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ASSESSING FISCAL SPACE: AN INITIAL CONSISTENT SET OF CONSIDERATIONS

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EXECUTIVE SUMMARY

Fiscal space is a multi-dimensional concept reflecting whether a government can raise spending or lower taxes without endangering market access and debt sustainability. Making such a determination requires a comprehensive approach considering, among other things, initial economic and structural conditions, market access, the level and trajectory of public debt, present and future financing needs, and dynamic analysis of the liquidity and solvency of the fiscal position under alternative policies. Balancing these considerations involves careful analysis and judgment.

Fund staff has over the years developed a variety of indicators to inform assessments of fiscal space in bilateral and multilateral surveillance. The Fund's core operational framework for such analysis is the debt sustainability framework, which includes a number of indicators, while allowing room for staff judgment. Surveillance also relies importantly on indicators developed by the Fiscal Affairs Department (FAD)—including those that have been used in the internal Vulnerability Exercise and Fiscal Monitors—while more recent methods based on fiscal stress tests and probabilistic approaches proposed in IMF (2016) are also promising. In addition, teams have used scenario analysis and general equilibrium modeling approaches to evaluate fiscal policy choices and their implications for sustainability. When applied to fiscal space, each indicator and approach has pros and cons and none covers all the relevant factors. Ultimately, therefore, assessing fiscal space requires judgment, informed by a broad range of tools.

This note seeks to bring together various approaches developed by Fund staff to outline a consistent set of considerations and indicators to help inform assessments of fiscal space, especially for advanced and emerging markets. The intent is to facilitate continued consistency between country team assessments by providing some common considerations and approaches to inform their judgment. The proposed framework will support Fund surveillance and policy advice going forward, informing discussions of the appropriate fiscal stance at all stages of the economic cycle. In the current context, for instance, it can be applied to the question of the scope for fiscal support in individual countries based on their macroeconomic situation and prevailing global economic policy challenges, including the amount of economic slack, deflationary pressures, diminished gains from additional monetary policy support, and

structural reform priorities. In other cases, it could be applied to help determine the preferred pace of fiscal withdrawal or building of buffers.

To this end, the note proposes a four-stage approach featuring considerations drawn from work by Fund staff on fiscal risks and sustainability. The set of issues is expected to evolve based on further experience, research, and feedback:

- **Stage 1.** Setting the macroeconomic stage by clarifying cyclical and external conditions and gaps, including those related to structural reforms, infrastructure, and balance sheet repair, which have a bearing on the economic impact of any fiscal policy action.
- **Stage 2.** Considering indicators of fiscal space in a hierarchical progression, related to (i) the availability of financing on favorable terms and the risk of market perceptions sharply increasing funding costs, (ii) the sustainability of the level and trajectory of public debt and financing needs over the medium term under both the baseline and stress tests, and (iii) the realism of the medium and long-term adjustment assumptions needed to stabilize debt or achieve prudent debt ratios (including expected increases in health and pension spending).
- **Stage 3.** Exploring fiscal space in a dynamic approach by simulating discretionary fiscal policy experiments, featuring fiscal expansion or contraction relative to the baseline under different assumptions about monetary policy settings and market reactions, and mapping out their implications for macroeconomic variables and the level and trajectory of debt and financing needs.
- **Stage 4.** Applying staff judgment to arrive at the final assessment of the degree of fiscal space, including reactions to the signals provided by the indicators and approaches under the first three stages, as well as any additional country-specific factors that they may emphasize, including compliance with and adequacy of existing fiscal frameworks, and to what extent this affects fiscal space.

Well-designed fiscal rules help countries anchor fiscal credibility while allowing for use of fiscal space, when available, to smooth shocks. Fiscal rules play an important role in safeguarding fiscal credibility and market access, and thus, fiscal space, and can be particularly important for currency unions. Well-designed rules support explicit medium-term objectives while leaving flexibility in the face of shocks or exceptional circumstances. However, some risks, including those related to protracted demand shortfalls and deflationary pressures, are hard to incorporate and operationalize ex ante in the design of rules. Assessment of fiscal space in such circumstances needs to carefully weigh the advantages of greater fiscal flexibility against the risk of losing credibility by deviating from medium-term commitments. While the costs in terms of lost credibility are difficult to estimate, experience suggests that they can come suddenly and be very high, especially in emerging markets—for

example in the form of higher financing costs or difficulty of market access. In the presence of significant or persistent discrepancies between the assessment of fiscal space under Stages 1-3 and that implied under the fiscal framework, staff should evaluate the appropriateness of the fiscal rules and frameworks, and consider necessary reforms in the context of bilateral surveillance. In particular, staff should assess scope for strengthening the design and effectiveness of the rule under alternative scenarios and make policy recommendations, as warranted. In this context, some new cross-country analytical work on the desirable features of fiscal rules is also planned.

This note does not aim to answer the question of when fiscal space should be used. The use of fiscal space depends on a wide range of factors that determine the appropriate fiscal policy stance under country-specific circumstances. What this note does is to put forward a set of tools to assess available fiscal space in a way that is broadly comparable across countries. Organizing the Fund's approach to fiscal space is intended to provide staff, and ultimately policymakers, with a consistent approach to assessing available space as an input to inform decisions about fiscal policy.

Regardless of the assessment of fiscal space, countries should aim for growth-friendly tax and expenditure policies. In most countries, there is scope to reorient tax and expenditure policies to boost growth by supporting work and investment incentives, human capital accumulation, and productivity growth, which has been the focus of much separate work by Fund staff, including most recently in IMF (2015c).

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INTRODUCTION

This note seeks to provide a stock-taking and organization of Fund staff's approach to assessing fiscal space. It organizes various approaches and indicators in this regard, including some recently developed ones to provide a framework to support Fund surveillance and policy advice going forward on the extent of fiscal space—but not if and how to use it.¹

- 1. This note proposes a structured framework for assessments of fiscal space in surveillance over time and across countries.** The proposed framework is designed to support Fund surveillance and policy advice going forward. It should apply to a broad range of future circumstances—in the current context, it can be used to assess a country's scope to use fiscal policy to offset current global economic policy challenges such as lingering deflationary pressures and diminishing gains from additional monetary policy support. Fiscal space is also currently required to fill gaps in public infrastructure or support structural reforms. In other cases, it could be applied to inform discussions of the appropriate pace of fiscal adjustment or building of buffers. As such, where fiscal space exists, discretionary policy can take the form of either a fiscal expansion or a slower pace of consolidation. Conversely, the absence of fiscal space would constrain the scope for such discretionary policy.
- 2. To this end, a systematic set of considerations for assessing fiscal space are brought together, building on work and models developed by Fund staff over the years.** Given the multi-faceted nature of the concept of fiscal space, these considerations involve a range of analytical tools and approaches, including newer frameworks and methods developed by Fund staff such as the MAC DSA framework and probabilistic assessments featured in IMF (2016). They seek to provide a “pre-flight check list” for country teams' assessments of fiscal space and should help support continued consistency of assessments in surveillance over time and across countries. Overall assessments will ultimately depend on staff judgments that draw on these considerations, as well as additional country-specific factors. The set of considerations and associated indicators will evolve based on further experience, research, and feedback.
- 3. The aim is to organize the considerations and tools available for staff to qualitatively assess fiscal space in a way that is broadly comparable across countries.** The purpose of organizing the Fund's approach to assessing fiscal space is to provide staff and, ultimately, policymakers with important inputs for making decisions about fiscal policy. Armed with a sense of whether fiscal space exists, policymakers can, among other things, make more informed decisions about short-term macroeconomic stabilization (through automatic and discretionary measures) and support for structural reforms to foster longer-term growth. This note does not attempt, however, to address the question of when fiscal space should be used. The use of fiscal space depends on a wide range of factors that determine the appropriate fiscal policy stance under country-specific circumstances.

¹ For discussion of these aspects, see, among others, IMF (2015c) and IMF (2015d).

4. Regardless of the assessment of fiscal space, countries should aim for growth-friendly tax and expenditure policies. Through such an approach there is much scope for a reorientation of fiscal policy to better support the supply side, by strengthening work and investment incentives, promoting human capital accumulation, and helping raise productivity. This has been discussed in work by Fund staff focusing on this aspect, including IMF (2015c) whose findings are summarized in Box 1.

WHAT IS FISCAL SPACE?

5. Fiscal space in general refers to room for undertaking discretionary fiscal policy relative to existing plans without undermining fiscal sustainability.² In other words, fiscal space exists if a government can raise spending or lower taxes without endangering market access and putting debt sustainability at risk. As discussed in Schaechter et al. (2012), persistent fiscal imbalances can result in high levels of general government debt that can raise concerns about future tax increases, private sector crowding out, sovereign debt rollover and, in the extreme, solvency. High debt can threaten macroeconomic stability and weigh on growth.³ If fiscal weaknesses are unaddressed, countries could face problems in meeting their funding needs and, in the limit, altogether lose market access. In such cases, the eventual fiscal adjustment required to restore stability could entail sharp losses in employment and output.

6. Determining if a country has fiscal space involves a forward-looking, dynamic assessment of whether its fiscal position remains sustainable under current as well as alternative policies, and a reasonable configuration of shocks. Fiscal space entails probabilistic judgments about the trajectory of fiscal variables and the availability of financing on favorable terms. Several factors are relevant, including the current level of government debt, its liability structure/financing profile, market conditions, public assets, contingent liabilities, future spending commitments (such as those for pensions), fiscal adjustment plans and their credibility, the fiscal framework, fiscal multipliers, the policy mix, the variance/covariance of typical economic shocks, and global considerations (including potential spillovers from coordination). In addition, other country-specific factors, such as credibility and implementation capacity, will also play a role.

² Discretionary policy can take the form of either a fiscal expansion or a slower pace of consolidation. In principle, some countries may be judged to not have space even to allow automatic stabilizers to operate.

³ See, among others, Cecchetti et. al (2010), Kumar and Woo (2010), Baum et al. (2013), and Pescatori et al. (2014) for recent empirical discussions of the relationship between public debt and growth.

Box 1. Budget Neutral Growth-Friendly Fiscal Reforms

Fiscal reforms can be both growth-friendly and budget neutral. The composition of fiscal revenues and spending can be changed to support long run growth with off-setting measures to preserve fiscal space. For example, lowering highly distortionary taxes (e.g., labor taxes) would support growth and could be offset by other tax measures and/or spending cuts. Similarly, increased spending on public infrastructure, health, and education could be financed either through additional revenue or through reductions in other less productive public spending. Additional borrowing is also an option for countries with fiscal space. Conversely, when consolidation is called for, spending cuts and/or revenue increases can be targeted on items that have relatively less impact on growth.

Revenue reforms can help achieve a more growth-friendly tax structure. These could include:

- **Shifting from direct to indirect taxes.** Reduction of distortionary taxes on capital and labor income can improve the incentives to invest and work, boosting labor supply and growth. The associated revenue losses could be compensated through higher indirect taxes, property taxes, environmental taxes or excises on harmful goods, like tobacco and alcohol. While such a shift in the composition of the tax system from direct to indirect taxes can be regressive, its negative impact can be contained through better targeting of spending programs that benefit the poorest segments of the population. Model simulations suggest that lower capital and labor taxes, financed through higher consumption taxes, can increase long-term growth by a significant amount.
- **Base-broadening measures can yield higher revenues, creating space for pro-growth policies.** These often include rationalizing tax exemptions and preferential regimes. While some form of tax credits for low-wage earners or for R&D spending are justifiable, eliminating tax loopholes, untargeted tax regimes or preferential treatments that largely benefit the rich can have a beneficial impact on growth and income equality (Blanchard and Cottarelli (2010)). They could also contribute to the perception that the tax system is fair, which is associated with improved tax compliance and higher revenue yield.
- **Improving revenue administration.** Tax compliance affects the revenue yield, efficiency and fairness of a tax system (IMF 2015e). Effective revenue administration reforms include the introduction of risk management techniques and segmentation of taxpayers (e.g., establishment of large taxpayer units). In addition, simplification of laws and procedures can help reduce the cost of taxpayer compliance.

Targeting public expenditure toward areas with high multipliers can be an important driver of productivity and growth. In particular:

- **Infrastructure investment can raise the economy's productive capacity and growth potential.** Developing economies with large infrastructure gaps stand to reap high returns from increasing public investment (Romp and de Haan, 2007, Bom and Ligthart, 2010, Gupta et al. (2014)). In addition, higher infrastructure investment can also raise output significantly in advanced economies if there is significant slack and accommodative monetary policies and efficient public investment (IMF 2014a). In order to

Box 1. Budget Neutral Growth-Friendly Fiscal Reforms (continued)

ensure public investment translates fully into productive capital and growth, it is key to have good public investment management processes.

- **Public spending on education can directly affect education outcomes and raise the stock of human capital** (Baldacci et al. (2008)). Education reform should focus on improving access for disadvantaged groups, contributing to increases in the economy's long-term growth. Efforts should focus on increasing investment in early levels of education and improving the efficiency of education spending. Targeting cash assistance to disadvantaged groups, and conditioning this assistance on certain education outcomes, can also help to reduce income barriers to education.
- **Investing in health care also supports human capital accumulation.** Staff analysis suggests that among all expenditure categories, health spending is the most likely to be followed by growth accelerations (IMF (2015c)).
- **Promoting R&D and providing key public goods can raise total factor productivity.** In addition to enhancing the economy's productive capacity, public investment in physical infrastructure can improve the productivity of private capital and raise its rate of return (Munnell (1992), Easterly and Rebelo (1993)). Similarly, public spending on education can also accelerate technology catch-up and enhance productivity by improving the ability of the domestic labor force to absorb cutting edge technologies from the global economy (Everaert et al. (2014), Dhont and Heylen (2009)). In addition, well-targeted R&D tax incentives can support sustained growth.

If fiscal adjustment is unavoidable, or measures are needed to make room for pro-growth policies, countries should focus on measures that have lower fiscal multipliers, improve efficiency of spending, and limit distortionary revenue measures. The proper mix of expenditure and revenue measures will vary depending on country circumstances, including the initial ratio of government spending to GDP, and should take into account equity considerations. In case of large adjustments, an expenditure review could help identify areas for rationalization and improving efficiency:

- **Rationalizing spending.** Spending on wages, subsidies and social benefits accounts for around three-quarters of total spending in advanced and emerging economies. Priority areas that could be examined for rationalization therefore include the government wage bill, especially where public sector wages and employment are high relative to the private sector; and poorly targeted social spending. For example, in advanced economies, only one-fifth of total spending on family benefits was means-tested in 2011; and in low-income countries, social assistance programs are often prone to leakages and insufficient coverage of eligible populations (IMF (2014b)). Countries with large investment budgets could focus on rationalizing projects that have a large import component (reducing the impact on domestic demand) and that are least efficient.
- **Improving efficiency.** Many countries could enhance the delivery of essential public services while saving resources by improving the efficiency of spending. For example, at least 20-40 percent of health

Box 1. Budget Neutral Growth-Friendly Fiscal Reforms (concluded)

spending is typically wasted (World Health Organization (2010)), and there is scope for substantial gains in health indicators at current levels of spending (Grigoli and Kapsoli (2013)). On education, implementing a per-student financing formula such as in the Netherlands could ensure that wage costs remain in line with the number of students and generate savings (IMF (2014b)). In addition, the average country loses about 30 percent of the value of its public investment to inefficiencies in the investment process (IMF (2015b)). The economic dividends from closing this “efficiency gap” could be substantial. Improving institutional arrangements for allocating public investment projects is critical for enhancing efficiency. The potential for efficiency improvements also extends to quasi-fiscal activities. For instance, reform of inefficient SOEs and privatizations can provide significant savings.

- **Reducing energy subsidies and increasing energy taxes.** Generalized energy subsidies distort consumption and production decisions, and constitute a poor instrument for income redistribution (Arze del Granado et al. (2012)). In 2015, spending on energy subsidies (on a post-tax basis) was estimated at US\$5.3 trillion (or 6½ percent of global GDP). Carbon or congestion taxes, aimed at reducing greenhouse gas emissions and pollution, could potentially generate significant revenue gains (as much as 2.9 percent of global GDP based on Gupta and Keen (2015)). As discussed above, countries could also raise revenues by focusing on broadening tax bases.

7. Fiscal space is challenging to operationalize. Various empirical strategies are found in the literature (Box 2). Most often, views on a country’s fiscal space are guided by some notion of debt sustainability, defined as the difference between the current level of public debt and some specified threshold. The threshold is determined, *inter alia*, by future fiscal balance adjustments needed to ensure debt sustainability (e.g., to stabilize debt over the medium/long term), inherent vulnerability to economic shocks (usually proxied by income levels), as well as the realism of the needed adjustments based on the country’s track record. In other contexts, fiscal space is formulated in terms of the scope for financing the deficit, without incurring a sharp spike in funding costs or excessive crowding-out of private investment. Practically speaking, therefore, fiscal space is difficult to pin down purely through a mechanical rule or threshold and judgment is required based on analysis of a variety of metrics, as debt sustainability thresholds, likely shocks, and economic institutions differ from country to country.⁴

8. Much past work at the Fund and staff analysis has focused on developing a variety of indicators to assess fiscal sustainability risks in bilateral and multilateral surveillance. The Fund’s core operational framework for such analysis is embedded in the debt sustainability analyses as represented in the DSA toolkit, which continues to be refined over time, for instance as presented

⁴ Thresholds are somewhat easier to define for emerging markets, where episodes of fiscal stress have been relatively more common. For advanced economies, the empirical literature extensively covers topics such as intertemporal fiscal solvency and fiscal multipliers, but relatively little attention is paid to whether they can reach constraints to public debt financing.

in IMF (2013). Surveillance also relies importantly on indicators developed over many years, including:

- Approaches to assessing a country's fiscal sustainability risks developed by FAD.⁵ These methods were summarized in a Fiscal Sustainability Risk Map based on six dimensions: the first three refer to expected fiscal developments under the baseline scenario: short and medium-term fiscal fundamentals, long-term fiscal challenges, and asset and liability management. The other three dimensions refer to shocks that may affect the baseline arising from unexpected macroeconomic developments, financial sector problems, and policy implementation shortfalls or errors.
- Models and indicators used to assess fiscal risks in the internal Vulnerability Exercise (VE) and the Fiscal Monitor.⁶ These include a set of fiscal indicators with reasonable signaling power for fiscal stress in many cases, including the cyclically-adjusted primary balance, the interest rate-growth differential, gross financing needs (GFN), and long-term age-related spending. Additional elements that are looked at include market perceptions of default risk, medium and long-term budgetary adjustment needs, and stochastic risks to medium-term debt dynamics.
- Additional approaches have more recently been proposed in IMF (2016).⁷ These include a more comprehensive and integrated assessment of the potential shocks to government finances, in the form of a fiscal stress test. While data-intensive, such a test could help policymakers simulate the effects of shocks to their central forecasts and their implications for government solvency, liquidity, and financing needs. In addition, the paper proposes probabilistic tools that can be used to map the uncertainty around medium-term trajectories for public debt. In combination with fiscal stress tests, these tools can help assess the probabilities that a country will stay within certain debt thresholds.
- Teams, as well as the WEO, have also used scenario analysis and general equilibrium modeling approaches to evaluate fiscal policy choices and their implications for sustainability.⁸

9. When applied to assessing fiscal space, each of these approaches has pros and cons and none covers all of the relevant factors. Ultimately, therefore, assessing fiscal space requires a broad range of tools and judgment. Accordingly, this note proposes a set of common considerations and approaches that would inform assessments of fiscal space in the context of bilateral surveillance.

⁵ These are based on the framework discussed in Cottarelli (2011), and summarized in the April 2011 Fiscal Monitor.

⁶ See IMF (2010), Baldacci et al. (2011) and Schaechter et al. (2012) for a description of these approaches.

⁷ Other relevant work by the Fund in this area includes the conceptual framework for assessing sovereign risks presented in Cottarelli (2011) and empirical work by Ostry et al. (2010) and Ghosh et al. (2013). In the latter, fiscal space is defined in relation to a debt limit above which debt grows without bound given the country's historical primary balance performance, i.e. this conception of fiscal space is based solely on the trajectory of public debt, and abstracts entirely from liquidity/rollover risk.

⁸ See Kumhof et al. (2010) for a general description of DSGE models employed by the Fund.

Box 2. Approaches to Measuring Fiscal Space

There are various methodologies used in the literature seeking to measure fiscal space (see IMF (2012) for a summary). These have informed many of the analytical and operational approaches developed at the Fund.

A first approach is to calculate the fiscal gap defined as the difference between the current fiscal balance and the constant balance that stabilizes debt over a medium-term horizon at a sustainable level (among others, see the index of fiscal sustainability proposed by Buiters (1985), Blanchard et al. (1990), Buiters, Corsetti, and Roubini (1993), and Auerbach and Gale (2011)). The calculations of the debt paths are based on projections for the fiscal balance, the discount rate, and the economy. Hence the estimates of the fiscal gap will change with the macroeconomic outlook. The approach is forward-looking and incorporates assumed policy plans, but the role for feedback between fiscal policies and private sector behavior tends to be limited. Various elements of these approaches in part inform the design of the Fund's debt sustainability framework.

A second approach is to employ VAR models to account for feedback effects between fiscal and macroeconomic variables, and assess fiscal sustainability. See, for instance Chung and Leeper (2007), Polito and Wickens (2005, 2011), and Giannitsarou and Scott (2006). It is similar to the structural approach in that the assessment of sustainability is based on a comparison of the existing level of government debt with a forecast of the present value of deficits from a VAR model of the economy. This captures interactions between sectors, but the approach is backward-looking and susceptible to the Lucas critique. Variants of these models have been used in the DSA and Vulnerability Exercise frameworks, as well as in IMF (2016).

A third broad approach is to evaluate fiscal sustainability in the context of more structurally founded general equilibrium models, calibrated to reflect the interaction between fiscal policy and the economy (see Kumhof et al. (2010) for a discussion of such models). These tools have been used extensively in bilateral and multilateral surveillance.

A fourth, structural approach, applies a fiscal reaction function and assumptions about the behavior of the sovereign risk premium to estimate fiscal space, which is defined as the difference between the current level of public debt and the debt limit implied by the country's historical record of fiscal adjustment and financial market access in response to changes in indebtedness (see, among others, Ostry et al. (2010)). In addition to modeling assumptions, similar to co-integration analyses, this approach relies on past data and behavior, and does not reflect possible future fiscal policy changes.

A final genre of analysis is to assess if fiscal policies are sustainable on the basis of whether the intertemporal budget constraint holds, by testing for stationarity and co-integration (among others, see Hamilton and Flavin (1986), Trehan and Walsh (1988), Wilcox (1989), Uctum and Wickens (2000), and Hakkio and Rush (1991)). Specifically, studies have analyzed stationarity or co-integration of debt and the primary deficit, and co-integration of government spending and revenue.

A COMMON CONCEPTUAL FRAMEWORK AND SET OF CONSIDERATIONS FOR ASSESSING FISCAL SPACE

10. The framework proposed focuses on a set of factors relevant for assessing fiscal space.

It takes a forward-looking perspective, considering the behavior of relevant macro-fiscal variables over time and under different scenarios, and incorporates dynamic and stochastic elements. The core inter-related aspects that need to be considered are: (i) the state of economy—for instance in the face of a large negative demand shock, fiscal prudence could reduce fiscal space by undermining growth (as shown in Scenario Box 2 of the April 2016 WEO); (ii) the availability of financing on favorable terms and the risk of market perceptions sharply increasing funding costs, (iii) the sustainability of the level and trajectory of public debt and deficits over the medium term, (iv) the needed adjustment to stabilize debt or achieve prudent debt ratios over the medium and long term (including expected increases in health and pension spending), and (v) the sensitivity of fiscal sustainability in terms of debt and financing needs under reasonable stress scenarios.

11. Following are a common set of considerations based on these factors and presented as a four-stage approach to assessing fiscal space.

This set of considerations could be thought of as a pilot's check-list. The objective is to gather a set of information that should be taken into account when making judgments about fiscal space. As noted above, the concept of space is inherently dynamic and is itself a function of the policies being considered. As such the overall approach considers initial conditions of the economy affecting the macroeconomic impact that different policy paths could have, followed by layers examining how the variables associated with fiscal sustainability vary with different dynamic policy paths and experiments. As such, a sequential approach based on four stages is envisaged, as summarized below and discussed in more detail in the subsequent sections:

- **Stage 1.** Setting the stage by considering the macroeconomic setting and structural gaps, which would also provide information about the likely size of fiscal multipliers and risk premia. On the cyclical side, this would include the output gap and the uncertainty of the growth outlook. With regard to other gaps, those related to structural reforms, infrastructure, external imbalances, or facilitating the clean-up of impaired balance sheets, as well as an assessment of other policy settings (such as monetary policy rates being close to their effective lower bound)⁹ would also help determine the economic impact of any fiscal policy action. Separately, indicators of fiscal policy credibility, such as the capacity of the government to credibly and efficiently implement fiscal measures should also be considered.
- **Stage 2.** Considering measures of fiscal sustainability under baseline policies and subject to standardized stress tests. These would relate to the availability of financing, the debt burden,

⁹ See Blanchard and Leigh (2013), Correia et al. (2013), and Mertens et al. (2014), for discussions of why multipliers are likely to be higher when monetary policy rates are close to the effective lower bound.

and fiscal adjustment needs over the medium and long term, drawn from the frameworks developed for DSAs, in the Fiscal Monitor, and in IMF (2016).

- **Stage 3.** Simulating discretionary fiscal policy experiments relative to the baseline, and mapping out their implications for macroeconomic variables and the level and trajectory of fiscal variables, including stocks and flows (e.g., debt and GFN). These could be conducted using general equilibrium frameworks—where possible—complemented by DSA analysis and staff’s own scenario analysis, (for example, assessments could consider downside scenarios featuring sharply lower growth or prolonged stagnation and how policies may interact with these). Such scenarios would shed light on the debt-growth trade-offs of discretionary fiscal policy (both expansionary and contractionary relative to the baseline), including based on the extent of slack in the economy and spending needs (and hence likely multipliers) and the marginal cost of financing new spending.
- **Stage 4.** Applying staff judgment to arrive at the final assessment of the degree of fiscal space under the relevant macroeconomic scenario, including reactions to and relative weighting of the signals provided by the considerations and approaches under the first three stages, as well as any additional country-specific factors that staff may emphasize, including compliance with and adequacy of existing rule-based fiscal frameworks, and to what extent this affects fiscal space.

12. The first stage summarizes initial conditions, including the cyclical position of the economy, that could inform the assessment of fiscal space. These considerations are divided into three sub-layers:

- *Macroeconomic conjuncture.* How does the starting position of the economy impact the assessment of space given its bearing on the impact of any discretionary policy action on growth and fiscal sustainability? Relevant variables here include: the output gap, uncertainty about growth prospects,¹⁰ recent revisions to potential growth, trade and financial openness, the external balance, and other policy settings.
- *Structural gaps.* To what extent would gaps related to factors such as infrastructure, structural reforms, and balance sheet repair affect the impact of discretionary policy on growth and fiscal sustainability?
- *Public investment efficiency.* Does the government have the ability to efficiently and effectively enact temporary fiscal stimulus? Staff judgment will be important here, including for instance on the availability of good quality and shovel-ready investment projects, supported by Fund work, e.g., IMF (2015b).

¹⁰ Based on the growth forecast track record calculated in the MAC-DSA, which compares the median forecast error for the country to the distribution of median forecast errors from other market-access countries. See IMF (2013) for more details.

13. The second stage considers the state of fiscal variables informing sustainability under baseline policies and stress tests.¹¹ These considerations are divided into three sub-layers:

- *Whether financing is likely to be available on favorable terms is the most basic question that must be asked.* It is reflected in risks to funding costs related to market perceptions (including the potential for extreme market reactions beyond certain threshold levels) and whether the debt profile (e.g., maturity, currency composition, and investor base) is well-balanced so as to facilitate continued market access. Finally, the size of public financial assets, preferably liquid ones, should also be considered.
- *The evolution of debt burden indicators is the next element to investigate,* captured by the level and trajectory of public debt, and gross financing needs (GFN) over the medium term. These also may be compared, where possible, to indicative benchmarks from the DSA both under the baseline as well as the computed standard stress tests, for instance under macro-fiscal shocks and the realization of contingent liabilities. The probability of exceeding the debt benchmarks should also be considered, using the fan chart technology discussed in IMF (2016).
- *The size of fiscal adjustment required to stabilize public debt should be considered.* Assessing adjustment needs will depend on starting conditions and policy dynamics. Over the medium term, a first question is whether the adjustment in cyclically-adjusted primary balances to stabilize debt in the baseline is realistic.¹² Over the longer term, the question is the size of the adjustment needed to achieve debt objectives taking into account various long-term fiscal pressures (e.g., expected increases in health and pension spending due to population aging). These questions need also to be considered in a dynamic general equilibrium approach laid out next.

14. In the third stage, the room for policy action without undermining sustainability is more directly assessed at the country level by applying a general equilibrium approach and the DSA framework.

- *A general equilibrium modeling approach, where feasible, should be used to assess the potential impact on growth, inflation, debt levels, interest rates and other macro variables in a country under an active fiscal scenario* (for example, using a fiscal expansion of a given size, a slower consolidation, or a faster adjustment).¹³ The impact will depend, in part, on country characteristics reflected in the model and the behavior of the risk premium, which may be

¹¹ See Annex I for more details on the indicators presented below.

¹² In the case of countries covered by the MAC DSA this could be based on the realism module, which includes comparisons with cross-country historical experience.

¹³ To facilitate cross-country comparability, among the scenarios considered, it would be useful to include a standardized one across countries. This could also include a coordinated expansionary fiscal stance, which can contribute to creating fiscal space in a severe deflationary spiral, as shown in Scenario Box 2 in the April 2016 World Economic Outlook and Chapter 1 of the April 2016 Fiscal Monitor.

sensitive, inter alia, to the strength of the country's external position.¹⁴ Uncertainty regarding likely risk premia would be partly addressed by looking at alternative scenarios with different risk premia based on the country's historical experience. Key questions include whether the debt-to-GDP ratio falls or at least stabilizes over the medium term as well as if it breaches any indicative DSA thresholds at the end of the forecast horizon.

- *The same active fiscal scenario can also be applied in the DSA using the general equilibrium or an alternative macroeconomic framework.* The alternative framework could be informed by general equilibrium models where available. Teams could also design tailor-made scenarios with different types of fiscal action, e.g., featuring fiscal impulses or contractions of a different magnitude, type, and duration or budget neutral growth-friendly fiscal policies. Use of the DSA framework would not only enable these alternative paths to be subject to the usual stress tests but, in the case of market-access countries, also allow analysis of financing needs which are not typically examined in existing Fund DSGE models.

15. In the current conjuncture, consideration of such scenarios should shed light on the debt-growth trade-offs of discretionary fiscal policy. The focus should be on the extent of slack in the economy and spending needs (and hence likely multipliers),¹⁵ the marginal cost of financing new spending, and the extent to which other macro policy instruments, including monetary policy and exchange rate adjustment, may be constrained. Importantly, a reasonable counterfactual needs to be part of the assessment, including the risk of lack of fiscal action leaving the economy vulnerable to a downturn that could lead to worse fiscal outcomes due to weaker growth and the materialization of contingent liabilities. The fiscal sustainability-growth tradeoff is likely to be more favorable in countries with larger output gaps, more efficient public spending, and lower funding costs.

16. In the fourth and final stage, using the information from the three preceding stages, staff judgment would be applied to arrive at an overall assessment of fiscal space. In addition to country-specific considerations not captured above, such a judgment would be informed, inter alia, by the following:

- *Fiscal frameworks.* The role of fiscal frameworks in supporting credibility and containing borrowing costs needs to be factored in. Fiscal rules play an important role in safeguarding fiscal credibility and market access, and thus, fiscal space. Well-designed rules support explicit medium-term objectives while leaving flexibility in the face of shocks or exceptional circumstances. However, some risks, including those related to protracted demand shortfalls and deflationary pressures, are hard to incorporate and operationalize ex ante in the design of rules. Assessment of fiscal space in such circumstances would need to carefully weigh the advantages of greater fiscal flexibility against the risk of losing credibility by deviating from medium-term

¹⁴ For instance, a country with an external position that is weaker than implied by medium-term fundamentals and with fiscal policy gaps contributing to this imbalance, could find risk premia to be more sensitive.

¹⁵ The estimates of fiscal multipliers should be informed by the work presented in IMF (2014c).

commitments. While the costs in terms of lost credibility are difficult to estimate, experience suggests that they can come suddenly and be very high, especially in emerging markets—for example in the form of higher financing costs or difficulty of market access. To operationalize this in practice, staff should regularly conduct the analysis laid out in Stages 1–3, juxtapose the resulting assessment against any requirements of the fiscal framework, and highlight the associated tradeoffs. In the presence of significant or persistent discrepancies between the assessment of fiscal space under Stages 1–3 and that implied under the fiscal framework, staff should also evaluate the appropriateness of the framework, and consider necessary reforms in the context of bilateral surveillance. In particular, staff should assess scope for strengthening the design and effectiveness of the rule under alternative scenarios and make policy recommendations, as warranted.

- *Currency unions.* Special characteristics of currency union members may also need to be taken into account. Lacking an independent monetary policy, such countries can have difficulties maintaining an appropriate policy mix in certain circumstances. Since fiscal rules can be necessary to help underpin the currency union, temporary deviations from such rules are more complicated and require negotiations at a multilateral level. Finally, currency union members are subject to greater spillovers within the union. This complicates the assessment of fiscal multipliers as spillovers from own policy actions to other members may need to be internalized.
- *Uncertainty about indicator results.* The uncertainty inherent in modeling approaches, including with regard to a historic shock, assumptions about multipliers, the risk premium, contingent liabilities, structural breaks, and potential thresholds beyond which markets could react extremely, will all affect fiscal sustainability, and hence fiscal space assessments.

CONCLUSION

17. This note has laid out a consistent approach for assessing fiscal space, which will be refined over time. Fiscal space is a complex concept, which can be challenging to operationalize in a consistent manner across countries. A variety of approaches have been suggested by the long line of Fund staff work related to fiscal risks and sustainability, including new frameworks and methods developed in recent years. To support continued consistency between approaches taken in bilateral surveillance, this note leverages past and recent work by Fund staff to bring together a broad toolkit that would inform country assessments.

18. The approach is based on a set of common considerations, and judgment by teams to take into account country-specific circumstances would play a key role. The assessment involves four steps. First, situating the country in terms of its initial conditions, including the cyclical position and structural gaps, which is informative about potential fiscal multipliers and risk premia. Second, assessing indicators of fiscal sustainability—related to market access and the level of debt and gross financing needs—under the staff’s baseline and stress tests. Third, simulating the effects of discretionary fiscal policies and alternative scenarios on fiscal sustainability, growth, inflation, and other macroeconomic variables. And fourth, using these inputs to inform staff assessments of the

availability of fiscal space, based on the preceding common criteria as well as country-specific factors not adequately captured by them. With some adjustments, the framework could be applicable to the entire Fund membership. Notwithstanding data limitations in low-income countries and economies without market access, the logic of the framework should still apply.

19. Regardless of views on the availability of fiscal space, countries should aim for growth-friendly tax and expenditure policies, as outlined in IMF (2015c) and Box 1. Options include: (i) strengthening incentives for work and investment in human capital through reform of labor taxes and social benefits (reducing “tax wedges”); (ii) encouraging private investments and R&D by reforming corporate income taxes and well-targeted tax incentives; (iii) raising productive capacity through efficient public investment, especially in infrastructure; and (iv) promoting human capital accumulation through broad access to education and health care.

ISSUES FOR FURTHER CONSIDERATION

20. In applying these considerations, a few issues will need further work over time:

- *Definition of benchmarks.* The appropriate benchmarks to assess fiscal indicators remains the subject of much debate, including for advanced economies (and particularly for reserve currency issuers). More work is needed in defining benchmarks. Since theory provides no clear answers on this question and different empirical studies suggest disparate thresholds, the initial approach that has been proposed in this note is to relate any thresholds to the likelihood of fiscal stress, for example as defined in Baldacci et al. (2011). The DSA and VE thresholds follow this definition and use a “signaling” approach to identify the level of the indicator that has best predicted fiscal stress in the past (see Annex I).¹⁶
- *Behavior of risk premium.* The risk premium charged by financial markets on government borrowing could move sharply in a non-linear way under different circumstances, including tightening global liquidity, heightened risk aversion, worsening macro fiscal indicators in the country, as well as in response to discretionary fiscal policies or excessive or repeated breach of fiscal rules. As proposed above, uncertainty on this front can in part be addressed in the third stage by looking at alternative scenarios with different risk premia based on a country’s historical experience. More systematic work, however, is called for to help model the behavior of risk premia under different policy scenarios.
- *Design of fiscal rules.* The cross-country experience shows that fiscal rules have typically undergone modification over time as new insights are gained with experience. In this context, FAD is planning to engage the Board with some new cross-country analytical work on the desirable features of fiscal rules, based on historical experience.

¹⁶ The signaling approach was proposed in a seminal paper by Kaminsky et al. (1998). It entails using identifying critical thresholds of potential indicators of crisis events that signal such events with the lowest prediction error.

21. The framework presented in this note will be updated and refined over time. It is expected to evolve in response to experience gained through implementation in bilateral surveillance, as well as to new metrics and approaches to fiscal sustainability developed by Fund staff.

Annex I. Fiscal Space: Selected Indicators

This annex provides additional background information on a range of potential indicators that could inform the analysis of fiscal space at the various stages considered in this note.

Stage 1 Potential Indicators

EBA Current Account Gap. The deviation of the observed current account (CA) from its EBA norm level; it is also equal to the sum of the CA regression residual and the contributions of policy gaps to the CA (which are the product of each of the estimated coefficients on the respective policy variables and the policy gaps (P-P*)). A positive value suggests a stronger than desirable current account. For more details, see Phillips et al. (2013).

EBA Domestic Fiscal Policy Gap. The deviation of the cyclically-adjusted fiscal balance from observed current account (CA) from its desirable level, under EBA. A positive value suggests a tighter than desirable fiscal stance. For more details, see Phillips et al. (2013).

Structural Reform Related Gaps. In addition to Fund staff's own metrics, third-party indicators that may be appropriate in particular circumstances could be considered. These could include, among others, the World Bank's Doing Business Survey and various indices computed by the OECD (see, for example, IMF (2015a)).

Real public capital stock per capita. The public capital stock is constructed following the perpetual inventory equation. The inputs required to apply this method are the investment flow series, the initial capital stock, and the size and time profile of the depreciation rate. All series (output, investment, capital stocks) are expressed in constant international 2005 prices (using purchasing power parity). For more details, see IMF (2015b).

Efficiency of public investment. Fund staff has developed a new Public Investment Management Assessment (PIMA) to assess the quality of public investment management practices. The PIMA evaluates 15 key institutions for planning, allocation, and implementing public investment. These PIM institutions are a subset of the broader framework of budget institutions that govern the public financial management process. For each of the 15 PIM institutions, three key design features are identified, each of which can be fully met, partly met, or not met. Based on how many of these key features are in place, countries are given a PIMA score of between 0 (no key features in place) and 10 (all 45 key features fully in place). For more details, see IMF (2015b).

Stage 2 Potential Indicators

A. Financing and debt burden indicators. For more details, see IMF (2013).

This section discusses the calibration of benchmarks for two distinct elements of the MAC DSA framework: (i) debt burden benchmarks used in the risk assessment, including the level of debt and

gross financing requirements; and (ii) benchmarks for the debt profile risk indicators, including sovereign spreads, public debt held by non-residents, change in share of short-term debt, and external financing requirements. These benchmarks both rely on the same methodology (signal approach). The signal approach is applied to EM-only and AE-only samples separately to reflect different characteristics of EMs and AEs, and because the definition of debt distress is different for EMs and AEs. Countries are designated as EMs or AEs based on their WEO classification.

Definition of debt distress events

For EMs, debt distress events are defined as:

- Default: arrears on principal or interest payments to commercial or official creditors;
- Restructuring and rescheduling: any operation which alters the original terms of the debtor-creditor contract; or
- MF financing: addressing liquidity issues associated with sovereign debt distress.

For AEs, debt distress events are defined as:

- Default: a sovereign not current on its debt obligations (Standard and Poor's definition);
- Restructuring and rescheduling: any operation which alters the original terms of the debtor-creditor contract;
- IMF financing: in excess of 100 percent of quota;
- Inflation: greater than 35 percent per annum; or
- Sovereign spreads: greater than 1000 basis points or 2 standard deviations from the country average.

Signal-approach benchmarks

The signal approach developed by Kaminsky et al (1998) is used to derive "benchmarks" for debt burden and debt profile risk indicators. These benchmarks indicate the level of the indicator that best predicts the occurrence of a debt distress event in the sense that it minimizes the sum of the missed crises and false alarms. The benchmarks were obtained by calculating sample-specific medians (for AEs and EMs) for the different indicators. A noise-to-signal ratio below 100 suggests that the indicator is an efficient predictor of debt distress. In order to differentiate countries within the higher scrutiny group for the purposes of the heat map, the debt level indicator benchmark derived from the signal approach is increased by about 20 percent (to 70 for EMs and 85 for AEs).

Risk assessment benchmarks for debt profile indicators

In order to provide an early warning of emerging risks, and to err on the side of caution, signal-approach benchmarks for debt profile indicators are scaled down. These early warning benchmarks, to be used in the identification of risks and in the risk assessment of debt profile, are derived by minimizing the sum of type I and type II errors when comparing to VEE and VEA results for similar year vintages. Separate early warning benchmarks for EMs and AEs were calculated.

- B. Probability of Breaching Debt Benchmark.** The probability of exceeding—or remaining below—the debt benchmark can be calculated using simulated distributions of future debt outcomes over a relevant time horizon. This is done by estimating the distribution of macroeconomic and fiscal shocks facing a given country, and then performing stochastic simulations of the future debt trajectory over the desired time horizon. The outcome of these simulations is a series of distributions of debt realizations for each year into the forecasting horizon. Those distributions allow calculating probabilities that public debt exceeds a given threshold at any point in time over the projection period, considering plausible constellations of shocks. For more details, see IMF (2016).
- C. Realism of Adjustment Required to Stabilize Debt.** This MAC DSA tool assesses the realism of projected fiscal adjustments based on the historical experience of countries. Cross-country experience provides useful insights about the prevalence of, and circumstances underpinning, large and sustained primary surpluses. The assessment of the realism of fiscal projections should consider both the adjustment in the primary balance as well as its level. Based on high debt country experience with cyclically adjusted primary balances, closer scrutiny of the fiscal path would be required if (i) the planned cyclically-adjusted primary fiscal adjustment over any three years during the projection horizon is larger than 3 percent of GDP; or (ii) the average of the cyclically adjusted primary balance for any consecutive 3-year period during the projection horizon is greater than 3.5 percent of GDP. For more details, see IMF (2013).
- D. Long-Term Adjustment Need.** This measure captures the size of fiscal adjustment needed to reduce public debt to 60 and 40 percent of GDP (by 2030) respectively for advanced and emerging economies while offsetting expected increases in age-related spending. More precisely, our measure shows the change in the cyclically-adjusted primary balance that would be needed between now and 2020 (and maintained until 2030) to reduce the debt ratio to the target level.¹⁷ Countries with a higher increase in age-related spending will need to implement bigger adjustments to their cyclically adjusted primary balance. For more details, see Schaechter et al. (2011).

¹⁷ As in the Fiscal Monitor, net debt is used for Australia, Canada and Japan. For Japan, the net debt target is 80 percent, which corresponds to a gross debt of 200 percent.

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