4 ASSESSING THE GROWTH IMPACT OF IMF-SUPPORTED PROGRAMS

This chapter presents more formal empirical approaches to assessing the growth impact of IMF-supported programs.[13] It builds on what is already a large academic literature examining the short-run growth impact of IMF-supported programs (i.e., during the program period) relative to a notional counterfactual of no Fund engagement. In broad terms, this literature is inconclusive, although recent studies have found more favorable evidence for the positive impact on growth of IMF-supported programs than earlier studies.[14] Many factors may explain the mixed findings of the literature, including different samples and empirical strategies adopted across studies. Moreover, there are significant econometric challenges involved, ranging from inherent difficulties to establish reliable counterfactuals to challenges in addressing sample selection bias, which could arise because programs are a deliberate choice of a country and the IMF and arranged only for countries with actual or prospective BOP needs.

Recognizing these challenges, the evaluation pursued a number of empirical approaches to assess the growth impact of IMF-supported programs during the program, in the post-program period, and in the longer run.

GROWTH IMPACT DURING THE PROGRAM

The growth impact of an IMF-supported program during the program period is estimated by using a recently developed statistical approach based on the propensity scoring method to correct for sample selection bias.[15] In this approach, the growth impact during the program period relative to a counterfactual of no Fund program engagement is identified as the average treatment effect (ATE) of IMF-supported programs. Thus, a positive ATE suggests that growth during the program period is higher than it would have been for a country in similar circumstances that did not undertake a Fund-supported program.[16] Estimation is undertaken for 152 countries in total (92 GRA and 60 PRGT countries) over the period 2008–19.

The estimated ATE is positive and highly significant (Figure 12). For completed programs, engagement in an IMF-supported program is estimated to raise annual growth, relative to a counterfactual of non-participation, by about 0.7 percentage points on average. The impact is higher for PRGT countries than GRA countries (1.1 percentage points versus 0.7

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[13] This chapter draws on Kim and others (2021) and Atsebi and Wojnilower (2021).

[14] See Appendix V in Kim and others (2021) for a select literature review of empirical studies on the growth impact of IMF-supported programs.

[15] See Kim and others (2021) for greater technical detail.

[16] Note that a country may have a positive ATE even though output may contract during the program because the counterfactual in the absence of stabilization measures and financial support would have been an even deeper economic downturn.

FIGURE 12. SHORT-RUN GROWTH IMPACT OF IMF-SUPPORTED PROGRAMS
(In percentage points)
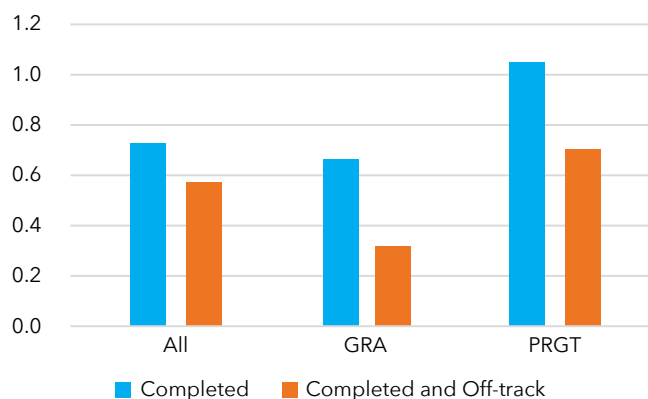
Source: Kim and others (2021).

FIGURE 13. SHORT-RUN GROWTH BENEFITS BY IMPLEMENTATION AND QUALITY OF SCs
(In percentage points)
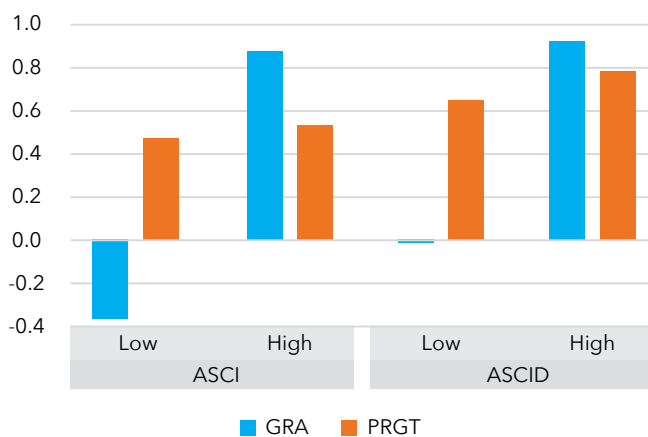
Source: Kim and others (2021).

percentage points). These results are broadly in line with the estimates reported in recent academic studies.[17] If the program sample is expanded to include both completed and off-track programs, estimated growth gains are smaller in both GRA and PRGT countries, implying that program implementation matters for short-run growth benefits of IMF-supported programs. Overall, these results provide strong support for short-run growth benefits of IMF-supported programs relative to a counterfactual of no Fund program engagement and underscore the importance of program implementation in realizing growth benefits.

Structural conditionality is an important aspect of IMF-supported programs aimed at ensuring progress with structural reforms. To assess whether structural conditionality has mattered for short-run growth gains, the analysis compares the ATE on short-run growth between programs with different records of implementation and quality of SCs.[18] The analysis uses the quantitative score index of SCs developed by the IEO (Kim and Lee, 2021), which is discussed in greater detail in Chapter 7 of this report.

The estimation results are all highly significant and provide strong support for the role played by SCs and the importance of their implementation and quality in determining the size of short-run growth gains from IMF-supported programs (Figure 13). Focusing on the average implementation score (denoted by ASCI), the difference in growth gains between high and low ASCI cases is particularly striking for GRA programs (1.2 percentage points), although negligible for PRGT programs. The results taking into account the depth of the measure as well as implementation (denoted by ASCID) paint broadly the same picture although in this case growth in PRGT countries is also seen to benefit from structural conditionality. These findings provide some support for the hypothesis that structural conditionality can generate short-term confidence effects which would be particularly important in GRA program

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[17] Bas and Stone (2014) find for a sample of 104 countries over 1970–2008 that the average growth impact of IMF-supported programs is on the order of 1.4–3.5 percentage points and rises steadily with the cumulative number of years under programs, that is, for longer-term IMF engagement. Bal Gündüz (2016) reports an average growth impact of 0.4 percentage points for PRGT programs in 55 LICs over 1980–2010 and finds that the growth impact rises to 1.5–3.5 percentage points in LICs facing substantial imbalances or large exogenous shocks. For programs with 66 LICs over 1989–2008, Bird and Rowlands (2017) report a significant growth impact of 1.0–1.7 percentage points for concessional programs up to two years after approval but negative effects for non-concessional programs.

[18] Quality of SC refers to the depth and growth orientation of SC. Depth is the degree of structural change that a SC would bring about if implemented. Growth orientation describes whether the SC is intended primarily for enhancing growth and economic efficiency that would help the economy adapt better to changes in economic conditions. Depth and growth-orientation scores are constructed based on descriptive information on SCs in the MONA database. See IMF (2019b) and Kim and Lee (2021) for further discussion.

countries with market access. Strong implementation of high-depth SCs could signal firm commitments of program countries to a durable recovery and help boost investor confidence, ease external financing constraints and ultimately boost growth.[19]

POST-PROGRAM GROWTH IMPACT

The post-program growth impact of IMF-supported programs is assessed by examining the effect on post-program *potential* growth of stabilization and structural reforms implemented during the program. To this end, post-program growth regressions are estimated for the three-year average of post-program potential growth rates relative to the previously described IEO constructed benchmark that corrects for the influence of external factors and country fixed effects.[20] Our focus on potential growth rather than actual growth is motivated by two considerations. First, in conceptual terms, the potential growth rate is more appropriate to capture the slow-moving medium-term effects on growth of stabilization and reforms implemented during the program. Second, use of the potential growth rate, which corrects for cyclical variation associated with macroeconomic policies and shocks, should help to produce sharper estimates of the medium-run growth benefits of stability gains and reforms achieved in the program context.

Overall, the regression results provide good evidence for medium-run growth benefits of both stabilization and reform efforts during the program (Kim and others, 2021). As to the role of stabilization efforts, cumulative debt reduction—both public (DPDY<0) and external (ΔEDY<0)—during the program is found to affect post-program potential growth positively and statistically significantly (Figure 14). Specifically, a 10 percent of GDP reduction in public or external debt is found to help boost post-program potential growth by 0.2 percentage points. Growth-friendly fiscal adjustment with increased

public investment (DPUBINVY>0) and social spending (DSOCIALY>0) during the program also appears to have produced lasting growth benefits, of the order of 0.07 percentage points and 0.18 percentage points for a 1 percent of GDP increase in public investment and social spending, respectively. The growth effect of revenue mobilization (not shown) is found to be statistically insignificant, perhaps because positive benefits of higher revenue mobilization may have already been captured by public debt outcomes.

Market debt operations (measured by a simple dummy) in the program context are found to have a negative and statistically significant impact on post-program growth, particularly in the specification where public debt outcomes are also used as a control. The dummy variable is admittedly too coarse to adequately capture the diverse modalities and coverage of debt operations across countries. Moreover, a large part of growth benefits from debt operations may have already been captured by improved public debt outcomes included in the regressions. As such, the estimated negative impact of debt operations on post-program growth is likely to reflect the lingering effect on macro-financial conditions and investor attitudes associated with debt operations—such as increased borrowing cost, reduced market access, and lost investor confidence (particularly in cases where the country defaulted on sovereign debt).

As is the case for within-program growth impact, SCs implemented during the program have affected post-program potential growth positively and significantly, even though the considered post-program period of three years would likely be too short to observe the full impact of structural reforms (IMF, 2019e). The estimation results confirm that the quality of SCs, especially depth, matters significantly for post-program growth benefits. However, the mere implementation of SCs alone is not found to deliver significant growth benefits and could even harm post-program growth if too many low-quality SCs are

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[19] In PRGT countries, Fund engagement itself is viewed as the most critical factor that helps boost donor confidence. This may explain generally smaller differences in growth gains between low and high SC scores (ASCI and ASCID) in PRGT programs than in GRA programs in Figure 13.

[20] The results do not distinguish between GRA and PRGT programs since the regression sample is relatively small with 54 programs at most due to the limited availability of post-program data since many programs were completed only recently or followed by successor programs in less than a year or two. The regression sample is further limited by programs that quickly went off track for which no valid annual data are available for program outcomes. See Kim and others (2021) for further detail.

implemented as indicated by the negative coefficient of SCI (see Figure 14).[21]

FIGURE 14. POST-PROGRAM POTENTIAL GROWTH REGRESSION COEFFICIENTS
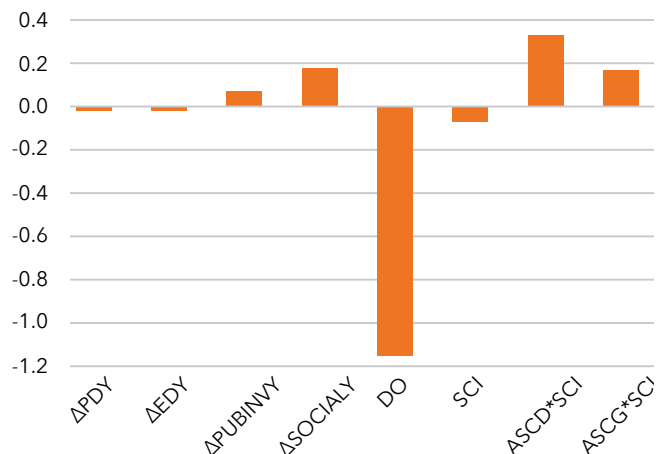
Source: Kim and others (2021).
Note: Based on the average across various specifications in Tables AVI.4 and AVI.5 in Kim and others (2021). DO denotes market debt operation. SCI, ASCD, and ASCG stand for the aggregate implementation score, the average depth score, and the average growth-orientation score of SCs, respectively.

SUSTAINED GROWTH SURGES AND IMF-SUPPORTED PROGRAMS

Taking a longer-term perspective than the rest of the evaluation, a background paper prepared for the evaluation (Atsebi and Wojnilower, 2021) assesses the role of IMF-supported programs in initiating sustained growth surges. In a seminal paper on growth surges, Hausmann, Pritchett, and Rodrik (2005) suggested that "accelerating the process of economic growth in a sustained manner is just about the most important policy issue in economics." Their study launched an expanding economic literature that aims to identify determinants of sustained growth accelerations, that is, growth surges. However, this literature has not considered the potential role of IMF-supported programs in helping countries to embark on sustained growth surges.

Anecdotal evidence suggests that IMF-supported programs, by supporting macroeconomic stabilization and structural
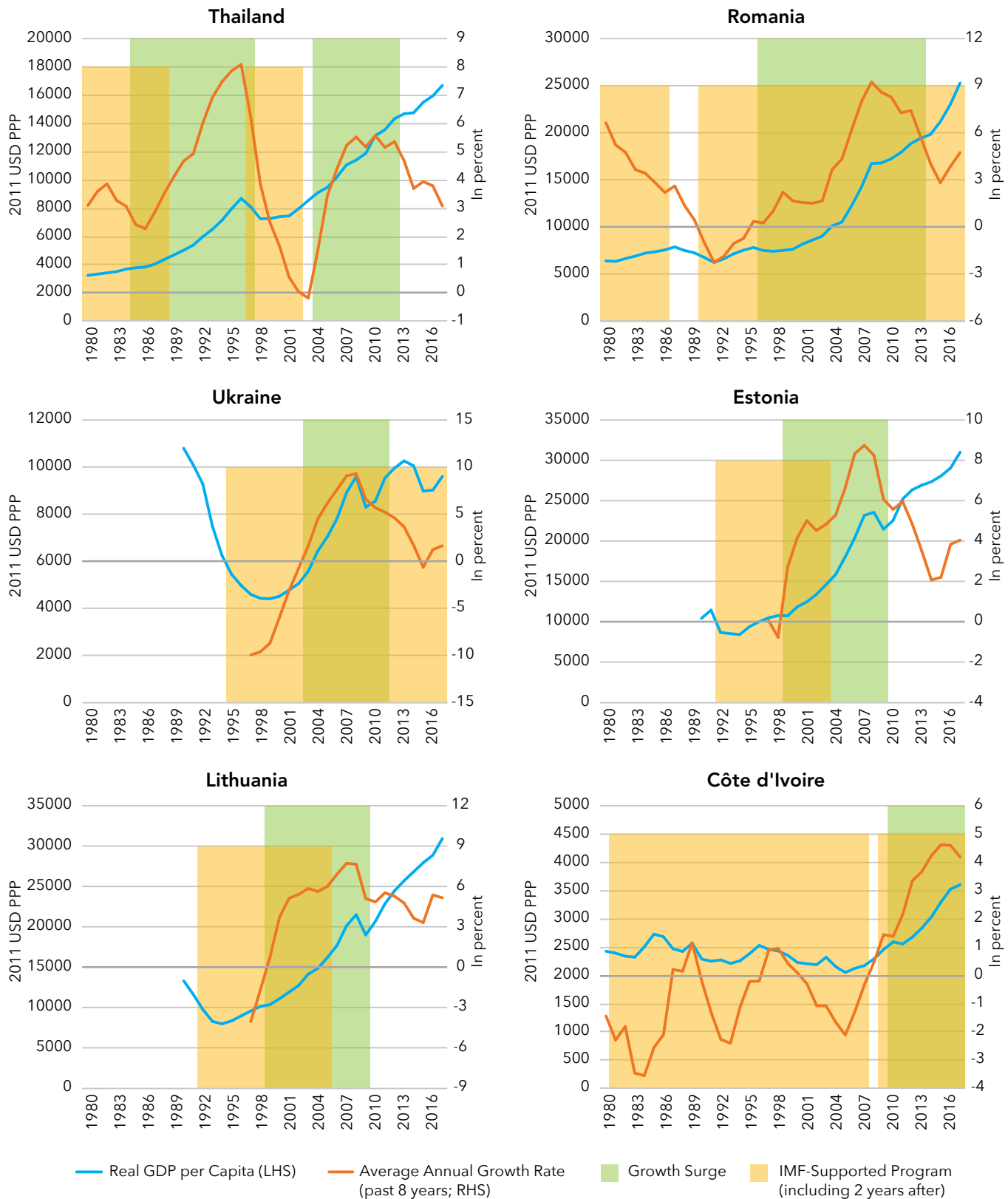
reforms, have played a role in initiating growth surges in a number of countries where deep-seated distortions and macroeconomic instability long hampered growth. Examples of countries that experienced sustained growth accelerations following IMF-supported programs include Thailand (1985), transition economies (e.g., Romania, 1997; Ukraine, 2003), the Baltic countries (Estonia and Lithuania, 1999), and Côte d'Ivoire (2010), among others (Figure 15).

For a more rigorous cross-country analysis and following the approach used by Hausmann, Pritchett, and Rodrik (2005), episodes of a sustained growth surge were identified as meeting two main criteria: (i) sustained rapid growth over at least eight years, and (ii) average growth significantly higher than in the preceding eight years. Applying these criteria and correcting for cyclical effects, 132 growth surges were identified in total in 117 countries during 1980–2017. More than half (56 percent) of these were associated with an IMF-supported program (Figure 16). It should be noted at the outset that growth surges are rare events—the unconditional probability of a growth surge starting in a given year is only 3.6 percent in the full sample. Interestingly, growth surges were significantly more frequent in the 2000s and in emerging market economies relative to previous decades and other income groups. Also noteworthy is that the share of growth surges associated with a program is significantly higher in the 2000s than in previous decades and in LICs compared to other income groups.

The empirical results in Atsebi and Wojnilower (2021) suggest that IMF-supported programs improve the chances of achieving a growth surge when policies are improved. Cross-country regressions based on a signal-extraction model show that significant improvements across the broad spectrum of relevant growth determinants (macroeconomic stability, structural reforms, investment and productivity) preceded nearly all growth surges. Moreover, such improvements were 10 percent to 20 percent more likely to trigger growth surges when associated with IMF-supported programs, an influence that was broadly similar between GRA and PRGT programs. While good luck (e.g., favorable external conditions) seems to have mattered significantly

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[21] Since all three SC scores shown in Figure 14—i.e., SCI, ASCD*SCI, and ASCG*SCI where ASCD and ASCG stand for the average depth and growth-orientation scores respectively—are considered simultaneously in the post-program potential growth regressions, the coefficient of SCI captures the effect of SC implementation when all SCs are of the lowest depth and growth orientation. Thus, the negative coefficient of SCI suggests that implementing too many low-quality SCs could harm growth. See Kim and others (2021) for further discussion.

FIGURE 15. SELECTED COUNTRIES WITH GROWTH SURGES AND IMF-SUPPORTED PROGRAMS

Real GDP per Capita (LHS) — Average Annual Growth Rate (past 8 years; RHS) — Growth Surge — IMF-Supported Program (including 2 years after)

Source: Atsebi and Wojnilower (2021).

FIGURE 16. GROWTH SURGES AND THEIR ASSOCIATION WITH IMF-SUPPORTED PROGRAMS
(Number of growth surges)

A. By Decade

B. By Region

C. By Levels of Development
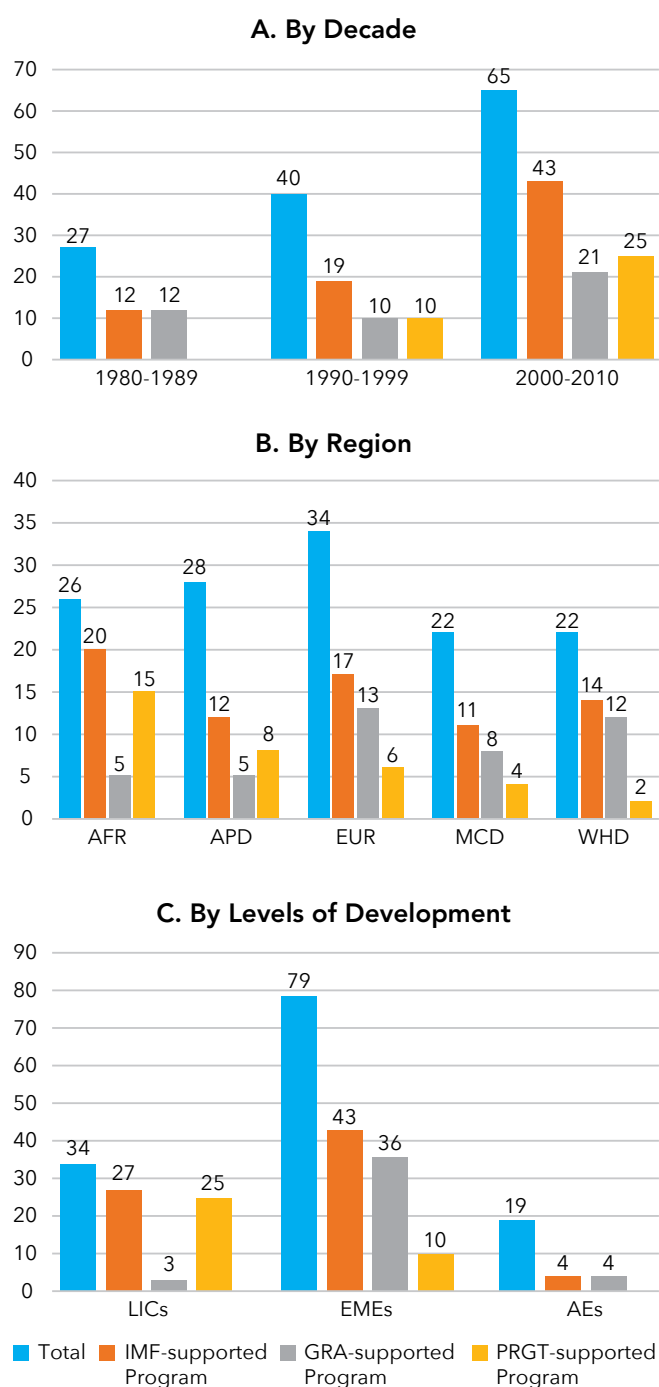
Source: Atsebi and Wojnilower (2021).
Note: AFR, APD, EUR, MCD, and WHD are abbreviations for IMF departments covering Africa, Asia and the Pacific, Europe, the Middle East and Central Asia, and the Western Hemisphere (i.e., the Americas and Caribbean), respectively. LICs, EMEs, and AEs stand for low-income countries, emerging market economies, and advanced economies, respectively.

for countries to embark on a sustained growth path, even in such cases the presence of an IMF-supported program seems to have enabled the country to take better advantage of favorable external conditions for sustained growth. Furthermore, IMF-supported programs have become increasingly effective at initiating growth surges over time, which suggests that the IMF's increasing attention to growth seems to have borne some fruit.

ASSESSMENT

Empirical evidence presented in this chapter suggests that IMF-supported programs have played a positive role in promoting growth in program countries in the short, medium, and longer runs.

The estimated growth impact during the program period, relative to a notional counterfactual of no Fund engagement, is significant, and found to be somewhat higher for PRGT programs than GRA programs. The estimated impact is found to be lower than the ranges reported in some recent academic studies but nonetheless seem quite impressive in light of the fact that such growth benefits were achieved against the background of a global growth and productivity slowdown in the aftermath of the GFC (IMF, 2015a; Adler and others, 2017). Another relevant finding is that SCs in the program (more precisely the implementation status and quality of SCs) have mattered significantly for the growth impact of IMF-supported programs, even in the short run. Given that structural reforms tend to affect growth with considerable time lag of 5–7 years (IMF, 2019e), the short-run growth impact of SCs may be attributed to positive confidence effects in the program context that implementation of high quality SCs can generate.

Evidence is also found for the medium-run growth impact of IMF-supported programs. Both stabilization policies and structural conditionality implemented during the program are estimated to have affected post-program potential growth positively and significantly. Debt reductions and increases in public investment and social spending during the program have generated lasting growth benefits beyond the program horizon. SCs also have mattered significantly for post-program potential growth, with stronger growth impact for higher quality SCs.

As to the longer-run growth impact, there is evidence that IMF-supported programs increase the likelihood of a sustained growth surge, by helping countries to implement policies conducive to macroeconomic stability and growth-enhancing structural reforms, as well as by strengthening the effectiveness of such policies in generating a growth surge. The results also suggest that IMF-supported programs have become increasingly effective at initiating growth surges over time.