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STRUCTURAL REFORMS AND MACROECONOMIC PERFORMANCE: INITIAL CONSIDERATIONS FOR THE FUND

IMF staff regularly produces papers proposing new IMF policies, exploring options for reform, or reviewing existing IMF policies and operations. The following document(s) have been released and are included in this package:

- The **Staff Report** prepared by IMF staff and completed on October 13, 2015

The report prepared by IMF staff has benefited from comments and suggestions by Executive Directors following the informal session on October 28, 2015. Such informal sessions are used to brief Executive Directors on policy issues and to receive feedback from them in preparation for a formal consideration at a future date. No decisions are taken at these informal sessions. The views expressed in this paper are those of the IMF staff and do not necessarily represent the views of the IMF's Executive Board.

The documents listed below have been or will be separately released.
- Structural Reforms and Macroeconomic Performance: Country Cases.

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INTERNATIONAL MONETARY FUND

October 13, 2015

STRUCTURAL REFORMS AND MACROECONOMIC PERFORMANCE: INITIAL CONSIDERATIONS FOR THE FUND

EXECUTIVE SUMMARY

Structural policies have become a prominent feature of today's macroeconomic policy discussion. For many countries, lackluster economic growth and high unemployment cloud the outlook. With fewer traditional policy options, policymakers are increasingly focused on the complementary role of structural policies in promoting more durable job-rich growth. In particular, the G20 has emphasized the essential role of structural reforms in ensuring strong, sustainable and balanced growth.

Against this backdrop, the 2014 Triennial Surveillance Review (TSR) called for further work to enhance the Fund's ability to selectively provide more expert analysis and advice on structural issues, particularly where there is broad interest among member countries. The purpose of this paper is to engage the Board on staff's post-TSR work toward strengthening the Fund's capacity to analyze and, where relevant, offer policy advice on macro-relevant structural issues.

While there is already an extensive range of work underway across the Fund, this paper lays out considerations to help frame a more strategic approach on structural issues that would better support the range of macro-structural needs of member countries. In that regard, this paper does not signal a dramatic shift in the Fund's agenda or coverage of structural issues; nor does it aim to provide a "how to" guide for advising countries on specific structural reforms. Instead, it focuses on "what" structural reforms are most likely to have macroeconomic implications, without attempting to do justice to the entire spectrum of issues that come under the structural reform umbrella.

To this end, the paper deploys a number approaches to identify reform areas most relevant across the membership.

- The empirical analysis finds a broadly positive relationship between structural reforms and productivity—in short, structural reforms matter. Importantly, the potential payoff from different reforms varies across income groups. The results also suggest that the benefits of reform tend to become more pronounced when reforms are bundled together.
- Given the need for care in interpreting the empirical findings, the paper also explores lessons from six country cases. Their reform experiences tend to reinforce the empirical findings and resonate with historical reform patterns. Moreover, these experiences hint at potential lessons for effective reforms, including the importance of strong ownership, the ability to sustain reforms, and the need for complementary macroeconomic and structural policies.

- These findings, together with an initial assessment of country needs, point to differentiated structural reform priorities across different country groups, reflecting stages of development. Nevertheless, some common reform priorities emerge where there is likely to be more broad-based interest across the membership.

Looking ahead, the approach and priorities identified in this paper can help guide the Fund in supporting countries' macrostructural policy needs. At an institutional level, the Fund's operational efforts should be geared toward countries' shared priorities. The Fund should continue to focus on structural reforms within its traditional areas of expertise—namely, fiscal structural and financial sector reforms. There are however other common priorities, outside of the Fund's traditional areas of expertise yet within its mandate, and where there is likely to be broad-based demand across the membership. In such areas, the Fund may need to scale up its efforts to build in-house expertise. In areas where there is less likely to be widespread demand across the membership, the Fund should actively collaborate with and leverage other institutions' expertise.

The goal is to develop a richer analytical foundation and range of tools—from within and outside the Fund—that country teams can leverage in their analysis and advice. Four complementary tracks of future work can help move this agenda forward: more systematically assessing country needs; ongoing analytical work; developing an analytical toolkit for staff; and developing modalities for inter-agency collaboration. This is not to say that Fund's macrostructural analysis and advice in individual cases should be limited to those areas. Ultimately, Article IV consultations should always be country-specific.

Approved By
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Prepared by Strategy, Policy, and Review Department, in consultation with area and functional departments.

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The country case studies—Armenia, Australia, Malaysia, Peru, Tanzania, and Turkey—were prepared in collaboration with area departments.

The team is also grateful for additional assistance and inputs from SPR colleagues (Greg Basile, Alexander Culiuc, Ilse Peirtsegaele, Jiemin Ren, Chad Steinberg, and Joanna Zaffaroni), as well as area and functional departments in compiling information on recent Fund-wide analytical work on structural issues, and respondents to the survey of Fund mission chiefs.

List of Abbreviations

AMs	Advanced Market economies
AML/CFT	Anti-Money Laundering/Combating the Financing of Terrorism
DSGE	Dynamic stochastic general equilibrium
EMs	Emerging Market economies
EMDCs	Emerging Market and Developing Countries
GPA	Global Policy Agenda
ILO	International Labor Organization
IMF	International Monetary Fund
LIDCs	Low-Income Developing Countries
NPLs	Non-Performing Loans
OECD	Organization for Economic Cooperation and Development
PRGT	Poverty Reduction and Growth Trust
QE	Quantitative Easing
R&D	Research and Development
REER	Real Effective Exchange Rate
REO	Regional Economic Outlook
TFP	Total Factor Productivity
TSR	Triennial Surveillance Review
ULC	Unit Labor Cost
UMP	Unconventional Monetary Policy
WEO	World Economic Outlook
ZLB	Zero Lower Bound

INTRODUCTION

1. **Structural policies have become increasingly central to the policy debate on how to strengthen countries' macroeconomic performance.** Since the global financial crisis, much of the Fund's membership has been grappling with how to break the cycle of lackluster growth and high unemployment, albeit with increasingly limited policy options. Moreover, the crisis has taken a toll on productivity growth, compounding the productivity slowdown that for many countries began well before the crisis. To this end, the policy debate has focused increasingly on the role of structural policies in boosting potential growth and economic resilience to promote more durable growth. The G20 has recognized "the essential role of structural reforms in ensuring strong, sustainable and balanced growth."[1] The Fund has also called for efforts to accelerate structural reforms as "an essential complement to demand-boosting efforts."[2]

2. **Against this backdrop, the Fund needs a strategic and analytically sound approach to effectively support the range of macro-structural needs across *all* member countries.** The 2014 Triennial Surveillance Review (TSR) set out broad principles to guide when and how the Fund should engage on structural issues. It also called for further work to boost our understanding of structural issues, building expertise where there is broad-based interest among member countries and improving the modalities for leveraging the expertise of other agencies where possible. There is already an extensive range of work underway across the Fund to examine the macroeconomic implications of structural reforms and raise awareness of country experiences. Looking ahead, the goal is to build on these efforts to more consistently integrate macro-structural issues in the Fund's day-to-day operations.

2014 TSR Recommendation:

"Be selective in advising on structural policies. Recognize all macro-critical structural issues and their implications on an economy; follow principles to determine where to provide advice: macro-criticality, and Fund expertise or interest from 'critical mass' of the membership (e.g., financial deepening and labor market issues); in other areas, leverage advice from other international organizations."

3. **As a first step toward this broader agenda, this paper sets out considerations to help frame a more strategic approach.** The objective of this paper is not to signal a dramatic shift in the Fund's agenda or coverage of structural issues; nor does it aim to provide a "how to" guide for advising countries on specific structural reforms. Given the breadth and diversity of issues that come under the structural reform umbrella, one paper cannot do justice to the entire spectrum of issues. At this stage, the goal is to articulate more clearly, and give more analytical support to, the focus on particular structural reforms important for macroeconomic performance. In effect, this paper focuses on "what" structural reforms are, on average, most likely to have macroeconomic implications and thus be relevant for the Fund's dialogue with its members.

4. **Identifying the reform areas most relevant across the membership will help orient possible avenues of future work.** A central objective will be to provide a consistent and

[1] G20 Communiqué, Meeting of G20 Finance Ministers and Central Bank Governors, 16-17 April 2015.

[2] *The Managing Director's Global Policy Agenda*, Spring 2015.

evenhanded basis for engaging with member countries on structural issues—and, importantly, to avoid institutional overreach. Any approach should also be sufficiently flexible to ensure that the Fund's policy analysis and advice reflects each country's specific circumstances and needs. In this regard, the relationship between reforms and the macroeconomy are complex and varied, with a number of dimensions—covering direct and indirect implications for economic growth, stability, resilience and inclusion—that are potentially relevant for the Fund. Future work should therefore seek to understand more fully the needs of member countries, as well as delve more deeply into the macro-relevant effects of structural reforms and, where relevant, approaches to implementation.

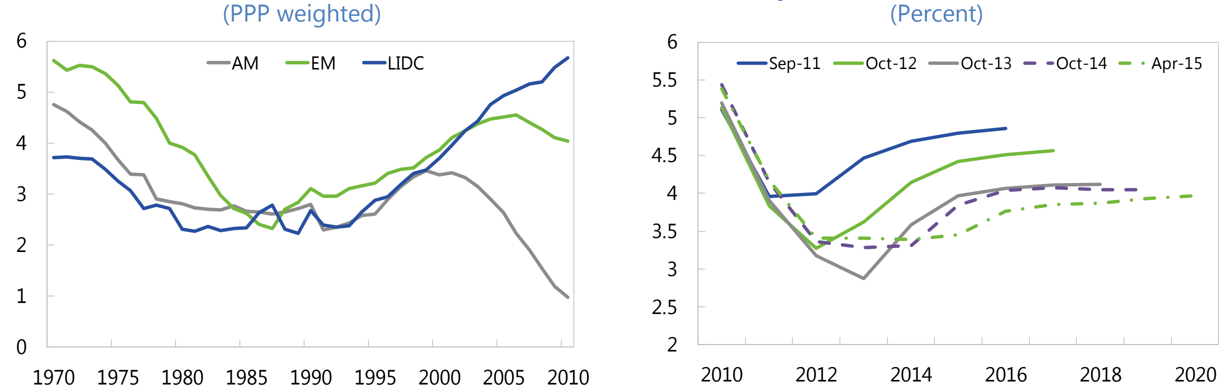
5. The paper is organized as follows: Section II provides context on the evolving policy challenges for member countries and the increased attention to structural issues, including at the Fund; Section III presents stylized facts on the pattern of structural reforms over the past 30–40 years; Section IV assesses the relationship between structural reforms and productivity, including the relative benefits for different country groups as well as the implications of larger scale reforms and waves of contemporaneous reforms; Section V delves into the reform experiences of selected country experiences; Section VI explores considerations for the Fund's operational approach to support the current reform priorities of member countries; Section VII discusses next steps in the Fund's work on structural reforms; and Section VIII sets out possible issues for discussion.

THE POLICY CONTEXT

6. Seven years after the onset of the crisis, a balanced, durable and job-rich recovery remains elusive. Despite a rebound in global financial markets, global economic activity continues to disappoint. Since 2011, global growth has averaged around 3.5 percent, compared to an average of 4.2 percent between 1997 and 2006. The latest World Economic Outlook forecasts global GDP growth of around 3.1 percent this year, more than a percentage point lower than projected in September 2011 (Figure 1). At the same time, global unemployment remains stubbornly high at over 215 million people at end-2014, with particularly high rates in the Euro area, the Middle East and North Africa, and parts of Latin America (Figure 2).

Figure 1. Trend and Projected Growth

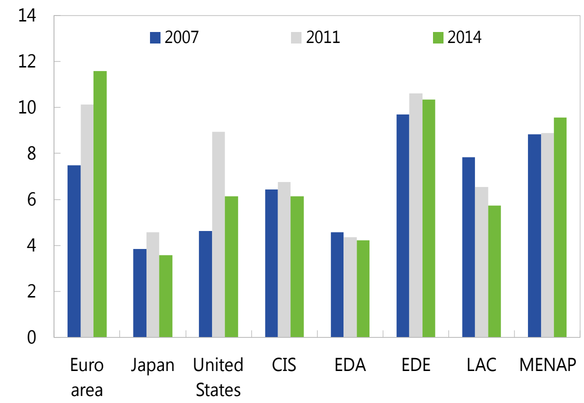
Trend GDP Growth (PPP weighted) | **Projected Global GDP Growth Rate** (Percent)



Source: Penn World Tables. | Source: World Economic Outlook.

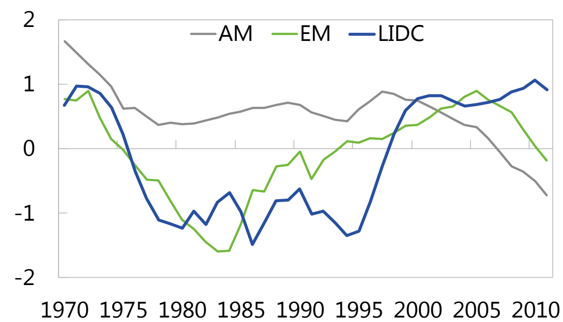
7. Cyclical and structural factors are at play in this subdued global growth performance, although the slowdown in productivity growth has been a telling factor. A sustained decline in potential output growth in advanced economies (AMs) began well before the crisis, driven largely by falling total factor productivity (TFP) growth and low employment growth (Figure 3). While the crisis further eroded TFP growth in the short-term, it also weighed heavily on investment and capital growth as well as potential employment growth, putting added downward pressure on potential growth among AMs. For emerging markets economies (EMs), lower TFP growth was also a key factor in the more recent decline in potential output growth, whereas potential employment and capital growth were largely unaffected by the crisis (Figure 4).[3] While potential output growth remains stronger in low-income developing countries (LIDCs), this tends to reflect factor accumulation rather than TFP growth. At the same time, for both EMs and LIDCs, the cyclical rebound from the crisis has also petered out. Domestic demand has

Figure 2. Unemployment Rate



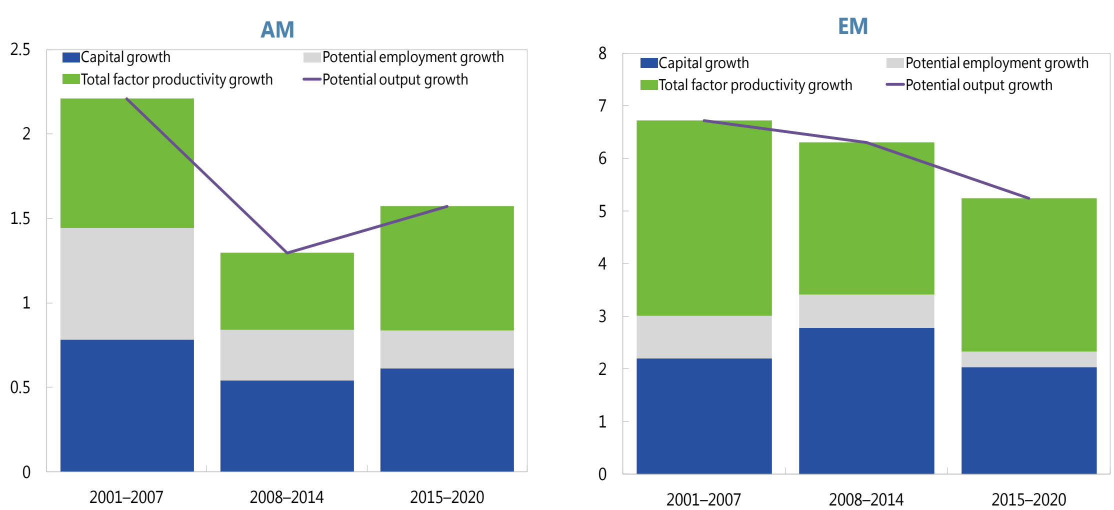
Source: World Economic Outlook, April 2015.

Figure 3. TFP Growth



Source: Penn World Tables.

Figure 4. Evolution of Potential Output Growth and its Components



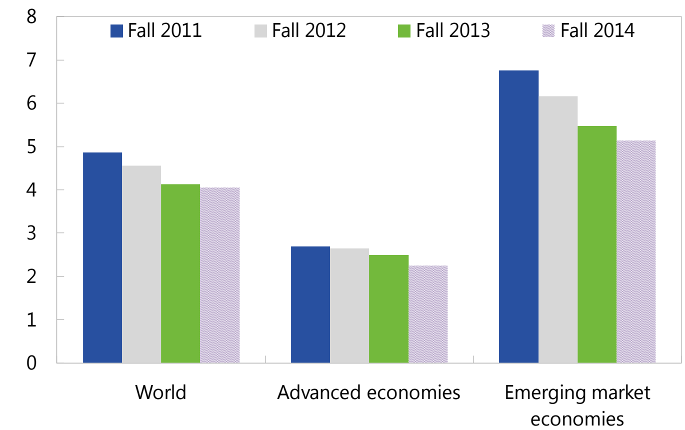
Source: World Economic Outlook, April 2015.

[3] World Economic Outlook, Chapter 3, *Where are we Headed? Perspectives on Potential Output*, April 2015.

normalized and the favorable external environment that facilitated income convergence over the past decade—high commodity prices, low interest rates and buoyant trade—has weakened.

8. **With TFP growth faltering in many countries, weak actual and potential growth continue to cloud the outlook**. Only a moderate global recovery is envisaged over the medium term (Figure 5). Repeated markdowns in growth forecasts—mainly among AMs and EMs, but also some LIDCs—demonstrate the uncertainty surrounding medium-term projections and the risk of a "new mediocre" if secular stagnation takes hold in AMs and/or potential output growth is much lower-than-expected in EMs and LIDCs. Although AMs could see some recovery in potential output growth on the back of a small rebound in TFP, it will likely remain below pre-crisis rates for some time, held back by unfavorable demographics and subdued investment. In EMs, potential output is expected to decline further, with lower TFP, capital, and employment growth. Although potential output growth may continue to rise in LIDCs, TFP growth is expected to remain persistently flat—especially at a time when raising potential growth is essential to generate the jobs needed for the growing working age population.

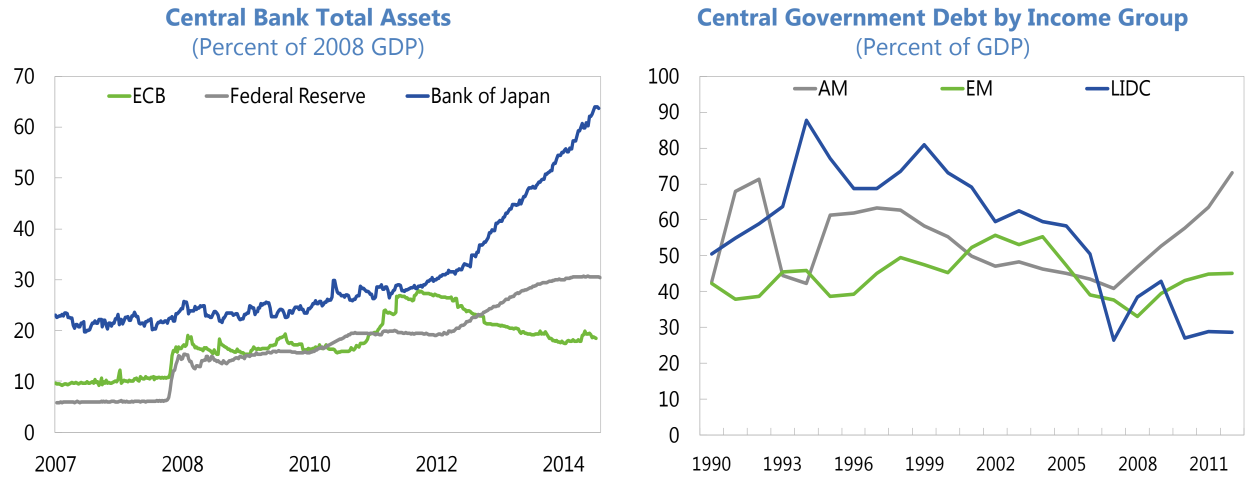
Figure 5. Medium-Term Growth Projections (percent)



Source: World Economic Outlook, April 2015.

9. **In this context, policymakers should continue to support demand where feasible, recognizing that policy support faces increasing constraints in many countries** (Figure 6). For AMs, the initial rounds of fiscal stimulus, and aggressive and unconventional monetary policies (UMP) were vital to jumpstart the recovery and prevent a financial system meltdown. As monetary policy rates approached the zero lower bound (ZLB), subsequent waves of UMP sought to further support the economy with bond purchases (QE). While circumstances vary among countries, the potential limits on demand-side policy space are, however, now becoming increasingly visible for much of the membership. The average debt-to-GDP ratio for AMs remains above 100 percent and will likely decline only very slowly in a slow growth, low inflation environment. Monetary policy rates remain close to the ZLB, even breaking into negative territory in some countries. Although of a different nature, EMs and LIDCs also have to contend with more limited macroeconomic policy space—for many inflation is above target, monetary policy rates are already low (or below neutral) and fiscal positions have weakened as a result of policies to counter the fallout from the crisis.

Figure 6. Monetary and Fiscal Policy Space



Source: World Economic Outlook.

Source: World Development Indicators.

10. Another consideration is that structural rigidities and market imperfections can also weigh on the effectiveness of demand-side policies and the efficient allocation of resources. UMP, particularly QE, proved crucial to supporting aggregate demand. And there is still unexploited scope in some countries for further demand support that need to be considered. However, over time the liquidity injected by central banks increasingly remains deposited as excess reserves, and corporates sit on large cash stockpiles. Complementary reforms to improve transmission mechanisms,[4] will help accommodative monetary policies become more effective in raising real investment. In contrast, overreliance solely on UMP can boost asset prices and generate financial stability risks. It is also telling that the recent confluence of generally favorable conditions—lower oil prices and the major depreciation in exchange rates—have yet to deliver a decisive boost to the real economy.

11. Consequently, there is increasing interest in the role of structural policies in securing more durable and job-rich growth. With faltering potential growth, persistent economic slack and, in some cases, constraints on demand support (both policy space and efficacy), structural reforms can be a critical component of a broader policy response. On the supply side, improving the allocation of resources and increasing investment can raise TFP—a key driver of actual and potential output growth. On the demand side, credible structural reforms can signal medium-term policy commitment, helping to build confidence and stimulate investment in the short term. Over time, structural reforms can also help to improve economic resilience. Stronger medium-term growth can improve debt dynamics, reinforcing efforts to rebuild policy buffers. Also, addressing underlying structural rigidities and the misallocation of resources can improve how an economy dynamically responds to shocks and to demand-support policies.

[4] For instance, insolvency reforms that incentivize the resolution of non-performing loans (NPLs) can help remove impediments to new lending.

12. The channels through which structural reforms impact the macroeconomy are, therefore, varied and complex, not all of which are sufficiently understood. For instance, initial conditions can be crucial for the impact of reforms—in terms of both size and duration—but there is no unanimity of views on exactly how. Similarly, regardless of initial conditions, while it is intuitive that the impact of some reforms is likely to accrue in the short term, for many others the effects are likely to accrue only over the medium- to longer-run. This all remains to be demonstrated in a sufficiently robust analytical framework, and the aim of this paper is not to take on these issues (although it could be a stream of future work). Rather the immediate objective, in line with the recommendations of the TSR, is to address an operational imperative—identify those structural reform areas that warrant more focus for the Fund.

13. A strategic approach can help guide this effort and, in time, better position the Fund to effectively engage across the wide range of countries' reform needs. Given the potential breadth of issues, we should be cognizant of the need to prioritize, and the Fund should continue to strive to better understand those reforms likely to strengthen macroeconomic performance and build economic resilience. That is not to imply that the Fund would prescribe a particular set of policies or take an overly narrow interpretation of macroeconomic relevance. To the contrary, the goal is to invest in analytical and operational approaches that continue to build a deeper understanding of the range of channels and macro-relevant effects of reforms. Over time, this would boost the Fund's capacity to deliver high-quality country-specific analysis and, where appropriate, advice. The Fund's mandate and *Articles of Agreement* can help guide these efforts, in line with its institutional responsibility (Box 1). At the same time, many structural issues will likely remain outside the Fund's areas of expertise, and exploiting opportunities for more effective collaboration with other agencies will be crucial to providing member countries with expert analysis in those areas.

14. The Fund has already stepped up its efforts to better appreciate the macroeconomic implications of structural reforms. This paper follows an extensive—and growing—analytical agenda both inside and outside the Fund (Boxes 2 and 3, respectively). A core element of the Fund's analytical work has focused on cross-cutting issues and assessing the impact of structural reforms on economic outcomes (such as, growth, productivity, employment, inequality). Other streams of work have targeted analyzing particular policy challenges or different types of reform (e.g., energy subsidy reform, labor market policies, fiscal structural reforms, infrastructure investment, insolvency reform, or financial deepening), and often as they relate to economic challenges faced by individual countries, groups of countries or regions. In this regard, bilateral and multilateral surveillance are playing an instrumental role in deepening the Fund's understanding of the relationship between structural reforms and macroeconomic performance. This, in turn, provides a stronger basis to leverage cross-country knowledge of policy experiences, while ensuring Fund analysis and policy advice is tailored to country circumstances.

Box 1. Basis for Fund Engagement on Structural Issues[1/]

The primary goal of the IMF is to promote global economic and financial stability. Article I of the *Articles of Agreement* sets out the purposes of the Fund and its role in supporting the rules and mechanisms for stability of the international monetary system; as well as facilitating the expansion and balanced growth of trade, and thereby contributing to the goal of member countries to promote and maintain high levels of employment and income.

Surveillance—with its core organizing principle of stability—is central to achieving this objective.[2/] To this end, multilateral surveillance pertains to global or regional economic and financial stability, and can encompass a wide range of country policies to the extent that they have wider spillovers. Bilateral surveillance focuses on an *individual* country's domestic and balance of payments stability and, as such, it always assesses exchange rate, monetary, fiscal and financial sector policies. However, it should also be tailored to reflect country circumstances and thus can cover other policies that have implications for stability. While growth is not strictly a goal of bilateral surveillance, in practice it often falls within its scope given the extent to which it can affect stability.[3/]

There are several channels through which structural issues could have a bearing on stability. For instance:

- *Impeding the efficient allocation of resources within an economy could contribute to the buildup of imbalances.* For example, impediments to competition and protection of the non-tradable sector can inhibit the development of the tradable sector and lead to an unsustainable external position.
- *Limiting flexibility could prevent timely adjustment to shocks and weaken the resilience of an economy.* For example, labor market rigidities (especially with regard to wage setting, unemployment benefits, severance pay) can contribute to high unemployment and low productivity growth. Similarly, impaired private sector balance sheets (with NPLs and debt overhang) can hold back lending and investment, constraining the pass-through of easier financial conditions.
- *Constraining potential, and eventually actual, growth can undermine stability.* For example, investment bottlenecks that constrain productivity and output growth can contribute to unfavorable debt trajectories, deteriorating financing conditions, and financial sector instability.
- *Generating imbalances in a member country or group of countries that impact global economic and financial stability.* For example, weak investment in AMs, infrastructure bottlenecks in EMDCs and deficiencies in LIDCs, can collectively weigh on short-term global demand and medium-term global growth prospects.

Assessing the implications of structural issues for stability requires judgment, taking into account country circumstances. The *Guidance Note for Surveillance under Article IV Consultations* outlines different approaches to inform these assessments, including: analysis to identify key growth bottlenecks and their macroeconomic impact; or assessing how far an economy stands from its efficient frontier to pinpoint areas with the greatest growth impact. The Guidance Note also offers approaches to assessing outward spillovers for systemic economies.

Structural reforms can also often be relevant in the context of Fund-supported programs. Given that Fund financing is focused on addressing balance of payments needs, program conditionality covering structural issues is expected to be limited to the minimum necessary to address those issues that are of critical importance to achieving the program's goals or for monitoring program implementation. Coverage is therefore tailored to country circumstances, reflecting understandings between the Fund and country authorities.[4/]

The Fund's capacity building activities can also involve structural issues and policies. While this typically involves technical assistance in established areas of Fund expertise (e.g., fiscal structural reforms), it continues to evolve. For instance, since 2000 the Fund has also offered technical advice to improve countries' Anti–Money Laundering and Combating the Financing of Terrorism (AML/CFT) regimes.

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[1/] Prepared in consultation with LEG.
[2/] Article IV (Section 3) provides for the Fund's oversight of: (i) each member's compliance with its surveillance obligations under Article IV, Section 1 (*bilateral surveillance*); and (ii) the international monetary system to ensure its effective operation (*multilateral surveillance*).
[3/] Policy advice provided in the context of surveillance can also cover other issues and policies, if they are important objectives for the member or if specifically requested by the member.
[4/] See 2011 Review of Conditionality.

Box 2. Overview of the Fund's Recent Analytical Work on Structural Issues[1/]

Following the global financial crisis, the Fund has produced a tremendous volume of analytical work on structural issues. This work encompasses a wide variety of issues, ranging from cross-cutting reforms relevant to the broader membership to reforms specific to particular regions, country groups or levels of development.

A key goal has been to deepen the Fund's understanding of how structural reforms affect economic outcomes, including: (i) boosting incomes and economic efficiency (e.g., investment, labor/product market reforms); (ii) promoting fairness and equity (e.g., tax and subsidy reform, social spending, gender equality); (iii) fostering economic and financial stability (e.g., export diversification, financial supervision, insolvency regimes, management of capital flows); and (iv) improving quality of life (e.g., education, healthcare, climate issues).

The Fund has engaged in broad cross-cutting work examining how structural reforms affect economic growth and productivity as well as poverty, inequality, and environmental issues.

- ***Economic growth and productivity.*** The Fund has examined how real and financial sector reforms impact economic performance in advanced and developing countries, and how structural reforms impact productivity growth in aggregate and by sector according to a country's development.

- ***Inclusive Growth and Gender.*** The IMF has focused increasingly on aspects of inclusive growth, including different regional considerations. The Fund also conducts an annual survey on access to finance and has studied the role of financial inclusion in promoting more inclusive growth. Fund staff has also looked at the macroeconomic gains from closing gender gaps in labor markets, including through addressing constraints on female labor participation, as well as drawing lessons from country experiences (such as in India, Hungary, Japan, the Nordic region, South Korea, and Saudi Arabia).

- ***Climate.*** In this area, the Fund's work focuses on the fiscal, financial, and macroeconomic impact of climate issues (e.g., via work on water management, and carbon taxes and fiscal policies to mitigate climate change).

The Fund has also examined how structural reforms in particular sectors can boost output and efficiency.

- ***Labor and product markets.*** The Fund has analyzed the relationship of jobs and growth, emphasizing the need to tackle high unemployment. This analysis is often tailored to particular regions, such as reforms to help reorient employment from the public to private sector in Gulf Cooperation Council countries or monetary, debt and labor market reforms to help create jobs in Europe. Structural issues have also featured prominently in surveillance in Europe, including exploring the governance aspects of structural reforms and fiscal structures in the Euro Area.

- ***Public investment and infrastructure***. In this area, staff analysis has found that increased public infrastructure investment raises output in both the short and the long-term, particularly when there is economic slack and the efficiency of investment is high. Other work shows that, given the potential for waste and inefficiency, better management of investment could close up to two-thirds of the efficiency gap.

- ***Fiscal structural reforms***. The Fund has explored how fiscal reforms can support strong and equitable growth, including how policies (such as stabilization, tax and expenditure policies, and institutional reforms) can boost labor supply, investment in physical and human capital, or productivity. Other analysis has covered reforms related to fiscal frameworks, tax administration, public financial management and pension systems.

- ***Managing natural resources and subsidy reform.*** The Fund has examined economic policies to manage natural resources, including in collaboration with aid agencies. The IMF has also prepared comprehensive estimates of the fiscal, environmental, and welfare costs of energy subsidy reform.

- ***Trade.*** Looking beyond trade liberalization, the Fund has sought to identify structural aspects that can promote growth and stability. This includes studying how economies in emerging Europe and Asia can take advantage of global value chains, and how export diversification can raise growth in low-income countries.

[1/] See Annex I for an illustrative list of recent Fund analytical work.

Box 3. The Wider Literature on Structural Reforms—What Have We Learned So Far?[1/]

This box presents a snapshot of the vast and growing literature on the macroeconomic effects of reform.

Academic interest in reforms and their role in macroeconomic performance picked up during the 1990s as many countries embarked on broad economic reform programs, often triggered by deteriorating economic conditions (Drazen and Easterly, 2001), including external debt crises and recessions (Agnello et al., 2015). However, there is no fixed relationship between the drivers of structural reforms and their actual implementation. Each country's experience reflects its institutional characteristics, history and political systems (Haggard and Webb, 1993). Moreover, the packaging and pace of economic reforms often reflects not just technocratic considerations, but the process of building broad political support and the outcome of bargaining among interest groups.

Over time, the literature evolved from its focus on cross-country long-run growth analyses to more micro-level studies that better address causality. More recently, DSGE models are gaining popularity due to their capacity to quantify more complex effects related to reform interactions and dynamics. Empirical evidence from the literature generally supports that structural reforms enhance economic performance, although the estimated effects and channels vary depending on the type of reform and country-specific conditions.

Turning to individual areas, a large body of work finds that *financial sector reforms* have positive effects through more efficient allocation of resources (MacKinnon, 1973; Shaw, 1973; King and Levine, 1993; Galindo et al., 2005) and easier access to external financing (Rajan and Zingales, 1998). Some have argued that *stock market liberalization* leads to higher investment and output growth (Henry, 2000; Bekaert et al., 2005), whereas findings on the effect of *capital account liberalization* more broadly are less clear-cut (Eichengreen, 2002) and could depend on the income level of a country (Klein and Olivei, 2008). Early literature on *trade liberalization* yield mixed results (Rodríguez and Rodrik, 2000), but recent studies provide more support to the positive effects (Dollar and Kraay, 2004; Wacziarg and Welch, 2008; Estevadeordal and Taylor, 2013). The quality of *legal system*, and in particular *property rights*, is also found to have an important effect on long-run output and investment growth (Acemoglu and Johnson, 2005).

An emerging strand of research focuses on the link between growth and market regulation. A large number of studies using rich micro-level datasets find robust evidence that competition-promoting *product market reforms* help boost an economy's total factor productivity growth (Nicoletti and Scarpetta, 2003; Faini et al., 2006; Buccirossi et al., 2009; Bourles et al., 2013). The benefits of *labor market deregulation*, on the other hand, appear more mixed (OECD, 2007) and smaller than from product market reforms (Bouis and Duval, 2011). Nonetheless, some recent studies find that strict employment protection depresses productivity growth (Bassanini et al., 2009), and high unemployment benefits and tax wedges can negatively affect employment (Bassanini and Duval, 2009).

The issue of reform complementarities—arising from "packaging" multiple reforms—is a small but fast-growing area of research. Several studies find that the strength of legal and political institutions affect long-run growth through their influence on financial sector development (La Porta et al., 1997; Demirguc-Kunt and Maksimovic, 1998; Acemoglu and Johnson, 2005; Djankov et al., 2005; Beck et al., 2005; Prati et al., 2013; Christiansen et al., 2013). Other work examines potential interactions between product market distortions and labor market rigidities (Blanchard and Giavazzi, 2003; Jean and Nicoletti, 2003), providing some indication that product and labor market reforms could complement each other and thus have far-reaching effects beyond their respective markets. Based on results from a DSGE model, Cacciatore et al. (2012) suggest implementing a broad package of labor and product market reforms to minimize short-term transitional costs associated with certain types of reforms (e.g., job protection reform).

Finally, studies on the sequencing of reforms remain at an early stage, with further work needed to draw useful policy insights. Hauner et al. (2013) show that trade reforms tend to precede domestic financial reforms, rather than *vice versa*, confirming Rajan and Zingales' (2003) prediction that opposition to financial sector reform weakens when an economy allows greater trade flows. Bouis et al. (2012) find that reforms may have varying impact over the business cycle, suggesting that undertaking some reforms (e.g., labor market) in good times, rather than in bad times, may help limit short-term implementation costs.

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1/ See Annex V for a full list of references.

STRUCTURAL REFORM PATTERNS & STYLIZED FACTS

Understanding how structural reform efforts have evolved across countries and over time can provide a useful starting point for better appreciating the macroeconomic benefits and considering possible operational implications for the Fund. Although structural reforms are more difficult to measure than typical macroeconomic policies, efforts to develop indicators make it possible to observe longer-term reform patterns across the membership and among country groups. Trends over the past several decades suggest that reform efforts have often borne a close relationship with macroeconomic conditions, stages of development and global integration.

15. Structural reforms are inherently difficult to measure as they often involve policies or issues that are not easy to quantify. They typically concern policies geared towards raising productivity by improving the technical efficiency of markets and institutional structures, and by reducing or removing impediments to the efficient allocation of resources. Thus, structural reforms have typically been associated with regulatory policies aimed at strengthening market-based incentives in domestic product and service markets, labor markets, trade, and capital and financial markets among others. However, structural reforms may also involve actions to address market failures (such as the increased emphasis on effective financial sector regulation since the crisis) or other government policies that can affect productivity more directly. In this regard, the recent Board paper on *Fiscal Policy and Long-term Growth* noted that fiscal policy can play a role, including where private provision may be less efficient in allocating resources (e.g., infrastructure) or where private markets do not adequately capture positive externalities (e.g., research and development).

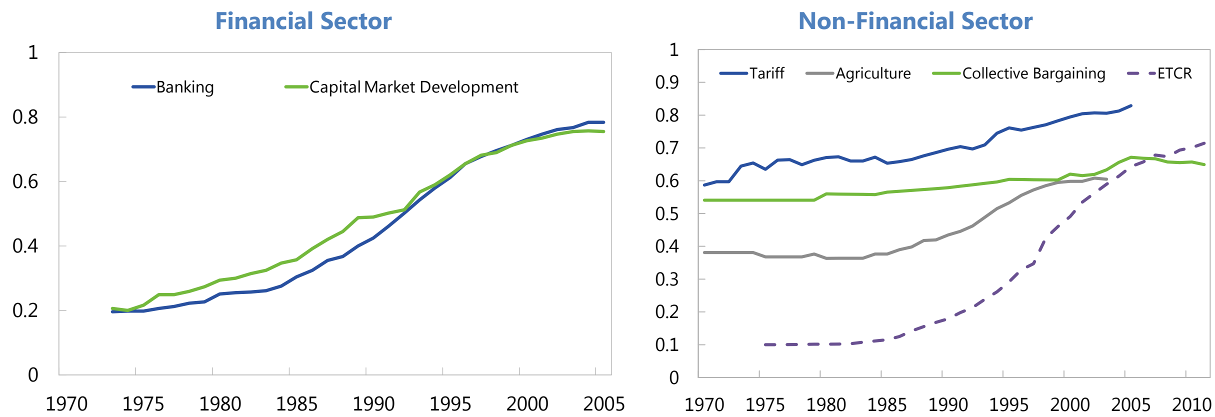
16. The priority for this paper has been to examine reform patterns and relationships based on reform indicators that are broadly representative of the entire Fund membership. The database covers 108 countries—33 AMs, 53 EMs, and 22 LIDCs—during the period 1970–2011 (see Annex II). It covers structural reforms in 10 areas, ranging from trade and financial sector reforms to institutional reforms, as well as reforms relating to the functioning and regulation of markets. Comparable indicators of fiscal structural reforms, beyond those noted above, are currently not available.[5] However, the emphasis here is to apply a consistent analytical approach to a sufficiently large sample, covering all income groups.

17. These indicators suggest that the Fund's member countries, at all levels, have undertaken substantial structural reforms over the past 30–40 years (Figure 7). With few exceptions, most reform indices have trended up since the 1970s. The most pronounced and sustained advances have taken place in banking and other financial sector reforms, although there are also clear positive reform trends in agriculture, trade and industry. Performance in other areas is more mixed, with limited progress in infrastructure, and more sporadic efforts in legal system and

[5] The Board paper on *Fiscal Policy and Long-term Growth* examined extensively fiscal reforms using an alternative framework and we draw on the findings of that analysis in later aspects of this paper.

labor market reforms. However, a deeper look at the pace of reforms across different indices or country groups provides a richer picture.

Figure 7. Trends in Selected Structural Reform Indices

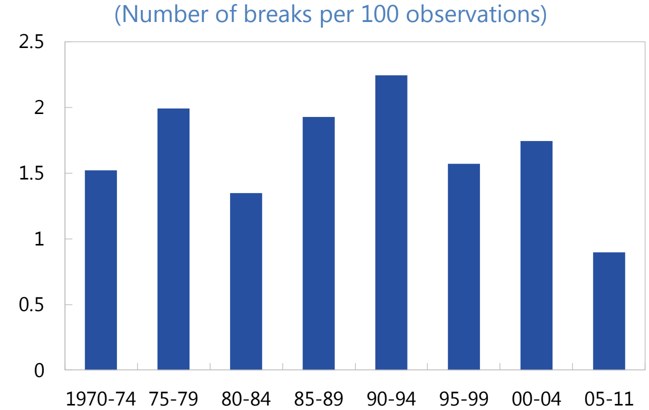


Source: Various (see Annex II).

18. The strongest reform momentum tended to coincide with periods of economic stress or turbulence. We identify big reform episodes based on the largest annual improvements in reform indices (top 3 percent) sustained during a three-year window (Figure 8). The *first big reform push* took place in mid-1970s, with a surge in reform efforts in the period following the breakdown of the Bretton Woods system and the first oil price shock. A *second big push* occurred during the late 1980s and early 1990s on the heels of the Latin American debt crisis and when many countries moved into recession after the 1987 stock market crash. Reform efforts gathered steam again during a *third big push* in the late 1990s and early 2000s around the time a number of EMs experienced financial crises. This pattern appears to be broadly consistent with literature that suggests that sustained or acute economic weaknesses often catalyze concerted structural reform efforts (see Box 3).

Figure 8. Structural Reform Breaks, All Countries

(Number of breaks per 100 observations)



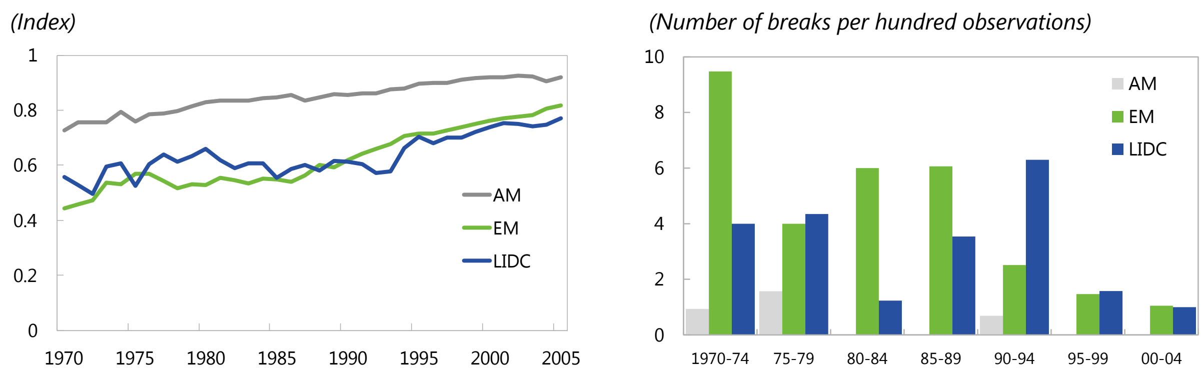
Sources: Various reform indices (see Annex II), IMF staff estimates.

19. Reform patterns in several areas also tend to mirror the acceleration in global economic and financial integration. In particular, *trade reforms* initially appear to have been undertaken in the context of multilateral and regional trade negotiations (Figure 9). EMs were perhaps most aggressive in pursuing trade reforms in the 1970s and 1980s, as many gradually phased out import substitution policies and pursued export-led growth models. Trade reform got a further boost from LIDCs from the second half of the 1980s to the mid-1990s. However, the increased potential for international competition or spillovers from, and the desire to take advantage of, a globalized economy have created incentives to pursue broad-based reforms beyond basic trade liberalization.[6] In this regard, the staggered take-off of *banking* and *capital market reforms* also appears broadly consistent with the pattern of international financial integration—first picking up among AMs in the 1970s, then by EMs a decade later, and in turn LIDCs with the gradual development of their domestic financial sectors (Figure 10).

20. However, certain reform patterns seem more attuned to evolving circumstances faced by countries—in particular, their stage of development.

- Early reforms by EMs and LIDCs focused on building stronger institutional foundations—*legal system and property rights* and *infrastructure*—although efforts have waned in some areas. AMs have not made progress on infrastructure since the 1970s, possibly reflecting large scale investment in earlier period and, thus, the recent increased attention to infrastructure (e.g., G20).
- In the wake of falling agricultural prices, and also possibly reflecting increased trade integration, *agricultural reforms* accelerated in EMs and particularly LIDCs from the mid-1980s through the 1990s.
- The global trend towards increased transparency and accountability may well have increased the emphasis on *business environment reforms* by AMs in the 1990s and more recently by EMs. Reforms by EMs in this area also reflected their broad structural transformation. These reforms were followed by more sophisticated *labor market reforms* in the 2000s, with efforts focused on decentralizing collective bargaining and reforming hiring and firing regulations.
- *Industry reforms* by AMs and EMs picked up in the second half of the 1990s, an era of rapid technological innovation (e.g., telecommunications) and the search for new energy sources.

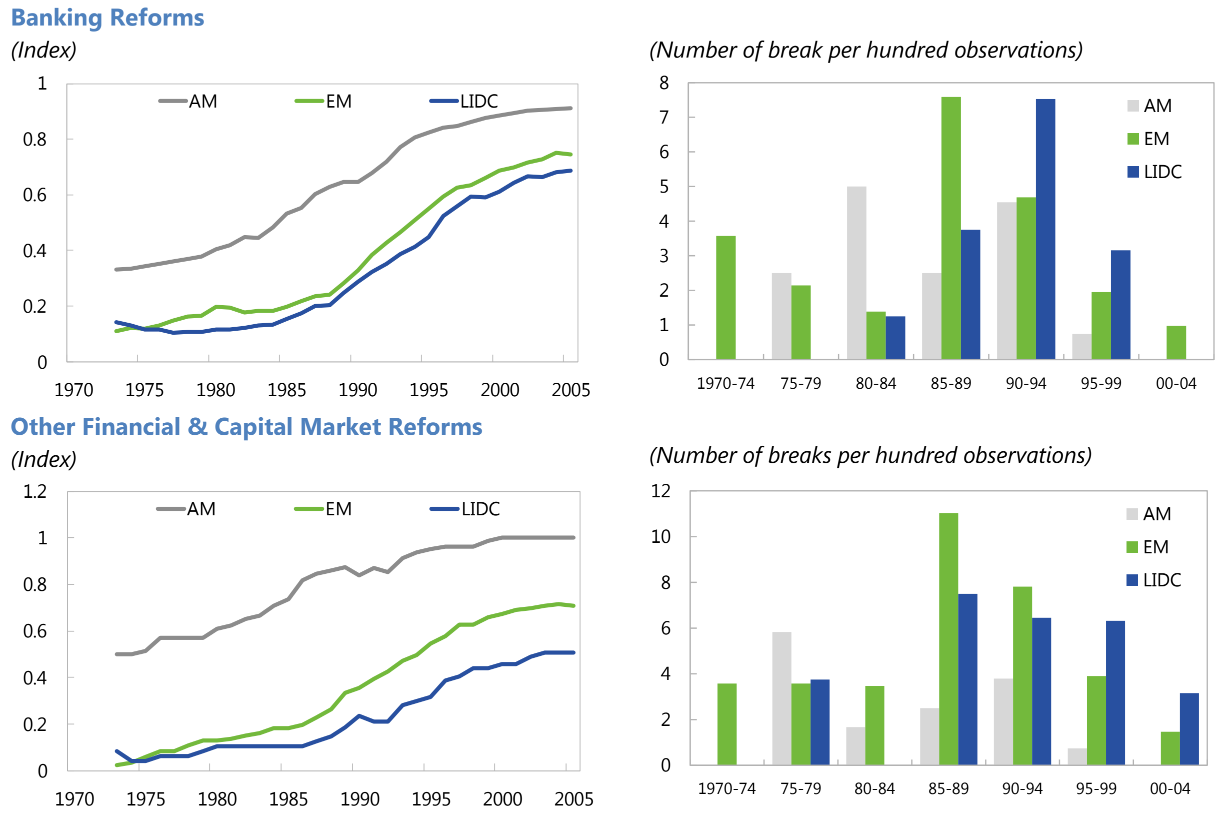
Figure 9. Trade Reforms



Sources: Various reform indices (see Annex II), IMF staff estimates.

[6] For example, see Sachs and Warner (1995).

Figure 10. Financial Sector Reforms



Sources: Various reform indices (see Annex II), IMF staff estimates.

ASSESSING THE IMPACT OF STRUCTURAL REFORMS

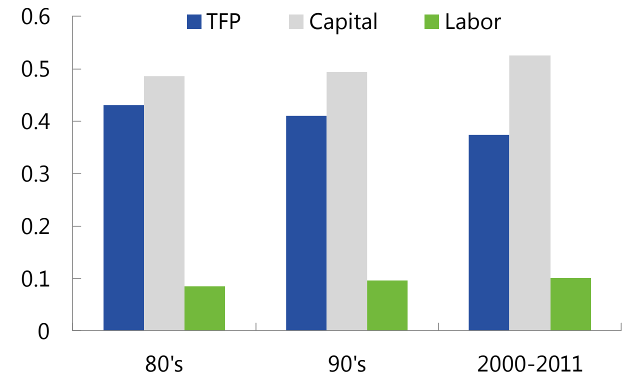
Observing broad reform patterns, however, can only take us so far. If the Fund is to invest more systematically in supporting countries' reform needs, this requires a deeper and more robust appreciation of the relationship between reforms and macroeconomic performance. In this instance, we focus on productivity, finding a broadly positive relationship with structural reforms—one that tends to become more pronounced when reforms are bundled together. However, going forward, the Fund should continue to explore a range of channels and effects to paint a more comprehensive picture of the relationship between reforms and macroeconomic performance.

21. **While structural reforms can be expected to affect macroeconomic performance through a variety of channels, productivity warrants attention at this juncture.** In particular, TFP is a significant driver of output (Figure 11).[7] Given the secular decline in productivity, worsened by the crisis, raising productivity is an essential piece of today's policy puzzle—both in boosting potential growth and economic resilience. Moreover, the impact of reforms on employment and capital accumulation are worthy of attention in their own right, and have been covered in more

[7] By decomposing levels of GDP per capita, Hall and Jones (1999) and Duval and de la Maisoneuve (2010) found that differences in productivity are a key determinant of cross-country variations in output per capita.

detail in other Fund analysis (Annex I), but for the purposes of this paper, they are implicitly captured when we consider growth in testing the robustness of our findings on productivity. While the remainder of this paper focuses on productivity, it will be essential for the Fund to continue exploring the impact of structural reforms on other macroeconomic variables. There is particular merit in looking at other effects as they pertain to specific reforms or are of special relevance to a region or group of countries (e.g., labor market reforms and employment).

Figure 11. Factors Contributing to GDP



Source: Penn World Tables.

22. Several different empirical approaches yield broadly similar conclusions regarding the relationship between structural reforms and productivity.[8] Building on previous Fund work, the analysis first explores the relationship between broad *reform trends* and productivity for all country income groups, including whether the impact varies across reforms and different country groups. Second, it considers if and how large-scale individual reforms (episodes) affect the results. Finally, it assesses the impact of *implementing several reforms in parallel* (waves) and whether the results differ from individual reform episodes.

A. Steady Reform Trends

23. The results from our first exercise point to a broadly positive relationship between different types of reforms and productivity growth. Using panel regression analysis, we estimate the impact of different types of structural reforms one year forward on TFP growth for countries at different stages of development. The results (Table 1) are broadly aligned with the historical reform patterns (previous section), as well as a range of previous Fund work.[9] They are also consistent with an intuitive understanding of the relationship between reforms and stages of economic development.

24. In this regard, we find that the potential payoff from different reforms varies across country groups. For instance, reforms to the legal system and property rights show a positive association with productivity growth in LIDCs and EMs, but not in AMs. In contrast, labor reforms (such as those concerning conditions related to hiring and firing and collective bargaining) are

[8] The structural variables used in this analysis are presented in Annex II and are the same as those for which stylized facts are presented in the previous section. The various empirical approaches are described in Annex III.

[9] See, for example, *The New Normal: A Sector-Level Perspective on Productivity Trends in Advanced Economies*; Dabla-Norris, et al. (2015); *Anchoring Growth: The Importance of Productivity-Enhancing Reforms in Emerging Market and Developing Economies*, Dabla-Norris, et. al. (2013); *Structural Reforms and Economic Performance in Advanced and Developing Countries*, IMF Occasional Paper No. 268 (2008); and "Which Reforms Work and under What Institutional Environment? Evidence from a New Data Set on Structural Reforms," *Review of Economics and Statistics*, Vol. 95:3 (July), pp. 946-968, Prati et. al., 2013.

associated with higher productivity growth in EMs and AMs, but not in LIDCs. In this regard, the varying magnitudes and significance of coefficients highlight differences in the potency of structural reforms across country groups.

25. Applying the same approach to other key macro-indicators also suggests a positive relationship with the same set of reforms. Cognizant of the broader notion of macroeconomic performance, we undertook a battery of checks and balances, testing different specifications and variables.[10]

- This included, for instance, examining the strength of the productivity-reform relationship with longer lags, as well as looking at the relationship between reforms and output and investment growth. The positive relationship holds up under these checks—in particular, substituting GDP growth for TFP growth generates similar results—providing reassurance of a robust relationship with productivity and the macroeconomic relevance of reform more broadly.
- In a similar vein and in keeping with the Fund's focus on stability, a separate track of ongoing work exploring the relationship between reforms and external resilience is generating early favorable results (see Box 4).

Table 1. TFP Growth Gains from Different Types of Structural Reforms between Country Groups

REFORMS	AM	EM	LIDC
Financial Sector Reform			
Banking system reform			
Interest controls			
Credit controls			
Privatization			
Supervision			
Capital market development			
Trade Liberalization			
Tariff rates (average)			
Institutional Reform			
Legal system and property rights			
Infrastructure			
Public capital stock			
Market Deregulation			
Agriculture			
Policy environment for foreign investment			
Promotion of competition			
Hiring and firing regulations			
Collective bargaining			
Energy/Transport/Communications			
Innovation			
R&D spending			

Note: Comparisons across country groups. Shading implies magnitude, with the darkest shade representing the strongest gain from reform and the lightest shade representing a minor gain.
Source: IMF staff estimates.

[10] The alternative specifications included using longer lags of reform indices. The entire set of robustness checks are described in Annex III.

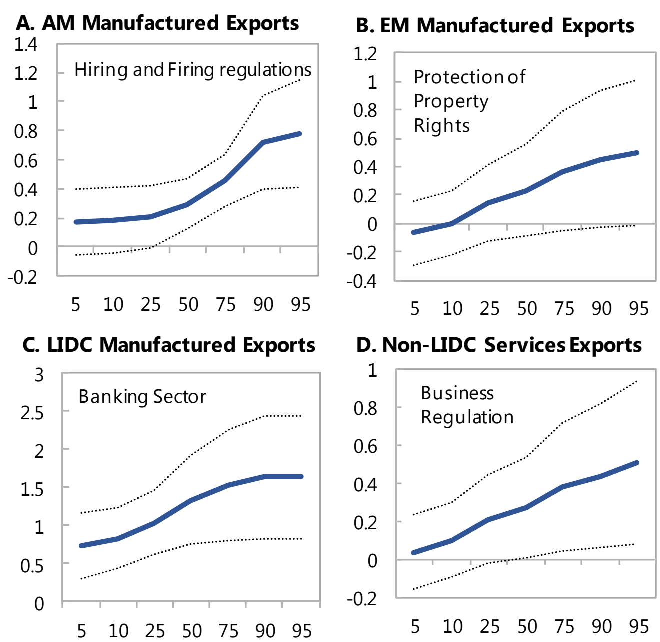
- An additional check to assess the long-run impact of reform on productivity suggests that reform priorities within each group (LIDCs, EMs, AMs) are broadly similar with our baseline results. There are a few exceptions. Over the long-run, the loosening of hiring and firing regulations has a less pronounced impact for AMs and EMs. On the other hand, several reforms have a stronger long-term impact: infrastructure (all country groups), bank supervision (EMs), capital market development (LIDCs), and decentralizing the collective bargaining process (EMs).

Box 4. Structural Reforms and External Resilience[1/]

Structural reforms can help countries adjust to shocks, thus contributing to economic stability. There are numerous channels through which structural reforms can speed up the response to economic signals, thus improving resilience. We focus on the resilience to shocks propagated through the real exchange rate. More resilient economies should exhibit a higher export response to real depreciations. *Labor and product market reforms* remove impediments to the allocation of resources to the tradeable sector. A *sound financial sector* facilitates this reallocation by channeling resources needed to finance the adjustment. Strong *legal systems* can mitigate risks associated with the transition, which would otherwise lead to underinvestment. *Trade openness* ensures that missing inputs are readily available.

We analyze the impact of structural indicators on the exports' response to REER movements using cross-country panel regressions that allow for estimating the percentage change in exports in response to a one percent change in the REER.[2/] This slope—called the *elasticity of exports with respect to the REER*—denotes the sensitivity of exports to movements in the exchange rate, with a steeper slope indicating a higher sensitivity. The hypothesis is that the slope (elasticity) should increase as structural indicators improve, i.e. countries with better structural indicators should respond more to a given REER depreciation. Since different structural indicators are likely to be binding at different income levels (e.g., reflecting differences in economic structures), we also expect different types of indicators to matter across income groups.

Export Elasticities Across Structural Indicators



Note: Horizontal axis is percentile distribution of countries in respective income group across the structural indicator. The dotted lines indicate the 95 percent confidence interval.

The measured elasticity increases as structural indicators improve. The text figure shows how elasticities change across the distribution of select structural indicators across countries. For example, panel A shows that an AM moving from the 25th to the 75th percentile of the distribution in terms of hiring and firing regulations will see its export elasticity for manufacturing goods increase from 0.2 to 0.45, i.e. its exports will have twice as large a response to a given REER depreciation.

Box 4. Structural Reforms and External Resilience (cont.)

The specific reforms that matter differ across income groups. The text table summarizes the magnitude and statistical significance of the impact of various structural indicators on export elasticities across income groups.[3/] Key findings, in the case of manufactured exports, are as follows:

- *In advanced economies,* product and labor market regulations are the primary facilitators of the manufactured exports' response to REER movements.
- Institutional indicators are important in *emerging markets*, which is consistent with the prominent role played by cross-border supply chains, which heavily rely on a strong contracting environment.
- *In low income countries*, banking sector regulations have a strong effect on export elasticities.[4/]

The table also presents results for *services exports* using Balance of Payments data for AMs and EMs. We find that services exhibit strong responses to REER movements in the presence of flexible financial sectors, trade openness, strong legal systems and property rights.

Impact of Structural Reforms on Export Elasticities

	Manufactured exports			Services
	AMs	EMs	LIDCs	Non-LIDC
Financial sector				
Banking	+	–	+**	+***
Security Markets	+**	–	+	+***
Openness				
Tariff rates (average)	+	–	+	+***
Institutions				
Protection of property rights	+	+**	–	+**
Legal enforcement of contracts	–	+*	+	+**
Product market regulation				
Business regulations	+**	+	–	+**
Telecom & electricity regulation	+	–		+
Labor market regulation				
Hiring & firing regulations	+**	+		–
Centralized collective bargaining	+	+		–

Note. The table presents the sign of the β_2 coefficient (see Footnote 1). Pluses denotes larger elasticities in absolute terms. *, ** and *** denote significance at the 10, 5 and 1 percent levels respectively.

It should be noted that caveats regarding the main results of this paper (for example concerning reform complementarities and endogeneity; see paragraph 30.   ) also apply here.[5/]

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1/ This box summarizes selected results from ongoing analytical work on structural reforms and external resilience.

2/ The estimated equation is $\Delta \log X_{it} = \beta_1 \Delta \log REER_{it-1} + \beta_2 \Delta \log REER_{it-1} \times S_{it-1} + \beta_3 S_{it-1} + \beta_A' Z_{it} + \omega_i + \eta_t + \varepsilon_{it}$, where X_{it} is exports of country i in period t, S is the structural reform of interest, Z is a set of control variables (trading partner growth and export goods inflation), ω and η capture country and time fixed effects, respectively. We use the negative of CPI REER change, i.e. a depreciation has a positive sign. The effect of the structural indicators on the export elasticity is captured by the β_2 coefficient on the interaction term. The equation is estimated on both manufactured and services exports using data averaged over three years. Most regressors are lagged to alleviate endogeneity concerns.

3/ While some structural indicators are shown with a negative sign, not one of them is statistically different from zero.

4/ A somewhat limited number of observations for LIDCs suggests a more cautious treatment of corresponding results.

5/ A number of robustness checks were performed, including controls for the structure of the export basket (measured by the Economic Complexity Index), and different averaging periods (1 and 5 years).

B. Large-Scale Reform Episodes

26. Large-scale reforms also demonstrate a generally positive relationship with post-reform productivity growth. To complement the regression analysis of general reform trends, we use positive 'breaks' in reform indices to identify large-scale reform episodes (i.e., the top three percent of positive changes). With a few exceptions, we find that reform episodes are typically associated with a significant pick up in post-reform productivity growth rates (Table 2). These simple computations broadly reinforce the findings of the regression analysis (including patterns relevant reforms across country groups). However, these results also suggest that the pace or magnitude of reform could have implications for the potential benefits, although not all large-scale reforms have commensurately large impacts on productivity.

Table 2. Average Medium-term TFP Growth Gain After Breaks

REFORMS	AM	EM	LIDC
Financial Sector Reform			
Banking system reform			
Interest controls			
Credit controls			
Privatization			
Supervision			
Capital market development			
Trade Liberalization			
Tariff rates (average)			
Institutional Reform			
Legal system and property rights			
Infrastructure			
Public capital stock			
Market Deregulation			
Agriculture			
Policy environment for foreign investment			
Promotion of competition			
Hiring and firing regulations			
Collective bargaining			
Energy/Transport/Communications			
Innovation			
R&D Spending			

Note: The shading indicates the average TFP growth gains from 5 years before and after "breaks". The dark blue indicates growth gain of 2 percentage points (ppt) or more, the light blue between 1 and 2 ppt, and blank is less than 1 ppt.
Source: IMF staff estimates.

27. Differences in the post-reform pickup in productivity growth underscore the need to calibrate the pace of reform depending on the reform type and the country group. For instance:

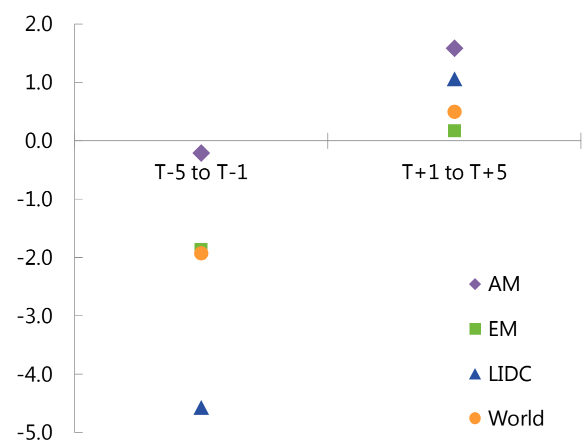
- For some reforms, *more gradual implementation* may be likely to yield benefits, whereas rushed large-scale spending may have little or no benefits—or even have negative consequences. In the case of infrastructure, for example, Berg et al. (2012) show that in developing countries, large public investments financed by natural resource booms can undermine investment efficiency. A similar challenge may arise for AMs investing in knowledge capital (R&D spending).

- Other reforms may be more amenable to a positive relationship with productivity growth when implemented through a *"big bang" approach*, rather than a more gradual manner. Here too, the results vary among country groups. For instance, "big bang" reforms in agriculture or the policy environment for foreign investment appear to be more valuable for EMs than slow and steady reforms in these areas.

C. 'Waves' or Bundling of Reforms

28. Even larger productivity payoffs are observed when multiple reform episodes occur in parallel. In practice, reforms in different areas can, and often do, occur simultaneously or in "waves." To examine whether reform "waves" further enhance the positive relationship with productivity, we consider instances when 3 or more large-scale reform episodes in different areas are implemented within the same 3-year period.[11] In these instances, there is a substantial uptick in 5-year average TFP growth rates after reform "waves" (Figure 12).[12] Specifically, AMs and EMs exhibited an average 2 percentage point pick-up in productivity growth, while LIDCs saw a much higher 5.5 percentage point increase. These productivity gains outstrip those associated with individual reform episodes.

Figure 12. Average 5-year TFP Growth Rates Before and After Reform Waves
(percent)



Source: IMF staff estimates.

29. The magnitude of these productivity growth differentials supports the notion that reforms can have complementary effects. While further work is needed to confirm this empirically, the common recurrence of particular reforms in "waves" adds credence to this notion. Among 34 identified reform "waves," comprising 103 episodes, these most often included financial sector reforms (both banking system and capital market development). The prevalence of banking and capital market reforms in waves may well reflect the central role that the financial sector plays in efficiently allocating resources. The next most common reforms to occur in waves were legal system and trade reforms. For example, episodes of capital market reforms are often accompanied by strengthening the broader legal system and property rights.

D. Interpret with Care

30. While these broadly consistent empirical results provide some measure of comfort, the results should be interpreted with some caution. The analysis above extracts useful information

[11] See Annex III for more details.

[12] For this calculation, we take the first year of the 3-year window as the reference point.

from the available data, but is not without some limitations. The first concerns data availability—there are certain types of structural reforms for which data is not available in a form amenable to regression analysis. Second, while the empirical results highlight statistical associations between the various types of reforms and productivity, they do not conclusively establish causality. Third, the regression results do not account for reform complementarities because the high correlation in reform indices requires them to enter the regressions one at a time. Fourth, measured TFP may also fall temporarily, introducing a downward bias on the results when the ultimate impact of the reform is still positive. The transition literature, for example, shows that reform often coincides with sharp declines in measured output as part of creative destruction—capital in inefficient places is idled, relative prices change, and resource reallocation incurs large initial costs.[13] Finally, while the empirical work considers one-year-ahead impacts and shows the results to be broadly robust to using longer lags or when considered over the longer-term, the objective of the analysis is not to establish the relationship between reforms and their time to impact, or between reforms and initial conditions. Having said that, the results do, however, suggest some promising areas for future research on these questions.

SELECTED COUNTRY EXPERIENCES

Given the need for care in interpreting these empirical findings, countries' reform experiences offer additional insights to help provide a more well-rounded basis for enhancing the Fund's approach to structural reforms. The six country cases examined for this paper tend to reinforce the messages from the empirical analysis, suggesting that sustained and well-coordinated reforms typically coincide with periods of improved productivity and macroeconomic performance more generally. Moreover, these experiences—as well as instances where reforms have proved less successful—hint at potential lessons about the ingredients for effective implementation and favorable outcomes.

31. Member countries' reform experiences are essential to developing a deeper understanding of the macroeconomic benefits of structural reform. In this regard, the Fund is working to better leverage its existing country-based analytical work and share knowledge of cross-country reform experiences (e.g., see Box 2 and Annex I).[14] Continuing in this spirit, we examine six country cases to glean potential lessons to enrich the Fund's approach to structural reform issues and its engagement with member countries. The group of countries comprises: Armenia, Australia, Malaysia, Peru, Tanzania and Turkey.[15] In some instances, these cases consider longer term reform efforts in the context of structural transformation (e.g., Malaysia). Others focus on more concentrated reform periods (e.g., Peru in the 1990s). In addition to complementing the empirical

[13] See, e.g. Harvylyshyn, Izvorsky and van Rooden, 1998; Blanchard and Kremer, 1997.

[14] For example, the recent Board paper on *Fiscal Policy and Long-term Growth* (April 2015) incorporated a range of country case studies.

[15] This group includes at least one country from each income level and each geographic region. These cases are set out in a companion paper, *Structural Reforms and Macroeconomic Performance: Country Cases*.

analysis in this paper, the potential lessons from countries' different approaches to designing and implementing reforms can point to avenues of future research and analysis.

32. Acute economic pressures or crises are often a strong motivation for countries to undertake structural reforms. For instance, Malaysia introduced an ambitious structural reform package, the *National Economic Recovery Plan*, to address the Asian crisis legacies of slow growth and financial system fragility. Similarly, Tanzania and Turkey undertook reforms in the wake of very weak growth, high inflation, and serious balance of payments pressures. In Armenia, the dissolution of the Soviet Union spurred a comprehensive rethink of the country's economic model. Australia was an exception, with broad-based structural reforms following a protracted period of mediocre growth. These experiences resonate with the broad trends and impetus from reforms in recent decades as noted in paragraph 18.

33. In turn, concerted structural reforms have generally coincided with a turnaround in economic performance. In each of these country cases, TFP growth picked up during the identified reform periods, in tandem with improved macroeconomic fundamentals. There was, however, some variation in the acceleration of TFP growth and the extent to which more favorable TFP growth was sustained following reforms. The more successful periods witnessed broad based macroeconomic benefits, with improvements in GDP growth and real GDP per capita—importantly, this pattern was evident for AMs, EMs, and LIDCs alike. Moreover, reforms arguably enabled some countries to be more resilient to shocks. For instance, around the time Australia was weathering the Asian crisis, Peru also withstood a series of external shocks between 1998 and 2001.

34. These country cases send a strong signal about the likely conditions for undertaking successful reforms. Importantly, structural reforms in and of themselves are not a 'silver bullet' for macroeconomic success. Strong ownership and the ability to sustain reforms appear to be crucial to reaping the productivity and growth benefits. Indeed, without sustained reforms, improvements in macroeconomic performance may be short-lived. In this regard, the domestic political context and the ability to garner strong and broad-based buy-in appear to be critical in being able to implement complementary macroeconomic and structural reforms, to make effective choices about combining and sequencing reforms, and to mitigate the risks of reform reversals.

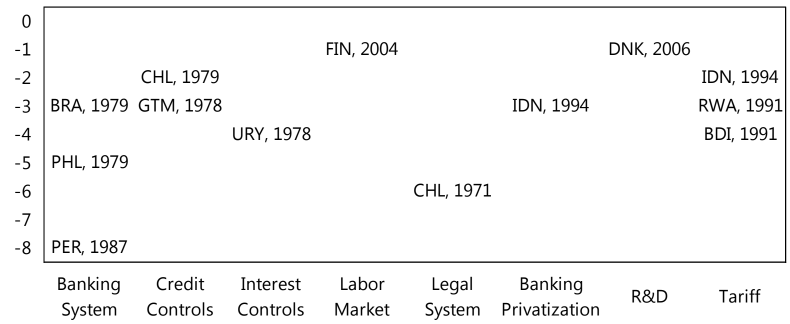
- While most specific reforms were undertaken over a short period of time, successful reforms were typically implemented in sequence and as part of a 'wave' of reforms intended to reinforce and complement one another. In this regard, the benefits of one-off reforms were less apparent than of reform 'waves.' Moreover, the pattern of reforms appeared to evolve in a broadly similar way across countries and over time. Typically, trade and price liberalization (including in the banking sector) were implemented first (Armenia, Australia, Tanzania, Malaysia and Turkey), followed by privatization and banking supervision and legal reforms.

- The most successful reform periods reflected a more comprehensive approach, where sound macroeconomic policies were an essential complement to structural reforms. As macroeconomic stresses (e.g., high inflation in Turkey) can derail growth prospects despite sustained structural reforms, credible fiscal and monetary policy frameworks are a vital ingredient to successful outcomes (Armenia, Australia, Malaysia and Tanzania).

- In this regard, almost all cases of fiscal structural reforms played a pivotal role in stabilizing the macroeconomic situation. Most often this involved a combination of measures to strengthen tax administration, spending efficiency and fiscal frameworks (e.g., Armenia, Australia, Malaysia, and Peru).

35. Circumstances where structural reforms have not yielded success can be equally instructive. The reform indices used in the empirical analysis also allow us to identify cases where TFP growth has shown negligible improvement or has even been negative following reforms. Figure 13 shows instances where reforms were followed by periods of negative TFP growth. In order to help member countries design and implement future reforms, it is important to understand the factors underlying those unfavorable outcomes. In many instances, these lessons reinforce those from the reform successes, including the need to understand specific country circumstances in order to calibrate the timing, pace and sequencing of reforms.

Figure 13. Reforms Followed by Declines in Productivity
(5-year averages of TFP growth)



Source: IMF staff estimates.

- Given that sustained reforms are more likely to generate prolonged benefits, the design of reform packages should account for macroeconomic stability and domestic political economy considerations. While large external shocks or crises provide an opportune time to implement reforms, they can also have damaging effects to existing reform efforts. Similarly, political economy factors are essential elements in enacting and sustaining reforms (Hoj, 2006).

- Binding constraints to economic performance can vary across countries (Hausmann et al., 2005), reinforcing the need to tailor reforms to country circumstances. Christiansen et al. (2009) find that weak institutions could be one such constraint for reaping the benefits of reforms. Macroeconomic stability can also be a binding constraint (Lora and Panizza, 2002), reinforcing the point above about the merits of sound macroeconomic policies or, where needed stabilization policies accompanying structural reforms.

- How quickly or extensively to reform is a pivotal decision. Some argue that lack of success is because reforms either did not go far enough or, at the other extreme, were too dramatic (Zettelmeyer, 2012). This is evidenced in our break analysis where most, but not all large reforms, had a substantial positive impact on productivity. However, it underscores the need for countries to effectively prioritize and pace reforms. It also highlights the risk of viewing reforms in a too linear or simplistic fashion—in many instances, unconstrained liberalization can be problematic. For instance, prior to Chile's reform successes, the improvement in TFP growth following banking reforms in the 1970s was short-lived (Figure 13), possibly reflecting too rapid or unbalanced reforms (e.g., weak supervision in the new deregulated financial market). These lessons were reflected in subsequent banking reforms that were more measured, and included supervisory reforms as a core element.

REFORM NEEDS AND OPERATIONAL PRIORITIES

Country experiences and different approaches to reform—such as the apparent merits of waves of reforms—suggest that prioritization is a central consideration for effective implementation. Given the breadth of structural reforms that can benefit macroeconomic performance, it is essential to begin to understand how countries might prioritize their reform efforts. Efforts to identify member countries' current reform needs suggest that the Fund is already focusing on reforms most likely to have macro-payoffs. Looking ahead, this can also help inform efforts to build a macrostructural toolkit to support country-tailored analysis and deeper engagement with member countries.

A. Member Countries' Current Reform Needs

36. For the Fund to appropriately orient its efforts, it is important to have a clear sense of the structural issues currently foremost on policymakers' minds. As a preliminary step toward a more systematic "bottom up" diagnosis of countries' structural reform challenges, a recent survey of IMF mission chiefs[16,17] sought to gauge the extent to which different types of structural issues are most relevant for member countries' macroeconomic performance.

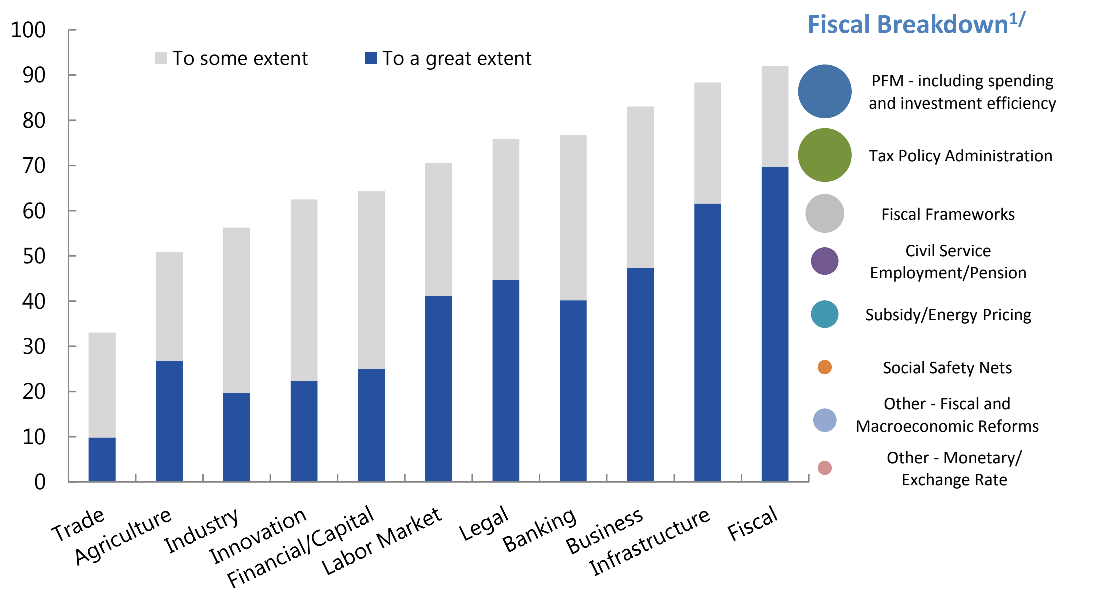
37. The survey results confirm that a wide range of structural reforms are regarded as having a bearing on macroeconomic performance. While all reform categories considered in the context of the empirical analysis above were considered to be macro-relevant, seven of these categories were considered to be macroeconomically important by over two-thirds of respondents (Figure 14). The wide interest in banking and other financial market reforms is consistent with the increased focus on financial stability since the crisis, including aspects related to cross-border flows and spillovers, and the growing role of non-banks. The same could be true of labor market issues in light of persistently high unemployment and the need to generate job-rich growth. The strong interest in infrastructure and legal system reforms is largely driven by EMs and LIDCs. Similarly, compared to the broader membership, fragile states place more importance on agriculture, legal and business reforms, and infrastructure.

[16] In July 2015, staff conducted a survey of IMF Mission Chiefs for the Fund's 188 member countries. The average response rate was around 60 percent, with a response rate above 50 percent for mission chief's representing all regions and income groups. Further information on the survey questions and response rates are set out in Annex IV.

[17] While the survey results offer insights into the potential range of macro-relevant structural issues, they should be regarded as preliminary and not be taken to represent the views of country authorities.

38. **Fiscal structural reforms are also considered by almost all respondents to be important for macroeconomic performance** (over 90 percent), in keeping with the Fund's core business. While this reflects a range of different types of fiscal reforms, three areas dominated: tax administration; public financial management and spending efficiency; and fiscal frameworks. There was broad recognition of the macro-importance of tax policy administration reforms across all income groups. However, EMs tended to see more value-added in reforming fiscal frameworks. Also, while LIDCs emphasized the importance of public financial management reforms, AMs and EMs focus on more general aspects of spending and investment efficiency. Although subsidy and energy pricing reforms were rated somewhat lower on average, these tended to be a higher priority for EMs and LIDCs, as well as oil/commodity producing economies.

Figure 14. Importance of Structural Reforms for Macroeconomic Performance
(Extent to which structural reforms are important; percent of responses)

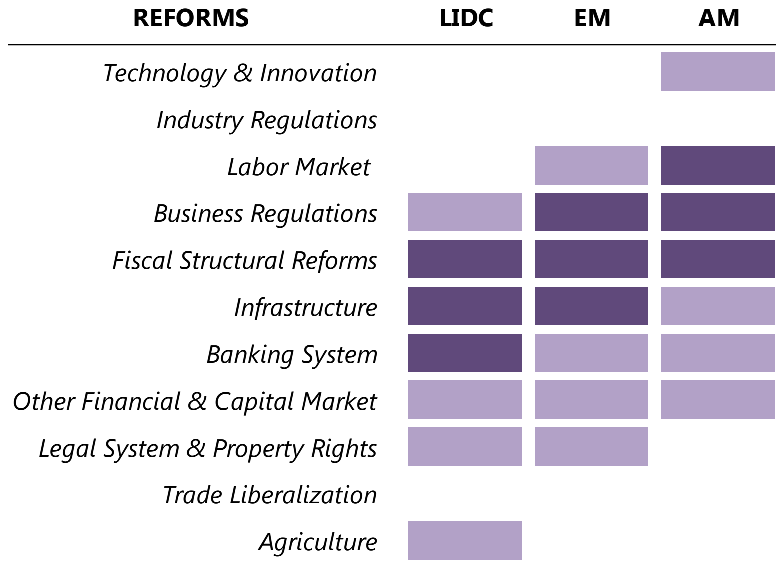


[1/] Includes a small number of cases where respondents identify reforms to other macro policy frameworks.

Source: Survey of IMF Mission Chiefs, July 2015.

39. **The highest priority reforms identified by respondents suggest that structural reform *needs* evolve across different stages of development** (Figure 15). On the one hand, the survey responses reveal several common reform priorities across all member countries. In addition to a strong common interest in fiscal reforms (noted above), there is a shared interest in banking and other financial and capital market reforms, infrastructure, and the business environment. As inferred by the earlier empirical analysis and country cases, the different priority reforms tend to reflect different stages of economic development. For instance, agricultural reforms appear to be relatively more important among LIDCs, and legal system reforms more important among LIDCs and EMs, whereas labor market issues become more relevant for EMs and AMs, and only AMs prioritize technology reforms.

Figure 15. Priority Structural Reforms for Member Countries



Note: Darker shading indicates the reform areas most often ranked among the top three reform priorities within each country group.

Source: Survey of IMF Mission Chiefs, July 2015.

40. The few instances where priority reforms diverge from historical reform patterns or country experiences appear to reflect the evolving nature of economies. For instance, following concerted trade liberalization reforms by LIDCs in recent decades, their reform efforts may be more focused on other aspects of trade reform (such as export diversification and integrating with global value chains). Similarly, AMs have a renewed interest in other financial market reforms given the growing role of non-banks and considerations related to expanding the regulatory perimeter. This suggests that the Fund is already focused on those reforms likely to have the highest payoff for macroeconomic performance, with due regard for changing circumstances and country specificities.

B. The Fund's Operational Focus on Structural Reforms

41. Looking ahead, the Fund's operational efforts should be geared to better supporting countries' macro-relevant reform needs. Our engagement with individual countries should be tailored to the reform priorities most relevant for their specific macroeconomic circumstances. However, to avoid an ad hoc approach, the TSR recommended a principles-based approach to help guide and articulate the macro-relevance of structural reforms. More broadly, the TSR emphasized the desirability of delivering more expert analysis and advice. To this end, institution-wide efforts should be geared toward developing and leveraging high quality and expert analysis and advice on structural issues, guided by three broad principles.

- One, the Fund should be equipped to *recognize* all macro-critical structural issues and highlight the macroeconomic implications in its surveillance.

- Two, although the Fund should limit its policy *advice* to areas where it has the necessary expertise, there may be merit in cautiously building further expertise in selected macro-critical areas of high impact and high demand—avoiding institutional overreach and guided by the rationale in Box 3.

- Three, where structural reforms have macro-implications, but remain clearly outside the Fund's core areas of expertise, the Fund should explore opportunities to better leverage or strengthen interagency collaboration mechanisms to draw on appropriate outside expertise.

The macro-structural relationships outlined in this paper—both empirical and country-based—can inform judgments about implementing these principles, and prioritizing the Fund's efforts.

42. The earlier empirical analysis can help gauge the relative benefits of different reforms for each country group, providing a starting point toward operationalizing these principles. Table 1 provides a basis for such an exercise—it indicates the relative impact of each type of reform across country groups, but not the impact of different reforms within any given country group. To take this extra step, it is useful to consider the "distance-to-best practice" for countries in each group, defined as the gap between the top performer in each group and the bottom 25th percentile in each reform index. Multiplying this gap by the initial regression coefficients (Table 1) provides an estimate of the expected productivity payoff from

Table 3. Productivity Gains from Different Structural Reforms

REFORMS	AM	EM	LIDC
Financial Sector Reform			
Banking system reform			
Interest controls			
Credit controls			
Privatization			
Supervision			
Capital market development			
Trade Liberalization			
Tariff rates (average)			
Institutional Reform			
Legal system and property rights			
Infrastructure			
Public capital stock			
Market Deregulation			
Agriculture			
Policy environment for foreign investment			
Promotion of competition			
Hiring and firing regulations			
Collective bargaining			
Energy/Transport/Communications			
Innovation			
R&D Spending			

Note: Comparisons across reforms within each country group. Darker shades imply larger gains from reforms.
Source: IMF staff estimates.

closing this reform gap in each country group (Table 3). As the gap does not depend on the particular scaling system of any reform index, this allows the estimated productivity gains to be compared across reform indices. In effect, this indicates the relative effectiveness of each reform in delivering higher productivity growth for each country group (where the darker shades imply relatively larger gains).

43. The reform priorities that emerge resonate with the historical reform patterns and country reform experiences examined earlier.

- Differing priorities among country groups suggest that reform needs evolve as an economy develops. For instance, the relatively important reforms for LIDCs—such as *agriculture*—are consistent with early stages of development when economies are more agricultural and markets are less well developed. Structural reforms that produce the largest TFP growth gains for EMs focus on improving market functioning as they become more industrialized—e.g., *business regulation*. For AMs, priority reforms are geared toward supporting more technologically advanced economies, with more well developed labor and product markets—*innovation* (particularly for those closest to the technology frontier) and *labor market reforms*.

- At the same time, two common priorities emerge from this exercise. *Infrastructure* and *banking reforms* both have the potential for high productivity payoffs in all country groups, reflecting their centrality to the effective functioning of any economy. However, differences among the various aspects of *banking reforms* signals the importance of a more nuanced (or non-linear) interpretation. A wider range of banking system reforms are important for EMs and LIDCs, perhaps as they stand to benefit most from fundamental reforms and financial deepening. Reforms to banking *supervision*, on the other hand, are the priority for AMs, underscoring the importance of adopting balanced and holistic reforms, rather than simply pursing liberalization unchecked.

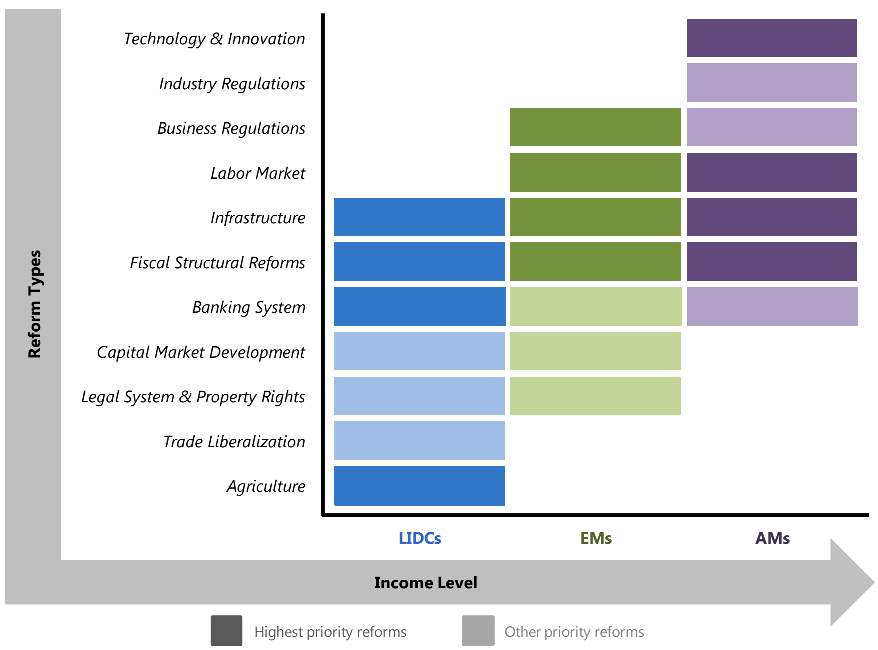
44. Beyond these empirically driven priorities, there is strong evidence that fiscal structural reforms are also a top priority. Where there is clear evidence from other sources, the Fund's operational approach should not be constrained by available reform indices. This is the case, in particular, with fiscal structural reforms. The country case studies demonstrated the importance of fiscal structural reforms for macroeconomic performance,[18] as well as the broader success of countries' structural reform efforts. Similarly, the survey results point to strong demand across the entire membership in this area. The Fund's existing expertise and depth of knowledge in this area ensures that it has been, and will continue to be, the principal provider of expert analysis and advice in many aspects of fiscal structural reform across all parts of the membership.

45. Collectively, this can inform how member countries and the Fund think about prioritizing structural reforms issues. It makes intuitive sense that countries focus on those reform

[18] The paper on *Fiscal Policy and Long-term Growth* also reiterated their importance for growth, and offered concrete suggestions on priority tax and expenditure polices that can help promote growth (see Table 1 of that paper).

areas likely to yield the largest payoffs. For the Fund as well, it is critical to prioritize, not just in tailoring its country-level analysis and advice, but in deciding at an institutional level where to build capacity and where to rely on other institutions (cognizant of both resource constraints and the Fund's mandate). The reform priorities draw from the range of approach above—empirical, as well as survey- and country-based—can be presented in a stylized "heatmap" of structural priorities (Figure 16) that could help guide the Fund's operational priorities in this area. While these reforms may not always reflect individual priorities, it provides a basis for considering where, on average, there is most value in the Fund "building" versus "borrowing" capacity.

Figure 16. Structural Reforms with Highest Productivity Payoffs within Each Country Group



Note: Comparisons among reforms, within each country group. Darker shades represent the higher priority reforms likely, on average, to have larger gains.

Source: IMF staff estimates.

46. In addition to *which* reforms to prioritize, this paper touches on aspects of reform implementation that merit attention in future analytical work. For instance, the pace of reform appears to matter for productivity growth as much as the type reform. Similarly, there appear to be benefits in implementing multiple reforms simultaneously ('waves'). While these are intuitively sensible lessons, further analytical work is needed to understand these issues more fully (e.g., which reforms at which pace, or which reforms are best bundled together in 'waves'). Over time, these factors will help inform decisions about how to translate the 'heatmap' to individual country circumstances.

IMPLICATIONS AND NEXT STEPS

47. The analysis presented above can help guide the Fund in supporting countries' macro-structural policy needs in several ways. At an institutional level, this helps to direct the Fund's efforts towards reforms that, on average, are likely to offer the global economy the best chance of securing higher and more durable growth. Thus, this approach provides a basis for collaborating with other agencies and in guiding where the Fund may wish to enhance its own capacity to provide advice. This is not to say that macrostructural analysis and advice in individual cases should be limited to those areas, or indeed that they necessarily should even cover those areas. Ultimately, Article IV consultations should always be country-specific. Thus, the primary goal of the 'heatmap' and this institutional approach is to develop a richer analytical foundation and range of diagnostic tools—either from within the Fund or from partnering institutions—that country teams can leverage in their analysis and advice.

48. The analysis allows us to identify more clearly those reform areas to which the Fund's operational efforts should be geared.

- The Fund has a clear comparative advantage and should continue building upon it in fiscal structural and financial sector reforms—at the center of the 'heatmap' (Figure 16). As the only multilateral institution focusing on macroeconomic policy with near universal membership, the Fund should continue to take primary responsibility for providing expert analysis and advice in these areas.

- Moving away from the center of the 'heatmap', there are a number of reform areas where the Fund has no comparative advantage. As these are areas where there is also less likely to be widespread demand across the membership, the Fund should actively seek to collaborate with and leverage other institutions' expertise to provide country-specific analysis (such as innovation or product market reforms (OECD) or agriculture (World Bank)).

- There are however two areas at the center of the 'heatmap'—labor market and infrastructure—that may not be traditional for the Fund or where the Fund may not have established expertise, but are more likely to have a significant bearing on macroeconomic performance for a 'critical mass' of the membership (Figures 14-15). In this context, the Fund may need to scale up its efforts, building on existing or developing new in-house expertise.

49. Four complementary tracks of future work can help move this agenda forward, with a view to developing a deeper understanding of the likely impact of reforms and importantly country needs, as well as enhancing the information and diagnostic tools available for surveillance.

- *Country needs:* To ensure that the Fund's approach reflects more fully a "bottom up" diagnosis of country needs, staff will look to engage more directly with country authorities to better understand the "demand side" of macro-relevant structural reforms. Also, staff will systematically catalogue the coverage of structural issues, and identify good practices, in recent Article IV reports.

- *Ongoing analytical work:* Staff will continue analytical work across the Fund on the various macroeconomic effects of structural reforms, guided by the Fund's mandate and principles outlined in this paper. That is not to say that all research and policy development should mirror the 'heatmap.' Indeed, and as noted earlier, the complexity of the relationship between structural reforms and macroeconomic outcomes warrants further examination.

    - Ongoing analytical work across the Fund will reinforce efforts to build expertise on specific structural issues. Labor and product market reforms feature prominently in the near-term research agenda of both functional and area departments. For instance, further work on labor and product market reforms in the Spring 2016 WEO and by the European Department. Another possible area for further work would be on successfully addressing infrastructure gaps in EMs.

    - Beyond this, future work should also consider expanding the analysis in this paper to focus on other non-TFP benefits of reform, such as resilience (particularly important given the central role of stability in the Fund's mandate), financial stability (including the relationship between financial development/deepening and reform), and inclusive growth. Also, while the empirical work in this paper provides some tentative insights regarding the timing and durability of the impact on productivity of various reforms, it also suggests the need for further research before they can be affirmed definitively.

    - The same is true concerning the insights gained, largely from the country cases, on aspects of implementation. Here, possible areas of future work could consider the role of initial conditions, the interaction between structural reforms and other levers of macroeconomic policy, the timing of reforms, or the costs associated with implementing reforms.

- *Toolkit and operational issues:* Staff will consider modalities and processes to more explicitly incorporate macrostructural issues in the review process and to more actively support country teams. In the context of building a macrostructural toolkit to help staff leverage analytical work and cross-country experiences, an immediate priority will be to put in place mechanisms to disseminate existing analytical work and policy experiences (including the material in Annex I and drawing on ongoing work to identify good practices in recent Article IV reports).

- *Interagency collaboration:* Based on the preliminary understanding (above) of where the Fund needs to build its own expertise and where the Fund should leverage the expertise of other institutions, staff will develop clearer protocols and modalities for inter-agency collaboration. Where possible, staff will look to build on, or draw lessons from, existing dialogue (e.g., with the OECD on product and labor market issues).

50. As part of a broader and longer term agenda, staff will look for opportunities to keep the Board apprised of the various elements of this work. The next major opportunity to engage the Board will be in the context of the 2017 interim assessment of TSR implementation, at which time staff will assess progress on these four tracks of work on structural reforms and, if necessary, identify the need for any reorientation of approach ahead of the 2019 TSR.

ISSUES FOR DISCUSSION

51. Do Directors find the approach outlined above a useful device to help prioritize the Fund's institutional focus on structural issues?

52. Do Directors agree that this helps provide a more strategic approach to selectively strengthen the Fund's macrostructural analytical work and tools?

53. Do Directors agree with the forward-looking analytical agenda on structural reforms?

54. Do Directors concur that labor markets and infrastructure are areas in which the Fund may need to scale up its expertise?

55. Do Directors see merit in exploring options to enhance interagency cooperation and coordination, with the focus outlined above?

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Annex I. Recent Macrostructural Analytical Work at the Fund

This Annex presents selected recent analytical work by IMF staff on macro-relevant structural reforms and policy issues. It includes policy papers presented to the Executive Board, cross-cutting analytical work, as well as analysis done in the context of multilateral and bilateral surveillance.[1]

Table A. Fund Board Papers on Macrostructural Issues

Reference/Title	Coverage	Reform or Policy Issue
Current Challenges in Revenue Mobilization (2015)	AM, EM, LIDC	Revenue administration
Fiscal Policy and Long-term Growth (2015)	AM, EM, LIDC	Fiscal structural reforms
Making Public Investment More Efficient (2015)	AM, EM, LIDC	Public investment
Update on Fiscal Transparency Initiative (2014)	AM,EM, LIDC	Fiscal transparency
Spillovers in International Corporate Taxation Policy (2014)	AM,EM, LIDC	Tax policy
Fiscal Policy and Income Inequality (2014)	AM,EM, LIDC	Fiscal redistribution
Budget Institutions in G-20 Countries (2014)	G-20	Budget institutions
Long-Run Growth and Macroeconomic Stability in Low-Income Countries—The Role of Structural Transformation and Diversification (2014)	LIDC	Export diversification; product market
Jobs and Growth—Analytical and Operational Considerations for the Fund (2013)	AM, EM, LIDC	Labor market
Macroeconomic Policy Frameworks for Resource-Rich Developing Countries (2012)	EM, LIDC	Fiscal structural reforms
Fiscal Transparency, Accountability, and Risk (2012)	AM,EM, LIDC	Fiscal transparency
Fiscal Policy and Employment in Advanced and Emerging Economies (2012)	AM, EM	Labor market
Revenue Mobilization in Developing Countries (2011)	LIDC	Tax policy
The Challenge of Public Pension Reform in Advanced and Emerging Economies (2011)	AM, EM	Pension
Macro-fiscal Implications of Health Care Reforms in Advanced and Emerging Economies (2010)	AM, EM	Health care

[1] Based on inputs provided by area and functional departments. Includes only documents already published. An expanded version of this list will be made available to staff as a step toward building a macrostructural toolkit for staff to facilitate sharing of expertise and country experiences.

Table B. Fund Analytical Papers on Macrostructural Issues		
Reference/Title	**Coverage**	**Reform or Policy Issue**
Inequality and Fiscal Policy, IMF (2015) B. Clements, R. de Mooij, S. Gupta and M. Keen	AM, EM, LIDC	Fiscal Redistribution
Equitable and Sustainable Pensions: Challenges and Experience, IMF (June 2014) B. Clements, F. Eich and S. Gupta	AM, EM	Pension
Assessing the Gains from Structural Reforms for Jobs and Growth, in "Jobs and Growth: Supporting the European Recovery," (April 2014) D. Anderson, B. Bergljot, L. Lusine and D. Muir	Europe	Product market; labor market
Designing a European Fiscal Union. Lessons from the Experience of Fiscal Federations (2014), C. Cottarelli and M. Guerguil	AM, EM	Fiscal framework
Getting Energy Prices Right—from Principle to Practice (2014), I. Parry, D. Heine, E. Lis and S. Li	AM, EM, LIDC	Energy subsidies
Jobs and Growth: Supporting the European Recovery (2014)	Europe	Large-scale reforms
Energy Subsidy Reform: Lessons and Implications (2013)	AM, EM, LIDC	Energy subsidies
Public Financial Management and Its Emerging Architecture, IMF (2013) M. Cangiano, T. Curristine and M. Lazare	AM, EM, LIDC	Budget institutions and management
The Economics of Public Health Care Reform in Advanced and Emerging Economies, IMF (June 2012) D. Coady, B. Clements and S. Gupta	AM, EM	Health care
Fiscal Policy to Mitigate Climate Change: A Guide to Policymakers, IMF (2012) R. de Mooji, M. Keen and I. Parry	AM, EM, LIDC	Climate change
The Taxation of Petroleum and Minerals: Principle, Problems, and Practice, (2010) P. Daniel, M. Keen and C. McPherson	AM, EM, LIDC	Tax policy
Department Paper 14/3, Subsidy Reform in MENA: Recent Progress and Challenges Ahead, C. Sdralevich, et al.	MENA	Subsidy reform
Departmental Paper 14/1, Toward New Horizons: Arab Economic Transformation Amid Political Transition, D. Gressani, H. Finger, et al.	MENA	Growth
IMF Occasional Paper No. 268, Structural Reforms and Economic Performance in Advanced and Developing Countries, Ostry, Jonathan David; Prati, Alessandro; Spilimbergo, Antonio (2009)	AM, EM, LIDC	Large-scale reforms
SDN 15/19, A Strategy for Resolving Europe's Problem Loans, S. Aiyar, et al.	Europe	Insolvency reform/NPL resolution
SDN 15/11, Is the Glass Half Empty or Half Full? Issues in Managing Water Challenges and Policy Instruments, (includes five Burkina Faso, Country Case studies), K. Kochhar, C. Pattillo, Y. Sun, N. Suphaphiphat, A. Swiston, R. Tchaidze, B. Clements, S. Fabrizio, V. Flamini, L. Redifer, H. Finger, and an IMF Staff Team	AM, EM, LIDC, Burkina Faso, DRC, Pakistan, Singapore, and Yemen	Water management
SDN 15/08, Rethinking Financial Deepening: Stability and Growth in Emerging Markets, R. Sahay, M. Cihak, P. N'Diaye, A. Barajas, R. Bi, D. Ayala, Y. Gao, A. Kyobe, L. Nguyen, C. Saborowski, K. Svirydzenka and S. Yousefi	EM	Financial deepening
SDN 15/07, Revitalizing SME Securitization in Europe, Aiyar, S., Al-Eyd, A., Barkbu, B. and A. Jobst	Euro Area	Financial sector

Table B. Fund Analytical Papers on Macrostructural Issues (cont.)

Reference/Title	Reference/Title	Reference/Title
SDN 15/04, Tackling Small and Medium Sized Enterprise Problem Loans in Europe, W. Bergthaler, K. Kang, Y. Liu and D. Monaghan	Europe	Insolvency reform/NPL resolution
SDN 15/03, The New Normal: A Sector-level Perspective on Productivity Trends in Advanced Economies, E. Dabla-Norris, M. Guo, V. Haksar, M. Kim, K. Kochhar, K. Wiseman and A. Zdzienicka	AM	Large-scale reforms
SDN 15/02, Fair Play: More Equal Laws Boost Female Labor Force Participation, C. Gonzales, S. Jain-Chandra, K. Kochhar and M. Newiak	AM, EM, LIDC	Labor market; gender
SDN 14/11, Youth Unemployment in Advanced Economies in Europe: Searching for Solutions, A. Banerji, et al.	Europe	Unemployment; labor market
SDN 14/10, Making the Most of Public Investment in MENA and CCA Oil-exporting Countries, M. Albino-War, et al.	MENA, CCA	Public investment
SDN 14/02, Redistribution, Inequality, and Growth, Jonathan D. Ostry, A. Berg, and C. G. Tsangarides	AM, EM, LIDC	Inclusive growth
SDN 13/10, Women, Work, and the Economy: Macroeconomic Gains From Gender Equity, K. Elborgh-Woytek, M. Newiak, K. Kochhar, et al.	AM, EM, LIDC	Labor market; gender
SDN 13/09, Toward a Fiscal Union for the Euro Area, C. Allard, P. Koeva Brooks, J. Bluedorn, F. Bornhorst, K. Christopherson, F. Ohnsorge, T. Poghosyan and IMF Staff Team	Euro Area	Fiscal framework
SDN 13/08, Anchoring Growth: The Importance of Productivity-Enhancing Reforms in Emerging Market and Developing Economies. Journal of International Commerce, Economics and Policy, E. Dabla-Norris, G. Ho, K. Kochhar, A. Kyobe and R. Tchaidze.	EM, LIDC	Large-scale reforms
SDN 13/01, A Banking Union for the Euro Area, R. Goyal, P. Koeva Brooks, M. Pradhan, T. Tressel, G. Dell'Ariccia, R. Leckow, C. Pazarbasioglu and IMF Staff Team	Euro Area	Financial sector
SDN 12/07, Fostering Growth in Europe Now, B. Barkbu, R. Jesmin, V. Rodrigo and IMF staff team	Europe	Product market; labor market
SDN 11/08, Inequality and Unsustainable Growth: Two Sides of the Same Coin? A. Berg and J. Ostry	AM, EM, LIDC	Inclusive growth
SDN 09/28, Climate Policy and the Recovery, B. Jones and M. Keen	AM, EM, LIDC	Climate change
WP 15/76, Recent U.S. Labor Force Dynamics: Reversible or Not, R. Balakrishnan, M. Dao, J. Sole, J. Zook	USA	Labor market
WP 15/62, RSD 2015, Estimating Potential Growth in the Middle East and Central Asia, P. Mitra, et al.	MCD	Potential growth
WP 15/51, Structural transformation—How Does Thailand Compare?	Thailand	Structural transformation
WP 15/46, Interconnectedness, Systemic Crises and Recession, E. Vega and S. Russell	…	Macrofinancial linkages
WP 15/45, Made in Mexico: Energy Reform and Manufacturing Growth, A. Jorge and F. Valencia	Mexico	Energy; manufacturing growth

Table B. Fund Analytical Papers on Macrostructural Issues (cont.)

Reference/Title	Reference/Title	Reference/Title
WP 15/32, Investment in the Euro Area: Why has it Been Weak?, B. Barkbu, P. Berkmen, J. Bluedorn, P. Lukyantsau, S. Saksonov and H. Schoelermann	Euro Area	Investment
WP 15/31, Can Islamic Banking Increase Financial Inclusion?, S. Naucer, A. Barajas, A. Massara	AM, EM, LIDC	Financial Inclusion
WP 15/30, 2015, Energy Subsidies in Latin America and the Caribbean: Stocktaking and Policy Challenges, G. Di Bella, L. Norton, J. Ntamatungiro, S. Ogawa, I. Samaké and M. Santoro	Latin American and Caribbean	Energy subsidies
WP 15/25, Harnessing Resource Wealth for Inclusive Growth in Fragile States, C. Delechat, W. Clark, P. Gupta, M. Kabedi-Mbuyi, M. Koulet-Vickot, C. Macario, T. Orav, M. Rosales, R. Tapsoba, D. Zhdankin and S. Yang	Fragile States	Fiscal structural reforms
WP 15/22, Identifying Constraints to Financial Inclusion and Their Impact on GDP and Inequality: A Structural Framework for Policy, E. Dabla-Norris, Y. Ji, R. Townsend and D.F. Unsal	Egypt, Kenya, Malaysia, Mozambique, the Philippines, Uganda	Financial inclusion
WP 15/16, U.S. Total Factor Productivity Slowdown: Evidence from the U.S. States, R. Cardarelli and L. Lusinyan	USA	Productivity
WP 14/221, Cashing in for Growth: Corporate Cash Holdings as an Opportunity for Investment in Japan, G. Sher	Japan	Corporate governance
WP 14/153, Unemployment and Structural Unemployment in the Baltics, C. Ebeke and G. Everaert	Europe	Unemployment; labor market
WP 14/148, Public Investment as an Engine of Growth, A. Warner	AM, EM, LIDC	Public Investment; infrastructure
WP 14/141, Balance Sheet Repair and Corporate Investment in Japan, J.S. Kang	Japan	Investment
WP 14/115, Labor Market Issues in the Caribbean: Scope to Mobilize Employment Growth, M. E. Kandil, G. Lindow, M. Mansilla, J.C. Okwuokei, J. Schmittmann, Q. Chen, X. Li, M. Santoro, S. Stavis	Caribbean, Trinidad and Tobago	Labor market
WP 14/113, France, Article IV, The EU Services Directive: Gains from Further Liberalization, E.F. Corugedo and E.P. Ruiz	France	Services sector; productivity
WP 14/54, How can Korea Boost Potential Output to Ensure Continued Income Convergence? S. Jain-Chandra and L. Zhang	Korea	Structural reforms; potential growth
WP 14/36, Assessing Countries' Financial Inclusion Standing—A New Composite Index, G. Amidzic, A. Massara and A. Mialou	AM, EM, LIDC	Financial inclusion
WP 13/240, Sector-Level Productivity, Structural Change, and Rebalancing in China, M. Nabar and K. Yan	China	Structural transformation
WP 13/237, The Investment-Financing-Growth Nexus: The Case of Liberia, W. Clark and M. Rosales	LIDCs	Fiscal structural reforms
WP 13/204, Enhancing China's Medium-Term Growth Prospects : The Path to a High-Income Economy, M. Nabar and P. N'Diaye	China	Structural transformation
WP 13/202, The Path to Higher Growth : Does Revamping Japan's Dual Labor Market Matter? C. Aoyagi and G. Ganelli	Japan	Labor market

Table B. Fund Analytical Papers on Macrostructural Issues (concluded)

Reference/Title	Reference/Title	Reference/Title
WP 13/196, Is Labor Market Mismatch a Big Deal in Japan? I. Shibata	Korea	Labor market
WP, 13/175, Financial Interconnectedness and Financial Sector Reforms in the Caribbean, S. Ogawa, J. Park, D. Singh and N. Thacker	Caribbean	Financial interconnectedness; regulation and supervision
WP 13/97, Productivity or Employment: Is it a Choice? A. De Michelis, M. Estevao and B.A. Wilson	Dominican Republic	Labor market
WP 13/44, Dealing with Private Debt Distress in the Wake of the European Financial Crisis: A Review of the Economics and Legal Toolbox, Y. Liu and C. Rosenberg	Europe	Insolvency reform/NPL resolution
WP 13/40, Growth and Employment in the Dominican Republic: Options for a Job-Rich Growth, U. Abdullaev and M. Estevao	Dominican Republic	Labor market; productivity
WP 12/244, Jamaica Debt Exchange, D. Grigorian, T. Alleyne and A. Guerson	Jamaica	Sovereign debt management
WP 11/248, The Role of Structural Reforms in Raising Economic Growth in Central America, S. Cas, A. Swiston and L.D. Barrot	Central America, El Salvador	Structural reforms; growth

Table C. Multilateral Surveillance-related Products on Macrostructural Issues

Reference/Title	Sample	Reform or Policy Issue
GFSR, October 2014, Chapter 3, *Risk Taking by Banks: The Role of Governance and Executive Pay*	AM, EM, LIDC	Financial Sector
WEO, October 2014, Chapter 3, *Is It Time for an Infrastructure Push? The Macroeconomic Effects of Public Investment*	AM, EM	Infrastructure
AFR REO, April 2015, Chapter 2, *How Can Sub-Saharan Africa Harness the Demographic Dividend?*	Sub-Saharan Africa	Demographics
AFR REO, April 2015, Chapter 3, *Global Value Chains: Where are You? The Missing Link in Sub-Saharan Africa's Trade Integration*	Sub-Saharan Africa	Trade; integration
AFR REO, October 2014, Chapter 2, *Building Resilience in Fragile States in Sub-Saharan Africa*	Sub-Saharan Africa	Large-scale reforms
AFR REO, October 2014, Chapter 3, *Addressing the Infrastructure Deficit in Sub-Saharan Africa*	Sub-Saharan Africa	Infrastructure
AFR REO, April 2014, Chapter 2, *Fostering Durable and Inclusive Growth*	Sub-Saharan Africa	Large-scale reforms
AFR REO, May 2013, Chapter 4, *Reforming Energy Subsidies*	Sub-Saharan Africa	Energy subsidies
AFR REO, October 2012, Chapter 3, *Structural Transformation in Sub-Saharan Africa*	Sub-Saharan Africa	Large-scale reforms
APD REO, April 2015 Chapter 2, *Reaping the Benefits from Global Value Chains*	Asia	Trade
EUR Regional Economic Issues Special Report, October 2014, *25 Years of Transition Post-Communist Europe and the IMF*	EUR	Structural reforms; economic transition
EUR, Central and Eastern Europe: New Member States Policy Forum 2014, Selected Issues Paper, *Making the Most of the EU Single Market*	EUR	Trade integration
EUR Regional Economic Issues, October 2013, *Faster, Higher, Stronger—Raising the Growth Potential of CESEE*	EUR	Labor market
MCD REO 2014, Annex 2, *Public Infrastructure Investment in the MENAP and CCA Region*	MCD	Infrastructure
MCD REO 2014, Annex 3, *Access to Finance for Small and Medium-sized Enterprises in the MENAP and CCA*	MCD	Financial inclusion
MCD REO 2014, Annex 4, *Measuring Inclusiveness in the MENAP and CCA Region*	MCD	Inclusiveness
MCD REO 2014, Annex 5, *Economic Cooperation and Integration in the CCA*	CCA	Trade; integration
MCD REO 2012, Annex 3.1, *Measuring the Informal Economy in the Caucasus and Central Asia*	CCA	Inclusiveness
WHD REO, 2014, Chapter 5, *Long-Run Growth in Latin America and the Caribbean: The Role of Economic Diversification and Complexity*	Latin American and Caribbean	Trade

Table D. Bilateral Surveillance-related Products on Macrostructural Issues

Reference/Title	Reform or Policy Issue
Algeria, 2014 Article IV, Selected Issues Paper, *Designing a Fiscal Framework for Algeria*	Fiscal framework
Algeria, 2014 Article IV, Selected Issues Paper, *Fostering Export Diversification in Algeria*	Export diversification
Algeria, 2014 Article IV, Selected Issues Paper, *Fostering Private Sector Job Creation in Algeria*	Jobs and growth
Algeria, 2014 Article IV, Selected Issues Paper, *Price Competitiveness in Algeria*	Competitiveness
Angola, 2014 Article IV, Selected Issues Paper, *Inclusive Growth*	Inclusive growth
Azerbaijan, 2013 Article IV, Selected Issues Paper, *Revamping the Fiscal Policy Framework in Azerbaijan*	Fiscal framework
Barbados, 2015 Article IV, Selected Issues Paper, *On the Adoption of Fiscal Rules*	Fiscal rule
Belgium, 2012 Article IV, Selected Issues Paper, *Towards Job-Creating Labor Market Reform*	Labor market
Belize, 2014 Article IV, Selected Issues Paper, *Toward a Fiscally Sustainable Wage Negotiation Framework*	Wage framework
Belize, 2008 Article IV, Selected Issues Paper, *Management of Oil Revenues*	Oil revenues management
Belize, 2006 Article IV, Selected Issues Paper, *The Impact of EU Trade Preference Erosion on Belize*	Trade
Bolivia, 2013 Article IV, Selected Issues Paper, *A Medium-term Fiscal Framework to Manage Resource Wealth in Bolivia*	Fiscal rule; resource wealth management
Botswana, 2014 Article IV, Selected Issues Paper, *Fiscal Policy Implications for Labor Market Outcomes in Middle-Income Countries*	Labor market
Botswana, 2014 Article IV, Selected Issues Paper, *Sustaining Growth and Enhancing Economic Diversification in Botswana*	Economic diversification
Brazil, 2015 Article IV, Selected Issues Paper, *Filling the Gap: Infrastructure Investment in Brazil*	Infrastructure
Burkina Faso, 2014 Article IV, Selected Issues Paper, *An Overview of the Cotton Sector*	Cotton sector; structural transformation
Burkina Faso, 2014 Article IV, Selected Issues Paper, *Inclusive Growth*	Inclusive growth
Burkina Faso, 2014 Article IV, Selected Issues Paper, *Mining Sector and Considerations for a Fiscal Rule*	Mining sector; fiscal rule
Egypt, 2014 Article IV, Selected Issues Paper, *Policies to Promote Growth and Create Jobs Over the Next Decade*	Growth; labor market
El Salvador, 2014 Article IV, Selected Issues Paper, *Assessing Potential Output*	Productivity; labor market
El Salvador, 2014 Article IV, Selected Issues Paper, *Fostering Diversification and Integration*	Export diversification
El Salvador, 2014 Article IV, Selected Issues Paper, *Investment Drivers in Central America: An Application to El Salvador*	Investment
Euro Area, 2015 Article IV, Selected Issues Paper, *Euro Area Structural Reform Governance*	Governance
Euro Area, 2015 Article IV, Selected Issues Paper, *Policy Options for Tackling Non-Performing Loans in the Euro Area*	Insolvency reform/NPL resolution
Euro Area, 2014 Article IV, Selected Issues Paper, *External Rebalancing in the Euro Area: Developments and Policies*	Product market; labor market
France, 2014 Article IV, Selected Issues Paper, *France in the Global Value Chains: Revisiting the Competitiveness Loss*	Trade
France, 2013 Article IV, Selected Issues Paper, *Potential GDP Estimates for France: Prudent (and Calling for Action)*	Structural reforms; potential growth

Table D. Bilateral Surveillance-related Products on Macrostructural Issues (cont.)	
Reference/Title	**Reference/Title**
Germany, 2015 Article IV, Selected Issues Paper, *Women in the Labor Market and the Demographic Challenge*	Labor market; gender
Greece, 2013 Article IV, Selected Issues Paper, *Restoring Growth*	Product market; labor market
Guinea-Bissau, 2015 Article IV, Selected Issues Paper, *Economic Diversification*	Export diversification; product market
Guinea-Bissau, 2015 Article IV, Selected Issues Paper, *Financial Stability, Inclusion and Deepening*	Financial Inclusion
Haiti, 2015 Article IV, Selected Issues Paper, *Opportunities and Challenges for Growth*	Large-Scale reforms
Haiti, 2015 Article IV, Selected Issues Paper, *Explaining the ECF's Fiscal Target*	Fiscal structural reforms
Haiti, 2015 Article IV, Selected Issues Paper, *Public Expenditure in Haiti*	Fiscal structural reforms
India, 2015 Article IV, Selected Issues Paper, *Price and Income Elasticity of Indian Exports: The Role of Structural Rigidities*	Infrastructure; trade
India, 2014 Article IV Selected Issues Paper, *Macroeconomic Effects of Labor and Product Market Deregulation in India*	Labor market
India, 2015 Article IV, Selected Issues Paper, *Financial Inclusion and Access in India: Analysis Using a Structural Model*	Financial inclusion
Indonesia, 2013 Article IV, Appendix 6, *Indonesia—Labor Market Policies and Economic Growth*	Labor market
Iran 2014, Article IV, Selected Issues Paper, *An Application of Unemployment in Iran using MCD Unemployment Template*	Jobs
Iran, 2014 Article IV, Selected Issues Paper, *Targeted Subsidy Reform in Iran*	Subsidies and equity
Italy, 2015 Article IV, Selected Issues Paper, *Does Public Sector Inefficiency Constrain Firm Productivity: Evidence from Italian Province*	Fiscal structural reform, productivity
Italy, 2015 Article IV, Selected Issues Paper, *Resolving Non-Performing Loans in Italy: A Comprehensive Approach*	Insolvency reform/NPL resolution
Italy, 2015 Article IV, Selected Issues Paper, *The Italian and Spanish Corporate Sectors in the Aftermath of the Crisis*	Corporate solvency
Italy, 2014 Article IV, Selected Issues Paper, *Judicial Reforms for Growth*	Judicial reform, growth
Jordan 2014, Article IV, Selected Issues Paper, *Electricity Tariff Increases--Impact on Competitiveness*	Competitiveness
Jordan, 2014 Article IV, Selected Issues Paper, *A Generation in Waiting—Unlocking the Employment Potential of Jordan's Population*	Jobs and growth
Kazakhstan, 2014 Article IV, Selected Issues Paper, *Assessment of Inclusive Growth*	Inclusive growth
Kuwait, 2014 Article IV, Selected Issues Paper, *Small and Medium Term Enterprises: Pursuit of Growth and Diversification in Kuwait*	Growth; diversification
Kuwait, 2013 Article IV, Selected Issues Paper, *In Pursuit of Diversification, Private Sector Development and Job Creation*	Jobs and growth; economic diversification
Kuwait, 2013 Article IV, Selected Issues Paper, *Optimal Fiscal Policy for Kuwait: How much to save and how much to invest*	Fiscal structural reforms
Lebanon, 2014 Article IV, Selected Issues Paper, *An Application of the MCD Unemployment Template*	Jobs
Lebanon, 2014 Article IV, Selected Issues Paper, *Designing a Fiscal Framework for a Prospective Commodity Producer: Options for Lebanon*	Fiscal framework
Libya, 2013 Article IV, Selected Issues Paper, *A Note on Subsidy Reform in Libya*	Energy subsidies; equity
Luxembourg, 2014 Article IV, Selected Issues Paper, *External Developments, Competitiveness, and Labor Market Policies*	Labor market; external competitiveness

Table D. Bilateral Surveillance-related Products on Macrostructural Issues (cont.)	
Reference/Title	**Reference/Title**
Madagascar, 2015 Article IV, Selected Issues Paper, *Financial System in Madagascar - Structure Performance and Risks*	Financial sector
Mauritania, 2015 Article IV Report, *Growth, Employment and Socio-demographic Challenges in Mauritania, Structural Reforms and Economic Diversification For More Inclusive Growth in Mauritania*	Labor market; economic diversification; inclusive growth
Mauritania, 2015 Article IV, Selected Issues Paper, *Growth, Employment and Socio-Demographic Challenges in Mauritania*	Jobs and growth
Mauritania, 2015 Article IV, Selected Issues Paper, *Managing Resource Wealth in Mauritania: Considerations for a Fiscal Framework*	Fiscal framework
Mauritania, 2015 Article IV, Selected Issues Paper, *Structural Reforms and Economic Diversification for More Inclusive Growth*	Inclusive growth; economic diversification
Mexico, 2014 Article IV, Selected Issues Paper, *The Impact of Mexico's Energy Reform on Hydrocarbons Production*	Energy sector
Mexico, 2013 Article IV, Selected Issues Paper, *Mexico—Reforms to the Fiscal Framework*	Fiscal framework
Morocco, 2013 Article IV, Selected Issues Paper, *Fuel Subsidies in Morocco: International Experience and Possible Ways Forward*	Fuel subsidies
Morocco, 2013 Article IV, Selected Issues Paper, *Inclusive Growth in Morocco: Stylized Facts and Policies*	Inclusive growth
Namibia, 2014 Article IV, Selected Issues Paper, *Policies That can Raise Potential Growth in Small Middle-Income Countries of SSA*	Potential growth; economic transformation
Netherlands, 2014 Article IV, Selected Issues Paper, *SME Financing in the Netherlands*	SME profitability and funding
Nicaragua, 2015 Article IV, Selected Issues Paper, *Lifting a Constraint on Growth: Achievements and Challenges of Nicaragua's Electricity Sector*	Energy sector
Nicaragua, 2015 Article IV, Selected Issues Paper, *Raising Potential Output: The Challenge of Inclusive Growth*	Potential growth; inclusive growth
Palau, 2014 Article IV, Selected Issues Paper, *Promoting Tourism and Growth in Palau*	Economic diversification
Peru, 2015 Article IV, Selected Issues Paper, *Investment Dynamics in Peru*	Growth
Peru, 2013 Article IV, Selected Issues Paper, *Fiscal Framework Alternatives for a Resource Rich Country*	Fiscal framework
Peru, 2013 Article IV, Selected Issues Paper, *The Spillover Effects of China's Slowdown and Rebalancing on Peru*	External
Peru, 2012 Article IV, Selected Issues Paper, *Trade Evolution and Policy Challenges*	Trade
Peru, 2011 Article IV, Selected Issues Paper, *Advances and Challenges in Social Policies*	Social policies
Philippines, 2015 Article IV, Selected Issues Paper, *Capital Market Development in the Philippines: Boosting Investment and Growth*	Capital market development
Philippines, 2015 Article IV, Selected Issues Paper, *Improving Infrastructure in the Philippines*	Infrastructure
Philippines, 2014 Article IV, Selected Issues Paper, *Financial Inclusion in the Philippines*	Financial inclusion
Philippines, 2014 Article IV, Selected Issues Paper, *The Philippines Employment Challenges*	Labor market
Poland, 2015 Article IV, Selected Issues Paper, *Raising Productivity Growth in Poland: The Role of Structural Transformation*	Labor market; structural transformation

Table D. Bilateral Surveillance-related Products on Macrostructural Issues (cont.)	
Reference/Title	**Reference/Title**
Portugal, 2015 Article IV, Selected Issues Paper, *Creating Jobs for Lower-Skilled Workers*	Labor market
Portugal, 2015 Article IV, Selected Issues Paper, *Structural Reforms to Boost External Competitiveness*	Large-scale reforms
Portugal, 2015 Article IV, Selected Issues Paper, *Supporting Medium-Term Growth Through Debt Restructuring: Progress, Impediments and Remaining Challenges*	Insolvency reform/NPL resolution
Portugal, 2015 Article IV, Selected Issues paper, *Taking Stock of Structural Reforms, A Firm Level Perspective*	Large-scale reforms
Portugal, 2013 Article IV, Selected Issues Paper, *How Fast Can Portugal Grow*	Large-scale reforms
Portugal, 2013 Article IV, Selected Issues Paper, *Portugal's Competitiveness*	Large-scale reforms
Qatar, 2015 Article IV, Selected Issues Paper, *Breaking Down Qatar's Rapid Growth: Input Growth or Productivity or Both?*	Growth
Qatar, 2015 Article IV, Selected Issues Paper, *Strengthening Fiscal Policy and Fiscal Framework in Qatar*	Fiscal framework
Qatar, 2014 Article IV, Selected Issues Paper, *Assessing Efficiency of Qatar Public Investment*	Fiscal framework
Romania, 2015 Article IV, Selected Issues Paper, *Benefits of Boosting Quality Public Infrastructure Spending in Romania*	Infrastructure
Romania, 2015 Article IV, Selected Issues Paper, *Romanian State-Owned Enterprises: Challenges and Reform Priorities*	State-owned enterprise; energy and transport sector
Saudi Arabia, 2013 Selected Issues Paper, *Labor Market Policies for Addressing Saudi Unemployment*	Labor market
Senegal 2014 Article IV, Selected Issues Paper and African Departmental Paper, *Growth, Structural Transformation, and Export Diversification*	Export diversification; product market
Senegal, 2014 Article IV, Selected Issues Paper and African Departmental Paper, *Social Safety Nets in Senegal*	Fiscal structural reforms; labor market
Slovenia, 2014 Article IV, Selected Issues Paper, *Legal and Institutional Challenges in Corporate Insolvency*	Insolvency reform/NPL resolution
South Africa, 2014 Article IV, Selected Issues Paper, South *Africa's External Adjustment: Any Role for Structural Factors?*	Structural factors; exports
Spain 2015 Article IV, Selected Issues Paper, *Recent Labor Market Reforms: A Preliminary Assessment*	Labor market
Spain, 2015 Article IV, Selected Issues Paper, *Obstacles to Firm Growth in Spain*	Small firms growth; productivity
Spain, 2015 Article IV, Selected Issues Paper, *Spain's Insolvency Regime: Reforms and Impact*	Insolvency reform/NPL resolution
Spain, 2014 Article IV, Selected Issues Paper, *Tackling the Corporate Debt Overhang in Spain*	Insolvency reform/NPL resolution
Spain, 2014 Article IV, Selected Issues Paper, *What is Spain's Sustainable Growth Rate?*	Potential output
Spain, 2013 Article IV, Selected Issues Paper, *Does Spain's Insolvency Framework Need Further Reforms to Address Debt Distress in the Non-Financial Private Sector?*	Insolvency reform/NPL resolution
Spain, 2015 Article IV, Selected Issues Paper, *Potential Output in France, Germany, and Spain: A Re-Assessment*	Potential output
Sudan 2012, Article IV, Selected Issues Paper, *Fiscal Cost and Distributional Impact of Fuel Subsidies*	Subsidies and equity
Sudan 2012, Article IV, Selected Issues Paper, *Fiscal Decentralization: Trends, Challenges and Perspectives*	Fiscal structural reforms

Table D. Bilateral Surveillance-related Products on Macrostructural Issues (concluded)

Reference/Title	Reference/Title
Sudan, 2012 Article IV, Selected Issues Paper, *Growth and Employment in Sudan*	Growth; employment
Suriname, 2014 Article IV, Selected Issues Paper, *Fostering Sustainability and Inclusive Growth in Suriname*	Inclusive growth
Suriname, 2013 Article IV, Selected Issues Paper. *The Labor Market in Suriname*	Labor market
Suriname, 2013, Article IV, Selected Issue Paper. *Fiscal Sustainability and Natural Resource Wealth for Suriname*	Fiscal sustainability; resource wealth
Tanzania, 2014 Article IV, Annex I, *Economic Diversification and Growth: Tanzania Experience*	Economic diversification
Thailand, 2015 Article IV, Appendix IX. *Thailand's Demographic Challenge*	Demographics
United Arab Emirates, 2014 Article IV, Selected Issues Paper, *The Efficiency of Public Spending*	Public spending efficiency
United States, 2013 Article IV, Selected Issues Paper, *Risky Business: The Uncertainty in U.S. Health Care Spending*	Health care
United States, 2012 Article IV, Selected Issues Paper, *International Spillovers from US Corporate Tax Reform*	Tax Policy
WAEMU, 2015 Article IV, Selected Issues Paper, *Financial Inclusion in the WAEMU*	Financial Inclusion
WAEMU, 2015 Article IV, Selected Issues Paper, Growth, *Structural Transformational and Diversification in the WAEMU*	Structural transformation; export diversification; product market; demographics
WAEMU, 2015 Article IV, Selected Issues Paper, *Trade and Revenue Implications of ECOWAS Common External Tariff on WAEMU Member States*	Trade
West Bank and Gaza, 2013, Selected Issues Paper, *Growth in the Palestinian Economy*	Growth
West Bank and Gaza, 2013, Selected Issues Paper, *The Link between Growth, Employment and Unemployment in West Bank and in Gaza*	Jobs and growth
Yemen, 2013 Article IV, Appendix II, *Unemployment, Poverty and Human Development Indicators in Yemen*	Jobs; poverty reduction
Yemen, 2013 Article IV, Appendix III, *Fiscal Policy and Structural Reforms in Yemen*	Fiscal structural reforms
Zambia, 2015 Article IV, Selected Issues Paper, *Enhancing Financial Inclusion in Zambia*	Financial inclusion
Zambia, 2015 Article IV, Selected Issues Paper, *Toward More Inclusive Growth*	Economic diversification; infrastructure; labor market
Zambia, 2013 Article IV, Appendix V, *Lending Rate Ceilings and Their Impact on the Nonbanking Sector*	Financial sector
Zambia, 2012 Article IV, Annex V, *Challenges to Financial Services in Zambia*	Financial sector; financial inclusion

Annex II. Defining and Measuring Structural Reforms

The priority for this paper is to focus on reform indicators that cover a sufficiently large sample across all income groups to ensure that the analysis in this paper is sufficiently representative of the entire Fund membership. However, structural reforms are inherently difficult to measure because they often involve policies or conditions that cannot be easily quantified, particularly compared to the measurability of many macroeconomic policies. In this regard, it is important to acknowledge data constraints—both in availability, measurement, and coverage—that limit the scope for quantitative analysis of structural reforms.

While more exhaustive and granular indicators are more readily available for advanced economies, and in particular types of reforms, this underscores the importance of efforts underway to address data gaps, including by the Fund. Nevertheless, there have been a number of efforts to develop indicators that facilitate cross-country empirical analysis of structural reform, including work done by the IMF (2008) as well as other international organizations.

The database used for the analysis in this paper covers 108 countries—33 advanced markets (AMs), 53 emerging markets (EMs), and 22 low-income developing countries (LIDCs)—during the period 1970-2011. It includes data for 10 types of structural reforms compiled from a wide array of sources such as the Economist Intelligence Unit, Fraser Institute, IMF, and Organisation for Economic Cooperation and Development (OECD). The reform areas covered include financial sector reforms, trade liberalization, institutional reforms, as well as a range of reforms related to the functioning and regulation of markets. Following are the descriptions of the specific reform variables:

Financial Sector Reforms

Banking System Reform: The banking sector reform index is a composite of five sub-indices on: (i) interest rate controls, such as floors or ceilings; (ii) credit controls, such as directed credit, and subsidized lending; (iii) restrictions on bank competition, such as limits on branches and barriers to entering the banking sector, including licensing requirements or limits on foreign banks; (iv) the degree of state ownership; and (v) the quality of banking supervision and regulation, including power of independence of bank supervisors, adoption of a Basel I capital adequacy ratio, and framework for bank inspections. Each of these sub-indices is aggregated with equal weights. *Source:* Prati et al. 2012 "Which reforms work and under what institutional environment? Evidence from a new dataset on structural reform", Abiad and others (2008).

Capital Market Development: The index refers to policies that either regulate or encourage the development of securities markets, including the auctioning of government securities, establishing debt and equity markets, policies to encourage the development of bond and equity markets, and on the openness of the domestic stock market to foreigner investors. *Source:* Abiad, Abdul, Enrica Detragiache, and Thierry Tressel, "A New Database of Financial Reforms," IMF Working Paper WP/08/266, December 2008.

Trade Reform

Trade Liberalization: This index reflects average tariff rates, with missing values extrapolated using implicit weighted tariff rates. It is measured on a scale of 0 to 1, where zero means tariff rates are 60 percent or higher and 1 means tariff rates are zero. *Source:* Prati et al. 2012 "Which reforms work and under what institutional environment? Evidence from a new dataset on structural reform."

Institutional Reform

Legal System and Property Rights: This index gauges the legal protections afforded individuals and property, and thus a legal system consistent with economic freedom in terms of the rule of law, security of property rights, an independent and unbiased judiciary, and an impartial court system. The index is assembled by EFW-Fraser Institute from three primary sources: the PRS Group's *International Country Risk Guide*, the World Economic Forum's *Global Competitiveness Report*, and the World Bank's *Doing Business* project and Worldwide Governance Indicators. *Source:* EFW-Fraser Institute Database, 1975–2012.

Market Regulation and Function

Agriculture: This index aims to capture the extent of government intervention in the market for the main agricultural export commodity in each country. Each country-year pair is assigned one of four degrees of intervention: (i) maximum (public monopoly or monopsony in production, transportation, or marketing); (ii) high (administered prices); (iii) moderate (public ownership in relevant producers, concession requirements); and (iv) no intervention. *Source:* Prati et al. 2012 "Which reforms work and under what institutional environment? Evidence from a new dataset on structural reform"; IMF Index of Agricultural regulation.

Business regulation:

- *Promotion of competition:* This is a qualitative indicator which looks at government policies on actively promoting competition and curbing unfair business practices. It is scored on a 1-5 scale as follows: (1) very poor-no effective competition institutions or legislation; (2) poor-competition policy and legislation exist; little enforcement action; (3) fair-some sanctions to curb monopoly power; reduction of entry restrictions; (4) good-significant actions to reduce monopoly power and promote competition; (5) very good-unrestricted entry to almost all markets. Effective enforcement of well-drafted competition policy. *Source:* Economist Intelligence Unit.

- *Policy environment for foreign investment:* This index scores countries between 1 and 10 on a variety of measures, including government policy towards foreign investment, investment protection schemes, and the risk of expropriation, with 1 being the worst and 10 the best. *Source:* Economist Intelligence Unit.

Labor Market Reforms:

- *Hiring and firing regulations:* This index is based on an Executive Opinion Survey conducted by the World Economic Forum, which asks whether the hiring and firing of workers in a country is impeded by regulations (=1) or flexibly determined by employers (=7). *Source:* World Economic Forum, Global Competitiveness Report.

- *Collective bargaining:* This index is based on an Executive Opinion Survey conducted by the World Economic Forum, which asks whether wages in a country are generally set by a centralized bargaining process (=1) or up to each individual company (=7). *Source:* World Economic Forum, Global Competitiveness Report.

Regulation in energy, transport and communications (ETCR): This index summarizes regulatory provisions in seven sectors: telecoms, electricity, gas, post, rail, air passenger transport, and road freight. In this regard, regulations pertain to factors such as market entry, public ownership, vertical integration, and market structure. *Source:* OECD.

Infrastructure

Infrastructure: While to date there is no established index that appropriately captures infrastructure reform, here we use public capital—the principal input into the production of public infrastructure—that is most commonly used in Fund and academic analysis. The PPP-adjusted ($2005) public capital stock is measured as the accumulated value of public investment over time, adjusted for depreciation which varies by income group and over time. *Source:* Fiscal Monitor.

Innovation

R&D Expenditure: Current and capital expenditures (both public and private) on creative work undertaken to increase stock of knowledge, expressed as percent of GDP. *Source:* Economist Intelligence Unit.

Annex III. Empirical Approach & Results

I. Panel Regression Analysis

The regression analysis proceeds in three steps:

- **Step 1 – We estimate the relationship between different types of reform and productivity growth (Table 1, main text).** A separate panel regression equation is estimated for each country group using a sample of 108 countries—33 AMs, 53 EMs and 22 LIDCs—from 1970 to 2011.

$$\Delta \log(TFP_{i,t}) = \beta_0 + \beta_1 \log(TFP_{i,t-1}) + \beta_2 X_{i,t-1} + \mu_t + \nu_i + \varepsilon_{i,t} \quad (1)$$

  Δ $TFP_{i,t}$ denotes Total Factor Productivity (TFP) growth in country *i* at year *t*. Regressions are estimated using annual data. $X_{i,t-1}$ is a one-year lag of each reform indicator. Various reform indices are considered one at a time (see definitions in Annex II). The equation controls for time effects μ_t to capture common time trends, i.e. oil price shocks, and time-invariant country effects ν_i , i.e. historical and legal origins.

- **Step 2 – We calculate and compare the productivity payoffs of different reforms within each country group (Table 3, main text).** As the correlation across reform indices does not allow for including all reforms simultaneously in the regression, we compare the yield from each reform by comparing the TFP growth impact of moving from the 25th percentile in each county group to the top performer or "frontier" in each group. We multiply the coefficient estimates of each reform, β_2 with the distance to the top performer in that reform category.

$$TFP\ growth\ impact = \beta_2 * distance \ \ ; \text{where } distance = \overline{reform}_{top-performer} - reform_{i(25th percentile)} \quad (2)$$

- **Step 3 – We provide a relative ranking of the reforms with the highest productivity payoffs within each group.**

Tables 1 and 3 present the results of the Step 1 and 2 above, respectively. Results in Table 1 capture the differential effect of a certain type of reform on TFP growth. For example, the coefficient estimate on Infrastructure in EMs implies that a one standard deviation improvement in the index raises annual TFP growth in EMs by about 0.4 percentage points. As the high co-movement of reforms do not allow for using several reforms simultaneously in the regression, the estimates for each index obtained in Table 1 can be compared across country groups, but not across reform indices. To overcome this issue we multiply the regression coefficient estimate in Table 1 with the "room for reform" for countries in the group. Results in Table 3 capture the change in TFP growth from an improvement in an index from the 25th percentile to the top of the index for the given country group. For example, such an improvement in the infrastructure index for the EM group results in 3.8 percentage points increase in annual TFP growth. Some coefficient estimates (especially for AMs) drop out because countries have already reached the "frontier" of a reform index and therefore the reform gap is zero.

II. Robustness of Panel Regression Analysis

We check the robustness of the baseline panel regression results along several dimensions. These include: (a) using longer lags of reforms indices (2 or 3 years); (b) including additional control variables—economy-wide level of education, institutional capacity, and terms of trade; (c) lagged dummy variable for systemic banking crises (Laeven and Valencia; 2012); and (d) using the sub-sample ranging from 1990-2011. We also examine the impacts of reforms on output and investment growth. The robustness results are summarized in Table A1. In the case of longer lags, most of the baseline results remain broadly unchanged up to a lag of 3 years. In the regressions with additional control variables, the coefficients for reform indices remain robust to the inclusion of measures of education and institutional capacity, and to a lesser extent the terms of trade.[1] The inclusion of lagged systemic banking crisis did not affect the baseline results, nor did the use of the 1990–2011 sub-sample data. We further conducted a joint test of coefficient equality between country groups that confirms that the baseline estimates are indeed statistically different from each other (at 1 percent significance level).

Table A1: Robustness Check Results: Alternative Control Variables

REFORMS	AM	EM	LIDC
Financial Sector Reform			
Banking system reform	C, D	A, B, C, D	A, B, C, D
Interest controls			A, C, D
Credit controls	B, C, D	B, C, D	A, B, C, D
Privatization		A, B, C, D	C, D
Supervision	A, C, D	A, B, C, D	A, B, C, D
Capital market development	A, C, D	B, C, D	B, C, D
Trade Liberalization			
Tariff rates (average)			A, B, C, D
Institutional Reform			
Legal system and property rights		A, B, C, D	B, C, D
Infrastructure			
Public capital stock	A, B, C, D	A, B, C, D	B, C, D
Market Deregulation			
Agriculture			B, C, D
Policy environment for foreign investment	A, B, C, D		
Promotion of competition		A, B, C, D	
Hiring and firing regulations	A, B, C, D	A, C, D	
Collective bargaining	A, B, C, D	B, C, D	
Energy/Transport/Communications	B, C, D		
Innovation			
R&D Spending	A, B, C, D		

Note: Robustness checks are based on the baseline only (see Table 1). Letters indicate significance of 15 percent or less when using (A) longer lags of reform indices; (B) additional control variables - education, institutional capacity, terms of trade; (C) systemic banking crisis dummy; and (D) a sub-sample over

Source: IMF staff estimates.

[1] The robustness check is conducted by adding one control variable at a time to the baseline equation. When the 3 control variables are added together, the results for regulation reform indices and banking system reform in AMs disappear.

Table A2 shows the results from our baseline specification, when using output and real investment growth as alternative dependent variables. The structure of the panel regression on the right-hand side remains the same as the baseline, except that we replace the lagged TFP level with the lagged GDP level. The results indicate significant and positive effects on real output growth for most reform types, particularly in EMs and LIDCs. Of the reform types, we found that financial sector reforms had universal significant impacts on output growth across all country groups. The results using investment growth, however, are weaker. Notably, reforms aimed at improving policy environment for foreign investment in AMs, and legal system/property rights and labor market regulations in EMs, were associated with positive and significant growth in investment.

Table A2: Robustness Check Results: Alternative Outcome Variables

REFORMS	AM	EM	LIDC
Financial Sector Reform			
Banking system reform	Y	Y	Y
Interest controls			Y, K
Credit controls	Y	Y	Y
Privatization		Y	Y
Supervision	Y	Y, K	Y
Capital market development	Y	Y, K	Y
Trade Liberalization			
Tariff rates (average)			Y
Institutional Reform			
Legal system and property rights		Y, K	Y
Infrastructure			
Public capital stock			Y
Market Deregulation			
Agriculture			Y
Policy environment for foreign investment	Y, K		
Promotion of competition			
Hiring and firing regulations	Y	Y, K	
Collective bargaining		Y, K	
Energy/Transport/Communications			
Innovation			
R&D Spending			

Note: "Y" and "K" indicate significance of 15 percent or less when using output and real investment growth as the dependent variable, respectively.

Source: IMF staff estimates.

Table A3 considers robustness to the baseline results presented in Table 3 (main text) by assessing the long-run (steady-state) TFP impact across different types of reforms in each income group. The impact of a large reform is now assessed by multiplying the long-term marginal effect obtained by the composite coefficient estimate $-\beta_2/\beta_1$ in the baseline specification (1) by the gap between the top performer and the bottom 25th percentile in each reform index. It is shown that reform priorities within each country group (AMs, EMs, LIDCs) are broadly similar to the baseline, with most of the top priority reforms remaining important by both short-run and long-run measures (reforms with unchanged relative priorities are indicated with a "*"). A few notable exceptions—where reforms may have higher ("+") or lower ("-") impacts over the longer term—are as follows:

- For AMs and EMs, the size of the long-term TFP level effect associated with loosening of hiring and firing regulations does not stand out among other reform types, unlike its short-term TFP growth effect.
- On the other hand, decentralizing the collective bargaining process and improving the quality of banking supervision become more important for EMs in terms of the long-term level effect.
- For LIDCs, developing the capital market has a relatively moderate short-term growth effect, but its long-term level gain ranks among the highest across reforms.
- For all country groups, infrastructure investment generates the highest long-term TFP level gain across major reform areas.[2]

Table A3: Long-term Productivity Gains from Different Types of Structural Reform

REFORMS	AMs	EMs	LIDCs
Financial Sector Reform			
Banking system reform	*	*	*
Interest controls			*
Credit controls		*	*
Privatization		*	+
Supervision	*	*	*
Capital market development		*	+
Trade Liberalization			
Tariff rates (average)			*
Institutional Reform			
Legal system and property rights		*	*
Infrastructure			
Public capital stock	*	*	*
Market Deregulation			
Agriculture			−
Policy environment for foreign investment	*		
Promotion of competition		*	
Hiring and firing regulations	−	−	
Collective bargaining	*	*	
Energy/Transport/Communications	*		
Innovation			
R&D Spending	*		

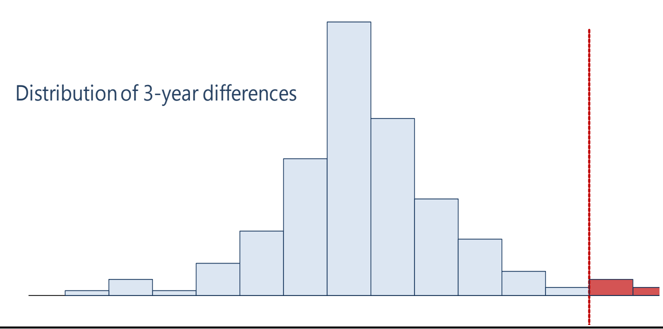
Note: The symbols indicate the change in the relative priority of reforms within each country group: "*" indicates same relative priority both in the short and the long term; "+" indicates higher relative priority in the long term than the short term; "-" indicates lower relative priority in the long term than the short term.
Source: IMF staff estimates.

[2] The interpretation of the long-run results warrants some caution as the concept of a *steady-state impact* of reform on level TFP becomes less clear in the context of our estimation approach, which assumes that the potential impact of reforms on countries' macro outcomes inherently depends on their level of development (AM, EM, LIDC).

III. Episodes Analysis

In this exercise, we first identify, for each reform variable, break points in time that lead to large and sustained improvements in a country ("reform episodes"). The time trends of these breaks, including the frequency and the composition of reform types both at the global and the country group level, are presented in Section III.B. The approach we adopt is a straightforward one, which essentially involves comparing, over a fixed window, the pre- and the post-break average TFP growth rates. It therefore establishes, as in the case of the regression analysis, association and not causation. The data (countries, reform variables) used are identical to the one from the regression analysis.

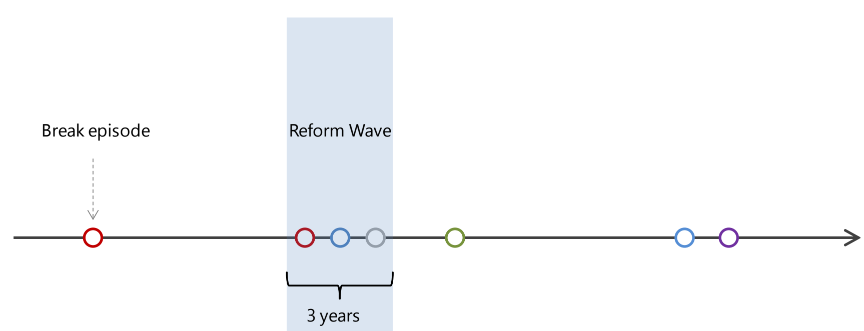
Figure A1: Definition of Episodes



Specifically, we identify breaks using an intuitive heuristic method. Specifically, for each country *i*, we first calculate the 3-year differences of a reform variable *X* as follows: $\Delta X_3^i = X_{t+3}^i - X_t^i$. We then pool together these 3-year differences across the entire sample countries—AMs, EMs, and LIDCs—to form a single distribution for *X*. We define *breaks, or reform episodes,* as those that satisfy the following criteria: (a) the observation belongs to the top 3 percentile of the distribution (Figure A1); (b) the annual change over the 3 years following the observation is always positive; and (c) if there are two or more consecutive observations that meet (a) and (b), we pick the first observation as the break. These rules imply that, by construction, breaks would occur at most every 3 years in a country for each reform variable.

To examine the impacts of these multiple, simultaneous reforms, we define a "reform wave" as an incidence of 3 or more breaks in different areas over a 3-year period.

Figure A2: Definition of Reform Waves



According to this definition, we identify a total of 34 reform waves—5 AMs, 23 EMs, and 6 LIDCs. These 34 reform waves accounted for 103 individual breaks—15 AMs, 70 EMs, and 18 LIDCs—or about 16 percent of the total 644 breaks identified from the break analysis.

Figure A3: Summary of Reform Waves

Country Name	Year	Banking	Capital Markets	Tariff	Legal System	Infrastructure	Agriculture	Policy Environment	Promotion of Competition	Hiring and Firing	Collective Bargaining	ETCR	R&D
Argentina	1988	1	1	1									
Bolivia	1988	1	1		1								
Brazil	1985	1	1	1									
Bulgaria	1995	1						1	1				
Cameroon	1993	1	1				1						
Chile	1974	1	1	1									
Chile	1984		1	1								1	
Colombia	1987	1	1	1									
Colombia	2000								1	1	1		
Czech Republic	1995							1	1		1		
Dominican Republic	2002				1					1	1		
Ecuador	1988	1	1	1									
Egypt	1999			1						1	1		
El Salvador	1988	1	1		1								
Estonia	1992	1	1									1	
Guatemala	1988	1	1		1								
Guatemala	2000				1					1	1		
Honduras	2001				1					1	1		
Hungary	1993	1	1									1	
Indonesia	1982	1	1	1									
Indonesia	2000				1				1	1	1		
Indonesia	2002								1	1	1		
Israel	2001									1	1	1	
Korea	2001				1					1			1
Madagascar	1986	1	1				1						
Nigeria	2002			1	1						1		
Peru	1986	1		1		1							
Peru	1989		1		1		1						
Poland	1995							1			1	1	
Slovakia	1999								1	1		1	
Sri Lanka	1989		1		1		1						
Uganda	1989	1			1		1						
Venezuela	1974		1		1	1							
Venezuela	1987	1	1	1									

IV. Robustness of Episodes Analysis

This Annex describes several robustness exercises that were implemented to examine how well the baseline "episodes" analysis holds.

The baseline results broadly hold under different distribution thresholds. Applying 1 and 5 percent cut-off values results in total breaks of 227 and 984, respectively, roughly proportionate to the number of breaks from the baseline 3 percent threshold. Despite the substantial difference in the number of breaks, however, we found the positive correlation between reform breaks and productivity growth to hold across country groups and reform types with only a few exceptions. Furthermore, in many cases, the breaks that belong to the top 1 percent of the distribution—i.e. those with larger structural improvements—are associated with higher subsequent productivity growth increases.

Using different time windows to calculate post-break productivity gains leads to similar results. Specifically, we conducted tests with symmetric windows of 3, 4, 6 years around breaks, as well as an asymmetric window of 3-year pre-break and 5-year post-break. Notwithstanding a few exceptions, we find that the results from these tests are broadly consistent with the baseline, albeit at varying degrees depending on country groups and reform types.

Outliers among identified breaks also do not seem to matter much. To check this, we compare the 5-year *median* annual TFP growth rates before and after breaks (based on the 3 percent threshold), instead of averages. The baseline results still broadly hold in this case, except for financial sector supervision and collective bargaining for AMs and interest controls for LIDCs.

Finally, for relevant reforms, we find that about a half of our baseline breaks coincide with those identified using a standard statistical approach. We used as the method of reference, a modified version of Bai and Perron (1998, 2002) developed by Berg et al (2012) for small sample data. A break point identified using our heuristic approach "coincides" with one from the statistical method if the latter takes place within one year before or after the former. Based on this criterion, about 60, 40, and 50 percent of our baseline breaks coincide with those from the Berg et al (2012) method.

Annex IV. Survey Methodology & Results

Staff conducted an online survey of IMF country mission chiefs in July 2015 to help gain insights into the macro-relevant structural reform needs of member countries.

Survey Questions

1. **The survey included several basic questions regarding country characteristics to facilitate analysis.** Mission chiefs were asked to specify each country's: region (e.g. Africa, Europe, etc.); income classification (advanced, emerging, or low-income); and other country characteristics (e.g., fragile state, small state, commodity exporter, etc.).

2. **The survey also sought MCs' views on the macroeconomic importance of structural reforms.** The questions focused on 11 broad reform categories (plus scope to indicate other reform needs or priorities),[1] with MCs asked to indicate:

  i. The extent to which each reform category is important for the country's macroeconomic performance;[2] and
  ii. The top three structural reform priorities for the country's macroeconomic performance.

Response Rate

3. **Response rates were similar across income levels and regions, providing a representative assessment of the needs and views across the Fund's membership.** The overall response rate was around 60 percent, with rates ranging from 54 to 63 percent across income groups, and from 53 to 66 percent across regions.

Category of Countries	Number of Surveys Sent	Responses	
		Number	Rate
Income Group:			
Advanced Economies	35	19	54
Emerging Markets	87	55	63
Low-Income Countries	66	38	58
Region:			
Africa	45	24	53
Asia and the Pacific	35	21	60
Europe	43	26	60
Middle East and Central Asia	30	18	60
Western Hemisphere	35	23	66
Overall	**188**	**112**	**60**

[1] The reform categories included: banking sector; other financial and capital market, trade liberalization, legal system and property rights, infrastructure, agricultural, business regulations, labor market, industry regulations , technology and innovation, fiscal, and other reforms. The first 10 categories broadly parallel the reform indices used elsewhere in this paper (see Annex II), although survey responses may reflect somewhat different interpretations of these reforms.

[2] Four possible answers: to a great extent (weighted with a scoring of 3); to some extent (2); to a limited extent (1); and not at all/not applicable (0).