INTERNATIONAL MONETARY FUND

2011 Review of Conditionality

Background Paper 2: Design of Fund-Supported Programs

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GLOSSARY

AREAER	Annual Report on Exchange Arrangements and Exchange Restrictions
BMA	Bayesian Model Averaging
BP1, 3, and 4	Background Paper 1, 3 and 4
CESE	Central, Eastern, and Southeastern Europe
EA	Euro Area
EBCI	European Bank Coordination Initiative
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EFM	Emergency Financing Mechanism
EIB	European Investment Bank
EPA	Ex Post Assessment of Longer-Term Program Engagement
EPE	Ex Post Evaluation of Exceptional Access
GRA	General Resources Account
HIPC	Highly Indebted Poor Country
IFI	International Financial Institution
MAE	Mean Absolute Error
MDRI	Multilateral Debt Relief Initiative
ME	Mean Error
MONA	Monitoring of Fund Arrangements
PIT	Personal Income Tax
PRGT	Poverty Reduction and Growth Trust
QPC	Quantitative Performance Criteria
RoC	Review of Conditionality
SBA	Stand By Arrangement
TA	Technical Assistance
UN	United Nations
VAT	Value Added Tax
WEO	World Economic Outlook

I. OVERVIEW

1. **Design of Fund-supported programs aims to address country specific needs while remaining even-handed and consistent with Fund policy**.[1] This paper examines the extent to which program design and conditionality have been appropriate in pursuing these goals, by seeking to answer several questions: has program design been consistent and evenhanded; has it addressed country specific needs and objectives appropriately; has it been based on reasonably good macroeconomic projections; and has it been flexible in the face of evolving country circumstances. The description and analysis focuses on the period between 2006 and September 2011, with some attention to the 2002-05 period.[2]

2. **To examine these questions, the paper relies primarily on descriptive and regression analysis, particularly of programs' macroeconomic adjustment and access**. It begins with a regression analysis of the extent to which factors like initial macroeconomic conditions and country characteristics explain macroeconomic adjustment and levels of access in program design. The results permit an examination first of the degree of comparability across countries and second of the economic appropriateness of these factors. This regression analysis is complemented by a description of adjustment patterns and structural reform in key sectors.[3] Third, the paper analyzes the accuracy and possible bias of

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[1] Prepared by a staff team led by Marshall Mills and comprising Tushara Ekanayake, Richard Harmsen (who led the paper at its initial stages), Christian Henn, Emmanuel Hife, Armine Khachatryan, Christian Saborowski, Mika Saito, and Nick Young, under the guidance of Dominique Desruelle and Ranil Salgado (all SPR). Contributions were also provided by Christoph Klingen (EUR); Aqib Aslam, Jack Grigg, Izabela Karpowicz, and Shamsuddin Tareq (all FAD); Yanliang Miao and Linda Kaltani (SPR). This is the second of four background papers for the 2011 Review of Conditionality (RoC) and the *Design of Fund-Supported Programs, consistent with the Concept Note for the Review* and the subsequent Board discussion on February 14, 2011. The first background paper is titled *The Content and Application of Conditionality* (referred to as Background Paper 1, or BP1), the third *Outcomes of Fund Supported Programs* (referred to as Background Paper 3, or BP3), and the fourth *Technical Appendices* (referred to as Background Paper 4, or BP4).

[2] Programs approved during the period 2002-2005 and covered in the Monitoring of Fund Arrangements (MONA) database are included in some regression analysis and examined in greater detail for comparison purposes in Appendix IV. The paper looks generally at programs meeting the Fund's upper credit tranche standards; besides the distinction between programs supported under the Fund's General Resources Account and Poverty Reduction and Growth Trust (hereafter, respectively, referred to as GRA and PRGT programs), the paper does not examine in detail the differences between types of programs, in large part because of the limited number of observations for many program types.

[3] The analysis of the programs' macroeconomic frameworks and adjustment focuses mainly on initial program design, both because this is when the broad outlines of the program are set and because it would be impractical to consider the numerous revisions to macroeconomic frameworks during a program. The analytical tools employed in the process of program design were examined in a background paper for the previous review of conditionality in 2005.

the macroeconomic projections in program countries, which are critical to both initial program design and subsequent modifications. Fourth, the paper examines data on trends in the flexibility of program implementation.[4]

3. **The paper finds that program design appeared—in general—tailored to country needs, even-handed, and flexible**. The positive findings broadly hold, looking at all programs together, comparing among programs, comparing to past periods, and assessing the economic logic of the program design. They hold for the substantial majority of programs supported under both the Fund's General Resources Account and the Poverty Reduction and Growth Trust (hereafter GRA programs and PRGT programs, respectively), with variations as specified below.

- As examined in section II, *a limited number of initial conditions can explain programs' macroeconomic adjustment and access to Fund financing, supporting a conclusion of even-handedness in program design.*[5] The fit of regressions explaining program design was generally good for GRA programs; the weaker fit for PRGT programs does not conclusively confirm even-handedness but suggests consistency, considering the greater heterogeneity of PRGT countries.

- As discussed in section III, *the extent of adjustment by sector and access levels broadly made economic sense, considering relevant initial country conditions and characteristics.* This finding supports the conclusion that programs are generally well-tailored to country needs and characteristics, with reasonable balance of adjustment and financing. In particular, adjustment and access adapted appropriately to the exceptional conditions associated with the global financial crisis, with increased access. Programs addressing capital account crises also had higher access, reflecting the lessons of the Asian financial crisis.

- Moreover, section IV shows that the *macroeconomic projections underpinning program design in the 2006-11 sample were generally unbiased,* and did not exhibit a systematic optimistic projection bias, contrary to studies based on programs in earlier periods.

[4] The following data sources were used: MONA data complemented by initial program documents; WEO data on macroeconomic variables; program documents for 16 case studies; surveys of Executive Board representatives, country authorities, resident representatives, and mission chiefs; and The Fund's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER).

[5] Even-handedness requires uniformity of treatment of countries in program conditionality and design, taking into account the differing initial macroeconomic conditions and country characteristics.

- Finally, section V finds that *flexibility has increased compared to the past, especially in terms of modifications of conditionality and augmentations of access*, and has helped maintain high implementation rates despite the global recession.

4. **However, some of the recent programs faced program design challenges**. Program design faced myriad difficulties in these so-called "wave 2" crisis programs, approved after August 2009. In particular, policy space has narrowed in many countries, making the inherent trade-off between adjustment and financing more difficult. Some of these programs posed a number of exceptional design challenges and risks, including: high public debt, sustained loss of market access, low growth, and competitiveness issues. Membership in a currency union, macro-financial linkages, spillovers, and systemic risk created further challenges in some cases. The appropriateness of the resulting strong programmed policy adjustment also needs to be continually reassessed.[6] In addition, membership in the Euro Area (EA) was found to be associated with higher access (taking into account other measurable factors). Large systemic risks justified the access levels; however, the reference to systemic risk in justifying high levels of access could have benefitted from more in-depth analysis at program inception. While relatively few in number, these programs nevertheless represent a large proportion of access to Fund financing, also creating financial risks to the institution. It is too early to assess the final outcomes of these programs, although the first Greece program already encountered significant difficulties.[7]

5. **Other important caveats to the analysis also lead to caution in interpreting the paper's encouraging findings**. Projection errors have grown for GRA cases: the shocks associated with the global financial crisis help explain this outcome, but room for improvement exists. The findings are founded on an overview of programs in the aggregate, and certain programs have exhibited specific design flaws, as highlighted by Ex Post Assessments of Longer Term Program Engagement (EPAs) and Ex Post Evaluations of Exceptional Access (EPEs) and indicated below, although no systematic design flaws were apparent.[8] Two findings suggest it is worthwhile to examine whether there is further scope in certain programs for relaxing macroeconomic adjustment: (i) the fiscal adjustment in programs in fragile states tended to be as large as or larger than other PRGT cases, controlling for other factors; and (ii) while program design in capital account crisis cases has

[6] BP3 on program outcomes conducts an in-depth analysis of the external and public sector debt sustainability implications of programs.

[7] Since the EA programs were initiated toward the end of this RoC's coverage period, discussion of these programs is limited. The Greece program, as redesigned in the request for a new extended arrangement, was not part of sample covered (through September 2011). This paper does not attempt to conduct in-depth assessments of these or any other individual programs. The assessments in this paper nevertheless attempt to take into account the broader implications of subsequent developments in these programs, to the extent possible.

[8] See BP4 for a summary of assessments from 23 EPAs and EPEs on program design and conditionality.

drawn on the lessons of the past, there may be some room in certain cases for further relaxing initial fiscal targets, since stabilization in the medium term was better than expected despite narrowly missing fiscal targets in the initial program period.

II. Comparability and Even-Handedness of Fund-Supported Programs

6. **The design of Fund-supported programs appeared generally consistent and even-handed, although certain results raise questions**. Based on regression results, programmed adjustment and access took into account relevant initial conditions and country characteristics in a fairly consistent manner, implying comparable, even-handed treatment.[9] The generally good fit of regressions explaining program design, especially for GRA programs supported this conclusion, as did the positive responses on the surveys of stakeholders (see BP4 for survey results). These regressions used a methodology that automatically and objectively selected the best explanatory model using an ample list of candidate regressors.[10] In particular, program design was also largely comparable across regions,[11] and there was no evidence that powerful Fund stakeholders exerted a systematic influence.[12] However, the power of the dummy variable for membership in the Euro Area in explaining variations in access warrants further examination (below).

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[9] See Appendix I for the complete regression results and details underlying the analysis in Sections II and III. As mentioned earlier, the sample period comprised 2002-11 and not just 2006-11, because the larger sample size lends robustness to the regression analysis in face of the large set of candidate regressors tested. For almost all regressions, the Bayesian Model Averaging (BMA) methodology does not select the post-2006 dummy as an effective regressor in explaining access and adjustment. This indicates consistent relationships through the period, so that the results are equally meaningful for programs initiated during 2006-11.

[10] BMA was used to address the uncertainty about which explanatory variables should be included in regressions (see Appendix I for details). The methodology trades off goodness of fit and parsimony in selecting models. The adjusted version of R^2 is reported to facilitate comparison of models with different numbers of regressors.

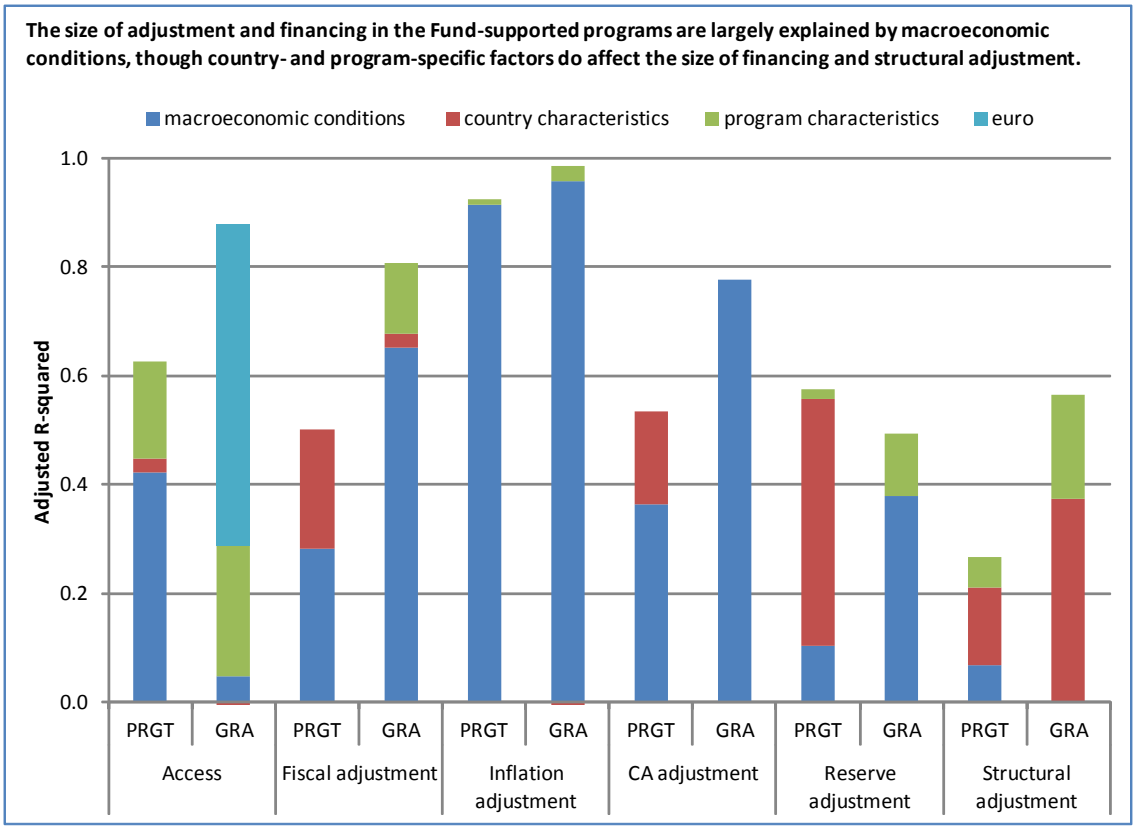
[11] These results are reported in Appendix Tables I.4 and I.5, in which the intercept was replaced by Fund area department dummy variables while otherwise leaving the specifications reported in Appendix Tables I.1 and I.2 unchanged. Generally no large differences amongst the coefficients of these dummies stood out. However, the Euro Area dummy remained by far the most significant regional dummy for explaining access.

[12] These results are summarized in Appendix I and tabulated in Appendix Tables I.4-7. Background for including political economy variables in the regressions in Appendix Tables I.6-7 is that a large academic literature investigates whether powerful Fund stakeholders exert disproportionate influence over Fund decisions. The regressions include three types of variables to proxy for political and economic interconnections to powerful stakeholders: UN voting patterns, Aid flows, and Trade flows. The importance of some of these variables for the incidence and size of IMF lending has been examined most prominently by Barro and Lee (2005), but also by Broz and Hawes (2006), Eichengreen et al (2006), and Pop-Eleches (2007). The impact of UN voting with the U.S. on program conditionality was examined by Stone (2008). The analysis in this paper, which looked at GRA and PRGT programs separately, found that these variables did not have strong explanatory power for the sample examined.

7. **Stakeholders responding to surveys perceived programs to have equivalent conditionality, though country authorities often could not judge**. Few respondents disagreed with the proposition that programs have equivalent conditionality, but around half of country authorities and donors responded that they did not know, suggesting room for improvement in communications on evenhandedness.

8. **As noted above, the design of GRA programs was highly consistent with countries' initial conditions and characteristics**, which strongly supports a conclusions of even-handedness (Figure 2.1). While the fit for the regressions was not as high for reserve adjustment and the number of structural conditions, it was still fairly good. The specific initial conditions and country characteristics explaining program design generally appeared appropriate. The absence of some variables one might have expected to be significant constitutes an additional caveat, however (e.g., institutional capacity measures for the number of conditions or successor program for GRA access).

Figure 2.1. Summary of Factors Affecting Adjustment and Access



Source: WEO, MONA, and Staff calculations.

Note: This figure summarizes how much of the variations in each aspect of the Fund-supported programs (in horizontal axis) can be explained by variables identified as macroeconomic conditions and country- and program-characteristics. Variables such as fiscal balance, current account balance, inflation, and growth are considered macroeconomic conditions; currency union and fragile state dummies are country characteristics; and crisis-program and subsequent program dummies are program characteristics (more details can be found in Appendix Tables I.1 and I.2).

9. **PRGT program design reflected fairly consistent relationships to conditions and characteristics, but it is harder to draw strong conclusions on even-handedness**. The fit of the regressions for programmed adjustment and access for PRGT programs was moderately good, but perhaps insufficient to conclude strongly whether or not PRGT program design was even-handed in all cases. Importantly, the fit was stronger for access. The specific macroeconomic initial conditions and country characteristics that explained program design appeared largely appropriate.

10. **Importantly, the more moderate fit of the regressions on PRGT program design likely reflects heterogeneity rather than clear evidence of inconsistent design**. In comparison to GRA countries, the heterogeneity of PRGT countries, programs, and objectives likely plays a role in the lower fit of some regressions, so that the results are not surprising. In particular, the method used favors more parsimonious models over larger models with better fit. In any case, an average fit of 0.5 is considered good for this type of method and cannot constitute evidence of inconsistency. In fact, to the extent that country heterogeneity could not be captured in the regression, lower R^2 values could possibly also imply that programs were tailored to country characteristics that were not readily quantifiable or common to several countries.

11. **Membership in the Euro Area was a significant variable in explaining the level of access to Fund financing in GRA programs**. Its inclusion explained much of the variation represented by the high levels of access for these programs. On the other hand, membership in the Euro Area was not statistically significant in explaining adjustment, although the "wave 2" countries, which include the Euro Area programs, were associated with somewhat higher fiscal adjustment.

12. **The extraordinarily high access in the Euro Area programs was viewed as necessary given the systemic risks from their crises and large debt rollover needs**. As explained in program documents, the spillovers from these crises posed specific, broader systemic risks that justified higher access, including through risks to European and global financial systems. These specific spillovers indeed seemed to be a main driver behind program design, especially since general financial interconnectedness was not found to be an important explanatory variable.[13] In addition to contagion and systemic risks, the Euro Area programs faced serious design challenges, related to membership in a currency union (eliminating nominal exchange rate devaluation), competitiveness problems, and sustained total loss of market access. The large-scale co-financing from the European Union also added

[13] Total cross-border bank claims and liabilities from the international investment position were used as proxies for financial interconnectedness (see Appendix Table I.3), but these do not adequately proxy for the contagion risks that these programs were designed to contain.

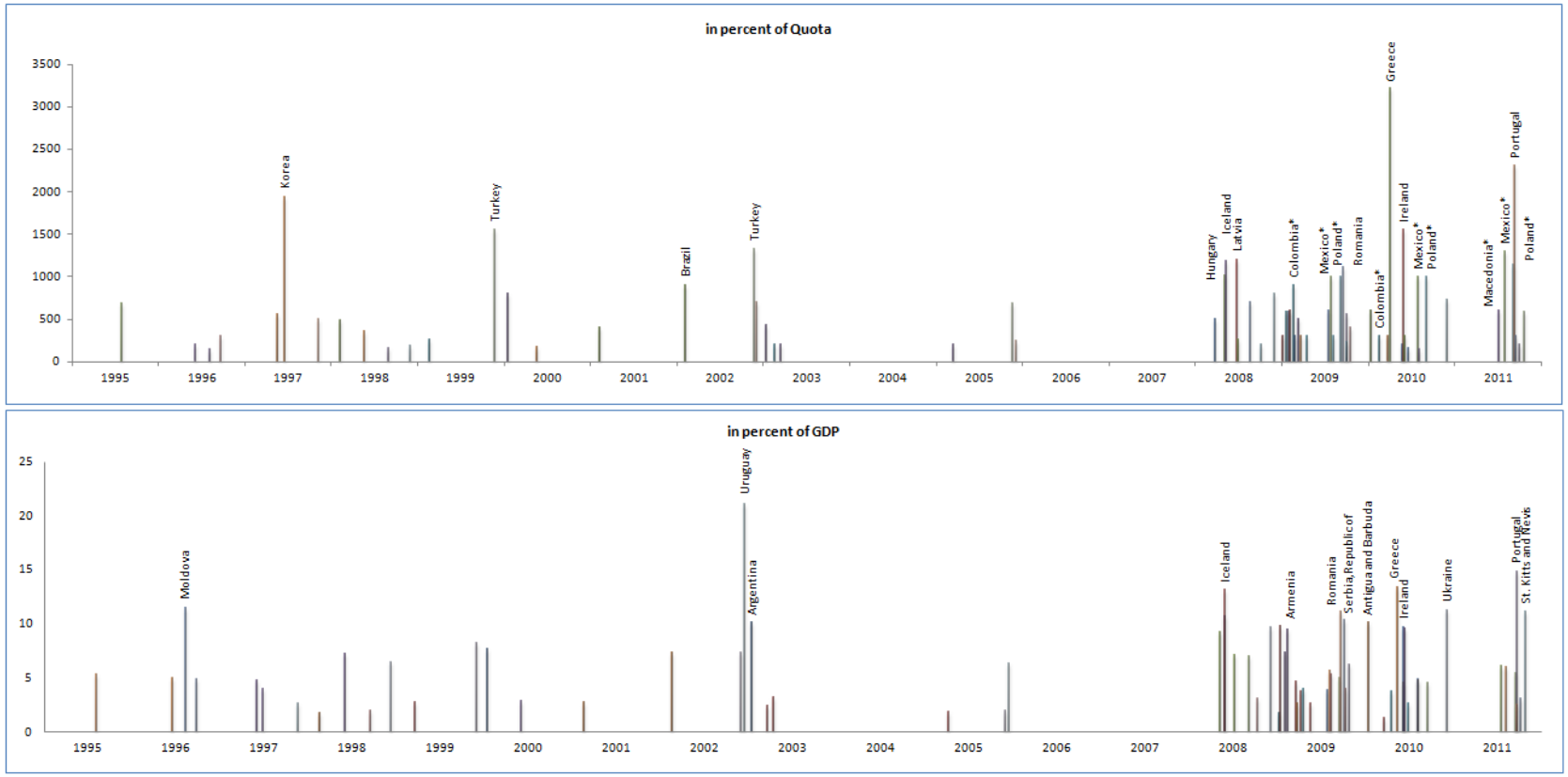
complexity to the programs. It is useful to examine briefly the evolution of the role of spillovers and systemic risks in program design.

13. **The 2008 Hungary program was among the first cases in which reducing risks of regional spillovers was cited as an important objective**. The Stand By Arrangement (SBA) request made an explicit reference to the need to reduce the scope of financial spillovers to other countries, given the exposure of the largest Hungarian bank to Central, Eastern, and Southeastern Europe (CESE) and of several Euro Area banks to Hungary via their subsidiaries. In fact, the large exposure of foreign banks to Hungary helped set a precedent of cross-border banking supervision and resolution framework at the European Union level.

14. **Cross-border spillovers and systemic risks were invoked in justifying high levels of access for Ireland, Greece and Portugal, despite concerns over debt sustainability**. The proposed exceptional access in Ireland (19.5 billion SDRs or 2,322 percent of quota at program approval[14]), Greece (26.4 billion SDRs or 3,212 percent of quota at program approval), and Portugal (23.7 billion SDRs or 2,306 percent of quota) entailed substantial risks to the Fund, both in terms of the stock of outstanding credit and the projected debt service, that would last for an extended period. However, the crises—if uncontained—could have spread rapidly in other countries through financial exposures both to and from peripheral Europe. The analysis of systemic risk, while supported by subsequent analysis and experience, was not fully developed or quantified in the initial Greece program document. Deeper analysis of risks in Euro Area programs over time has facilitated better informed decisions. As risks evolved and became more prominent during the implementation of the program, the analysis and presentation of risks was expanded in subsequent program documents. This increased coverage should be emulated in future exceptional access cases at program inception. It is also important to note that historically, access levels have periodically diverged from trends as the Fund has strived to meet new challenges—such as the massive liquidity needs in the Asian capital account crises or public debt challenges in Brazil and Turkey in 2000s, although the risks to debt sustainability were perhaps smaller in these cases (Figure 2.2).

[14] Ireland's quota increased substantially in March, 2011, reducing total access to 1,548 percent of quota.

Figure 2.2. Access through the Ages: Exceptional Access in GRA-supported Programs, 1995-2011



Source: MONA

III. Adjustment and Access in the Design of Fund-Supported Programs[15]

15. **Macroeconomic adjustment and access in Fund-supported programs generally were tailored to country needs and objectives in an economically appropriate manner**.[16] As examined also in BP1 and BP3, program design aimed to achieve economic stabilization through a combination of adjustment and financing, including access to Fund resources. Promoting growth and poverty reduction was also a goal in nearly all PRGT programs and about half of GRA cases.[17] Pursuing stabilization and sustainability while minimizing output losses from adjustment appears as a consistent theme in the following assessment.

16. **The section examines the economic reasoning behind adjustment and access using descriptive and regression analysis**. First, it examines initially programmed adjustment in three sectors in turn—fiscal, monetary, and external—looking at its magnitude, composition, timing, and outturns. The descriptive analysis focuses on cases with imbalances (e.g., fiscal, inflation, and current account) in the top quartile of all programs, supplemented by the regression analysis presented in section II.[18] Subsequently, the section reviews the factors explaining the levels of access to Fund financing, as well as the extent of structural conditionality and its linkages to adjustment. To conclude, the section assesses the resulting macroeconomic policy mixes and adjustment/financing balances for different policy challenges (such as large fiscal deficits, public debt, capital account crises, or fragile states), considering how policies interact with and reinforce each other.

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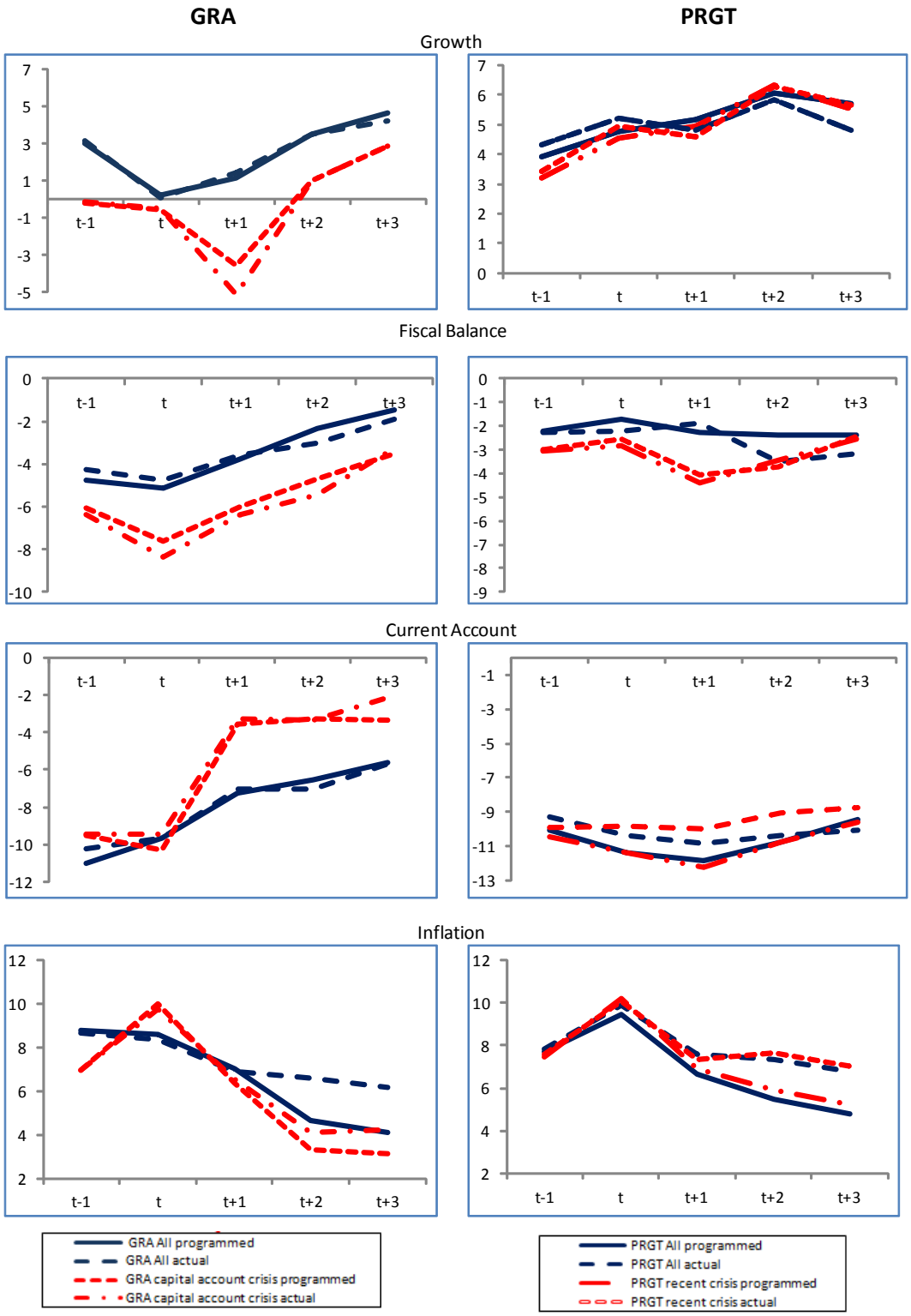
[15] In this section, "adjustment" refers to planned or projected adjustment at the outset of a program, unless otherwise specified. The adjustment/projection horizon includes five years from period *t-1* (one period before the program is initiated) to *t+3* (three periods after the program is initiated). Additional data on adjustment is presented in Appendix III.

[16] Unless noted otherwise, the averages presented for macroeconomic variables are calculated on the basis of a sample of countries for which data are available on growth, the fiscal balance, inflation, the current account balance and reserve coverage between t-1 and t+3. This amounts to a sample of 36 GRA and 57 PRGT programs between initiated between 2006 and 2011, as well as 25 GRA programs and 30 PRGT programs initiated between 2002 and 2005.

[17] Stakeholders surveyed agreed that program objectives were consistent with domestic priorities, although country authorities and donors agreed less strongly than mission chiefs and resident representatives. Exceptions clearly existed, however—for example, the EPA for Sierra Leone noted room for improvement in aligning the reform agenda with program objectives.

[18] In other words, programs in countries for which the relevant variable (e.g., inflation) was in the upper quartile in the program sample in the year prior to the program (t-1). The quartiles were calculated separately for GRA and PRGT programs.

Figure 3.1. Programmed and Actual Macroeconomic Adjustment



Source: WEO, MONA, and Staff calculations.

Note: PRGT recent crisis programs are defined as those approved after August 2008.

A. Fiscal Adjustment

17. **Fiscal adjustment in Fund-supported programs appeared generally appropriate considering countries' initial conditions, program characteristics, and objectives**. Moreover, fiscal adjustment appeared to be more flexible in its magnitude and timing than in the past (Box 1 and BP3).

18. **The magnitude of fiscal adjustment was generally restrained, largely out of concern for output effects, particularly during the global economic crisis** (Figure 3.1 and Table 3.1). In PRGT cases, fiscal adjustment was larger both for countries with stronger institutions (rule of law), presumably given their higher capacity. Surprisingly, however, this effect was offset to a degree for fragile states, which regression results also show had higher fiscal adjustment, controlling for other factors (including their low rule of law scores)—these offsetting results should be interpreted carefully.[19] Generally, initial fiscal and debt positions were strong enough to allow for limited adjustment in most cases, while preserving sustainability and generating resources for priority spending. In particular, fiscal adjustment was smaller during 2006-11 for PRGT programs and more back loaded for GRA cases compared to previous periods (Box 1). The magnitude of adjustment picked up for wave 2 programs, however.

Table 3.1. Regression Results Explaining Programmed Fiscal Adjustment

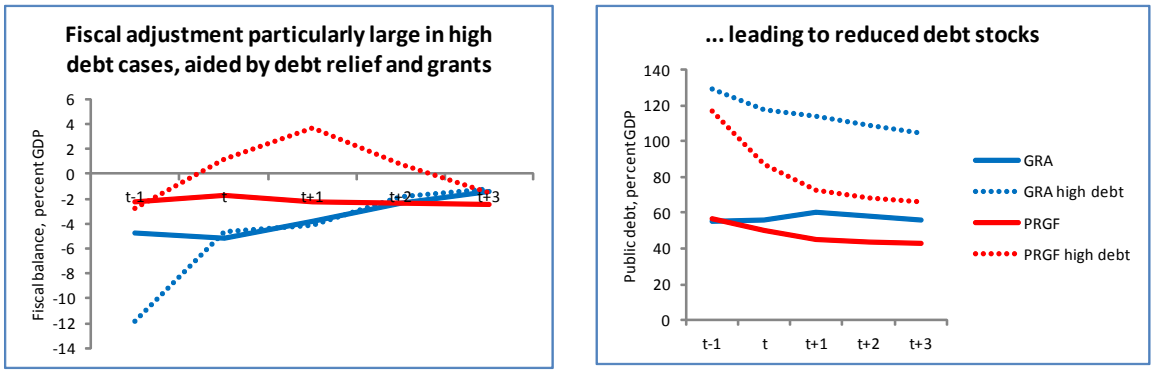
	GRA	PRGT
Macro conditions	Fiscal balance at t-1 (-) Public debt at t-1 (+) Change in current account balance from t-2 to t-1 (-)	Fiscal balance at t-1 (-) Public debt at t-1 (+) IIP liabilities at t-1 (+)
Country charac-teristics	Rule of law (-)	Fragile states dummy (+) Rule of law (+) Aid dependence (-)
Program charac-teristics	Wave 2 dummy (+)	
R-squared Adj.	0.807	0.500

Source: IMF staff estimations.
Notes: All variables are statistically significant at the 10 percent level or higher. See Appendix Tables I.1-3 for descriptions.

[19] Previous analysis on fragile states in *Macroeconomic and Operational Challenges in Countries in Fragile Situations* did not find higher fiscal adjustment in fragile states compared to the average.

- *The size of fiscal adjustment generally remained sufficient to at least stabilize public debt at sustainable levels*. As examined in more detail in BP3, debt dynamics for most PRGT and GRA cases improved under programs to achieve at least debt stabilization. Programs with very high initial debt in the Euro Area and Caribbean were exceptions to this finding, however. (In some cases, e.g., Belarus and Mongolia, EPEs found that the specific measures of fiscal balance used could have been better suited to the country's policy challenges.)

Figure 3.2. Programmed Adjustment in High Debt Cases for GRA and PRGT Programs



Source: WEO, MONA, and Staff calculations.

Note: Due to data availability only 46 PRGT programs and 29 GRA programs could be taken into account in establishing the high debt grouping. The very large change in fiscal balances in high debt PRGT countries is driven to a large extent by significant debt relief operations.

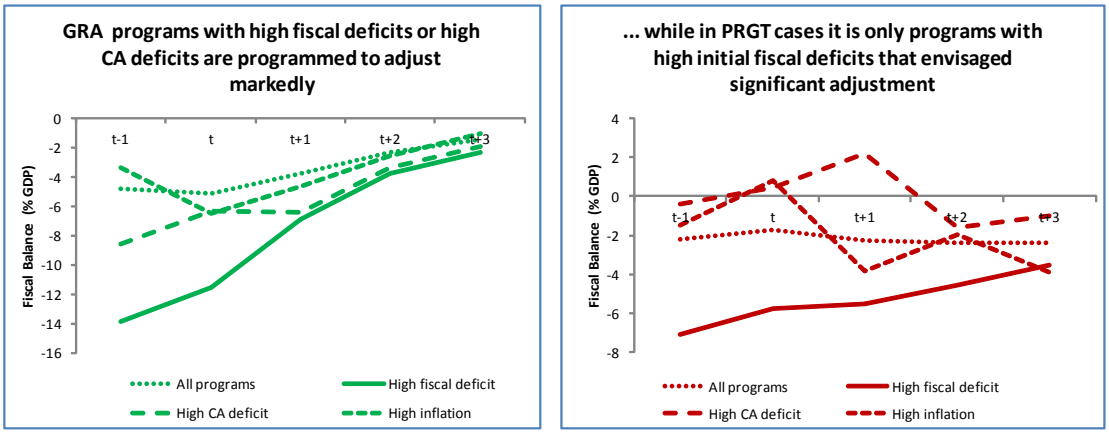
- *High debt programs involved relatively more fiscal adjustment than other programs, although sustainability concerns may still arise in some cases*.[20] Regression analysis shows that the magnitude of adjustment is explained to a large extent by the high initial fiscal deficits in high debt GRA cases in year t-1 (Figure 3.2).This pattern is evident, to a lesser extent, for PRGT programs with high debt ratios as well. In both high-debt PRGT and GRA programs, fiscal adjustment, coupled with debt relief under the HIPC and MDRI initiatives in many PRGT cases, was usually programmed to contribute to reductions in debt ratios. However, under the debt projections in one

[20] Average debt ratios (projected and actual) are computed on the basis of a subsample of 22 GRA and 34 PRGT programs for which data are available. Burundi was excluded from the high debt sample as debt relief was recorded as part of revenue and grants, which would have severely impacted the averages in the small group of high debt countries. Other high debt PRGT countries (Guinea, Mauritania, Togo, and Uganda) received significant bilateral and multilateral debt relief through the heavily indebted poor countries (HIPC) and multilateral debt relief initiative (MDRI) and were able to reduce debt burdens abruptly.

high debt GRA case (Greece), debt ratios remained at high levels, albeit on a downward trend after 2013, even with macroeconomic assumptions that turned out to be more positive than the outturn (BP3 and Appendix IV).

- *Programs with less fiscal adjustment seemed to emphasize deeper structural reform agendas*. Programs with extensive structural reform agendas adjusted less in the initial program years (Appendix Figure III.1). This pattern implied that program design takes into account political constraints by avoiding both large fiscal adjustment and extensive structural conditionality. However, it is unclear whether this tendency was appropriate in all cases; in certain cases, structural reforms needed to support fiscal consolidation were found lacking (e.g., see EPE for Ukraine).

Figure 3.3. Fiscal Adjustment and Initial Conditions
(means in percent of GDP unless otherwise indicated)



Source: WEO, MONA, and Staff calculations.

19. **The <u>composition</u> of fiscal adjustment generally appeared tailored to country conditions and usually safeguarded priority spending**. In PRGT programs with high initial fiscal deficits, adjustment relied partly on expenditure restraint, while in other PRGT cases, fiscal balances and expenditures were stable in GDP terms, with increases in revenue and grants playing a larger role in the initial program years (Figure 3.3 and Appendix III). This approach seemed appropriate given that initial expenditure ratios were not particularly high, and it helped programs meet their objectives of protecting priority social and capital spending. In GRA programs with high initial fiscal deficits, most of the fiscal adjustment fell on spending, as spending levels were relatively high. (The sustainability of this adjustment merits close monitoring since previous experience suggested that revenue enhancement has been important for sustained adjustment in emerging economies.) Both social spending on health and education and capital expenditures were fairly well protected in both program types (see BP3)—capital expenditures actually increased in PRGT programs both as a share of GDP and overall spending (Figure 3.4). The social consequences of expenditure and

revenue policies were increasingly taken into account, although there was much room for further work (Boxes 2 and 3; see also BP3).[21]

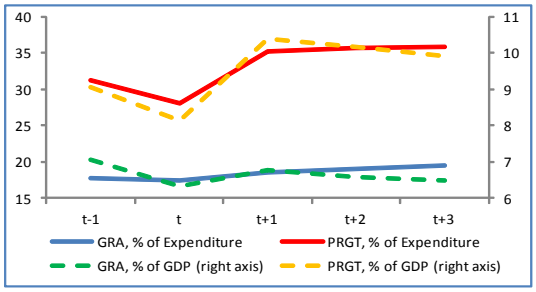
20. **The timing of fiscal adjustment was often back-loaded, to accommodate concerns over growth in the initial program years**.

- In GRA programs—most of which were initiated following the onset of the global economic crisis—the overall balance was programmed to improve by just 1 percent on average in the first two program years.

- In PRGT cases, expenditure was planned to increase early in programs, supported by grants and debt relief, and to remain above its initial ratio to GDP in all but the third year after program initiation.

Figure 3.4. Capital Expenditure in GRA and PRGT Programs

Capital expenditure safeguarded in PRGT programs and relatively stable in GRA cases



Source: WEO, MONA, and Staff calculations.

Note: Due to data availability, only 40 PRGT programs and 19 GRA programs were taken into account for this chart.

21. **Strong outturns compared to targets in early program years indicated that most fiscal adjustment targets were not over-ambitious**. Partly driven by faster than expected economic growth, performance against program targets was generally good in the first two program years (see also Appendix III).

- GRA programs initially adjusted faster than projected and about as much as programmed towards the end of the projection horizon. In contrast, capital account crises missed targets throughout the program horizon.

- The size of adjustment was an important determinant of performance in GRA cases. Regression analysis suggests that programs requiring larger fiscal adjustment in a given year were less likely to meet that year's quantitative performance criteria (QPCs).[22] Consequently, it may be detrimental to program performance to count on extraordinarily large adjustment efforts.[23]

[21] The description of how case study countries in this paper were chosen can be found in BP4.

[22] The dependent variable in the analysis is the share of QPCs that was met in period t+1. Significant determinants of PRGT performance against QPCs could not be found.

[23] Interestingly, it is projected adjustment, and not the initial fiscal balance, that determines program performance; in fact, the results suggest that GRA programs with large initial deficits performed better.

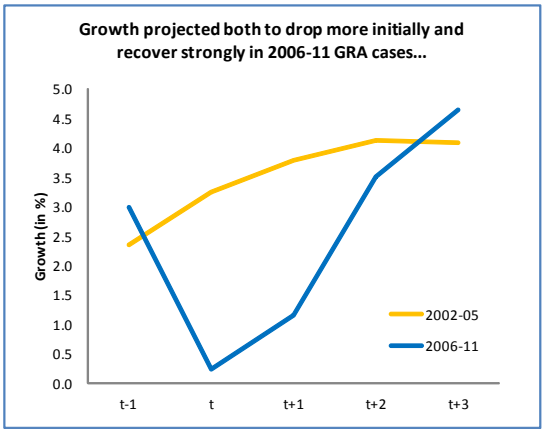
- PRGT programs also adjusted faster than programmed in the initial program years (except for Policy Support Instrument arrangements which adjusted less than initially expected) but subsequently adjusted less than initially programmed.

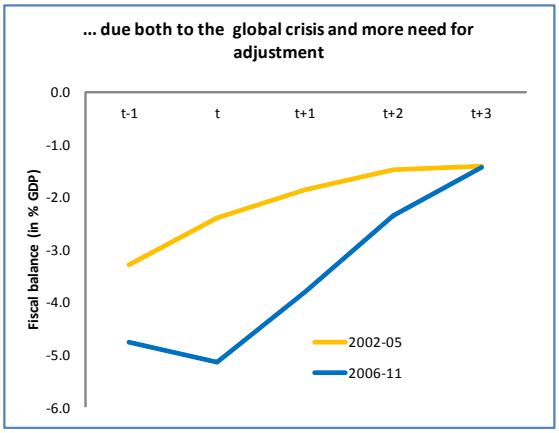
Box 1. Flexibility in Fiscal Adjustment

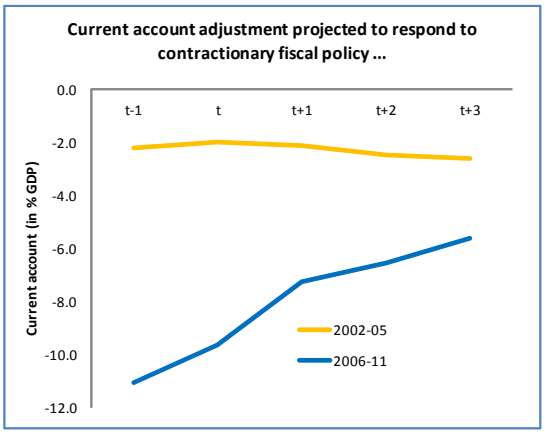
Compared to the 2002-05 sample, GRA programs in 2006-11 planned more fiscal adjustment in the face of higher deficits and inflation rates (see Appendix I for details). Fiscal deficits in the first year of programs were substantially higher on average in the 2006-11 sample than during 2002-05 (Box Figure 1). Programmed fiscal adjustment thus had to be larger. Initial inflation rates were also higher (in year t), but were projected to fall by a similar magnitude over the program horizon as in 2002-05, thus targeting slightly higher rates in the medium term.

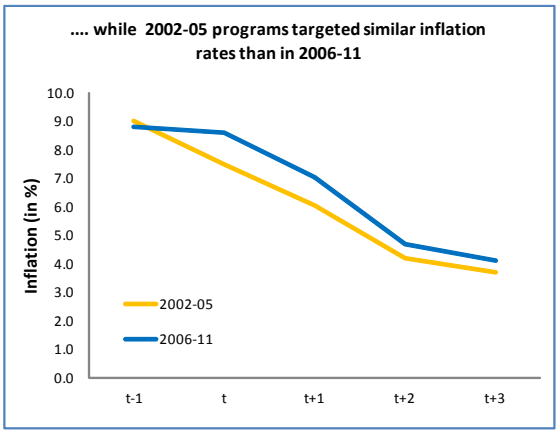
But adjustment was more back loaded in current GRA programs than the earlier period, in light of the larger growth declines during the global crisis. Both fiscal and inflation adjustment in the initial program periods were smaller in the 2006-11 sample in spite of larger initial deficits and falling revenues (Box Figure 2). This back loaded adjustment was especially pronounced in capital account crises which only adjusted moderately after two years of strongly expansionary policy.

Box Figure 1. Programmed Adjustment in GRA Programs: 2006-11 vs. 2002-05





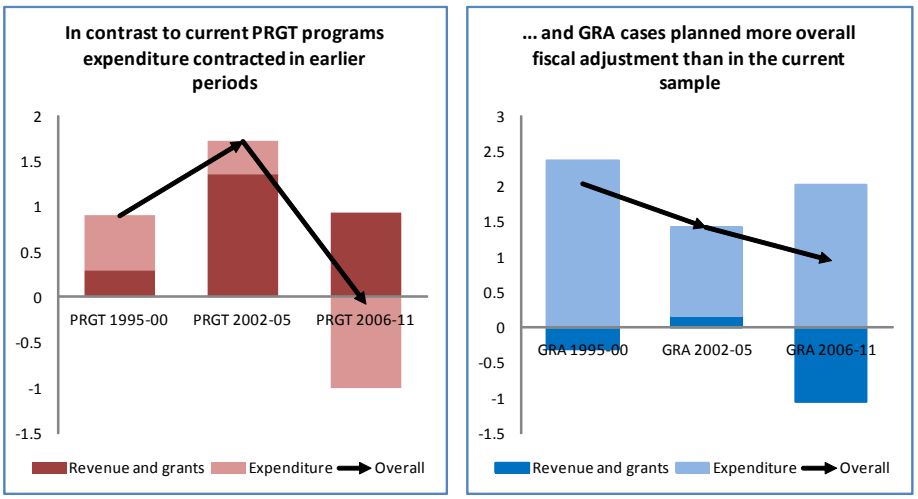




Source: WEO, MONA, and Staff calculations.

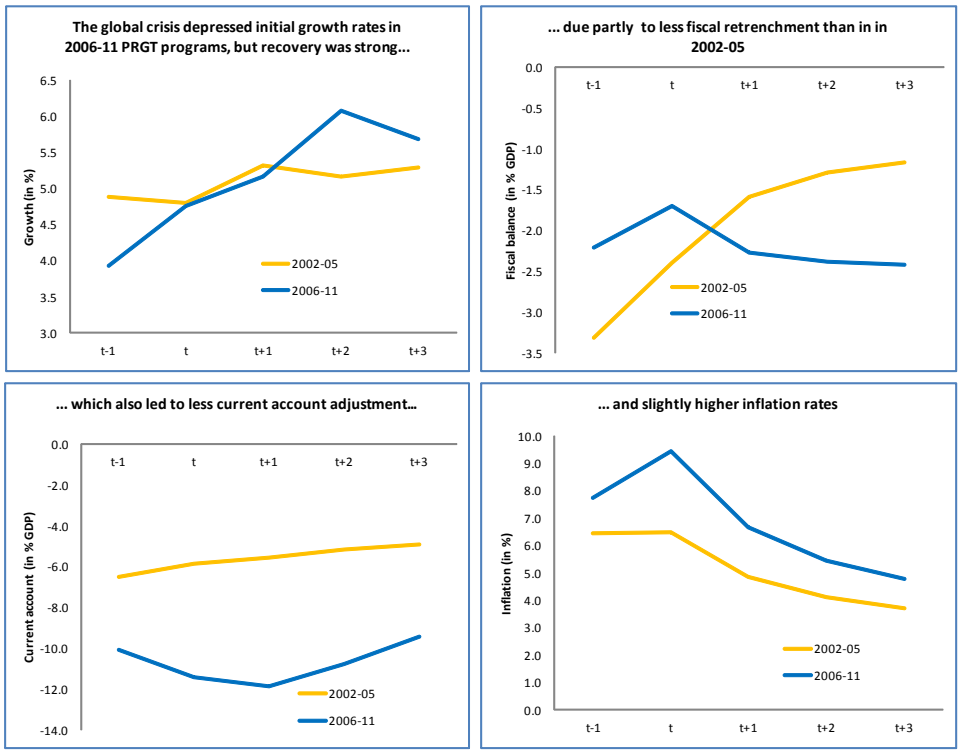
PRGT programs in the 2006-11 targeted less adjustment and higher deficits and inflation (Box Figure 3). Programs faced lower initial fiscal deficits in the 2006-11 programs, and adjustment was significantly less than before. In the initial periods, fiscal adjustment relied solely on revenue and grants, while expenditure remained expansionary, allowing for counter-cyclical policies (Box Figure 2). Monetary policy targeted inflation rates of about 4 percent in 2006-11 programs, slightly higher than in 2002-05.

Box Figure 2. Composition of Programmed Fiscal Adjustment Between t-1 and t+1



Source: WEO, MONA, and Staff calculations.

Box Figure 3. Programmed Adjustment in PRGT Programs: 2006-11 vs. 2002-05



Source: WEO, MONA, and Staff calculations.

Box 2. Conditionality on Expenditure Measures and Protecting the Poor

Expenditure policy measures potentially affecting the poor focused mainly on price increases. The most common spending measures required an adjustment of utility tariffs or increases of domestic petroleum prices. These were deemed necessary to avoid excessive volatility of taxes and revenues, curtail untargeted subsidies, eliminate quasi-fiscal deficits, and put loss-making public enterprises on a sounder footing. Occasionally, price increases were preceded or accompanied by automatic price adjustment mechanisms that would smooth out periodic adjustments, dampen price volatility, and depoliticize price increases.

Between 2006 and 2010, nine of the 18 countries in the case study sample were subject to program conditionality affecting prices of products consumed by the poor. While the Uganda (2006), Pakistan (2006), and Ghana (2009) programs predicated specific tariff increases, Moldova (2006 and 2010), Sierra Leone (2006), The Gambia (2007), Togo (2008), and the Dominican Republic (2009) implemented measures related to a utilities tariff adjustment mechanism or the definition of institutional responsibilities for price setting. The Gambia, Ghana, and Togo programs included conditionality related to automatic fuel pricing.

In five out of these nine countries, price adjustment conditionality was accompanied by an analysis of their distributive impact. Technical assistance (TA) explicitly considered adverse impacts of such measures on the poor and how these could be mitigated. Since 2002, the IMF's Fiscal Affairs Department carried out 15 missions, including in Ghana and Moldova. In the Gambia, Sierra Leone, and Togo, TA focused on issues related to the design and implementation of a price smoothing mechanism where explicit account was taken of its effects on the poor, and recommendations for offsetting measures were provided.

Where analysis of distributive impacts of measures was not available, Fund staff sought support from the World Bank and included conditionality aimed at strengthening social protection. In cases where distributive impact analysis or other relevant TA was not carried out, conditionality in the area of price increases was generally accompanied by a benchmark requiring the expansion of existing social safety nets and social benefits to the poor. In the case of Pakistan, this occurred with the help of the World Bank. The Uganda program did not include price increases as explicit conditionality; rather the authorities expressed their desire to increase electricity tariffs in the Memorandum of Economic and Financial Policies. This was coupled with a floor on expenditures from the Poverty Action Fund as an indicative target in the program.

Expenditure Conditionality and the Poor

	Price Reforms		Pro-poor work	
	Utility tariffs	Fuel Prices	Distribtutive analysis/TA	Other conditionality[1]
Armenia				x
Dominican Republic	x			x
Ghana		x	x	
Moldova	x		x	x
Pakistan	x			x
Sierra Leone		x	x	
The Gambia		x	x	
Togo		x	x	
Uganda	x			
Ukraine	x			

Sources: SPR MONA database and FAD.
[1] Measures include for example, introducing targeted social assistance system; strengthening targeting of social safety nets; increasing coverage of conditional cash transfer programs, etc.

Box 3. Conditionality on Tax Policy Measures and Equity Considerations

Although technical assistance (TA) often provides advice on the equity dimension of tax policy reforms, equity considerations appeared to be less prominent in program conditionality on tax policy. Between 2006 and 2010, the number of tax policy conditions in Fund programs increased tenfold to reach contained 102. Motivated by a desire to enhance revenue while minimal distortions or negative effects on growth, these tax policy conditions tend to focus on reforms concerning a VAT or other indirect taxes, as well as streamlining tax expenditures related to incentives and exemptions for businesses (Box Table 1).

Box Table 1. Policy Conditionality for All Program Countries, 2006-2010

Category	Description	Share of Tax Policy Conditions
General taxation	Broad reforms either unspecified or encompassing both direct and indirect taxes.	26.50%
Indirect taxation	Reforms to VAT or excises, including indirect tax expenditures	22.50%
Direct taxation	Reforms to business and/or personal income tax, including income tax expenditures	10.80%
Tax expenditures	Reduction of tax incentives, either unspecified or encompassing both direct and indirect taxes or miscellaneous taxes	11.80%
Miscellaneous taxation	Reform of specific taxes other than direct or indirect taxes, including property taxes, transaction taxes, and fees.	9.80%
RA & PFM measures	Reform of revenue administration and public financial management classified as revenue measures.	7.80%
General fiscal reforms	Reforms encompassing combined revenue and expenditure items, or general fiscal tightening.	10.80%

While considering the equity dimension of tax policy reforms, TA typically advises that equity objectives are best addressed through the use of targeted expenditure policies rather tax policy. This allows tax policy to focus on efficient revenue raising to finance these expenditures. Furthermore, it is not the case that efficient tax policy inevitably involves compromising equity objectives. The assumption that VAT is a regressive revenue raiser is subject to controversy. Eliminating tax expenditures to broaden tax bases and improving the efficiency of tax administration improve horizontal equity by leveling the playing field between different sectors and taxpayers.

Program conditionality on tax policy appeared to give less prominence to equity considerations than TA. A review of the seven countries in the sample with tax policy conditions highlights how tax policy structural benchmarks center on introducing modern value-added tax (VAT) systems and broadening the tax base through the elimination of incentives, exemptions, and other forms of tax expenditures. With the exception of Seychelles (and to a certain extent Greece), the equity implications of tax policy structural benchmarks were not explicitly addressed in the design of tax measures. In the Seychelles, a flat-rate personal income tax (PIT) on salaries, interest and dividend income was extended untaxed non residents and expatriate workers, while reducing the PIT rate previously applied to resident wage earners. In Greece, for example, revenue-raising has targeted higher-income segments, with temporary surcharges on highly profitable entities, the presumptive taxing of professionals and increases in luxury goods taxes. Tax administration reforms there were also crucial to ensuring effective revenue effort and improving fairness. Moreover, some other programs contain explicit expenditure measures for protecting low-income households from the adverse impacts of macroeconomic adjustment (e.g., Grenada and Pakistan).

In the future, program design could benefit from offering to the authorities to analyze more directly the impact of tax policy measures on low-income households or the progressivity of revenue collection. Structural conditionality could explicitly refer to certain essential items for exemption from a VAT or to tax-free thresholds for both direct and indirect taxes. In addition, including well-designed natural resource and property tax reforms as program measures would allow developing countries to increase revenue collections without adversely affecting the equity of the tax system or impairing growth.

B. Monetary Adjustment

22. **Monetary policy adjustment in Fund-supported programs during 2006-11 generally appeared well adapted to country needs and program characteristics**.

- *The magnitude of monetary policy adjustment can be well explained by relevant initial macroeconomic conditions,* particularly initial inflation (Table 3.2). Programs with higher initial inflation consistently involved larger inflation reduction for both GRA and PRGT programs. Regression analysis also indicates that programs in currency unions targeted more initial inflation reduction. Crisis programs involved less inflation reduction in light of already subdued price pressures.

Table 3.2. Regression Results Explaining Programmed Inflation Reduction

	GRA	PRGT
Macro conditions	Inflation at t-1 (+)	Inflation at t-1 (+) Change in inflation from t-2 to t-1 (+)
Country characteristics	Currency Union dummy (+)	
Program characteristics	Wave 2 dummy (-) Successor program dummy (+)	Crisis program dummy (-)
R-squared Adj.	0.955	0.926

Source: IMF staff estimations.
Notes: All variables are statistically significant at the 10 percent level or higher. See Appendix Tables I.1-3 for descriptions.

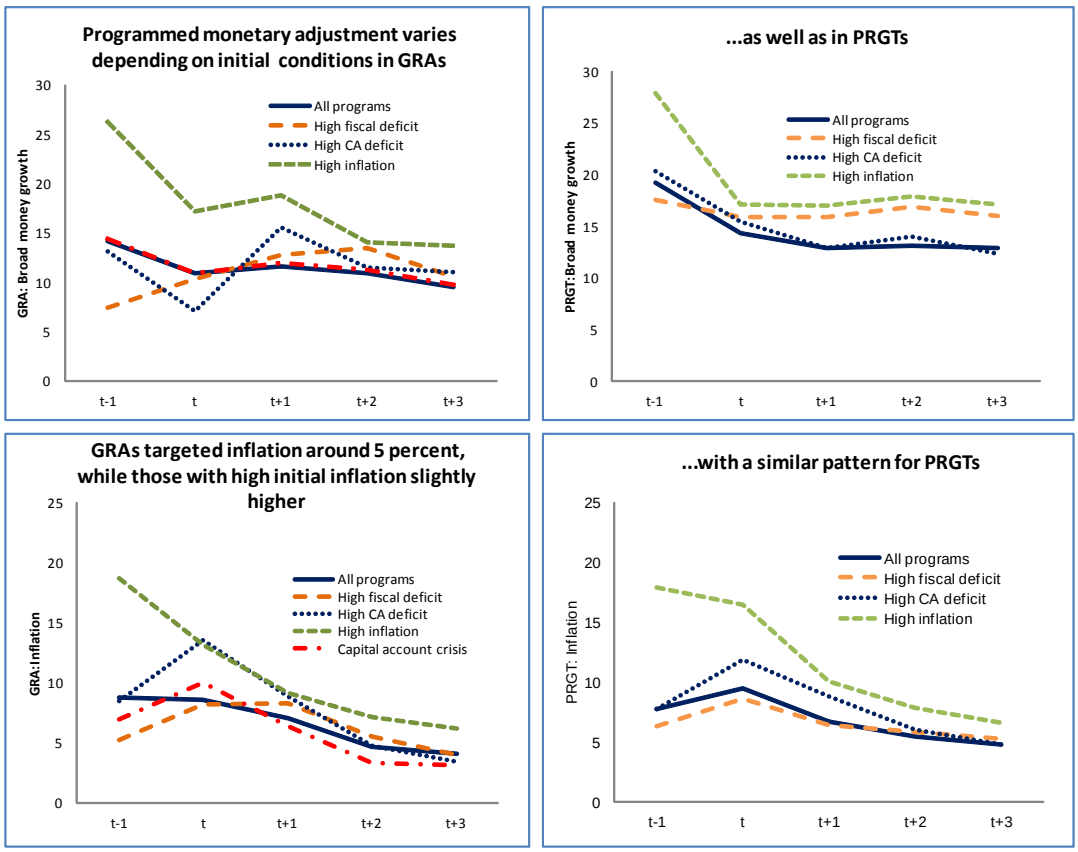
- *Programs targeted broadly reasonable inflation levels*. For both GRA and PRGT cases, countries with lower initial inflation generally targeted around 5 percent, while those with higher initial inflation on average targeted slightly higher rates. These levels are consistent with the literature on optimal inflation levels for middle and low income countries (e.g., Habermeier et al. (2009) and Berg et al. (2010), respectively).[24]

- *In high inflation cases, PRGT programs relied on initially tight monetary and fiscal policy to rein in inflation, while GRA programs leaned more on monetary policy*. For PRGT cases, concerns over output losses were evident in regression results that programs during the global crisis targeted less inflation adjustment.

[24] Both PRGT and GRA program countries with initial inflation 5 percent and below were prevalently those with managed exchange rate regimes (including different types of fixed rates) and members of monetary unions.

- *The <u>timing</u> of targeted disinflation was generally fairly gradual*, except for high inflation cases. For high inflation cases among GRA programs, disinflation involved a fairly sharp reduction in money growth in year t+1 and an initially contractionary fiscal policy, whereas in PRGT programs with high inflation, adjustment in year *t* was programmed to lead to sharp falls in inflation (Figure 3.5).

Figure 3.5. Monetary Adjustment and Initial Conditions
(means in percent of GDP unless otherwise noted)



Source: WEO, MONA, and Staff calculations.

Note: Programs are grouped according to initial conditions. Programs with a high fiscal deficit, a high current account deficit or high inflation are those in the upper quartile of the sample distribution with respect to each measure.

23. **Monetary policy conditionality evolved during the review period to adapt to countries' characteristics and policy preferences**. An increasing number of (primarily GRA) program countries implemented inflation targeting, to which conditionality adapted in flexible and innovative ways (Box 4). Structural conditionality in monetary policy often focused on clarifying the relationship between policy objectives and tools (Appendix Table II.1).

24. **In PRGT countries, monetary adjustment played a somewhat limited role in macroeconomic adjustment policies**. This pattern tended to reflect a mixture of several factors: weak monetary policy transmission mechanisms, inefficient monetary policy frameworks, lack of key pre-requisites (including infrastructure) for market operations, and

lack of competition in money and foreign exchange markets. These limitations, the evolution in financial intermediation, and other structural changes lead to instability in money demand (IMF Sub-Saharan Africa REO April 2008). Nevertheless, in light of the weaknesses of other monetary policy anchors, many programs continued targeting the monetary base as a key anchor (Figure 3.6).

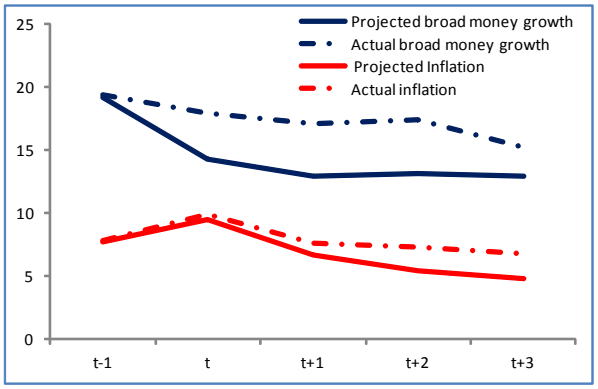
25. **Inflation outturns came fairly close to targets for both GRA and PRGT cases in the first program year, indicating that these targets were not unreasonable**. Money growth diverged more often from program targets, however; implementation of a "pure" monetary targeting regime has proven increasingly complex, given instability in money demand and the increasing incidence of price and capital flow shocks in recent years.

- *Both GRA and PRGT programs initially performed fairly well relative to inflation targets*, especially during the first year following the beginning of a program. Despite diverging later from initial program targets, average inflation still fell to around 6 percent for GRA cases and 7 percent in PRGT cases (roughly 1½ to 2 percent above initial targets). Higher than programmed inflation outcomes for PRGT programs could be partly due inflationary impact of the surge in commodity and fuel prices.

- *In GRA capital account crisis cases, money growth slowed more than targeted*, as sudden stops, capital outflows, and increased risks in financial markets had a higher impact than projected.

- *In GRA programs both fixed and flexible exchange rate regimes seemed to be successful in controlling inflation and supporting macroeconomic adjustment*.

Figure 3.6. Monetary Policy Implementation in PRGT Programs



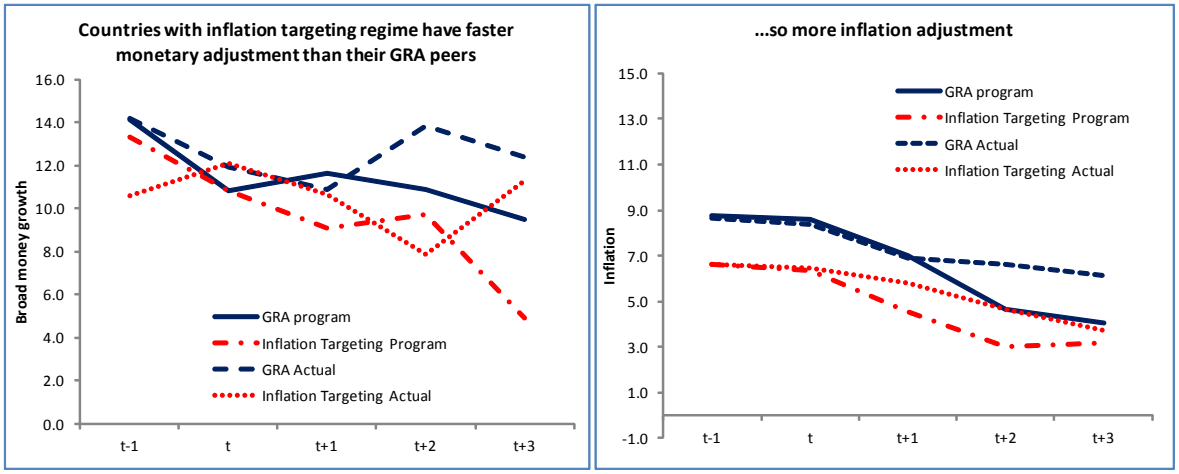
Source: WEO, MONA, and Staff calculations.

Box 4. Program Conditionality, Monetary Policy Frameworks, and Inflation Targeting

Program conditionality has been adapting to the growing diversity in monetary policy frameworks, seen most notably in cases of inflation targeting. The number of program countries with such a framework increased from two to 10 compared to the 2005 RoC, including one PRGT case (Ghana). This movement added to the diversity of monetary policy frameworks in Fund-supported programs. In 2006-11, about 60 percent of program countries had flexible exchange rate regimes, necessitating a monetary policy anchor. In programs without inflation-targeting, conditionality specified a ceiling on net domestic assets and a floor on net international reserves, either as performance criteria or indicative targets. In inflation targeting regimes, conditionality has shifted to a combination of consultations in the event of deviation from targeted inflation and reserves targets (Appendix II).

Programs incorporating inflation-targeting have sought to strengthen the monetary policy foundation. Structural conditionality and technical assistance have stressed: an independent central bank with a mandate to follow price stability as the main goal of the monetary policy; accountability for inflation performance; a "forward-looking assessment of inflation pressures" to inform and communicate policy actions; and finally, transparent and well communicated monetary policy strategies and implementation. Countries adhering to inflation targeting framework seemed to perform better in monetary and inflation adjustment (Box Figure 1). There is more experience, however, of such a framework in successfully reducing inflation from moderate levels than from high levels.

Box Figure 1. Money Growth and Inflation under Inflation Targeting



Source: WEO, MONA, and Staff calculations.

C. External Adjustment

26. **Adjustments in the external sector appeared well designed to support country needs and objectives**.

- *The magnitude of external sector adjustment provided for sustainability and buffers while seeking to minimize output losses* (Figures 3.1 and 3.7). GRA programs targeted modest and gradual improvements in both the current account balance and reserves, reflecting the objectives of restoring external sustainability and rebuilding buffers. PRGT programs targeted stability in the current account and reserve levels over three years, with modest deterioration in the initial years, reflecting a greater preoccupation with supporting

output. BP3 found that the adjustment in current account balances in most program countries was sufficient to reduce external debt or stabilize it at sustainable levels; however, in a few cases, external debt was projected to remain at high levels.

- Generally, *the initial conditions that explained the magnitude of external adjustment were reasonable* (Tables 3.3 and 3.4).[25]
  - For the current account, a lower initial or declining balance led to larger adjustment for both GRA and PRGT countries, explaining the bulk of variation among programs. PRGT programs with high external debt levels also targeted more current account adjustment.
  - For international reserves, a capital account crisis led to higher programmed accumulation in GRA countries, while reaching the HIPC completion point led to higher programmed accumulation in PRGT countries.[26]

Table 3.3. Regression Results Explaining Programmed Current Account Adjustment

	GRA	PRGT
Macro conditions	Current account balance at t-1 (-) Change in current account balance from t-2 to t-1 (-)	Current account balance at t-1 (-) IIP liabilities (+) Public debt at t-1 (+)
Country charac-teristics		Trade openness (+)
R-squared Adj.	0.777	0.534

Source: IMF staff estimations.
Notes: All variables are statistically significant at the 10 percent level or higher. See Appendix Tables I.1-3

[25] The fit of the regressions for reserves, however, were somewhat lower than for most other types of adjustment—adjusted R^2s ranged from 0.57 in PRGT cases to 0.49 in GRA cases. For the current account, it ranged from 0.53 in PRGT cases to 0.78 in GRA cases.

[26] Reserve accumulation was the only aspect of program design for which reaching the HIPC decision or completion point had statistically significant explanatory power.

Table 3.4. Regression Results Explaining Programmed Reserves Adjustment

	GRA	PRGT
Macro conditions	Fiscal balance at t-1 (+) Reserves at t-1 (-) Growth at t-1 (-) Change in reserves from t-2 to t-1 (-)	IIP liabilities at t-1 (+) Growth at t-1 (+) Change in current account balance from t-2 to t-1 (+)
Country charac-teristics		Trade openness (+)
Program charac-teristics	Capital account crisis dummy (+) Successor program dummy (-)	HIPC completion point dummy (+)
R-squared Adj.	0.494	0.574

Source: IMF staff estimations.
Notes: All variables are statistically significant at the 10 percent level or higher. See Appendix Tables I.1-3 for descriptions.

27. **The composition of external adjustment between demand management and exchange rate tools reflected both initial conditions and national policy priorities**. This combination was intended to promote ownership. Adjustment in PRGT programs with a high initial current account deficit tended to rely mainly on tighter monetary policy, while in GRA cases, it relied on a mix of fiscal and monetary policies. Many program and non-program countries increased exchange rate flexibility during the turbulence of the global financial crisis, with low initial reserve levels playing a large role in these decisions. However, there was no evidence that having a program affected that decision (Box 5). Discussions of program design in the Latvia and Iceland programs illustrated how a flexible, pragmatic approach—in which different policy options to achieve sustainability were developed for the authorities to consider—can strengthen ownership.

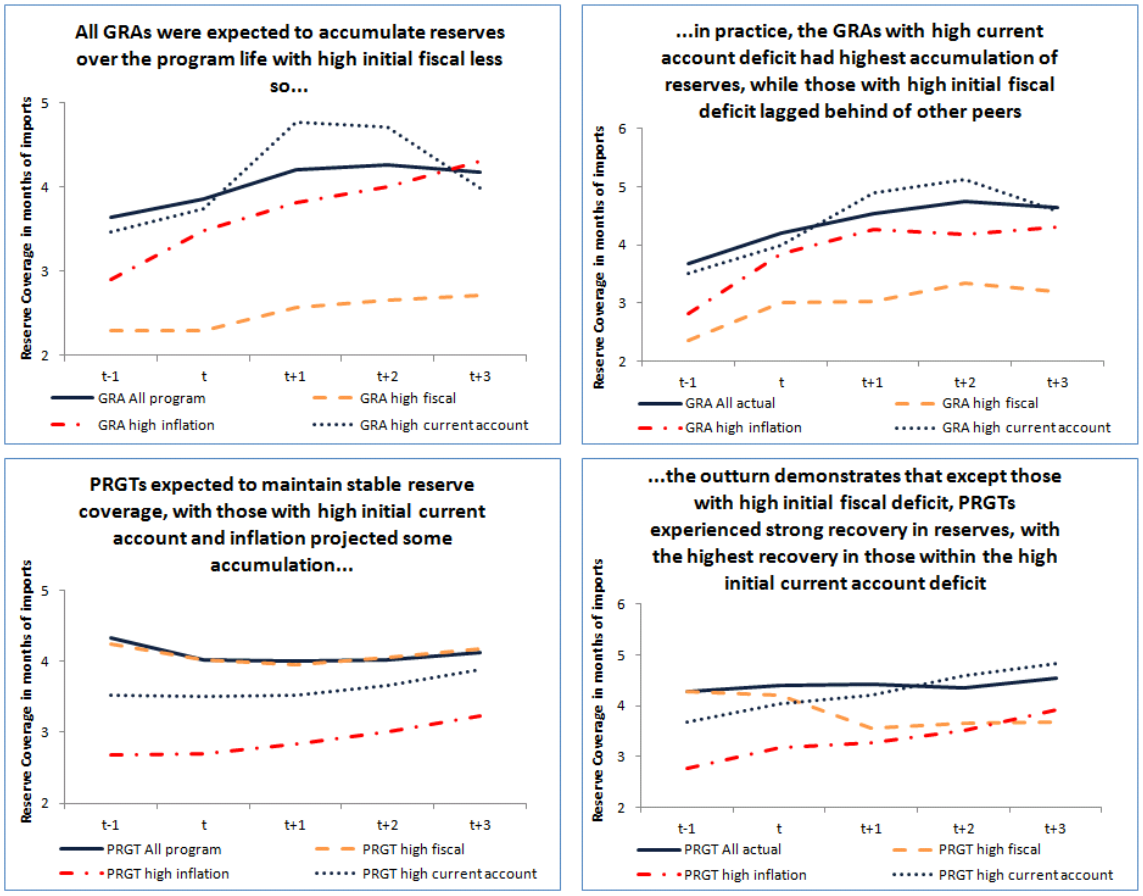
28. **Considering timing and outturns, planned external adjustment appeared reasonably ambitious**.

- *GRA programs envisaged smooth current account adjustment*. The outturns were broadly consistent with the projections. Reserve accumulation was also gradual but exceeded targets throughout programs. GRA programs facing high current account deficits tended to delay inflation adjustment (in many cases due a weakening exchange rate).

- *PRGT programs largely exceeded targets for planned reserve accumulation, with slight underperformance in current account adjustment later in the program*. The outturn of reserve accumulation under PRGT programs exceeded programmed levels on average and in specific cases, including high initial current account balance and inflation—this could be partly explained by the impact of SDR allocation on LICs.

The magnitude of the allocation was significant for LICs, and about half of all LIC programs did not envisage a need to spend and absorb it, leading to reserve accumulation (for details see BP4).

Figure 3.7. Planned and Actual Reserve Coverage Adjustment



Source: WEO, MONA, and Staff calculations.

Box 5. Exchange Rate Flexibility and Fund-Supported Programs

During 2006-11, countries—both with and without programs—increasingly moved toward more flexible exchange rate regimes (Box Table 1). Among program countries:

- About half considered exchange rate policies as a strategy for achieving program objectives.
- About a quarter moved to more flexible arrangements, notably during the global crisis.
- There was explicit conditionality related to exchange rate policies and restrictions in 16 programs (8 GRA and 8 PRGT) launched during 2006-11 (including removing multiple currency practices, abolishing market rationing and removal of current account restrictions).
- Countries with currency boards (both with and without programs) did not change their exchange rate regimes.
- Regression analysis concluded that program countries have not moved to more flexible exchange rate regimes more often than their non-program peers (Appendix III Table III.2). This result did not support a commonly held view that Fund-supported programs influenced countries' decisions to move toward more flexible exchange rate regimes.
- The shift towards greater exchange rate flexibility under programs was supported by reforms in the institutional framework and market infrastructure, including rules-based and transparent foreign exchange intervention policies; enhancing central bank liquidity management; and stronger supervision of commercial banks' risk management.

Box Table 1. Factors in Moving to More Flexible Exchange Rate Regimes, 2006-2011

Initial level of international reserves	Type of exchange rate regime: Fixed	Type of exchange rate regime: Flexible
Low	9 programs (move to greater flexibility)	36 programs (enhance flexibility to reduce loss)
High	18 programs (initially draw on reserve buffers)	8 programs (consider using the reserves to avoid large exchange rate movements)

The initial level of reserves and competing macroeconomic objectives appeared to be important factors in a country's decision to increase exchange rate flexibility (Box Table 1). (This analysis addresses program documents that had discussions on exchange rate policies.) In countries with high international reserves, program design tended to envisage a drawdown in reserves to limit exchange rate movements (in both fixed and flexible exchange rate regimes), with the goals of dampening inflationary pressures, calming market sentiment, and preserving financial stability. However, in countries with fixed exchange rate regimes and low reserves, programs envisioned a move towards more flexibility, particularly when multiple macroeconomic and monetary policy objectives were becoming increasingly incompatible. Countries with floating exchange rates and low reserves relied more heavily on exchange rate movements in order to avoid reserve losses and absorb large exogenous shocks.

Box Table 2: Evolution of Exchange Rate Regimes

Year	2006	2007	2008	2009	2010	2011
Crawling band and peg	11	12	10	7	5	4
Currency board	13	13	13	13	13	12
Peg	66	64	39	40	43	43
Float	81	82	110	111	112	114
No separate legal tender	4	4	4	5	5	5

Source: AREAER database 2011.
Note: Data for 2011 based on Jan-Sept.

D. Access to Fund Financing[27]

29. **Access levels under GRA programs can largely be explained by macroeconomic variables and membership in the Euro Area** (Table 3.5). More specifically, financing needs, program strength, and capacity to repay the Fund are also key determinants of access, but since consistent cross-country data on those are not available and they may be endogenous to program design, they were not included in the set of candidate regressors. An initially higher current account balance was associated with lower access levels, while programs with a capital account crisis had higher access. More Fund credit outstanding was associated with higher access, but immediate successor programs were not.[28] Membership in the Euro Area has a substantial and statistically significant explanatory power for variations in access levels, as already discussed in Section II on evenhandedness. The 2009 change in the Fund policy that raised access limits appeared crucial to satisfying higher financing needs during the crisis. The regression results suggest that access was higher in wave 1 (i.e., crisis programs before August 2009) and Euro Area programs, but not for non-Euro Area wave 2 programs. Thus, if the earlier access limits had remained in place, they would arguably have constrained access for peak-of-the-crisis programs to less than that warranted by macroeconomic conditions (see BP3 for further analysis).

Table 3.5. Regression Results Explaining Access Levels

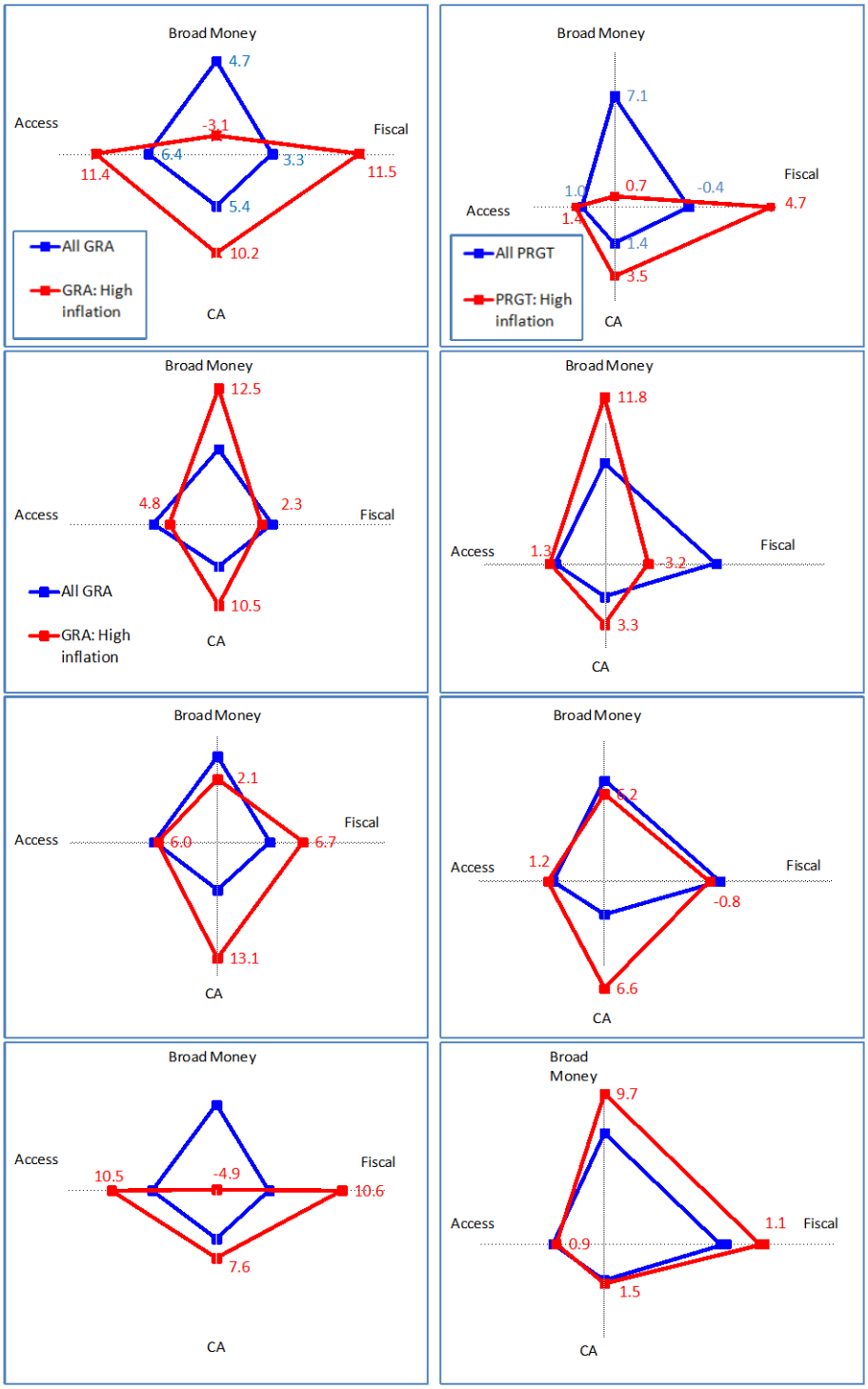
	GRA		PRGT
	Baseline	Excluding Euro Area dummy	
Macro conditions	Current account balance at t-1 (-)	Current account balance at t-1 (-) IIP liabilities at t-1 (-) Total cross border bank claims at t-1 (+)	Growth at t-1 (-) IIP liabilities at t-1 (-) Total cross border bank claims at t-1 (+)
Country charac-teristics	Euro area dummy (+) Trade openness (-)	Currency union dummy (+) Trade openness (-)	Transition country dummy (+)
Program charac-teristics	Capital account crisis dummy (+) Wave 1 dummy (+) Fund credit outstanding (+)	Capital account crisis dummy (+) Precautionary program dummy (-)	Successor program dummy (-) Dummy for post-2006 programs (+)
R-squared Adj.	0.874	0.828	0.626

Source: IMF staff estimations.
Notes: All variables are statistically significant at the 10 percent level or higher. See Appendix Tables I.1-3 for descriptions.

[27] The analysis of this section relied on regressions of the determinants of access measured as a percent of quota. In addition, the 2009 SDR allocation created additional financing, which is discussed separately in BP4.

[28] This pattern has not led to a buildup of credit outstanding in many cases, as repayment was usually largely completed before a successor program was completed (Seychelles and Dominican Republic are exceptions). In addition, three European countries (Serbia, Romania, and Ukraine) have successor programs to their large crisis programs—partly in reaction to the EA crisis—which could lead to some build up in outstanding credit.

Figure 3.8. Access and Adjustment



Source: WEO, MONA, and Staff calculations.

Note: Access denotes average access per quota; fiscal (current account) adjustment denotes fiscal (current account) balance in t+3 minus fiscal balance in t-1; monetary adjustment denotes broad money growth in t-1 minus broad money growth in t+3. The sub-samples of countries in the country groupings in this chart differ slightly from those in the remainder of the paper as PSIs have been dropped for this exercise (due to zero access).

30. **Access under PRGT programs was fairly well explained by macroeconomic and structural variables**. The initial conditions for growth, international liabilities, and cross-border bank claims helped explain access levels. Successor programs had less access, as expected, while countries in transition received higher access. Programs approved from 2006 onwards received higher access after controlling for other factors. This is likely due both to higher crisis-related financing needs and the revision of PRGF access guidelines in 2009.

31. **Access under GRA programs was tailored to projected adjustment, while it was evenly distributed in PRGT programs** (Figure 3.8). GRA programs with higher fiscal adjustment (linked to high initial fiscal deficits or high public debt) on average received higher access. In PRGT programs, access was generally fairly evenly distributed across programs facing different challenges, reflecting a consistent application of access norms for PRGT cases. Also, the more even distribution of access in PRGT programs reflects their longer-term growth and poverty reduction objectives to a degree, in contrast to the strong medium-term stabilization objective of GRA programs.

E. Structural Reforms

32. **Structural reforms have appeared reasonably well tailored to country needs and planned macroeconomic adjustment** (see also BP1). This section reviews the determinants of the number of non-financial structural conditions in programs and examines their links to planned macroeconomic adjustments (the following section concentrates on financial sector reforms).

33. **The variations in the number of structural conditions can be best explained by ownership and the onset of the global financial crisis** (Table 3.6). Ownership can be proxied by the number of prior actions at Board approval of the program, as in Wei and Zhang (2005). The falling number of structural conditions following 2006 can be explained by a combination of Fund policy shifts and increased focus on near-term stability following the global financial crisis (interestingly, the specific policy measures of the abolition of structural PCs and the move to review-based conditionality in 2009 did not appear to have a statistically significant effect on the number of conditions in these regressions). In addition, the only other significant explanatory variable for PRGT cases was a higher current account balance, which was associated with an increase in the extent of structural conditionality—presumably, less urgency for macroeconomic adjustment left more policy space for structural reform. As examined in BP1, the areas targeted by structural conditions were increasingly linked to core macroeconomic objectives, such as growth and public financial management.

Table 3.6. Regression Results Explaining Programmed Structural Burden

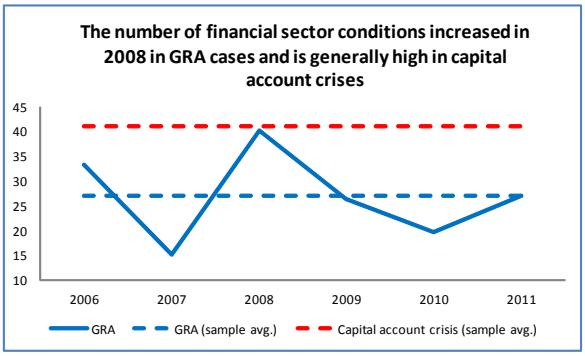
	GRA	PRGT
Macro conditions		Current account balance at t-1 (+)
Country charac-teristics	Prior actions at board approval (+)	Prior actions at board approval (+)
Program charac-teristics	Dummy for post-2006 programs (-)	Dummy for post-2006 programs (-)
R-squared Adj.	0.564	0.267

Source: IMF staff estimations.
Notes: All variables are statistically significant at the 10 percent level or higher. See Appendix Tables I.1-3 for descriptions.

F. Financial Sector Reforms[29]

34. **The design of financial sector conditionality appeared consistent with the Fund's core mandate and tailored to evolving country needs**. In keeping with the Fund's mandate, financial sector reforms have played an important role in structural conditionality, especially in programs addressing capital account crises (Figure 3.9). However, rising non-performing loan ratios in GRA cases raise concerns that banking sector weaknesses may not have been fully addressed (Figure 3.10), even though banking crises were avoided in most program countries. The integration of macro-financial linkages posed heightened risks in the crisis period that will require continuing efforts to integrate them fully and systematically into program design (Box 6).

Figure 3.9. Financial Sector Conditionality in GRA Programs
(percent of total structural conditions in initial program year)



Source: WEO, MONA, and Staff calculations.

- *Program conditionality in the financial sector focused on areas related to the Fund's core mandate to support financial sector soundness*. Nearly all of financial sector conditionality relate directly to this mandate, together accounting for at least two-thirds

[29] A classification of financial sector reforms that is not currently in MONA was developed for this analysis.

of total conditionality (Appendix Figure III.3). The next largest category, financial infrastructure and market development, focused on contributions to growth and supported soundness.

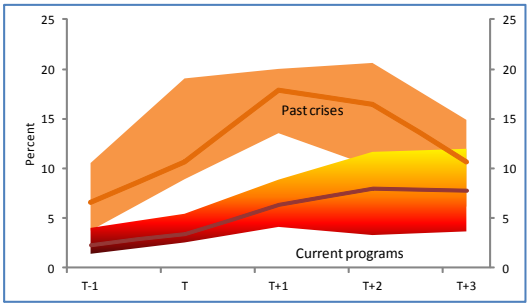
- *The relative emphasis of conditionality was reasonably tailored to different types of programs*. In particular, the share of infrastructure and market development was larger in PRGT programs, consistent with their emphasis on medium-term growth. Bank restructuring, privatization, and resolution figured prominently in transition economy and capital account crises programs.

- *Financial sector conditionality adapted rapidly to the global financial crisis* (Figure 3.11). When the global crisis hit, the focus of reform in GRA cases initially shifted to curbing liquidity pressures and financial stress.[30] Subsequently, reforms included measures to address solvency concerns and balance sheet weaknesses and then bank resolution and intervention. A number of program countries also appeared to benefit from reform progress made prior to the crisis in strengthening supervision and prudential regulation, addressing systemic risks, and reducing balance sheet vulnerabilities—an observation that merits more rigorous analysis (Review of Recent Crisis Programs). Nevertheless, in at least two cases (Benin and Georgia), EPAs suggested that program conditionality could have been more focused on financial sector soundness (although in the former case, it was explained by the fact that supervision is the responsibility of a regional institution and a Financial Sector Assessment Program was planned).

- *In PRGT countries, the emphasis shifted more to assessing financial stability and building capacity for crisis contingency and less to bank restructuring*, reflecting the weaker financial sector transmission channel during the crisis.

- *Programs adapted to country-specific vulnerabilities*, including pre-existing insolvency of key banks (e.g., Iceland, Latvia, and Ukraine), corporate sector distress (e.g., Georgia, Latvia, and Pakistan), and private debt restructuring (e.g., Iceland, Latvia, and Serbia).

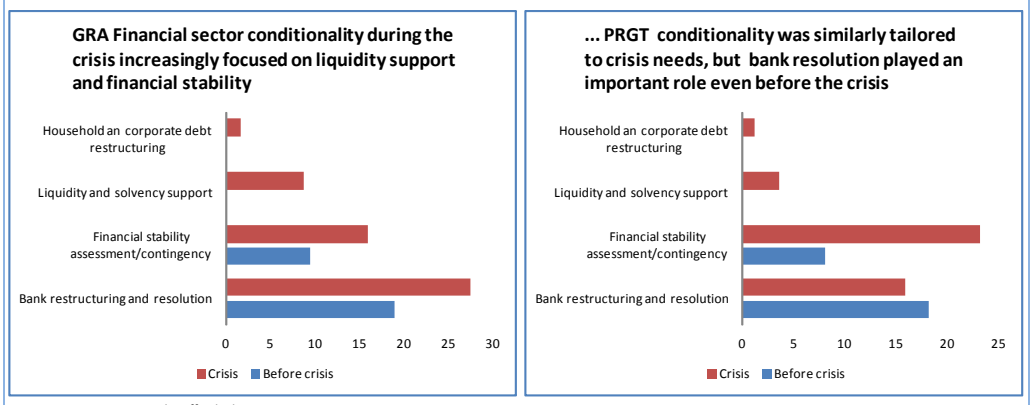
Figure 3.10. Non-Performing Loans
(in percent of total loans, bands represent 25th and 75th percentiles of the distribution)



Source: Crisis Program Review 2012.

[30] The reform agenda included establishing deposit insurance and guarantees, enhancing central bank lending facilities, and broadening eligible collateral and regulatory forbearance.

Figure 3.11. Classification of Financial Sector Conditionality



Source: WEO, MONA, and Staff calculations.

35. **Efforts to address concerns over maintaining cross-border inter- and intra-bank financing met with mixed success**. The high incidence of foreign ownership of domestic banks in some program cases was initially a cause for concern, given that parent banks were under pressure. For certain programs in Europe, this issue was addressed by way of the European Bank Coordination Initiative (or "Vienna Initiative") (Box 7). In other programs, pre-conditions for similar initiatives were not as propitious and financing pressures often did not appear as acute. Nevertheless, it would be useful to explore the possibility, during surveillance, of contingency planning and preparatory work for similar initiatives in other regions—much as the Vienna Initiative has continued as a forum for discussions in Europe.

G. Macroeconomic Policy Mix and Financing/Adjustment Balance

36. **Program design used policy mixes and financing/adjustment balances tailored to particular country challenges, although some areas for improvement stand out**. Based on the preceding analysis, these policy mixes and balances generally made economic sense, particularly from the point of view of achieving stabilization and sustainability while minimizing the cost in terms of output losses.[31] This preoccupation was especially appropriate during the immediate aftermath of the global financial crisis. For example, program design has proven flexible in providing direct budget support where needed during this period, while maintaining Fund lending principles (Box 8). The following assessment focuses on the policy mixes and financing/adjustment balances for programs with imbalances in the top quartile of all programs. The analysis suggests that recent program design has to a large extent drawn on lessons from past mistakes (e.g., capital account crises). But certain

[31] The examination of outcomes in BP3 indicated that countries with Fund-supported programs did not suffer a greater output loss than other countries with similar initial conditions, but it also did not find evidence that program countries' output losses were smaller.

challenges and risks in the specific cases of capital account crises and perhaps fragile countries (examined further below) may not yet be managed as well as possible (Figure 3.8).

- **Adjustment for a high fiscal deficit.** *The typically gradual fiscal adjustment and accompanying accommodative monetary policy appropriately sought to mitigate output losses*. Fiscal adjustment in high fiscal deficit programs was larger than in the entire program sample and on average sufficient to reach a stable path of public debt. Programmed adjustment appeared realistic and attainable on average, which contributed to strong ownership and implementation. At the same time, monetary policy was supportive of output, with money growth slowing only marginally in PRGT cases and with expansionary policy in GRA programs. GRA cases with high initial fiscal deficits or debt burdens also received higher access, which was appropriate given higher financing needs. However, more recent GRA programs with very high public debt loads have highlighted the challenges for this type of program, including the vulnerabilities stemming from high debt and the nexus of fiscal adjustment and growth (see BP3). One lesson for program design is that higher risk cases require additional, more in-depth analysis.

- **Adjustment for high inflation**. *Programs with higher initial inflation successfully achieved disinflation while mitigating output costs*. PRGT programs targeted both slower disinflation and sharper monetary and fiscal adjustment, compared to GRA cases—likely because inflation in the former cases responded less rapidly to adjustment. GRA programs relied on a more gradual monetary tightening; fiscal policy was not supportive initially, perhaps reflecting a missed opportunity to coordinate policies. Access was somewhat below average in GRA cases and near average in PRGT cases, while monetary adjustment was well above average in both cases, as one would expect. Outturns for these high inflation cases in both program types missed targets by about 3-5 percentage points on average in the two to three years after the program initiation—which nevertheless represented significant disinflation.

- **Adjustment for a high current account deficit.** *Adjustment to initially high current account deficits achieved its goal of restoring sustainability with a generally appropriate gradual approach*. In PRGT programs, adjustment relied on a mix of initially tighter fiscal and monetary policy, while adjustment was limited and gradual in GRA cases. In PRGT programs with high current account deficits, actual adjustment exceeded programmed targets; it may be worthwhile in retrospect to try to draw lessons from why projections were too pessimistic. Access was average for both GRA and PRGT cases with high current account deficits; while this finding might run counter to expectations, the feasibility and success of adjustment was reassuring. Decisions on whether to increase exchange rate flexibility supported adjustment in appropriate ways, reflecting initial conditions (especially reserve levels) and country policy preferences. This approach supported ownership and implementation.

Box 6: Direct Budget Support in Recent Fund-Supported Programs

While a long-standing practice, the incidence of direct budget support has increased in recent years. Direct budget support occurs when a disbursement goes directly, at least in part, to the government's fiscal authority. Direct budget support can be appropriate and consistent with the Fund's mandate and legal framework provided a balance-of-payments (BoP) need exists (*Staff Guidance Note on the Use of Fund Resources for Budget Support*). Analytically, fiscal needs are seldom disjointed from BoP needs, and Fund financial support has often addressed both.

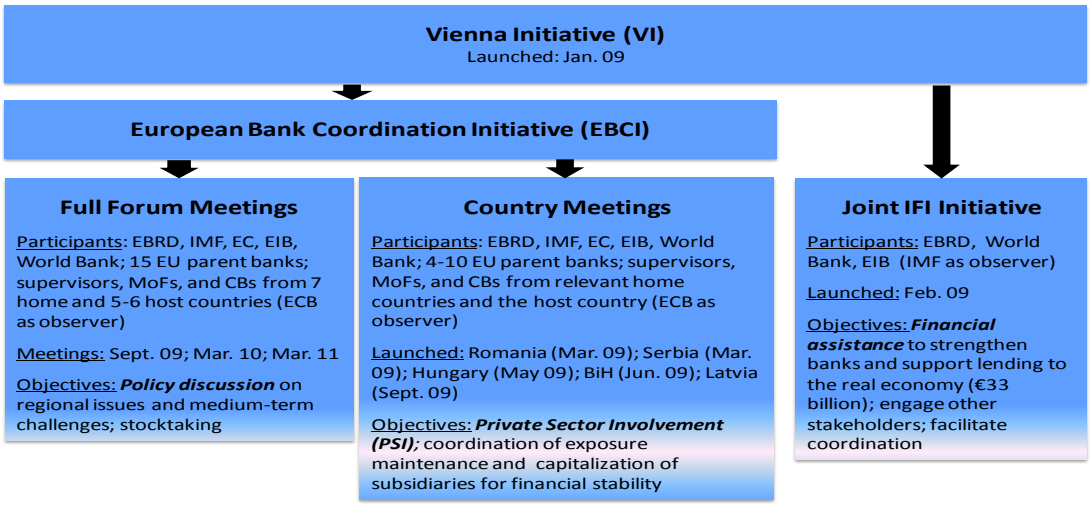
From 2006 onwards, 36 percent of Fund-supported programs had some direct budget support, driven by needs related to the global crisis and institutional changes in member countries. The increase was particularly notable for GRA programs. This increase reflected both fiscal financing needs to respond to the impact of the global crisis, including more recently sovereign debt crises (and an accompanying loss of access to private external financing) and institutional changes in member countries, especially the move to greater central bank independence. All of these programs have been consistent with the requirement of a balance of payments need and circumstances identified as warranting direct budget support—fiscal financing needs and institutional constraints. Based on econometric analysis, these programs have not differed greatly from others in economic design, controlling for other factors (Appendix Table I.8). The main difference observed was that these programs tended to have somewhat larger fiscal adjustment.

Box 7. The Vienna Initiative

In the fall of 2008, concerns ran high that certain economies of central, eastern and southeastern Europe (CESE) would suffer a contagious financial meltdown.[1] Most economies in the region were seriously overheated with wide current account deficits, high external debt, and many years of extremely rapid credit growth. Much of bank credit was foreign-currency denominated and financed from abroad. The US$450 billion exposure of western banks to CESE mostly took the form of loans by western parent banks to their local affiliates, with exposure easily exceeding 50 percent of GDP in many countries. Such vulnerabilities raised the specter of reversing capital flows, pulling the rug from underneath banking systems and leaving exchange rates in a downward spiral, starting with the most vulnerable countries and then spreading to the rest of the region. Financial stability looked doomed unless banks coordinated to maintain exposure and the official sector agreed to step in to fill remaining financing gaps.

It is against this background that the Vienna Initiative was born. Following informal discussions beginning in November 2008, the inaugural Vienna Initiative meeting was held in Vienna, Austria on January 23, 2009. It brought together the key western parent bank groups, certain home and host-country authorities (financial supervisors, finance ministries, and central banks), and multilateral organizations (IMF, European Bank for Reconstruction and Development (EBRD), European Commission (EC), European Investment Bank (EIB), and the World Bank). Specific agreements on private sector involvement for five countries with Fund-supported programs would follow under the European Bank Coordination Initiative (EBCI) arm of the Vienna Initiative. "Full Forum Meetings" would also be held, providing a platform for policy discussion with representatives across CESE and their western counterparts. On February 27, 2009, the "Joint IFI (International Financial Institutions) Initiative" was launched as the financial assistance arm of the Vienna Initiative. Over the next two years, the EBRD, World Bank, and EIB would disburse €33 billion to strengthen banks in the region.

Each group of Vienna Initiative participants made critical commitments to ensure a cooperative outcome. Parent banks committed to maintain exposure to certain CESE countries and recapitalize their regional subsidiaries as needed. The IFIs pledged financial assistance under adjustment programs and the Joint IFI Initiative. Home-country authorities agreed that any public support for parent banks would not discriminate between the groups' domestic and foreign operations. Host-country authorities committed to implement programs as agreed and, likewise, not to discriminate between domestic and foreign banks.



[1] CESE includes Albania, Bosnia-Herzegovina, Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, FYR Macedonia, Montenegro, Poland, Romania, and Serbia.

The details of the five country-specific agreements differed somewhat. Banks' commitments were stronger in the cases of Romania, Serbia, and Bosnia-Herzegovina, where agreements were an integral part of the discussions of the adjustment programs, than in the cases of Hungary and Latvia, where agreements were concluded only after the macro-adjustment program had been put in place.

The feared financial meltdown in CESE was successfully avoided. All fixed exchange rate regimes held up. Any excessive depreciation of flexible exchange rates that had occurred earlier corrected quickly. Only Latvia was afflicted by a full-fledged banking crisis, and even there its onset predated the launch of the Vienna Initiative and concerned mainly Parex Bank—a domestic bank without a western parent. Banks largely complied with their EBCI commitments. Consequently, overall exposure of western banks to CESE declined little and far less than in other regions—in effect, the private sector was "bailed in" under the BCI arrangements. The success of the BCI in CESE underscored the potential value of co-financing with regional financing arrangements.

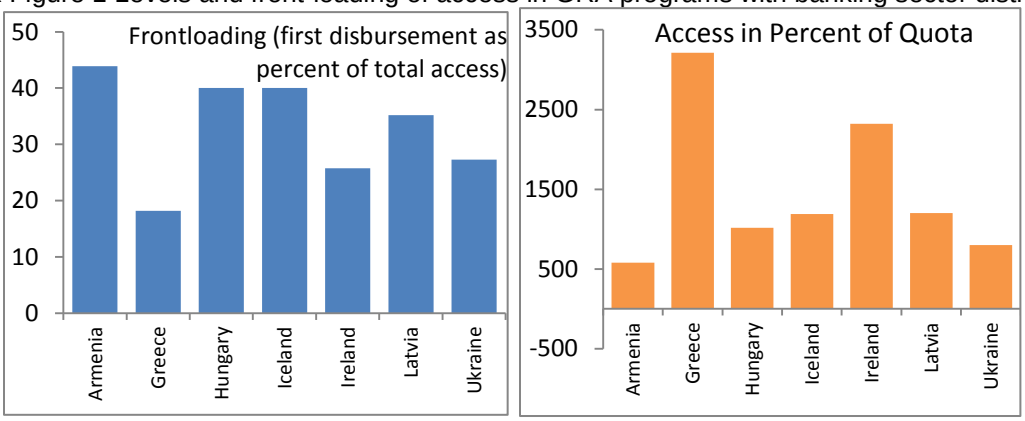
Box 8. Macro-Financial Linkages in Program Design

Macro-financial linkages and financial spillovers appear to have affected every aspect of Fund program design: access, phasing, conditionality, and the balance of policy mixture. Banking distress necessitates rapid and decisive responses, accompanied by prior actions and frontloaded conditionality. The balance of the policy mix naturally tilts toward fostering financial stability, especially if the financial sector triggered or exacerbated the crisis. In addition, key program parameters are often subject to unusual uncertainties due to the pernicious feedback loop between bank distress, fiscal burden, and weak growth.

The timing of the financing need was often urgent and entailed rapid responses because of the speed with which financial sector vulnerabilities could spread into other sectors of the economy. A good proxy for the urgency of the financing need is whether an arrangement involved the emergency financing mechanism (EFM).[1] Virtually every program request associated with, if not triggered by, distress in the banking sector was considered under the EFM: Armenia, Hungary, Iceland, Latvia, Ireland, and Ukraine, to name but a few. Staff teams were quickly deployed to the field within days of receiving authorities' request and the board approval of staff-level agreements was also expedited.

With banking distress, the financing need was invariably large and could only be met through exceptional and heavily frontloaded access (Box Figure). In the case of Ireland the first disbursement of SDR 5 billion upon approval amounted to 598 percent of quota, and total access during the first year would reach almost 1500 percent of quota.[2] The large amount of financing made available was justified by the need to restore fiscal sustainability and/or fundamentally restructure the banking system.

Box Figure 1 Levels and front-loading of access in GRA programs with banking sector distress



Because of the EFM and frontloaded access, conditionality tended to be frontloaded as well, with prior actions and structural benchmarks focusing on the financial sector. The initial policy mixture naturally tilted toward financial sector policies aiming at maintaining bank liquidity and solvency. Those policy measures were often three pronged: 1) restoring liquidity by providing emergency liquidity support and containing deposit outflows; 2) resolving and recapitalizing non-viable banks; and 3) strengthening bank monitoring and disclosure. In many cases, curbing liquidity pressures and financial stress took precedence over structural measures of strengthening balance sheets and addressing solvency concerns. Many of the longer-term structural measures such as resolution framework and strengthening supervision, however, were eventually incorporated into program conditionality.

[1] First used in 1997 during the Asian crisis, the procedures of the EFM were used during the global financial crisis for Armenia, Georgia, Hungary, Iceland, Latvia, Pakistan, Ukraine, Greece, and Ireland.
[2] Based on quota at the time of approval in December, 2010. Ireland's quota increased substantially in March, 2011, reducing total access to 1,548 percent of quota.

There was a sovereign-banking nexus in debt sustainability analysis because debt dynamics hinged on the amounts provided for bank recapitalization. General government debt could increase rapidly as a result of recapitalization needs. Total public debt in Ireland, for example, rose from a mere 25 percent of GDP in 2007 to 99 percent by end-2010 following large bank support outlays (around 20 percent of GDP in 2010) and a sharp contraction in GDP. The sovereign also faced much higher borrowing costs and significantly reduced market access as spreads on government bonds increased to historical highs. Further, debt sustainability outlook was subject to unusual uncertainties around bank recapitalization needs, which in turn were subject to stress and diagnostics tests of the financial sector.

Key program parameters needed continuous adjustment because of the unpredictable negative feedback loops between the weakness of the banking sector, public finances, and growth prospects. The generalized underestimation of the broader effects of the global deleveraging process on the real economy had important implications for the growth projections and the pace of fiscal adjustment under various programs. To snap the vicious feedback loops, policy measures often had to go beyond the financial sector and involve deep structural reforms across sectors.

Conditionality thus had to evolve as well with the realization of the extent and depth of banking sector vulnerabilities. In the 2008 Ukraine SBA, for example, prior actions grew from four during initial approval to seven by the first review. The rising number of prior actions underlined the difficulties and uncertainties in resolving a banking crisis and the attempt to keep policies on track. In many cases, conditionality initially focused on the financial sector and exchange rate policy but had to gradually shift toward fiscal policy as banking distress quickly devolved into a fiscal burden.

The choice of Fund facility may also have been affected by the depth and extent of the banking system problem and the potential negative feedback loop. The three-year Extended Fund Facility was adopted in Ireland and Portugal partly because it ensures a realistic repayment schedule, given the time needed to complete an orderly overhaul of the banking system and broad structural reforms.

37. **Although policy mixes were tailored to some degree to capital account crises, some room for further improvement exists in these and fragile PRGT contexts**:

- **Adjustment for a capital account crisis**. *The combination of tight monetary policy, accommodative fiscal policy, and greater access to Fund resources was broadly appropriate,* but there might be some room to further relax initial fiscal stances. Generally, program design reflected lessons learned from the Asian crisis.

    - The fiscal stance was accommodative, with expenditure projected to increase on average in the initial two years of the program, and the fiscal deficit to worsen from 3.0 to 6.5 percent of GDP.[32] Nevertheless, these programs missed initial fiscal targets more often than other programs, although by generally modest margins.

    - GRA programs of this type envisaged a more rapid reduction in broad money growth in the face of net falls in capital flows. On the other hand, inflation adjustment, while significant, tended to be back-loaded.

[32] In the outer years of the projections, however, programmed adjustment is substantial at 2.5 percent of GDP.

- Planned external adjustment (both the current account balance and reserves) was higher in capital account crisis programs.

- This mix of tight money and loose fiscal policy drew on lessons from the past and aimed to limit capital outflows while reducing the output cost of stabilization. Reserves did recover roughly as planned. Although these programs tended to miss fiscal targets more often than others, they still stabilized successfully in the medium term, raising questions of whether the planned fiscal stance in the initial periods could have been relaxed somewhat more.

- **Adjustment in fragile PRGT countries**. *The magnitude of fiscal adjustment in fragile PRGT cases raises some questions of appropriateness*.

  - PRGT programs faced specific challenges, particularly economic stabilization needs, reconstruction needs, and administrative and political capacity weaknesses.

  - While the comprehensive structural reform agenda was considered a "window" of opportunity, regression analysis suggests that part of the response appeared to have been higher planned fiscal adjustment, controlling for other factors.[33] This finding lends urgency to the recommendation in the fragile states paper to consider ways to build greater flexibility into program design.

IV. Macroeconomic Projection Error and Bias

38. **Projections in Fund-supported programs were largely unbiased in 2006-11, but their accuracy suffered from the shocks of the global financial crisis**. Program design depends critically on accurate and unbiased macroeconomic projections. While errors inevitably occur due to imperfect forecasting models and unanticipated shocks, minimizing error margins helps avoid mistakes in program design and can boost confidence in quantitative targets.[34] The guiding questions are whether or not Fund projection errors are relatively accurate (small mean absolute error, or MAE) and whether they are biased (non-

[33] This paper uses the World Bank definition of fragile states—countries facing particularly severe development challenges: weak institutional capacity, poor governance, and political instability. Often these countries experience ongoing violence as the residue of past severe conflict. The World Bank's criteria to measure these challenges are scores on its Country Policy and Institutional Assessment and the presence of UN and/or regional peace-building mission.

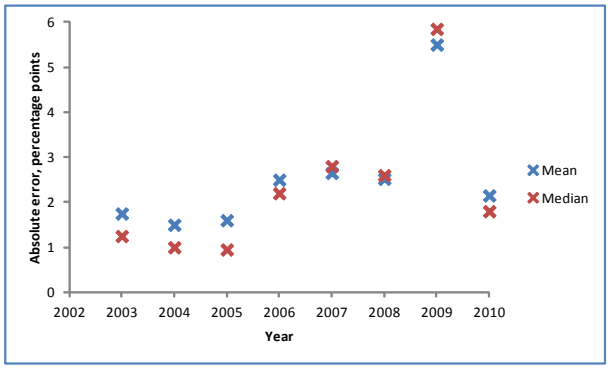
[34] A projection error is defined as the difference between the projection and the actual outcome for a given variable of interest. Initial program projections (t) are defined as the projections made in the World Economic Outlook (WEO) vintage that most closely follows program approval. Program projections as of t+1, t+2 and t+3 are taken to be the WEO vintage one, two, and three years after the t vintage. If data for any given vintage are not available, the other WEO vintage published in the same year is used as a substitute.

zero mean error, or ME). This analysis focuses on year-on-year projection errors (based on projections made in year t for year t+1) for five key macroeconomic variables—growth, inflation, the government balance (percent of GDP), the current account balance (percent of GDP), and reserve coverage (months of imports).[35] To this end, projection errors are compared over time separately for PRGT and GRA programs, as well as between programs and non-programs.

Projection accuracy

39. **GRA program projection errors were generally large, and projections were less accurate than in 2002-05, likely owing to the global crisis** (Figure 4.1). The current account balance, fiscal balance, and growth projection errors for 2006-11 programs were large on average compared to 2002-05 programs, reflecting the unanticipated drop in global demand during the crisis and inaccurate projections of its subsequent impact (Table 4.1). Depending on the program year, the MAE ranged from 4.8 to 5.9 percentage points of GDP for the current account balance, 2.6 to 3.1 for the fiscal balance, and 2.7 to 5.5 for growth. While errors of this magnitude may seem large, they should be viewed in perspective. In typical years, median errors are smaller than mean errors due to outliers, and errors were substantially larger in 2009 than in other years owing to the global crisis.[36]

Figure 4.1. Mean and Median Growth Errors in GRA Programs 2006-11



Source: WEO, MONA, and Staff calculations.

40. **The accuracy of PRGT program projections did not deteriorate during the global crisis, and their growth projections were more accurate than for GRA programs**. Differences between the 2006-11 and 2002-05 samples were negligible, suggesting that the impact of the crisis did not increase projection errors for PRGT program countries. The more accurate PRGT growth projections likely reflect stronger financial linkages between advanced market economies where the crisis originated and middle-income countries.

[35] The analysis was also conducted on projection errors at program initiation—based on projections made at program approval—and the conclusions were the same as for year-on-year projections.

[36] This paper does not compare the accuracy of Fund projections to other projections, but Timmermann (2006; http://www.imf.org/external/pubs/ft/wp/2006/wp0659.pdf) compared WEO and Consensus forecasts and found that the WEO were generally at least as accurate as Consensus forecasts in the period examined.

41. **Projection errors in PRGT programs were significantly smaller than those in PRGT-eligible, non-program countries; to a lesser extent, this also held for GRA countries**. Table 4.2 compares projection accuracy and bias between program and non-program countries.[37] In GRA cases, program projections appeared more accurate (lower MAEs) than non-program projections for the government balance and reserve coverage. For growth, the current account balance, and inflation, projections were not systematically more or less accurate. In PRGT cases, MAEs are significantly lower for programs than for non-programs for all the variables.

Projection bias

42. **There was no evidence of an overly optimistic bias in 2006-11 Fund program projections**.[38] The analysis examined both the mean error (ME) and the number of observations with negative and positive errors to assess whether program projections exhibited an over-optimistic or over-pessimistic bias. If anything, the evidence pointed to the presence of an overly pessimistic bias in the projections for some variables. Program projections also did not appear to be more optimistic than non-program forecasts (Table 4.2). The lack of evidence for an optimistic bias in Fund program projections stands in contrast to findings in the academic literature and the previous RoC, which were based on earlier sample periods.[39] This paper could not test whether this finding held for larger, more recent programs, because the number of outturns under the programs is too limited—preliminary indications do suggest some concerns.

- ***In GRA programs***, there was some evidence for pessimistic projections for reserves and perhaps the current account balance, but mean errors were rarely significantly different from zero.

    - *Growth, government balance, and inflation*: The picture was mixed, both in terms of the count of negative and positive errors and MEs (which were never significant).
    - *Reserves and current account balance*: Projections were more often pessimistic, but the MEs were not significant.
    - *Programs initiated between 2002 and 2005* showed some evidence for an over-optimistic inflation bias (negative errors) and over-pessimistic biases in fiscal balance, growth, and reserves.

[37] Non-program PRGT countries are defined as countries that were PRGT eligible as of 2010. Non-program projections were drawn from the April WEO vintage of any given year. If data for the April WEO vintage was not available, the September/October vintage was substituted.

[38] Except inflation, a positive projection error indicates an optimistic projection.

[39] Timmermann (2006); Musso and Phillips (2001); *Policy Formulation, Analytical Frameworks, and Program Design*.

Table 4.1 Projection Errors Under Programs, 2006-11 [1/ 2/]

GRA		**t=1**			**t=2**			**t=3**	
	# of Obs.	**MAE**	**ME**	**# of Obs.**	**MAE**	**ME**	**# of Obs.**	**MAE**	**ME**
CA balance (% GDP)	**26**	**4.9**	**-0.7**	**12**	**4.8**	**2.0**	**4**	**5.9**	**-5.6**
error > 0	10		5.4	5		8.1	1		0.6
error < 0	16		-4.5	7		-2.4	3		-7.7
Fiscal balance (% GDP)	**26**	**2.6**	**0.0**	**12**	**2.8**	**-0.8**	**4**	**3.1**	**-2.2**
error > 0	17		2.0	5		2.4	1		1.8
error < 0	9		-3.8	7		-3.1	3		-3.6
Growth	**26**	**3.5**	**-0.6**	**12**	**2.7**	**0.1**	**4**	**5.5**	**1.8**
error > 0	9		4.2	4		4.2	2		7.2
error < 0	17		-3.2	8		-1.9	2		-3.7
Inflation	**26**	**2.2**	**0.7**	**12**	**3.5**	**1.1**	**4**	**2.2**	**2.2**
error > 0	13		2.9	5		5.5	4		2.2
error < 0	13		-1.5	7		-2.0	0		
Reserves (months of imports)	**25**	**1.2**	**-0.5**	**12**	**1.3**	**0.0**	**4**	**3.0**	**-2.2**
error > 0	7		1.2	3		2.4	1		1.4
error < 0	18		-1.2	9		-0.9	3		-3.5

PRGT		**t=1**			**t=2**			**t=3**	
	# of Obs.	**MAE**	**ME**	**# of Obs.**	**MAE**	**ME**	**# of Obs.**	**MAE**	**ME**
CA balance (% GDP)	**37**	**4.7**	**-1.2**	**31**	**4.6**	**-1.0**	**20**	**3.5**	**-1.3**
error > 0	17		3.8	14		3.9	8		2.8
error < 0	20		-5.5	17		-5.1	12		-3.9
Fiscal balance (% GDP)	**37**	**2.9**	**0.0**	**30**	**1.7**	**0.4**	**20**	**2.7**	**1.0**
error > 0	15		3.6	17		1.8	11		3.4
error < 0	22		-2.5	13		-1.6	9		-1.9
Growth	**38**	**1.7**	**0.2**	**31**	**2.1**	**0.6**	**20**	**3.9**	**1.2**
error > 0	21		1.7	18		2.3	10		5.1
error < 0	17		-1.6	13		-1.8	10		-2.7
Inflation	**38**	**2.7**	**-0.5**	**31**	**3.7**	**-1.4**	**20**	**4.1**	**1.7**
error > 0	18		2.4	13		2.8	13		4.5
error < 0	20		-3.1	18		-4.4	7		-3.5
Reserves (months of imports)	**37**	**1.4**	**-0.7**	**30**	**1.4**	**0.0**	**19**	**1.4**	**-1.4**
error > 0	14		0.9	15		1.4	1		0.3
error < 0	23		-1.7	15		-1.3	18		-1.5

1/ Errors are defined as yoy projection minus actual. ΔME is defined as the mean error. MAE is defined as the mean absolute error. A t+x error denotes the difference between the initial program projection for period t+x and the actual outcome for period t+x.

2/ Errors larger than 50 (inflation) and 20 (Current account, Fiscal, Growth, Reserves) have been excluded from the analysis as they are likley to reflect data errors.

* Grey denotes significance at 90 percent level of confidence MEs.

** Yellow denotes significance at 95 percent level of confidence MEs.

*** Green denotes significance at 99 percent level of confidence MEs.

Table 4.2 Projection Accuracy and Bias in Programs vs. Non-Programs, 2006-11 [1/ 2/]

GRA

Fiscal balance (% GDP)

	Current period		1 Period ahead		2 Periods ahead	
year	ΔME	ΔMAE	ΔME	ΔMAE	ΔME	ΔMAE
2002-05	-0.6	-0.3	-0.7	-1.4	-0.9	-1.5
2006-10	-0.2	-0.7	-1.1	-0.2	-1.9	-1.4
2002-10	**-0.4**	**-0.5**	**-0.9**	**-0.7**	**-1.5**	**-1.5**

Growth

	Current period		1 Period ahead		2 Periods ahead	
year	ΔME	ΔMAE	ΔME	ΔMAE	ΔME	ΔMAE
2002-05	0.4	0.4	-0.2	-0.6	-0.4	-0.5
2006-10	0.7	-0.2	-1.0	0.3	-1.0	-0.5
2002-10	**0.6**	**0.1**	**-0.6**	**0.1**	**-0.8**	**-0.5**

Current account balance (% GDP)

	Current period		1 Period ahead		2 Periods ahead	
year	ΔME	ΔMAE	ΔME	ΔMAE	ΔME	ΔMAE
2002-05	-1.4	-0.6	-0.8	-0.6	-0.5	-1.6
2006-10	0.2	0.2	-1.1	0.8	-0.5	0.1
2002-10	**-0.5**	**-0.1**	**-1.0**	**0.3**	**-0.6**	**-0.6**

Reserve coverage (months of imports)

	Current period		1 Period ahead		2 Periods ahead	
year	ΔME	ΔMAE	ΔME	ΔMAE	ΔME	ΔMAE
2002-05	-0.1	-0.2	-0.1	-0.7	0.3	-0.9
2006-10	-0.3	-0.7	-0.5	-0.7	-1.0	-0.6
2002-10	**-0.2**	**-0.5**	**-0.3**	**-0.7**	**-0.5**	**-0.7**

Inflation

	Current period		1 Period ahead		2 Periods ahead	
year	ΔME	ΔMAE	ΔME	ΔMAE	ΔME	ΔMAE
2002-05	0.4	0.2	-1.7	2.0	-0.7	-0.2
2006-10	0.6	-0.8	0.9	-0.1	1.8	1.4
2002-10	**0.5**	**-0.4**	**-0.1**	**0.7**	**0.9**	**0.8**

PRGT

Fiscal balance (% GDP)

	Current period		1 Period ahead		2 Periods ahead	
year	ΔME	ΔMAE	ΔME	ΔMAE	ΔME	ΔMAE
2002-05	1.4	-0.8	0.2	-1.0	0.8	-1.2
2006-10	0.7	-1.1	0.7	-1.0	1.1	-1.1
2002-10	**0.9**	**-1.0**	**0.5**	**-0.8**	**0.9**	**-1.0**

Growth

	Current period		1 Period ahead		2 Periods ahead	
year	ΔME	ΔMAE	ΔME	ΔMAE	ΔME	ΔMAE
2002-05	0.0	-0.4	-0.2	-1.6	-0.5	-1.7
2006-10	0.1	-0.5	0.8	-0.8	0.5	-0.4
2002-10	**0.1**	**-0.6**	**0.3**	**-1.2**	**0.2**	**-0.9**

Current account balance (% GDP)

	Current period		1 Period ahead		2 Periods ahead	
year	ΔME	ΔMAE	ΔME	ΔMAE	ΔME	ΔMAE
2002-05	0.5	-1.5	1.8	-1.9	2.9	-0.2
2006-10	-0.5	-1.3	-2.2	-0.8	-2.1	-1.4
2002-10	**0.1**	**-1.4**	**-1.2**	**-1.2**	**0.0**	**-1.0**

Reserve coverage (months of imports)

	Current period		1 Period ahead		2 Periods ahead	
year	ΔME	ΔMAE	ΔME	ΔMAE	ΔME	ΔMAE
2002-05	-0.6	-0.1	-0.3	-0.6	-0.5	-0.5
2006-10	-0.3	-0.6	-0.7	-0.4	-1.0	-0.2
2002-10	**-0.5**	**-0.4**	**-0.7**	**-0.5**	**-0.9**	**-0.3**

Inflation

	Current period		1 Period ahead		2 Periods ahead	
year	ΔME	ΔMAE	ΔME	ΔMAE	ΔME	ΔMAE
2002-05	0.1	-2.7	-0.9	-1.6	-0.7	-1.2
2006-10	0.5	-1.8	1.2	-1.7	0.6	-2.0
2002-10	**0.3**	**-2.2**	**0.4**	**-1.8**	**0.3**	**-1.7**

1/ Errors are defined as projection minus actual. ΔME is defined as the mean error in programs minus the mean error in non-programs. ΔMAE is defined as the mean absolute error in programs minus the mean absolute error in non-programs. An x period ahead projection for year t is defined as the projection as of year t-x for year t.

2/ Every country is included in the analysis as long as the relevant data is available. Program countries cannot be classified as non-programs while the program is ongoing (t-1 to t+3). Errors larger than 50 (inflation) and 20 (Current account, Fiscal, Growth, Reserves) have been excluded from the analysis as they are likley to reflect data errors.

* Grey denotes significance at 90 percent level of confidence for MEs and MAs.

** Yellow denotes significance at 95 percent level of confidence for MEs and MAs.

*** Green denotes significance at 99 percent level of confidence for MEs and MAs.

- ***In PRGT programs***, there was some weak evidence both for optimistic projections for growth and for pessimistic projections for the current account balance and reserves.

    - *Growth*: Projections were more often optimistic, but MEs were not significant—suggesting a weak optimistic bias. The evidence was weaker when considering just the crisis period.
    - *Government balance and inflation*: No indication of bias.
    - *Current account balance*: Projections were more often pessimistic, but MEs were not significant. The evidence of a pessimistic bias was stronger when considering just the crisis period.
    - *Reserves*: MEs were often negative and significantly different from zero, suggesting a pessimistic bias in projections.
    - *Programs initiated between 2002 and 2005* showed some weak evidence for pessimistic projections for the government balance and optimistic projections for inflation.

V. Flexibility of Fund-Supported Programs

43. **Increased flexibility during the design and implementation of Fund-supported programs contributed to their success in a dynamic economic environment.** Examination of the data showed that programs made active use of flexibility to accommodate changing conditions and that this had positive effects on the implementation rate of conditionality in the subsequent reviews. Generally, the active use of flexibility helped maintain the implementation rate of conditionality at around 90 percent despite the turbulence of the global recession. Nor did this flexibility appear to come at the expense of program success in meeting objectives. Flexibility in program design in this context is considered to be revisions to program conditionality through adjustors built into program design, as well as modifications of QPCs and augmentations during program implementation.

A. Flexibility in Implementation

44. **Fund-supported programs accommodated a rapidly changing economic environment by adjusting macroeconomic frameworks and conditionality**. In particular, during this review period, many countries were affected by the 2008-09 global financial crisis, as well as the 2007-08 food and fuel price shocks. Some had begun Fund-supported programs before these exogenous shocks occurred, and others began them after being affected by the initial shocks. In the face of these shocks, the flexibility of programs increased, as they were re-designed to accommodate these shocks in several ways. Numerous modifications of conditionality, both QPCs and structural conditions, were requested and approved, as revisions of macroeconomic policy frameworks resulted in changes in program targets. Augmentations of access levels accommodated changes in financing needs during the program period, and rephasing of disbursements accommodated changes in the timing of financing needs during the program period. In addition, combining reviews and/or extensions provided additional time needed for completing reviews or meeting the program objectives.

Several EPA/EPEs (e.g., Mongolia, Serbia, and Burundi) found that principled flexibility enhanced ownership, further improving implementation.

- *Revisions in the macroeconomic policy frameworks in Fund-supported programs, especially for growth, consistently led to modifications of QPCs and augmentations of access*. Indeed, the number of modifications and augmentations increased when the downward revisions to growth projections were the largest (about 4 percentage points on average, Figure 5.1, top and middle panels).

- *Downward revisions in growth projections were also associated with the size of augmentation, although less strongly* (Figure 5.1, bottom panels). The relationship between growth and the size of financing needs appeared less direct. Given the magnitude of the shocks during this period, augmentations of access levels were requested and approved even more than once in a single program in some cases (e.g., Burkina Faso, Grenada, Sierra Leone, and Togo); moreover, the size of augmentations was beyond the norm or even at the maximum level in some cases (e.g., Grenada).

- *Combining reviews and program extensions provided flexibility for countries needing more time to implement programs satisfactorily*. In some instances, this served to helped countries manage difficult domestic social or political constraints (e.g., Grenada and Sierra Leone).

- *Programs in fragile states posed difficult challenges, which program design and implementation may have struggled to address fully*. The higher rate of program extensions suggested that some programs for fragile states might be overly ambitious in the timing of reaching objectives (Figure 5.2).

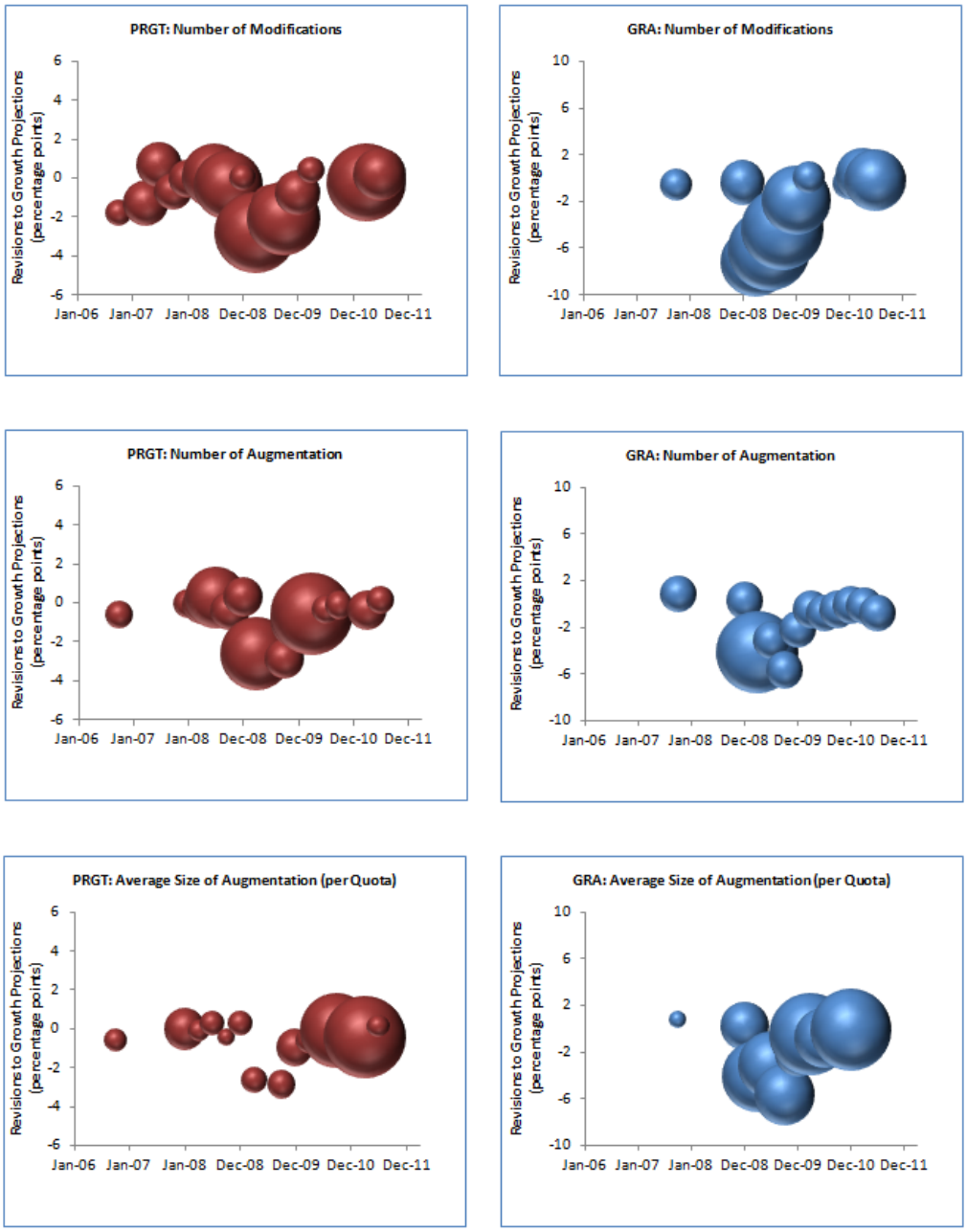
B. Flexibility Built into the Design of Programs

45. **Program adjustors provided flexibility, so countries were not penalized for foreseeable shocks that were beyond their immediate control**. The most common example of an adjustor concerned a change in the level of external assistance, which can have a large impact on low-income countries' macroeconomic policies; while such changes were common, the size of the change could not be known *ex ante*.

46. **The use of adjustors has remained fairly stable over time; it depends on the type of QPCs and arrangements** (Figure 5.2). There are large variations across different types of QPCs, but on average, adjustors are used in more than half of them. Moreover, the use of adjustors tends to be higher in Fund-supported programs for low-income countries, for which foreseeable shocks were more common.

Figure 5.1. Flexibility and Revisions to Growth Projections[1,2]

Downward revisions in the macroeconomic policy frameworks, especially for growth, consistently led to more modifications of QPCs and augmentations of access levels.



Source: MONA, WEO, Staff Reports.

[1] The vertical axes are: the average revision of the two proceeding reviews (first row) and the revision since the approval (second and third rows).

[2] Size of the bubble corresponds to the number of modifications (first row), that of augmentation (second row), and the size of augmentation (per quota) (last row).

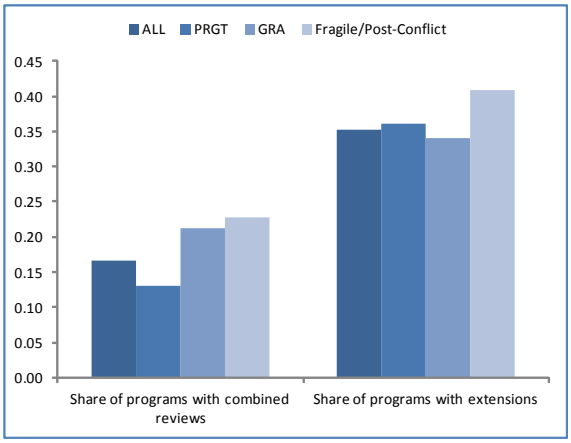
C. Implementation and Flexibility

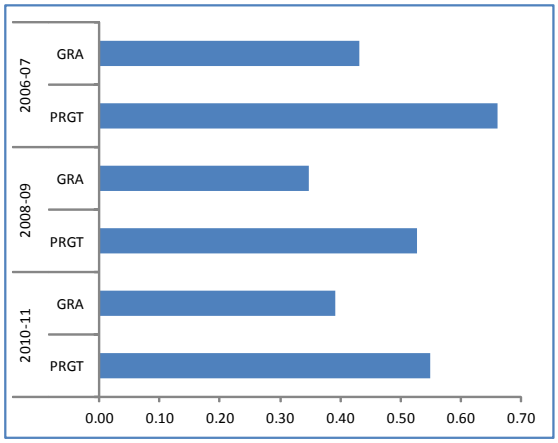
47. **The flexibility shown in programs clearly led to an improvement in the implementation rate in subsequent reviews**. However, a simple comparison of the average implementation rates for program reviews with and without flexibility measures suffers from the selection bias: programs that requested flexibility tended to be facing difficulties and accordingly had lower implementation rates in general (Figure 5.3, left panel). However, program flexibility in a review clearly helped to improve the implementation rate the subsequent review, with the exception of combined reviews (Figure 5.3 right panel).

48. **The flexibility built into the program design in the form of adjustors also helped lead to a higher implementation rate**. The application of adjustors led to an increase in implementation rates from 70 percent to 90 percent, compared to a situation without adjustors (Figure 5.4). These adjustors enabled program design to adapt automatically to foreseeable shocks without compromising program objectives.

Figure 5.2. Combined Reviews, Program Extensions and Adjustors

The use of other types of flexibility, during either implementation (e.g., combining reviews and program extensions) or in program design (e.g., adjustors), has remained fairly stable over time; it depends mostly on the type of arrangement.

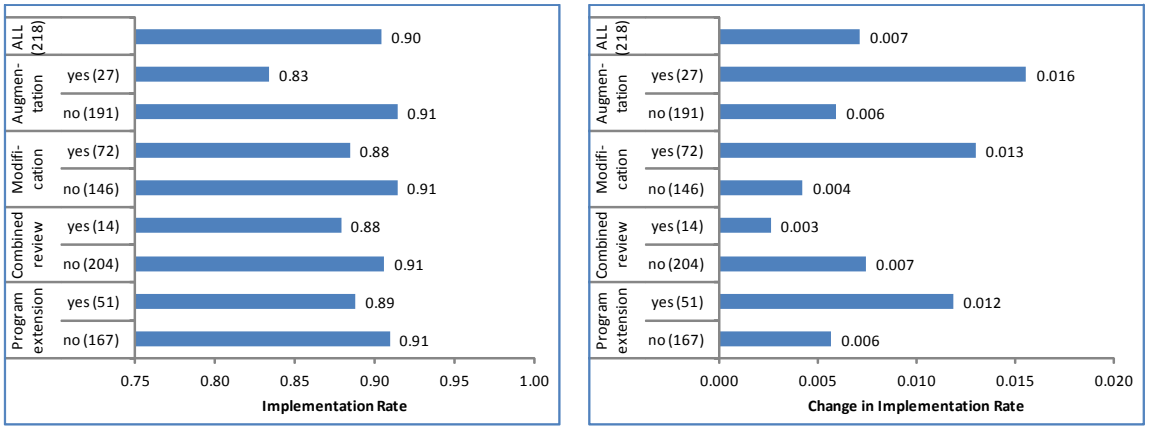




Source: MONA.

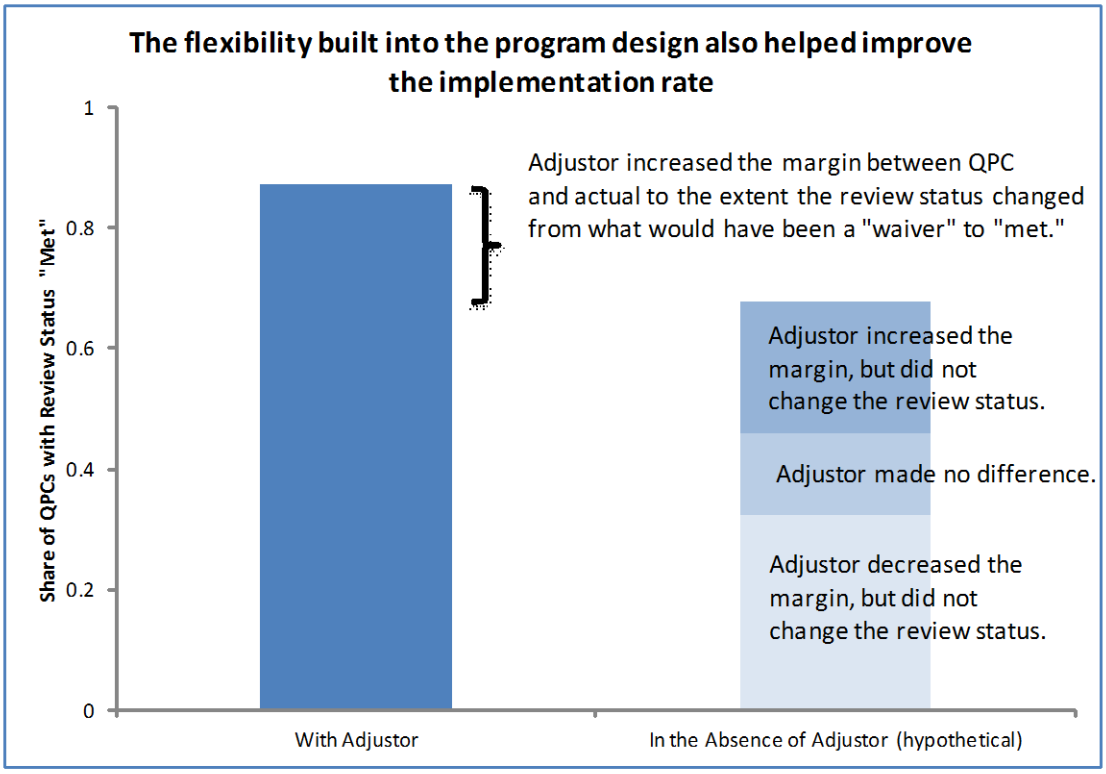
Figure 5.3. Improvement in the Implementation Rate in Subsequent Review

Although Fund-supported programs that made use of flexibility tended to have lower implementation rate in general, the flexibility clearly led to an improvement in the implementation rate in subsequent reviews.



Source: MONA. The number in parentheses indicates the total number of reviews.

Figure 5.4. Change in Implementation Rates Due to Adjustors



Source: MONA.

APPENDICES

Appendix I. Regression Results on Determinants of Adjustment and Access

49. **Given high uncertainty about the correct model, the estimation builds on the iterative Bayesian Model Averaging (BMA) methodology.** It selects for each equation the best available model from among the candidate regressors by employing a selection criterion which rewards goodness of fit as well as parsimony.[40] In integrating probability distributions over both the model and parameter spaces, BMA has a number of advantages over estimating any single model, if the true model is unknown (Raftery and Zheng, 2003), and its use has become increasingly common in economics in applications where uncertainty about the correct model abounds (Fernandez, Ley, and Steel, 2001; Eicher, Henn, and Papageorgiou, 2011). Raftery et al (1997) provide a comprehensive BMA tutorial. BMA provides averaged model probability weighted coefficients as well as a listing of the best models selected. Although the probability weighted coefficients have desirable statistical properties, for ease of presentation the tables below always report the best model selected by BMA after it has been re-estimated by regular frequentist econometric techniques.[41] Full details for the baseline results already presented in abbreviated form in the main text can be found in Tables I.1 and I.2. Table I.3 provides descriptive statistics and source information for all variables. In interpreting the results it is important to keep in mind that coefficients may suffer from some endogeneity bias, which cannot easily be remedied, because access and programmed adjustment are simultaneously determined. Otherwise, endogeneity bias is kept to a minimum by only including pre-determined macro conditions as regressors and refraining from including the dependent variable from one regression in another.

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[40] To avoid overfitting in light of the large number of candidate regressors relative to the limited number of observations, we furthermore (i) limit the model size to a maximum of 15 regressors and (ii) undertook the robustness checks separately after the BMA estimation (Tables I.4-I.7). In the regressions explaining inflation adjustment, BMA's best model showed more variables (regulatory quality and fixed exchange rate for GRA, and the currency union dummy, rule of law, and aid dependence for PRGT). They were not retained in the reported regressions, because, despite their significant coefficients, these variables only made a negligible contribution to explaining programmed inflation adjustment, thereby obscuring the predominant role of initial inflation levels and pre-program changes in inflation.

[41] The objective of BMA generally is to find variables that are robust across many possible alternative models, i.e., are included in many well-fitting models as indicated by a high posterior inclusion probability (PIP). Nevertheless, we instead take the regressors selected by BMA's best model and use them in a (non-Bayesian) ordinary least squares regression. This path is chosen for ease of presentation because of (i) readers' familiarity with OLS estimates and (ii) the fact that in the present analysis this best model generally includes all regressors with very high PIPs. Reported adjusted R squared figures are also based on these OLS regressions. Reporting frequentist results also eliminates possible any doubts that could arise over how strongly prior distributions affect final estimates in Bayesian estimation, although it is the case that the unit information prior used in the applied BMA methodology has been shown to only minimally affect final results (Eicher, Papageorgiou and, Raftery, 2010).

50. **We undertake three additional robustness checks, in addition to the robustness already implicit through BMA.** The BMA already undertakes quite extensive robustness checks for by exploring the entire model space spanned by the candidate regressor set. From this built-in robustness emerge the comforting facts that: (i) the best five models are generally close variations of the best selected model; and (ii) the coefficients of the best model tend to be close to the BMA-averaged coefficients. The three additional robustness tests then aim at testing some additional variables not included in our baseline set of candidate regressors.[42] The baseline regressions are highly robust to these variations and most baseline variables remain highly significant in the modified specifications.

51. **The first robustness check considers whether program design varied by area departments.** In order to test this hypothesis in Tables I.4 and I.5, the intercept from the baseline regression is split up into area department dummies. The results illustrate that program design was evenhanded across all area departments after macroeconomic and other characteristics were taken into account. Likelihood ratio tests show that only in the cases of the GRA current account and reserves adjustment, the augmented regressions are preferred to the baseline. The results imply higher current account and reserves adjustment in African and Asia-Pacific programs. However, there were only three GRA programs in each of those departments during the review period—too few to draw strong inferences. Thus, these results should not detract from the overall conclusion of evenhandedness across regions. In comparison, significance of the Euro Area dummy in the access regression was a more robust result, though justifications exist, as discussed in the main text.

52. **A second robustness check includes public rollover needs in the GRA regressions.** One of the objectives was to test one of the justifications for higher Euro Area access. Moreover, inclusion of rollover needs also in the adjustment regressions constitutes a test whether programmed paths varied for high-rollover cases. However, the evidence does not seem to support either case—although it was not possible also to include differences in market access, which may be a significant explanatory variable. The rollover needs variable is only selected by BMA once as an effective regressor—in the structural conditionality regression, where higher rollover is, intuitively, associated with more structural conditionality. For space reasons and because inclusion of rollover needs limits the sample size considerably, these results are not reported.

53. **A third and final robustness check adds a large set of political economy variables.** The hypothesis here, entertained by a large academic literature nicely surveyed by Steinwand and Stone (2008), is that powerful Fund stakeholders wield disproportionate

[42] Note that the baseline set of candidate regressors is already large relative to the number of observations, so that expanding it much further tends to lead to issues with over-fitting, given that the regressor set becomes increasingly internally collinear.

influence over Fund decisions and hence program design. Those stakeholders, the argument goes, practice favoritism by influencing program design to channel more resources—potentially with less associated adjustment and conditionality—to countries to which they either are politically proximate or have strong business links. Results from adding a large set of political economy variables to the baseline frequentist specifications are presented in tables I.6 and I.7. No consistent patterns for the importance of political economy variables can be found, and the vast majority of them are demonstrated utterly insignificant in explaining program design. Where they do enter significantly, they generally carry counterintuitive signs, suggesting harsher conditionality for proximate countries. In a few cases, the political economy specifications are statistically preferred to the corresponding baseline, but against the backdrop of the non-schematic and counterintuitive results, this be attributed to coefficient being over-fit, given that the number of observations is low.[43]

[43] This notion is confirmed by an alternative robustness check, in which the political economy variables are added to the candidate regressor set from which BMA can pick the best model. Most resulting best models include some political economy variable(s), while variables also included in the baseline remain very robust, particularly for GRAs. The political economy variables that enter often carry unintuitive signs in both size and magnitude and tend to offset each other. Furthermore, gains in overall fit versus the corresponding baseline are generally very limited, so that Vuono (1989) tests (for comparing two non-nested models) side with the baseline over the political economy specification for the vast majority of regressions.

Appendix Table I.1. Regressions Explaining Planned Macroeconomic Adjustment in GRA Programs

Dependent variable:	Programmed fiscal balance adj. (percent of GDP)	Programmed inflation reduction (percent of GDP)	Programmed current account adj. (percent of GDP)	Programmed reserves adj. (months of imports)	Access (multiple of quota)		Number of Structural Conditions
					Baseline	Excl. EA dummy	
Initial macro conditions (t-1):							
Public debt (% of GDP)	0.03 **						
Public debt (% of revenue)							
IIP liabilities (US$ billions)						-0.01 **	
Total cross-border bank claims (US$ billions)						0.06 ***	
Inflation (percent)		0.91 ***					
Fiscal balance (percent of GDP)	-0.45 ***			0.15 ***			
Reserves (months of imports)				-0.14 *			
Growth (percent)				-0.13 **			
Current account balance (percent of GDP)			-0.73 ***		-0.12 ***	-0.19 ***	
Output gap (percent of GDP)							
Changes in macro conditions (t-2 vs t-1):							
Inflation (pp)							
Fiscal balance (percent of GDP)							
Reserves (months of imports)				-0.86 ***			
Current account balance (percent of GDP)	-0.30 ***		-0.31 ***				
Country characteristics:							
Prior actions at board approval							0.72 ***
Fixed FX rate dummy							
Currency Union dummy		3.68 ***				3.97 ***	
Euro Area dummy					19.68 ***		
Transition country dummy							
Post-conflict dummy							
Fragile States dummy							
Trade openness					-0.02 **	-0.05 ***	
Regulatory quality							
Rule of law	-1.06 **						
Program characteristics:							
Capital account crisis (narrow sample)				1.16 **	4.79 ***	5.85 ***	
Capital account crisis (broad sample)							
Precautionary program dummy						-2.03 ***	
Wave 1 dummy					3.04 ***		
Wave 2 dummy	3.19 ***	-1.98 ***					
Successor program dummy		1.34 **		-1.06 **			
Fund credit outstanding (Multiple of quota)					0.30 **		
SPC abolition dummy							
Dummy for post-2006 programs							-3.61 ***
Intercept	-1.95 ***	-3.23 ***	-1.23 **	1.92 ***	2.75 ***	5.65 ***	6.47 ***
R-squared adjusted	0.807	0.955	0.777	0.494	0.874	0.828	0.564

Source: IMF staff estimations.

Notes: ***, **, * denote 1, 5, and 10 percent significance levels, respectively. The set of regressors included in each regression is determined using the iterative Bayesian Model Averaging (iBMA) methodology. Grey shading indicates variables excluded from the set of candidate regressors in iBMA. The number of observations is 56 for all regressions.

Appendix Table I.2. Regressions Explaining Planned Macroeconomic Adjustment in PRGT Programs

Dependent variable:	Programmed fiscal balance adj. (percent of GDP)	Programmed inflation reduction (percent of GDP)	Programmed current account adj. (percent of GDP)	Programmed reserves adj. (months of imports)	Access (multiple of quota)	Number of Structural Conditions
Initial macro conditions (t-1):						
Public debt (% of GDP)	0.02 **		0.03 ***			
Public debt (% of revenue)						
IIP liabilities (US$ billions)	0.22 ***		0.22 ***	0.22 ***	-0.02 **	
Total cross-border bank claims (US$ billions)					0.13 ***	
Inflation (percent)		0.80 ***				
Fiscal balance (percent of GDP)	-0.64 ***					
Reserves (months of imports)						
Growth (percent)				0.11 **	-0.04 ***	
Current account balance (percent of GDP)			-0.39 ***			0.09 **
High debt dummy						
Changes in macro conditions (t-2 vs t-1):						
Inflation (pp)		0.08 **				
Fiscal balance (percent of GDP)						
Reserves (months of imports)						
Current account balance (percent of GDP)				0.10 ***		
Country characteristics:						
Prior actions at board approval						0.45 ***
Fixed FX rate dummy						
Currency Union dummy						
Transition country dummy					0.35 **	
Post-conflict dummy						
Fragile States dummy	2.77 ***					
Trade openness			0.06 ***	0.01 **		
CPIA						
Rule of law	2.58 ***					
Aid dependence (Aid in percent of program country GDP)	-0.15 ***					
Program characteristics:						
Crisis program dummy		-1.21 ***				
HIPC decision point dummy						
HIPC completion point dummy				1.44 ***		
Successor program dummy					-0.43 ***	
Fund credit outstanding (Multiple of quota)						
SPC abolition dummy						
Dummy for post-2006 programs					0.56 ***	-1.26 **
Intercept	-1.40 *	-2.49 ***	-9.72 ***	-3.02 ***	0.74 ***	7.15 ***
R-squared adjusted	0.500	0.926	0.534	0.574	0.626	0.267

Source: IMF staff estimations.

Notes: ***, **, * denote 1, 5, and 10 percent significance levels, respectively. The set of regressors included in each regression is determined using the iterative Bayesian Model Averaging (iBMA) methodology. Grey shading indicates variables excluded from the set of candidate regressors in iBMA. The number of observations is 85 for all regressions. The exception is the access regression, which excludes PSI programs and only has 72 observations, because access in PSIs is zero by definition.

Appendix Table I.3. Descriptive Statistics and Sources of Variables Used in Regressions

	GRA sample (56 obs.)				PRGT and PSI sample (72 and 13 obs. = 85 total)				Data sources 1/
	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max	
Dependent Variables:									
Access (multiple of quota) 2/	4.57	6.21	0.16	32.12	0.70	0.71	0.00	4.57	MONA
Programmed fiscal balance adj. (percent of GDP) 3/	2.39	5.22	-12.24	28.22	0.73	4.30	-20.39	12.26	IMF WEO vintages
Programmed current account adj. (percent of GDP) 3/	2.87	7.81	-10.29	39.60	1.25	7.44	-14.33	34.90	IMF WEO vintages
Programmed inflation adj. (percentage points) 3/	-4.84	8.06	-47.02	7.80	-2.79	6.43	-33.60	7.78	IMF WEO vintages
Programmed reserves adj. (months of imports) 3/	0.35	1.78	-3.28	4.71	0.18	2.88	-4.76	19.36	IMF WEO vintages
Number of structural conditions per program review	6.75	4.85	0.80	23.70	6.72	2.94	0.00	17.30	MONA
Initial macroeconomic conditions (t-1):									
Public Debt/GDP (percent of GDP)	51.30	38.08	7.76	164.97	82.81	78.75	15.88	600.09	IMF WEO
Public Debt/Revenue (percent of revenue)	193.85	150.51	21.44	716.12	374.10	325.48	55.46	2522.21	IMF WEO
IIP liabilities (US$ billions)	147.63	484.30	0.54	3544.04	6.53	8.52	0.35	70.97	IMF International Financial Statistics
Total cross-border bank claims (US$ billions)	37.46	95.41	0.14	651.37	1.21	3.18	0.01	28.17	Bank for International Settlements
Inflation rate (percent)	8.67	8.82	-2.19	51.46	7.21	7.45	-4.80	38.59	IMF WEO
Fiscal balance (percent of GDP)	-3.61	5.94	-22.07	9.22	-2.64	4.00	-10.21	15.46	IMF WEO
Reserves (months of imports)	4.33	2.84	0.14	11.05	4.19	2.31	0.22	8.48	IMF WEO
GDP growth (percent)	3.22	5.53	-14.46	13.82	4.86	5.16	-14.15	33.63	IMF WEO
Current account balance (percent of GDP)	-5.29	8.40	-35.51	15.56	-7.69	7.93	-47.21	7.00	IMF WEO
Changes in macro conditions (t-1 vs t-2):									
Inflation rate (percentage points)	0.99	8.66	-25.10	26.93	-0.84	5.43	-18.09	12.02	IMF WEO
Fiscal balance (percent of GDP)	-1.32	4.15	-20.77	6.11	-1.02	7.53	-41.33	20.96	IMF WEO
Reserves (months of imports)	-0.03	1.13	-2.26	3.06	0.32	1.15	-2.40	4.49	IMF WEO
Current account balance (percent of GDP)	-0.87	6.66	-32.94	11.72	0.05	6.35	-16.33	31.85	IMF WEO
Country characteristics:									
Number of prior actions at board approval	3.18	3.87	0.00	21.00	2.24	2.42	0.00	10.00	MONA
Fixed Exchange Rate dummy 3/	0.34	0.48	0.00	1.00	0.45	0.50	0.00	1.00	IMF Annual Report on Exchange Arrangements and Exchange Restrictions
Currency Union dummy	0.11	0.31	0.00	1.00	0.25	0.43	0.00	1.00	IMF Staff
Euro Area dummy	0.05	0.23	0.00	1.00	…	…	…	…	IMF Staff
Transition country dummy 4/	0.16	0.37	0.00	1.00	0.11	0.31	0.00	1.00	IMF Staff
Post-conflict dummy 5/	0.09	0.29	0.00	1.00	0.11	0.31	0.00	1.00	World Bank Violent Conflict database
Fragile States dummy 6/	0.07	0.26	0.00	1.00	0.25	0.43	0.00	1.00	World Bank
Trade openness 7/	81.30	34.50	23.53	176.62	72.92	34.58	24.97	203.71	Penn World Tables 6.2
CPIA 8/	…	…	…	…	0.43	0.09	0.24	0.60	World Bank
Regulatory quality index 9/	0.51	0.12	0.25	0.83	…	…	…	…	World Bank Global Governance Indicators
Rule of Law	-0.34	0.72	-1.62	1.78	-0.69	0.48	-1.63	0.69	World Bank Global Governance Indicators
Aid dependence (Aid in percent of program country GDP)	0.99	1.51	0.00	6.84	7.96	10.96	1.00	96.19	OECD
Program characteristics:									
Capital account crisis (narrow sample) 10/	0.16	0.37	0.00	1.00	0.00	0.00	0.00	0.00	IMF Staff
Capital account crisis (broad sample) 11/	0.41	0.50	0.00	1.00	0.00	0.00	0.00	0.00	IMF Staff
Precautionary program dummy	0.54	0.50	0.00	1.00	0.00	0.00	0.00	0.00	MONA
Crisis program dummy 12/	0.48	0.50	0.00	1.00	0.35	0.48	0.00	1.00	IMF Staff
Wave 1 dummy 13/	0.27	0.45	0.00	1.00	0.00	0.00	0.00	0.00	IMF Staff
Wave 2 dummy 14/	0.21	0.41	0.00	1.00	0.00	0.00	0.00	0.00	IMF Staff
Successor program dummy 15/	0.18	0.39	0.00	1.00	0.29	0.46	0.00	1.00	MONA
Fund credit outstanding (Multiple of quota) 16/	1.09	2.55	0.00	14.37	0.74	0.65	0.00	4.07	IMF Staff
HIPC decision point dummy 17/	0.00	0.00	0.00	0.00	0.22	0.42	0.00	1.00	IMF Staff
HIPC completion point dummy 18/	0.00	0.00	0.00	0.00	0.20	0.40	0.00	1.00	IMF Staff
SPC abolition dummy 19/	0.32	0.47	0.00	1.00	0.28	0.45	0.00	1.00	IMF Staff
Dummy for post-2006 programs 20/	0.55	0.50	0.00	1.00	0.64	0.48	0.00	1.00	IMF Staff

Appendix Table I.3 (continued)

	GRA sample (56 obs.)				PRGT and PSI sample (72 and 13 obs. = 85 total)				Data sources 1/
	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max	
Political economy variables:									
UN voting with US, important votes (percent) 20/	51.02	20.85	0.00	88.90	25.74	21.45	0.00	80.00	U.S. Department of State
UN voting with US (percent) 21/	22.23	11.27	6.67	45.10	12.16	7.81	0.00	45.45	Voeten and Merdzanovic (2009)
UN voting with UK (percent) 21/	78.86	11.61	60.00	96.92	70.37	8.96	51.61	100.00	Voeten and Merdzanovic (2009)
UN voting with France (percent) 21/	81.81	11.02	64.00	98.36	72.84	8.42	54.84	100.00	Voeten and Merdzanovic (2009)
UN voting with Germany (percent) 21/	87.21	9.67	62.50	100.00	80.04	7.62	60.00	100.00	Voeten and Merdzanovic (2009)
UN voting with Japan (percent) 21/	90.21	7.51	68.18	100.00	84.10	6.06	65.79	100.00	Voeten and Merdzanovic (2009)
IMF A-level economists (fraction) 22/	0.46	0.52	0.00	1.87	0.18	0.20	0.00	0.85	IMF
IMF B-level economists (fraction) 23/	0.37	0.74	0.00	3.47	0.08	0.17	0.00	0.81	IMF
Aid from US (Fraction of US total aid)	0.01	0.02	-0.01	0.14	0.01	0.01	0.00	0.04	OECD
Aid from UK (Fraction of UK total aid)	0.00	0.01	-0.07	0.05	0.02	0.04	0.00	0.33	OECD
Aid from France (Fraction of French total aid)	0.00	0.00	0.00	0.01	0.01	0.04	0.00	0.26	OECD
Aid from Germany (Fraction of German total aid)	0.00	0.01	-0.01	0.03	0.01	0.02	0.00	0.19	OECD
Aid from Japan (Fraction of Japanese total aid)	0.00	0.01	-0.01	0.02	0.01	0.02	0.00	0.16	OECD
Trade with US (fraction of total program country trade) 24/	0.18	0.25	0.00	1.43	0.02	0.10	0.00	0.93	IMF Direction of Trade Statistics
Trade with UK (fraction of total program country trade) 24/	0.20	0.62	0.00	4.47	0.02	0.03	0.00	0.22	IMF Direction of Trade Statistics
Trade with France (fraction of total program country trade) 24/	0.15	0.26	0.00	1.02	0.02	0.04	0.00	0.29	IMF Direction of Trade Statistics
Trade with Germany (fraction of total program country trade) 24/	0.20	0.38	0.00	2.14	0.01	0.01	0.00	0.10	IMF Direction of Trade Statistics
Trade with Japan (fraction of total program country trade) 24/	0.06	0.10	0.00	0.62	0.01	0.02	0.00	0.13	IMF Direction of Trade Statistics

Notes:

1/ Given reporting lags, the last available year is used throughout for those programs for which the appropriate observations was not yet available. Variables cover IMF programs from 2002-11, except those for which data was missing for some variables. Those were for GRA programs Antigua and Barbuda (2010), Bosnia and Herzegovina (2002), Iraq (2005, 2007), Kosovo (2010), Serbia (2009, 2011), Seychelles (2008, 2009), and St. Kitts and Nevis (2011). The excluded PRGT programs are Afghanistan (2006), Cote d'Ivoire (2002), Lesotho (2010),.Grenada (2006), Sao Tome and Principe (2005, 2009), and Sri Lanka (2003).

2/ Access is not used as an explanatory variable in explaining programmed adjustment because of the risk of simultaneity bias. However, including it would not change results in most regressions given that BMA only rarely selects it as an effective regressor in explaining programmed adjustments.

3/ Programmed adjustment between t-1 and t+3 when program was approved. While the actual duration of programs varies, it is mostly 2-3 years. Here we approximate adjustment under the program using a uniform three year period in order to achieve comparable time periods of adjustment across countries. Data are taken from the IMF World Economic Outlook vintage closest in time after program approval.

4/ This dummy takes the value of 1 for the following sample programs: Albania (2002, 2006), Armenia (2005, 2008, 2009, 2010), Belarus (2009), Bosnia and Herzegovina (2009), Croatia (2003, 2004), Macedonia FYR (2005), Moldova (2010), Tajikistan (2002, 2009), and Ukraine (2004, 2008, 2010).

5/ Takes the value of 1 if the country has experienced a "war" (as defined by the World Bank Violent Conflict database) within five years prior to program approval.

6/ Takes the value of 1 if a country is in a fragile situation as classified by the World Bank. The World Bank defines a fragile situation as a country having either a harmonized CPIA rating of less than 3.2 or a UN or regional peace-keeping or peace-building mission having been present in the previous three years before program approval.

7/ Defined as (Imports+Exports)/GDP in the year prior to program approval.

8/ Used as a proxy for public sector institutions for PRGT/PSI countries.

9/ Used as a proxy for institutions for GRA countries.

10/ Although some judgment had to be applied for some special cases, capital account crises were identified mainly in a rules-based manner. The narrow capital account crisis definition includes program countries that (i) experienced a fall in net total private capital flows above 1 percent of GDP at time t or t-1 (where Iraq 2010 is excluded on the basis of being a transition program) and (ii) experienced a fall in net portfolio capital inflows above 3 percent at time t or t-1 (where Ireland is taken to satisfy the criterion as a special case, given its large portfolio capital outflows at t-2). It identifies 9 programs: Greece (2010), Hungary (2008), Iceland (2008), Ireland (2010), Jamaica (2010), Latvia (2008), Portugal (2011), and Ukraine (2008, 2010).

11/ The broad capital account crisis definition includes programs that only meet the first criterion in note 10. It thus identifies 16 programs in addition to those identified by the narrow definition. These 16 programs are: Antigua and Barbuda (2010), Armenia (2009), Belarus (2009), Bosnia and Herzegovina (2009), Costa Rica (2009), Dominican Republic (2009), El Salvador (2009, 2010), Gabon (2007), Guatemala (2009), Maldives (2009), Pakistan (2008), Paraguay (2006), Romania (2009), Serbia (2009), and Sri Lanka (2009). Of these Antigua and Barbuda (2010) and Serbia (2009) could not be included in the final estimation sample because of data limitations on other variables.

12/ Takes the value of 1 if a program was approved in September 2008 or thereafter. It is excluded in structural burden regressions given its close collinearity with the dummy for the abolition of structural PCs.

13/ Takes the value of 1 if a program was approved in September 2008 or thereafter, but before September 2009.

14/ Takes the value of 1 if a program was approved in September 2009 or thereafter.

15/ Takes the value of 1 if another program for the country was approved within 1 year of expiry of the original program. It is also 1, if an existing program was cancelled at the time a new

16/ At program approval.

17/ Takes the value of 1 if the HIPC decision point was reached sometime during the program period. Hypothesis is that anticipation of debt relief may have influenced the adjustment contemplated in program design.

18/ Takes the value of 1 if the HIPC completion point was reached sometime during the program period. Hypothesis is that anticipation of debt relief may have influenced the adjustment contemplated in program design.

19/ Takes the value of 1 for programs approved after structural performance criteria were abandoned in March 2009.

20/ Percentage of times the program country voted with the U.S. in the U.N. General assembly during the 3 years prior to program approval on decisions classified as "important" to the U.S. by the U.S. Department of State.

21/ Percentage of times the program country voted with the respective country in the U.N. General assembly during the 3 years prior to program approval. All U.N. General Assembly votes are considered in the calculation.

22/ Fraction of IMF senior management level economists that have the program country's nationality.

23/ Fraction of IMF non senior management level economists that have the program country's nationality.

24/ Trade is exports plus imports.

References:

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Appendix Table I.4. Robustness for Regressions Explaining Planned Macroeconomic Adjustment in GRA Programs Including Regional Variables

Dependent variable:	Programmed fiscal balance adj. (percent of GDP)	Programmed inflation reduction (percent of GDP)	Programmed current account adj. (percent of GDP)	Programmed reserves adj. (months of imports)	Access (multiple of quota)		Number of Structural Conditions
					Baseline	Excl. EA dummy	
Initial macro conditions (t-1):							
Public debt (% of GDP)	0.01						
Public debt (% of revenue)							
IIP liabilities						-0.01	
Total cross-border bank claims (US$ billions)						0.05 **	
Inflation (percent)		0.91 ***					
Fiscal balance (percent of GDP)	-0.64 ***			0.10 **			
Reserves (months of imports)				-0.10			
Growth (percent)				-0.10 **			
Current account balance (percent of GDP)			-0.72 ***		-0.16 ***	-0.17 **	
Output gap (percent of GDP)							
Changes in macro conditions (t-2 vs t-1):							
Inflation (pp)							
Fiscal balance (percent of GDP)							
Reserves (months of imports)				-0.91 ***			
Current account balance (percent of GDP)	-0.29 ***		-0.21 ***				
Country characteristics:							
Prior actions at board approval							0.69 ***
Fixed FX rate dummy							
Currency Union dummy		3.69 ***				4.11 **	
Euro Area dummy					19.36 ***		
Transition country dummy							
Post-conflict dummy							
Fragile States dummy							
Trade openness					-0.03 **	-0.05 ***	
Regulatory quality							
Rule of law	-0.75						
Program characteristics:							
Capital account crisis (narrow sample)				1.68 ***	4.49 ***	5.66 ***	
Capital account crisis (broad sample)							
Precautionary program dummy						-1.91 **	
Wave 1 dummy					2.81 ***		
Wave 2 dummy	2.37 **	-2.01 ***					
Successor program dummy		1.40 **		-0.99 **			
Fund credit outstanding (Multiple of quota)					0.28 **		
SPC abolition dummy							
Dummy for post-2006 programs							-3.61 ***
Area department dummy variables: 1/							
African	2.59	-3.83 ***	3.33 *	3.59 ***	5.54 ***	6.23 **	6.93 ***
Asia-Pacific	-2.41	-3.73 ***	7.79 ***	2.40 **	2.95	7.47 ***	4.11 *
European	-1.95 ***	-2.78 ***	-1.82 **	0.95 *	3.72 **	7.43 ***	7.61 ***
Middle East and Central Asia	-1.46	-4.03 ***	-3.89 **	0.49	2.67 *	7.19 ***	5.85 ***
Western Hemisphere	-1.31	-3.36 ***	-1.64 ***	1.52 ***	2.83 ***	5.61 ***	6.17 ***
R-squared adjusted	0.838	0.966	0.883	0.596	0.917	0.828	0.852
Area dept. dummies are jointly significant 2/	No	No	Yes	Yes	No	No	No
Likelihood ratio test result (Prob > chi2)	0.332	0.483	0.000	0.003	0.332	0.382	0.301

Source: IMF staff estimations.

Notes: ***, **, * denote 1, 5, and 10 percent significance levels, respectively. The set of regressors included in each regression is determined using the iterative Bayesian Model Averaging (iBMA) methodology. Grey shading indicates variables excluded from the set of candidate regressors in iBMA.

[1] Distribution of the total 56 observations is as follows across area departments: African (3), Asia-Pacific (3), European (19), Middle East and Central Asia (5), Western Hemisphere (26). The African department programs were Gabon (2004, 2007) and Angola (2009). The Asia-Pacific Department programs were Maldives (2009), Mongolia (2009), and Sri Lanka (2009).
[2] Joint significance is evaluated at the 5 percent level. The test of joint significance employed is the likelihood ratio test vis-à-vis the corresponding baseline model including an intercept in lieu of area department dummies (results reported one line below).

Appendix Table I.5. Robustness for Regressions Explaining Planned Macroeconomic Adjustment in PRGT Programs Including Regional Variables [1,2,3]

Dependent variable:	Programmed fiscal balance adj. (percent of GDP)	Programmed inflation reduction (percent of GDP)	Programmed current account adj. (percent of GDP)	Programmed reserves adj. (months of imports)	Access (multiple of quota) 3/	Number of Structural Conditions
Initial macro conditions (t-1):						
Public debt (% of GDP)	0.02 **		0.03 ***			
Public debt (% of revenue)						
IIP liabilities	0.22 ***		0.22 ***	0.22 ***	-0.02 **	
Total cross-border bank claims (US$ billions)					0.13 ***	
Inflation (percent)		0.81 ***				
Fiscal balance (percent of GDP)	-0.64 ***					
Reserves (months of imports)						
Growth (percent)				0.11 **	-0.04 ***	
Current account balance (percent of GDP)			-0.40 ***			0.09 **
High debt dummy						
Changes in macro conditions (t-2 vs t-1):						
Inflation (pp)		0.07 *				
Fiscal balance (percent of GDP)						
Reserves (months of imports)						
Current account balance (percent of GDP)				0.10 ***		
Country characteristics:						
Prior actions at board approval						0.38 ***
Fixed FX rate dummy						
Currency Union dummy						
Transition country dummy					0.35	
Post-conflict dummy						
Fragile States dummy	2.78 ***					
Trade openness			0.06 ***	0.01 **		
CPIA						
Rule of law	2.57 ***					
Aid dependence (Aid in percent of program country GDP)	-0.16 ***					
Program characteristics:						
Crisis program dummy		-1.24 ***				
HIPC decision point dummy						
HIPC completion point dummy				1.52 ***		
Successor program dummy					-0.42 ***	
Fund credit outstanding (Multiple of quota)						
SPC abolition dummy						
Dummy for post-2006 programs					0.57 ***	-1.22 **
Area department dummy variables: 1/						
African	-1.47 *	-2.28 ***	-9.70 ***	-3.19 ***	0.69 ***	7.10 ***
Asia-Pacific	-0.84	-3.11 ***	-10.13 ***	-1.62	0.84 ***	8.80 ***
European	-0.17	-3.08 ***	-9.18 ***	-2.56 **	0.73 **	8.85 ***
Middle East and Central Asia	-1.85	-2.85 ***	-9.74 ***	-3.53 ***	0.72 ***	7.11 ***
Western Hemisphere	-1.08	-3.27 ***	-10.58 ***	-3.63 ***	0.93 ***	7.85 ***
R-squared adjusted	0.490	0.936	0.519	0.566	0.822	0.880
Area dept. dummies are jointly significant 2/	No	No	No	No	No	No
Likelihood ratio test result (Prob > chi2)	0.869	0.470	0.993	0.484	0.732	0.544

Source: IMF staff estimations.

Notes: ***, **, * denote 1, 5, and 10 percent significance levels, respectively. The set of regressors included in each regression is determined using the iterative Bayesian Model Averaging (iBMA) methodology. Grey shading indicates variables excluded from the set of candidate regressors in iBMA.

[1] Distribution of the total 85 observations is as follows across area departments: African (58), Asia-Pacific (3), European (4), Middle East and Central Asia (14), Western Hemisphere (6). In the access regression, the number of African department programs to 45 given omission of PSI programs; consequently the total number of observations drops to 72.

[2] Joint significance is evaluated at the 5 percent level. The test of joint significance employed is the likelihood ratio test vis-à-vis the corresponding baseline model including an intercept in lieu of area department dummies (results reported one line below).

[3] Excludes PSI programs as their access level is zero by definition.

Appendix Table I.6. Robustness for Regressions Explaining Planned Macroeconomic Adjustment in GRA Programs Including Political Economy Variables [1]

Dependent variable:	Programmed fiscal balance adj. (percent of GDP)	Programmed inflation reduction (percent of GDP)	Programmed current account adj. (percent of GDP)	Programmed reserves adj. (months of imports)	Access (multiple of quota)		Number of Structural Conditions
					Baseline	Excl. EA dummy	
Initial macro conditions (t-1):							
Public debt (% of GDP)	0.04 *						
Public debt (% of revenue)							
IIP liabilities						0.04 **	
Total cross-border bank claims (US$ billions)						-0.05	
Inflation (percent)		0.92 ***					
Fiscal balance (percent of GDP)	-0.63 ***			0.10			
Reserves (months of imports)				0.00			
Growth (percent)				-0.04			
Current account balance (percent of GDP)			-0.82 ***		-0.14 **	-0.24 ***	
Output gap (percent of GDP)							
Changes in macro conditions (t-2 vs t-1):							
Inflation (pp)							
Fiscal balance (percent of GDP)							
Reserves (months of imports)				-0.78 **			
Current account balance (percent of GDP)	-0.22 **		-0.39 ***				
Country characteristics:							
Prior actions at board approval							0.75 ***
Fixed FX rate dummy							
Currency Union dummy		4.47 ***				-0.85	
Euro Area dummy					20.88 ***		
Transition country dummy							
Post-conflict dummy							
Fragile States dummy							
Trade openness					-0.02	-0.05 ***	
Regulatory quality							
Rule of law	-1.40 *						
Program characteristics:							
Capital account crisis (narrow sample)				1.99 ***	3.44 **	3.23 *	
Capital account crisis (broad sample)							
Precautionary program dummy						-1.33	
Wave 1 dummy					1.87		
Wave 2 dummy	2.38	-1.44					
Successor program dummy		0.97		-0.35			
Fund credit outstanding (Multiple of quota)					0.09		
SPC abolition dummy							
Dummy for post-2006 programs							-1.24
Political economy variables:							
UN voting with US, important votes (percent)	-0.01	0.02	0.03	0.01	0.00	0.00	0.03
UN voting with US (percent)	0.06	-0.05	-0.08	-0.08	-0.11	-0.17	0.00
UN voting with UK (percent)	0.11	-0.09	0.12	-0.08	0.10	-0.07	-0.78
UN voting with France (percent)	-0.36	0.15	-0.50	0.28	0.13	0.35	1.12
UN voting with Germany (percent)	0.04	0.02	-0.08	-0.20	-0.03	-0.02	0.22
UN voting with Japan (percent)	0.25	-0.01	0.50	0.02	-0.11	-0.17	-0.61 **
IMF A-level economists (Fraction)	0.01	1.24	0.31	-1.09	-0.15	-0.34	0.69
IMF B-level economists (fraction)	-2.39	-0.61	1.59	0.33	-0.10	-1.46	-0.29
Aid from US (Fraction of US total aid)	-9.11	-1.53	-52.74	-26.89	-32.71	-65.94 **	38.71
Aid from UK (Fraction of UK total aid)	-0.54	3.18	-7.91	2.65	27.19	34.05	-28.04
Aid from France (Fraction of French total aid)	410.82	99.24	226.44	199.27	156.32	534.62	297.00
Aid from Germany (Fraction of German total aid)	-43.85	-27.08	-64.64	10.02	37.70	17.66	-169.86
Aid from Japan (Fraction of Japanese total aid)	-28.03	-72.50	-81.61	3.10	-97.66	-97.40	-51.42
Trade with US (fraction of total trade)	0.43	2.39	-5.41	3.04	2.79	-3.77	3.92
Trade with UK (fraction of total trade)	0.40	-0.28	0.75	-0.30	-0.85	-22.85 ***	0.03
Trade with France (fraction of total trade)	-0.73	-2.28	2.02	0.57	-3.07	11.50 **	-1.97
Trade with Germany (fraction of total trade)	0.31	1.30	-1.39	-0.27	2.55	1.58	-1.48
Trade with Japan (fraction of total trade)	-1.14	-6.29	8.79	-5.78	3.37	7.21	-9.37
Intercept	-9.11	-8.98	-8.60	0.40	-0.08	4.01	9.46
R-squared adjusted	0.793	0.945	0.770	0.473	0.858	0.817	0.559
Political econ. variables jointly significant 1/	No	No	No	No	No	Yes	No
Likelihood ratio test result (Prob > Chi2)	0.273	0.724	0.257	0.179	0.382	0.034	0.207

Source: IMF staff estimations.

Notes: ***, **, * denote 1, 5, and 10 percent significance levels, respectively. The set of regressors included in each regression is determined using the iterative Bayesian Model Averaging (iBMA) methodology. Grey shading indicates variables excluded from the set of candidate regressors in iBMA. The number of observations is 56 for all regressions.

[1] Joint significance is evaluated at the 5 percent level. The test of joint significance employed is the likelihood ratio test vis-à-vis the corresponding baseline model without political economy variables.

Appendix Table I.7. Robustness for Regressions Explaining Planned Macroeconomic Adjustment in PRGT Programs Including Political Economy Variables [1]

Dependent variable:	Programmed fiscal balance adj. (percent of GDP)	Programmed inflation reduction (percent of GDP)	Programmed current account adj. (percent of GDP)	Programmed reserves adj. (months of imports)	Access (multiple of quota)	Number of Structural Conditions
Initial macro conditions (t-1):						
Public debt (% of GDP)	0.01		0.03 ***			
Public debt (% of revenue)						
IIP liabilities	0.17		0.12	-0.05	-0.03	
Total cross-border bank claims (US$ billions)					0.14 ***	
Inflation (percent)		0.84 ***				
Fiscal balance (percent of GDP)	-0.73 ***					
Reserves (months of imports)						
Growth (percent)				0.11 **	-0.06 ***	
Current account balance (percent of GDP)			-0.34 ***			0.07
High debt dummy						
Changes in macro conditions (t-2 vs t-1):						
Inflation (pp)		0.09 **				
Fiscal balance (percent of GDP)						
Reserves (months of imports)						
Current account balance (percent of GDP)				0.02		
Country characteristics:						
Prior actions at board approval						0.54 ***
Fixed FX rate dummy						
Currency Union dummy						
Transition country dummy					-0.05	
Post-conflict dummy						
Fragile States dummy	2.25 **					
Trade openness			0.05 **	0.02 ***		
CPIA						
Rule of law	2.07 **					
Aid dependence (Aid in percent of program country GDP)	-0.07					
Program characteristics:						
Crisis program dummy		-0.89				
HIPC decision point dummy						
HIPC completion point dummy				1.43 ***		
Successor program dummy					-0.42 ***	
Fund credit outstanding (Multiple of quota)						
SPC abolition dummy						
Dummy for post-2006 programs					-0.09	1.12
Political economy variables:						
UN voting with US, important votes (percent)	0.00	0.00	0.04	0.00	0.00	-0.01
UN voting with US (percent)	0.09	-0.01	-0.08	-0.02	-0.02	0.06
UN voting with UK (percent)	0.02	-0.03	0.02	0.06	0.09 *	-0.26
UN voting with France (percent)	-0.12	0.12	0.10	0.00	-0.08	0.30
UN voting with Germany (percent)	-0.05	-0.15	-0.11	-0.07	0.03	-0.16
UN voting with Japan (percent)	0.22 *	0.07	0.22	0.07	-0.02	0.11
IMF A-level economists (Fraction)	-2.27	1.98	-1.44	0.46	0.33	-1.28
IMF B-level economists (fraction)	2.91	1.06	5.72	-0.97	0.18	-0.22
Aid from US (Fraction of US total aid)	-52.02	-25.29	28.08	43.35	6.41	-1.94
Aid from UK (Fraction of UK total aid)	-5.31	-13.54	-25.38	17.94	3.03	-25.25
Aid from France (Fraction of French total aid)	-5.10	16.60	-52.60	-9.66	1.78	10.21
Aid from Germany (Fraction of German total aid)	-85.94	10.77	-85.36	-31.13	-12.78	110.68 **
Aid from Japan (Fraction of Japanese total aid)	-10.65	3.12	-5.95	-7.88	-1.34	5.59
Trade with US (fraction of total trade)	27.99 **	1.50	42.50 **	24.98 ***	1.69	-4.04
Trade with UK (fraction of total trade)	20.12	18.52	-26.75	13.92	-2.26	19.79
Trade with France (fraction of total trade)	14.04	-2.54	59.24	16.67	-5.27	5.65
Trade with Germany (fraction of total trade)	-96.02	-18.38	-86.29	-9.14	8.69	-41.07
Trade with Japan (fraction of total trade)	10.48	-42.14 *	51.07	-36.18	2.00	-46.11
Intercept	-8.88	-3.08	-25.99 **	-6.62 *	0.04	5.23
R-squared adjusted	0.556	0.931	0.549	0.666	0.662	0.276
Political econ. variables jointly significant 1/	Yes	No	No	Yes	Yes	No
Likelihood ratio test result (Prob > Chi2)	0.020	0.066	0.144	0.001	0.033	0.215

Source: IMF staff estimations.

Notes: ***, **, * denote 1, 5, and 10 percent significance levels, respectively. The set of regressors included in each regression is determined using the iterative Bayesian Model Averaging (iBMA) methodology. Grey shading indicates variables excluded from the set of candidate regressors in iBMA. The number of observations is 85 for all regressions. The exception is the access regression, which excludes PSI programs and only has 72 observations, because access in PSIs is zero by definition.

[1] Joint significance is evaluated at the 5 percent level. The test of joint significance employed is the likelihood ratio test vis-à-vis the corresponding baseline model without political economy variables.

54. **The quantitative design of programs with direct budget support did not differ substantially from that in other programs, controlling for other factors**. This conclusion is supported by econometric analysis of the factors explaining macroeconomic adjustment and access (used in the background paper on program design for the RoC). The main exception is somewhat larger programmed fiscal adjustments of 1¾ percent of GDP in GRA cases and 2½ percent of GDP in PRGT cases over the period of a program. In addition, GRA programs with budget support include on average 1.3 more structural conditions per review. Meanwhile PRGT budget support programs envisage 2 percentage points of GDP less inflation reduction (possibly because inflation is already lower in these cases in light of independent central banks and exchange rate pegs). Coefficients on other variables remain robust over the 2006-11 sample period vis-à-vis the baseline specification, which is reported in the RoC and excludes the budget support indicator.

Appendix Table I.8. Regression Evaluating Impact of Budget Support in GRA Programs

Candidate regressors for the iterative Bayesian Model Averaging (BMA) methodology: [1]	**Dependent variable**			
	Programmed fiscal adjustment (percent of GDP)		Programmed inflation reduction (percent of GDP)	
	Baseline 2006-2011	Incl. Budget Sup.	Baseline 2006-2011	Incl. Budget Sup.
Initial macro conditions (t-1):				
Public debt (% of GDP)	0.02	0.01		
Public debt (% of revenue)				
IIP liabilities	0.15	0.15		
Total cross-border bank claims (US$ billions)				
Inflation (percent)			0.71 ***	0.77 ***
Fiscal balance (percent of GDP)	-0.84 ***	-0.90 ***		
Reserves (months of imports)				
Growth (percent)				
Current account balance (percent of GDP)				
Changes in macro conditions (t-2 vs t-1):				
Inflation (pp)	[2]	[2]	0.13 **	0.11 **
Fiscal balance (percent of GDP)			[2]	[2]
Current account balance (percent of GDP)			[2]	[2]
Country characteristics:				
Prior actions at board approval				
Fixed FX rate dummy				
Currency Union dummy				
Transition country dummy				
Post-conflict dummy				
Fragile States dummy	1.68	1.73		
Trade openness				
CPIA				
Rule of law	2.13	2.23		
Aid dependence (Aid in percent of program country GDP)	-0.14 *	-0.10		
Budget Support dummy	[2]	2.44 *	[2]	1.92 ***
Program characteristics:				
Crisis program dummy			-0.95 *	-1.09 **
HIPC decision point dummy				
HIPC completion point dummy				
Successor program dummy				
Fund credit outstanding (Multiple of quota)				
Intercept	-2.12 *	-2.97 **	-1.90 ***	-2.84 ***
R-squared adjusted	0.5143	0.5414	0.9014	0.9158
Number of observations	58	58	58	58
Sample	2006-11	2006-11	2006-11	2006-11

Source: IMF staff estimations.
Notes: ***, **, * denote 1, 5, and 10 percent significance levels, respectively.

[1] Given the large uncertainty surrounding the exact model specification, the iterative Bayesian Model Averaging (BMA) methodology was applied to a larger 2002-11 program sample to obtain the baseline specifications (see Review of Conditionality Background Paper 2 on Program Design). The BMA methodology requires a set of candidate regressors, which here is constituted by all the variables listed. BMA then selects the best model by using a selection criterion that trades off parsimony and goodness of fit. The estimates presented here then result from an OLS estimation of this best model.
[2] The regressor is excluded from the set of candidate regressors used by BMA to determine the best model.

Appendix Table I.9. Regression Evaluating Impact of Budget Support in PRGT Programs

Candidate regressors for the iterative Bayesian Model Averaging (BMA) methodology: [1]	Dependent variable			
	Programmed fiscal adjustment (percent of GDP)		Number of Structural Conditions	
	Baseline 2006-11	Incl. Budget Sup.	Baseline 2006-11	Incl. Budget Sup.
Initial macro conditions (t-1):				
Public debt (% of GDP)	0.01	0.01		
Public debt (% of revenue)				
IIP liabilities				
Total cross-border bank claims (US$ billions)				
Inflation (percent)				
Fiscal balance (percent of GDP)	-0.66 ***	-0.61 ***		
Reserves (months of imports)				
Growth (percent)				
Current account balance (percent of GDP)				
Output gap (percent of GDP)				
Changes in macro conditions (t-2 vs t-1):				
Fiscal balance (percent of GDP)			[2]	[2]
Current account balance (percent of GDP)	-0.22 ***	-0.21 ***	[2]	[2]
Country characteristics:				
Prior actions at board approval			0.51 ***	0.44 **
Fixed FX rate dummy				
Currency Union dummy				
Euro Area dummy				
Transition country dummy				
Post-conflict dummy				
Fragile States dummy				
Trade openness				
Regulatory quality				
Rule of law	-1.55 ***	-1.80 ***		
Budget Support dummy	2/	1.77 **	[2]	1.26 *
Program characteristics:				
Capital account crisis (narrow sample)				
Capital account crisis (broad sample)				
Precautionary program dummy				
Wave 1 dummy				
Wave 2 dummy	2.36 **	2.70 ***		
Successor program dummy				
Fund credit outstanding (Multiple of quota)				
Stuctural PC abolition dummy	[2]	[2]		
Intercept	-2.24 ***	-3.13 ***	3.27 ***	2.89 ***
R-squared adjusted	0.868	0.883	0.187	0.240
Number of observations	34	34	34	34
Sample	2006-11	2006-11	2006-11	2006-11

Source: IMF staff estimations.

Notes: ***, **, * denote 1, 5, and 10 percent significance levels, respectively.

[1] Given the large uncertainty surrounding the exact model specification, the iterative Bayesian Model Averaging (BMA) methodology was applied to a larger 2002-11 program sample to obtain the baseline specifications (see Review of Conditionality Background Paper 2 on Program Design). The BMA methodology requires a set of candidate regressors, which here is constituted by all the variables listed. BMA then selects the best model by using a selection criterion that trades off parsimony and goodness of fit. The estimates presented here then result from an OLS estimation of this best model.

[2] The regressor is excluded from the set of candidate regressors used by BMA to determine the best model.

Appendix II: Lessons from Case Studies of Monetary Policy Adjustment

55. **Fund-supported programs incorporated monetary reforms to support monetary adjustment and the achievement of program objectives.** Examining the types and depth of monetary reforms in 18 case studies showed that they were influenced by the initial conditions, including inflation, fiscal and current account balances, capital and remittances inflows, and the level of reserves, while taking account of the structural agenda.

56. **In many programs launched during the global financial crisis, establishing a clear monetary anchor was a high priority** (Dominican Republic, Ukraine, Seychelles, Sri Lanka, Armenia, and Moldova). These programs were typically designed to move away from pursuing multiple monetary policy objectives, and towards flexible exchange rate arrangements, which served to remove the potential conflicts between monetary and exchange rate policies. The immediate or gradual introduction of a full-fledged inflation targeting regime was considered an essential part of the monetary reform package in many of these countries.

Table II.1. Number of Monetary Policy Reforms in GRA and PRGT Programs (based on a review of the case studies)

Type of monetary policy measures	GRAs	PRGTs
Change in monetary regime	5	5
Monetary policy instruments/liquidity management	7	6
Monetary and fiscal consolidation	3	6
Central Bank recapitalization/independence	3	4
Exchange rate regime	8	6
Other	2	-

Source: IMF Staff estimations.

57. **In a number of countries, clarification of the central bank's role in the foreign exchange market was an important part of conditionality** (Costa Rica and Hungary). In particular, central banks were recommended to avoid sending mixed signals by refraining from foreign exchange interventions except to stabilize volatile market conditions.

58. **In PRGT countries, monetary adjustment played a limited role in adjustment policies given uncertainties and constraints for policy implementation.** Many countries faced weak monetary policy transmission mechanisms, inefficient monetary policy frameworks, lack of key pre-requisites (including infrastructure) for market operations, and lack of competition in money and foreign exchange markets (Sierra Leone, Moldova, and Uganda). Nevertheless, they continued targeting the monetary base as a key anchor for monetary policy design and implementation.

59. **In both GRA and PRGT cases, major reforms were proposed in monetary policy forecasting and implementation.** All programs envisaged measures to strengthen the transmission mechanisms for monetary policy, including relying on a detailed liquidity forecasting exercise to guide central bank interventions in the money market and eliminating the segmentation in the money markets. Central bank recapitalization reforms were discussed or included in both GRA and PRGT programs (Dominican Republic, Costa Rica, and

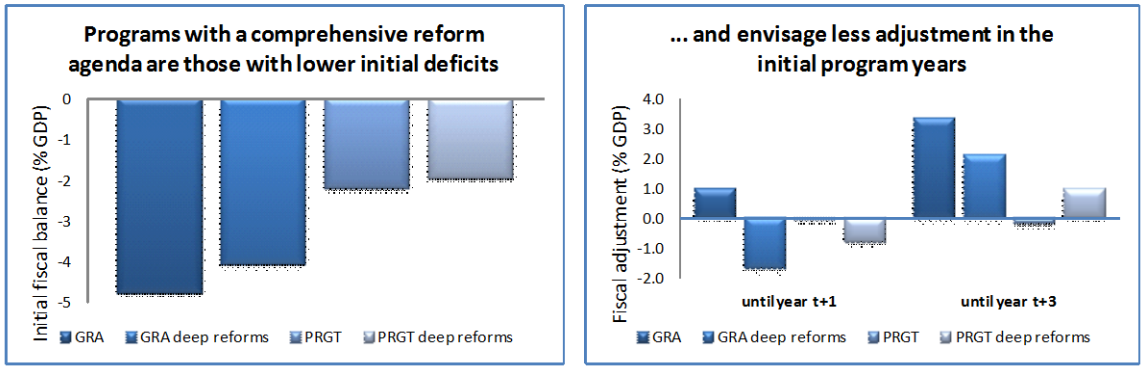
Pakistan) to strengthen credibility and independence of the central bank, as well as the efficiency of open market operations.

60. **In PRGT countries, the efficiency of monetary adjustment often depended on coordination of monetary and fiscal operations, debt management, and government cash management.** In a number of countries (Uganda, Sierra Leone, and Moldova) the improvement of coordination was seen as an important pre-requisite for enhancing the efficiency of monetary policy implementation, and the link between the money market and lending interest rates.

Appendix III. Adjustment in the Design of Fund-Supported Programs Additional Figures and Tables

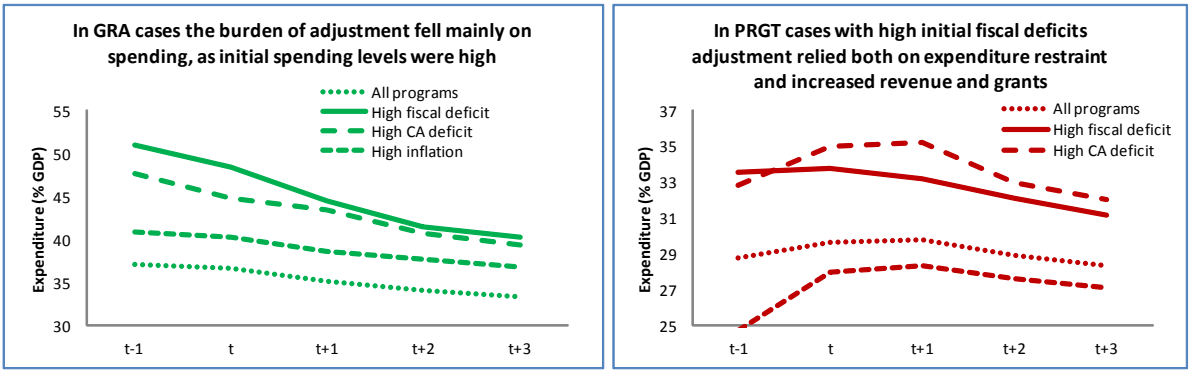
Fiscal Adjustment

Figure III.1. Program Objectives and Structural Conditionality



Source: WEO, MONA, and Staff calculations.

Figure III.2. Fiscal Adjustment



Source: WEO, MONA, and Staff calculations.

Table III.1. Determinants of Performance Against QPCs

Dependent variable: share of QPCs met in year t+1						
QPCs in dependent variable	Fiscal	Fiscal	Fiscal & credit to govt	Fiscal & credit to govt	All QPCs	All QPCs
Sample	All	2006-11	All	2006-11	All	2006-11
Projected* fiscal deficit in t	-0.0155	-0.0252*	-0.0092	-0.0177**	-0.0082	-0.0125*
	(-1.51)	(-2.38)	(-1.26)	(-3.38)	(-1.89)	(-2.91)
Projected* fiscal adjustment** in t+1	-0.0259	-0.0328*	-0.0171	-0.0240**	-0.0136*	-0.0179**
	(-1.66)	(-2.20)	(-1.71)	(-3.63)	(-2.29)	(-3.30)
Projected* inflation in t	-0.0166	-0.00721	-0.0132*	-0.0125**	-0.00539	-0.00802*
	(-1.85)	(-0.77)	(-2.18)	(-3.01)	(-1.50)	(-2.36)
Number of prior actions	-0.0430**	-0.0914*	-0.0381***	-0.0182	-0.0202**	-0.00748
	(-3.00)	(-2.89)	(-3.74)	(-1.48)	(-3.34)	(-0.74)
Constant	1.010***	0.929***	1.036***	0.970***	0.960***	0.955***
	-12.65	-10.65	-17.01	-19.52	-26.5	-23.46
N	32	17	36	21	36	21
R-sq	0.461	0.69	0.465	0.625	0.438	0.517
adj. R-sq	0.381	0.586	0.397	0.531	0.366	0.396

* Projections are as of period t (e.g. fiscal adjustment in t+1 as projected in t)

** Fiscal adjustment in t+1 is defined as the fiscal balance (% GDP) in t+1 minus the fiscal balance (% GDP) in t.

Note: The table presents the results of probit regressions estimated to seek explanations for the incidence of fiscal slippages. A positive coefficient suggests that an increase in the respective regressor is associated with an increased probability of a higher than programmed fiscal deficit in the second year of the program (period t+1).

External Adjustment

Table III.2. Probit Results for Fund Effects on Change in an Exchange Rate Regime

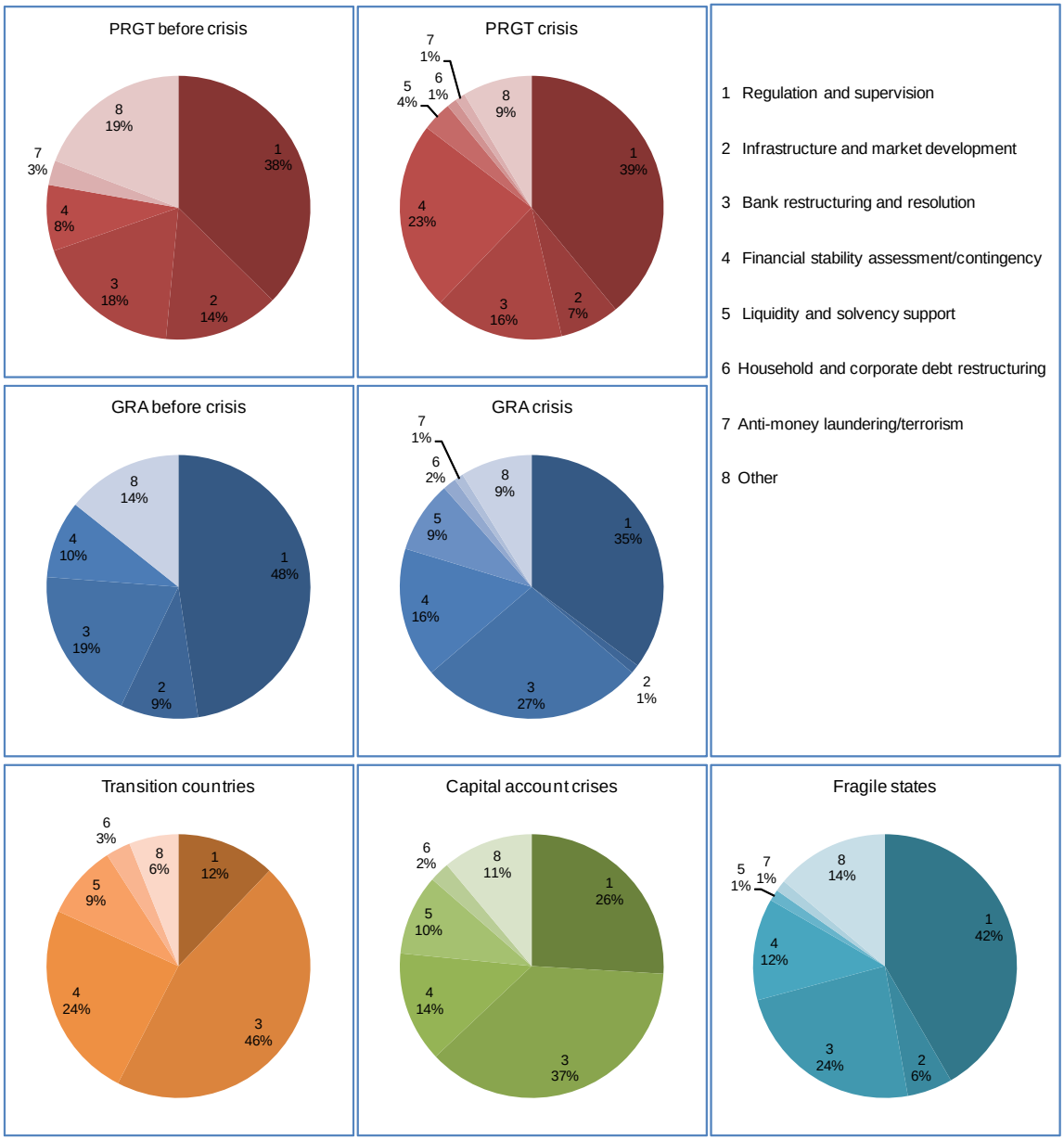
	Change in Exchange Rate Regime	Change from Fixed to Flexible Regime
Dummy for GRA Program	0.0369	0.0136
Dummy for PRGT Program	0.0064	0.057
Dummy for a Hard Peg	-0.0977***	-0.0181
Dummy for a Soft Peg	-0.0159	0.0469**

Note: Dependent Variable is 1 denoting a change in the exchange rate regime from t-1 to t

Note: A Hard Peg is defined solely as those exchange rate regimes classified as a currency board or no separate legal tender; A soft peg is defined as those exchange rate regimes classified as crawling peg, crawling band or a peg

Financial Sector Reforms[1]

Figure III.3. Classification of Financial Sector Conditionality

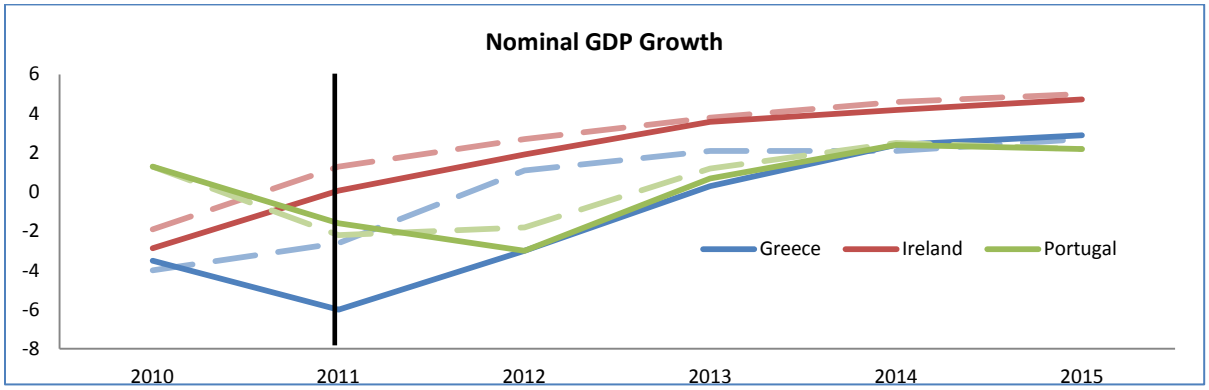


Source: WEO, MONA, and Staff calculations.

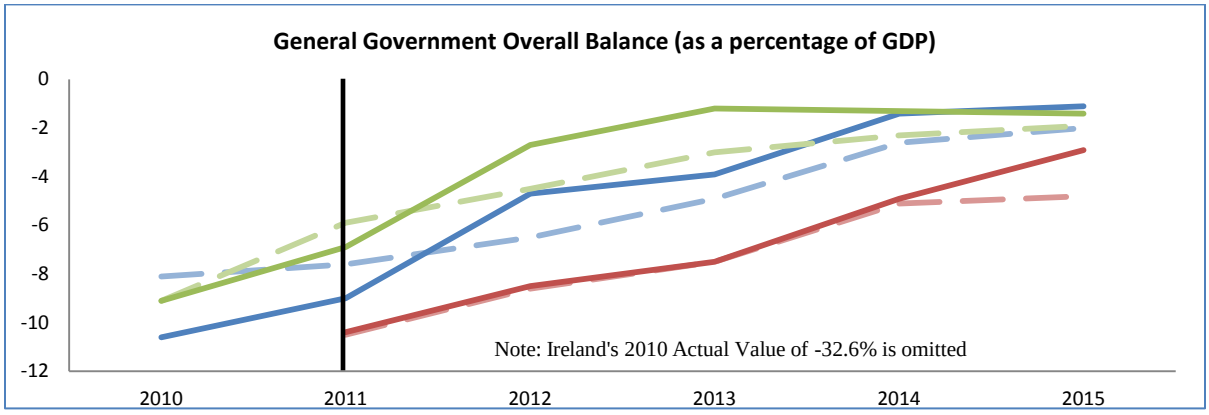
[1] A new classification of financial sector reforms was developed for this analysis.

Appendix IV: Macroeconomic Projections: Euro Area Programs

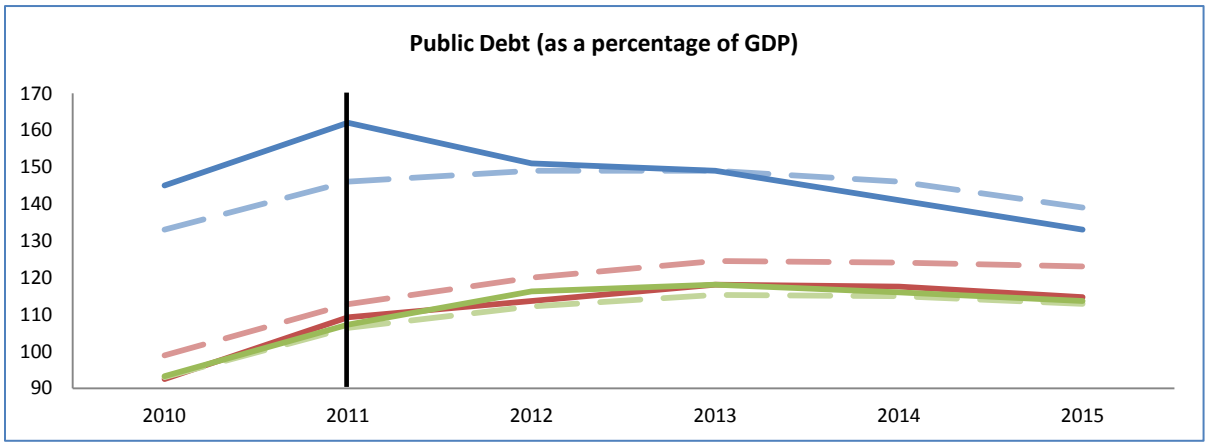
Downward revisions in GDP growth forecasts were present to differing degrees in all three Euro Area programs.



Fiscal deficits in 2011 were larger than initially forecasted for Greece and Portugal.



And public debt was larger than forecast in 2011 for Greece.



The data analyzed for the Review of Conditionality does not include enough outturns to conclude whether or not there was bias in projections for Euro Area programs, but they do suggest that any bias would be optimistic, rather than pessimistic as seen in other GRA crisis projections.

Note: Red Denotes Ireland, Blue Greece and Green for Portugal. The solid line represents their latest review (4th for Ireland, 5th for Greece and 2nd for Portugal). All projection s past 2011 are revisions to previous projections made at board approvals.

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