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**WORLD BANK AND INTERNATIONAL MONETARY FUND**

**DEVELOPING A MEDIUM-TERM DEBT MANAGEMENT STRATEGY  
FRAMEWORK (MTDS) – UPDATED GUIDANCE NOTE FOR COUNTRY  
AUTHORITIES**

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## EXECUTIVE SUMMARY

**This guidance note describes a framework for developing a medium-term debt management strategy.** The Executive Boards of the International Monetary Fund (IMF) and the World Bank (WB) strongly support the strengthening of debt management practices and recognize the importance of developing a medium-term debt management strategy.

**This note updates the MTDS framework, presented in the 2009 Guidance Note.** The essence of the MTDS framework remains unchanged; the update mainly takes account of recent developments and highlight the revisions to the accompanying analytical tool. The latter has been updated to reflect feedback from IMF and WB Board discussions of 2017, and from recipients of technical assistance (TA).

**The MTDS framework offers a comprehensive and structured approach to evaluate the costs and risks of alternative financing options for the government.** As governments from an increasing number of countries diversify their sources of financing, including through issuance of Eurobonds, a coherent framework that assesses related costs and risks of financing options can assist in decision making. For example, the MTDS framework assists countries in analyzing the costs and risks, and the trade-offs between them, associated with extending the maturity profile of domestic borrowing or accessing the international capital markets.

**The MTDS framework aims to support the development of a debt management strategy that is consistent with preserving debt sustainability.** By taking into account linkages to key macroeconomic policies and debt sustainability, the framework can highlight an appropriate debt management strategy that meets debt management objectives (such as developing the domestic debt market) while maintaining debt sustainability.

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## Glossary

AT	Analytical Tool
ABP	Annual Borrowing Plan
ALM	Asset-Liability Management
ATM	Average Time to Maturity
ATR	Average Time to Re-fixing
DMS	Debt Management Strategy
DM	Debt Manager
DSA	Debt Sustainability Analysis
DSF	Debt Sustainability Framework
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IMF	International Monetary Fund
LIDC	Low-Income Developing Country
MTDS	Medium-Term Debt Management Strategy
MTFF	Medium-Term Fiscal Framework
NPV	Net Present Value
TA	Technical Assistance
WB	World Bank

## INTRODUCTION

1. In 2009, the WB and the IMF jointly developed a systematic and comprehensive framework to help countries develop an effective medium-term debt management strategy. A guidance note setting out the framework, accompanied by an analytical tool, was published. Since then, numerous countries have benefited from TA in this area. A joint WB-IMF Board paper (2017) provides an assessment of these capacity-building efforts.<sup>1</sup>

2. This note updates the 2009 Guidance Note. The basic framework laid out in the 2009 note remains valid. The update serves mainly to incorporate recent developments in debt management, such as a wider variety of instruments in sovereign debt portfolios, or the increased use of liability management operations (for example, buybacks and exchanges). The update also highlights the revisions to the accompanying analytical tool, which has been updated to incorporate feedback from the discussions of the Boards of the WB, IMF, and TA recipients. The main changes to the 2009 revision are in the Introduction, in the references to the updated analytical tool (AT), and in Appendix III, from which (i) formulae for costs and risks have been moved to the Manual of the MTDS AT; and (ii) cost-risk indicators that are not applicable for debt managers have been removed.

3. Developments since 2009 have illustrated clearly the importance of sound debt management and motivate and inform this update of the Guidance Note. The global financial crisis demonstrated that developing and implementing a sound debt management strategy helps mitigate major risks.<sup>2</sup> Vulnerabilities related to debt levels and debt composition have increased in many advanced and developing countries, making effective and prudent debt management more macro critical.<sup>3</sup> Developments in real effective exchange rates, often driven by unfavorable commodity price trends, continue to contribute to create challenges for debt sustainability (Figures 1a and 1b). Debt stocks, including foreign currency denominated debt, have been rising (Figure 1c), mainly due to:

A sharply higher reliance on foreign financing in a low interest rate environment;

Lingering growth slowdown and increased fiscal deficit; and

Trade shocks—particularly commodity and energy price shocks—weather-related shocks, and contagion from global financial market crises.

The debt portfolios of many LIDCs have become more complex. The Multilateral Debt Relief Initiative (MDRI) significantly reduced the debt burden for many LIDCs, freeing resources to help finance governments' growth programs. It also opened new opportunities to access nonconcessional sources of financing, including access to the international capital

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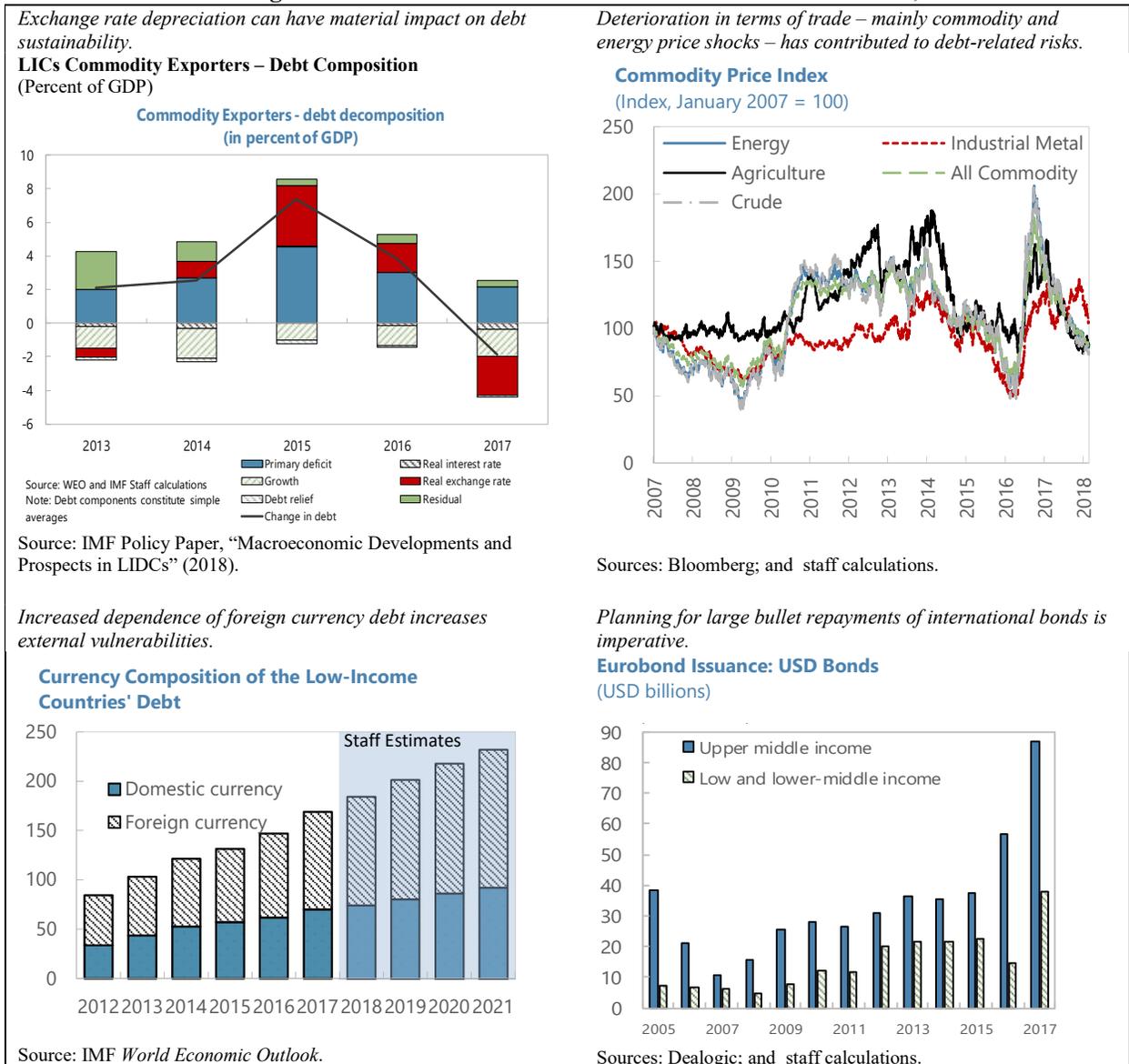
<sup>1</sup> *The Medium-Term Debt Management Strategy: An Assessment of Recent Capacity Building*. <https://www.imf.org/en/Publications/Policy-Papers/Issues/2017/07/28/pp072817-the-medium-term-debt-management-strategy>.

<sup>2</sup> See discussion in the joint WB-IMF Board paper *Managing Public Debt: Formulating Strategies and Strengthening Institutional Capacity* (2009).

<sup>3</sup> IMF Policy Paper, "Macroeconomic Developments and Prospects in Low-Income Developing Countries (2018).

markets. Furthermore, new instruments such as derivatives and collateralized loans are increasingly being used by LIDCs. These trends have raised new risks and challenges that need to be carefully assessed. As many countries have experienced, poor financial choices, including those related to the terms and structure of new debt, can contribute to the re-emergence of significant debt vulnerabilities, thus putting debt sustainability at risk and endangering macroeconomic stability.

**Figure 1. The Evolution of Public Debt and Its Vulnerabilities, 2000–20**



4. The MTDS framework provides a coherent structure to assess the costs and risks of financing options for the government and the composition of government debt.<sup>4</sup> The framework allows to address questions such as: What is the appropriate mix of concessional

<sup>4</sup> While this framework was specifically developed taking into account the LIDC context, it is more general in its application, and could be equally useful in other developing and emerging market economies.

and quasi-concessional debt? Should a country tap the international capital markets? What are the cost-risk implications of extending the maturity of domestic borrowing?

5. This Guidance Note differentiates between the MTDS framework and a country's medium-term debt management strategy (DMS). The MTDS framework attempts to help a country develop a DMS that explicitly recognizes the relative costs and risks involved, takes account of the linkages with other key macroeconomic policies, is consistent with maintaining debt sustainability, and can facilitate domestic debt market development. Typically, a country will update its DMS periodically as conditions change, using the MTDS framework as appropriate.

### **What is a DMS?**

6. When determining how best to meet the government's financing requirement, the debt manager (DM) is faced with many potential trade-offs between the costs and risks of alternative instruments, and their concomitant interactions.<sup>5</sup> For instance, if foreign interest rates are lower than domestic interest rates, foreign currency debt may seem attractive. However, the advantage becomes less clear once the exchange rate risk, which will determine the ex-post cost of foreign currency debt, is taken into account. Taking on foreign currency debt could also affect government objectives with respect to domestic government debt market development. The DMS should identify and explain these trade-offs.

7. A DMS is a plan that the government intends to implement over the medium term in order to achieve a desired composition of the government debt portfolio, which reflects the government's preferences with regard to the prevalent cost and risk.<sup>6</sup> Those preferences capture the government's debt management objectives—for example, ensuring that the government's financing needs and payment obligations are met at the lowest possible cost, consistent with a prudent degree of risk. An effective DMS has a strong focus on managing *costs* and *risk exposures* embedded in the debt portfolio—specifically, potential variations in the overall cost of debt servicing and its impact on the budget.

8. The analysis underpinning the DMS identifies how cost and risk vary with the composition of the debt. While a sound DMS can be developed without the use of a quantitative tool, especially where countries are severely constrained in their choices, the use

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<sup>5</sup> The term “debt manager” is used here to generically describe those authorities responsible for developing the MTDS. While primary responsibility will lie, along with the decision-making authority, with the Minister of Finance, this term encompasses the debt management unit or office, which would typically take the lead in preparing the strategy proposal; however, it could also cover a macroeconomic unit in the Ministry of Finance, if involved in determining policies affecting the choice of debt composition.

<sup>6</sup> The medium-term is typically defined as three to five years. If the time horizon is too short, there is a risk that short-term expediency will dominate, turning the focus toward short-term costs and away from risks that could materialize later. The evaluation of the costs and risks underlying the strategy should aim to capture the full economic cycle, allowing potentially higher short-term interest rates and substantive movements in the exchange rate to emerge, both of which may significantly increase the cost of debt.

of scenario analysis can enable the DM to quantify the potential risks to the budget of alternative debt management strategies.

9. In principle, the scope of the DMS covers total nonfinancial public-sector debt. This comprises the debt of the central government (budgetary, extra-budgetary and social security funds), the state and local governments, and the debt of nonfinancial public corporations. In practice, however, it is often useful to initially focus on central government debt, where generally data are more readily available, and the authority exists to implement the strategy. The scope of the DMS can be extended as information becomes available and where the institutional arrangements allow for a broader and more comprehensive strategy to be implemented. For example, to effectively extend the DMS to cover the totality of nonfinancial public-sector debt would require some element of central government control on borrowing decisions of state and local governments, and nonfinancial public corporations.

10. The focus of the DMS is typically on actual direct liabilities of the government but can be extended to contingent liabilities.<sup>7</sup> Contingent liabilities may have an important bearing on the sustainability of debt and the robustness of the DMS. Consequently, it would be prudent to anticipate the materialization of contingent liabilities under specific scenarios, to which end the DM must have good information on the nature of these liabilities.<sup>8</sup>

### **Benefits of a DMS**

11. A DMS provides a structure within which the authorities can make informed choices on how the government's financing requirements should be met, while also taking due account of constraints and potential risks. Such a systematic approach to decision-making can help strengthen the debt management function, enhance analytical capacity, and help reduce operational risk, even where capacity is constrained.

12. Adopting an explicit and formal DMS enables the authorities to:

**Evaluate cost-risk trade-offs:** The DMS allows informed decisions to be made, ensuring that the costs and risks associated with alternative strategies are clearly recognized and identified. Setting clear medium-term strategic goals will help DMs avoid poor decisions made solely on the basis of cost, or for the sake of short-term expediency.

**Identify and manage risk:** Even where financing choices are limited, the analysis undertaken to formulate a DMS helps identify and monitor key financial risks and establishes strategies that ensure countries are well placed to take advantage of new borrowing opportunities in a considered and risk-conscious way. The development of a DMS also facilitates risk management by enabling the consideration of options for risk mitigation. This could include supporting the development of the domestic debt market, maintaining cash or reserves buffers, or establishing committed lines of credit.

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<sup>7</sup> Some countries may include all the direct explicit exposures of the central government, including guarantees, in their definition of debt.

<sup>8</sup> The DMS can be extended to also cover government assets. Government assets in the widest sense are extensive, but also hard to value or adjust. More amenable to treatment in the DMS framework are tradable financial assets held by the government.

13. In addition, the process of developing a DMS provides benefits with respect to:

**Coordination:** Developing a DMS will facilitate coordination between debt management and both fiscal and monetary management, helping to reconcile various objectives and constraints, including those concerned with domestic debt market development and balance of payments issues. While enhancing coordination, DMS also enables each respective agency to focus more clearly on its core objectives, helping to achieve greater clarity and accountability for debt management separate from fiscal and monetary policies.

**Identification of constraints:** The DMS helps identify the constraints that affect the DM's choices, and highlights, where possible, steps to ease those constraints.

**Cost:** A DMS can potentially lower the cost of debt servicing, as an effective and transparent DMS will support domestic debt market development, and facilitate the relationship with investors, creditors, and rating agencies.

**Transparency and accountability:** Preparing a DMS requires the compilation of detailed relevant data, potentially from several government agencies, which may in itself facilitate accountability. A DMS should normally be reflected in a document that is regularly updated and circulated to relevant government agencies and may be presented to parliament and published. A formal and explicit DMS, expressly agreed to by high-level authorities, can help build broad-based support for responsible financial stewardship. These elements all serve to enhance good governance and accountability.

## How Does the DMS Fit in the Overall Economic Framework?

14. The DMS has linkages to macroeconomic policy, structural policies, and short-term operations (Box 1 and Figure 2). The DM determines the DMS, taking into account constraints stemming mainly from the macroeconomic framework and the level of development of the domestic financial market. In turn, the analysis presented in the DMS can provide input to macroeconomic policy analysis. Given its medium-term perspective, the DMS can support efforts to develop the domestic debt market by facilitating a transparent and predictable strategy for domestic borrowing, including the systematic introduction of new instruments, and by highlighting where impediments might exist, particularly in market infrastructure and institutions.<sup>9</sup>

### Box 1. Key Interlinkages

Figure 2 illustrates the key interlinkages between the DMS and other key policy areas, also indicating how cost-risk analysis is used to pull this information together and inform the choice of DMS:

- *DMS, Fiscal Planning, and Debt Sustainability*

Ex ante, the level of debt is mainly determined by fiscal policy, although ex post, the debt composition can play an important role (Figure 2). Given the medium-term perspective of the DMS, to be most effective the DMS should be formulated within a fully operational medium-term fiscal framework (MTFF). Debt sustainability analysis (DSA) will assess whether the fiscal policy implied by the MTFF, and the associated debt level, are sustainable over the long term. The WB-IMF Debt Sustainability Framework (DSF), a key tool to undertake that analysis, includes alternative scenarios to assess the realism of the outlook. This is undertaken by showing the development of debt ratios if (a) the primary balance does not change (improve); and (b) projections of GDP growth are closer to the historic outcome than the assumed outlook under bound tests that examine the impact on debt of shocks to key macro variables. In contrast, the DMS will also provide a detailed analysis of the cost and risk characteristics of different debt management strategies. The DMS can also help country authorities move toward setting expenditure priorities independent of financing sources, by identifying strategies that generate a profile of interest costs consistent with debt sustainability, but which do not rely on the availability of specific project financing. More generally, the DMS can strengthen fiscal planning by contributing an analysis of the budget implications of its implementation.

- *DMS and Monetary Policy*

The monetary policy regime—the instruments used for monetary policy operations, the institutional setting, and the credibility of monetary policy—has important implications for the MTDS. For example, lack of a credible monetary policy may result in a high inflation risk premium and make longer-term domestic debt excessively costly. Another example arises where sterilization operations to mop up liquidity arising from capital inflows have led to large scale central bank issuance of securities in its own name. The consequent increase in quasi-fiscal deficits and potential replacement of central bank debt with central government debt are also considerations that need to be taken into account when developing a DMS.

- *DMS, Exchange Rate Policy, and Balance of Payments*

The exchange rate policy and expected evolution of the balance of payments and consequent developments in the real exchange rate, may have consequences for the DMS. For example, if the exchange rate is expected to trend downward (that is, depreciate), an increase in the cost of external borrowing would result. Similarly, debt servicing costs may spike if the exchange rate is volatile. In general, borrowing in foreign currencies requires a good understanding of balance of payments trends and coordination with exchange rate policies. In addition, the exchange rate and capital control regime are pertinent for analysis underpinning a DMS. For example, under a fixed exchange rate regime, and in the absence of capital controls, capital flight can lead to problems rolling over domestic debt and erode international reserves. In such

<sup>9</sup> For example, the DM can introduce a new point on the yield curve, confident that it can be sustained with continued issuance in the medium term; this commitment to continued issuance of new instruments can then be communicated to market participants. See the WB-IMF Board Paper *Guidelines for Public Debt Management* (revised, 2014), and the WB-IMF, *Developing Government Bond Markets: A Handbook* for a broader discussion of the benefits of regularity and predictability in issuance.

cases, it may be appropriate to consider whether additional foreign currency reserve buffers are required to cover short-term domestic debt, or that maturities need to be lengthened.

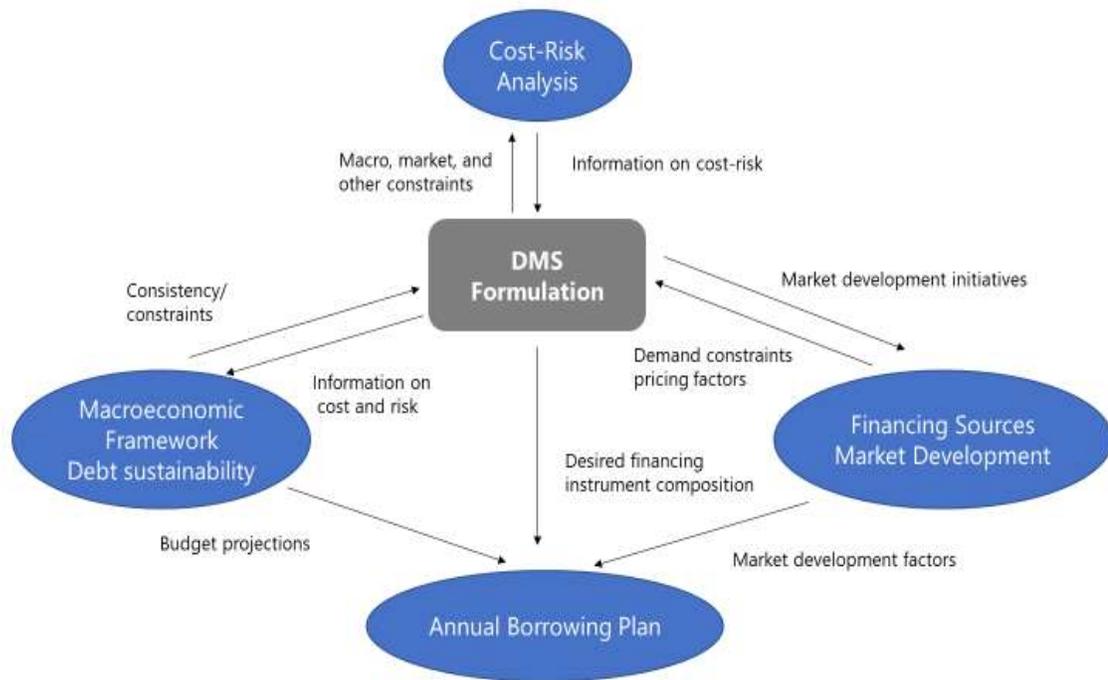
- *DMS and the Development of Domestic Debt Markets*

Often the trade-offs between borrowing domestically or externally will be defined and limited by the level of development of the domestic debt market, and/or private sector crowding-out considerations. The analysis underpinning the DMS can help identify key challenges in this area, and in some instances the chosen strategy can help address those challenges.

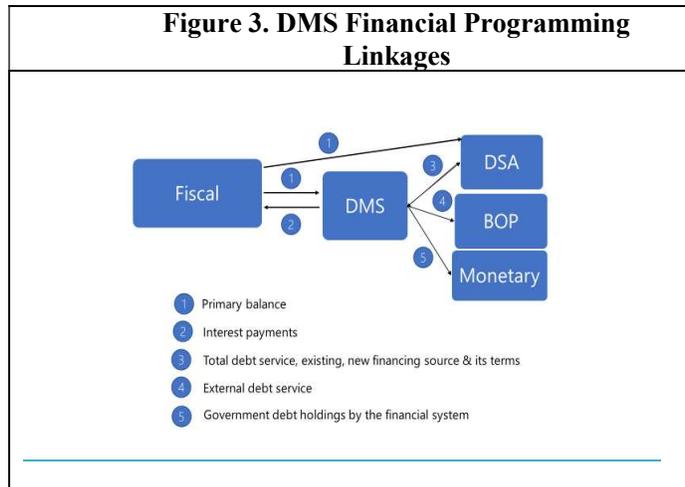
- *DMS and Annual Borrowing Plan*

An annual borrowing plan should be developed, consistent with the DMS and taking account of the underlying volatility in government cash flows. The borrowing plan helps operationalize the DMS. The specifics on size and timing of new borrowing are determined in conjunction with the forecast of government cash flows given the expected implementation of the budget, taking into account any specific market characteristics or creditor behavior, and the objective of presenting regular and stable issuances in the domestic market. An important factor in determining the effectiveness of the borrowing plan will be the quality and robustness of government cash management and forecasting. The annual borrowing plan should be shared with the central bank, as it has important consequences for the central bank's assessment of liquidity conditions.

**Figure 2. Key Interlinkages**



15. In order to ensure consistency between the DMS and the overall macroeconomic framework, it is important that the interlinkages and feedback effects are well understood and that coordination mechanisms are in place. The general architecture for integrating the financing file with traditional financial programming is illustrated in the text chart. The DMS financing file receives information on the primary balance from the fiscal file and generates information on domestic and external interest payments and amortizations. That information is input into other parts of the framework. Mechanisms are incorporated to represent feedback inputs and to ensure consistency. Indeed, for LIDCs, these interlinkages are likely to be more significant, partly due to underdeveloped domestic debt markets, and partly due to capacity constraints and relatively weak institutional settings.<sup>10</sup> In this context, close coordination is vital to ensure that the overall policy mix is sustainable.



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## Developing a DMS

### Context

16. The implementation of the DMS framework is most effective where an appropriate enabling context already exists, including a well-developed medium-term macroeconomic framework with clear and consistent objectives for fiscal and monetary policies.<sup>11</sup> Key elements of such a context include (Appendix I): (1) an adequate legal framework; (2) effective institutional arrangements; and (3) comprehensive and efficient debt recording. While countries take different approaches to each of these, some key underlying principles generally hold true.<sup>12</sup>

**The legal framework.** The legal framework should clearly define the authority to borrow and to issue new debt, invest, and undertake transactions on the government’s behalf. Often, the legal framework also sets out the overall objectives for debt management, clarifies accountability, and outlines the desired reporting and audit requirements.

<sup>10</sup> Developing and implementing an effective DMS may require a significant strengthening of capacity in many developing countries: see Appendix I for a discussion of the enabling institutional framework. In addition, capacity may need to be strengthened in other complementary areas—such as government cash management and forecasting, medium-term fiscal and expenditure frameworks, monetary policy implementation—to maximize the benefits of an DMS.

<sup>11</sup> The Guidance Note recognizes that many of these elements may not be fully in place in many developing countries; nevertheless, an effective DMS could help identify needed reforms.

<sup>12</sup> See the 2014 IMF-WB revised *Guidelines for Public Debt Management*, a fuller discussion. <https://www.imf.org/external/np/pp/eng/2014/040114.pdf>.

**Institutional arrangements.** The supporting governance structure should clearly outline and describe the roles and responsibilities of all relevant institutions involved in debt management activities. In particular, it should be clear which agent is responsible for debt management decisions.

**Debt recording.** The DM needs to have sufficient information available pertaining to the debt portfolio on which to base the analysis. Often, establishing an effective database that covers all relevant types of debt and other instruments (including, possibly, debt of the non-budgetary government, contingent liabilities, and financial assets) presents a significant challenge. A precondition for high quality and comprehensive debt data is efficient and timely debt recording.

17. In addition, given that the purpose of the DMS is to inform future financing choices, it is imperative that there be political commitment to, and strong ownership of, the process and its outputs.

### Steps

18. The MTDS framework sets out the steps to design a DMS. Note that, although these steps are presented here in a specific sequence, in practice several steps may be undertaken concurrently and/or in a different order. The eight steps are as follows:

1. Identify the objectives for public debt management and scope of the DMS.
2. Identify the current DMS and analyze the cost and risk of the existing debt.
3. Identify and analyze potential funding sources, including their cost and risk characteristics.
4. Identify baseline projections and risks in key policy areas—fiscal, monetary, external, and market.
5. Review key longer-term structural factors.
6. Assess and rank alternative strategies on the basis of the cost-risk trade-off.
7. Review implications of candidate debt management strategies with fiscal and monetary policy authorities, and for market conditions.
8. Submit and secure agreement at high levels on the DMS.

19. Once the strategy has been agreed upon, it should be disseminated through a published strategy document. The DM should then develop an annual borrowing plan that is consistent with this strategy.

20. As the borrowing plans are implemented, their impact on progress toward achieving the strategy should be regularly monitored and evaluated. In addition, the strategy should be reviewed on a regular basis, for example, annually, or more frequently if macro or market conditions change significantly. This monitoring and review process is an important element of effective risk management.

## **DEVELOPING A MEDIUM-TERM DEBT MANAGEMENT STRATEGY: EIGHT STEPS**

### ***Step 1. Identify the objectives for public debt management and scope of the DMS.***

*Objective:* Identify the main objectives for public debt management and define the scope of the DMS.

21. To enhance accountability, the objectives and scope for public debt management, which effectively determine the DM's tasks and responsibilities as well as the coverage of the DMS analysis, should be expressly identified. In countries where debt management objectives are not clearly stated (for example, in a legal document), the DM should agree on the primary objectives with the highest relevant authority (typically the Minister of Finance) and ensure that these are clearly documented.

22. The relevant objectives for debt management are often framed in terms of ensuring that the government's financing needs and payment obligations are met on a timely basis, and at the lowest possible cost, consistent with a prudent degree of risk. A secondary objective can be supporting domestic debt market development. Furthermore, the DM should identify other policy objectives that may have implications for the formulation of the strategy, such as supporting the implementation of monetary or exchange rate policy.

23. A precondition for developing and implementing a sound strategy is a clear definition of the strategy's scope.<sup>13</sup> At a minimum, the scope should include the total (domestic and external) direct central government debt. The exact definition of the scope will depend on the degree to which the DM can influence the risk exposure of specific portfolios.<sup>14</sup> The coverage of the DMS could be gradually expanded as information becomes available and where the institutional arrangements allow for a broader and more comprehensive strategy to be implemented.

24. Even within a relatively narrowly defined scope, the DM should attempt to gather information on the overall balance sheet of the government: that is, the main financial assets and liabilities of the government, and the main contingent liabilities. This information can inform the assessment of the overall vulnerability of the debt position and strengthen the analysis of the appropriate strategy by taking into account the net financial exposures of the government.<sup>15</sup>

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<sup>13</sup> Though the prudent approach would be to include government borrowing from the central bank, including overdrafts, drawings from loan facilities, and the central bank's holding of government securities, purchased directly, in some cases, the MTDS excludes central bank debt. The rationale for excluding central bank debt is that the anticipated profit remittances from the central bank are typically embedded in the fiscal projections (Appendix IV). It would, however, be important to check that these projections are indeed consistent with the assumed cost of monetary policy implementation. The implications of the currency composition of the government's foreign debt and the central bank's foreign assets can be separately reviewed to match the exposure and reduce risk in the overall public-sector balance sheet, using an asset-liability management (ALM) approach.

<sup>14</sup> For example, if the scope includes the portfolio of government guarantees, the DM should be involved in the decision-making process related to the issuance of guarantees.

<sup>15</sup> Paying attention to net exposures can result in the formulation of a more comprehensive ALM approach.

Outputs:

- Description of the overall objectives for debt management.
- Description of the scope for the DMS.

***Step 2: Identify the current DMS and the cost and risk of the existing debt.***

*Objective:* Identify the current DMS, the outstanding debt, and its composition; calculate basic cost and market risk indicators.

25. Identifying the current DMS helps provide a basis against which alternative strategies can be tested. Often a formal DMS does not exist, or only covers part of the debt portfolio. In such cases, the current strategy would be a description of existing borrowing practices.

26. A solid understanding of the structure of, and risks to, the outstanding stock of debt is fundamental in developing a DMS. The DM should gather the data on the debt portfolio as defined under Step 1. The data should comprise the total amount of debt, a breakdown by currency, creditor type, and instrument type—fixed, variable, or indexed, bullet, or amortizing (Box 7). The DM should organize the data so that the debt servicing and debt maturity profile can be readily determined, and the impact of changing assumptions assessed.<sup>16</sup> Ideally, this information will be easily available from the debt recording system(s).

27. The DM should analyze the debt stock on the basis of key cost and risk indicators. Undertaking this analysis requires the DM to identify a clear definition of cost and risk. While this may seem trivial, in practice, it is an issue that debt managers struggle with. It is important that the DM be clear about the objectives of debt management, and the relevant time horizon to which they apply. Typical cost and risk indicators used by DMs are discussed in Appendix III, and in the manual of the analytical tool. Based on an assessment of these indicators, the DM should identify sources of vulnerability affecting the existing debt.<sup>17</sup> The extent of the risk will depend on the risk factors, such as the variability and trends in interest rates, and exchange rates, as well as the risk exposure, such as the share of domestic debt, short-term, and variable rate debt.<sup>18</sup>

Outputs:

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<sup>16</sup> For variable rate debt and debt denominated in foreign currencies, the current interest and exchange rates are typically applied for the initial calculation of the debt servicing and maturity profile of the outstanding debt stock. However, these would be recalculated using the projections underlying any forward-looking quantitative analysis (Step 6).

<sup>17</sup> The assessment of vulnerabilities could also address creditor concentration, which captures an element of rollover risk.

<sup>18</sup> It is important that variability is assessed over an appropriate time horizon. For example, using an annual measure of volatility might mask a trend in a key variable. Such trends are often made apparent when continuous or comparative data are graphed; in those cases, volatilities should be evaluated over longer periods. Moreover, it is important to evaluate changes in those variables expressed in real terms (that is, taking into account inflation). For example, the long-term debt-to-GDP ratio—and other ratios indicative of the cost of debt—depends on developments in the real interest and exchange rate.

- Detailed information on outstanding debt.
- Debt servicing profile of outstanding debt.
- Description of main portfolio risks.

***Step 3: Identify and analyze potential funding sources, including their cost and risk characteristics.***

*Objective:* Identify potential sources of finance, their financial characteristics, amounts available, and desirability of use.

28. The DM should identify the characteristics of all existing financing instruments and assess their relative costs and risks.<sup>19</sup>

29. In addition to the standard characteristics of the outstanding debt that affect the cost and risk analyzed in step 2, other characteristics also affect the desirability of specific types of debt instruments. These include:

whether its use is restricted to certain purposes, such as, for example, project financing or budget support;

whether there are other conditions attached to it, such as, for example, is co-financing required;

special features of the debt contracts, such as collateralization provisions, embedded options and contingency clauses, acceleration clauses, cross-default clauses, and collective action clauses; and

any uncertainties associated with disbursement.

30. The DM also needs to consider whether the use of certain instruments (such as international capital market financing) would entail other costs, including the legal or financial advisory services necessary to achieve a successful issue. In addition, the DM should determine whether any instruments come with added benefits, such as advisory services or project management support, which could offset some of the cost factors. Clear identification of such factors will help inform the appropriate balance, for example, between funding from bilateral and multilateral sources. The DM should assess, any limitations on the quantities that could be borrowed from potential sources of funding, and the conditions under which these quantities might change.<sup>20</sup>

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<sup>19</sup> Appendix IV discusses possible sources and their cost and risk characteristics. Note that the MTDS framework is focused on debt-creating financing options; this means that grants are not covered within the framework. However, the projected availability of grants is an important factor in determining the net debt-creating financing need, and should be incorporated into any quantitative analysis, as they will effectively reduce the funding need.

<sup>20</sup> For example, if a country decides to access the international capital markets, its access to concessional financing might change. See “IDA Countries and Non-Concessional Debt: Dealing with the ‘Free Rider’ Problem in IDA14 Grant Recipient and Post-MDRI Countries,” IDA/R2006-0137, July 2006. Or, currently, it may only be feasible to access the domestic

31. The DM should consider what potential new-financing instruments might become available within the horizon of the DMS (for example, access to international capital markets, retail debt, and longer tenors). Issues of timing can also be critical in determining the feasibility of specific instruments.<sup>21</sup> The DM should also consider whether financial derivatives might be accessible and clarify how these might affect the implementation of the DMS. However, while swaps to alter the currency composition of the debt might be useful and appropriate for LIDCs, their use requires that the necessary capacity, systems, and institutional set-up are in place. Where actions are outside his/her scope, the DM should consider raising these matters with the relevant policy maker, and more generally working with other officials to enhance the country's access to financing.<sup>22</sup>

Outputs:

- An assessment of the characteristics, including the cost and risk, of all available and potential financing instruments, and how they might mitigate the portfolio risks previously identified.
- An identification of constraints, particularly on issue size, relevant to the determination of the DMS.
- An identification of steps necessary to improve access to, or terms of, these instruments.

***Step 4: Identify baseline projections and risks in key policy areas—fiscal, monetary, external, and market.***

*Objective:* Identify the baseline projections for key fiscal, monetary and external policy variables, as well as market rates, the main risks to these projections, and the relevant constraints and implications for DMS formulation.

32. The DM should have a clear understanding of the macroeconomic framework within which the DMS is to be developed, and how it interacts with decisions on debt management. In particular this step will require interaction with the fiscal and monetary policy authorities.

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market at variable rates or at relatively short tenors, whereas if the domestic market were more developed, it would be feasible to issue longer-term fixed rate debt. In this case, the DM should actively consider what policy actions within his/her purview would be effective in developing the domestic market.

<sup>21</sup> For example, if monetary policy is not yet fully credible, then the DM may want to postpone issuance of longer-term fixed rate instruments on the grounds of cost.

<sup>22</sup> This could involve, for instance, supporting the implementation of a program of investor education by the securities regulator, or encouraging the tax authorities to review the tax treatment of investments in government securities, so as to facilitate domestic market development.

The baseline projections for the macro variables will in general be the same as those used in the authorities' debt sustainability analysis (DSA) (Box 2).

33. Regarding the fiscal policy setting, the DM should obtain firm information on the expected path of the primary balance and the key drivers underlying this projection, including anticipated government revenues and expenditures, and economic growth. An issue that may be particularly pertinent for LIDCs is the appropriate treatment of project loans and associated spending. The planned spending, as reflected in the fiscal framework, is typically dependent on the receipt of specific project loans. Thus, it may be appropriate for the DM may to take the path of expected disbursements as a given, as they will be offset by changes in spending.<sup>23</sup>

34. With respect to monetary policy and external factors, the DM should seek the views of the monetary authorities regarding their assessment of the future stance of monetary policy, the exchange rate, the anticipated balance of payments developments, and the implicit debt strategy incorporated in the external DSA. Given their assessment of the outlook, the monetary authorities may require a specific target for reserves accumulation; this could be particularly pertinent in such cases as where a country is part of a monetary union, or where a country operates a fixed exchange rate regime. In addition, the credibility of monetary policy should be considered, as it may affect the relative cost considerations of short- and long-term domestic debt and influence the choice of the preferred strategy. In this case, the DMS could contribute to coordinated efforts to enhance credibility and reduce the inflation risk premium.<sup>24</sup> More generally, the role of DMS in reinforcing or hindering these policies needs to be clearly understood and may require coordination (Box 1 and Appendix V).<sup>25</sup>

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<sup>23</sup> Nevertheless, it will be important to assess from time to time strategic choices in a more unconstrained manner, which will enable the authorities to determine the relative costs and benefits of project-based versus general budget financing.

<sup>24</sup> For example, the introduction of inflation-linked instruments could signal a wider commitment by the authorities to maintaining price stability.

<sup>25</sup> For example, in relatively underdeveloped markets, any implied volatility in the supply of domestic debt securities, and the tenor of those instruments, could affect the transmission of monetary policy, and the effectiveness of any monetary policy signals.

## Box 2. MTDS, DSA, and the DSF: The Linkages

The MTDS and Debt Sustainability Framework (DSF) are both frameworks that address debt issues, but, given their different focus, they complement rather than substitute for each other.

The DSF provides the analytical tool to undertake debt sustainability analysis (DSA). Its primary objective is to gauge whether or not the level and terms of current and expected future borrowing may lead to future debt servicing difficulties over the long term. To assess debt sustainability, the DSA considers a baseline macroeconomic framework that projects the country's fiscal and balance of payments stance under certain assumptions and conditions, and then considers the robustness of key debt burden indicators—usually the ratio of the net present value (NPV) of debt to GDP, exports, or tax revenue—to various macroeconomic shocks, such as to GDP, the exchange rate, revenues, etcetera. Typically, certain simplifying assumptions are made so that, for example, the term structure for market debt does not need to be explicitly modeled. Therefore, the DSA often does not make use of the detailed information used by the debt manager (DM) for its more granular analysis.

The MTDS is a more targeted debt management framework, focusing on the specifics of how the composition of debt should be managed over the medium-term. Determining an effective DMS requires that the performance of various financing strategies be evaluated under a given path for key macroeconomic variables, which should be consistent with that used in the DSA. Similarly, it requires that the robustness of each alternative strategy be evaluated under various shocks. Again, the DSA should inform the stress tests to be applied. Here, variables that capture market risk, such as the interest rate sensitivity of cash flows, other determinants of the term structure, and the exchange rate, may be explicitly modeled. This means that detailed information on the specifics of the debt portfolio can be assessed more readily.

The DM needs to recognize that DMS may have important consequences for the DSA. Where testing of the alternative debt strategies under the various stress tests suggests that key debt sustainability indicators may be at risk, this should be discussed with the fiscal authorities. The preferred strategy and its associated cost and risk implications could be fed into an updated DSA, and policy trade-offs reviewed.

35. In addition, the DM needs to determine a baseline projection for relevant yield curves, and any other relevant market factors, that will prevail through the planning horizon, thereby enabling the determination of the assumed cost of contracting new debt or rolling over existing debt. Judgment is required when identifying the most suitable methodology for undertaking these projections and estimating any required risk premia. The DM should draw on market contacts and market analysis to help inform these projections.<sup>26</sup> As domestic debt

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<sup>26</sup> Standard options for deriving a yield curve would include inferring the forward curve from the current observed curve, or assuming a domestic yield curve based on a benchmark external curve (for example, in US dollars or euros) and adjusting

markets develop; the quality of these estimates can be improved, and more sophisticated techniques may become feasible.

36. The DM can also draw on officials involved in other areas, particularly banking and securities market supervision, for clarification regarding:

regulatory factors or potential weaknesses in banks that may affect banks' demand for public debt;

regulatory and other factors that may affect nonbanks' demand for public debt;

the organization of the secondary market for securities; and

the functioning of the securities clearing and settlement system.

37. More generally, a broad understanding of financial sector, regulatory, capital controls, and taxation policies will be useful for assessing possible developments that could impact the market environment for issuing debt. The DM should review the financial advice and analysis available from other sources, such as investment banks, which could provide some useful insight as to how market conditions might evolve.

38. Once a baseline has been determined, the DM should identify, in consultation with other officials, relevant risk scenarios that could potentially impact the quantity and cost of financing. For example, where countries have increasingly accessed external funding sources, including the international capital markets, the DM should consider the risk of a "sudden stop," which could lead to rollover problems. That assessment could influence the preferred strategy towards lengthening the average maturity of external debt or building a cushion of reserves.<sup>27</sup> At a minimum, these risk scenarios should reflect those highlighted by the DSA.<sup>28</sup>

39. Note that, even in the absence of a substantive change in the macroeconomic framework, the DMS may have important consequences for the DSA. Where testing of the alternative debt management strategies being considered (Step 6 and Box 2) suggests that key debt sustainability indicators may be at risk, the DM should interact closely with the official agencies involved in the DSA to identify strategies that reduce the risk of debt default, or if there are no such strategies, highlight this fact, so that other measures can be taken.

Outputs:

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for expected inflation differentials, inflation risk premium, and credit risk premium. This methodology is explained in the analytical tool manual (Annexes L and M).

<sup>27</sup> Where this external vulnerability is high and reinforced by the operation of a fixed or semi-fixed exchange rate regime, coordinating that risk mitigation response with the monetary authorities is critical.

<sup>28</sup> For example, experience suggests that the authorities should be cautious in their assessment of the expected return on public investment or aid; consequently, a more pessimistic growth scenario should be considered. The DSA should highlight the key stress tests.

Baseline projections for key fiscal, monetary policy, external, and market variables.

A clear and comprehensive set of country-specific risk scenarios to be tested.

***Step 5: Review longer-term structural factors.***

*Objective:* Review structural factors that will potentially influence the desired direction of the debt composition over the longer term.

40. The DM should identify, in consultation with the main economic policymakers, long-term structural features of the economy that may influence the desired debt composition. These factors should also be reflected in the authorities' DSA. These could include the following:

structural developments, such as demographic trends, or the development of compulsory pension schemes that affect savings behavior;

the economy's dependence on commodities and the associated vulnerability to developments in commodity prices;

the longer-term prospects of continued access to concessional finance;

possible long-term trends in the real effective exchange rate; and

long-term inflationary trends.

41. Such factors could have a significant influence on the desired debt composition over the long term. For example, the desirable currency composition should take into account the long-term outlook for the real effective exchange rate and domestic inflation and their implications for the evolution of the difference between domestic and foreign interest rates. Similarly, the maturity composition of the portfolio should take into account the broad macroeconomic policy regime, and whether that regime might change.<sup>29</sup>

42. An assessment of how economic policy makers expect these factors to develop over time will guide which strategies the DM should focus on (Box 3). In general, the extent of and the speed to which the quality of institutions can be strengthened, and credibility of macroeconomic policies established, will affect the terms on which new borrowing will become available.

**Box 3. Links Between DMS and Country-Specific Structural Economic Factors**

<sup>29</sup> For example, if it is envisaged that, over time, the exchange rate regime may become more flexible, then that might have implications for the longer-term currency and maturity composition of the portfolio. As noted earlier, rollover risk is more pronounced in countries that follow a fixed exchange rate regime, but a more flexible exchange rate regime could support a greater proportion of short-term debt.

Depending on the country-specific factors that are being analyzed, the DMS should be targeted at mitigating or offsetting, as much as possible, undesirable outcomes. For example:

***Terms-of-trade developments:*** Where countries' revenues are significantly exposed to terms-of-trade developments, for example, as a consequence of a dependence on commodity exports or imports, there are likely implications for real effective exchange rates. This aggravates the potential cost and risk of foreign currency debt. Alternatively, potential cost and risk is significantly reduced if a country's real effective exchange rate exhibits an appreciation trend. For example, where many LIDCs have suffered from the consequences of the prolonged downward trend in commodity prices in the 1980s, 1990s, and 2000s, for the "Asian Tiger" countries, foreign currency debt might have proved relatively cheap. As commodity prices and terms of trade can follow very long cycles, a long-term view on such risk is necessary.

***Access to concessional financing:*** As countries' income levels grow, access to concessional financing may become limited. In this case, the DMS will be biased toward enhancing access to other types of financing, such as, for example, introducing a broad range of domestic marketable securities, or establishing access to international capital markets.

*Output:*

Articulation of long-run structural factors that the DMS should take into account.

***Step 6: Assess and rank alternative debt management strategies on the basis of the cost-risk trade-off.***

*Objective:* Identify and analyze possible debt management strategies, assess their performance, and choose a small number of candidate debt management strategies.

43. To determine the preferred strategy, the DM should assess the performance—either qualitatively or quantitatively—of a range of alternative strategies, from a cost and risk perspective. This requires the DM to identify a set of possible strategies and assess them under the constraints and future scenarios for the previously determined primary balance and market rates. Furthermore, the strategies should then be evaluated under the relevant risk/stress scenarios that have been identified.

44. In practice, the DM, should usually focus on analyzing in detail a small set of strategies. To begin, the DM should consider the existing—implicit or explicit—DMS (Step 2). The DM could then identify alternative debt compositions, and strategies that could help mitigate the key vulnerabilities already identified by varying some main characteristics (duration, currency composition, domestic versus external). Strategies that support the development of domestic markets might also be considered.

45. The DM should consider what characteristics of debt or debt composition would mitigate key sources of volatility affecting the budget or provide some buffer to the impact of identified risks (Step 4), and consider the potential costs of achieving that debt composition. .

For example, if the country is exposed to external shocks and the real exchange rate is volatile or likely to depreciate, the DM may want to avoid aggravating that situation by reducing external financing. This would allow the DM to specify the preferred direction of specific risk indicators, such as increasing the share of domestic currency debt or lengthening debt maturity.

46. If the DM has developed or has access to relevant tools, such as the accompanying MTDS AT (Box 4 and illustration in Appendix VI), a quantitative assessment of the cost and risk of the alternative strategies can be undertaken. Typically, such tools compare the cost of debt to the risk (defined as the change in the cost) over a specific time horizon and under different scenarios. Such tools allow the DM to simulate the impact of various financing options, tracking the evolution of the key cost and risk indicators for each strategy.

#### **Box 4. The MTDS Analytical Tool**

The MTDS AT complements the analysis described in this Guidance Note. The purpose of the Microsoft Excel-based, tool is to support quantitatively the process of decision making. The outputs are intended to inform and illustrate the consequences of following a particular DMS under various scenarios or stress tests. The tool can be used to test the consequences of either following a specific financing plan or achieving and maintaining a specific debt composition, with the associated series of financing plans determined by the tool. In this connection, the tool can be used to highlight the relationship between the cost of various financing plans or debt compositions and the associated risk. The tool is flexible, and users can, within certain limits, specify the time horizon for the projections, the number of currencies, and the range of instruments.

A variety of cost and risk indicators are produced, allowing the DM to consider cost-to-risk trade-offs of each alternative strategy. While these outputs are helpful in the decision-making process for selecting a strategy, they should not be the sole focus. With outputs driven by the input assumptions, careful judgement must be applied to any interpretation of the results.

In 2019, the MTDS AT was revised to meet the evolving needs of countries. The number of representative instruments was increased and new features added, which include:<sup>1</sup>

Built-in indexed instruments (such as inflation or exchange rate linked bonds); and

Options to:

- Input existing debt cash flows in local or hard currency;
- Build and use cash buffers; and
- Include nonbudgetary items (such as contingent liabilities and/or asset sales).

The accompanying documents have been revised and renamed. “The Medium-Term Debt Management Strategy Analytical Tool Manual,” and “Medium-Term Debt Management Strategy Analytical Tool: Data Preparation Manual”.

<sup>1</sup> Note that the MTDS AT is not set up to readily accommodate complex instruments such as derivatives and collateralized loans. " to highlight the limitation of MTDS AT in handling such instruments easily.

47. Scenario analysis allows to evaluate the impact of specific shocks or risk scenarios to be evaluated. These should include the alternative scenarios or stress tests identified in Step 4, including any compound shocks considered in the DSA. Similarly, in cases where the DSA suggests that the baseline macro scenario is optimistic, it is important to introduce a

more conservative set of macro assumptions.<sup>30</sup> This risk assessment becomes critical where debt levels are already high, relative to the government’s ability to pay.

48. The choice of time horizon over which cost and risk are evaluated should take into account the prospects for macroeconomic stability. For example, if the economy is relatively stable, evaluating cost and risk over a shorter time horizon may be fully representative; however, if the economy is not stable, it may be necessary to consider a longer time horizon.<sup>31</sup> Similarly, the shocks considered also need to correspond to the period evaluated.<sup>32</sup> More generally, when comparing the relative impact of specific stress tests, the subjectively determined probability assigned to the realization of each specific shock should be taken into account.

49. The strategies under consideration should be reviewed against the assessment undertaken in Step 3, to ensure that they would be feasible to implement. This review might identify broader policy issues that effectively constrain the set of feasible strategies. Even where the range of feasible debt management strategies is limited, as is the case for many LIDCs, this explicit evaluation of the costs and risks is an important element of risk management.

50. Once the DM has assessed the projected performance of the possibly relevant strategies, core results should be summarized (for example, in tabular or graph form) and a small number of candidate strategies should be identified, presented, and discussed with other policy economic authorities.

Output:

A ranking of a small number of candidate strategies in terms of cost and risk.

***Step 7: Review implications of candidate debt management strategies with fiscal and monetary policy authorities, and the potential effects of the various strategies on the market conditions***

*Objective:* Ensure that relevant feedback from the strategies identified is provided to the fiscal and monetary policy authorities. Review the potential market implications of the strategies.

51. The candidate strategies and their associated cost and risk implications should be reviewed with the fiscal policy authorities, and their implications for debt sustainability assessed. If the review with the fiscal authorities of the strategies identified under Step 6 suggests potential risks to the budget, or that debt sustainability or external viability appears

<sup>30</sup> This might bias the MTDS toward a lower risk, but possibly costlier, strategy.

<sup>31</sup> For example, if commodity export prices are in a downward phase, a longer time period may need to be chosen so that a subsequent upward phase is also captured.

<sup>32</sup> For example, a typical shock might be represented by the annual standard deviation of the variable in question, or by the standard deviation over a five-year period, measured on a rolling basis, for example, over a 20-year horizon. Ideally the standard deviation would be calculated over a period that is equal to or longer than the cycle. See also the discussion under Step 2.

to be at risk, the potential strategies may have to be adjusted. Alternatively, a review of the baseline fiscal projections may be required so that more fiscal space can be created.

52. Similarly, the candidate strategies' potential implications for monetary conditions, including their potential to support monetary policy objectives, should be discussed with the central bank. The anticipated amount of foreign currency and other nonresident financing, and the likely tenor, may have implications for foreign exchange intervention, the exchange rate, and crowding out of the private sector. The strategies' effects on the balance of payments and the level of rollover risk relative to the anticipated level of international reserves should also be discussed. If external debt sustainability appears at risk, or financing strategies create or contribute to excessive liquidity risk, the implications affecting the exchange rate regime should be discussed. The outcome of such discussions may also affect the choice of strategy or might require the DM to identify an alternative strategy.

53. The implications of the DM's preferred DMS, including the projected financing from domestic and international markets, should be reviewed with the monetary and financial market authorities to assess the impact of investment undertaken by key investor groups. Also the potential implications for, and feedback from capital market development and financial stability should be assessed.<sup>33</sup> These implications might be positive—for example, a strategy under consideration that would help provide an effective benchmark for the private sector—or negative—for example, the quantity of proposed financing through one instrument could effectively absorb all available capacity and may crowd out the private sector. Additionally, regulatory concerns about, for example, the exposure of the banking system, could be considered.

54. In general, if the DMS has significant implications for the underlying macroeconomic assumptions, an interactive approach may be needed where debt and macroeconomic strategies are jointly discussed and revised, using a process of iterations. A significant revision to the baseline projections (Step 4) will require the DM to repeat the strategy analysis exercise (Step 6).

**Output:**

A clear assessment that the candidate strategies are consistent with fiscal and monetary policies, while maintaining debt sustainability, and are in line with plans for market development.

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<sup>33</sup> An interaction with financial stability concerns could arise from the concentration of the investor base in the banking sector; a crisis in the banking system may increase government debt, and any disruption to the government debt market may affect banks' solvency and liquidity.

## ***Step 8: Submit and secure agreement on the DMS***

*Objective:* Identify the preferred strategy, and send proposal, along with ranked alternative candidate strategies, to the highest authority responsible for debt management for approval.

55. Based on Steps 1 through 7, the DM should present the preferred strategy to the highest authority responsible for debt management for approval. The presentation should include alternatives to the preferred strategy.

56. The DMS should be approved by the highest authority (typically of the Ministry of Finance), because it directly represents the government's preferred risk tolerance position, which involves a political judgment on the cost and risk tradeoff. In some countries, approval may have to be obtained from the Cabinet, and/or presented to parliament. Once approved, the DMS should be formalized and an explicit mandate given to the DM to implement the strategy.

Output:

An approved DMS.

## **DISSEMINATION**

57. Once the strategy has been agreed upon and formalized, it is recommended to disseminate it through the release of a public DMS document.<sup>34</sup> Dissemination of the strategy document will help the DM to:

secure support for the chosen strategy and commitment to its implementation;

reduce investor uncertainty;

strengthen the relationship with creditors, investors, and other key stakeholders (for example, credit rating agencies), and facilitate an open dialogue on key factors influencing the choice and implementation of the strategy; and

enhance ex ante and ex post transparency and accountability on debt management.

58. A typical published document describing the strategy would highlight the following: the strategy's objective and scope; a description of the current and expected macroeconomic environment; an evaluation of the existing stock of debt; and a summary outline of the

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<sup>34</sup> The DM should use all readily available avenues for publication, including websites.

agreed-upon DMS, with a discussion of factors that influenced the choice of strategy, including the key risk factors that the DMS is focused on managing.<sup>35</sup>

59. The DMS could be expressed in terms of targets responsive to a specific instrument composition or by specific indicators of cost or risk. At the initial stages, the indicators could be more descriptive; for example, the desired strategy is one that increases the share of domestic currency debt or gradually extends maturities. Over time, the targets could become more specific and precise, such as, for example, one that sets a portfolio target of 60 percent domestic currency debt.

60. Where a medium-term DMS is developed for the first time, it might be particularly useful to reach out to a broad audience, including parliamentarians, domestic and foreign investors, intermediaries, and rating agencies, by organizing workshops, seminars. More generally, the DMS can provide a strong basis for building an effective investor relations program, which can facilitate domestic debt market development and impact the cost of future market-based debt.<sup>36</sup>

## **IMPLEMENTATION AND FOLLOW-UP**

61. Once the strategy has been decided, the DM should develop an internal annual borrowing plan outlining how the strategy will be implemented over the coming budgetary period. Determining the annual borrowing plan generally begins with an analysis of the anticipated budget (cash) flows, including expected debt servicing flows. At the aggregate level, the total amounts to be raised through each of the available instruments can be determined based on the strategy. This plan then needs to be broken down into more specific targets based on the DM's knowledge of the sources of financing. Typically, separate plans will be formulated for domestic and external market borrowing.

62. When the aggregate targets are identified, the likely timing of flows should be planned and checked to ensure that the plan delivers sufficient financing to meet the anticipated intra-year flows. In general, the cost-effectiveness with which a financing plan can be implemented will reflect the authorities' capacity to develop meaningful government cash forecasts.<sup>37</sup>

63. Taking account of the starting balance on the Treasury Single Account (TSA), or the net balances across government accounts (and the planned profile of reserves financing for the central bank) will enable the DM to map out the profile of financing requirements

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<sup>35</sup> See Appendix VII on "Template for a debt management strategy document." It is generally not necessary to disclose the full extent of the analysis undertaken; in particular, some of the stress scenarios considered may be sensitive.

<sup>36</sup> See IMF (2004) for a discussion of issues relating to the design of an effective investor relations program.

<sup>37</sup> Efficient and effective government cash management will support the development of a more committed and transparent financing plan, and overall contribute to reducing the cost of debt. Where there are significant weaknesses in cash management, the timing of financing operations may be more ad hoc, and consequently less conducive to market development, and, thus, costlier.

through the year. Supplementing this with the anticipated disbursements of official loans would identify where the anticipated balance on the TSA will be, relative to its target balance, and, consequently, the preferred size and timing of financing operations.<sup>38</sup> On the domestic side, this analysis allows the DM to develop an issuance schedule consistent with strategic goals, such as following a regular issuance pattern to support market development (see Appendix VIII for an illustration). On the external side, while the DM may have less discretion to choose the precise timing of operations, the analysis would highlight the latest point at which borrowing will need to have been secured, for example, from tapping international markets or sourcing other external private sector loans.<sup>39</sup>

64. Coordination with the central bank will be needed to avoid undesirable interactions with monetary policy implementation, and to cope with seasonality. Typically, government determines its intra-year borrowing plans to meet its objectives (such as coping with seasonal or irregular fluctuations in its net cash inflows or providing the market with a regular supply of certain securities), while the central bank employs its instruments flexibly to meet its objectives (such as maintaining a certain policy rate or exchange rate anchor). Coordination can be helpful for both sides.

65. Often an annual borrowing plan, or at least its domestic component (for example, a securities issuance calendar), is communicated to the market.<sup>40</sup> As the year progresses and the budget is implemented, financing plans will need to be updated, depending on the realized flows.

66. It is important to review the DMS periodically, ideally on an annual basis, and confirm its continued validity. If there are fundamental shifts in macroeconomic or market conditions, the DMS should be updated. A new analysis should be undertaken, and a new proposal should be submitted along with a clear explanation of why a revision and update of the strategy is recommended.

67. Progress on the implementation of the DMS should also be regularly communicated to the Minister of Finance, or any other relevant committee, through regular management reporting. This reporting should provide information on the evolution of the portfolio, and

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<sup>38</sup> It may be an agreed-upon policy objective to maintain a positive TSA balance to absorb volatility in key inflows. In general, to reduce potential carry cost, the debt manager will try to time financing operations to keep account balances as close as possible to their target levels, although that needs to be balanced against the desirability of following a regular issuance pattern to support market development.

<sup>39</sup> Where countries have not already established a presence in the international capital markets or relationship with specific creditors, these plans should take into account the potentially significant lead times involved.

<sup>40</sup> Such communication can facilitate the deepening of the government bond market and contribute to both cost and risk reduction by enabling greater volumes and a broader range of instruments to be issued, and by reducing the risk premium arising from market uncertainty. In addition, the more regularity and commitment that can be factored into the auction schedule, the more likely that operations will be successfully received by the market, helping mitigate the risk of undersubscription.

the key cost and risk factors. Such regular reporting plays a key role in an effective risk management framework.

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## Appendix I. The Enabling Institutional Framework

68. A clear institutional framework facilitates effective debt management. Key elements of such a framework include: (1) an adequate legal framework; (2) effective institutional arrangements including the organizational setup of the DM function; and (3) comprehensive and efficient debt recording. While countries take different approaches to each of these, some key underlying principles generally hold true.<sup>41</sup> Specifically, the legal framework should clarify the authority to borrow and to issue new debt, invest, and undertake transactions on the government's behalf (Box 5). Often, the legal framework sets out the overall objectives for debt management, clarifies the accountability, and outlines the desired reporting and audit requirements. It can also address the specific modalities of coordination among the agents involved in debt management, including, for example, a fiscal agency role for the central bank.

69. The supporting governance structure should clearly outline and describe the roles and responsibilities of all relevant institutions involved in debt management activities. In particular, it should be clear which agent is responsible for debt management decisions. Typically, this would be the minister of finance, possibly supported by an advisory committee. Regardless of the specific set-up, the arrangements need to be structured, and lines of responsibility and accountability should be clear and consistent.

70. The agent responsible for debt management policies and implementation should make sure that there is sufficient information available to discharge this responsibility effectively. Typically, this is done through periodic reporting by the DM on progress regarding the implementation of the DMS and associated borrowing plan. This reporting should provide information on the evolution of the portfolio and the key cost and risk indicators, so that those accountable for decisions are able to adequately monitor developments vis-à-vis the expected evolution of these indicators.

71. Where different entities are involved in contracting direct liabilities of the central government, there need to be effective institutional arrangements to ensure coordination and effective implementation of the DMS. In particular, there need to be mechanisms in place to share information on developments in these sub-portfolios and to coordinate actions. Countries take different approaches to addressing this coordination challenge, ranging from centralizing all debt management functions in one unit, to creating a central unit responsible for developing and monitoring the strategy while other entities retain responsibility for implementation. In addition, given the important linkages between the effective implementation of the DMS and government cash management and monetary policy implementation, institutional arrangements must recognize the need to establish effective coordination mechanisms between these functions.

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<sup>41</sup> See World Bank and IMF, 2003, *Guidelines for Public Debt Management*, for a fuller discussion.

### **Box 5. Elements of a Sound Legal Framework for Public Debt Management**

The legal framework for public debt management ideally contains the following key elements:

Clear authorization by Parliament/Congress for the executive branch of government to approve borrowings and loan guarantees on behalf of the government.

Clear authorization by the executive branch of government for the debt management entities to undertake borrowing and debt-related transactions and to issue loan guarantees.

Clear debt management objectives. Common debt management objectives found in modern legislation are: that the central government's funding needs are always met; the cost of the debt is minimized from a medium/long-term perspective; the risks in the debt portfolio are kept at acceptable levels; and that development of the domestic debt market is promoted.

A requirement to develop a DMS. Once the debt management objectives are set, these objectives must be translated into an operational strategy that will provide a framework for how the government will achieve its debt management objectives.

Mandatory reporting on an annual basis covering an evaluation of outcomes against stated objectives and the determined strategy. Such accountability is the counterpart to the delegation by Parliament/Congress of borrowing power to the executive branch.

A requirement for an external audit. Such a requirement for external audit is normally found in the general Public Audit Act, rather than in specific debt management legislation.

### **Box 6. Organizational Arrangements**

Sound public debt management requires an institutional structure that clearly delineates roles, responsibilities, and reporting channels for the relevant institutions. Consolidating debt management functions into one department or directorate can avoid duplication of functions, strengthen accountability, and reduce the requirements for coordination and information sharing. It also facilitates the analysis and development of a strategy for the aggregate debt portfolio, because one entity is clearly mandated to perform this role and maintains the full set of information required to undertake it.

Experience in the developing country context suggests that institutional arrangements surrounding debt management operations remain fragmented across a number of government agencies, especially since project management tends to require the heavy involvement of the planning or economy ministries. Strong coordination among the various agencies is then called for in order to effectively carry out DM functions. In this regard it is generally recognized that a consolidated debt management function is not a precondition for sound public debt management.

When consolidating debt management responsibilities into one entity, clear internal divisions of responsibilities are needed to reduce operational risk. In particular, separation between front- and back-office activities is critical for reducing the risk of fraud in any organization undertaking financial transactions. In turn, in more advanced operations, the separation of front- and middle-office activities ensures the independence of those setting and monitoring the risk management framework from those responsible for executing market transactions. In addition, it is important that staff are subject to a clear code of conduct and conflict of interest rules to ensure the integrity of the debt management operations.

Based on World Bank (2007a) chapter 5, and World Bank (2015a).

72. Often, establishing an effective database that covers all types of debt, and that also provides necessary input for the development of the DMS, can present a significant challenge. A precondition for high-quality and comprehensive debt data is efficient debt recording. While a good IT system contributes to establishing sound debt recording, experience shows that the establishment of clear processes and procedures around the debt recording system(s) is critical. With respect to IT systems, countries take a variety of approaches, including developing systems in-house, use of a third-party system, or some combination of both. To ensure the integrity of any data entered into a system, adequate operational procedures should be in place to ensure accuracy.<sup>42</sup>

73. Country experiences in establishing an effective enabling framework are discussed more expansively in World Bank and IMF (2007) and World Bank (2007a).

#### **Box 7. Desirable Elements of a Debt Recording System**

A robust debt recording system should provide for an accurate, consistent, and comprehensive database of domestic, external, and government-guaranteed debt. A good debt recording system would readily provide the following:

An accurate breakdown of the outstanding debt by various characteristics, including currency composition, creditor composition, concessionality, and instrument composition (including by interest rate type).

Aggregate debt servicing schedules across various categories of debt.

Some basic portfolio indicators, such as average maturity, proportion of foreign currency debt, etcetera.

Payment schedules for interest and amortization of individual loans and securities, along with the associated payment notices. This can be decentralized if management is spread across different contracting entities.

Ideally, the system would also interface with other key systems, including: (1) the payments system used to make debt servicing payments; (2) the transaction management system (where relevant);<sup>1</sup> (3) the auction system (if separate from the transaction management system); and (4) the government's financial management information and accounting system(s).

In addition, it should be possible to ensure the integrity of the system by imposing appropriate security controls. Debt recording, and validation processes should be supported by documented procedures for debt data recording and all transactions related to debt. Backups for the debt recording system should be made frequently and stored in a separate and secure location. Procedures for securely storing debt obligation agreements and debt administration records should also be in place. An operational risk management plan, including business continuity and disaster recovery arrangements is also important to ensure mitigation of risks and continuity of operations.

<sup>1</sup> For example, if the debt management unit engages directly in financial market transactions.

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<sup>42</sup> In general, countries should strive to achieve the "four eyes" principal, with data entered and verified by separate people.

## **Appendix II. Designing an DMS: Checklist for Debt Managers**

*The steps of the MTDS framework are summarized below:*

### ***Step 1. Identify the objectives for public debt management and the scope of the DMS.***

Purpose is to help clarify what objectives the strategy should seek to achieve. This will also help clarify the tasks and responsibilities for which the DM is accountable.

Identify the main objectives for public debt management. For example:

- Meet the financing need.
- Minimize cost.
- Maintain risk at a prudent level.
- Develop the domestic debt market.
- Establish a reference or benchmark for private sector issuance.

Ensure that objectives (where they are not set down in law) are properly documented.

Define scope of the strategy:

- Central government; general government; or wider public sector.
- Contingent liabilities.
- Interaction with private sector external debt.

### ***Step 2. Identify the current DMS and cost and risk of existing debt.***

Purpose is to clearly determine the starting position for the analysis; this will help identify whether the DMS should seek to change the characteristics of the existing debt portfolio in any specific way, for example, to reduce a specific risk.

Explicitly identify the current strategy:

- Provide a benchmark against which alternatives can be evaluated.

Identify outstanding debt and its composition:

- Determine debt servicing profile of outstanding debt.

Calculate basic cost and risk indicators for the portfolio:

- Identify sources of vulnerability to the existing debt stock.

***Step 3. Identify and analyze potential funding sources, including cost and risk characteristics.***

Purpose is to determine the range of possible strategies that might be feasible and desirable to implement. This will also help identify any potential constraints that might impede the implementation of a chosen strategy. This may require interaction with financial market supervisors, or other agencies (for example, Ministry of Planning).

Identify potential sources of finance, their financial characteristics, including cost and risk parameters, and potential amounts available:

- List existing and potential instruments, domestic and external, and describe their financial characteristics.
- Evaluate the potential quantum of borrowing available through each instrument.
- Identify any constraints that might impede the availability of funding.
- Discuss/rank the instruments based on their cost/risk characteristics (and within the context of the vulnerabilities in the debt portfolio previously identified).

***Step 4. Identify baseline projections and risk in key policy areas—fiscal, monetary, external, and market.***

Purpose is to determine the baseline scenario for the analysis of the performance of alternative strategies and identify specific risk scenarios to be evaluated. Requires interaction with fiscal, monetary policy, and financial market authorities, and (where relevant) market participants.

Identify the baseline medium-term projections for key fiscal and monetary policy variables:

- Use projections from the DSF.

Identify whether there are any external constraints relevant for DMS formulation:

- Discuss any anticipated changes in exchange rate or capital account regime.
- Discuss any required financing of international reserves.

Identify the baseline medium-term projections for market rates.

Clarify assumptions about likely pricing of nonmarket instruments:

- Based on creditor information and other sources.

Determine specific risk scenarios:

- Those identified in DSF.

- Other specific changes to market conditions and demand (for example, shock to global liquidity conditions).

***Step 5. Review longer-term structural factors.***

Purpose is to take a longer-term perspective and identify any factors that could influence how the debt composition should ideally change over the longer term. This requires interaction with fiscal and monetary policy authorities.

Set out long-term structural features of the economy that the DMS analysis should try to take into account, for example:

- Commodity price vulnerability.
- Access to concessional financing.
- Trends in real effective exchange rate.
- Inflation trends.

***Step 6. Assess and rank alternative debt management strategies on the basis of the cost-risk trade-off.***

Purpose is to analyze a number of alternative debt management strategies, assess their performance, and identify a small number of candidate strategies, including a preferred strategy.

For a range of alternative strategies:

- Assess how costs could change under the various risk scenarios.
- Assess how well each strategy helps mitigate the identified portfolio vulnerabilities.
- Assess how well each strategy meets the debt management objectives, both primary and secondary.
- Assess whether each strategy would be feasible to implement given assumptions about potential sources of financing.

***Step 7. Review implications of candidate strategies with fiscal and monetary policy authorities, and the potential effects of the various strategies on the market.***

Purpose is to clearly determine that the preferred strategy and other candidate strategies are consistent with fiscal and monetary policies, maintaining debt sustainability, and in line with plans for market development.

Outline the preferred strategy and other candidate strategies to the fiscal and monetary policy authorities:

- Discuss any points of interaction.
- Confirm that debt sustainability indicators are in line with DSA.

Review the potential debt market implications of the candidate strategies, including, where relevant, with financial market authorities.

***Step 8. Propose and approve the DMS.***

Purpose is to propose the preferred strategy to the decision maker and secure his/her agreement.

Document the preferred and a small number (for example, one or two) of alternative strategies:

- Outline why the preferred strategy is superior to the others.
- Clearly describe the key associated costs and risks, and the relationship with the broad objectives.

Present the proposal to the highest responsible authority.

Agree to the strategy.

Once determined, the agreed-upon strategy should be disseminated.

## Appendix III. Cost and Risk, and Debt Indicators

This appendix discusses a variety of measures of cost and risk, and other useful debt indicators that the debt manager may need in the course of effectively managing the debt portfolio. Appendix VI outlines how some of these could be used in applications of the framework for a hypothetical country. The corresponding formulae for the cost and risk indicators listed here can be found in the MTDS AT Manual.

74. A precondition for developing a sound DMS is a clear definition of cost and risk. While this may seem trivial, in practice, this is an issue that debt managers struggle with. It is important that debt managers are clear about what exactly is captured by specific cost and risk measures so that the most appropriate measures are selected for a given objective.

75. For immediate budget purposes the focus is typically on absolute nominal measures, that is, nominal interest payments at current exchange rates. While nominal measures are useful for budgeting purposes, they fail to inform the decision makers of the true cost of debt, as they ignore the implications of inflation on the real value of debt, and the gains or losses on indexed debt or debt denominated in foreign currency. They also do not reflect how the repayment capacity is influenced by growth in GDP or tax revenues. Consequently, it may be useful to consider the ratio of interest payments to nominal GDP or nominal tax revenues—both effectively real measures that better capture the true burden of debt. Another important real cost measure discussed below is the ratio of the NPV of debt to GDP, which captures the level of concessionality of debt.

76. In the context of what follows, and in the MTDS analytical tool accompanying this Guidance Note, risk is defined as a change in one of these cost measures after a shock is applied. However, this appendix also discusses some other useful portfolio statistics that capture directly the inherent exposure of the debt portfolio to such risks as interest and exchange rate changes.

77. The formulae for the cost and risk indicators are found in the manual of the MTDS AT. Below are broad descriptions of costs and risks measures.

### **Cost Measures**

78. Examples of commonly used cost indicators for a debt portfolio include:

#### ***Interest Cost***

Interest cost captures the interest payments of coupon or interest payments for bonded debt and loans, respectively.

Typical interest cost measures include:

- Interest payments to nominal GDP.

- Interest payments to nominal revenue.

### **Unweighted and Weighted Average Interest Rate**

Unweighted and weighted average interest rates indicate the cost of borrowing, which can be compared with the corresponding average interest rate of existing debt to give an indication of by how much the cost of borrowing is expected to increase/decline.

### **Risk Measures**

79. Risk is generally a function of the exposure of the government debt portfolio and the specific risk factor. While the exposure tends to be endogenous to management decisions, the risk factor is exogenous, as it is driven by forces beyond the control of the debt manager, including macroeconomic developments within a country and in the world at large, changes in market sentiment, and other factors that give rise to unanticipated changes in market prices.

80. Debt managers can help reduce the vulnerability of the government debt portfolios to changes in market prices by reducing the portfolio exposure. To this end, appropriate indicators that gauge the extent to which the debt portfolio, and debt cost, are exposed to various types of risks can be measured and monitored over time.

81. Risk measures estimate the potential unexpected increase in debt service payments produced by an unanticipated shift in market variables such as changes in interest or exchange rates.

82. As noted above, in a deterministic setting, as used in the MTDS analytical tool, risk is measured as the difference between the cost in a given period under a scenario incorporating a specific shock and the cost under a predetermined baseline scenario.<sup>43</sup>

83. In addition to interest and exchange rate risks, debt managers are also exposed to refinancing (or rollover) risk—that is, the risk that debt will have to be rolled over at unusually high cost, or, in extreme cases, cannot be rolled over at all. Although refinancing risk may be considered a type of interest rate risk, its materialization can lead to exceptionally large increases in government funding costs, or to the inability to refinance the government loans coming due. Since such an impact can lead to or exacerbate a debt crisis, and thereby cause severe economic losses in addition to the purely financial effects of higher interest rates, it is important to treat refinancing risk separately. Below, we discuss vulnerabilities to interest rate, refinancing, and foreign currency risks, and provide some statistics that can be used to gauge their severity.

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<sup>43</sup> In a stochastic setting, risk is typically quantified by some measure of dispersion (for example, the standard deviation) or extreme or tail area of a given distribution (for example, the 95<sup>th</sup> percentile of the empirical cost distribution, or the upper tail area of the empirical cost distribution beyond the 95<sup>th</sup> percentile).

## **Indicators of Exposure to Market Risk Factors**

### ***Interest Rate Risk***

84. Interest rate risk refers to the vulnerability of the debt portfolio and the cost of government debt to higher market interest rates when the interest rate on variable rate debt and fixed rate debt that is maturing is being repriced. The following indicators provide measures of the exposure to this risk:

Amount of the debt stock refixing the interest rate in a particular period.

Share of debt in the debt portfolio refixing the interest rate in a particular period.

Average time to refixing of the debt portfolio. This indicator is a measure of the weighted average time until all principal payments in the debt portfolio become subject to a new interest rate.

### ***Refinancing (Rollover) Risk***

85. Refinancing risk captures the exposure of the debt portfolio to unusually higher interest rates at the point at which debt is being refinanced; in the extreme, when this risk is too high, debt managers are unable to roll over maturing obligations. The following indicators measure the exposure to this risk:<sup>44</sup>

The redemption profile of the outstanding debt. The redemption profile of the debt is the sequence of principal or amortization payments that the outstanding stock of debt gives rise to.

Proportion of the debt stock falling due within a particular period: the ratio of the debt falling due in a given period to the total outstanding debt.

Average time to maturity. This indicator measures the weighted average time to maturity of all the principal payments in the debt portfolio.

### ***Foreign Exchange Rate Risk***

86. Foreign exchange risk relates to the vulnerability of the debt portfolio, and the government's debt cost, to a depreciation/devaluation in the external value of the domestic currency. The following indicators provide a measure of the exposure to this risk:

Ratio of foreign currency debt to total debt (possibly by currency).

Ratio of foreign currency debt maturity and debt servicing in one year to foreign currency reserves.

### **Other Useful Debt Indicators**

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<sup>44</sup> Note that the indicators discussed here can also be used to assess the exposure to interest rate risk arising only from maturing debt.

Debt-to-GDP and debt-to-government revenue ratios.

The NPV of the total debt: The present value of the outstanding debt stock is the discounted stream of all its future cash flow payments.

LIDCs have access to concessional sources of financing, which reduces the cost considerably. This is not captured in a normal stock measure of the debt, but can be captured by examining the NPV, which discounts future (low) debt servicing payments to the present. The drawback of the NPV measure is that it does not assume that a concessional loan is rolled over. Thus, if a concessional loan falls due the next day, the NPV is in essence the same as the face value. In a typical country case, concessional loans are often replaced with new loans. In a full-fledged strategy evaluation (see the MTDS analytical tool) this is overcome by assuming rollover strategies for such loans over a very longtime horizon. As the distant future is heavily discounted, this problem is reduced.

## Appendix IV. Potential Sources of Financing

This appendix provides a brief overview of the main classes of financing sources available to the sovereign. When evaluating alternative funding sources, it is important to take into consideration the all-in cost of borrowing, as there may be fees and hidden costs associated with the borrowing.

### External Sources

87. There are two main sources of external debt—official and private. Official debt is typically contracted in the form of nonmarketable loans. Private sector external debt can be either nonmarketable loans or marketable debt securities.

### *Official Sources*

88. Official sources include multilateral institutions and bilateral loans from sovereigns.

89. Concessional loans typically have long maturities (for example, 30–40 years) and long grace periods (for example, seven to 10 years). In the case of the International Development Association (IDA) loans to LIDCs are fixed rate debt, denominated in SDR (special drawing rights, a composite of the US dollar, euro, the Japanese yen, and the Chinese renminbi). In the case of the International Bank for Reconstruction and Development (IBRD) (middle-income countries), they can be fixed or variable, and with the currency chosen by the borrower. Interest rates are typically very close to or below Libor. Bilateral loan terms vary, and may be at a discount to market terms, but their distinctive characteristic is that they tend to be denominated in the currency of the lending country.

90. Often such creditors set specific conditions before loans are disbursed. Multilateral creditors may either constrain the use of funds to specific purposes or set other policy-related conditions. In terms of bilateral loans, these conditions could include requiring recipients to use or procure goods and services exported by the creditor country. In the specific case of project loans, there is typically a co-financing element where recipients need to partially match the funding provided by the creditor. All of these factors, and related loan disbursement delays, can indirectly add to the cost of the loan.

91. In many countries, the authorities organize a donor conference to coordinate the financial commitment of each donor. This allows the authorities to assess the amount of concessional financing available, to identify the profile of any pre-committed financing that they may want to constrain (that is, by assuming it is fixed) in the DMS analysis, and to determine the financing gap to be accessed through non-concessional borrowing.

### *Private Sources*

92. Private sources include borrowing from the international capital markets, or from commercial banks.

93. With the Multilateral Debt Relief Initiative, countries' access to international capital markets is increasing. However, access can be uncertain and is subject to sudden shifts in market sentiment and appetite. Consequently, to enhance analysis, it is important to constantly collect market intelligence and to monitor issuances by sovereigns with similar credit ratings. Developing an advisory relationship with an investment bank may be one way to improve the quality of this information collection. Countries can further mitigate this risk by establishing a strong track record in meeting their debt obligations and by establishing an effective investor relations program. In addition, countries should be aware of any likely constraints on the terms of an issue, such as whether a minimum issue size or currency choice is likely to be required. In addition, the structure of the security—that is, bullet or amortizing—will also be important. Such factors will affect any analysis of cost and risk of this financing option, and its relative attractiveness.

94. In addition, it may be possible to negotiate loans with commercial banks. Credit and market sentiment is likely to influence the amounts from these sources. Such loans will typically be on a floating interest rate basis and for shorter maturities than are available in the capital markets.

### *Domestic Sources*

95. Domestic sources of financing will take the form of either nonmarketable instruments or marketable debt securities.

96. The sources of nonmarket domestic financing will include bank loans, suppliers, and often the central bank. Reliance on central bank financing, through requiring direct participation in the primary market or through an overdraft facility, is not desirable, as it can conflict with the monetary authorities' objectives and distort the market.<sup>45</sup> Such financing is inflationary and will typically lead to a higher general level of interest rates. In addition, depending on the terms agreed upon, central bank financing can impede the price discovery process, hindering the development of an efficient government bond market. Captive investors, such as the public-sector institutions, may also be an important source of financing; but reliance on these investors will be counter-productive for developing an efficient bond market.<sup>46</sup> As with external bank

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<sup>45</sup> In most countries, monetary financing of the government is explicitly prohibited by law.

<sup>46</sup> While their presence might appear to be beneficial and help keep interest costs contained, over the long term, their presence will impede market development and ultimately limit the amount and quality of financing available in domestic markets. Subject to the relevant prudential and market-conduct standards, the DM should seek to minimize the impact of captive investors on the market (for example, by allowing their participation in auctions on a noncompetitive basis to meet regulatory-related demands, ensuring that securities are allocated to them on market terms).

loans, domestic bank loans are likely to be short term and with variable rates. Short-term credit from suppliers may also be available in the form of accounts payable.

97. In terms of marketable instruments, the range of available debt securities will be limited by the level of market development. As markets develop, the choice of financing instruments (maturity, instrument type, and so on) expands to include instruments with potentially more desirable risk properties. This creates a role for the DM in encouraging the development of domestic debt markets. Furthering this process, it is necessary for the DM to move from a regime of administered rates to fully market-determined rates before the market will develop effectively, and the DM may need to commit to a benchmark issuance program in order to develop an effective yield curve.

98. The nature of the investor base, comprising some combination of banks, pension funds, insurance companies, other domestic institutional investors, foreign investors, and retail investors, will determine the capacity of the domestic market to absorb the quantum and the desired range of debt instruments. Market participants tend to have segmented preferences for different debt instruments, particularly with respect to maturity, based on their own balance sheet needs.<sup>47</sup> Consequently, the composition of the investor base will be a key factor in determining the relative cost of extending the yield curve or introducing different instrument types. Developing these sources of savings will require a long-term effort on a range of fronts, including regulatory, taxation, legal, market infrastructure, and financial literacy. Building the foreign investor base will also have consequences for the capital account and the functioning of the foreign exchange market and will need careful consideration and coordination with the monetary authorities. As with external markets, it is important to gather market intelligence on a regular basis to monitor the market appetite for certain maturities and instrument types (fixed versus floating or other indexation). Establishing effective relations with the investor base will help provide that intelligence.

### ***Cost and Risk Characteristics***

99. The cost and risk characteristics of different instruments can be broadly characterized as follows (Table IV.1).

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<sup>47</sup> For example, pension funds tend to require long-term inflation-protected assets, while banks tend to have a preference for short-term assets to match short-term deposits.

**Table IV.1. Cost and Factors of Different Financing Instruments**

<b>Instrument Type</b>	<b>Cost Characteristics</b>	<b>Risk Characteristics</b>	<b>Other Comments</b>
<b>External Instruments</b>			
Multilateral concessional loan (for example, IDA, African Development Fund, AfDF, African Development Bank ADB)	Highly concessional	Fixed rate; denominated in foreign currency; ultra-long tenor; amortizing structure; long grace period.	Access will decline and terms will harden as income level increases. Limited flexibility to negotiate terms. Typically involves a commitment fee. Disbursement can be dependent on certain conditions being met.
Multilateral non-concessional loan (for example, IBRD, AfDB, ADB)	Some concessionality	Both fixed and variable rate; denominated in foreign currency.	Flexibility to tailor terms (for example, currency and interest rate structure) to suit recipient risk preferences. Tenor and grace period linked to country category. Involves a commitment fee. Not available to IDA-only countries.
Bilateral loan (including project loans)	Typically some concessionality	Both fixed and variable rate; denominated in foreign currency.	Limited flexibility on choice of terms. Various transaction charges involved. Project loans tied to specific project use; consequently, disbursement highly dependent on progress of project.
Commercial bank loan (including syndicated loans)	Market rates	Can be fixed or variable rate; can be short-, medium- or long-term; typically denominated in foreign currency.	Flexibility to influence terms will depend on relative negotiating power. Can involve significant transaction fees.
Sovereign bonds	Market rates (depending on liquidity conditions and country credit rating)	Can be fixed or variable rate; typically denominated in foreign currency; typically bullet structure.	Authorities choose key features (for example, interest rate structure, currency, and maturity). Significant transaction fees involved. Resource intensive to launch.

Instrument Type	Cost Characteristics	Risk Characteristics	Other Comments
<b>Domestic Instruments</b>			
Treasury bills	Market rates	Short-term; denominated in domestic currency.	Typically the first instrument introduced in the domestic market.
Treasury bonds	Market rates	Medium- to long-term; typically denominated in domestic currency. Can be fixed or variable rate. Can be indexed.	Structure of investor base will be determinant of relative cost of different types and maturities.
Retail instruments	Administrative or market rates	Can be fixed or variable rate; denominated in domestic currency; can be indexed. Typically short- to medium-term.	Developing retail investor base can provide some support in face of rollover risk. Can be relatively costly depending on the distribution arrangements.
Commercial bank loan	Market rates	Can be fixed or variable rate; generally short-term. Typically denominated in domestic currency.	Flexibility to influence terms will depend on relative negotiating power. Some transaction fees involved.
Sukuk	Reflects market conditions,	Medium- to long-term; can be denominated in domestic or foreign currency. Can be fixed or indexed.	Structure is based on (or backed by) an underlying asset. Resource intensive to launch for the first time (may require amendments in the legal framework, taxation regime, and capital market regulations). Can help investor diversification. Requires specific assets.
Green/Blue bonds	Market rates (but might also be slightly more favorable)	Medium- to long-term; can be denominated in domestic or foreign currency. Can be fixed or indexed.	Created to fund projects that have positive environmental and/or climate benefits. Resource intensive to launch for the first time. Can help investor diversification.
State contingent instruments	Market rates (might include a liquidity premium)	Medium- to long term; linked to real-world variables (such as GDP, commodity prices, the occurrence of natural disasters).	Not a common instrument (except for natural disaster-linked instruments; could provide a natural hedge for debt management). Lacks a natural investor base.

## **Appendix V. Formulating the DMS: Considering the Costs of Monetary Policy Implementation**

100. This appendix discusses how the costs of monetary policy implementation can be taken into account when conducting the DMS analysis. These issues would be automatically resolved where the DMS is formulated on the basis of a fully consolidated public sector, including the central bank; however, it is not typical to formulate a DMS in that way.

101. In pursuit of its monetary policy objectives, the central bank might need to eliminate excess liquidity in the system, using a variety of instruments, including: (1) reserves requirements; (2) deposit auctions; (3) central bank bills; (4) government securities; and (5) liberalizing capital outflows. Using instruments that imply costs that are directly borne by the central bank should be reflected in the projected profit remittances of the central bank. Issuing government securities in the primary market in order to sterilize excess liquidity has direct budget implications, as the interest is directly borne by the government, and the receipts cannot be used for government funding because they are parked in blocked deposits at the central bank. These costs are normally already taken into account in the baseline macroeconomic projections and can be ignored.

102. However, there are some instances where the choice of DMS will significantly affect those costs; consequently, the relative difference in costs should be recognized and considered when making the trade-off between alternative debt management strategies. For example, where the exchange rate is pegged or managed, and the capital account de facto not very open, external borrowing to fund the budget in excess of that needed for balance of payments purposes will result in large international reserves accumulation. This may be a particular issue where countries are very dependent on concessional foreign currency loans to fund the budget, as is the case with many LIDCs. Any additional domestic liquidity injected as a consequence may then need to be temporarily sterilized until it can be absorbed. Where the country has limited capacity to absorb this liquidity, for example, where opportunities to extend credit to the private sector are poor, sterilization could take a considerable period of time. This net sterilization cost should in principle be factored into the cost of any external financing where that financing exceeds anticipated balance of payments needs.

103. In some cases, the choice of DMS will take into consideration a central bank's need to bolster reserves for balance of payments purposes. For such situations, the formulation of the strategy, including the analysis of alternative strategies' cost-risk trade-offs, should be analyzed within the context of the balance of payments objective.

104. For scenario analysis, the debt manager should factor the extra cost associated with such external borrowing into the net profit remittances and interest payments of the central bank, as it is not reflected in the baseline macro framework. Alternatively, if the government relies on direct central bank financing as part of its strategy, then this is likely to need sterilization to avoid inflationary pressures. The DM can usually make the simplifying assumption that all

central bank sterilization is at short-term interest rates. Another relevant operation might be where the government receives surplus external resources which it decides to use to repay debt early. Where this debt is held by domestic investors, the central bank may need to sterilize the liquidity injected in the market until it can be absorbed elsewhere. The cost of this sterilization, either direct or indirect, would still be borne by public finances.

## **Appendix VI. Developing a DMS in Practice: An Illustration**

*This Appendix illustrates the application of the MTDS framework in the context of two different country cases.*

### **Country A**

#### **Existing Debt Management Strategy (Step 1)**

105. Until early 2008, Country A's implicit debt management strategy focused almost exclusively on cost reduction. However, in April 2008, having secured external debt relief and recognizing the importance of developing the domestic debt market, the authorities published for the first time a national public debt management strategy document. That strategy document charted a new course for developing the domestic debt market, and sought to institutionalize a closer consideration of the cost and risk trade-offs of new borrowing options going forward, while maintaining long-term debt sustainability. The MTDS exercise was to help provide a framework to quantitatively evaluate these options, by providing the cost and risk trade-offs involved in alternative debt management strategies.

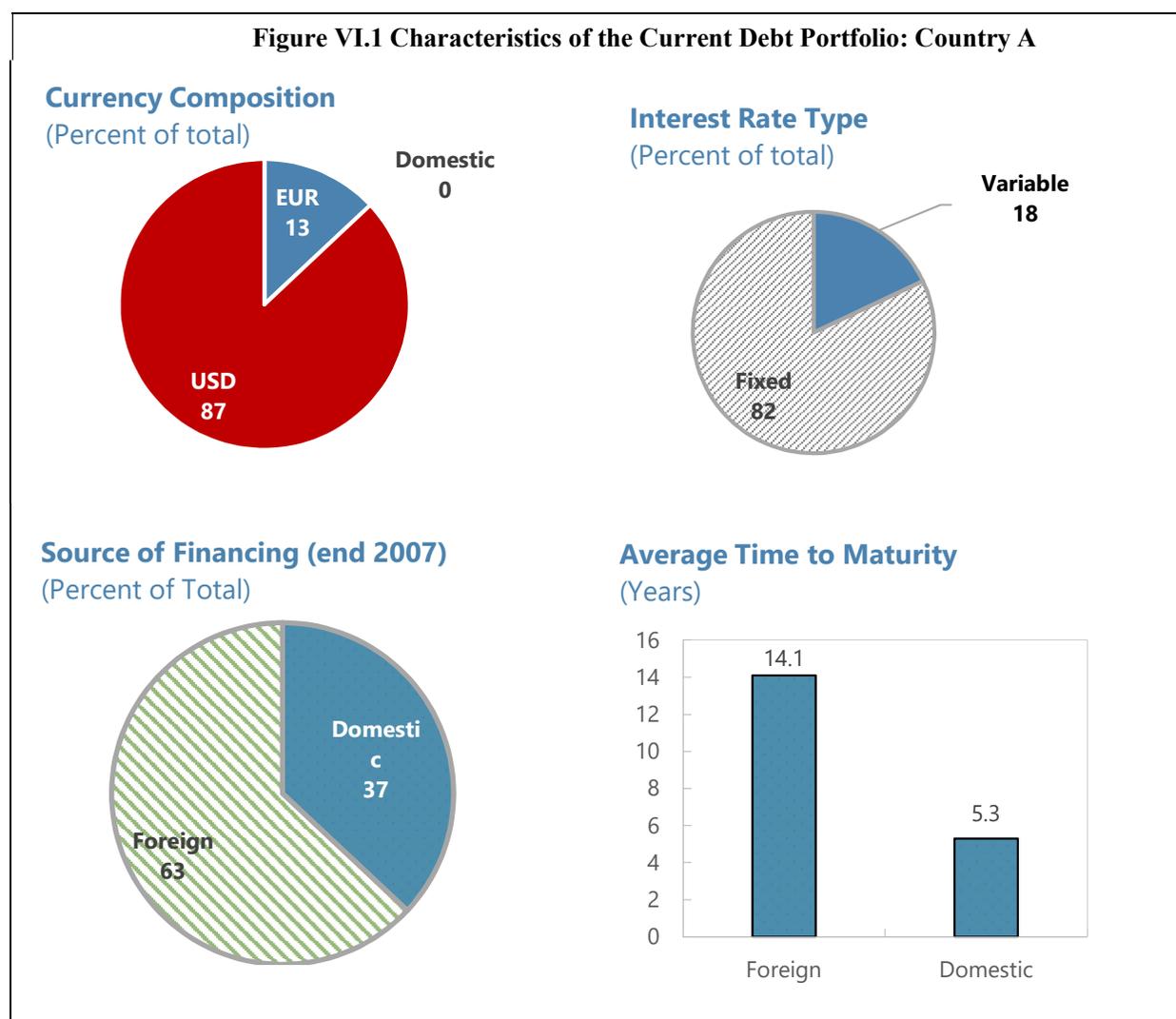
#### **Characteristics of the Existing Debt Portfolio (Step 2)**

106. The existing debt portfolio is composed of 63 percent external and 37 percent domestic debt; however, all domestic debt is denominated in foreign currency. Overall the portfolio is relatively low cost. Almost all external debt is contracted at concessional rates, while the presence of captive investors and practice of forced placements has kept the cost of domestic debt below a true market rate. With regard to key vulnerabilities, foreign exchange risk is the dominant risk, as there is no domestic currency debt. Refinancing risk and interest rate risk represent moderate risk, as only 6 percent of the total debt matures within the next five years, and over 80 percent of the total portfolio is fixed rate. A reduction in foreign exchange risk would be desirable, but that would require the introduction of domestic currency debt instruments. Going forward, the combination of the authorities' stated strategy of developing the domestic debt market, and their perception that their access to concessional financing will decline, is likely to change the cost and risk profile of the portfolio significantly.

#### **Potential Funding Sources (Step 3)**

107. As an IDA-only country, Country A relies heavily on grant and concessional financing. Nevertheless, as the country moves toward graduation from IDA, it is expected that the terms at which these funds are available will become less concessional. In the domestic market, a feature of the country's financial market is that more than 70 percent of financial institutions' deposits and more than 95 percent of the investments are in foreign currency, limiting the demand for domestic currency assets. The institution that manages the public pension is the most important institutional investor in government bonds, absorbing between 60 and 65 percent of all new issuances.

Figure VI.1 Characteristics of the Current Debt Portfolio: Country A



### Current Macroeconomic Challenges and Structural Features (Steps 4 and 5)

108. Despite substantial debt relief and recent fiscal consolidation, the country remains at a moderate risk for debt distress, underlining the importance of continuing to contain debt interest costs. A key factor affecting the risk of debt distress is the country's vulnerability to exchange rate movements, particularly given its dependence on commodity exports and high oil imports. Given persistently high current account deficits, and the limited availability of concessional loans and the volatility and uncertainty of aid provision, the authorities have sometimes felt the need to rely on domestic issuance or external borrowing from nontraditional sources to meet expenditure needs. Weather-related events regularly impact the fiscal and balance of payments position, also potentially resulting in unanticipated financing needs. However, the domestic financial market is highly dollarized and shallow, with the limited number of institutional investors constraining its ability to smooth the impact of these temporary budgetary shocks. In addition, the impact of rising food and fuel prices puts pressure on the real exchange rate and poses a challenge for containing domestic financing costs. Overall, this suggests a need to

develop access to a diverse range of financing sources to help mitigate potential expenditure volatility.

### **Assessing the Alternative Debt Strategies (Step 6)**

109. Taking these factors into account, the relative performance over the medium-term of four alternative debt management strategies was considered. The strategies tested were based on discussion with the authorities with respect to their goal of developing the domestic debt market and their perspective on their options for securing concessional financing going forward. This analysis was undertaken on the basis of a specified set of macroeconomic projections and a specific set of pricing assumptions. A number of risk scenarios were also specified reflecting some of the vulnerabilities identified above. The four strategies considered were:

S1: A status quo strategy that (largely) covers the financing need with external concessional debt, while continuing to refinance a small proportion of non-standardized domestic debt with standardized instruments;

S2: A more aggressive domestic market development strategy that rolls over a greater proportion of nonstandardized debt using standardized debt, consequently reducing the recourse to concessional external debt;

S3: A strategy that aims to address the exchange rate risk in the portfolio by considering the introduction of standardized domestic currency denominated debt, at the same pace as domestic debt issued under S2; and

S4: A strategy that considers a change in the composition of external debt by introducing a decline in the degree of concessionality of external financing.

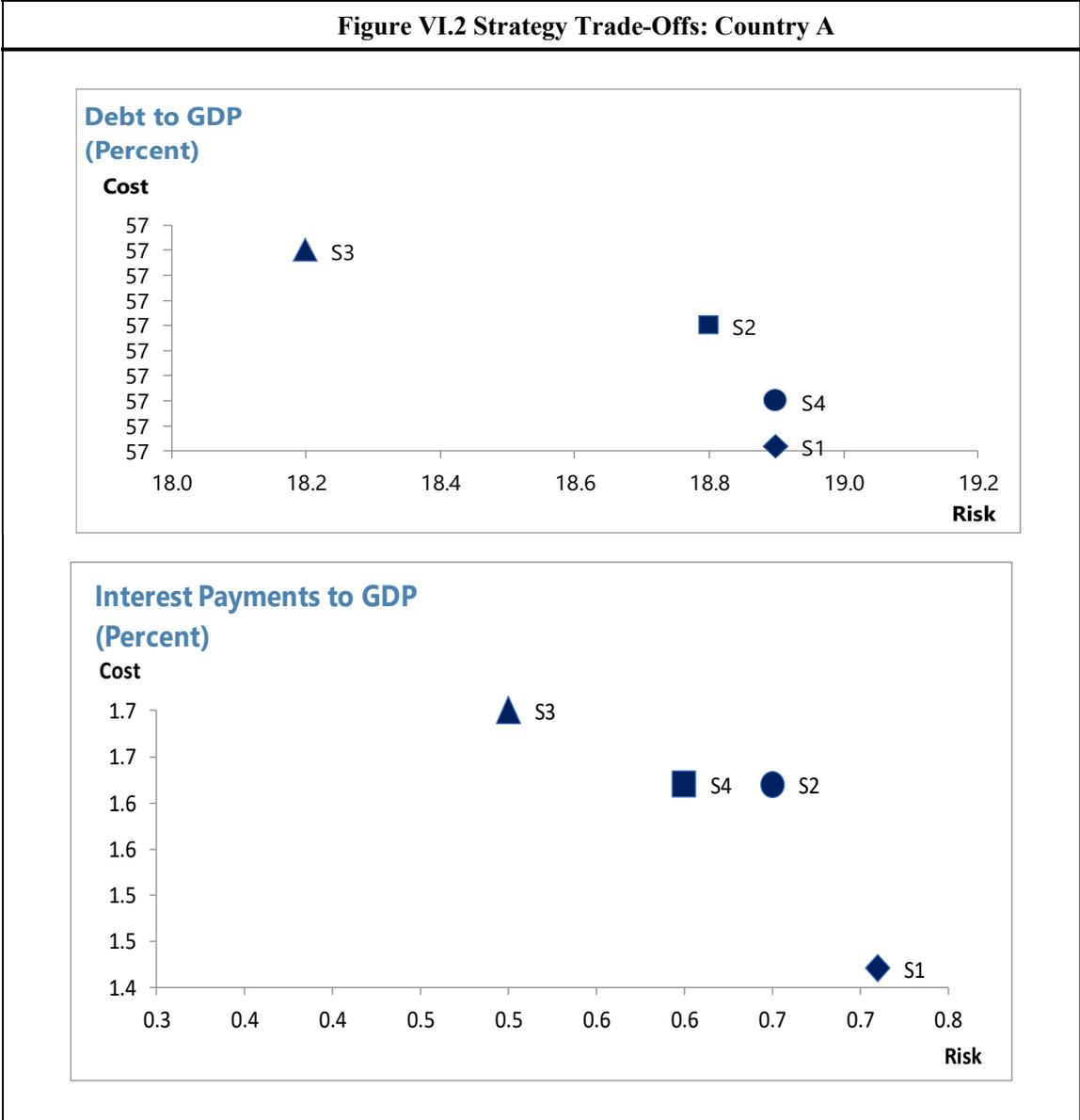
110. Figure VI.2 illustrates the relative performance of these strategies on the basis of two key indicators—the end period interest payments to GDP and debt to GDP. Risk is defined as the maximum increase in these two indicators under stress scenarios.<sup>48</sup>

111. For a similar level of risk, Strategy 1 is the least costly compared to strategies 2 and 4. This strategy implicitly maximizes concessional borrowing to help maintain debt sustainability. Strategies 2 and 3 are illustrative scenarios that highlight the potential increase in costs associated with the authorities' stated objective of building the domestic debt market. Similarly, these strategies capture the impact of using domestic sources of financing in the event that the total amount of concessional funding is not forthcoming and external nonconcessional sources are limited. In addition, Strategy 3 highlights the potential cost of reducing exchange rate exposure in the portfolio. The primary benefit of presenting the cost and risk of each strategy in this context is to highlight the estimated cost to the government budget of pursuing a domestic debt market development strategy. In order to contain these costs, and to ensure that risks of debt distress are not excessively aggravated, this market development strategy would need to be supported by prudent macro policies that would help reduce the cost—by reducing credit and

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<sup>48</sup> These are calculated using the analytical tool that accompanies the Guidance Note.

inflation risk premia, while creating sufficient budget space to accommodate these costs. It would also need to be accompanied by a clear strategy to develop the market infrastructure, including adopting an effective communication plan, to ensure that it could be successfully implemented.



**Country B**

### **Existing Debt Management Strategy (Step 1)**

112. Country B had in place a formal debt strategy of maximizing concessional debt, with a secondary debt management objective of developing the domestic debt market. Nevertheless, after securing debt relief and in light of the extent of its infrastructure investment needs, it was actively developing alternative sources of quasi-concessional and market-based financing. The country had recently successfully tapped international capital markets.

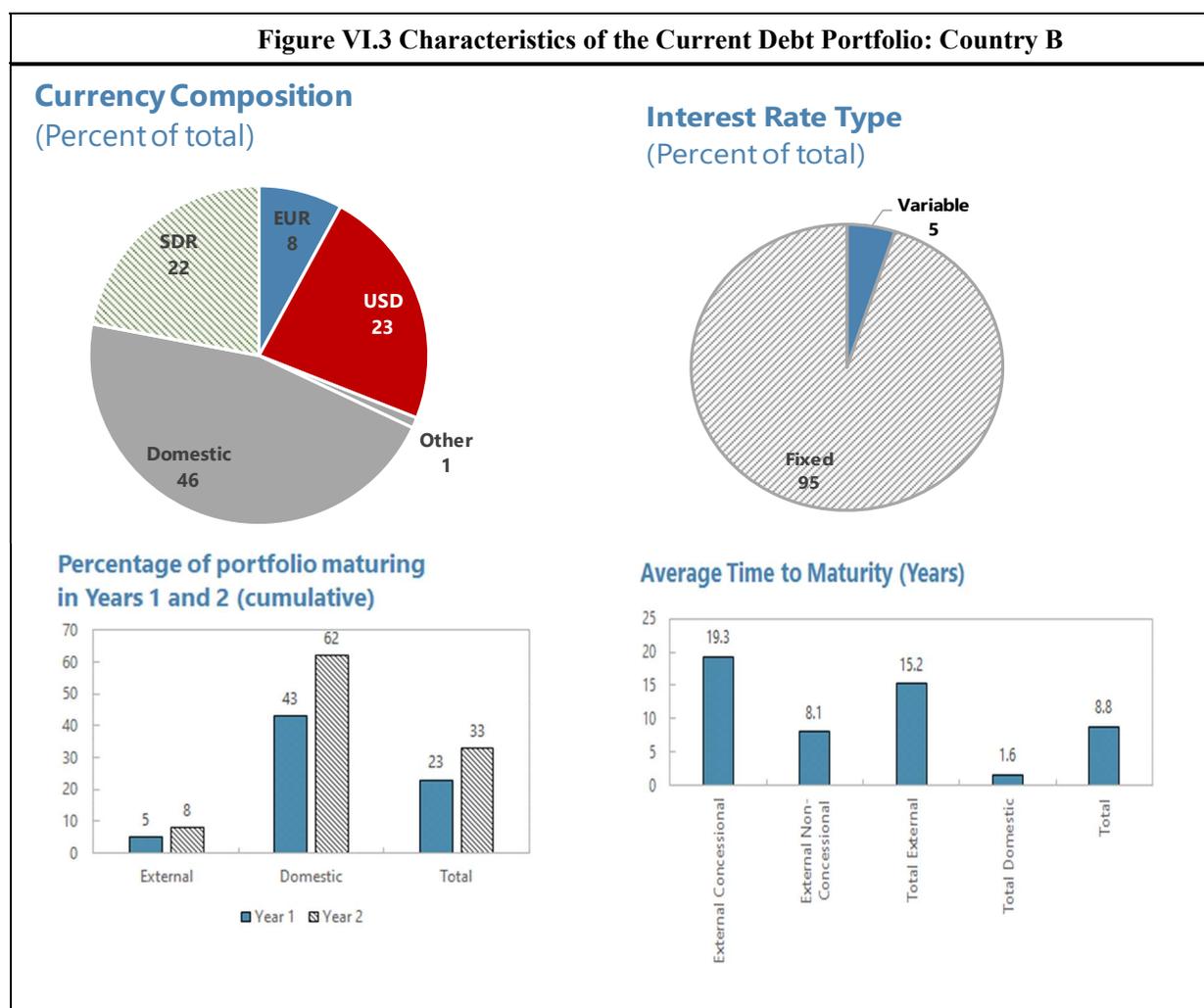
### **Characteristics of Existing Debt Portfolio and Funding Sources (Steps 2 and 3)**

113. The existing debt portfolio consists of a relatively wide range of instruments, including concessional financing from multilateral creditors, quasi-concessional financing from bilateral creditors, external commercial loans, a USD denominated Eurobond, Treasury bills, floating rate Treasury notes (issued with two- and three-year maturities), and fixed rate Treasury bonds (issued at two-, three- and five-year maturities).

114. The portfolio broadly consists of 46 percent domestic and 54 percent external debt (Figure VI.3), suggesting a relatively significant exposure to movements in the exchange rate. While the majority of debt is at fixed rates, the short average maturity of domestic debt—most of the portfolio will mature in the next two years and the average maturity is 1.6 years—which means that interest rate risk is not inconsequential. The extent of the refinancing risk in the domestic debt portfolio is further aggravated by the authorities' assessment that the market is relatively underdeveloped, with low capacity to absorb significant quantities of debt at any one time.

115. In summary, this suggests that strategies which lead to a reduction in foreign exchange or refinancing risk would be desirable. Nevertheless, containing the cost will be imperative, given that the underlying fiscal deficit, excluding grants, is 7 percent of GDP, so fiscal space is severely limited.

**Figure VI.3 Characteristics of the Current Debt Portfolio: Country B**



**Macroeconomic Factors Influencing Choice of Strategy (Steps 4 and 5)**

116. The debt manager has reviewed the DSA and discussed macroeconomic policy challenges with officials involved in fiscal, monetary and exchange rate issues.

117. Overall, the fiscal position is relatively weak and past expectations have often turned out to be overly optimistic; the country is relatively aid dependent, with grants typically accounting for up to 3–4 percent of GDP, which has led to volatility in receipts with a consequent impact on the implementation of budgeted expenditure plans. The country is also potentially exposed to significant trade shocks and has a large current account deficit, mainly financed by official flows. Nevertheless, incomes have risen sharply in the last few years and are projected to continue doing so; this itself raises the prospect that access to grants and concessional financing may become more limited going forward. On the monetary side, the country has recently adopted an inflation targeting regime, with a floating exchange rate, and does not factor any specific exchange rate target, or related balance of payments needs, into the choice of domestic

versus external borrowing. The foreign exchange market and the money markets are relatively shallow. The inflation rate is several percentage points above the central bank’s target level and has recently spiked as a consequence of a significant increase in the price of imported commodities (for example, oil). Furthermore, the capital account regime is relatively liberalized, and nonresident investors can participate in both the equity and fixed income markets, potentially adding further volatility to the capital account.

In summary, the key structural macroeconomic factors that would influence the direction of the DMS are set out in Table VI.1.

<b>Nature of exposure</b>	<b>Macroeconomic variables affected</b>	<b>Implication for choice of MTDS</b>
Aid volatility	Government expenditure, level of international reserves	Build cash/reserves buffer; diversify financing sources.
Terms of trade	Balance of payments, exchange rate	Bias toward domestic currency instruments to limit exposure to exchange rate movements.
Credibility of monetary policy	Interest rates	Consider domestic currency instruments that are insulated against shocks to inflation expectations (for example, inflation-linked, variable rate, short-term debt); bias toward foreign currency-denominated instruments.
Capital account	Level of international reserves	Ensure sufficient reserves to cover potential scale of nonresident outflows; limit rollover risk; diversify financing sources.
Fiscal (for example, revenue shortfall)	Budget deficit, government expenditure, growth, exchange rate	Build cash buffers; diversify financing sources; limit rollover risk; limit currency exposure.
Rising income levels	Exchange rate, credit premium	Diversify financing sources; access to concessional sources may become more limited.
Shallow markets	Exchange rate, interest rates	Limit rollover risk; diversify financing sources.

118. Overall, highlighted macroeconomic risks, as well as those identified in the existing debt portfolio, point to the need to mitigate foreign exchange and rollover risks, while ensuring sufficient buffers or other means (such as diversifying financing sources) to mitigate the risk of a shortfall or volatility in receipts.

### **Assessing the Alternative Debt Strategies (Step 6)**

119. Taking these factors into account, the DM considers the relative performance of four alternative debt management strategies.<sup>49</sup> A number of risk scenarios were also specified.

120. The four strategies under consideration are broadly as follows:

S1: Retain the existing portfolio composition.

<sup>49</sup> Using in this case the analytical tool that accompanies the Guidance Note.

S2: Increase the proportion of domestic currency debt but maintain existing maturity structure.

S3: Increase the proportion of domestic currency debt but lengthen maturity of domestic currency debt.

S4: Increase the proportion of foreign currency debt; increase the proportion of foreign currency commercial debt; lengthen the maturity of domestic currency debt.

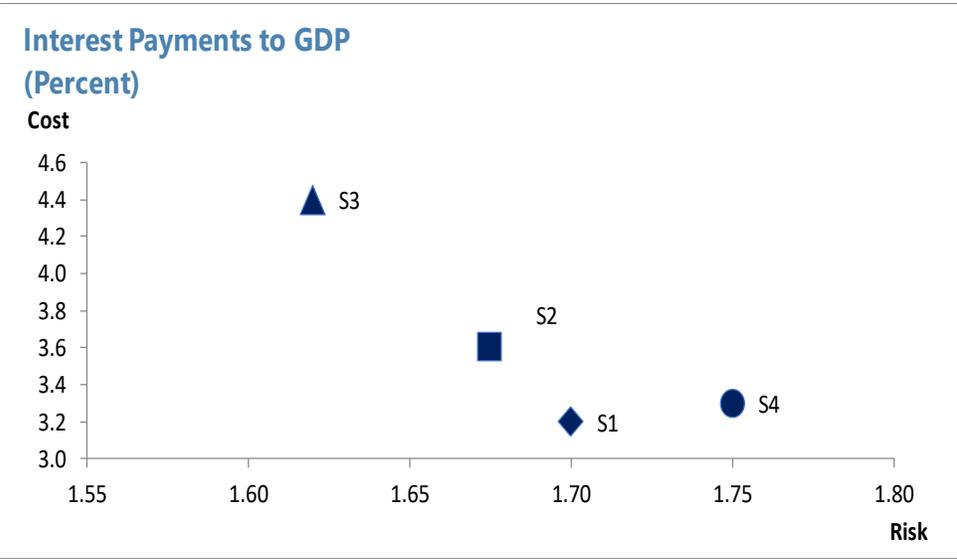
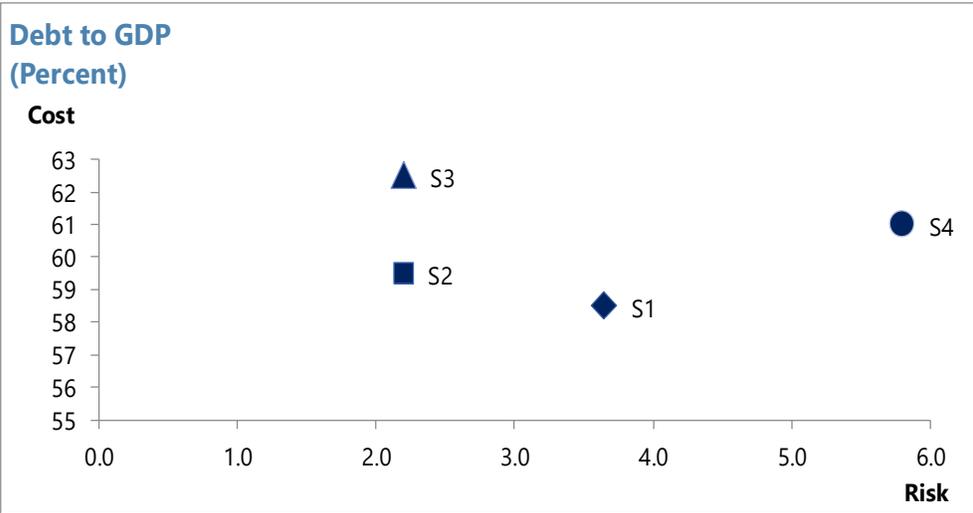
121. Both S3 and S4 are consistent with diversifying financing sources, and so are broadly consistent with helping to mitigate rollover risk; they would also mitigate some of the volatility in budget execution associated with uncertainty in the timing of disbursement of concessional loans. S2 and S3 are both consistent with the overall objective of reducing the foreign currency exposure of the debt, but rollover risk might be a concern given the associated shortening of the maturity of the portfolio.

122. Figure VI.4 illustrates the performance of these strategies on the basis of two key cost indicators, and under a specific set of macroeconomic and pricing assumptions used in the exercise.

123. From Figure VI.4 S1 is the least-cost alternative of all four strategies, while risk is relatively low. This suggests it is a contender for preferred DMS. Nevertheless, if incomes rise as expected, the implied quantum of concessional financing might not be achievable. S2 and S3 are both higher cost, given that weak monetary policy credibility and the consequent inflation risk premium keeps domestic interest rates high; this is a significant factor given the relatively weak fiscal position. In addition, the implied increase in participation by nonresident investors in the domestic market might suggest that an increase in reserve buffers is needed to mitigate associated rollover risk. Also, if S3 requires banks to hold a significantly greater proportion of longer-dated debt, then a judgment is required as to whether the associated maturity mismatch might add significantly to risk in the banking sector. Finally, while S4 is relatively low cost, especially in terms of interest cost, it aggravates the currency exposure of the portfolio, and so carries the most risk.

124. Overall, it appears that S1, which maximizes the recourse to concessional debt, should be the preferred strategy as long as it is available. Over time, as access to external concessional loans becomes more limited, and as monetary policy becomes more credible, S2 and S3 could be re-evaluated, particularly if the fiscal position strengthens, providing some scope to absorb the higher cost.

Figure VI.4. Strategy Trade-Offs: Country B



## Appendix VII. Template for a Published DMS Document

125. This appendix sets out the typical components of a DMS document to illustrate the minimum content of such a document. In general, such a publication would have sections discussing the following:

### **Objectives and Scope**

Describes the objectives surrounding debt management, the scope of the DMS, and the types of risks being managed under the DMS.

### **Existing Debt Portfolio**

Provides the historical context for the debt portfolio, describing changes in its size (including relative to GDP) and composition through time. Changes in relevant market variables should be included, along with commentary concerning significant events in the evolution of the debt.

### **The Environment for Debt Management Going Forward**

Describes the environment for debt management in the future, including fiscal and debt projections, assumptions about exchange and interest rates, and constraints on portfolio choice, including those relating to market development and the implementation of monetary policy.

### **The DMS**

Describes the analysis that has been undertaken to support the recommended DMS. The assumptions used and limitations of the analysis should be made clear.

Sets out the recommended strategy and its rationale. Describes the desired debt composition and the core arguments for such composition. This should include a discussion of the key risk factors that influenced the choice of strategy.

Describes the progress to be made toward the desired composition over the planning horizon (three to five years). Specifies ranges for the key risk indicators of the portfolio and the financing program.

The documented strategy should also outline any specific measures or projects that are planned for managing nonquantifiable risks and/or in support of debt market development, such as plans to introduce new debt recording systems, or a primary dealer framework.

The documented strategy should also outline the periodic review process that will apply in order to check whether key assumptions continue to hold and that the DMS remains appropriate. The document should also highlight the process that would be followed if circumstances were to change significantly outside that regular review cycle.

## Appendix VIII. Developing a Short-Term Borrowing Plan: An Example

126. The following provides an illustration of how a short-term borrowing plan might be derived, given an agreed-upon DMS.

127. Assume that the agreed-upon DMS is to finance 60 percent of the government's cash requirement through concessional debt, 20 percent through official quasi-concessional financing, and 20 percent through medium-term domestic bonds.

128. Assume that in this particular year the total financing requirement is 100. Of the 20 quasi-concessional financing required under the strategy, 5 has already been committed from a development bank for a specific project, with another 10 available from the IBRD, so the DM needs to identify who might provide the final 5. Similarly, while the target is to raise 20 through medium-term bonds, the DM may determine that the market will absorb only 5 in five-year bonds, so that the remaining 15 will need to come from three-year bonds (see Table VIII.1).

129. In terms of translating those targets into an actual issuance plan, and assuming the typical size of an auction of three-year bonds is 2, the DM needs to plan seven to eight such auctions during the year to meet the total financing target. Similarly, if the anticipated maximum size of a five-year auction is 1.5, then the DM may need to plan for three to four such auctions, giving an overall target of 10–12 auctions. The DM also needs to consider whether there are any seasonal factors—such as typical holiday periods—when it may be more difficult to tap the market.<sup>50</sup> These periods should be avoided if possible. So, if August and December are typically slow times in the domestic market, the DM may want to avoid these months; this would leave 10 months in the year to schedule auctions. Finally, the DM should take into account the needs of the market and whether there is any benefit to following a regular schedule of auctions. So, for example, three-year auctions may generally be held in the first week of the month, while five-year auctions may be most successful at the beginning of a quarter. Note, where markets are relatively underdeveloped, and access to very short-term financing is limited, or its use might conflict with the achievement of the monetary policy objective, it may be desirable to frontload the financing so that gaps are covered early and cash rationing can be avoided.

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<sup>50</sup> The underlying seasonality of government cash flows also needs to be taken into account when determining the pace at which new borrowing is undertaken.

Table VIII.1 Sample Borrowing Plan

<b>Total Borrowing Requirement</b>				<b>100</b>
<b>Strategy</b>				
	<i>External financing</i>			
		Official concessional	IDA	60
		<b>Subtotal official concessional</b>		<b>60</b>
		Official non-concessional	African Development Bank	5
			IBRD	10
			Bilateral creditor	5
		<b>Subtotal official non-concessional</b>		<b>20</b>
	<i>Domestic financing</i>			
		Market	3-year bonds	15
			5-year bonds	5
		<b>Subtotal domestic market-based</b>		<b>20</b>

**Provisional auction schedule**

<b>Month</b>	<b>Instrument</b>	<b>Target size</b>	<b>Cumulative financing</b>
January	5-year	1.5	3.5
February	3-year	2	5.5
March	3-year	2	7.5
April	5-year	1.5	9
May	3-year	2	11
June	3-year	2	13
July	5-year	2	15
August	<i>Only if needed</i>		15
September	3-year	2	17
October	3-year		
	5-year only if needed to reach target financing	1.5	18.5
November	3-year	1.5	20
December	<i>Only if needed</i>		20