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# FS SERIES #12: DEVELOPING GOVERNMENT BOND MARKETS

PRIMER, DIAGNOSTIC CHECKLIST, AND  
GUIDELINES FOR PREPARING A MODEL SCOPE OF WORK

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The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development, the United States Government, or the Commonwealth Secretariat.

# CONTENTS

- Acronyms ..... i
- Foreword ..... ii
- Introduction ..... iii
- Executive Summary ..... iv
  
- Primer ..... 1
  
- A. Government Securities Markets ..... 2
  - A1. Definition and Function ..... 2
  - A2. Positive Externalities ..... 4
  - A3. Foundations of Sound Market Practices ..... 5
  
- B. Developing a Government Bond Market: Preconditions and Sound Market Practices ..... 6
  - B1. General Preconditions ..... 6
    - B1a. Credibility of the Government as an Issuer of Securities ..... 7
    - B1b. Stable Macroeconomic Conditions ..... 7
    - B1c. Commitment of the Government to Pay Market Interest Rates ..... 8
    - B1d. Appropriate Technical and Regulatory Infrastructure ..... 8
    - B1e. Sound Banking System ..... 9
    - B1f. Critical Mass ..... 9
  - B2. Money Market-Related ..... 9
    - B2a. Functions of the Money Market ..... 10
    - B2b. Repurchase Agreements and Indirect Monetary Policy Tools ..... 10
  - B3. Debt Management-Related ..... 11
    - B3a. Clarity in Objectives Pursued ..... 11
    - B3b. Efficient Institutional Structure ..... 12
    - B3c. Debt Management Strategy ..... 12
  - B4. Other Sound Market Practices ..... 13
    - B4a. Coordination and Independence ..... 13
    - B4b. Centralization ..... 14
    - B4c. Integration ..... 15
  
- C. Developing the Primary Market: Specific Regulations ..... 15
  - C1. Funding Strategy ..... 15
  - C2. Issuance Procedures ..... 17
  - C3. Debt Instruments ..... 18
  - C4. Cash Management Instruments ..... 18
  - C5. Investor Base ..... 18

D. Developing the Secondary Market: Specific Requirements .....	19
D1. Function of the Secondary Market.....	19
D2. Preconditions for Developing the Secondary Market .....	20
D3. Sound Market Practices .....	21
D4. Frequent Market Practice: Primary Dealers.....	22
E. Conclusion.....	23
F. Case Studies.....	23
F1. Developing a Government Securities Market: General Preconditions — Mexico and India .....	23
F1a. Mexico.....	23
F1b. India.....	24
F2. Debt Management-Related Preconditions — Hungary .....	26
F3. Coordination between Monetary Policy and Government Debt Management — India .....	27
F4. Developing the Primary Market — Egypt.....	28
F5. Developing the Secondary Market — Thailand and Brazil.....	29
F5a. Thailand.....	29
F5b. Brazil .....	30
Annexes	
Annex A. Diagnostic Checklist.....	A-1
Annex B. Guidelines for the Preparation of a Model Scope of Work .....	B-1
Annex C. Glossary .....	C-1
Annex D. Bibliography.....	D-1

## ACRONYMS

ABP	Annual Borrowing Plan
AKK	Government Debt Agency (Hungary)
BRH	Banque de la République de Haiti
CB	central bank
C&S	Securities Depository and Clearing and Settlement System
DMS	debt management strategy
DMU	debt management unit
IMF	International Monetary Fund
GDM	government debt manager
GDP	gross domestic product
GS	government securities
GSM	government securities market
MoF	minister of finance
MOFT	Ministry of Finance and Treasury (Republic of Maldives)
MSS	Market Stabilization Scheme
NBH	National Bank of Hungary
PD	primary dealer
RBI	Reserve Bank of India
SMP	sound market practice
T-bill	Treasury bill

## FOREWORD

Repeated debt crises over the last three decades have exposed the risks of excessive reliance on foreign currency borrowings by developing countries. To avoid these risks, there is a strong case for governments to raise long-term resources from the domestic debt market. This is, however, easier said than done. Local debt markets in many developing countries are shallow and provide limited opportunity for the government to raise adequate resources. At the same time, these markets are subject to many market distortions at the initial stages of development, raising the risk and cost of government borrowing.

A deep, liquid, and vibrant government securities market is necessary to allow governments in developing countries to effectively tap domestic debt markets. Building a government bond market is a complex and challenging task requiring concerted effort in macroeconomic policy, debt management, and market-building efforts over several years or even decades. With this in mind, governments must institute a strategic debt management framework that promotes market development, particularly if the country has a large investment gap. A deep and broad debt market will ensure a stable and sustainable source of financing for governments to meet their investment needs while preserving debt sustainability.

This primer is designed to support governments in their efforts to access sustainable funding. It is the outcome of an innovative partnership between the Commonwealth Secretariat and USAID. The Commonwealth Secretariat has a longstanding commitment to assisting countries in accessing and managing the financial resources they need for development. Begun in the early 1980s after the Latin American debt crisis, the Secretariat's flagship debt management program provides the world-renowned Commonwealth Secretariat Debt Recording and Management System to 60 countries. This is supplemented with a structured capacity-building program and advisory policy support on different aspects of debt management, including debt market development.

This primer draws on experience from around the world to provide a practical road map and guidance to developing debt managers and policymakers in creating government bond markets. It is hoped that this successful collaboration between Commonwealth Secretariat and USAID will play an important role as a resource document in debt market development and in supporting countries to secure the sustainable finance to achieve their development goals.

Ransford Smith  
Deputy Secretary General, Commonwealth Secretariat



## INTRODUCTION

USAID’s Bureau for Economic Growth Agriculture and Trade (EGAT) created the Financial Sector Knowledge Sharing Project (FS Share) to collaborate with USAID missions to develop effective and efficient financial-sector programs that increase access to financial services and develop well-functioning markets worldwide. FS Share has a three-year period of performance, July 2008 through July 2011.

Through the FS Share Task Order, USAID EGAT and Chemonics collaborate with missions to identify financial-sector priorities and develop strategies and programs for growing the financial sector. FS Share identifies financial-sector best practices and aggregates them through model scopes of work, primers, diagnostic tools, best-practice case studies, and other tools. These deliverables are disseminated to USAID missions for use in financial-sector programs. FS Share can assist with implementation and connect mission staff to external resources on best practices. In response to mission demand, FS Share also is available to perform case analyses, high-level, targeted, short-term technical assistance, and medium-term (3-5 months) pilot initiatives.

### Objective of This FS Series

The objective of this deliverable is to help United States government economic growth program designers identify reforms to facilitate the development of efficient government securities markets (GSMs) for the primary market in which government securities (GS) are issued and for the secondary market in which GS are traded. It presents case studies based on recent emerging-market country experiences to illustrate how some preconditions and sound market practices (SMPs) have been practically implemented in GS markets. It also contains a diagnostic checklist to help U.S. government program officers make a preliminary determination of whether the fundamental legal, regulatory, market, and government support preconditions are in place for developing a viable and sustainable GSM or enhancing the efficiency of its functioning GSM. In addition, we provide guidelines for the preparation of model scopes of work.

This FS Share paper was developed in collaboration with the Commonwealth Secretariat. It was written by Baudouin Richard and Arindam Roy with the Commonwealth Secretariat and reviewed by FS Share on behalf of Chemonics International.

### FS Share Rapid Response Hotline

For assistance identifying resources to design programs that increase access to credit or using government securities, contact FS Share Project Manager Roberto Toso at 202-955-7488 or [rtoso@chemonics.com](mailto:rtoso@chemonics.com), or Deputy Project Manager Melissa Scudo at 202-775-6976 or [mscudo@chemonics.com](mailto:mscudo@chemonics.com). To access the FS Share task order and EGAT assistance on any mission, financial-sector program, scope of work, or procurement questions, contact:

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## EXECUTIVE SUMMARY

The issuance of GS is the most efficient way for governments to meet their financing needs. It also creates a number of positive externalities that benefit economies as a whole. However, the issuance of GS requires the development of a foundational market in which the securities can be issued.

The development of a GSM is a complex undertaking. It requires meeting a number of preconditions that vary depending on how developed a market is. A GSM typically begins with a government issuing only short-term securities bought by only banks and kept in their portfolios until maturity. Initially, the government's main concern is to obtain the funding it needs. In the second phase of market development, the challenge of the government debt manager (GDM) is to lengthen maturities and lower the cost of the funding. Reaching these goals will, in turn, create new preconditions to meet.

The objective of this primer is to help identify the reforms required to develop an efficient GSM, both for the primary market in which GS are issued and for the secondary market in which GS are traded. This objective is designed to be achieved in three steps. First, the preconditions for a GSM to develop are grouped in three categories, depending on whether they apply to a GSM as a whole, or to the primary or secondary markets specifically. Second, whenever applicable, the analysis of each precondition is complemented by a description of the related SMPs extracted from the experience of more advanced economies. Third, we have included case studies based on recent emerging-market country experiences to illustrate how some preconditions and SMPs have been practically implemented in GSMs.

This primer's introductory section reviews the reasons why the development of domestic government bond markets has become a matter of growing policy interest in developing countries. Section A puts the development of the GSM in context by summarizing the functions, structure, and usefulness of GSMs, and by outlining the foundations of SMPs. Section B makes an inventory of the main preconditions and SMPs for developing a GSM; it subdivides these preconditions into three categories: general, money market-related, and debt management-related. Section B also focuses on three debt management policies that are of fundamental importance in developing a GSM: independence and coordination, centralization, and integration. Sections C and D review the preconditions and SMPs applicable to primary and secondary markets, respectively. Section E contains concluding observations and Section F provides case studies of emerging market experiences.



## PRIMER

The development of domestic government bond markets has become a matter of growing policy interest in developing countries in recent years. Faced with growing budgetary deficits, a number of factors have forced governments to finance their deficit through increased reliance on tapping funds from their GSMs. These factors include the limitations of bank financing, inadequate availability of foreign aid and concessional foreign loans from the official sector (i.e., foreign governments and multilateral institutions), and increasing awareness of the risks associated with borrowing in foreign currencies.

Compared with advanced and emerging market economies, government bond markets in most developing countries are at a nascent stage. Advanced economies already have vibrant government bond markets. Many emerging market economies have made significant progress during the last decade in widening their GSMs and are now focusing on opportunities to deepen the market by enhancing trade liquidity of GS in the secondary market to match prevailing levels in advanced economies. In contrast, most developing countries are still coping with the challenges of transforming their GSMs from a nascent stage into a deep and liquid market. This is also symptomatic of the developmental stage of the larger financial market in such economies.

Benefits of a vibrant GSM go beyond providing a reliable source of financing for a government deficit, and include many other positive externalities. The pursuit of developing countries in building deep and liquid GSMs also stems from the positive spin-offs they have on the development of the financial sector, its efficacy, and its flexibility in terms of monetary policy conduct and resilience to financial stability. Experience of advanced and emerging market economies has shown that well-regulated, predictable, reliable, and liquid GSMs can play a critical role in supporting economic growth, particularly in developing countries, at the macroeconomic and microeconomic levels.<sup>1</sup>

Establishing a GSM is a long and complex process that requires certain key preconditions to be in place. Many issues can inhibit the development of the market, such as economic or political instability; financial repression<sup>2</sup>; low domestic savings rate; paucity of institutional investors; proliferation of government agencies issuing securities causing market fragmentation; unpredictable issuance policy; and absence of the required market infrastructure. Potential obstacles to the development of a GSM depend, therefore, on a country's overall degree and stage of development. Accordingly, to build a deep and liquid bond market, each country must develop its own reform plan suited to its conditions.

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<sup>1</sup> The 2009-2010 global financial crisis, despite its scale, has not resulted so far in a sovereign debt crisis among emerging market economies. It is generally agreed that the improved macroeconomic management and public debt management in these countries over the last decade have played an important role in this favorable outcome. In particular, the improved composition of their public debt portfolios, aided by significant progress in developing their GSM, provided the countries with a significant degree of resilience when the crisis hit.

<sup>2</sup> Financial repression refers to the notion that a set of government regulations, laws, and other non-market restrictions prevent the financial intermediaries of an economy from functioning at their full capacity. The policies that contribute to financial repression include interest rate ceilings, liquidity ratio requirements, high bank reserve requirements, capital controls, restrictions on market entry into the financial sector, credit ceilings or restrictions on directions of credit allocation, and government ownership or domination of banks. Economists have commonly argued that financial repression prevents the efficient allocation of capital and thereby impairs economic growth.

Making an inventory of the preconditions to be met before a GSM can be established is a necessary first step in developing the market. It forces a check on those elements that are missing and focuses the reform program on the right targets in the initial stage. Moreover, because reform measures for achieving preconditions touch a number of macroeconomic areas — especially fiscal, monetary, and financial sector policies — the development strategy must be embedded within the overall plan of macroeconomic reforms. Appropriate sequencing and pacing become more and more relevant, and need to be calibrated as a GSM develops. Because the momentum of these reform measures is usually outside the scope of debt managers’ mandates, they require an inter-agency consultative process to initiate and monitor them.

GDMs can also play a crucial role to put in place appropriate debt management policies that support the development of a GSM. Debt market development and debt management are linked. In mature GSMs, GDMs have gradually developed a set of SMPs that enhance the efficiency of the market.<sup>3</sup> SMPs are not preconditions for the market to function; they maximize the benefits that can be derived from its establishment.<sup>4</sup>

## **A. GSM**

### **A1. Definition and Function**

GSM is the market for tradable securities issued by the central government to cover its borrowing requirements.

Governments have short- and long-term funding needs that arise from gaps in the timing and size of revenues and expenditures. Specifically, they arise when a government’s expenditures are larger than its revenues over a certain period.

Issuing GS in the domestic market is the most efficient funding means for governments. Historically, governments have typically begun to meet their funding needs by borrowing from their central bank (CB), either through direct lending or through issuances of ad hoc securities. Though this is the easiest means of borrowing, it is highly inflationary and effectively finances the budget deficit by printing money. At the same time, many developing countries relied on financing their deficit through foreign aid and concessional loans from foreign governments and multilateral institutions.<sup>5</sup> However, there is limited availability of such official flows to any particular country. At a second stage, governments tend to obtain financing by seeking bank loans from domestic sources or the overseas market. Last, countries typically focused on tapping funds by developing a GSM. In some instances, governments issued foreign currency-denominated bonds in the international market.

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<sup>3</sup> Given that CBs in many developing countries are entrusted with the responsibility of managing the domestic debt of the government, GDMs may include debt management units from both the Ministry of Finance and the CB, depending on the institutional structure of the government debt management.

<sup>4</sup> Although an effort has been made to have two generic and exclusive sets of preconditions and SMPs, some practices may in reality act as preconditions in any particular country (or vice versa), given the country-specific circumstances.

<sup>5</sup> Governments in developing countries often obtain financing by borrowing from international financial organizations (e.g., the International Monetary Fund, the World Bank, or regional development banks) at concessional — or subsidized — interest rates for long-tenor loans.

Sources of external finance from international banks and foreign bonds have drawbacks. Bank loans are expensive, are available only in limited amounts, and are typically short-term. Short maturities raise a roll-over risk, because the government cannot be assured of securing a new loan to repay the outstanding loan when it matures. Short maturities also carry interest rate risk because of the future uncertainty that the new loan will be extended at the prevailing interest rate. The result is a volatile cost of funding with a corresponding risk of burdening the government budget with higher financing expenditures. By contrast, bonds denominated in foreign currency have longer maturities. However, the government can suffer a loss if the exchange rate of borrowed currency against local currency is higher when the bond matures. The same applies for any borrowings denominated in foreign currencies. Borrowings from the international capital market are also fraught with the volatility of capital flows, particularly when the external sector is under stress or when there is uncertainty in global financial markets.

Issuing GS in the domestic market is a more efficient means of borrowing than borrowing from banks or other commercial sources. The amounts are larger, the maturities are longer, the longer-term cost is lower, and the government avoids exposure to currency risks.<sup>6-7</sup> The savings realized through lower funding cost and lower risk associated with local currency bonds releases resources that the government can use for more socially productive purposes. Moreover, with voluntary, wide investor base participation in a GSM, the issuance of GS gives a GDM the flexibility to optimize cost-risk trade-off of the debt portfolio — even under high borrowing requirements by the government.

As part of their market borrowings within the domestic market, governments issue short-term debt instruments, usually Treasury bills (T-bills), and long-term debt instruments with an original maturity of more than one year, usually Treasury bonds or notes. Bonds issued by the government in the domestic market can, in some cases, be denominated in foreign currency.<sup>8</sup> At the same time, local currency bonds can be issued in the domestic market and the foreign market.<sup>9</sup> This primer concentrates on the local currency domestic bond market, because it usually represents a government's main source of financing through market borrowings.

As with any marketable instrument, a GSM has two segments: a primary and a secondary market. The primary market is the market on which GS are issued. It enables a GDM to raise resources for the government in a cost-effective manner with due recognition of their associated market risks. The secondary market is the market on which GS are traded after being issued (i.e., bought, sold, borrowed, or loaned). A GSM's secondary market can be traded by dealers and investors to manage their GS portfolio of assets. It can also be traded by the CB as part of its

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<sup>6</sup> The cost may not be lower in the start-up phase due to high risk premiums related to inflationary expectations, term premium and liquidity premium, and the marketing drive required to launch a new product.

<sup>7</sup> However, borrowings from GSM still entail other portfolio risks (e.g., refinancing risk and interest rate risk) that can be relatively better managed through a prudent debt management strategy.

<sup>8</sup> Many Latin American economies financed the government deficit through the issuance of government bonds denominated in foreign currencies or indexed to foreign currencies, although it is being de-emphasized now as a part of those countries' debt management strategy with a switch to greater local currency issuance to avoid foreign currency exposure.

<sup>9</sup> In recent years, several emerging market countries have successfully issued local currency bonds in the global market.

open market operations for monetary policy purposes, and by a GDM for liability management operations such as bond buy-backs and bond exchanges.

## **A2. Positive Externalities**

In addition to being a sustainable source of government financing, a GSM has positive externalities, including:

- It provides a risk-free benchmark yield curve that other financial markets can use as a reference for pricing financial assets, thereby imparting liquidity to such markets.<sup>10</sup> An efficient GSM must exist if a corporate bond market is to develop. This ensures that savings are allocated to their most productive uses while private investment is enhanced.
- It facilitates the monetary policy “transmission mechanism” through the existence of the yield curve and by acting as a channel of integration of various segments of the financial market.<sup>11</sup> T-bill and bond yields provide an efficient alternative for regulating domestic money and credit conditions than changing bank liquidity and reserve requirements, or issuing directives to banks regarding lending practices, all of which are relatively blunt instruments in a liberalized economy.
- It provides greater flexibility to CBs in the conduct of monetary policy by using market-based instruments such as open market operations, including repurchase agreements (repos).
- It increases overall financial stability. It reduces a financial system’s dependence on the banking sector and contributes to budgetary discipline by exposing the government to financial discipline. For example, in the event of lax fiscal policies, market participants can increase the government’s cost of funding by seeking higher yields (i.e., to lower the price of GS).
- If a wide and deep GSM does not exist to finance the government’s budget deficit, the government might have to raise taxes to generate revenue. In addition to allowing a smooth execution of the budget deficit with no need to resort to cash rationing as a budgetary device, a vibrant GSM contributes to tax stability and, therefore, to overall efficiency of the economy.
- A GSM helps institutionalize the financial infrastructure (i.e., exchanges, depositaries, and clearance and settlement systems) needed for the development of other financial markets. It also facilitates the growth of educated market participants.

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<sup>10</sup> The risk-free yield curve is the basis of the credit curve. Unlike corporations, there is in theory no default risk on securities issued by governments, given their unlimited power to generate tax revenue. As a result, government securities should offer the lowest yield of any fixed income instrument denominated in the same currency. In particular, corporate bonds which vary in their risk characteristics can be priced relative to a standard government bond of the same maturity when they trade in a deep and liquid market (defined in Section D).

<sup>11</sup> Given the crucial linkages the GSM provides between segments of financial markets within an economy, as well as between the domestic financial and foreign financial markets, stability of the GSM is a key policy consideration to ensure overall financial market stability within an economy.

- A GSM provides a riskless and socially useful outlet for the investment of savings. This always applies to institutional investors (e.g., pension funds and insurance companies), and can also apply to retail investors. The issuance of non-tradable savings certificates can be important for private individuals; it can also be an important source of funding for the government, at least until bank savings rates become competitive and/or money market mutual funds arise.<sup>12</sup>

### **A3. Foundations of Strong Market Practices**

SMPs are practices that have been gradually developed by GDMs in mature GSMs to enhance the market efficiency. All SMPs rest on one or more of the five practical observations described below, all of which have been codified based on country experience in mature markets.

*The placement of GS is a market process that cannot be dictated by laws and decrees.* None of the positive externalities of a GSM can materialize if the placement of GS is administratively regulated. As an illustration, a precondition for the development of a risk-free yield curve is that the government should be a price-taker that accepts paying the interest rate set by the market.

*Issuances or early redemption of GS should not be influenced by “insider information” about CB actions on interest rates.* If a government has access to information on future CB actions related to interest rates or monetary measures influencing liquidity, it can time its issuances better or accept certain rates. Such a strategy will hinder market development because investors are, in effect, penalized and will eventually shy away from the market. This is one of the reasons for separating debt management objectives from monetary policy objectives.<sup>13</sup>

*The goal of a GDM is not to “beat the market” — not to minimize the cost of government borrowings by taking a speculative position.* The government finances deals with taxpayers’ money; government debt is the largest financial portfolio in the country and should be managed in a manner that minimizes the risk of losses. Consequences could be dire if a GDM made a wrong speculation by taking a view on the market. Finally, GDM speculation would end up having a higher funding cost — even if it was always right — because investors would charge a risk premium for dealing with a GDM whose speculative strategy is always correct. This explains why, for instance, a GDM’s funding strategy for issuing GS should always be based on a strict risk/return analysis based on market-neutral assumptions.

*A GDM has a vested interest in being looked upon by the market as a credible and trustworthy issuer.* Investors are willing to pay a higher price for GS they feel they can trust. The yield of a security decreases as its price rises, lowering the issuer’s cost of funding. Experience shows that investors are willing to pay a higher price for the securities issued by a GDM whose funding strategy is stable, transparent, and sustainable.

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<sup>12</sup> Retail savings certificates do not have a secondary market because they are non-tradable instruments. Accordingly, this primer does not include such instruments in its discussion of GSM.

<sup>13</sup> Despite the need for independence between the objectives of debt management and monetary policy, for operational reasons, there is a need for significant coordination between debt management and monetary management so neither runs at a cross purpose (because there is also consistency between them).

*The relationship between a GDM and the market is a partnership based on common goals, not a confrontation.* The government is a permanent borrower, and institutional investors are permanent lenders. These counterparts have no choice but to get along with one another based on shared goals. Their relationship must be mutually rewarding. Thus, for instance, a GDM should always consult the market to check that his/her issuance policy meets the market needs.

The Table 1 summarizes items that are reviewed in more detail in later sections.

**Table 1. Debt Management at a Glance: Objectives, Risks, and Tools**

<b>Main Objectives</b>	
Meet the financing needs of the government at the lowest possible cost with the lowest possible risk	
<b>Main Risks</b>	<b>Corresponding Strategies</b>
Foreign exchange rates	Borrow in the local currency
Interest rates	Borrow at a fixed rate
Refinancing rates	Lengthen maturities
Foreign capital volatility	Borrow in the domestic market <sup>14</sup>
<b>Main Tools</b>	<b>Corresponding Strategies</b>
Put investors in competition	Issue by auction
Issue liquid securities	Issue benchmarks
Ensure price transparency	Develop secondary market

## **B. Developing a Government Bond Market: Preconditions and SMPs**

### **B1. General Preconditions**

The general preconditions mentioned in this section apply to a GSM as a whole. They are:

1. The government should be a credible issuer of securities.
2. The prevailing macroeconomic conditions should have at least some degree of stability.
3. The government should be committed to pay market interest rates on its debt.
4. The financial market should be supported by an appropriate technical and regulatory framework.
5. The banking system should be sound.
6. The public debt and the financial market should have a certain minimal critical mass.

The first three preconditions constrain the establishment of a GSM at its starting phase; the last three must be met for a GSM to develop further in a second phase. These two phases correspond roughly to the primary and secondary markets, respectively. Initially, the government's main (if not only) concern is to obtain the needed funding; after this, it can begin focusing on minimizing the funding cost and risks. Minimizing risks requires issuing longer maturities (for the refinancing risk) at a fixed rate (for the interest rate risk), and minimizing cost requires

<sup>14</sup> Even if GS are issued in the domestic market, if non-resident investors are allowed to invest in GS, there will still be risks associated with reversal of capital flows affecting the GS market. This, in turn, leads to policy consideration on the pace and scale of allowing non-resident investment in GS.



increasing the breadth and depth of the secondary market. Both objectives are linked. Investors are willing to buy longer maturities only if they are confident in their ability to sell the securities if they need cash. Investors are also willing to pay a higher price for a security with this advantage. In this case, the cost of funding the government is lowered, because the yield of a security always declines when its price rises.

### **B1a. Credibility of the Government as an Issuer of Securities**

The political environment should be secure and the government should be credible before it issues securities. The legal framework should clarify the authority to borrow and issue new public debt, and to undertake transactions on the government's behalf. Investors and dealers need assurance that the GDM has legal authority to represent the government and that the government will stand behind the transactions into which it has entered. With this assurance, the market will focus on more advanced issues, such as if the law adequately protects investors' rights; if the regulatory environment ensures the safety of securities transactions; if dependable legal procedures for dispute resolution provide for fair treatment; and if the tax system is fair. Initially, however, the investors concerned (i.e., those in practice banks) will be local investors who are already doing business in the country; their main concern will be to ensure that they effectively acquire a claim against the government by virtue of acquiring a GS.

Government credibility also implies that the size of the public debt allows investors to be confident about the government's ability to meet its financial commitments (i.e., to service and to repay its borrowings). Consequently, the market will want to assess whether the government can repay its borrowings without having to make a significant adjustment to fiscal policy. A prudent fiscal policy with appropriate fiscal consolidation measures supported by a "fiscal responsibility act" will then mitigate concerns about debt sustainability. Again, however, such issues are of little relevance in terms of immediate priority at the initial stage of establishing a GSM.

### **B1b. Stable Macroeconomic Conditions**

If inflation is in the double digits and interest rates are high and volatile, investors will at best buy only very short-term securities with maturities no longer than a few weeks. High inflation and high interest rates are indicators of economic and/or political problems. Uncertainty about future macroeconomic conditions — particularly about the course of inflation — will therefore prevent the government from extending the yield curve beyond very short-term securities.<sup>15</sup> However, extension of the yield curve under persistent inflationary conditions may require issuance of inflation-indexed bonds or variable-rate bonds in the initial stage.<sup>16</sup> Though a GSM

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<sup>15</sup> Past experience suggests that investors demand foreign currency-denominated securities in countries where anti-inflationary policies are not credible. Many Latin American countries under hyper-inflationary conditions during the 1980s issued foreign currency-denominated (or indexed) T-bills or bonds in the domestic market.

<sup>16</sup> Faced with double-digit inflation rates, many Latin American countries have switched their issuances from foreign currency-denominated bonds to inflation-indexed or variable-rate securities in the domestic market. However, because the latter are also exposed to inflation rate risk or interest rate risk, in recent years, there has been a conscious strategy to limit exposure to them by switching to a greater amount of long-term fixed-rate debt once the investor appetite for such securities has been established.

can begin with a relatively high inflation rate, to develop, it needs government commitment to contain inflation.

To attract foreign investors, the government usually must commit to maintaining a credible foreign exchange regime. Yet, when yields are very high, some foreigners can be attracted to the domestic market as a currency play rather than a traditional fixed-income investment plan.

GDMs are not responsible for ensuring that preconditions for the macroeconomic environment are met. An inter-agency consultative process is required for establishing the preconditions within the scope of a plan for overall macroeconomic reforms.

### **B1c. Commitment of the Government to Pay Market Interest Rates**

The market cannot develop if the government enacts regulations to create a captive investor base by compelling some institutions to buy GS (i.e., by obliging banks to invest in GS a certain percentage of their deposits), thereby enabling the government to issue at artificially low rates. Similarly, the market cannot develop if the government issues smaller amounts than announced or altogether cancels a scheduled auction because of its subjective perception that asked yields are too high. The level of the yields applicable to GS and other financial assets should be market-determined, not administratively set. The government should be committed to developing the market, financing itself through the market (not through captive investors), accepting market rates, and not canceling auctions.

Experience has shown that interventions are effective and reforms are best-enacted in countries where commitment begins with top leadership and is conveyed to the ministerial level, particularly when key ministers are enlisted as partners to champion and implement reforms (Moody, 2009).

### **B1d. Appropriate Technical and Regulatory Infrastructure**

In its initial phase, a GSM is merely a primary market. As a result, establishing the market basically requires only designing rules for auctioning securities and putting in place an elementary technical organization (e.g., a registry to give a legal title to GS holdings, a central depository for the custody of GS, and a clearing and settlement system aside a cash payment system so that GS can be transferred). At inception, few transactions will be done in the GSM, and they will all be dealt with by banks that are assumed to be sophisticated investors. Thus, there is no need for a sophisticated, high-capacity technical infrastructure (e.g., delivery versus payment system) or detailed regulations protecting non-bank participants.<sup>17</sup>

As the number of transactions increases and the number of market participants diversifies, a more efficient system for the registration, custody, clearance, settlement of, and payment for GS must be put in place to ensure further development of the market. The systems used to settle and clear financial market transactions must be cost-efficient and easy to use. They should offer delivery versus payment, and final registration of ownership. They will need to have a clear legal basis, be subject to regulatory oversight, and have the capacity to process required trading

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<sup>17</sup> For example, rules for disclosure, protection against fraud and/or insider information.

volumes within the chosen settlement cycle. Ideally, the settlement cycle should not exceed three days.<sup>18</sup> However, such issues are relatively less relevant at the initial stage.

### **B1e. Sound Banking System**

A large and heterogeneous investor base with different risk preferences, investment maturity horizons, and trading motives ensures a strong and stable demand for government debt securities in a range of market conditions.<sup>19</sup> It also gives more depth and liquidity to the GSM. (See Section D for more details.) This is, however, not a precondition for a GSM at inception. At the initial phase, only banks participate; yet, at minimum, the country should have a sound banking system that provides adequate appetite to invest in GS.

Subsequently, contractual savings vehicles such as pension funds, insurance companies, and mutual funds will provide a natural market for medium- and longer-term government debt. Efforts should be made to ensure equity of investor treatment, and measures should be taken to ensure the competition of collective investment managers by introducing accounting norms and market valuation of assets.

### **B1f. Critical Mass**

Ultimately, the liquidity of the secondary market cannot develop if the seller of a GS cannot readily find an investor interested in acquiring it. This requires that the GDM be in a position to issue relatively large series of bonds to a relatively large number of investors. Without a critical mass of debt and/or participants, the market will inevitably lack liquidity. Investors will not be able to undertake transactions without moving prices against themselves.

In addition, the market and the amount of its public debt should be large enough to support development of the required technical infrastructure. If the amount of the debt is too small, the government can, at best, issue only T-bills. If critical mass is absent, better options might include private placements of securities, development of retail markets, or regional solutions (IMF/World Bank, 2001a). But these will depend on the availability of alternative financing channels.

## **B2. Money Market-Related**

A well-functioning government bond market requires the support of an active money market (see next section) in order to grow beyond the starting phase in which a GSM is only a primary market for short-dated securities. SMPs have strengthened the money market by promoting the use of repurchase agreements and indirect monetary policy tools.

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<sup>18</sup> The longer the settlement cycle, the bigger the risk that something will go wrong.

<sup>19</sup> The Asian Development Bank conducted a market survey in 2009 among market makers from ASEAN+3 countries to inquire about the importance of specific initiatives that could raise liquidity in local currency bond markets. A greater diversity of investors and traders ranked first, well ahead of tax incentives and improvements in market access, price transparency and clearing & settlement.

## **B2a. Functions of the Money Market**

The money market is where banks, discount houses, and money dealers borrow and lend funds to one another to manage short-term liquidity positions. The money market also trades liquid, short-term financial instruments (such as Certificates of Deposits or short-term commercial paper), including government bills and bonds with a remaining life to maturity of less than one year. Trades are done for short periods, up to one year. In practice, the maturities most often traded are up to 90 days.

An active money market strengthens the government bond market in three respects. First, it anchors the bond yield curve. A yield curve develops by gradually extending maturities, starting from the short maturities of T-bills. The government can consider issuing longer maturities only after confidence has built in the short end. Second, an active money market increases the liquidity of GS, enabling investors and financial intermediaries to hold larger portfolios of GS by making it easier for them to cover their short-term liquidity needs. It also makes it safer and more cost-efficient for market-makers to warehouse securities for on-sale to customers. Third, an active money market reduces the volatility of short-term rates as it reduces the liquidity risk. This further increases investors' ability to hold larger portfolios of term debt. An additional advantage of the money market is that it leads to increased competition among financial intermediaries.

The money market should be competitive and efficient. Market conventions on pricing formulas and settlement procedures should be clearly defined. Information on market activity and money-market indices should be publicly disclosed. Taxation of money-market transactions should be neutral.

## **B2b. Repurchase Agreements and Indirect Monetary Policy Tools**

A repurchase agreement (repo) is a two-legged trade: It is the sale of the security and the simultaneous commitment to buy it back at a certain price on a certain date. By combining these two trades, the seller of the security has effectively borrowed cash from the buyer, and the buyer is protected against the risk that the seller might not repay the funds at maturity because the buyer holds the securities as collateral (i.e., the risk of default by the seller). The interest rate payable on repos is lower than stand-alone borrowing, due to the protection provided by repos to the lender against the credit risk on the borrower. As a result, repos contribute to the liquidity of a GSM by making it less expensive for financial intermediaries to fund their trading portfolio.

Dealers can also use repos as an instrument to borrow securities instead of cash. In a repo agreement, the party who sells a security and simultaneously commits to buy it back (i.e., lending a security and borrowing cash) has, by definition, a counterpart who buys the same security while committing to sell it back (i.e., borrowing the security and lending cash). This is called a "reverse repo." Reverse repos also increase the liquidity of a GSM, because the transferred collateralized bonds can be used by market-makers to cover short positions incurred in the framework of their trading activity.

In a mature GSM — and an increasing number of emerging markets — the CB uses repos for its open-market operations and standing facilities. These repos make GS more attractive to banks by reinforcing their potential use as liquidity management instruments. They also support the

development of the market infrastructure required for the development of the interbank repo market. Moreover, an increasing number of GDM are supporting the market-making activity of their primary dealers (PDs) by putting in place a “securities lending facility.” In this framework, they lend securities to their PDs on a repo basis.

### **B3. Debt Management-Related**

Investors should be confident in the quality, safety, and integrity of management of the public debt. The government should establish an appropriate institutional and regulatory environment that supports investor confidence. There are three requirements to achieve this: clarity in the objectives pursued by the government in issuing and managing debt; an efficient institutional structure; and a well-designed debt management strategy.

#### **B3a. Clarity in Objectives Pursued**

*Precondition: transparency.* The government should explain how it plans to manage its fiscal obligations and borrowing risks. Transparency in public debt management provides two main benefits. First, the effectiveness of debt management is strengthened if the public knows the goals and instruments of policy, and if the authorities can make a credible commitment on meeting them. Second, transparency enhances good governance through greater accountability of public institutions involved in public debt management.

Information on the amount and composition of the debt, as well as on the government’s overall financial position, should be published regularly. Materially important aspects of debt management (e.g., objectives, financing requirements, and strategy and procedures for participating in government auctions and their results) should also be publicly disclosed. Debt management activities should be audited annually by external auditors who provide reports on the financial integrity of central government accounts procedures for systems and control procedures. The external auditors are generally state auditors, though in some countries (such as France), well-known private audit firms also conduct audits.

*SMP: explicit debt management objectives.* Explicitly formulated objectives are useful to clarify what the GDM seeks to ultimately achieve. They are also a prerequisite to formulate a debt management strategy and subsequently evaluate its implementation.

Government debt management usually has two objectives: to ensure the government’s borrowing needs and debt-servicing obligations are met, and to manage the public debt portfolio according to the government’s cost and risk objectives. Developing the domestic debt market is often another objective.

Ideally, parliament should define debt management objectives. Including debt management objectives in legislation strengthens institutional arrangements for it. This also supports the requirement to publish information on public debt and the government debt management strategy on a timely basis.

### **B3b. Efficient Institutional Structure**

*Precondition: clear roles, responsibilities, and delegations.* Sound debt management requires an institutional structure that provides well-defined roles, responsibilities, and delegations for the institutions involved in public debt management. It also requires an unobstructed flow of information and reporting lines, monitoring and control policies, and documentation of procedures. This should be supported by a clear legal framework.

Efficient management of operational risk is required from the GDM in the same way it is required from financial institutions. Attaining international standards on debt recording and registry operations is essential for ensuring safe and secure transactions in the primary and secondary GS markets. This requires that debt management activities be supported by accurate and comprehensive management information systems with proper safeguards for access, back-up, and disaster recovery.

Government debt management requires staff with a combination of financial market skills (e.g., portfolio management, risk analysis, and market transactions) and public-policy skills.<sup>20</sup>

*SMP: debt management unit (DMU).* The consensus today is that debt management objectives are best achieved in the framework of an organization that centralizes debt management activities in one entity with the same organization structure as banks and other financial institutions (i.e., a front office for transactions negotiation and execution, a middle office for risk analysis and strategy formulation, and a back office for transactions validation and settlement). This entity is a DMU. From an operational risk-control perspective, it is important to separate back-office functions from front-office activities. Proper audit procedures and an internal risk-control function are also essential components of a DMU.

### **B3c. Debt Management Strategy**

The objective of a debt management strategy (DMS) is to determine the composition of the debt portfolio that will best achieve the objectives assigned to the government issuing debt. When developing a DMS, it is important to clarify what priority risk-reduction should have over cost savings.

*Precondition: guidelines.* The public debt should be managed within the framework of at least some intuitively developed general guidelines that are qualitative formulations of policy choices. Such general guidelines help increase the share of domestic debt, issue more fixed-rate debt, and lengthen maturities (Commonwealth Secretariat, 2010). Increasing the share of domestic debt avoids the foreign exchange risk; it generally decreases the refinancing risk, and contributes to the development of the local market. Issuing more fixed-rate debt and lengthening maturities decreases the interest-rate risk and the refinancing risk.

*SMP: cost and risk analysis.* A framework should be developed to enable GDMs debt managers to identify and manage tradeoffs between expected cost and risk in a government debt portfolio.

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<sup>20</sup> This can be a challenge when there is a high demand for such staff in the private sector and large salary differentials exist between the public and private sectors.

A public DMS should be based on a thorough analysis of risks, including stress tests of the debt portfolio based on the economic and financial shocks to which the country could be exposed.

Avoiding debt default should be given maximum priority in light of the magnitude of the corresponding potential output losses and human cost associated with a debt crisis. In part, financial crises and sovereign defaults have often been triggered and/or aggravated because governments have focused on expected cost savings leading to risky debt structures, leaving budgets vulnerable to changing market conditions.<sup>21</sup>

Another SMP developed relative to DMS is the Annual Borrowing Plan (ABP), which outlines how the selected DMS will be implemented over the next budgetary period. ABP is a borrowing plan and a cash-management program; it develops the funding strategy by modulating the mix of future borrowings. In the process, it focuses on the management of cash flows. ABP has a direct linkage with issuance procedures in the primary market. It helps ensure the stability and predictability of the issuance calendar. ABP and its implementation may require an even closer interaction with the CB than designing the DMS does (Commonwealth Secretariat, 2010).

#### **B4. Other SMPs**

##### **B4a. Coordination and Independence**

Debt management should be conducted independently from monetary and fiscal policy. However, it should be coordinated with these policies.

*Debt management and monetary policy.* It is generally agreed that, where the level of financial development allows, there should be a separation of debt management and monetary policy objectives and accountabilities (IMF/World Bank, 2001b). The objective is to minimize conflict between policies pursuing different objectives.

Debt management and monetary policy should be carried out independently. The main objective of debt management is to ensure that the government's funding needs are met. The main objective of monetary policy is to ensure that prices are stable. In practice, a CB may have to raise interest rates to control the money supply because of inflation when the GDM is trying to raise funds in the market at as little cost as possible. The function of monetary policy is not to serve the needs of debt management, and vice versa. Similarly, a debt cost-minimization objective, subject to a prudent level of risk, cannot be construed as a mandate to influence domestic monetary conditions to reduce interest rates, nor can it be viewed as justifying the CB's extension of a low-cost credit to the government. The corresponding monetization of the budget deficit would be inflationary.

Yet, debt management and monetary policies should be implemented in a manner that keeps both parties informed. The CB requires accurate cash forecasts to offset the government's daily cash deficits and surpluses, and to efficiently manage liquidity levels in the banking system. The government should keep the CB informed of operations that can affect the size of the money

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<sup>21</sup> For example, by issuing large amounts of short-term debt or debt in foreign currency because it appears to be less expensive.

supply. This includes the forecasted amount of the balance in its account with the CB. The CB and the DMU also need to coordinate their activities in the financial market as a whole so they do not operate at cross purposes. This includes having separate dates for GS auctions and open-market operations.

SMP calls for the CB to enhance the liquidity of a GSM by using indirect monetary policy tools. When monetary operations are carried out using government debt instruments and markets, the GDM and the CB need to further coordinate on a range of policy issues, because the instruments used and the operating procedures implemented can affect the functioning of the GSM.

*Debt management and fiscal policy.* Debt management and fiscal policy should also be conducted independently. The global DMS to be implemented over the medium term should be set or approved by the minister of finance (MoF). However, fiscal policymakers should not attempt to reduce debt servicing costs in the short term without considering risks and longer-term costs (i.e., through the use of excessive short-term debt or zero-coupon instruments). Thus, there should be no political pressure on the choice of a borrowing strategy as long as debt management is kept within the framework of the approved medium-term DMS.

Though they should be conducted independently, debt management and fiscal policy should be coordinated. There are two reasons. First, though the size of the public debt is a fiscal responsibility, debt management should take into account the government's degree of risk tolerance, which is itself a function of the size of the debt. The larger the debt is, the lower the government's degree of risk tolerance should be. Second, debt managers require reliable fiscal forecasts (e.g., primary budget deficits, tax revenues, and government expenditures) to adequately plan financing activities. Accurate cash forecasting contributes to efficient debt management by fostering a robust ABP that integrates debt management with cash management on the primary market, and with liability management operations on the secondary market. The government requires assurance that there is sufficient cash to meet debt obligations as they fall due. Attempting to meet this basic requirement when cash management practices are inadequate can result in over-funding, with the cost of idle balances resulting in negative fiscal consequences. Effective cash forecasting also assists in the implementation of monetary policy. SMPs require that the cash flow forecast for the government be made available via daily forecasts for at least the following two weeks. Then weekly forecasts should be made available for the next three months, followed by monthly forecasts of the government cash flows for the next twelve months. At minimum, there should be weekly meetings between the debt manager and the staff responsible for making fiscal forecasts to plan borrowing in advance.<sup>22</sup>

#### **B4b. Centralization**

*Centralization of debt issuance.* Allowing different government agencies to issue debt causes a market fragmentation that raises the cost of funding of the public sector. In addition, competition between public issuers should be avoided. Autonomous borrowings by sub-national authorities should not be allowed until the central government has been able to establish itself as a frequent issuer in the primary market. State-owned enterprises should, at minimum, submit a calendar of operations to the government. This will minimize the risk of conflict.

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<sup>22</sup> These forecasts should also be shared with the CB.



CBs are effectively competing with the government when they are allowed to issue their own securities for monetary policy purposes (usually Certificates of Deposits). To avoid this, the CB should carry out its open-market operations using GS whenever possible.

*Centralization of debt management.* Because the risks created by borrowing can add up or net out, they should be analyzed globally. To that effect, the entire public debt — domestic and external, short- and long-term — should be managed by the same authority. Consolidating the debt management functions allows for a comprehensive financial risk analysis of the aggregate debt portfolio, which feeds into the eventual design of an integrated strategy.

Consolidating debt management functions into one operating unit further improves debt management and data exchange by helping to avoid duplication of functions, strengthen accountability, and reduce the need for coordination. It is possible, however, to contract some operations while retaining overall responsibility for their integrity and quality. For example, auction management may be contracted to the CB. In these circumstances, agency agreements with clear performance measurement criteria should be employed.

#### **B4c. Integration**

The objective of cash management is to bridge short-term gaps in the timing and amount of government revenues and expenditures.<sup>23</sup> Temporary cash deficits must be financed and temporary cash surpluses must be invested to obtain remuneration for the funds concerned.

Efficient cash management improves the predictability and transparency of debt management. It facilitates the publication of reliable issuance calendars, enhances the stability of debt issuance, and promotes benchmark development. In addition, the market counterparts of the debt manager are generally the same for its debt and cash management activities. The management of short-term surpluses and deficits in a government's daily cash position should be integrated in debt management.

The liquidity position of a government should be centralized in a treasury single account to ensure the netting of cash-flow deficits and surpluses. Ideally, the debt manager should be allowed to become an active participant in the domestic money market, just as a commercial bank, in order to have maximum flexibility for managing the government short-term cash flows.

### **C. Developing the Primary Market: Specific Regulations**

The primary market is the market in which GS are issued. Specific requirements for the development of the GS primary market apply with respect to the funding strategy, the issuance procedures, the debt instruments, the cash management instruments, and investor base.

#### **C1. Funding Strategy**

*Precondition: market-based mechanisms.* The funding strategy should use market-based mechanisms such as auctions, syndications, taps, private placement, or retail issuance. For a

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<sup>23</sup> The net of which makes the “liquidity position” or “cash position” of the government.

GSM to achieve its function of pricing reference for other financial assets, the government must be a price-taker and accept market clearing rates. Unless there is evidence of collusion between market participants to artificially raise yields, an offer of securities should not be canceled based on the GDM's perception that the cost of funding is too high.

Funding the debt at artificially low rates by having recourse to captive investors should be avoided because it does not create overall net savings for the public sector balance sheet when the captive investor belongs to the public sector. It results in an inefficient allocation of resources and affects the integrity of the financial sector, and may end up in future re-capitalization of banks' balance sheets by the government. A sound balance sheet for banks and financial institutions requires that securities be purchased at market-determined prices, not at captive customer prices. A GSM will not grow in a sustainable manner unless debt is issued, and can be resold, at market prices.

*SMPs.* Five SMPs have developed to support the effectiveness of the activity of the GDM on the primary market.

1. *Auctions should be the favored issuance mechanism.* In general, the choice of the distribution channel is largely a function of the public debt. As an illustration, bonds are usually placed using syndications in the external market. Retail debt is usually placed by subscriptions. In the domestic wholesale market, however, auctions generally derive the best possible result for the government because they maximize competition among investors.<sup>24</sup>
2. *Issuance policy should be predictable, stable, market-friendly, benchmark-oriented, and transparent.* A published and reliable issuance calendar is critical to support the primary market. Investors are more likely to commit resources to primary issuances if they can plan their purchases well in advance. A predictable issuance calendar also has a favorable impact on the secondary market. Owners of GS are more prone to lend those securities out or sell them forward if they have clear, reliable knowledge of the issuance volumes and maturity structures in advance.
3. *The issuance of benchmark securities should be promoted.* Benchmark securities enhance market liquidity. Strengthening benchmarks reinforces the pricing information externality that results from a well-functioning GSM. In practice, a lack of benchmark securities is a key impediment to the development of a GSM in many low- and middle-income countries. In most developing markets, every issue is a new series. The corresponding multiplication of series of small-volume bonds results in low liquidity for all outstanding issuances. GS must be consolidated into a few benchmark issues to enhance the liquidity of the debt markets.
4. *The yield curve should be extended.* Constructing a long-term yield curve in a GSM should be one of the main objectives of a GDM. Adequate maintenance of the GS yield curve is so important for the other fixed-income markets — the corporate bond market in

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<sup>24</sup> In the initial phase, the issuance policy may also include the tap issuance method, because market players may not be sophisticated enough to place bids in the auctions.

particular — that some governments have continued to issue GS despite not needing funding.<sup>25</sup> The sole objective of this strategy is to continue to provide the market with an updated risk-free yield curve.

5. *Allocation limits.* Limiting the maximum amount of securities that can be allocated to any single successful bidder favors a balanced distribution of the issue's proceeds. In turn, this enhances the liquidity of the secondary market. The issuer's short-term loss caused by not taking full advantage of an attractive bid will be more than compensated by the firmer prices bid at later auctions (as a result of the higher liquidity of the relevant securities). Allocated limits also prevent monopolistic holdings in securities, thereby limiting possibilities of market manipulation such as a short squeeze (i.e., when a lack of supply and an excess demand for a security forces the price upward). A GDM should consider imposing an allocation limit only when the market is developed enough so that increasing the liquidity of the secondary market is a relevant objective or when there are few players in the market.

## C2. Issuance Procedures

*Precondition: The debt auction methodology should be efficient, secure and transparent.*

Auctions can be structured in different ways. The most common types are the multiple price auction or uniform price auction, and the open or closed auction; each has advantages and drawbacks. Regardless, if auctions are held too frequently, it will inhibit the development of the secondary market. One option with regard to institutional arrangement is to subcontract conducting the auction to the CB, which would be acting as an agent of the government. However, the government should decide the amount and price (i.e., yield) of the securities issued — the CB should not play the role of issuer and operate at arm's length.

*SMPs.* Two SMPs have developed to enhance the effectiveness of auction procedures.

1. *Balanced placement and fast release of results.* The issuance procedure should ensure that the auctioned securities are allocated to a diversified investor base and that the results of the auction are released promptly. A balanced allocation to a diversified investor base enhances the liquidity of the secondary market, and a prompt release of auction results allows investors to submit more aggressive bids.<sup>26</sup> Other factors can enhance the success of auctions, including the timely release of information about the government's finances and funding plan, and the rapid availability of title to securities post-auction. Liquid money and secondary bond markets also enhance the success of auctions. By reducing the liquidity risk of holding term debt, or debt paid in lump sum at the time of maturity, these markets assist investors in maximizing their participation
2. *Electronic auction systems.* An auction is classified as electronic when participants can input their bids directly (using a dedicated telephone line or the Internet) into the software

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<sup>25</sup> Such as Denmark in the early 2000s. The CB (which manages public debt in Denmark) created a funding need artificially by buying back bonds in the secondary market.

<sup>26</sup> Investors are committed by the bids they have submitted. Yet, market conditions may change in between the time bids are submitted and the time the auction is announced. The longer the time difference, the bigger the risk becomes. As a result, investors bid lower prices at auctions (as a safety cushion), when auction results are not released quickly.

that processes the auction in the MoF or CB. This means the issuer does not have to input the bids in the system, and allows faster auction processing and release of results. It also reduces the risk of human error.<sup>27</sup>

### **C3. Debt Instruments**

There are four SMPs for choosing debt instruments:

1. *Standardization.* Debt instruments should be standard, straightforward, dematerialized, fungible, and preferably tax neutral. Experience has shown that these features maximize the liquidity of the secondary market.
2. *Fungibility.* Issuance of fungible securities, with the corresponding possibility of re-opening previously issued series, is a technical requirement for creating benchmark bonds. Fungibility enables a gradual increase in the amount outstanding of a bill or bond series that can be placed in the market (in the framework of one single auction).
3. *Priority to fixed-rate instruments.* The issuance of fixed-rate debt instruments minimizes the interest-rate risk in the debt portfolio.
4. *Flexibility.* Debt instruments should be adapted to investors' preferences and the desired structure of the debt portfolio. For example, the issuance of floating-rate bonds and inflation-linked bonds ensures lengthened maturities in the debt portfolio while simultaneously catering to the portfolio needs of a specific investor class. However, there may be a trade-off with respect to low liquidity for such types of securities.

### **C4. Cash Management Instruments**

Cash management instruments should be as diversified as possible. The primary instruments are short-term borrowings and lending in the interbank market, repurchase agreements, short-term paper programs, and cash management T-bills.<sup>28</sup> Efficient management of a government's short-term cash deficits and surpluses supports the issuance of stable amounts and the creation of benchmarks.

### **C5. Investor Base**

*Precondition.* A large and heterogeneous investor base is a precondition for establishing a fully developed GSM.

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<sup>27</sup> When the auctioning process is sufficiently developed and the investor base is diversified, a “when issued” market can further enhance efficiency in the primary market. A “when issued” market has two main advantages. First, it facilitates the distribution process for GS by stretching the actual distribution period for each issue and allowing the market more time to absorb large issues without disruption. Second, it facilitates the price discovery process by reducing uncertainties surrounding auctions by aggregating diverse information of participants in the market.

<sup>28</sup> Under a surplus cash position, buy-back of securities maturing in that year can also be used as a cash management instrument.

*SMP*. Foreign investors should not be admitted prematurely. Governments are sometimes tempted to attract foreign investors to circumvent the constraints created by small market size. However, a premature relaxation of restrictions on capital account transactions may expose the economy to volatile capital flows before the extensive preconditions for beneficial capital account liberalization are in place (Eichengreen, 2008). Sudden or large-scale reversals in capital flows can result in significant volatility in a GS market when secondary markets are shallow and illiquid (Arvai, 2008). This applies especially to T-bills, because the volatility at the short end of the yield curve can generate overall volatility across the maturities spectrum and the financial market in general.

## **D. Developing the Secondary Market: Specific Requirements**

A well-functioning secondary market is a vital prerequisite for the full development of an efficient GSM. Trading in the secondary market provides the reference prices for GS, which in turn determine the current cost of government borrowing. Investors are willing to pay a premium for securities with transparent prices and securities that can be easily bought and sold.

Developing the secondary market is generally challenging, particularly in developing countries. At the early stages of market development, investors tend to be “buy-and-hold,” meaning they keep the bonds on their books until maturity. Investors tend to do this when some preconditions for developing the secondary market are absent, particularly price transparency.<sup>29</sup>

The development of an efficient secondary market in GS is usually fairly country-specific. Modifications of SMPs to fit countries’ needs are therefore expected.

### **D1. Function of the Secondary Market**

The secondary market is the market in which securities are bought and sold after they have been issued. Its function is to provide a cost-efficient and secure platform enabling market participants to buy and sell GS in a fair and transparent manner. In a “liquid” secondary market, GS can be traded fast, at a low cost (i.e., at a narrow spread between bid and offer prices), in large amounts, and with no significant impact on market price (Bank for International Settlements, 2007).<sup>30</sup> A liquid secondary market offers at least four benefits to the issuer.

1. *Lower debt servicing costs*. Investors are willing to pay higher prices (i.e., accept lower yields) to acquire liquid securities.
2. *Longer maturities*. Market financing of government deficits usually begins with the issuance of short-term government bills. As the secondary market develops, liquidity increases and investors gain the confidence needed to invest in longer-term GS.

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<sup>29</sup> Some investor classes such as banks may, because of accounting policies, adopt a buy-and-hold strategy as part of the prudential requirements for the banking system.

<sup>30</sup> The corresponding common features of liquid markets are depth, tightness, and resilience. Depth indicates the market’s ability to absorb large transaction volumes without disturbing the equilibrium price; tightness measures the cost efficiency in transacting; and resilience indicates the market’s ability to absorb a shock and return to normal prices. Based on these characteristics, liquid markets are usually characterized by large turnover, low bid-ask spreads, and limited day-to-day price volatility.

Lengthening the maturity of the government debt stock reduces the frequency of issuance, thereby reducing the roll-over risk, and the interest-rate risk, which assists in the budget-planning process.

3. *Enhanced fiscal discipline.* The market can signal its views on government policies by adjusting the price level of GS. This is often an early warning of trouble, when a government persists in following a suboptimal indebtedness policy or other macroeconomic policies that have a bearing on management of public debt.
4. *Reduced cost of infrastructure.* Greater market depth and corresponding higher trading turnover help bring about economies of scale that reduce the cost of market operations (e.g., clearing, settlement, book entry, and registry functions).

## **D2. Preconditions for Developing the Secondary Market**

Four main preconditions must be met to develop a liquid secondary market of GS.

1. *Regulatory framework.* The secondary market should be supported by effective regulations through a securities regulatory authority. The required rules relate to market participants, market conduct, transparency requirements, and clearing and settlement procedures. They should reduce informational asymmetries and ensure a more level playing field within each class of market participant (Arvai, 2008).
2. *Diversified investor base.* GS should be held by a large number of investors. This is one of the key factors to enhance market liquidity. The more investors are holding a series of securities, the easier it is for a buyer to quickly find a seller fast, and vice versa.
3. *Limited number of large-series securities.* A large amount of securities outstanding in any series contributes to market liquidity and price transparency. A large size is one of the principal features of a benchmark security.
4. *Price transparency.* It should be easy to determine the price of a security. Assets with values too complex to assess trade less and trade slowly since buyers and sellers are wary of making a mistake.

In most emerging markets, trading of government bonds develops around an organized exchange. An exchange is a market organized by members who agree to be bound by certain rules and regulations to facilitate price discovery, and to trade in a fair and open way. In many emerging markets, however, trades are negotiated over the phone before the price is reported to the exchange for posting. By contrast, in mature markets, exchanges play an insignificant role for GS, and most of the trading activity takes place in the “over-the-counter” market (i.e., the market in which participants deal directly with one another on the telephone or using commercial trading systems). The main players in mature, secondary markets are large institutional investors for which over-the-counter trading is faster, more flexible, and more cost-efficient than trading on an organized exchange.

### D3. SMPs

There are five main SMPs to increase the efficiency of the secondary market.

1. *Bond exchanges and bond buy-backs.* The issuance of a large quantity of securities to increase their outstanding amount creates a large funding need on their maturity date. An outstanding borrowing is usually repaid with proceeds from a new borrowing. Consequently, the GDM is exposed to refinancing risk — the risk of not being able to borrow funds to repay securities that are maturing or to do so at a reasonable cost.

The refinancing risk can be lowered by reducing the outstanding amount of a bond issue ahead of its maturity date, spreading the risk over time. There are two instruments that can do this: bond exchanges and bond buy-backs. In exchanges, investors are given the option to exchange a bond that is approaching maturity for a bond with a longer maturity. In buy-backs, the debt manager offers to buy back a bond before its maturity date, and the corresponding borrowing requirement is refinanced longer-term. Such operations provide an outlet for investors to off-load holdings of securities. This, in turn, enhances liquidity for such securities, especially when such liability management operations are undertaken on a regular basis.

At the same time, for illiquid securities, which are typically legacy issues, buy-backs or exchanges can result in the creation of new, liquid securities. Securities exchanges and buy-backs are therefore both risk management and liquidity-enhancement tools.

2. *Market makers.* Price transparency increases market liquidity. A security's price is transparent when it is frequently traded; its last traded price is a reliable reference to assess its market value. However, there is seldom a continuous flow of buyers and sellers with matching interests.

Some financial intermediaries have made it their business to act as market-makers (i.e., to continuously post bid-and-offer prices at which they are willing to trade). A market-maker can sell securities any time because s/he holds a certain amount of securities in inventory and/or is confident that s/he can buy the security in the market to cover its short position, if any. A market-maker can also buy a security any time s/he is confident about being able to sell it back in the market. The intermediation of market-makers is remunerated by the margin between their bid-and-offer prices. Market-making is an important duty of PDs when they are appointed by the public debt manager. A market-maker system is a quote-driven system.

3. *Call market.* A call market is an alternative to market-making. It is established when buyers and sellers agree to bring their orders to the same place (typically a stock exchange) at the same time. The goal is to maximize the probability that the parties will find a matching interest. This procedure is useful when the market does not have the depth for market-makers to work without excessive risks. However, trading is possible only at certain times, which means there is no trading immediacy. A call market is an order-driven system.

4. *Trading systems.* Trading systems are to the secondary market what electronic auctions are to the primary market. Business is not conducted by telephone. Instead, market-makers have displays showing the trading terms (i.e., purchase or sale, price, and quantity) they are willing to enter into. If a customer agrees to these terms, s/he clicks on the display, which closes the deal. The main advantages of trading systems are increased transparency and lower transaction costs.
5. *Derivatives.* Introduction of fixed-rate derivative instruments and markets (e.g., interest rate swaps, forwards, and futures) also promotes liquidity in the GS market by achieving greater linkages between the bond, currency, and derivatives markets. However, regulation and supervision of the derivatives market present big challenges.

#### **D4. Frequent Market Practice: Primary Dealers**

PDs are financial intermediaries appointed by the MoF to perform specialized roles in the GSM.<sup>31</sup> Generally, in exchange for specific privileges, PDs agree to fulfill certain obligations or functions in the operation of markets for GS. The corresponding institutional arrangement between PDs and the debt manager is called a PD system.

In practice, PDs are usually assigned six different duties: to submit bids at auctions, in some cases, with an underwriting commitment; to place securities with final investors; to enhance market liquidity by acting as market-makers; to be the GDM's counterpart for certain debt-management operations; to advise the GDM on its DMS; and to report to the GDMs on their activity in the secondary market.

As a result, PDs are a channel between the debt manager and investors. They are expected to build a stable and dependable demand for GS by broadening the debt manager's customer base. They also mitigate the debt manager's interest-rate and refinancing risk, and facilitate market development.

PDs usually have some privileges that help them perform their duties. For example, their participation in auctions can be supported by having exclusive access to auctions (i.e., closed-auction systems), extra time for submitting bids (i.e., open-auction systems), and/or the right to submit non-competitive subscriptions. The PDs' market-making activity can also be supported by exclusive access to a securities-lending facility or obtaining borrowing privileges with the CB.

Establishing a PD system is not an SMP for the GS secondary market; to be beneficial, a PD must be subject to preconditions. First, the debt and the investor base must be large enough to justify appointing PDs — otherwise, they do not add value. At the same time, in many instances, PDs will be necessary to broaden the investor base. PD appointments restrict competition by granting privileged status to certain financial intermediaries. Furthermore, if too few PDs are appointed, there is a risk for collusive behavior. Second, a GDM has to create the appropriate

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<sup>31</sup> PDs may also be appointed by the CB in countries where the responsibility for managing public debt has been assigned to the CB.



environment for PDs to work: There must be a stable, regular supply of securities, issuance of securities attractive to the market, benchmarks, and appropriate support and incentives.

## **E. Conclusion**

Developing a GSM is a complex undertaking. The main challenge is to identify the preconditions to develop the market to focus the reform program on the right targets. This primer has presented a comprehensive list of the preconditions necessary for developing an efficient GSM.

The diagnostic checklist in Annex A is meant to help U.S. government program officers identify what preconditions are missing in the country they are reviewing.

In practice, the appropriate reform program depends on a market's stage of development. Therefore, the guidelines for the preparation of a model scope of work in Annex B have been divided in four sections, each corresponding to a certain stage of market development.

## **F. Case Studies**

### **F1. Developing a GSM: General Preconditions — Mexico and India**

#### **F1a. Mexico**

Mexico has a long history of issuing domestic GS. It issued its first peso-denominated T-bills in 1978. Until the late 1980s, however, GSM was hindered by an unstable macroeconomic environment and recurrent debt crises. Soon thereafter, Mexico embarked on a comprehensive program of macroeconomic and financial reforms (Arvai, 2008).

Financial deregulation was one of the main prerequisites for developing the market. The key steps in this process were abolishing reserve requirements (1988), liberalizing interest rates, eliminating selective credit controls, and removing the 30-percent liquidity requirement on bank liabilities (1989). Foreign exchange controls were abolished in 1991. In 1992, a pension reform broadened the investor base. The payment system was reformed in 1994. Financial deregulation was accompanied by a gradual capital account liberalization starting at the end of the 1990s. Nonresident investors have been allowed to hold Mexican GS since December 1990.

By the end of the 1990s, Mexico had created most of the preconditions for a developed primary market. Coordination between the MoF and the CB has fostered market development beyond a stable macroeconomic environment, market-determined interest rates, and abolishing reserve requirements and liquidity ratios. Mexico also has a well-functioning and liquid money market — another prerequisite. The country has strengthened its regulatory and supervisory framework, and lawmakers have enacted and amended laws related to the financial sector in recent years.

The composition of Mexico's domestic debt has changed substantially over the last decade. One-year zero-coupon bonds were launched in 1990; three- and five-year fixed-rate bonds were issued in 2000. Since then, the yield curve has quickly extended to include maturities of 10 years (2001), 20 years (2003), and 30 years (2007).

Mexico has been less successful in developing its investor base. The financial system is still dominated by banks, and the local institutional investor base (pension funds, mutual funds, and insurance companies) is still relatively small compared with other major emerging economies. In particular, the growth of mutual funds has been held back by regulations limiting the share of assets that mutual funds were allowed to invest in short-term securities. This has made mutual funds less competitive than banks in an environment of volatile interest rates, where the value of long-term securities can be subject to sharp changes. Recent changes in regulation have substantially relaxed these restrictions.

### **F1b. India**

Faced with a balance of payments crisis in 1991, India initiated wide-ranging reforms that gradually covered macroeconomic stabilization and structural reforms. This is a good illustration of how the basic foundations for development of the GSM were put in place by virtue of macroeconomic and financial reforms throughout the 1990s.

During the pre-reforms period, the GSM was characterized by administered — and often artificially low — rates of interest. GS investors were predominantly public-sector banks and financial institutions; they became captive investors due to high statutory liquidity ratio requirements. GS were issued through a non-market process to keep government borrowing costs down, resulting in negative real rates of return until the mid-1980s. Government borrowing expanded considerably during the 1980s, and was financed by automatic accommodation by the Reserve Bank of India (RBI), the CB, to control the cost. This was achieved through the mechanism of ad hoc T-bills, with implications on the CB's balance sheet and inflationary pressures caused by monetizing a large part of the government's fiscal deficit. At the same time, non-market related yields on GS affected the banking system's profitability, and led to higher lending rates in the banking sector.

Driven by these compulsions, the CB's monetary management was dominated by a regime of administered interest rates, and rising cash reserve ratio and statutory liquidity ratio requirements reflecting growing financial repression. This, in turn, left little room for monetary maneuvering. With a captive investor base and interest below the market rate, the secondary market for government bonds remained dormant. This resulted in the absence of a liquid and transparent secondary market for GS and, consequently, the lack of a smooth and robust yield curve for pricing of the instruments.

Against this backdrop and in the context of the overall economic reform program, reforms in GSM commenced in 1992, aided by macroeconomic stabilization and structural reforms in the financial sector. Evidently, such reforms involved a great deal of interface between debt management, fiscal policy, and monetary policy, and involved policy challenges with conflicting objectives. With relatively less success in limiting fiscal deficit, which resulted in rising borrowing requirements, development of a liquid and deep GSM became an essential component of the overall reform program and was appropriately paced, sequenced, and calibrated. The major reforms and their impacts on the GSM within 10 years of implementation are summarized below.

*Movement to market-based interest rates.* A reform measure adopted in 1992 was to switch from administered rates to an auction-based system for issuing securities at market-clearing rates. Though the average cost of securities issued initially rose by 200 basis points (up from 11.8 percent in 1991-92 to a peak of 13.8 percent in 1995-96), and despite achieving significant elongation in maturity of securities, the cost of issuance fell to 7.3 percent in 2002-03. This was aided by benign inflation rates, liquidity conditions, and rising investor demand for risk-free assets warranted by capital adequacy considerations.

*Elongation of maturity.* Though the move to market-related rates provided flexibility to modulate the maturity structure according to the needs of different investor classes, considerations in cost reduction during the initial years of reforms led to a shortening in the maturity structure within the range of two-10-year tenors. Consequently, the weighted average maturity of issuance, which was around 16 years in 1990-91, was reduced to 6.59 years in 1997-98. This resulted in significant bunching of redemptions in the medium term with potential refinancing risks. To elongate the maturity profile of government debt during 1998-99, the government issued longer-dated securities with tenors of 11, 12, 15, and 20 years. Reflecting this, within a span of four years, the weighted average maturity of issuance more than doubled, to 14.3 years in 2001-02. In 2002-03, after a break of 15 years, the government issued the 30-year bond, resulting in a yield curve spanning up to 30 years.

*CB's holding of GS.* Though the volume of market-based primary issuance of GS increased by more than tenfold between 1991-92 and 2001-02, it was accompanied by a sharp decline in primary subscription by RBI, from 45.9 percent in 1992-93 to a mere 0.74 percent in 1994-95. The abolition of ad hoc T-bills was made effective from April 1997, thereby eliminating automatic monetization of the deficit and replacing it with a system to meet only the temporary mismatches in government cash flows. However, subsequent devolvement/private placement on RBI ranged 25-30 percent during 1999-2000 and 2001-02, reflecting RBI's liquidity management operations in the face of the continued spurt in external capital flows. At a later stage however, these securities were offloaded in the secondary market to contain the monetary impact. As part of the Fiscal Responsibility Act (2002), RBI can participate in primary auctions only under exceptional circumstances (Reserve Bank of India, 2003).

*Diversification of the investor base.* To move away from a captive investor base regime of the banking system, statutory liquidity ratio and cash reserve ratio were significantly reduced in phases by 2002. Traditionally, the investor base for GS in India has been banks, financial institutions, provident funds, insurance funds, and pension funds; however, commercial banks (at present, 64 percent) and the Life Insurance Corporation of India (18 percent) are the largest holders. Most of these holdings are in the nature of statutorily mandated investments. This category has recently been further diversified by the entry of cooperative banks, regional rural banks, mutual funds, and non-banking finance companies. In addition, the entry of Gilt Mutual Funds has broadened the retail investor base. The thrust of policy initiatives in this direction is focused on developing the retail segment of the market.

*Benchmark bond policy.* A policy of reissuance/re-openings through price-based auctions (as opposed to earlier yield-based auctions) was introduced in 1999, the goal being to improve fungibility among the securities and facilitate consolidation of the debt. This greatly improved

market liquidity and assisted the emergence of benchmark securities in the market. The process of passive consolidation helped contain the number of bonds at a level that was prevailing at the end of 1998-99. Of the 25 loans issued (excluding private placements) during 2001-02, 12 were new loans and 13 were reissues of the existing loans. This ability to "reissue" or "reopen" loans is limited by the maximum outstanding amount that is perceived as "manageable" from the viewpoint of redemption.

India's GSM has been transformed over 10 years, following the initiation of a reform program. A snapshot of the market would reveal that between 1992 and 2003, the outstanding stock of central GS increased nine-fold. As a proportion of GDP, it has doubled, from 14.7 percent to 27.3 percent. The average maturity of securities issued during the year has elongated to 15 years in 2003 from around six years in 1996. The weighted average cost of securities issued during the year first rose from 11.8 percent in 1992 to 13.8 percent in 1996, then fell to 7.3 percent in 2003. Turnover increased to more than 200 percent of GDP in 2003.

## **F2. Debt Management-Related Preconditions — Hungary**

Hungary, which used to have a centrally planned economy, is a good example of the beneficial impact of having an efficient institutional structure, clear debt management objectives, and a well-designed DMS.

Hungary began issuing T-bills in 1988. Between 1989 and 1992, T-bills provided only supplementary financing of the budget. The main source of funding of the government was provided by the CB at preferential rates. This period was characterized by adverse macroeconomic conditions (i.e., a recession, a large budget, account deficits, high inflation, and low domestic savings). The firmness of the authorities' intent to finance the deficit on market-based conditions has been decisive in the development of a GSM. Interest rates were liberalized in 1991. The budget deficit has been financed almost entirely by GS since 1992. The limit on the direct financing of the budget by the CB was reduced to 3 percent of the previous year fiscal revenues in 1995. The CB has not provided any financing of the budget deficit since 1997.

The first step taken toward establishing a GSM was — as expected in a formerly centrally planned economy — to create a legal basis for the operation of the market and its participants. Starting in the late 1980s, Parliament enacted legislation on all sectors of the financial market, including the issuance and trade of securities and the establishment of the stock exchange, the Central Clearing House and Depository, and the Securities Supervisory Agency. The Government Debt-Management Agency, or AKK, was established in 1995 within the Ministry of Finance.

The AKK is a semi-autonomous budgetary institution functioning under private law since 2001. Before it was established, the National Bank of Hungary (NBH) had acted as government agent to organize the issuance of GS and play a market-making role in a GSM. In 1997, the government transferred all of NBH's domestic debt management activities to AKK. The NBH continued to issue foreign currency-denominated bonds in its own name until 1999, when AKK took over all bond issuances in international markets in the name of the Republic of Hungary. Initially, NBH remained responsible for concluding in the market hedging transactions related to the foreign currency debt, acting on AKK's instructions. In 2004, AKK took over this

responsibility. Since then, NBH has only a consulting role on strategic issues. In the process, the management of the entire public debt portfolio has been unified under AKK.

AKK's stated objective is to finance the central government's borrowing requirements, minimizing cost in the long-term and considering the risks involved. Starting in 1997, AKK began developing a DMS framework which has — conforming to practice in mature markets — become increasingly precise, because it uses statistical models based on market scenarios and simulations. The objective of the models is to design a benchmark debt portfolio (i.e., to determine the composition of the debt portfolio that optimizes the trade-offs between costs and risks). The objective of debt management then becomes to align the actual debt portfolio on the benchmark debt portfolio.

The benchmark debt portfolio of Hungary in 2010 has five main features:

1. The domestic debt should represent 68-75 percent of the total public debt.
2. In the domestic debt, borrowings at a fixed rate should represent 61- 83 percent of the total domestic debt.
3. The duration of the domestic debt should be approximately 2.5 years.
4. The foreign currency debt should be denominated only in euro.
5. In the foreign currency debt, borrowings at a fixed rate should represent approximately 66 percent of the total foreign currency debt.

Hungary's experience with GMS is proof that small countries can achieve considerable market development if supported by a strong commitment by policymakers (Arvai, 2008).

### **F3. Coordination between Monetary Policy and Government Debt Management Policy — India**

India illustrates the extent to which the government and the CB can coordinate to achieve an objective of monetary policy. Since the mid-1990s, the RBI has been confronted with a continuous inflow of large amounts of funds into the country that it has needed to sterilize. The RBI is not allowed to issue its own securities under the RBI Act. Initially, in the mid-1990s to 2003, it managed the liquidity impact of the capital inflows primarily through outright open market sale of GS, because the stock of GS with RBI was finite. In this way, the RBI contributed to the liquidity of a GSM. However, open market operations could not absorb the excess liquidity in the financial system, prompting the government to step in and support RBI's effort in three ways.

First, the government increased the amount of the T-bill auctions to 91 days, using the excess proceeds to build a surplus balance in its account with the RBI. Again, however, this was not enough to absorb the excess liquidity in the financial system. In 2004, an internal working group on instruments of sterilization recommended that the government issues a special variety of bills and bonds for sterilization purposes, called Market Stabilization Bills/Bonds, to mop up the enduring surplus liquidity from the system. Finally, the government implemented a new scheme, the Market Stabilization Scheme (MSS), shortly thereafter. Under MSS, which is meant exclusively for sterilization purposes, the CB has been empowered to issue government T-bills and T-bonds for the purpose of liquidity absorption. The proceeds from their auction are sequestered in a special government MSS account at the RBI; the deposits can be used only for

redeeming or buying back MSS securities. The payment of interest and discount on MSS securities are shown transparently in the government budget. However, the MSS securities are indistinguishable from the standard T-bills and T-bonds that are traded in the market.

Thanks to this seamless cooperation between the government and the CB, India has devised an efficient instrument for monetary policy that, far from fragmenting the financial market by creating a competition between two public issuers, has enhanced the liquidity of government-issued securities.

#### **F4. Developing the Primary Market — Egypt**

In 2009, the Egyptian MoF substantially enhanced the efficiency of the primary GS market. The improvement is evidenced by the more stable bid-to-cover ratio and the narrower dispersion of bids at the 2010 auctions, despite the increase in the government's borrowing requirements. This favorable outcome has resulted primarily from taking the following three steps, whose common denominator is to increase the transparency and the predictability of the government's issuance policy.

1. *Statement of the objectives of debt management.* The MoF has made clear that Egypt's debt-management policies are focused on ensuring low cost in the long-term, considering risk, and supporting the development of an efficient primary and secondary market for domestic GS.
2. *Publication of an annual issuance plan.* The annual issuance plan, started in 2009, outlines the government's borrowing strategy for the next 12 months. For 2010, the plan's main elements are to continue gradually extending the average maturity of the domestic debt that was initiated in 2009; continue focusing on a limited number of benchmark securities; and increase the number of re-openings of benchmark maturities.

The 2010 issuance plan has taken stock of the decisions taken by the MoF in 2009 to focus on a limited number of benchmark maturity dates; quantify the maximum amount that can safely be refinanced on any given day (i.e., a refinancing risk limit); increase its target benchmark size, also making it a function of the maturity date of the relevant security; and combine an issuance calendar with a maturity calendar. The objective was to allow the issuance of larger benchmarks by ensuring that there was never more than one line maturing on any given day and by preserving the flexibility to keep re-opening benchmarks as long as they were attractive to the market without being constrained by the need to close on a given date to be able to issue a new maturity.

3. *Standardization of issuance procedures.* The quarterly auction calendars published by the MoF before 2009 provided substantial information to market participants. They disclosed auction dates, the maturities and quantities to be issued, and whether the auctioned maturities were a re-opening or a new bond. Over time, the calendars have improved by re-opening lines more frequently, reducing the number of maturities outstanding. Up to 2009, however, the quarterly issuance calendars showed no fixed date for the issuance of bonds and no fixed pattern for the auctioned maturities, neither for bills nor for bonds. Only one bond was auctioned at a time, but a bond auction could occur any week of the

month. The number of bill maturities auctioned could fluctuate between two and four. The number of bond auctions during any given month could fluctuate between one and three. Therefore, the auction calendars offered only a limited contribution to making the issuance policy stable and predictable. Furthermore, they were not developed within a longer-term framework, raising a risk of opportunistic issuance. This was a missed opportunity, as investors are willing to pay a premium for a regular issuance calendar because it simplifies their investment strategy.

Since 2010, the quarterly issuance calendars show a regular issuance pattern. There is a bill auction every week and a bond auction every other week, each with a standard and predictable set of maturities.

## **F5. Developing the Secondary Market — Thailand and Brazil**

### **F5a. Thailand**

In 2008, the Bank of Thailand was tasked with developing an active secondary GSM. To meet this challenge, it has set up several sub-working groups. The measures so far include:

- *Developing the repo market.* The Bank of Thailand, in collaboration with government agencies such as the Securities and Exchange Commission, the Thai Bond Dealing Center, the Ministry of Finance, and commercial banks, has been working to develop a Global Master Repurchase Agreement to solve tax problems and provide training on repo transactions to market players.<sup>32</sup>
- *Improving the information and trading system in the secondary market.* The MoF has appointed the Stock Exchange of Thailand to develop the Electronic Trading Platform that gives investors more trading channels and increases trade transparency.
- *Integrating the Securities Depository and Clearing and Settlement System (C&S).* The Bank of Thailand, in cooperation with the Thailand Securities Depository, has transferred the C&S for GS to the Thailand Securities Depository, home of the C&S for corporate bonds and equities. In this way, the C&S of all securities is integrated in one location. The objective is to further enhance market efficiency by enabling the Thailand Securities Depository to provide collateral management and bond-lending services and reduce transaction costs.

In 2006, a bond-lending unit was established to act as an intermediary to match borrowers and lenders, provide the payment and delivery system, and report the status of investors. Simultaneously, a collateral management unit was made responsible for marking-to-market the collateral, calling margin payments, and designing the selection criteria and allocation of collateral debt instruments.

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<sup>32</sup> A Global Master Repurchase Agreement (GMRA) is a standard repo agreement. The objective is to simplify the procedure by having all market participants use the same agreement.

## F5b. Brazil

Before 1999, a large number of maturities, often two in a week, would hamper the liquidity of the Brazilian GS. Due to the low amount outstanding in each bond series, GS were difficult to price and to trade. An excessive number of auctions reduced the need for investors to use the secondary market. Because there was not an auction calendar, auctions were unpredictable (Brazilian National Treasury, 2010).

In 1999, a working group was created with members from the National Treasury and the CB to diagnose the problems affecting the domestic public debt and local financial market. This involved studies and discussions based on international experiences and interviews with representatives of financial institutions, dealers' associations, and stock markets.

The working group proposed 21 measures to create a more dynamic secondary market; most of these have been adopted. The most important measures included:

- *Issuance procedures.* Reducing the number of issued maturities and the frequency of auctions.
- *Market information.* Publishing a monthly auction calendar; issuing periodic press releases with information about the government bond market and liquidity conditions; publishing daily reports showing the amount of GS outstanding; and holding periodic meetings with dealers and institutional investors in particular pension funds and insurance companies.
- *Liability management operations.* Organizing bond buy-back auctions.
- *Trading procedures.* Promoting electronic trading systems to stimulate transparency in trading GS on the secondary market; making it easier for financial institutions to adopt short positions; and buying and selling fixed-rate bonds with reverse repurchase agreements to help dealers cover short positions.

In 2003, the National Treasury implemented some additional measures were implemented to counter the volatile market conditions that followed the presidential election. It included the following provisions in its ABP for 2003: reduce the percentage of securities maturing in the short term to levels considered comfortable, minimizing the risk of refinancing; reduce the share of debt linked to the exchange rate and interest rate; increase the share of fixed-rate and inflation-linked debt; continue announcing the auction schedule for the next month at the end of the previous month; and remain close to market participants and make transparent the strategy for carrying out the ABP. These directives succeeded in changing market behavior, increasing liquidity, and reducing the spread between the buying and selling prices of GS.

Overall, the policies implemented by the National Treasury to enhance the liquidity of a GSM have been quite effective. In 2008, the equivalent of 20.8 percent (\$591 billion) of the total volume traded in local emerging markets was traded in the Brazilian market.



## ANNEX A. DIAGNOSTIC CHECKLIST

This diagnostic checklist is a tool to help U.S. government program officers make a preliminary determination of whether the fundamental legal, regulatory, market, and government support preconditions are in place for developing a viable and sustainable GSM or enhancing the efficiency of its functioning GSM.

The checklist has been divided into two parts to address possible scenarios. First, if there is not a GSM, is it possible to develop one now? Second, if there is a GSM, how can it be improved?

Key Questions	Yes	No	Comments/ Responses
<b>CASE 1: There is not a GSM</b>			
If the answer to 75 percent or more of the questions below is “no,” the establishment of a GSM must be postponed. Instead, the effort should focus on putting in place a reform program to meet the preconditions required for establishing a GSM.			
<b>A. Credibility of the government as an issuer of securities</b>			
1. Is the political regime stable?			
2. Does the law state who has authority to borrow on behalf of the government?			
3. What was the budget deficit-to-gross domestic product (GDP) ratio over the last three years?	n/a	n/a	
4. Is the country’s debt-to-GDP ratio in line with the average ratio of comparable emerging market economies?			If not, is the ratio declining?
5. Is there a functioning taxation system to generate the revenues the government needs?			
6. Does the law protect investors’ rights?			
7. Is the government functioning in the framework of sound governance rules?			
8. Is the judicial system dependable?			
<b>B. Macroeconomic conditions</b>			
1. Is the inflation rate in line comparable emerging market economies?			If not, is the government committed to containing inflationary pressures?
2. Are real interest rates in line with comparable emerging market economies?			
3. Are interest rates stable?			If not, is the CB committed to stabilizing interest rates?
4. Is the exchange rate of the country’s national currency stable?			
<b>C. Government commitment to develop the market</b>			
1. Are interest rates market-determined?			
2. Does the government accept to pay market interest rates on its debt?			
<b>D. Market infrastructure</b>			
1. Are any securities (e.g., equities) being issued in the country?			If so, are the securities dematerialized?
2. Is there a central securities depository?			
3. Is there an institution of securities clearing and settlement?			If so, is that institution

Key Questions	Yes	No	Comments/ Responses
			functioning efficiently?
4. Is there a stock exchange?			
<b>E. Critical mass</b>			
1. What is the size of the public debt?	n/a	n/a	
2. How many banks are established in the country?	n/a	n/a	
3. Are there potential institutional investors (e.g., insurance companies, pension funds)?			If so, how many are there? What is the size of their balance sheets?
4. Is there potential for issuing securities for retail investors?			
<b>F. Soundness of the banking sector</b>			
1. Are banks making money?			
2. What is the average ratio of non-performing loans?	n/a	n/a	
3. What are the capital adequacy ratios for major banks?	n/a	n/a	
<b>G. Money market-related preconditions</b>			
1. Is there a functioning money market?			If so, can it be qualified as active?
<b>H. Debt management-related preconditions</b>			
1. From whom does the government currently borrow (e.g., international financial institutions, the CB, captive investors, commercial banks)?	n/a	n/a	
2. Is there reliable public information available about the amount and composition of the debt?			
3. Does the government disclose the reason why it is borrowing (e.g., to Parliament and market participants)?			
4. Does the government have a borrowing strategy?			
<b>CASE 2: There is a GS market in place. How can it be improved?</b> The objective of the questions below is to help U.S. government officers determine in what stage of development the GSM is (i.e., nascent, deepening, maturing) to identify the appropriate reform program. The checklist indicates the possibilities for improvement when they are easily identifiable.			
<b>A. Composition of public debt portfolio</b>			
1. What is the ratio of domestic currency debt to foreign currency debt?	n/a	n/a	With regard to domestic currency debt, what is the ratio of fixed-rate debt to floating-rate debt?
<i>Possibilities for improvement:</i> Increase the share of domestic debt in total debt and of longer-term fixed-rate borrowings in the domestic debt.			
<b>B. Debt management: operational management</b>			
1. Is there a debt-management unit centralizing the management of the debt?			If so, does it incorporate front, middle, and back offices?
2. Are working procedures well-documented?			
3. Have any objectives been assigned to debt management?			If so, by whom?
4. Is there a DMS to achieve objectives?			If so, is it based on a cost-risk analysis? Is it complemented by an ABP?
5. Is the debt managed independently from and in			

Key Questions	Yes	No	Comments/ Responses
coordination with monetary policy?			
6. Is the debt managed independently from and in coordination with fiscal policy?			
<i>Possibilities for improvement: Centralizing debt management in one entity is often the most important step.</i>			
<b>C. Debt management: governance</b>			
1. Are delegation and reporting lines clear?			
2. Are debt-management activities audited?			
3. Are debt managers accountable for the results of their management?			
<b>D. Debt management: transparency</b>			
1. Are the government's borrowing requirements and DMS publicly disclosed?			
2. Is information on the account and composition of debt published regularly?			
3. Does the GDM have an informative and updated Web site?			
<b>E. Cash management</b>			
1. Are the forecasts of the government's borrowing needs accurate?			
2. Is cash management integrated within debt management?			
3. Is the government's liquidity position centralized in a treasury single account?			
4. What instruments are being used to manage the government's liquidity position?	n/a	n/a	
<b>F. Primary dealers</b>			
1. Is there a PD system?			
2. What are the PDs' rights and obligations?	n/a	n/a	
<b>G. Primary market: debt issuance policy</b>			
1. Is debt issuance predictable, stable, and transparent?			
2. Does the government publish auction calendars?			
3. Are the issued securities dematerialized and fungible?			
4. Is debt issuance focused on creating a limited number of large benchmarks?			
<b>H. Primary market: debt issuance procedures</b>			
1. Who is entitled to borrow on behalf of the government?	n/a	n/a	
2. Does the government borrow from the CB or have recourse to captive investors?			
3. Which procedures are used to issue securities? (e.g., auctions, taps, syndications, private placements)	n/a	n/a	Of those, which utilize maximize competition?
4. Does the government cancel auctions when the asked yields are deemed too high?			
5. Are the auction results released quickly?			
6. Is an electronic auction system used?			
<b>I. Secondary market</b>			
1. Is it easy to determine the market price of GS?			
2. Is the traded volume significant?			

Key Questions	Yes	No	Comments/ Responses
3. Are bond exchanges or bond buy-backs done?			
4. Are there market-makers?			
5. Is there an electronic trading platform(s)?			
<b>J. Money market</b>			
1. Are repurchase agreements being used?			
2. Does the CB use indirect monetary policy tools?			
<b>K. Efficiency of market infrastructure</b>			
1. Are the registry, custody, clearance, payment, and settlement systems secured and efficient?			

## **ANNEX B. GUIDELINES FOR THE PREPARATION OF MODEL SCOPES OF WORK**

The scope of work for developing a viable and sustainable GSM depends on the market's stage of development. This applies to the proper sequencing of measures to be taken. In almost every instance, something can be done to advance market development; the challenge is to determine what steps are necessary and how to implement them (Moody, 2009). It is important to identify a correct list of the reform activities, but even more important to ensure the sequence of activities is implemented in the appropriate order.

The development of a GDM can be divided into four stages: no existing market; a nascent market; a market in need of deepening; and a maturing market (Arvai, 2008). These stages have two features in common. First, reforms are enacted only when there are committed counterparts. It is essential to enlist key officials as partners to champion and implement the necessary changes. Second, a top-down concentration on infrastructure — the “build-it-and-they-will-come” approach — does not work. The cooperation of market participants must be elicited through consultation and by familiarizing them with the design and implementation of the reforms.

### **A. Stage 1: No Existing GSM**

#### **A1. Features**

The main features of this initial stage are the fiscal dominance of the government in the domestic market and the monetization of budget deficits. The government obtains a large share of its funding from captive sources at artificially low rates. This includes the CB, which, in effect, funds part of the fiscal deficit by printing bank notes. The government borrows the balance from CBs, and there is no issuance of dematerialized securities. The external debt has been obtained at concessional rates of interest.

#### **A2. Model Scope of Work**

The absence of a GSM usually coincides with fragile macroeconomic fundamentals. The latter explains the former. Therefore, priority should be given to adopting and implementing a stable and credible macroeconomic framework, reforming and liberalizing the financial sector, ensuring the proper pace of liberalization in different areas, and adopting a proactive approach in developing the necessary regulatory framework to support development of financial markets (IMF/World Bank, 2001a). Because several government entities are involved in the process of market development, it is often critical to establish a high-level committee to coordinate the way forward.

## **B. Stage 2: Nascent GSM**

### **B1. Features**

#### **B1a. General**

The primary market shows severe shortcomings and the secondary market not liquid.

#### **B1b. Primary Market**

The government has started auctioning bills for very short maturities. The debt is fragmented, and there is a large stock of non-marketable debt. The government opens a new series of securities at every auction, and several agencies issue public debt. The government also may compete with the CB, which issues its own securities. Auctions are frequent, as the government's borrowing needs cannot be forecasted accurately. This inhibits the development of the secondary market. There is a lack of transparency and communication to the market. In particular, issuance policy is unpredictable without an auction calendar.

There is still some degree of fiscal dominance, because the government continues to rely to some extent on captive sources of funding and shows an uneven acceptance of market rates (i.e., by canceling auctions when the yields in the market are perceived to be too high).

#### **B1c. Investor Base**

The public debt is held primarily by the banking sector. There is not a diversified investor base. The institutional investors' sector (e.g., pension funds, insurance companies, mutual funds) is underdeveloped.<sup>33</sup> No foreign investors are buying GS.

#### **B1d. Market Infrastructure**

Dematerialized (i.e., book-entry) securities exist, but the securities settlement structure is slow and inefficient. The interbank market lacks liquidity

#### **B1e. Regulatory Environment**

There is not a clear legal framework for government borrowing authority, terms of instruments, payment and settlement process, and secondary market activity. Securities portfolios are not revalued by being marked-to-market. There is not a reference rate. This encourages investors to buy and hold.

#### **B1f. Monetary Policy Operations**

The CB uses direct (i.e., rules-based) monetary policy instruments (e.g., reserve requirements, standing facilities, liquid asset ratios). Monetary policy operations are generally highly

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<sup>33</sup> Most developing countries have pay-as-you-go pension systems and have not implemented pension reforms that would create private pension funds.

accommodating, which inhibits activity in the secondary market. The CB often issues its own securities, which are then competing with GS.

## **B2. Model Scope of Work**

The following recommendations usually apply during the very early stages of GSM development. Start by issuing short maturities (i.e., three or six months); regularly auction small amounts, offering to the market only what it can absorb; spread the repayment dates to decrease the refinancing risk; be predictable, consistent, and transparent; and reward helpful financial intermediaries. GDMs are also advised to consult their banks before doing anything new and to entrust their debt-management operations to the banks that have worked best for them. Thereafter, the scope of work should focus on strengthening the primary market and creating the conditions for the secondary market to develop later. The corresponding reform program covers many steps, such as centralizing debt issuance in one agency; eliminating reliance on captive sources of funding; scaling back issuance of non-marketable debt; publishing an auction calendar; and gradually decreasing the frequency of auctions as the market develops.

The risks/costs/benefits of increasing the share of domestic debt in the total debt portfolio should be closely analyzed. The GDM should focus on lengthening maturities to decrease the refinancing risks. One possibility worth considering is issuing floating-rate or inflation-indexed securities to lengthen maturities, but only for small amounts, because both instruments can create considerable risk in an unstable macroeconomic environment.

The government should develop the technical infrastructure, and the legal, regulatory, and governance framework necessary for GS issuance (i.e., borrowing authority, debt-management procedure, transparency, accountability, disclosure), trading (i.e., market intermediaries, market conduct, market surveillance), and settlement (i.e., central depository, clearing, and settlement). It should work with the CB to create the conditions for conducting monetary policy with money market-based instruments.

The government should collect and publish reference rates and create a favorable legal and regulatory framework for mutual funds and the contractual savings sector. The conversion of pay-as-you-go systems to privately managed mandatory contribution systems (such as Pillar II Pension Funds) creates institutional demand for fixed-income instruments. It also accelerates improvements in market infrastructure. Likewise, the development of the insurance industry creates demand for fixed-income instruments and complements pension funds as institutional investors. Life insurance companies have long-term investment time horizons that are beneficial to support the long end of the yield curve.

At this stage of GSM development, nonresidents should be allowed to invest on only a limited scale in the domestic GS. As the secondary markets are shallow and illiquid, foreign investors raise the risk of sudden and/or large-scale capital flows resulting in a boom-bust pattern in asset prices.

The government should regularly consult with market participants about market preferences and provide timely information on its finances, debt portfolio, borrowing strategy, and data on the

activity in the primary and secondary market. Appointing PDs should be also considered by the end of this second stage.

### **C. Stage 3: Deepening the GSM**

#### **C1. Features**

##### **C1a. General**

The basic elements of primary and secondary markets are in place, but the composition of the debt portfolio can be improved with more fixed-rate debt with longer maturity, and the secondary market lacks depth and liquidity.

##### **C1b. Primary Market**

The government has attempted to lengthen maturities and decrease the number of lines through consolidation and issue benchmarks. A DMS and ABP have begun to be formulated. Communication to the market has improved with timely information on government finances, composition of debt portfolio, borrowing plan and auction calendar, and data on activity in the primary and secondary markets.

##### **C1c. Investor Base**

The investor base is developing. The contractual savings sector is gaining significance. The market share of mutual funds is increasing. Some nonresident investors begin to join the market.

##### **C1d. Market Infrastructure**

The market infrastructure is improving with the development of sub-depositaries, a shortening of settlement period, and growing activity in the interbank market.

##### **C1e. Regulatory Environment**

By this stage, an effective secondary market regulation is usually established.

##### **C1f. Monetary Policy Operations**

Monetary policy is increasingly implemented through open-market operations and auction-based techniques. The design of standing facilities is less accommodating. This encourages banks to use the money market more extensively for liquidity management.

#### **C2. Model Scope of Work**

The number and diversity of the reforms to be undertaken increase as the GSM develops. The building of benchmarks should be comforted with bond buy-backs and switches; the outstanding stock of non-marketable debt should be converted into securities bearing market interest rates;



the DMS should be reinforced with cost-risk analyses and stress tests; the capital account should be gradually liberalized to allow nonresident investors to participate in the domestic GSM.<sup>34</sup>

The government should further increase and refine the data and information provided to the public, ensure sound regulatory and supervisory practices for institutional investors, promote the development of the interbank market, and encourage active trading in the repo market. The CB should refrain from issuing its own securities unless it is necessary for money sterilization, in which case the CB should restrict issuance to the short end of the yield curve.

## **D. Stage 4: Maturing GSM**

### **D1. Features**

#### **D1a. General**

The level of development approaches mature country levels. The major remaining gap is the absence of derivative financial instruments.

#### **D1b. Primary Market**

The primary market is well-established. It is underpinned by large benchmarks and a sound debt-management framework. The share of fixed-rate long maturities in the debt portfolio has grown significantly.

#### **D1c. Investor Base**

The domestic investor base is well-developed. Nonresident investors are allowed to invest in long- and short-term securities.

#### **D1d. Market Infrastructure**

The securities clearing settlement system is efficient (delivery versus payment; real-time gross settlement system). The interbank market is liquid.

#### **D1f. Regulatory Environment**

The legal and regulatory environment for the primary and secondary markets is fully established. Mark-to-market requirements are fully implemented.

#### **D1g. Monetary Policy Operations**

CB relies mostly on indirect monetary policy instruments to implement monetary policy.

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<sup>34</sup> It is recommended to lift controls on longer term securities first.

## **D2. Model Scope of Work**

Effort should be focused on making the market internationally competitive by developing derivative instruments (e.g., interest rate swaps, futures, options). Supervisory capacity, along with accounting and reporting rules to assess and properly measure the risks associated with derivatives, should be strengthened. The development of risk management capacity in financial institutions and the integration of the debt market with other financial markets should be promoted.

## **E. Illustrative Examples of Targeted Technical Assistance**

### **E1. Focus: Starting a GSM – Republic of Haiti**

In July 2010, the International Monetary Fund (IMF) implemented technical assistance in Haiti focused on a specific target in the framework of a deliberate market development strategy. The issuance of GS in Haiti is a project which, from design to implementation, was completed in about one year.

In November 2009, the government resolved to stop borrowing from the CB, the Banque de la République de Haiti (BRH), and issue GS to meet its financing requirements.

In July 2010, the IMF recommended the government adopt a step-by-step approach, beginning with issuing Treasury papers for small amounts with short maturities and in a flexible manner. This program was comparable to the commercial paper programs used by large private-sector companies in mature financial markets. In contrast to T-bills, which are issued on regular dates (per the issuance calendar) and for standard maturities (usually 3, 6, and 12 months), the issuance of commercial paper, with respect to timing and maturity, is tailor-made to the needs of the issuer. By suggesting the government begin by issuing securities in the framework of a Treasury paper program, the IMF hoped to minimize the institutional and technical preparations needed to get started and create an opportunity to build capacity with experience gained from practice.

Still, Haiti needed a capital market law to provide a legal foundation for the Treasury paper program. The IMF suggested to initially design only a basic legal framework that outlined borrowing objectives, authority, instruments, and procedures. The law laid the foundation for further developments by empowering the minister of finance. In consultation with BRH, the minister of finance can in due time determine who can participate in the primary and secondary GS market, draft the required market regulations, and appoint a market authority. To that effect, the law stipulates that the issuance of any new instrument will be subject to the provisions of an “information note,” to be published by the minister of finance.

The suggested provisions of this information note were kept as simple and straightforward as possible: The program is valid for one year; the maximum amount of Treasury paper that can be issued is G 1 billion (USD \$26.6 million); the maximum maturity of Treasury paper is 91 days; Treasury papers are guaranteed by the BRH; the only eligible buyers of Treasury papers on the primary and secondary markets are the commercial banks established in Haiti; Treasury papers are issued with competitive, multiple-price auctions.

Parliament voted on the capital market law on September 27, 2010. The first issuance of Treasury paper occurred the very next day; it was for G 300 million (USD \$8 million) at 36 days at a rate of 1 percent. The issuance, which had been prepared by organizing two mock auctions to rehearse the procedure, was a success. The government managed to issue its Treasury paper at the same yield as the short-term notes issued by the BRH.

## **E2. Focus: Advancing the Development of a GSM – Republic of Maldives**

In May 2010, USAID implemented technical assistance in the Maldives focused on advancing the development of a nascent GSM. In some respects, this is a more complex task than enabling a government to make a first issuance of securities. The Maldives is an illustration of technical assistance requiring a careful assessment of the status of development prior to determining the appropriate priorities and sequence in which assistance should be implemented.

The Republic of Maldives is a small economy with a population of 350,000 and a GDP of \$1.6 billion. The country is undergoing a major readjustment after pursuing unsustainable fiscal policies during 2004 to 2008. The current debt is in the medium-high range, at 67 percent of GDP (34 percent domestic and 33 percent external). The financial markets are in an embryonic stage. Yet, there is a functioning, albeit narrow, primary T-bill market for maturities up to 91 days. T-bills represent 27 percent of the total public debt. The balance is represented by CB funding and concessional borrowings from international financial institutions.

Developing the GSM by issuing longer maturities and by establishing the foundations needed to allow the gradual emergence of a functioning secondary market would benefit the country by providing a sustainable source for meeting the government's financing needs. It would also support the development of the other local financial markets, increasing the overall efficiency of the economy.

The development of a GSM in the Maldives is constrained by four primary factors: a narrow and shallow investor base; an embryonic financial sector; a weak institutional debt management infrastructure; and the need to build technical capacity in the Ministry of Finance and CB. Steps are being taken to expand the investor base for GS<sup>35</sup>; the main issue is to determine the additional fields on which technical assistance should be focused.

The government is benefiting from the support of several technical assistance providers in different fields. In particular, the World Bank has been providing support in public financial management, especially budget preparation, information, and monitoring. The IMF has also offered technical assistance to establish a primary dealer system. The Commonwealth Secretariat has provided advice on necessary institutional and policy reforms for effective public debt management. It has also provided training sessions for using the debt recording and management system as a debt management tool.

Yet, the support provided thus far is not meeting all needs. As an illustration, the Ministry of Finance and Treasury (MOFT) still lacks the capacity to exploit data from the debt recording and

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<sup>35</sup> Steps include: establishing a government contribution pension plan and an Islamic banking system, and privatization of state-owned enterprises.

management system to analyze the risks. It has sought assistance from the Asian Development Bank in analyzing the risks of the debt and in forecasting short-term cash flows (i.e., the liquidity position of the government). A mission is also due in early 2011 from the IMF-World Bank to develop a reform program for public debt management in the Maldives. The CB has a pending request for technical assistance to improve its auction system and develop a government bond market. Understaffing is another important issue in the MOFT. For example, an internal audit department was created in the MOFT in 2007, but its activities were stopped shortly thereafter due to staff recruiting problems.

The main technical assistance issue appears to be targeting. What are the priorities? What is the appropriate sequence? A study conducted by USAID in May 2010 concluded that the two main factors constraining the development of the GSM in the Maldives are 1) a weak institutional debt management structure, compounded by 2) inadequate technical capacity of the debt managers involved. Because these factors are linked, there is an opportunity for a synergistic effect in the provided assistance. For instance, establishing a DMU in the MOFT to centralize the management of the public debt in one single entity will create a structure that ensures debt managers can maximize the benefit of the technical training by combining it with experience gained from practice.

## ANNEX C. GLOSSARY

**Auction.** A competitive securities issuance procedure in which investors submit bids (amount and price or yield) for acquiring securities. Investors are selected by ranking bids in decreasing order of attractiveness from the standpoint of the issuer (starting from the highest price or from the lowest yield). Bids are accepted (“successful bids”) starting from the most attractive level down to the level the issuer needs to accept in order for the desired amount of securities to be placed. The remaining bids are rejected.

The four main types of auctions are:

- **Multiple-price auction.** Each successful bidder is allocated securities at the price for which s/he has asked. The advantage is to allow the issuer to benefit from the highest bids. The drawback is the loss suffered by the successful bidders who have bid the highest prices (“winner’s curse”). As a result, these auctions tend to attract only a small number of bidders who tend to bid conservatively.

**Single-price auction.** Each successful bidder is allocated securities at the lowest price (highest yield) accepted. The issuer gives up the benefit of the highest bids. However, these auctions are less risky for bidders (no winner’s curse). As a result, they attract a larger number of bidders who bid more aggressively.

- **Open auction.** Any investor registered with the issuer can participate.
- **Closed auction.** Participation is restricted to a limited number of dealers and/or investors who have been selected according to some eligibility requirement determined by the issuer. Closed auctions are usually restricted to primary dealers.

**Benchmark issue.** An issue of securities that is large and actively traded enough that its price may serve as a reference point in determining the value of other issues of similar maturity.

**Bond.** A coupon-bearing security, typically with a maturity beyond one year. Alternatively, a contract in which the seller (issuer) promises to pay the buyer (bondholder) a specified amount (face value) at a specified date in the future (term or maturity) and, until said term passes, makes periodic payments (coupons) of interest at a specified rate (coupon rate). The coupon rate may be fixed or floating (indexed to a benchmark).

**Bond exchange.** Government purchase of a particular series of government bonds using another series of government bonds as payment.

**Book-entry securities.** Securities where no certificate is given to investors.

**Book-entry system.** A system, usually automated, for recording the ownership of securities.

**Buy-back operation.** The repurchase of bonds by the issuer prior to their maturity.

**Call market.** A form of an order-driven market in which orders from traders are collected centrally in an auction agency's (usually an exchange) order book. Also called an auction-agency market.

**Cash management.** Management of short-term cash inflows or outflows related to debt management.

**Central securities depository (CSD).** An institution in which the final settlement of securities transactions are recorded. The function of a CSD in a securities market is, to a limited extent, equivalent to that of a CB in the cash market.

**Clearing.** The matching of orders prior to final settlement. Alternatively, the process of verifying, before executing a securities trade, so the transfer instructions sent by the buyer and the seller are matching.

**Coupon rate.** The interest rate stated on a fixed-income security expressed as a percentage of the principal (face value or nominal value).

**Credit risk.** The possibility that the issuer of a fixed-income security will default by failing to repay principal and interest in a timely manner. Bonds issued by a central government are, in principle, immune from credit risk because the government can print money to repay.

**Currency risk.** Risk that a change in foreign exchange rates will raise the cost of a borrowing.

**Currency sterilization.** A form of monetary action in which a CB counteracts the effect of a changing monetary base.

**Custody.** The process of accepting delivery of paper or electronic securities for safekeeping and administration. Custodians generally provide clearing and settlement services, enhancing the efficiency of the process. Many regional banks offer custody, clearing, and settlement services.

**Custody account.** An account recording a holding of securities, just as a current account with a commercial bank records a holding of cash. See *book-entry accounts*.

**Debt management office (unit).** The government office that manages the public debt.

**Default risk.** See *credit risk*.

**Delivery vs. payment (DVP).** The link between the funds transfer system and the securities transfer system to ensure that securities will not be delivered until funds are received.

**Depository.** A bank or company that holds securities deposited by others and where exchanges of these securities take place.

**Discount.** Difference between the issuing or purchase price and the value at maturity of a fixed-income security.

**Electronic trading system (ETS).** Computerized trading systems that centralize, match, cross, or otherwise execute trades.

**Emerging market.** A developing country's financial market; usually a small market with a short operating history.

**Fiscal deficit.** The amount by which government spending exceeds income over a certain period, typically one year.

**Fixed-income instrument.** A security that generates a specified amount of income over a certain period.

**Floating interest rate.** An interest rate that changes periodically. The change is usually tied to movement of an outside indicator, such as a money market rate.

**Fungibility.** Perfect substitutability between securities.

**Government securities (GS).** Securities issued by a government.

**Institutional investor.** An institution whose main business is to make financial investments (e.g., banks, pension funds, insurance companies). Institutional investors are by far the largest participants in securities trading.

**Interest rate risk.** Risk that interest rates may change, thereby raising the value of a liability or reduce the value of an asset.

**Line.** Synonymous with "series" of securities. All securities issued with the same maturity date, nominal value, and coupon belong to the same line.

**Liquid market.** A market in which buyers and sellers actively trade so individual trades are not likely to appreciably move securities prices.

**Liquidity risk.** Risk that a financial asset will not be able to be converted to cash quickly and/or without a loss of value.

**Market-maker.** A financial intermediary who is quoting bid and asked prices for securities, and is usually prepared to deal at those prices.

**Money market.** A network of banks, discount houses, institutional investors, and money dealers who borrow and lend among themselves for short periods (primarily up to 90 days). The money market also trades liquid financial instruments (including GS) with maturities up to one year.

**Non-competitive subscription (NCS).** The right to submit a bid at an auction without indicating a price. In general, the applicable price is the price at which the securities will be auctioned (pre-auction NCS) or have been auctioned (post-auction NCS).

**Open-market operation.** The buying and selling of GS by a CB in to control the money supply. Also CB transactions with market intermediaries that affect general market conditions to meet monetary policy objectives. Such transactions may be outright sales or purchases of securities or repurchase agreements.

**Price taker.** A seller who accepts the price offered for the amount of securities s/he is selling.

**Primary dealer.** A group of GS dealers designated by authorities to be special intermediaries between those authorities and the market.

**Primary market.** The market in which securities are first issued and sold, usually through some form of tender or auction process.

**Public debt.** A stock of outstanding government debt obligations resulting from the cumulative issuance of GS.

**Public debt management.** The process of establishing a strategy for managing the government's debt to raise the required amount of funding, achieve its risk and cost objectives, and meet any other sovereign debt management goals the government may have set (e.g., developing and maintaining an efficient market for GS).

**Refinancing risk.** Risk that a borrower will not be able to obtain a new loan to repay a borrowing that is maturing or will be unable to obtain a loan at a reasonable cost.

**Repurchase agreement (repo).** A transaction recorded as the combination of an immediate securities sale with the simultaneous agreement to reverse the transaction in the future. The combination is usually treated as a lending of cash against securities as collateral.

**Securities.** Financing or investment instruments bought and sold in financial markets. Examples include bills and bonds.

**Secondary market.** The market in which previously issued securities are traded (i.e., bought and sold or borrowed and loaned).

**Settlement.** The process of executing a securities trade. A settlement is delivery vs. payment when the security is delivered to the buyer, only after checking that the payment to the seller is being processed simultaneously. The longer it takes for a trade to settle, the greater the risk something will go wrong.

**Treasury bills (T-bills).** Securities issued by a treasury, usually on a discount basis and for maturities not longer than one year.

**“When issued” market.** Trading of securities before they are issued. Also known as a grey market.



**Yield curve.** A curve that shows the relationship between yields and maturity dates for a set of similar bonds. The government yield curve is the benchmark against which all other fixed-income securities denominated in the same currency are priced. This removes the uncertainty of price discovery that would otherwise complicate the issuance of bonds by entities other than the government, especially for long maturities. The difference between the yield of a corporate bond (for instance) and the yield of a government bond of the same maturity is called credit spread.



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