INTERNATIONAL MONETARY FUND

# IMF POLICY PAPER

July 2017

## THE MEDIUM-TERM DEBT MANAGEMENT STRATEGY: AN ASSESSMENT OF RECENT CAPACITY BUILDING

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

- A **Press Release** summarizing the views of the Executive Board as expressed during its July 10, 2017 consideration of the staff report.
- The **Staff Report**, prepared by IMF staff and completed on June 9, 2017 for the Executive Board's consideration on July 10, 2017.
- A **Staff Supplement**.

The IMF's transparency policy allows for the deletion of market-sensitive information and premature disclosure of the authorities' policy intentions in published staff reports and other documents.

Electronic copies of IMF Policy Papers
are available to the public from
http://www.imf.org/external/pp/ppindex.aspx

**International Monetary Fund**
**Washington, D.C.**

INTERNATIONAL MONETARY FUND

June 9, 2017

# THE MEDIUM-TERM DEBT MANAGEMENT STRATEGY: AN ASSESSMENT OF RECENT CAPACITY BUILDING—ANNEXES

Approved By
**Peter Dattels (IMF) and Jan Walliser (WB)**

Prepared by Apostolos Apostolou, Tadeusz Galeza, Thordur Jonasson, Michael Papaioannou, Miriam Tamene, Eriko Togo (Monetary and Capital Markets Department, IMF), and Emre Balibek, Sebastian Essl, Lars Jessen, and Antonio Velandia (WB) in consultation with other departments. The work was supervised by Daniel Hardy (IMF), and Abha Prasad and Coskun Cangoz (WB).

## CONTENTS

# Glossary

| | |
|---|---|
| ABP | Annual Borrowing Plan |
| AT | Analytical Tool |
| BiH | Bosnia and Herzegovina |
| DeMPA | Debt Management Performance Assessment |
| DMO | Debt Management Office |
| DMS | Debt Management Strategy |
| DPI | Debt management performance indicator |
| DSA | Debt Sustainability Analysis |
| EMDC | Emerging Market Developing Country |
| FBiH | Federation of BiH |
| IDA | International Development Association |
| IMF | International Monetary Fund |
| LIDC | Low Income Developing Country |
| MoF | Ministry of Finance |
| MTDS | Medium-Term Debt Management Strategy |
| PDD | Public Debt Department |
| RS | Republika Srpska |
| SOE | State-owned enterprise |
| TA | Technical assistance |
| WB | World Bank |

# Annex I. The Role of Debt Management in Economic Policy Frameworks and the Medium-Term Debt Management Strategy Framework

## A. The Role of Debt Management in Economic Policy Frameworks

1. **Effective debt management and hence the design and implementation of a debt management strategy depend on the macroeconomic and institutional context, but the connection is two-way: sound debt management is critical to macro and financial stability, and financial and overall development.** It follows that debt management is an integral part of a country's macroeconomic and financial policy framework, and needs to be coordinated with other policy areas.

2. **Within the constraints of the macroeconomic framework, the debt manager has the delicate task of balancing domestic and external sources of financing of various tenors so as to meet the government funding needs at low over-all cost and contained risk.** The debt management strategy must not only accommodate forthcoming fiscal financing needs, but also take into account effects on the size and currency composition of external capital flows, the monetary policy and exchange rate regimes, foreign currency reserve levels, the state of development of domestic markets, and the financing preferences and balance sheets of the private sector.

3. **Sound debt management contributes to reduced macro-financial risks, complementing prudent fiscal management and monetary policy implementation.** Debt managers are responsible for ensuring that financing constraints do not lead to sharp reversals in fiscal policy or spikes in interest costs. Also, debt management affects monetary policy transmission, market liquidity, and financial market price discovery. The debt manager's ability to cover external public financing requirements through external debt issuance, and avoid undue bunching of debt service obligations helps reduce crowding out, exchange rate pressures, or large swings in international reserves.

4. **Debt management contributes to market and institutional development.** For example, the development of the domestic sovereign debt markets is a public good that assists banks to manage their liquidity, provides a saving tool, enables the central bank to effectively conduct monetary policy and provides a benchmark yield curve for private sector borrowing. Also, active debt management depends on the availability of timely and accurate debt and fiscal data. Furthermore, good debt management practice involves fostering the investor base through predictable issuance and regular communication. Therefore, the transparency and accountability of the debt managers are directly linked to their effectiveness.

## B. The Medium-Term Debt Management Strategy Framework

**5. The Medium-Term Debt Management Strategy (MTDS) framework consists of a methodology and associated analytical tool (AT) to facilitate sound debt management.** In particular, a debt management strategy (DMS) is a plan for the evolution of the public debt portfolio that operationalizes the debt management objectives given the constraints, and specifically the government's preferences with regard to cost-risk trade-offs. The MTDS framework is a policy tool to then help the authorities formulate, adjust, and ultimately implement their DMS. The key elements of the steps involved in formulating an MTDS are summarized below:

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

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

- Identify the main objectives for public debt management.
    - For example:
        - Meet the financing needs;
        - Minimize cost;
        - Maintain risk at a prudent level;
        - Develop the domestic debt market; and
        - Establish a reference or benchmark for private sector issuance.
- Ensure objectives (where they are not set down in law) are properly documented.
- Define scope of MTDS:
    - Central government, general government, or wider public sector; and
    - Contingent liabilities.

**Step 2. Identify the current debt management strategy and cost and risk of existing debt.**

Purpose is to clearly determine the starting position for the analysis; this will help identify whether the MTDS should seek to change the characteristics of the existing debt portfolio in any specific way, e.g., 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, investors or other agencies (e.g., the 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/creditor type;
  - Identify any constraints that might impede the availability of funding; and
  - Discuss the instruments based on their cost/risk characteristics.

**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.
- Identify whether there are any external constraints relevant for MTDS formulation:
  - Discuss any anticipated change in exchange rate or capital account regime; and
  - Discuss any required financing of international reserves.
- Identify the baseline medium-term projections for market rates.

- Clarify assumptions about likely pricing of non-market instruments:
    - Based on creditor information and other sources.
- Determine specific risk scenarios:
    - Those identified in DSF; and
    - Other specific changes to market conditions and demand (e.g., 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. Requires interaction with fiscal and monetary policy authorities.

- Set out long-run structural features of the economy that the MTDS should try to take into account, for example:
    - Commodity price vulnerability;
    - Access to concessional financing;
    - Trends in real effective exchange rate; and
    - Inflation trends.

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

Purpose is to analyze under different shock scenarios 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; and
    - 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 for market development.**

Purpose is to clearly determine that the preferred, 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, and other candidate, strategies to the fiscal and monetary policy authorities:
    - Discuss any points of interaction; and
    - 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 MTDS.**

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

- Document the preferred and a small number (e.g., one or two) of alternative strategies:
    - Outline why the preferred strategy is superior to the others; and
    - Clearly describe the key associated costs and risks, and relationship with the broad objectives.
- Present the proposal to the highest responsible authority.
- Agree the MTDS.

Once determined, the agreed MTDS should be disseminated.

# Annex II Past MTDS Board Papers[1]

**1. The 2007 Board Paper explained the Public Debt Management Guidelines; the 12-country pilot; and the intention to intensify debt management support.**[2] That support would serve to identify and manage sovereign balance sheet risk, develop debt markets, undertake reforms, and integrate these efforts into the policy dialogue with country authorities (paragraph 50). It was recognized that:

- This would be a long-term endeavor, demanding a project management focus and a comprehensive diagnostic (paragraph 53); and
- The MTDS and flexibility in its implementation (paragraph 93) would be valuable to many countries; and

The Board endorsed the proposal to scale-up technical assistance (TA) in this area, and to develop and apply the DeMPA and MTDS frameworks.

**2. The 2009 Board Paper described the DeMPA tool (paragraph 32), the development of the MTDS Guidance Note and the MTDS Analytical Toolkit (paragraph 45).**[3] The paper reported on:

- The initial application of the DeMPA, with the intention to undertake 20 assessments per year and the intention to do 4–6 MTDS assessment per year (paragraph 53);
- The importance of training activities and training of trainers as well as cooperation with external partners; and
- The need to strengthen coordination with debt market development work (paragraph 65).

The Board endorsed the work program—specifically the use of the MTDS Toolkit (Guidance Note and AT; see Annex I) and the ongoing undertaking of DeMPAs—and encouraged countries to continue to strengthen their public debt management frameworks.

**3. The 2013 Board Paper presented lessons and developments since the 2009 Board Paper, strengthening further the case for public debt management reforms in the aftermath of the global financial crisis.**[4] Information was provided on:

- The number of DeMPA evaluations and the—sometimes slow—progress in improving indicators;

---

[1] Please see Footnotes 1, 2 and 3 of the main paper.

[2] See IMF-WB (2007) "Strengthening Debt Management Practices - Lessons from Country Experiences and Issues Going Forward" http://www.imf.org/external/pp/longres.aspx?id=4189 ; PIN 07/60.

[3] See SM/09/64; PIN 09/45.

[4] See SM/13/56.

- Progress on MTDS, with several countries developing formal and explicit strategies (paragraph 25);
- Progress in the clear allocation of debt management responsibilities and establishing suitable institutional arrangements (paragraph 30); in debt recording; and in the management of operational risks (paragraph 31) as well;
- Progress in development of domestic government securities markets (paragraph 32); and
- Examples of country program support (Box 2 on page 15).

# Annex III. DeMPA Framework and Results

1. **The DeMPA is a diagnostic tool to assess government debt management through a comprehensive set of performance indicators.** The DeMPA tool was launched in February 2008 and has been revised twice (2009 and 2014). The current DeMPA tool comprises 14 debt management performance indicators (DPIs) and 33 subordinate dimensions spanning five core areas of debt management:

- Governance and strategy development;
- Coordination with macroeconomic policies;
- Borrowing and related financing activities;
- Cash flow forecasting and cash balance management; and
- Debt recording and operational risk management.

2. **By end-2016, 113 DeMPA missions had been fielded in 78 countries, of which 31 countries have received repeated assessments.** More than 80 percent of beneficiary countries are low or lower-middle income countries. The DeMPA findings have contributed to the development of debt management reform plans in over 46 countries, with focus on strengthening institutional arrangements, governance and managerial structure, formulation of debt strategies, improved domestic markets, and mitigating operational risk.

3. **Results from countries with more than one DeMPAs across time (Table III.1) indicate progress in several debt management areas.**[1] Table III.1 measures improvements over time in the 5 main areas of the DeMPA methodology. Coordination with macroeconomic policies is generally relatively strong. Both governance, comprised of 5 indicators (one of which is on the DMS), and capacity in borrowing operations have been improving. Debt recording and operational risk management show significant improvements, although they remain one of the weaker core functions across several debt offices. The weak and stagnant scores in cash flow forecasting and cash flow management (which is not part of the MTDS framework) suggest both technical capacity deficits and deeper structural issues with budget formation and execution.

[1] The DeMPA conducted by the WB is a demand driven program, and hence the assessments are updated upon request from authorities; data are therefore not available for all countries that have received MTDS technical assistance.

**Table III.1. Comparison of Scores from the Countries that have repeated DeMPAs 1/**

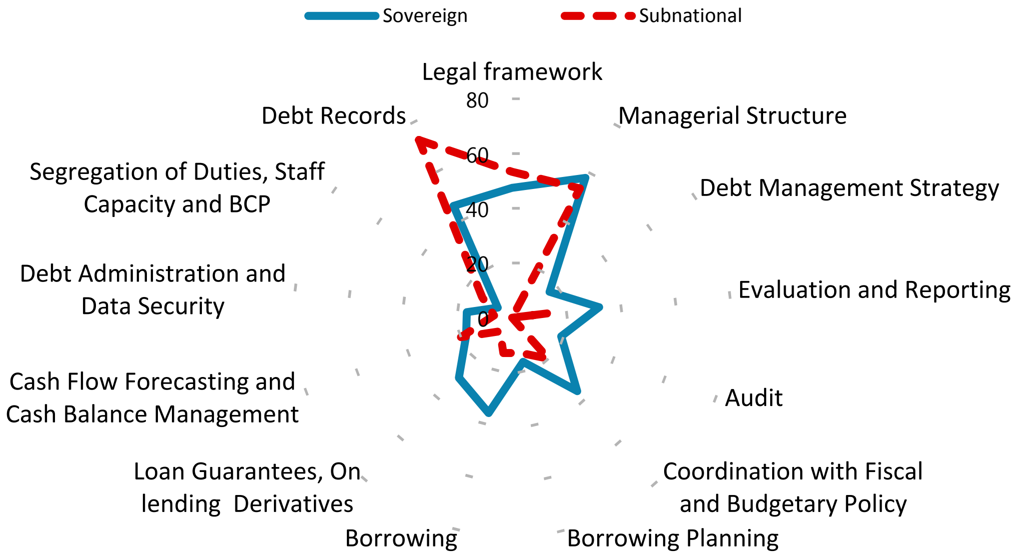
(In percent)

| Share of the scores that have experienced | Up-grade | Down-grade | Stable | Share of score A, B, or C: Latest DeMPA | Share of score A, B, or C: First DeMPA |
|---|---|---|---|---|---|
| Overall | 16 | 8 | 69 | 37 | 29 |
| I. Governance and Strategy Development | 15 | 8 | 65 | 39 | 29 |
| II. Coordination w/ Macroeconomic Policies | 19 | 15 | 61 | 58 | 57 |
| III. Borrowing and Related Financing Activities | 12 | 4 | 74 | 33 | 27 |
| IV. Cash Flow Forecasting and Cash Balance Management | 6 | 5 | 87 | 13 | 15 |
| V. Debt Recording and Operational Risk Management | 21 | 9 | 69 | 30 | 17 |

Sources: WB; and staff calculations.

1/ The sample includes a total of 78 countries. A score of A, B, or C means that a formally approved and publicly available medium-term DMS, covering all central government debt, is in place. The DMS strategy should contain a discussion of the evolution of interest rate, refinancing, and foreign currency risk, and the opinion of the Central Bank are obtained. A score of D applies if a medium-term DMS is not in place or the quality is not sufficient, the decision-making process is not sufficient, and/or the DMS is not published.

**Figure III.1. Subnational vs. Sovereign DeMPA Scores 1/**
(In percent)



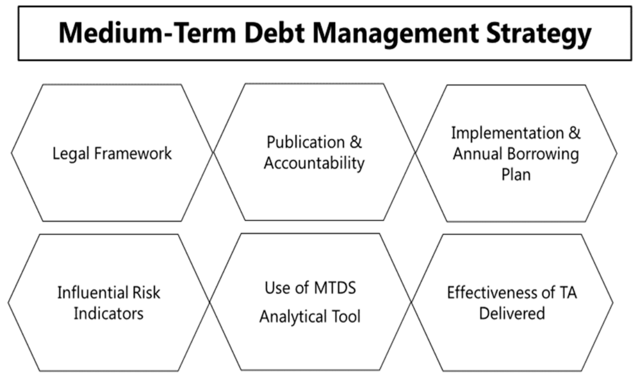

Source: WB.
1/ Includes information of the assessments of 15 subnational governments and 78 sovereign governments.

4. **The increasing importance of subnational borrowing led to the development of the Subnational DeMPA** (August 2012, revised in December 2016), comprising 13 DPIs and 31 dimensions. It has been applied across 15 subnational governments (five in Sub-Saharan Africa, three in South Asia, and two each across LAC and EAP). Results from these reveal significant gaps in most key debt management areas, except for debt recording, legal frameworks, and managerial structure (Figure III.1). It should be noted that the sample is small and may be biased towards countries with highly developed institutional arrangements for managing subnational debt.

# Annex IV. Detailed Questionnaire Results

*A questionnaire soliciting views on debt management strategy and the capacity to develop one was sent to 110 countries (including those that have not benefited from MTDS TA).*[1] *The questionnaire touched on six broad areas (Figure IV.1). Respondents were asked to rate various aspects of their own debt management activities or related technical assistance (TA); all questions sought additional comments. This annex summarizes the key findings from the questionnaire and provides insights on the usefulness of the MTDS TA and areas of focus for further improvement.*

**Figure IV.1. Main Topics Covered in the Questionnaire**




1. **Most countries indicated having in place a formal debt management strategy.** For those without one, they cited lack of expertise and limited human resources as the main reasons. That said, even in those cases where a formal DMS is absent, many mentioned the presence of a passive strategy that maximized concessional borrowing before resorting to domestic debt issuance.

2. **The majority of respondents confirmed the publication of DMS report (Figure IV.2a).** DMS documents are regularly published either as an independent document or as an attachment to the annual budget. Most acknowledged the benefits of publications as promoting transparency and accountability. In some cases, debt managers said the DMS being in the public domain gave them the lever to implement the selected strategy. The report also facilitated communication with market participants and other stakeholders, including government entities.

3. **In many cases, the formulation of DMS was underpinned by a dedicated legal framework (Figure IV.2b).** One third of respondents confirmed the requirement by law to prepare a DMS. Approval by the highest authorities, such as the Cabinet, Council of Ministries or the Minister of Finance was obtained in almost all cases.

4. **Debt management strategies varied across countries, reflecting differences in debt portfolio risks (Figure IV.2c).** In addition to debt portfolio risks, there were also differences by horizon and scope of debt:

- *The cost and risks features of existing debt portfolio were found to be the principal factors that determined the countries' DMS*. Market risks ranked top (refinancing, exchange rate, interest rate,

[1] Of the 110 countries, 62 responded, of which 37 received MTDS TA.

and liquidity), followed by risks that could surface from contingent liabilities. Operational risk was also highlighted as a source of risk for the functioning of the government bond market.

- *The horizon of debt management strategies varied, with the common period being 3 years.* The period for DMS ranged from 3 to 5 years, with annual review conducted in many cases. The exception was low-income countries, where review took place less frequently.

- *The default for debt coverage was central government debt.* A few countries incorporated the consolidated public sector debt, while consideration of guaranteed loans was rare.

5. **The execution of a strategy largely depended on the capacity to develop an annual borrowing plan (Figure IV.2d).** While some countries planned their annual borrowing plan (ABP) based on the adopted DMS, actual borrowing diverged due to factors outside the control of debt managers (fiscal slippage, delay in implementation of large projects, ministerial decisions). Some countries indicated lack of capacity to develop an ABP consistent with the debt management strategy as a reason for inconsistent ABP with that of DMS.

6. **In many cases, the formulation of MTDS was supported by quantitative analysis**, **including through the utilization of the MTDS Analytical Tool (AT) (Figure IV.2e).** For those countries that did not use the MTDS AT they reported owning an internal quantitative model. While countries that use the MTDS AT found it to be a helpful tool, a few found some aspects to be challenging: projecting baseline interest and exchange rates; determining shock scenarios; and ensuring consistency with the macroeconomic framework. However, the main challenge in using the MTDS AT was the difficulty of obtaining fiscal and macroeconomic data and the time it took to set up the AT.

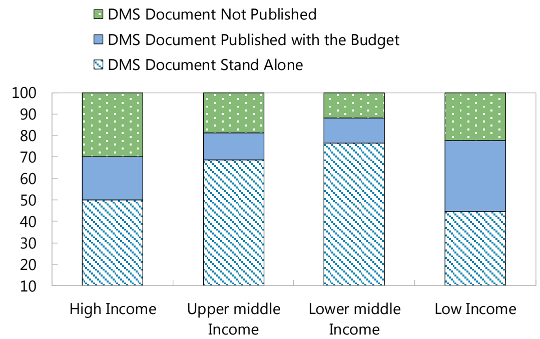
7. **Additionally, understaffing and lack of technical expertise contribute to the challenge debt management office face in developing a DMS.** High staff turnover meant retention of capacity was a recurring challenge, and debt management offices were seldom fully staffed. Lack of support from higher management was another challenge reportedly faced by debt management offices.

8. **Those countries that received TA from IMF and WB found the workshops and international trainings to be most helpful (Figure IV.2f)**. The Debt Management Practitioners' Program is popular by those who participated in it.

## Figure IV.2. Key Findings from the DMS Questionnaire

*While there is no clear pattern by income group for the choice to publish DMS report, capacity constraint is the common factor for Low Income Countries.*

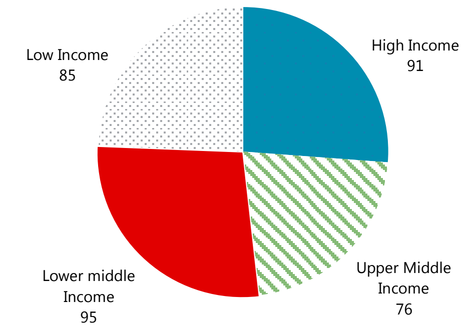
**a. Published DMS Document**
(in percent)




Sources: Country authorities; and staff calculations.

*The legal framework stipulates for the DMS to be formulated in many countries.*

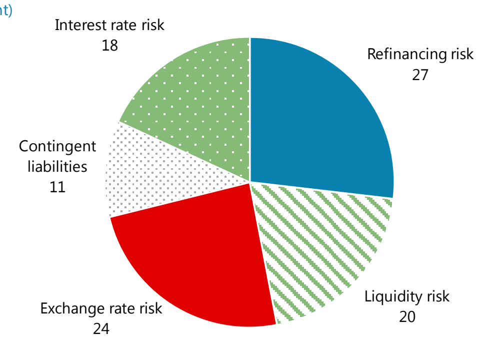
**b. Legal framework supports the development of DMS**
(in percent)




Sources: Country authorities; and staff calculations.

*In analyzing and designing DMS, market risks are the key elements that influence debt managers, while contingent liabilities are also a concern.*

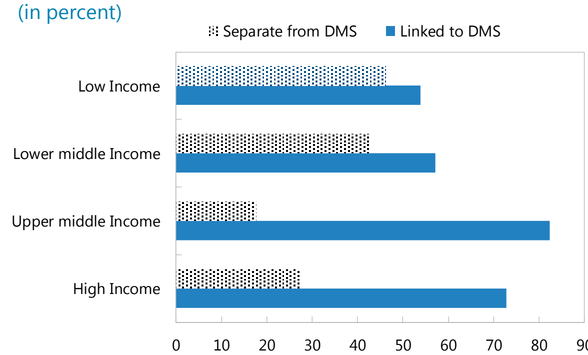
**c. DMS Risk Indicators by Importance**
(in percent)




Sources: Country authorities; and staff calculations

*Execution of DMS through an ABP is less common in the low and lower middle income countries, in part due to factors outside the control of debt managers.*

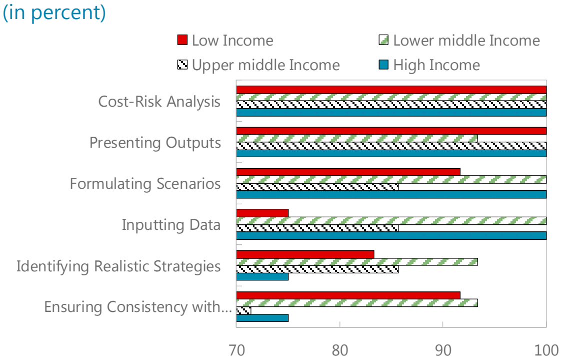
**d. Annual Borrowing Plan Based on DMS**
(in percent)




Sources: Country authorities; and staff calculations.

*Looking ahead, linking the MTDS AT with the macro framework and guidance on strategy identification would be important to assist the users of the tool.*

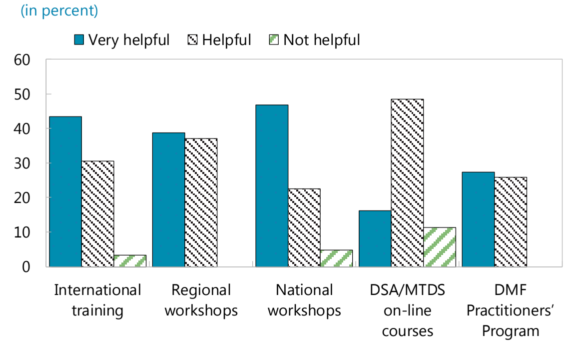
**e. Usefulness of the MTDS AT**
(in percent)




Sources: Country authorities; and staff calculations

*Workshops and international training were slightly preferred for TA delivery, probably due to the opportunity they offer for peer to peer learning.*

**f. Effectiveness of MTDS TA**[1/]
(in percent)




Sources: Country authorities; and staff calculations
1/ Figures do not add up to 100 as "Not Applicable" responses have been excluded.

# Annex V. Case Studies

***This annex presents country cases studies as evidence on the content, modalities, and achievements of a range of MTDS TA missions.*** *The analysis is based on the detailed examination of eighteen MTDS country missions, delivered between 2008 and 2016.*[1] *The examination involved the review of MTDS reports, the models supporting the analysis and advice provided, other relevant documents (such as TA reports on other debt management topics), and interviews with TA mission chiefs.*

1. **The Annex is organized in four sections:** Section A, distills common themes in the analysis and advice provided. Section B describes the effectiveness of the TA, and challenges encountered. Section C, presents topical case studies, and Section D presents fuller country case studies.

## A. TA Components

### Adaptation to country circumstances

2. **The TA missions considered a variety of country specific factors, while maintaining a consistent approach to the analysis across countries.** TA missions invariably covered the first six steps of the MTDS framework (see Annex I). However, to accommodate specific circumstances or reflect actual practices, complementary (separate) analyses were undertaken (Table V.1).

**Table V.1. Incorporating Country Characteristics: Some Examples**

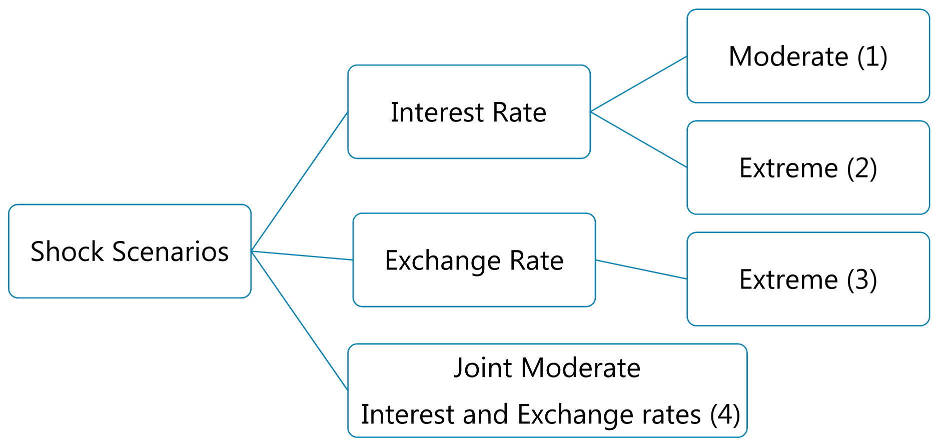
| MTDS Framework Steps | Adaptations |
|---|---|
| Scope of debt | In addition to central government debt, incorporated broader public sector debt, including:<br>• liabilities of state owned enterprises; and<br>• potential liabilities from public private partnerships. |
| Structural factors | Sensitivity factors that could influence the government's ability to meet debt service obligations were considered, such as for example a collapse in relevant commodity prices. |
| Potential funding sources | Viability of new sources and methods for pricing:<br>• Tapping the international market (Eurobond issuances); and<br>• Inflation-linked bonds. |

[1] The full sample included countries, which had multiple missions: Mongolia and Vietnam from East Asia; Bosnia & Herzegovina and Kyrgyz Republic from Europe & Central Asia; Pakistan from South Asia; Benin, Cameroon, Ivory Coast, Ethiopia, Ghana, Kenya, Malawi, Mozambique, Nigeria, Tanzania, Uganda, Zambia from Sub-Saharan Africa and; Grenada from Caribbean. The following section discusses six countries in more detail: Bosnia & Herzegovina; Kyrgyz Republic; Lebanon; Uganda, Vietnam; and Zambia.

### Cost-risk analysis and shock scenarios

3. **Shock scenarios were consistently applied and adapted to country specific risks, as agreed with the authorities.** The MTDS analytical tool (AT) allows five scenarios, including the baseline to be analyzed, by varying interest and exchange rate risks (Figure V.1). Shocks were generally applied in the second year of the MTDS analysis period.

**Figure V.1. Possible combination of shock scenarios in MTDS AT**




4. **The extreme exchange rate shock, guided by the LIC-DSF, is usually set at 30 percent, and the moderate one at the range of 15–20 percent, against major currencies.** In Zambia and Kyrgyz Republic, where currency depreciations had exceeded those levels, shocks were calibrated based on historical data. Exchange rate shocks were included also in countries with fixed exchange rate regimes to illustrate the budgetary impact of adjustments to the currency regime.

5. **Interest rate shocks were linked to the borrowing instruments.** The baseline interest rate projections for capital market instruments, including Eurobonds and domestic sovereign bonds, were generally based on forward yield curves, to which shocks were applied to represent a parallel shift, or change in slope of the yield curve. Loans from multilateral institutions on concessional terms (for example, the African Development Fund) were rarely subjected to interest rate shocks. Bilateral loans were considered on a case by case basis taking into consideration available information on the loan conditions or evidence from previous fluctuations in interest rates.

6. **The TA mission team in discussion with the authorities would determine the size and timing of shocks.** If the underlying rationales for shocks were regarded to be sensitive—for example, based on expectation of an upcoming election outcome—the TA mission reports would refrain from discussing them. In a similar vein, mission reports did not elaborate on the probability of market shocks materializing, which may inadvertently signal government’s views of monetary policy or change in exchange rate regime.

## Analysis of borrowing strategies

7. **Alternative borrowing strategies were identified for each country based on discussion with officials.** A common theme was the desire to examine the cost-risk trade-offs between lengthening the maturity of domestic securities (higher cost, lower refinancing risk) and maintaining the status quo that often relied heavily on short-term securities (lower cost, higher refinancing risk); there was a clear aspiration to gradually extend the maturity profile of the domestic debt. In some countries, domestic borrowing strategies included the introduction of new financing instruments such as an inflation-linked bond in Zambia and diaspora bonds and Sukuk in Nigeria. For external debt, a typical topic was assessing Eurobond issuances. Some analysis included debut Eurobond issuance (Uganda and Ethiopia). To smooth the redemption profile, mitigation options evaluated included introducing amortizing bonds (Zambia) and accessing commercial loans (Benin).

## Recommendations

8. **TA recommendations addressed a range of measures that support the formulation and implementation of a DMS, and in particular the effective use of the MTDS framework (Table V.2).** The TA missions (and their subsequent reports) did not single out preferred strategies or specific debt operations, because those are policy decisions that are the responsibilities of the authorities. Rather, the TA explained and recommended measures to improve DMS analysis and decision-making, and supporting institutional changes or policy actions. Thus, recommendations directly related to the use of the MTDS framework and the AT were typically set in a wider context of how to build capacity on a sustained basis, promote effective implementation, and foster financial market development more generally.

## Table V.2. Selected recommendations

| |
|---|
| **DMS formulation, implementation, and communication** |
| Publish and update the DMS |
| Align the development of the DMS with the medium-term fiscal framework |
| Ensure that the budget statement includes the DMS approved by the Cabinet |
| Present MTDS analysis to senior management, recommending a specific strategy |
| Extend coverage for future DMS by including explicit guaranteed debt |
| Improve coordination between public debt management units to enable implementation of DMS |
| Increase coordination with Central Bank for the management of foreign currency reserves |
| Increase investor communications |
| Develop an ABP and ensure consistency between the DMS and the ABP |
| **Cost-risk Analysis** |
| Maximize concessional financing |
| Ensure an appropriate balance of concessional and non-concessional financing |
| Closely monitor refinancing risk related to international market issuance |
| Establish broad targets for debt portfolio risk indicators |
| Increase domestic debt issuance, combined with semi-concessional financing to reduce vulnerability |
| **Institutional** |
| Review debt management laws to clarify objectives, roles, borrowing purposes, and DMS mandate |
| Establish a DMO with front, middle and strong back-office function |
| Improve debt management institutional arrangements by appointing a principal debt management unit |
| Complete a reorganization of the debt management unit and strengthen analytical capacity |
| Appoint and train staff for the central debt management unit |
| **Data-Related** |
| Consolidate and reconcile debt and government guarantees data into a single debt recording system |
| Publish a debt statistical bulletin covering key debt portfolio indicators |
| Enhance monitoring of contingent liabilities |
| Enhance reporting and recording of SOE debt |
| Cover all government accounts |
| Improve capacity in cash flow forecasting |
| **Market development** |
| Reduce market fragmentation, develop investor base and revise primary dealers' framework |
| Improve incentives for domestic market development by avoiding administered rates |
| Inform market participants when Treasury bills are issued for deficit financing and for sterilization |
| Establish price reporting of secondary market transactions and strengthen custody arrangements |
| Introduce quarterly auction calendar |

Sources: IMF and WB staff.
Based on TA reports of the following countries: Benin, Bosnia Herzegovina, Cameroon, Ethiopia, Ghana, Grenada, Ivory Coast, Kenya, Kyrgyz Republic, Malawi, Mongolia, Mozambique, Nigeria, Pakistan, Uganda, Vietnam, Tanzania, and Zambia.

## B. TA Effectiveness and Hindrances

### Risk indicators

**9. The TA mission reports provided recommendations that were associated with improvement in debt portfolio structures and cost-risk indicators (Box 1).** The association does not prove causation, but it is plausible that the capacity that the countries built up with support from TA allowed them to reduce debt riskiness. The improvements are most remarkable in light of the fact that external or macroeconomic circumstances often deteriorated or the total debt stock increased. In this connection, it is noticeable that, for countries wishing to deepen the domestic sovereign market or reduce exchange rate risk (by increasing the share of domestic debt), their success depended on the depth and resilience of the domestic financial market.

### Box 1. Debt Portfolio Risk Exposure Indicators and Debt Developments

Debt to GDP ratios increased considerably between 2010 and 2015 in 13 of the 18 select countries, albeit by widely varying amounts. While the average increase was around 10 percentage points in three years, the surge is more significant in countries with high foreign currency debt that saw their currency depreciate substantially, such as Ghana and Zambia, Mongolia, and Mozambique. Several countries with large public debt increase in recent years resorted to Eurobond issuance between 2012–2015, making use of the favorable circumstances in international markets.[1]

External debt continues to dominate the debt portfolio in countries that have traditionally relied on concessional financing such as Kyrgyz Republic, Malawi, and Mozambique. The opposite was true for countries that were either part of a regional currency union (Benin and Ivory Coast), giving them access to a larger investor base in domestic currency, or have relatively more developed domestic markets (Kenya, Vietnam, Pakistan), allowing a reduction of the share of foreign currency denominated debt.

The same set of countries was also able to improve or maintain debt portfolio risk exposure indicators associated with domestic debt. Generally, countries with relatively larger and more developed domestic (or regional) markets had additional options in managing the composition of their debt portfolio.

In the context of increasing debt to GDP ratios, countries were generally able to reduce or stabilize key debt portfolio risk exposure indicators but results were not uniform with 9 countries achieving an either a risk reduction or stability in the management of foreign exchange, interest rate and refinancing risks. Foreign exchange risk either decreased, or was stable, in 12 of the 18 countries. Interest rate risk either decreased or was stable in 13 of the 18 countries, mainly driven by increased issuance of fixed rate debt (domestic or international). Refinancing risk was reduced in 13 of the 18 countries due to longer maturities, but deteriorated in 5 countries that mainly had to resort to shorter maturities in their domestic market.

[1] These countries include Zambia (2012), Mongolia (2012), Ethiopia (2014), Kenya (2014) and Cameroon (2015): they issued their debut Eurobonds, while some others like Ghana, who had earlier issued a Eurobond, accelerated borrowing from international markets. Pakistan returned to the international markets in 2013 after a long absence.

**Challenges to DMS implementation**

**10. The TA missions identified a range of capacity related challenges that impact countries' ability to perform the MTDS analysis:**

- The processing of compiling debt portfolio data for analytical purposes posed a hurdle for some countries with implications for the MTDS TA. Looking ahead, additional TA efforts on debt recording and basic cost and risk monitoring would be helpful; and

- Deploying the required skills to utilize the Analytical Tool (AT) was challenging for some low-income countries. Looking ahead, a simplified version of the AT, particularly for countries with a large share of concessional debt, could be sufficient and significantly easier to implement.

**11. Some countries had an approved DMS but they were unable to execute it.** For example, where SOEs are significant, coordination within the public sector is needed (Ethiopia, Mozambique), together with the institutional mechanism to approve, update and monitor the strategy (Tanzania, Mongolia and several others). In addition to institutional arrangement, capacity to develop annual borrowing plan was also a factor. In the future, TAs focusing on linking DMS with annual borrowing plans would be important, as well as assistance on strengthening the overall institutional framework for debt management.

**12. Experience suggests that countries would benefit from capacity development efforts over longer periods.** While each TA mission would have its own focal issues to address, it should ideally build on previous TA missions to identify and address persistent challenges, and ensure continuity. To ensure that TAs continue to be effective, assessing the implementation status of previous TA recommendations, and confirming full commitment from the authorities are equally important going forward.

## C. Topical case studies

**Ghana**

**13. The MTDS technical assistance in Ghana contributed to developing the government's financing strategy consistent with the medium-term macroeconomic framework.** The technical assistance pointed to previous years' financing strategies that relied heavily on domestic financing, which had led to significant drawings from the overdraft facility from the central bank and accumulation of arrears. The result had been high inflation and high domestic interest rates, and rapid and large depreciation of the local currency. By 2014, non-resident inflows had ground to a halt and practically all residual domestic financing was achieved through Treasury bills. It was agreed that domestic financing had to be curtailed to a level consistent with the absorptive capacity of the domestic market and to prevent further crowding out of the private sector investments. Thus, in the mid-year revised fiscal framework and supplementary budget, the financing strategy was revised in which the share of external and domestic borrowing was more balanced. This strategy was approved by the Cabinet and published, satisfying the structural benchmark.

**14. Over the medium-term, the DMS envisioned a gradual return to greater reliance on domestic financing.** To prepare for the return, it was critical to make progress in deepening the domestic debt market by strengthening the primary and secondary markets; market infrastructure and the operating environment; as well as risk management practices, with a focus on reducing domestic refinancing risk. Non-resident investors have returned in significant volume to Ghana beginning in late 2016, which allowed the authorities to implement its strategy to lengthen domestic maturities and reduce refinancing risk.

### Indonesia

**15. Indonesia is an example of a country that used the MTDS AT as a springboard to develop their own tools for cost-risk analysis.** The Directorate General of Financing and Risk Management (the debt office), Ministry of Finance, decided in 2012 that they wanted to strengthen the analytical foundation for the debt management strategy. It was decided to initially apply the MTDS AT, and on that basis develop more advanced and tailored tools in-house. The analysis undertaken in the MTDS AT provided the quantitative basis for the debt management strategy 2013–17, and was followed by the construction of a MTDS AT replica in Matlab. The deterministic model was further developed allowing greater flexibility in granularity and number of instruments, and supplemented by a stochastic version that allowed a richer output. In practice, the two models were applied side by side. The experience with developing cost-risk tools in-house has been very positive; it substantially increased the analytical capacity in the debt management office.

### Bosnia Herzegovina (BiH)

**16. BiH provides an example of application of the MTDS framework and AT in a subnational context.** The country has a highly decentralized governance structure, with two Entities (the Federation of BiH (FBiH) and the Republika Srpska (RS)) having their own constitutional right to borrow externally and domestically. The approach adopted was a "bottoms up," with the determination of the borrowing strategies at the Entity level dictating the strategy at the State (national) level. The exercise was a success in ensuring improvements not only in the borrowing stance but also in overall debt management practices at the Entity level. In 2015, all Entities published their DMS. By late 2016, RS presented its auction calendar for the upcoming year 2017 to investors, after FBiH already had adopted this practice.

### Nigeria

**17. In Nigeria, the MTDS TA provided support to the DMO analyzing the asset and liability portfolios of the central government.** Nigeria has a fiscal rule in which the fiscal revenue is derived by a predetermined "budget oil price." Under this rule, if the realized oil price is above the budget oil price, the excess revenue arising from the difference between the realized and the budget oil price is saved in a fund. Depending on the chosen budget oil price relative to the outcome, it is possible that funds are accumulated while the government runs a fiscal deficit. The MTDS mission illustrated the usefulness of analyzing the public debt path, accounting for asset accumulation, and how net debt evolved depending on different budget oil price assumptions and the relative interest rates on the assets and liabilities. The analysis generated discussions on the circumstances under which asset accumulation might make sense (despite the cost of carry) and when to reduce the size of the balance sheet.

**Ethiopia**

**18. In Ethiopia, the MTDS AT captured in the analysis debt management issues related to SOEs, which play a critical role in public investments and borrowing.** The central government fiscal framework comprises a small portion of the total public expenditure execution. The MTDS TA demonstrated the usefulness of a broader coverage: vulnerabilities were found to be higher, as the risk profile of the public debt portfolio including the SOEs is significantly worse because of their reliance on commercial debt (compared to the central government borrowing, which comprises mostly of concessional sources). Moreover, vulnerabilities were found to be intensifying because the public debt ratio including SOE debt was found to be on a steeper upward trajectory.

**Tanzania**

**19. The MTDS TA in Tanzania incorporated public-private partnership transactions into the analysis.** The government had accumulated debt-like obligations in deals whereby pension funds would invest and build structures (e.g., hospitals and schools) which are later leased to the government. The government was then to pay a "fixed rental payments" over 15 years, and at the end of the period, the ownership of the building was to be transferred to the government. The "fixed rental payments" effectively comprised interest and principal repayment, similar to a mortgage, but without the upfront recognition of the stock of debt. In turn, the rental payment expenditures would appear under health and education expenditures, which was misleading in terms of the true budget allocation to the sectors. The MTDS assistance demonstrated the benefits of recognizing these obligations as debt and reclassifying the expenditures from hospital and education expenditures to interest payments, and supported the authorities' decision to cease entering into similar deals that lacked transparency.

## D. Country Case Studies

**Kyrgyz Republic**

***Background***

**20. Kyrgyz Republic received two TA missions (2011 and 2016).** Both missions delivered training in cost-risk analysis, applying the MTDS AT, and the latter assisted in updating the DMS. It built on earlier support provided during 2015, including a DeMPA-based diagnostic and a reform plan. In addition to the MTDS TA, the mission provided recommendations on the development of the government securities market.

**21. The update and publication of the DMS was required by the regulatory framework and under the IMF Extended Credit Facility (ECF).** The DMS covering the period of 2015–17 was approved by Cabinet and published. The DMS specifies the debt management objectives and the scope; it also contains guidelines on (i) lengthening the maturity profile of debt, that is, increasing the average time to maturity, and (ii) informing annual financing plans by market consultations.

22. **In the MTDS AT, yield curves (spot and forward) were modeled based on US Treasury yield curves.** To consider credit and exchange rate risk, a credit spread was applied, whereas exchange rate risk was based on expected inflation differentials, which was refined further to allow gradual depreciation in line with the expected forecast from the Ministry of Finance.

23. **The shock scenarios were applied in the second year of the analysis.** For exchange rates, shocks were set at 40 and 20 percent, based on historical developments and discussions with authorities. The external interest rate shock was based on an increase of the US Treasury yields by 200 basis points (bps) for a 1-year maturity and 400 bps for a 10-year maturity. For domestic interest rates the shock spanning 2016 and 2017 was assumed to be a parallel shift of the yield curve by 5 percent, based on historical data for primary interest rates.

***Key Issues and Outcomes***

- The development of DMS has been a positive development, and is providing guidance of borrowing decisions; and
- The narrow investor base was an impediment in developing the domestic government securities market, as well as the limited progress in consolidating the government securities into fewer individual lines.

***Lessons Learned***

- Given that concessional debt have long maturities, currency shocks may have only a mild effect on debt service cash flows, but the effect on the debt size can be more significant;
- A key task of a mission is to assess the potential development of domestic market for government securities, with a focus on the primary market. From a narrow short-term cost perspective, taking into account the continued access to concessional funding, a shift to more market based borrowing may not be attractive at present, but the longer-term benefits may make it worthwhile; and
- The cost-risk analysis may serve to increase awareness of debt portfolio risks and the importance of developing the government securities markets in the medium term.

**Lebanon**

***Background***

24. **Lebanon received TA on several key aspects of debt management.** Initial TAs supported the establishment of a debt management unit in the Ministry of Finance. The TA program consisted

of 4–5 peripatetic visits per year, hiring of local junior consultants, as well as remote assistance. The development and implementation of a DMS has been an integral element of the TA.

**25. The TA helped the authorities formulate a DMS.**[2] In 2013, the Public Debt Directorate (PDD) had developed its first DMS (2014–16), which was formally approved by the High Debt Committee and published.[3] The annual borrowing plan was also presented. The strategy sets qualitative goals informed by internal analysis and covered key developments around debt and borrowing strategy for the coming 5 years (initially 3 years).

**26. The MTDS AT provided the analytical foundation for the DMS.** The initial cost-risk analysis and each subsequent update investigated both extreme and realistic scenarios. Notwithstanding the currency peg, the risks have been analyzed with and without currency shocks. Both simple and more sophisticated approaches have been considered for interest rate projections.

***Key Issues and Outcomes***

- The political context has been challenging for management of the public debt and TA delivery, and the publication of a DMS based on detailed MTDS analysis was a major development;
- Borrowing plans and debt issuance has been in line with the DMS; and
- The TA led to technical achievements at the level of the PDD, such as the creation of an integrated debt management unit, with a centralized back-office of central government debt and new front and middle offices, where capacity was built on MTDS and issuance of domestic securities. Some staff gained expertise in using the MTDS AT.

***Lessons Learned***

- A programmatic approach can be very effective; and
- Solid implementation of the DMS requires strong support at a high level. For this reason, in principle approval for the implementation of the DMS should be sought from decision-makers prior to TA delivery.

[2] At the time writing, a new MTDS for 2017–2021 has been formulated.

[3] Foreign currency borrowing is subject to a ceiling; every year Parliament votes on a new debt ceiling that sets out new foreign currency issuance.

## Uganda

### *Background*

27. **There have been two joint IMF-Bank MTDS missions to Uganda (April 2013 and December 2015).** The 2015 mission specifically targeted to strengthen the capacity of officials and assist in updating the existing DMS.

28. **The legal framework requires annual reporting to Parliament on evaluation of debt management activities against the DMS.** The Ministry of Finance has updated the DMS on an annual basis since its first formulation in 2013. The objectives of the DMS include a requirement for an evaluation of costs and risk trade-offs for all borrowings.

29. **In the 2015 TA mission, the cost-risk analysis concentrated on reducing both cost and risk by maximizing (semi-) concessional financing.** The strategy for 2015–2020, however, anticipated a gradual increase in non-concessional borrowing. The TA mission highlighted that other borrowing strategies that relied less on concessional loans could become unavoidable; these include Eurobond issuance, and more and longer domestic financing.

30. **The exchange rate shocks were standard but the interest rate shock included a tapering effect.** The exchange rate shocks were standard DSA shocks of 15 and 30 percent in the second year of the analysis. For interest rates, it was assumed that the shock materializes in the second year, tapers off in the third, before fading away.

### *Key Issues and Outcomes*

- The authorities are now capable of formulating a comprehensive DMS;
- A DMS was formally approved and published;
- Access to concessional financing was expected to decline as Uganda's per capita income surpassed the concessional eligibility criteria, which prompted the analysis of a Eurobond issuance and created new debt management challenges; and
- The issuance of domestic debt was constrained by the absorption capacity of the local market, particularly its appetite for longer maturities.

### *Lessons Learned*

- Domestic market development issues should be addressed.

## Vietnam

### *Background*

31. **The development of the DMS was part of a programmatic approach to debt management TA in Vietnam.** In January 2014, the WB launched a medium-term TA program with the design and implementation of the DMS being one component of the program, which would be reinforced by other components, such as the revision of process and procedures in the debt management office and the review of the debt management law. TA on MTDS was delivered in 2014 and 2015.

32. **The DMS was formally approved.** In 2012, the Prime Minister formally approved the Public Debt and National External Debt Strategy over 2011–2020 and "Vision toward 2030". The document includes both fiscal policy thresholds and debt management guidelines. The MTDS workshop focused on a six-year analysis, 2015–2020.

### Key Issues and Outcomes

- As Vietnam approaches middle-income country status, concessional and semi-concessional financing could become scarce; and
- The fragmented institutional responsibilities for debt management presented challenges for the formulation and implementation of the DMS.

### *Lessons Learned*

- When relevant, it is important to widen the scope of MTDS missions beyond strict cost-risk analysis to include, for example, domestic market development issues; and
- A current multi-year program can be especially effective.

## Zambia

### *Background*

33. **There have been three MTDS missions to Zambia (2009, 2014 and 2016).** The missions focused on MTDS capacity building for the technical level of the debt management unit.

34. **For the MTDS analysis, the missions analyzed strategies that were defined together with the authorities.** In 2014, the financing strategies that were considered related to more domestic financing, domestic maturity extension, and Eurobond issuance. The strategy analysis in 2016 started with maximum (semi-) concessional financing and considered the issuance of domestic inflation-linked bonds, in addition to addressing the lengthening of the average domestic maturity, Eurobond issuance, and attention to the capacity of the domestic market.

**35. The missions used different parameters for shock scenarios.** In 2014, in line with DSA analysis, the extreme exchange rate shock amounted to a 30 percent depreciation against the US dollar in the second year of projections (and a more moderate shock against the Chinese yuan) and the moderate foreign currency shock amounted to 15 percent versus the US dollar. In the 2016 mission, the extreme and moderate foreign currency shocks of 25 and 50 percent, respectively, were based on the kwacha's history. The interest rate shocks too were derived from historical data.

***Key Issues and Outcomes***

- The Ministry's debt management unit produced its own DMS in 2008 and 2014;
- The missions noted challenges regarding debt recording and reporting, despite investment in an updated debt recording system (DMFAS 6);
- Attention was given in the 2016 report to developing domestic debt markets, such as broadening the investor base, strengthening benchmarks, and developing a secondary market, including the trading platform of the central bank; and
- The lack of progress could be attributed largely to a deterioration in macro-fiscal conditions, which led to the doubling of public debt. The reduction of foreign currency risk was hampered by the absorption capacity of the domestic market, which constrained the issuance of domestic debt in longer maturities or larger amounts.

***Lessons Learned***

- Due attention should be given to debt data collection and preparation prior to MTDS missions;
- The implementation of DMS needs to be addressed in detail;
- Strong early commitment from senior officials can contribute to better implementation of the DMS; and
- A programmatic approach combining different types of training may enhance overall effectiveness. Based on prior MTDS missions and debt management TA, stronger up-front support from the authorities may thereby have been established.