EXCHANGE RATE POLICY, EXTERNAL ADJUSTMENT, AND GROWTH

This chapter examines how exchange rate policy in IMF-supported programs has helped to support growth and facilitate external adjustment. It looks in turn at experience with discrete transitions in the overall exchange rate regime, changes in real exchange rates arising from both external and internal depreciations, and the links between such exchange rate outcomes and adjustment and growth outcomes. The analysis here recognizes the fundamental principles of the Fund’s advice on exchange rate policy in both program and non-program contexts to respect the authorities’ choice of the exchange rate regime (ERR) while seeking to ensure consistency with the broader macroeconomic policy framework and that any exchange rate depreciation should be consistent with members’ obligation under Article IV to avoid manipulating exchange rates in order to prevent effective BOP adjustment or to gain an unfair competitive advantage.

In the face of an external shock, an exchange rate depreciation can help support growth and facilitate external adjustment by promoting expenditure switching and raising export profitability. Research looking into the aftermath of the GFC indicated that exchange rate adjustment may have helped to alleviate the adverse impact on growth during a crisis or when recovering from a crisis. A separate strand of literature on the impact of exchange rate overvaluation or undervaluation on long-term growth finds that growth accelerations are often correlated with real exchange rate depreciations. At the same time, however, exchange rate adjustment may be a double-edged sword, contributing to a “fear of floating,” as it risks destabilizing inflation expectations and imposing adverse balance sheet effects on the financial sector depending on country circumstances and economic structure.

EXCHANGE RATE REGIME TRANSITION

Consistent with previous findings, transitions in the exchange rate regime (ERR) in the program context were relatively rare during the evaluation period. Out of 131 programs in the evaluation sample, there were only 22 instances of regime transition (10 in GRA and 12 in PRGT programs) occurring in the program context (21 during the program period and one—Egypt (2016)—shortly before program approval as a prior action). Of these transitions, only 6 (5 GRA and 1 PRGT) were towards greater flexibility (all from intermediate to flexible}
regimes). All transitions toward greater fixity were from flexible to intermediate regimes, except for two small states (São Tomé and Príncipe and Solomon Islands) which moved from intermediate to fixed regimes. Most program countries with no regime transition were under an intermediate regime.

The infrequency of regime transition is not unique to program periods. Transition probabilities estimated for a sample of 192 countries for 2008–19 are broadly similar between program and non-program periods and exhibit a strong tendency for status quo (Table 8, Panels A and B). A notable exception is the transition probability from flexible to intermediate regimes, which is two times higher in the program period (10.7 percent) than in the non-program period (5.3 percent). Accordingly, the probability of staying in a flexible regime is actually lower in the program period (89.3 percent) than in the non-program period (94.7 percent). Within program periods, the results show that regime transition towards greater flexibility was more likely in GRA programs than in PRGT programs, while the opposite was the case for transition towards greater fixity (Table 8, Panels C and D).

Data from a finer regime classification in the AREAER database also suggest a tendency toward greater fixity rather than greater flexibility in programs with no regime transition in broad categories. Specifically, the average regime score (scaled between 1 and 10 based on the AREAER classification) during the program period was lower (i.e., closer to fixity) than the corresponding score for the initial regime at T−1, particularly in PRGT programs that operated under intermediate regimes. This result suggests that a change in the exchange rate regime was not used actively as a tool to facilitate external adjustment and support growth in IMF-supported programs under evaluation, particularly in PRGT programs.

A simple analysis of growth outcomes for programs with different exchange rate regimes provides some evidence that more flexible regimes have been associated with somewhat stronger growth performance in PRGT programs. For such programs, growth was on average higher for countries under intermediate and flexible regimes than under fixed regimes (including currency union and currency board arrangements), while import compression was particularly pronounced in countries under the hardest peg (currency union, currency board) (Figure 32). In GRA programs, interestingly, growth during the program was on average highest under fixed regimes (Panel B) and lowest and negative under the hardest peg (Panel A).

TABLE 8. EXCHANGE RATE REGIME TRANSITION PROBABILITY
(In percent)

<table>
<thead>
<tr>
<th></th>
<th>A. PROGRAM PERIOD</th>
<th>B. NON-PROGRAM PERIOD</th>
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<tbody>
<tr>
<td></td>
<td>Fixed</td>
<td>Intermediate</td>
</tr>
<tr>
<td>Fixed</td>
<td>100.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Intermediate</td>
<td>2.1</td>
<td>93.8</td>
</tr>
<tr>
<td>Flexible</td>
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<td>10.7</td>
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<table>
<thead>
<tr>
<th></th>
<th>C. GRA PROGRAMS</th>
<th>D. PRGT PROGRAMS</th>
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<tbody>
<tr>
<td></td>
<td>Fixed</td>
<td>Intermediate</td>
</tr>
<tr>
<td>Fixed</td>
<td>100.0</td>
<td>0.0</td>
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<tr>
<td>Intermediate</td>
<td>0.0</td>
<td>89.7</td>
</tr>
<tr>
<td>Flexible</td>
<td>0.0</td>
<td>8.2</td>
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</tbody>
</table>

Source: Bal Gündüz and Darius (2021).
Note: Each entry in the matrix represents the probability of transition from the regime in the row to the regime in the corresponding column. “Non-program Period” covers the non-program periods of both program and non-program countries.

53 These six instances are Armenia, Egypt, Georgia, Jamaica, Malawi, and Sri Lanka. However, Armenia, Egypt, Malawi, and Sri Lanka subsequently shifted back to intermediate regimes. Only Georgia and Jamaica still maintain a floating currency (since 2013 and 2017, respectively). Indeed, several countries had more than one regime transition during the program, leaving the number of programs with enduring regime transitions at 12 in the evaluation sample.
DEVELOPMENTS IN NOMINAL AND REAL EXCHANGE RATES

This section first looks at the higher-frequency developments in bilateral nominal exchange rates to capture the dynamics before and in the early phase of the program when movements are likely to be more pronounced than later in the program, particularly for countries facing sharp reversals in capital flows. It then examines how nominal exchange rate movements were translated into adjustments in nominal effective exchange rates (NEERs) and real effective exchange rates (REERs).

Developments in the Bilateral Nominal Exchange Rate

IMF-supported programs have often involved a significant nominal depreciation against the U.S. dollar. Specifically, the bilateral nominal exchange rate vis-à-vis the U.S. dollar (NER) depreciated by on average about 13 percent over the period between T−6 (6 months prior to program approval) and T+36 (36 months after program approval) in both GRA and PRGT programs (Figure 33). Cross-country variation was significantly larger in GRA programs than in PRGT programs, as indicated by the interquartile range in shade. It is notable, albeit not surprising, that NER depreciation prior to program approval was quite sharp for the bottom quartile of GRA programs, many of which were exceptional access and crisis programs. In contrast, for a quarter of GRA programs, the NER remained unchanged (pegged to...
the U.S. dollar) or appreciated. In PRGT programs, the NER depreciated by more than 5 percent by T+36 in more than three-quarters of programs. While individual country experiences differed widely, it is notable that the depreciation trend on average continued until 36 months after program approval in both GRA and PRGT programs.

Developments in the NEER and REER

Taking into account movements in third currencies, movements in the NEER were on average much more muted than those in the NER, although there is substantial cross-country variation, particularly in GRA programs (Figure 34). The median NEER depreciated by a mere 1 percent and 4 percent by T+36 in GRA and PRGT programs, respectively, while cross-country variation is substantially larger in the former. For the bottom quartile of GRA programs, the NEER depreciated by 18 percent or more by T+36.

Adjusting for inflation differentials, changes in the REER—a measure of exchange rate competitiveness—were typically even more modest. The median REER depreciated by only 1.3 percent by T+36 in GRA programs with only limited cross-country variation and the median REER appreciated by 0.8 percent in PRGT programs. Notably, about a quarter of PRGT programs had a REER appreciation of 10 percent or more by T+36, attributed to higher inflation compared to trading partners. The REER appreciated by more than 5 percent in about a quarter of GRA programs over a similar period.

While movements in the NEER were only partially reflected in shifts in the REER due to inflation pass through, cross-section data do show a highly significant bivariate relationship between changes in the NEER and REER during the program period consistent with significant potential for exchange rate policy as a tool for external adjustment (Figure 35). To be specific, in completed programs, a 1 percent depreciation in the NEER translated on average into about 0.6 percent depreciation in the REER not only in GRA programs but also in PRGT programs where exchange rate pass-through to inflation (ERPT) is more likely to be a policy concern than in GRA programs (Bal Gündüz and Darius, 2021). This result does not

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54 GRA program countries in the top quartile that had a U.S. dollar peg are Antigua and Barbuda, Djibouti, El Salvador, Grenada, Iraq, Jordan, and St. Kitts and Nevis.

55 Exchange rate pass-through to inflation (ERPT) affects the extent to which nominal exchange rate changes translate into real exchange rate adjustments, and ERPT itself is influenced by the monetary policy regime (Taylor, 2000). Maintaining low and stable inflation reduces ERPT, which in turn helps to sustain low inflation and stabilize inflationary expectations. Evidence in the literature suggests that the ERPT in developing countries ranges between 0.1 and 0.5.
**FIGURE 34. DEVELOPMENTS IN NEER AND REER**
(Increase = appreciation)

GRA Programs
(T -6 = 100)

A. NEER

PRGT Programs
(T -6 = 100)

B. REER

Source: Bal Gündüz and Darius (2021).

Note: The numbers on the horizontal axis represent months from program approval with negative numbers for pre-program period.

**FIGURE 35. BIVARIATE RELATIONSHIP BETWEEN CHANGES IN THE NEER AND REER**

Sources: IMF, INS database; and IEO staff estimates.

Note: Changes in the NEER and REER are calculated as the percent change in the average during the program compared to the 12-month average before program approval.
hold, however, for incomplete programs, underlining the importance of ensuring confidence in the macroeconomic framework to contain ERPT.

Figure 36 provides a more detailed picture of the distribution of outcomes for the REER across GRA and PRGT programs. It confirms that REER depreciation was generally larger in GRA programs than in PRGT programs. Among PRGT programs, changes in the REER were more skewed to appreciation with a significant number of programs having REER appreciation above 5 percent (Figure 36, top panels). In contrast, a majority of GRA programs had some REER depreciation, which exceeded 4 percent for most crisis programs. Notably, REER movements towards depreciation were more limited for members of currency unions (Figure 36, bottom right panel), although three countries (Benin, Burkina Faso, and Senegal) did manage to achieve a REER correction of 5–7 percent through a combination of “internal devaluation” and NEER depreciation.

A significant clustering of changes in the REER around zero suggests that in practice changes in exchange rate competitiveness were not frequently achieved in programs to ease the adverse impact of adjustment on growth.

To put the magnitude of these exchange rate changes during programs into historical perspective, annual changes in the REER are measured relative to the country-specific standard deviation calculated over 2000–19. Focusing on the first year of the program during which exchange rate corrections were most likely, about one-fifth of GRA programs and a quarter of PRGT programs achieved a REER depreciation exceeding one standard deviation during the first program year (Figure 37, Panels A and B). As to changes in the NER, one-third of GRA programs and two-fifths of PRGT programs achieved nominal depreciation above one standard deviation (Figure 37, Panels C and D).

Notwithstanding that movements in the REER were generally quite muted during the program period, the exchange rate tool does appear to have been used to correct significant REER overvaluations prior to program approval. When assessed by the percentage deviation from the trend

FIGURE 36. CROSS-COUNTRY DISTRIBUTION OF CUMULATIVE REER CHANGES DURING PROGRAMS (Share of programs; in percent)

A. GRA

B. PRGT

C. Crisis Programs

D. Currency Union

Source: Bal Gündüz and Darius (2021).
Note: Based on the percentage change in the program average (i.e., 36-month average after program approval relative to 12-month average before program approval). Positive (negative) values on the horizontal axis represent appreciation (depreciation).
REER, GRA programs had on average larger overvaluations immediately prior to program approval than PRGT programs (Figure 38). REER overvaluation exceeded 4 percent at T–1 for a quarter of GRA programs but in less than one-fifth of PRGT programs. Cross-country evidence suggests that initial REER overvaluation was corrected quite quickly and even reversed by the first year of the program as indicated by the black trend line for the full sample in Figure 39. In cases where initial overvaluation exceeded 4 percent, REER correction was on average two times larger than initial overvaluation as indicated by the red trend line.

**REAL EXCHANGE RATES, EXTERNAL ADJUSTMENT, AND GROWTH**

This section examines the role of REER depreciation in promoting adjustment and growth in the program context. Upfront, it should be recognized that the bivariate relationship between REER and adjustment and growth masks the influence of a host of other factors and thus may not capture appropriately the marginal impact of REER depreciation on growth. Thus, the multivariate results presented subsequently are more reliable.

Looking first at adjustment, while bivariate results suggest only a weak impact of REER depreciation on the current account, a multivariate analysis which controls for other factors that affect CA adjustment paints a more encouraging picture, particularly for GRA countries. Specifically, bivariate data for GRA programs suggest that REER depreciation appears to have promoted not only exports but also imports, resulting in limited contribution of REER depreciation to CA adjustment (Figure 40, left panels). The bivariate relationships between REER depreciation and CA adjustment or adjustments in exports and imports in PRGT programs are broadly similar to those in GRA programs with limited contribution to CA adjustment (Figure 40, right panels). Nevertheless, the multivariate regression analysis reported in Bal Gündüz and Darius (2021), which takes account of adjustment policies, shows

**FIGURE 37. CROSS-COUNTRY DISTRIBUTION OF CHANGES IN REER AND NER: FIRST YEAR OF THE PROGRAM**

(Positive figures indicate appreciation)

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Source: Bal Gündüz and Darius (2021).
Note: Based on annual data. Standard deviations are country-specific and calculated by using the annual data over 2000–19 for each country.
FIGURE 38. PERCENTAGE DEVIATION FROM TREND REER
(Positive figures indicate appreciation)

A. GRA

B. PRGT

Source: Bal Gündüz and Darius (2021).
Note: The trend REER is estimated by applying the HP filter to annual REER data for each country. T refers to the first year of the program.

FIGURE 39. REER REACTION TO PRE-PROGRAM OVERVALUATION
(Positive figures indicate appreciation or overvaluation)

Source: Bal Gündüz and Darius (2021).
Note: REER overvaluation is measured by the percentage deviation of the actual REER from the historical trend. The linear trend line in red is for REER overvaluations exceeding 4 percentage points only.
FIGURE 40. EXTERNAL ADJUSTMENT AND CHANGE IN REER

Source: Bal Gündüz and Darius (2021).
Note: CAB stands for the current account balance as a share of GDP.
that for program countries (excluding small states) over the evaluation period, the effect of REER changes on CA adjustment is highly significant with the expected sign for GRA countries, although not significant for PRGT countries. The regression results suggest that a 10 percent REER depreciation helped to increase the CA balance in the order of 1.0–2.6 percent of GDP depending on the level of trade openness (with the effect being larger for higher trade openness).

Turning to growth, the bivariate relationship between REER changes and growth is generally weak in GRA programs where more REER depreciation is associated with lower, and not higher, growth. However, this result is largely influenced by the relationship observed in crisis programs which typically experienced the largest changes in REER as well as less favorable growth outcomes in view of large adjustment needs (Figure 41, left panel). In contrast, larger REER depreciation is on average associated with higher growth in PRGT programs (Figure 41, right panel).

Again, multivariate regression analysis, which takes account of adjustment policies, found clearer evidence of benefits from REER changes (Kim and others, 2021). In particular, this work found that where it has occurred, real effective depreciation (DREER <0) has helped to boost growth, particularly in PRGT programs where a 10 percent real depreciation is estimated to boost growth by 1.1–1.7 percentage points. For GRA programs, the same 10 percent real depreciation is estimated to boost growth by 0.4–2.9 percentage points although the impact is generally not statistically significant.

**LESSONS FROM COUNTRY EXPERIENCE**

Consistent with the empirical analysis, only a minority of the case study countries experienced significant real depreciations during the evaluation period. Among the completed programs, six countries achieved real exchange rate depreciations exceeding 5 percent in cumulative terms during the program period (Figure 42). Egypt (2016) and Malawi (2012) had the highest real depreciations although also experiencing sharp spikes in inflation. In the former case, exchange rate management was complicated by a surge in capital inflows at a depreciated exchange rate, while in the latter fiscal and monetary policies were not tightened sufficiently. Significant nominal depreciation under Ghana’s floating regime translated into relatively modest real depreciation owing to high inflation in the 2009 program. Benin (2010) and Senegal (2010), both of which are members of the West African Economic and Monetary Union (WAEMU) and share a currency pegged to the euro, achieved real depreciation through a combination of

**FIGURE 41. GROWTH OUTCOMES BY CHANGE IN THE REER: COMPLETED PROGRAMS**

Source: Bal Gündüz and Darius (2021).

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56 Bal Gündüz and Darius (2021) reports that in other GRA programs, REER depreciation of more than 10 percent was associated with significantly higher growth than the benchmark.
The experience with adjustment and growth outcomes varied widely across these six cases. Egypt, Ghana, and Senegal achieved substantial current account adjustment. In Egypt, exports responded strongly to real depreciation as the program addressed upfront the significant overvaluation and the disruptive shortages of foreign exchange that had crippled the economy, which helped to support Egypt’s strong growth performance during the program. In Senegal, export performance also benefited from the real depreciation but competitiveness problems (including non-price factors) remained an issue holding back private sector performance. While Ghana’s exports increased significantly following its depreciation, external imbalances reemerged at the end of the program owing to highly expansionary fiscal policy, which led to a successor arrangement. In Malawi (2012), the envisaged effects of exchange rate regime reforms on diversification did not materialize given non-price impediments. Mongolia’s export sector is dominated by the mining sector, so export performance has depended more on international commodity prices and supply factors; flexible exchange rate management in the 2009 program was intended as part of the macroeconomic policy framework rather than to gain export competitiveness.

The experience of countries with currency pegs shows that some competitiveness gains can be achieved with appropriate domestic policies while maintaining the peg. Latvia (2008) is a case in point. Latvia faced an estimated 30 percent overvaluation and in the program’s first year, GDP declined by 14 percent, triple the projected contraction. While maintaining its currency peg to the euro, Latvia restored external competitiveness unexpectedly quickly, through a surge in labor productivity rather than a decline in domestic wages and prices, and exports recovered strongly (helped partly by the contraction in domestic demand). However, Latvia’s experience seems to be historically unusual. As mentioned above, two WAEMU members (Benin and Senegal) also experienced real effective depreciations albeit in part because of the decline of the euro against the dollar, and Benin in particular benefitted from improved export performance in the context of efforts to improve transportation infrastructure. By contrast, Cameroon, which is a member of the Central African Economic and Monetary Community (CEMAC), entered a program in 2017 alongside all other CEMAC members in the face of a large decline in oil prices and unsustainable fiscal policies, but was not able to achieve much improvement in competitiveness to support non-oil exports.

Several country case studies illustrate the practical difficulties involved in managing and sustaining a shift to a more flexible exchange rate regime. The Egypt (2016) program envisaged moving to a fully floating regime and had a prior action on an upfront devaluation but shifted back to an intermediate regime in 2017, preferring to limit exchange rate fluctuations in the face of volatile capital flows. Malawi (2008, 2010) aimed to introduce greater exchange rate flexibility to eliminate parallel market premia. Ahead of the 2012 program, the authorities adopted

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57 The depreciation of the euro against the U.S. dollar contributed to NEER depreciation in Benin but far less in Senegal due to different composition of trading partners.

58 In many crisis programs, internal devaluation itself proved hard to achieve and the desired recovery in growth and exports did not materialize (IMF, 2015b; IEO, 2016). Difficulties in restoring competitiveness through internal devaluation was confirmed by the ex-post assessment for Greece’s 2010 program (IMF, 2013c) and Portugal’s 2011 program (IMF, 2016). More recent evidence also suggests that the output costs of external adjustment via internal devaluation were higher than anticipated in some euro area countries during 2010–14 (Lambertini and Proebsting, 2019).
a floating rate regime, but the float proved highly volatile in the face of swings in demand for foreign exchange, and after a high inflation episode, Malawi moved back to an intermediate regime in 2016. Mongolia (2009) had a prior action on the introduction of foreign exchange auctions. The return of commodity boom-bust cycles led to another program in 2017 amid a sharp depreciation of the exchange rate and reserve losses. In fear of worsening debt dynamics and balance sheet risks, Mongolia shifted back to an intermediate regime in 2018. Even in cases that successfully transitioned to a floating regime, concerns about the consequences of floating delayed the regime change. In Jamaica (2010), for example, the authorities initially pushed against Fund advice for greater flexibility due to concerns for pass-through to inflation, lack of national support, and delayed responsiveness of exports to the exchange rate. Jamaica (2013) included commitments to exchange rate flexibility, measures to develop fully the interbank foreign exchange market, and further steps towards a full-fledged inflation targeting regime. Helped by these measures, Jamaica eventually shifted to a floating regime in 2017 during the 2016 successor program, and has seen a pickup in export growth. Ukraine moved to a more flexible exchange rate regime in 2009 which aimed at reducing reliance on capital controls, returned to a peg in 2011, and then floated the rate in 2014 in the face of heavy market pressures in a highly uncertain policy environment. Although Ukraine needed to introduce capital controls as security-related uncertainties intensified in 2015, it has subsequently been able to maintain a flexible rate regime backed by introduction of inflation targeting. In a number of cases with intermediate exchange rate regimes, programs tolerated gradual real effective appreciation in the context of stabilization efforts, notwithstanding the staff’s assessment of overvaluation at program approval or earlier. Honduras (2014) introduced a crawling peg in the 2010 SBA/SCF to provide more scope to protect competitiveness after considerable appreciation under the previous peg, but the REER continued to rise albeit at a reduced rate. In Pakistan (2013), the exchange rate was managed heavily as a contribution to inflation control in the 2008 SBA and 2013 EFF, allowing a gradual appreciation of the real effective exchange rate; the loss of competitiveness was eventually reversed by a sharp market driven depreciation ahead of the 2019 EFF.

The case study experience clearly indicates that a shift towards active use of a flexible exchange rate as a policy tool needs careful technical preparation and policy support—in particular to establish a liquid foreign exchange market, a credible monetary policy regime to provide an alternative inflation anchor to limit exchange rate pass through to inflation and consistent macroeconomic policy settings. In all the cases with regime shifts, the Fund played a significant role in supporting more flexible exchange rate management through its capacity development work related to exchange rate management, market development, and the monetary policy framework, which was well appreciated. However, success clearly depended on strong buy-in and commitment from the country authorities.

**ASSESSMENT**

The experience assessed in this chapter suggests that greater exchange rate flexibility did help to improve competitiveness and support external adjustment and growth in a number of programs, particularly in GRA cases involving significant initial currency overvaluation. However, shifts in exchange rate regime and substantial depreciations in the real exchange rate were relatively infrequent, and were often not sustained post program. In a number of cases, the gravitational pull towards intermediate regimes reasserted itself after short episodes of floating, reflecting at least in part fear of floating. Moreover, a number of PRGT programs relying on heavily managed exchange regimes as an inflation anchor experienced quite significant real exchange rate appreciations, suggesting an over-reliance on the exchange rate as a tool to control inflation with adverse implications for growth.

This experience suggests that the exchange rate tool could be used more actively as a means to support growth outcomes while achieving external adjustment, subject to the principle that the exchange rate regime choice is ultimately the authorities’ decision and to members’ obligations under Article IV to avoid manipulating exchange rates in order to prevent effective BOP adjustment or to

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59 The staff’s exchange rate assessments are taken from the IMF country reports at program approval or the latest Article IV consultation report prior to program approval.
gain an unfair competitive advantage. This said, the ground for more active use of the exchange rate would need to be well prepared. Policies to contain the inflationary impact of depreciation and a monetary policy framework that anchors inflation expectations are required to ensure the effectiveness of the exchange rate as a policy tool to improve competitiveness, especially in PRGT programs. Where they have worked well, they have followed various paths depending on country circumstances—for example, regime transition towards greater flexibility; more aggressive use of flexibility available under intermediate regime; and internal devaluation. To address obstacles to greater use of the exchange rate tool, there needs to be early attention to: (i) technical issues and related TA support to build functioning foreign exchange markets; (ii) the need to ensure adequate anchors (e.g., build a credible inflation targeting monetary policy regime) to limit exchange rate pass through to prices; and (iii) reducing non-price obstacles to improved export performance and currency mismatches in the financial sector balance sheets.