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## NOTES

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# Developing Government Local Currency Bond Markets

Hideo Hashimoto, Yen Mooi, Guilherme Pedras, Arindam Roy, Kay Chung,  
Tadeusz Galeza, Michael G. Papaioannou, and Peter Katz from the IMF  
and Zsolt Bango, Jose Antonio Gragnani, Bryan Gurhy, and Cindy  
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**Approved by**

Miguel Savastano (IMF) and Caroline Freund (World Bank)

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## Executive Summary

This guidance note was prepared by International Monetary Fund (IMF) and World Bank staff under a project undertaken with the support of grants from the Financial Sector Reform and Strengthening Initiative.<sup>1</sup> The aim of the project was to deliver a report that provides emerging market and developing economies with guidance and a road map to support development of their local currency bond markets (LCBMs). This note will also inform technical assistance missions in advising authorities on the formulation of policies to deepen LCBMs.

Deep and efficient domestic government debt markets help enable resilience to shocks in times of financial turbulence and convey multiple additional economic benefits. Recent financial crises, including the turmoil in financial markets caused by the coronavirus pandemic, have shown that efficient LCBMs can increase financial resilience by mitigating currency risk, which is often a source of financial distress. In addition, the development of LCBMs is a cornerstone of broader capital market development that helps risk to be priced appropriately, allows participants in financial markets to better manage their portfolios, and provides a more effective conduit for monetary policy. These factors then help boost a country's long-term economic growth potential.

Developing domestic debt markets is a complex process that requires multiple and interdependent policy actions. Though broad guidelines and general principles to develop LCBMs are readily available, their translation into spe-

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<sup>1</sup>The Financial Sector Reform and Strengthening Initiative is a multidonor grant facility that provides short- to medium-term technical assistance to promote sounder, more efficient, and inclusive financial systems. It is currently supported by five donors: the Department for International Development of the United Kingdom, Germany's Federal Ministry of Economic Cooperation and Development, the Ministry of Finance of Luxembourg, the Ministry of Foreign Affairs of the Netherlands, the State Secretariat for Economic Affairs of Switzerland, and the World Bank Group and the IMF.

cific reforms is a daunting task because it requires actions from a broad range of stakeholders, including the debt manager; the central bank; regulators; the providers of trading, payment, clearing, and settlement systems; and other policymakers. As countries tend to be at different levels of development along these various dimensions, the further development of their LCBMs will be path-dependent and require a country-specific, customized approach.

To anchor this approach, this guidance note provides a comprehensive and systematic framework for LCBM development. It fills a gap in the current literature by going beyond merely recommending best practices to fully recognizing the obstacles that hamper implementation of LCBM reforms. It starts with a systematic assessment of the preconditions for success and the stages of market development along the six major building blocks of LCBM development: money market, primary market, investor base, secondary market, financial market infrastructure, and the legal and regulatory framework. Applying a series of specific indicators, the guidance note framework allows for (1) the identification of gaps in a country's LCBM, (2) the assessment of a country's stage of market development, and (3) the identification of possible peers that may provide replicable lessons.

The guidance note discusses commonly faced challenges and bottlenecks in the journey to efficient and deep LCBMs. In particular, the guidance note explores how to overcome difficulties in implementing some existing best practices. Experience points to the interdependent nature of the required development actions and the need for supportive actions outside the narrow field of LCBM agents. The challenges discussed and accompanying policy guidance draw from the IMF and World Bank's extensive technical assistance provision in this area, cross-country experience in LCBM development, and results from a recent survey of country authorities.

The guidance note intends to be a resource for a wide range of stakeholders interested in government bond market development. Country authorities and technical assistance providers can use the diagnostic on the level of LCBM development to design a proper sequence of policy actions to further improve the functioning of the domestic government debt market. Country authorities and IMF and World Bank country teams can use the guidance note to identify key macroeconomic and financial issues linked to LCBM development and integrate it into their policy analysis and advice. The diagnostic findings regarding weaknesses in LCBMs can be used to help identify financial vulnerabilities and their remedies, in the authorities' ongoing financial sector surveillance, and in the context of Financial Sector Assessment Programs and Financial Sector Stability Reviews.

## Abbreviations

ASEAN	Association of Southeast Asian Nations
BMA	Bond Market Association
CCP	central counterparty clearing house
CIS	collective investment scheme
CSD	central securities depository
DMO	debt management office
DVP	delivery versus payment
ETP	electronic trading platform
FMI	financial market infrastructure
G20	Group of Twenty
LCBM	local currency bond market
LMO	liability management operation
IMF	International Monetary Fund
PD	primary dealer
PDMO	Public Debt Management Office
RTGS	real-time gross settlement
SRD	Serbian dinar





# Introduction

Local currency marketable debt as a share of total government debt has increased in emerging market and developing economies over the past decade. Better macroeconomic conditions and increased perception about the importance of developing domestic debt markets created the conditions for this increase. For a selected sample of 44 emerging markets, the size of marketable government debt more than doubled since 2011 (\$6.5 trillion to \$13.5 trillion in 2019), with a significant increase in issuance of local currency debt during this period (\$5.9 trillion to \$12.1 trillion).<sup>1</sup> Furthermore, the local currency share of total government debt in emerging market and development economies increased from 18.9 percent in 2011 to 46.6 percent in 2019. However, despite considerable growth of local currency bond markets (LCBMs) in recent years, LCBMs in emerging market and developing economies continue to remain relatively underdeveloped compared with advanced economies, in which the local currency share of total government debt is about 95 percent.

Alongside growth in LCBMs, issuance policies have improved. Emerging market and developing economies have adopted new issuance policies and procedures as their government debt portfolios have grown, advisory efforts among international financial institutions and global and regional actors have increased, and knowledge sharing on debt management and debt management best practices have improved within the international community. In addition, progress has been observed in developing economies as primary market practices have become more transparent and more countries have started to issue benchmark securities.

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<sup>1</sup>IMF World Economic Outlook database and Bank of America Emerging Market Local Markets Guide.

Despite the observed progress, there is still significant scope for countries to further develop their LCBMs.<sup>2</sup> Although many emerging market and developing economies have regularly promoted and adopted policies to develop their domestic markets for several years, different crises—for example, banking sector and macroeconomic dysfunctions in some countries have deterred LCBM improvements. In other cases, the lack of underlying enabling conditions or appropriate policies related to LCBM development has prevented further progress. Thus, it is important to understand the factors that are hindering the government LCBM development process so that appropriate measures and steps, targeted to the specific country, can be developed.

LCBM development can help to diversify government funding sources, safeguard sovereign portfolios from currency and maturity mismatches, and prevent or ameliorate financial crises in emerging markets (September 2002 *Global Financial Stability Report*, Chapter IV). In particular, Silva and Velandia-Rubiano (2010) find that some emerging markets that shifted the composition of their public debt portfolios toward local currency debt issuance and improved their macroeconomic fundamentals avoided being buffeted by the global financial crisis. Along the same lines, Creehan (2015) argues that developing LCBMs can help insulate Asian emerging markets from volatility in global capital markets and associated capital outflows, and from exchange rate volatility that can lead to higher debt servicing costs for domestic borrowers in the event of a depreciating local currency. The funding challenges faced by many countries because of the coronavirus disease pandemic is one more example of the importance of developing domestic debt markets to increase economic resilience.<sup>3</sup>

The Group of Twenty (G20) has also recognized the importance of LCBMs in improving the resilience of the domestic economy and financial systems. In November 2011, the G20 endorsed an action plan to support LCBM development. As part of this commitment, several multilateral institutions developed a diagnostic framework to identify general enabling conditions, key components, and constraints for successful LCBM development in emerging market and developing economies (IMF, World Bank, EBRD, and Organisation for Economic Co-operation and Development 2013). Also, international financial institutions have played a role in supporting domestic capital markets by issuing local currency bonds, providing advisory services to debt managers, and setting up guarantee facilities.

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<sup>2</sup>In the context of this note, strengthening of LCBMs refers to the goal of increasing the share of marketable local currency government bond securities in the overall debt portfolio of the central government, in the context of a transparent primary market and growing activity in the secondary market.

<sup>3</sup>Appendix 4 briefly discusses the implication of a more developed domestic market on financial stability.

The work presented in this guidance note brings together the large array of knowledge on this topic and is relevant to a variety of stakeholders. It systematizes the existing knowledge on the many issues related to the development of LCBMs and formulates a comprehensive approach to analyze them. Also, the guidance note provides a way to compile country experiences more easily, thereby facilitating the creation of a repository of information. This repository would be a powerful resource for country authorities who want to further develop their domestic debt markets and for technical assistance providers in this field. Technical assistance donors will also benefit because the guidance note can facilitate better implementation of recommendations and the monitoring of progress. Moreover, it will facilitate surveillance work by the IMF and World Bank teams, who can use the guidance note as a resource to identify relevant issues that need to be addressed to improve financial sector soundness and economic resilience.

The guidance note is organized as follows. The next section provides an overview of the literature and practical work done up to now in the area of LCBM development. The core of the guidance note is divided in two parts: Part 1 is the diagnostic element, which consists of an analytical framework to assess the level of market development. It discusses the enabling conditions necessary for LCBM development and presents a series of indicators to assess the level of development in six building blocks.<sup>4</sup> Part 2 of the guidance note covers country experiences and discusses challenges and bottlenecks typically faced by emerging market and developing economies in their market development process. This section also offers guidance on how to overcome those challenges, backed by country cases where relevant. The final section concludes and suggests a road map on how to use the framework to implement LCBM development policies, considering the assessment from Part 1 and the challenges identified from Part 2. The report also includes five appendixes. Appendix 1 describes selected case studies of successful market development experiences; Appendix 2 presents the results from a survey sent to country authorities in 2019 to identify the main challenges they had faced in developing their domestic debt markets; Appendix 3 presents three stylized cases that illustrate possible paths of reform for different levels of LCBM development; Appendix 4 provides a brief discussion on the impacts of a deeper domestic debt markets on financial stability; and Appendix E develops on the features and preconditions of a primary dealer system.

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<sup>4</sup>The building blocks are money markets, primary markets, secondary markets, investor base, financial market infrastructure, and legal and regulatory frameworks.



## The Work on LCBM Development Up to Now

Several studies have documented the key determinants of LCBM development. Burger and Warnock (2006) find that countries with stable inflation rates and strong creditor rights have more developed LCBMs and rely less on foreign currency denominated bonds. The results of Essers and others (2016) show that LCBM capitalization in selected African countries is negatively correlated with governments' fiscal balance and relatively high inflation, and positively related to common law legal origins, quality of institutional setup, and strong democratic political systems. In a study on Asian emerging markets, Park (2017) presents evidence that better macroeconomic performance and stronger institutions help develop stronger LCBMs.

With regard to specific building blocks of LCBM development, Árvai and Heenan (2008) discuss the development of secondary markets for government securities and reach the following conclusions: (1) a commitment to achieving and maintaining a stable macroeconomic environment, especially prudent fiscal policy, should underpin market development, (2) a sound and transparent public debt management strategy supports secondary market activity, (3) a deep and diverse investor base is required, (4) poor market infrastructure leads to high transaction costs, slow order execution, and excessive operational risk, all of which inhibit trading, (5) secondary market growth is facilitated by effective monetary policy implementation, and (6) reforms should be sequenced to ensure a balanced development of all the structures supporting the secondary market.

Considering LCBMs' integral role in sovereign debt portfolio management, Jonasson and Papaioannou (2018) maintain that LCBM development can be viewed in three main stages, each with different priorities. In the initial stage, the focus should be on establishing a functioning primary market and creating the enabling conditions for secondary market development. In the deepening stage, where basic elements of the primary market and secondary

market are established and functioning, the focus should be on improving liquidity on the secondary market. Finally, in the maturing stage, where elements of the market are, in general, well-functioning, the focus of policymakers should be on the development of sophisticated instruments and segments such as derivatives and making the market internationally competitive. Furthermore, they maintain that the debt manager is in a key position to influence the development of the government securities market through the choice and design of instruments, issuance patterns, and its communication channels.

Jonasson, Papaioannou, and Williams (2019) discuss the main impediments in LCBM development and policies to overcome them, including macro or political instability; financial repression; low domestic savings; paucity of institutional investors; proliferation of government agencies issuing securities, fragmenting the market; unpredictable issuance policy; and absence of the required market infrastructure. Potential obstacles to the development of a domestic market depend on the country context (that is, the overall degree and stage of development). Each country must develop its own reform plan suited to its conditions, focusing on developing the credibility of the government as an issuer of securities and as a reliable policymaker; maintaining transparency to stakeholders; enhancing secondary market liquidity; and promoting a well-functioning money market, diversified investor base, and an appropriate regulatory infrastructure.

Since the early 2000s, the IMF and the World Bank have produced several reports to promote the development of LCBMs:

- A handbook on policy issues, building blocks, and implementation considerations (World Bank and IMF 2001) that reflects the experiences and views of practitioners from the public and private sectors in the 1990s.
- A joint pilot program to design relevant reform and capacity-building programs in 12 countries (World Bank 2007). The countries chosen were geographically and economically diverse and helped illustrate the challenges, obstacles, and progress in applying principles of LCBM development.<sup>1</sup> This work provided practical insights to the many aspects of debt markets, including the six key building blocks already mentioned, and to the complex ways that they interact and react to policies and developments.
- The Government Securities Market Development Toolkit for low-income countries to assess public debt market performance (World Bank 2014). The toolkit uses a rating system of 10 government securities market devel-

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<sup>1</sup>The 12 countries are Bulgaria, Colombia, Costa Rica, Croatia, Indonesia, Kenya, Lebanon, Nicaragua, Pakistan, Sri Lanka, Tunisia, and Zambia.

opment key performance indicators and assesses the level of public debt management performance.

- A stock-taking of recent global LCBM policy initiatives and regional and country implementation efforts and of examined trends in government and corporate LCBMs' size, investor base, secondary market liquidity, and key drivers (IMF and World Bank 2018; IMF and World Bank 2020). Furthermore, they presented key themes for developing LCBMs and discussed the roles that policymakers and multilateral development banks could play.

Many regional financial institutions have also produced reports on LCBM trends and development guidelines. The Asian Development Bank published a report in 2019 discussing trends in Association of South East Asian Nations (ASEAN)+3, which sets out good practices for developing LCBMs, drawing on regional experiences and lessons from the ASEAN+3 Bond Markets Forum. The report acknowledges that applying a one-size-fits-all approach to countries is not useful because of each market's unique features.

Though the work described was extensive, a more granular description of the underlying factors driving market development and the challenges faced by countries was still missing. The analytical framework presented in this guidance note aims to close this gap.





## Part 1. Diagnostics

This section outlines a comprehensive and systematic framework to assess the level of domestic debt market development in a country. It discusses the following two components:

- Enabling conditions, to highlight the important role that the broader environment plays in the implementation of policies in domestic debt market development.
- Six building blocks, which use a set of indicators to measure the level of domestic government debt market development in each block. The six building blocks are money market, primary market, secondary market, investor base, financial market infrastructure, and legal and regulatory framework.

### Enabling Conditions

Enabling conditions are fundamental for the effectiveness of agreed local currency bond market (LCBM) reform efforts and they broadly define a country's development potential. To inform a better assessment of the building blocks for LCBM development, it is important to consider the nature of enabling conditions in the country being assessed. The state of the enabling conditions also can shape policy priorities and the sequencing of reforms. Nevertheless, even with less than satisfactory enabling conditions, strengthening of the basic functionalities in the LCBM building blocks can contribute to a virtuous cycle—such reforms will have a positive impact on macroeconomic discipline, which can contribute to further improving the enabling conditions themselves. For countries facing structural constraints, such as the size of the economy or the financial sector, there is a natural limit on domestic market development; securing stable, consistent financing from the domestic market could instead be the key objective. The most important

enabling conditions that are conducive for domestic government debt market development are discussed as follows.

### **General Macroeconomic Conditions**

Sound and stable macroeconomic conditions are crucial for the development of LCBMs. A stable macroeconomic environment anchors investor confidence, assuring investors that the value of their debt holdings will be preserved. A track record of good macroeconomic performance supported by a credible macroeconomic policy framework and overall commitment of the authorities will strengthen investor expectations. Mismanagement of the economy is often costly because past episodes of severe adverse events (that is, sovereign debt crisis, restructurings and/or banking sector crises) could have lingering impacts on investor confidence and significantly limit the progress of LCBM reform.

### **Financing Needs of the Government**

The government's funding needs forms the basis of debt issuance. In most countries, the government's fiscal requirements dictate the need to borrow, and the LCBM is one of the primary sources of this financing. However, in some lower-income countries, the availability of grants or long-term concessional borrowing might imply that the issuance of more expensive local debt is not advisable, if foreign currency risk is not a concern. In addition, there are a few examples of countries that have issued domestic debt for the sole purpose of developing a domestic market.

### **Structure of the Economy**

The size of the economy and domestic savings base (including the availability of contractual saving institutions) will have an impact on the absorption capacity of the bond market. For small economies, it may be challenging to build a liquid market. Furthermore, a low domestic saving rate, even for larger markets, may constrain the demand for interest-bearing financial assets, including that of government securities. Many factors influence the level of savings in a country, such as macroeconomic fundamentals, taxation policy, and pension systems. Domestic savings can also be allocated toward many competing factors (for example, domestic infrastructure assets), and the marketplace of such alternative assets should be considered when assessing this aspect of the structure of the economy.

Small economies may face more limitations when developing domestic markets; however, defining a minimum threshold for an LCBM to develop is difficult. Small sovereign issuers may face constraints on instrument consolidation and on the issuance of liquid benchmark bonds. These issuers also may face hurdles in mobilizing large volumes of money through cash management and in building a sufficient large cash buffer. They may be more vulnerable to larger concentration ratios of debt holdings with a few investors. Local investors may not be comfortable with holdings of single instruments in a large size and even with that they may not be willing to trade on the secondary market. The scope for attracting nonresident investors is limited because they typically expect large volumes in the overall market and in the instrument they purchase. Therefore, governments in these countries should assess carefully their capabilities and needs before heavily investing in costly infrastructures and building capacity for market development.

It is easier to issue local currency assets in a country with low levels of financial dollarization or euroization.<sup>1</sup> Demand for local currency assets in the financial system would be supported when there is a small share of foreign currency deposits (and lending) in the banking system. This is reinforced further by a stable exchange rate and benign inflationary conditions that would preserve the value of local currency assets.

### **Fiscal and Debt Positions**

Sound fiscal and debt positions support the development of LCBMs, particularly in the primary market. A high fiscal deficit can feed into an unsustainable debt trajectory, and fiscal risks stemming from contingent liabilities can add to debt-related vulnerabilities. Countries with large external financing needs, a high stock of public debt subject to market risks (for example, interest-rate refixing, refinancing and exchange rate risks), and an unsustainable fiscal position are likely more vulnerable. The size of the government's borrowing needs and the risk of debt distress will affect the volume of net marketable domestic financing that the government is able to raise, the stability of this financing, and the pricing of the instruments. Easy availability of concessional external loans and reliance on nonmarketable domestic borrowings could constrain the growth of LCBMs. The erosion of investor confidence in countries with a history of sovereign debt defaults, including forced conversion or extension of domestic debt through financial repression measures, could affect significantly the prospects for LCBM development.

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<sup>1</sup>Financial dollarization/euroization occurs when domestic residents of a country can keep foreign currency deposits (US dollars, euros) in banks and borrow in foreign currency from those banks. The share of bank deposits (loans) in foreign currency in total bank deposits (loans) is a common measure of the degree of financial dollarization/euroization.

A lack of fiscal control can lead policymakers to deviate from sound market-based borrowing practices and affect investor confidence. For example, when there is a need to raise large amounts of financing or to contain borrowing costs over the short term, the government may choose to exert control over interest rates, accumulate payment arrears, borrow directly from the central bank, or resort to nonmarket placement methods. Such noncompetitive placement methods may generate short-term cost savings at the expense of market development in the long term. Similarly, to save on near-term budgetary costs, the government may be tempted to primarily raise borrowings with short-term maturities, which impedes market development and creates additional refinancing risk concerns. The adherence to sound market practices is important because it generates a feedback loop—the adoption of sound practices in the primary market that are oriented toward market-based borrowing can instill fiscal discipline on the government, thus helping to keep its borrowing costs at tolerable levels.

### **Monetary and Exchange Rate Conditions**

Stable inflation, interest rates, and exchange rates reduce uncertainty for investors and enhance demand for government-marketable debt. Excessive interest rate volatility and inflation pressures (which could also stem from the lack of monetary policy credibility) may lead to higher yields because investors require a premium for the unpredictability. Investors perceive excessively high and volatile nominal and real interest rates as unsustainable—this could induce uncertainty about debt sustainability, possible changes in the exchange rate regime, or an imposition of new forms of taxation and controls. This uncertainty reduces investor incentives to invest in local capital markets and long-term assets because it adversely affects expected profitability. Thus, stable monetary conditions allow the government to issue cheaper long-term debt, and to extend the maturity of the debt portfolio. High exchange rate volatility along with a high pass-through rate are key deterrents for investor confidence, both domestic and foreign.<sup>2</sup>

Interest rate controls or other symptoms of financial repression are often seen as indicators of weak underlying monetary and fiscal conditions. Faced with limited fiscal space and high funding costs, the government might be tempted to resort to these practices. However, while these practices could save costs in the short term, they could compromise the government's fiscal discipline, fueling inflation expectations and exacerbating financing costs in the long term; they might also distort market interest rates. The development of a market-based monetary policy framework (as discussed in the money market section) and the adoption of sound policies in the primary market could facilitate the exit from such practices.

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<sup>2</sup>For foreign investors, low convertibility also poses an additional burden.

## Financial Sector Soundness

The country's financial sector must be liquid and well-capitalized because it plays an important role as both investor and intermediary in the government debt market. The banking sector is an important part of the investor base in many countries, and typically it plays a critical intermediary role in LCBMs. The soundness of the financial sector is assessed typically by its capital adequacy, asset quality, earnings, and liquidity positions. Any risks of financial sector instability would hamper the capacity of the banking sector to play its role effectively.

## Debt Management Capacity and Operating Procedures

Effective institutional arrangements for managing public debt is a key enabling condition for the development of LCBMs. Debt management responsibilities should be defined clearly in statute, and operating procedures should be stipulated in a Memorandum of Understanding between relevant institutions, if necessary. To implement a market-based approach to public debt management, the debt management entity should have trained staff, a supporting organizational structure, and the necessary resources to do so.

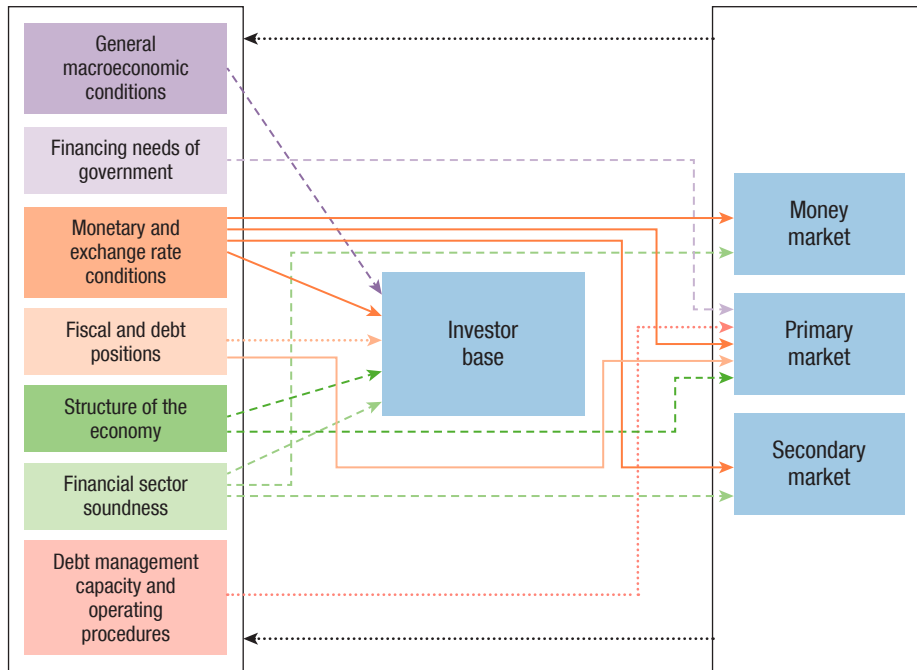
Although the debt management authority is not the only institution that may lead LCBM reforms, it is the best-placed to do so.<sup>3</sup> The debt management entity typically has the mandate and the incentives to lead the development process for LCBMs. It is important to have in place a medium-term debt management strategy, an annual borrowing plan, an auction calendar, and a debt-reporting procedure (which requires sufficiently robust public debt-recording capacity; IMF and World Bank 2019). For countries with a high stock of nonmarketable debt, their debt strategy should also consider ways to move toward more marketable instruments over the medium term.

The overall state of the enabling conditions will influence the pace at which progress in developing LCBMs can be achieved (Figure 1). The enabling conditions influence the three markets (money, primary, and secondary) and the investor base, while the financial market infrastructure and the legal and regulatory environment are largely independent. In general, feedback loops from the building blocks also will facilitate progress in the enabling conditions, entrenching a virtuous cycle (for example, a strong primary market can help to promote fiscal discipline, and hence establish better sustainability in fiscal and debt positions).

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<sup>3</sup>Although in some countries, the central bank may have higher capacity and closer contact with market participants.

**Figure 1. Enabling Conditions and LCBM Building Blocks**



Source: IMF staff.

Note: LCBM = local currency bond market.

## Framework to Assess the Conduciveness of Enabling Conditions for LCBM Development

### (1) General macroeconomic conditions

**Objective:**

Assess whether the track record of macroeconomic performance generates investor confidence in the economy.

**Key questions:**

- (1) Has the country been able to maintain a track record of sound and stable macroeconomic performance in the past five years? (yes/no)
- (2) Has the country been able to avoid severe adverse events such as sovereign debt restructurings and banking sector crises over the past 10 years? (yes/no)

### (2) Financing needs

**Objective:**

Assess whether the financing need of the government supports LCBM development.

**Key questions:**

- (1) Does the projected fiscal position of the government require market-based borrowing that generates a sufficient supply of government securities in the LCBM? (yes/no)
- (2) Is the government anticipating reduced access to or declining disbursements of concessional external financing (grants and loans), which would warrant more domestic borrowing? (yes/no)

### (3) Structure of the economy

**Objective:**

Assess whether the structure of the financial sector supports LCBM development.

**Key questions:**

- (1) Is the size of the economy sufficiently large to develop a financial sector that can support the LCBM? (yes/no)
- (2) Is the domestic saving base large enough to support the demand for government securities? (yes/no)
- (3) Is the use of domestic currency in the economy widespread enough to have an LCBM? (yes/no)

### (4) Fiscal and debt positions

**Objective:**

Assess whether the fiscal position of the government is sustainable and conducive to LCBM development.

**Key questions:**

- (1) Is the government's debt position at low or medium risk of overall debt distress based on IMF–World Bank's low-income countries' debt sustainability assessment framework, or considered sustainable based on market access countries' debt sustainability assessment framework? (yes/no)
- (2) Is the fiscal position of the government sustainable without having to resort to fiscal dominance on monetary and financial policies? (yes/no)

### (5) Monetary and exchange rate conditions

**Objectives:**

Assess whether monetary conditions are conducive to the development of the LCBM.

**Key questions:**

- (1) Is inflation low and stable, and are inflationary expectations well anchored? (yes/no)
- (2) Are exchange rates aligned with fundamentals, such that investors are not concerned about the risk of large devaluations? (yes/no)
- (3) Is volatility in short- and long-term market interest rates well contained? (yes/no)
- (4) Is financial repression (such as through interest rate controls) absent in the financial system? (yes/no)

### (6) Financial sector soundness

**Objective:**

Assess whether financial sector conditions are conducive to the development of the LCBM.

**Key questions:**

Is the banking sector sound and stable, with adequate solvency and liquidity positions? (yes/no)

### (7) Debt management capacity and operating procedures

**Objective:**

Assess whether the enabling conditions for an efficient management of public debt are in place.

**Key questions:**

- (1) Does the legal and institutional framework define a clear responsibility for a single entity to issue debt on behalf of the central government and execute operations related to that debt? (yes/no)
- (2) Does the entity responsible for debt management have sound governance arrangements and qualified staff? (yes/no)
- (3) Does the entity responsible for debt management prepare and publish a medium-term debt management strategy? (yes/no)



## **Building Blocks of LCBM Development**

### **Overview**

Once an assessment of the enabling conditions is made, the LCBM framework can be used to assess the current stage of market development in individual countries and to facilitate the identification of key areas where reforms or policy measures are needed. The LCBM framework also enables countries to systematically monitor and assess progress in their LCBM development over time.

Six building blocks are used to analyze the development of LCBMs in relation to their depth, liquidity, diversity, and resilience. These are (1) the money market, (2) the primary market, (3) the secondary market, (4) the investor base, (5) the financial market infrastructure (FMI), and (6) the legal and regulatory framework. The six building blocks are designed intuitively to provide focus on key reforms for the efficient functioning of LCBMs.

The framework uses a set of indicators that represent the key functionalities of each building block. For any country, each indicator is assessed from stage one to stage four, summarizing the level of functionality or stage of development in the specific building block. The indicators are ordered in a sequential manner, starting with more foundational measures and progressing in sophistication. A composite stage at the building-block level also can be calculated, which can help focus the proper sequencing of policy efforts across the six building blocks. The aim of benchmarking at the indicator and building-block level is to allow countries to identify peer countries that have overcome similar challenges, and to draw lessons from them to formulate an LCBM reform plan.

### **Determining the Stage of Development at the Indicator Level**

There are two types of indicators: outcome indicators, which show the current state of the market in relation to the building block; and policy indicators, which analyze the current policy and regulatory-associated practices employed by the authorities (both de jure and de facto). For most indicators, several binary (yes or no) questions are used to assess the extent to which sound policies and practices are implemented. Countries are rated as 1 (yes) or 0 (no) for each question, and the sum of the ratings determines the stage of the indicator. For several indicators (mostly those in the primary

market), a specific question is asked, and the answer determines the stage of the indicator.<sup>4</sup>

### **Determining the Composite Stage at the Building-Block Level**

Four building blocks (the money market, primary market, secondary market, and the investor base) have outcome indicators and policy indicators. A composite stage can be calculated with an equal weighing for both the simple average of the assigned stages of outcome indicators and policy indicators.

Two building blocks (market infrastructure and legal and regulatory framework) have only policy indicators. A composite stage can be calculated with a simple average of the assigned stages of policy indicators.

### **The Four Stages of LCBM Development**

Four thresholds are proposed to represent the following stages of development in LCBMs:

- Stage one, or the nascent stage, where the relevant indicator exhibits no functionality.
- Stage two, or the developing stage, where the relevant indicator exhibits some functionality, but severe shortcomings exist.
- Stage three, or the emerging stage, where basic elements of the indicator's functionality are established.
- Stage four, or the mature stage, where the indicator exhibits a considerable degree of functionality. This stage broadly corresponds to the levels and functionalities in LCBMs of advanced economies.<sup>5</sup>

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<sup>4</sup>For some indicators under the different building blocks and in the Enabling Conditions section, questions may require detailed judgment by the evaluator and some degree of subjective assessment may be needed (particularly in the case of self-assessments). To reduce the risk of misjudgment and facilitate an objective and consistent cross-country comparison, thresholds will be defined based on the first few pilot cases where assessments are conducted by the IMF and World Bank teams.

<sup>5</sup>For the investor base building block, stage four represents the state of functionalities observed in emerging market economies that are at a more advanced stage of market development.

## **Building Block 1: Money Market**

An efficient money market facilitates the implementation of monetary policy, strengthens monetary policy transmission, and provides a foundation for the maturity extension of government financing.<sup>6</sup> Money markets are crucial for the short-term financing and inventory management of market makers in government securities, and for the liquidity management operations of commercial banks. In addition, they help create broader products, such as floating rate instruments, and hedging tools, such as derivatives. Derivatives (for example, interest rate swaps) can further facilitate the development of capital markets.

### **Outcome Indicator**

#### **Well-Functioning Short-Term Securities and Repo Markets**

A reliable short-term yield curve and active repo market provide the foundation for the issuance of long-term securities and the development of the secondary market.<sup>7</sup> The reliability of the yield curve is underpinned by a deep and liquid money market that provides a foundation for many of the core areas of the government securities market.<sup>8</sup> The treasury bill market is often the most liquid and important segment in the money market. Treasury bills are discount instruments issued by the government, generally at tenors of less than one year. Typically, they are regarded as the safest government instruments because of their short maturity. In addition, central banks sometimes rely on the treasury bill market to conduct monetary policy operations. If that is the case, it is important that financial market participants understand the motives of treasury bill issuances because lack of transparency and unclear or mixed signals may cause market distortions.

Repo markets play various roles in the LCBM. The use of repo transactions in central bank market operations is a good starting point to catalyze the market development process.<sup>9</sup> Liquidity in the interdealer market would

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<sup>6</sup>For the purposes of this assessment, money market segments relate to short-term instruments excluding foreign exchange derivatives and interest rate derivatives, which are discussed in the Investor Base and Secondary Market sections, respectively.

<sup>7</sup>A repo (or sale and repurchase agreement) is the sale of securities tied to an agreement to buy them back later. A reverse repo is the purchase of securities tied to an agreement to sell back later. These transactions normally take place among financial intermediaries. A repo is best thought of as a collateralized loan or investment. Because a repo minimizes counterparty credit risks, it became more widely used after the global financial crisis.

<sup>8</sup>A liquid money market is one with an active secured and unsecured money market segment in which price transparency and trading volumes are robust enough to support market agents in investment, trading, and risk-management activities.

<sup>9</sup>Central banks use collateralized transactions for short-term liquidity provision and absorption operations. The collateral typically used by central banks is either foreign exchange (cash) in foreign exchange swaps transactions or government/central bank securities in repo transactions, or both.

strongly support market-making activities of dealers, particularly in inventory management.<sup>10</sup> Repo markets also could strengthen the capacity of banks and other institutional investors to adjust their liquidity positions, and invest in longer-term government securities and help to support dealer activities in the primary market. As repo markets develop, interbank or interdealer transactions would tend to increase and the reliance on central bank operations would tend to fall. The size of the haircut applied to government securities,<sup>11</sup> including illiquid ones, should not be set at a high level nor deviate significantly from that imposed on central bank securities (where relevant) as it could dampen the incentives for repo activity. The active use of repos by market players is an indication of an advanced stage in the money market.

## Policy Indicators

### A Monetary Policy Operating Framework Supportive of LCBM Development

The operating framework of monetary policy has a significant effect on money market development. The monetary policy framework reflects the development stage of money markets and defines the central bank's involvement in them—the more extensively interest rates are used as operational targets to guide monetary policy, the more active money markets tend to be and the higher the propensity of central banks to develop this market segment.<sup>12</sup> Because the transition to a market-based framework entails costs in the form of higher interest expenses, which might result in central bank negative capital positions, authorities need to be mindful of these associated costs and take relevant steps to address them.<sup>13</sup> A market-based operating framework requires liquidity management across the whole banking sector. Any

<sup>10</sup>Market makers need to hold a certain level of liquid inventories (for example, stock of government securities sold by investors) for their business. With the use of repo markets, they can borrow money to hold inventories, while selling securities that they do not hold by borrowing them. In general, repos are a more stable and cheaper funding source than unsecured borrowing, as they are flexible and minimize counterparty credit risks.

<sup>11</sup>The haircut, or the margin applied to repo transactions, takes into account the risk that collateral will not realize the full value of the transaction, and the haircut depends on the maturity, quality, scarcity value, and price volatility of the underlying collateral; the term of the repo; and the creditworthiness of the customer.

<sup>12</sup>An inflation targeting (IT) framework uses interest rates as an operational target, and an exchange rate targeting framework typically uses exchange rates and interest rates as operational targets. A monetary targeting framework uses reserve money as an operational target and, at least in theory, does not require active money markets for monetary policy operation purposes. Countries that make the transition from a monetary targeting framework to an inflation targeting framework typically must develop money markets quickly to enable market-based operations.

<sup>13</sup>A transition from a monetary targeting framework to an inflation targeting framework requires central banks to adjust the composition of liabilities and pay market interest rates as opposed to holding large balances of required reserves that are not remunerated. Central banks with large balance sheets might accumulate losses as revenues from assets (for example, foreign interest rates) that typically are lower than expenses for liabilities (for example, domestic interest rates).

excess liquidity in the banking system, if not properly managed by the central bank,<sup>14</sup> could reduce the need for banks to actively manage their liquidity and undermine any incentives to trade in the money market.

### **Monetary Policy Operations Supportive of LCBM Development**

Open market operations are integral to the functioning of money markets. Direct policy instruments (particularly interest rate controls), are harmful to market development. High levels of reserve requirements, which are typical under a reserve monetary targeting framework, could distort the price discovery function in money markets by putting downward pressures on market interest rates.<sup>15</sup> In banking systems that hold high levels of excess reserves, the absence of remuneration at market rates also can adversely affect price discovery. In general, the use of marketable securities in liquidity absorption operations is more conducive to market development than the use of non-marketable term deposits (see Box 1). The use of competitive price auctions indicates that securities are issued at market rates (and thus more likely to be traded in the secondary market).

### **Transparency of Market Information**

Transparency can be assessed by the publication of short-term reference rates, other than the policy rate. Because short-term reference rates are the basis for pricing a broad range of products in capital markets, it is important to ensure their reliability as reference rates. In general, transaction-based reference rates are more reliable than quote-based rates, particularly if the quotes are indicative.<sup>16</sup> Information on market pricing is necessary to construct a reliable short-term yield curve, and information on trading volumes is helpful to enhance transparency and facilitate the broadening of the investor base. This information could include pre-trade information and market quotes on the treasury bill and repo market. Timeliness is key—if the publication of market prices is delayed, their usefulness declines. Ideally, market pricing should be published daily (that is, by the end of the business day), while trading volumes should be published at least monthly. In general, the local banking or market association, or in some cases the central bank, is best placed to publish such reference rates. Appropriate measures should be in place to ensure the reliability of reference interest rates.

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<sup>14</sup>Proper management of excess liquidity implies that excess reserves are remunerated at the market rate.

<sup>15</sup>High levels of reserve requirements tend to reduce the need for banks to adjust liquidity positions in money markets. Most countries do not pay interest on reserve requirements.

<sup>16</sup>The reference rates of very short tenors (typically up to two weeks but in some markets only one day) tend to be more reliable because they are underpinned by higher market liquidity.

## The Legal Framework for Repurchase Transactions

Written master agreements and their enforceability are crucial for the development of repo markets. Written master agreements, such as the Global Master Repurchase Agreement and the Master Repurchase Agreement, have been developed to provide legally robust contractual documentation for repo transactions.<sup>17</sup> To be fully enforceable, such agreements will, in many countries, require supportive legislation, in particular to recognize the ownership right over the collateral and the right of the nondefaulting party of close-out netting in the event of an insolvency-related default.<sup>18</sup> Such legislation avoids instances in which a court refuses to acknowledge the transfer of title to the collateral and recharacterizes the repo as a collateralized loan, with the risk that the holder of the collateral has no more rights than other creditors in a bankruptcy, or invalidates netting.<sup>19</sup>

A nondistortive tax framework is important. A tax framework for repo transactions could be distortionary if it is structured based on the legal structure of the repo (sale and repurchase) rather than its economic substance (collateralized borrowing). It is desirable to treat income and gains from, and the costs of, repo transactions as interest income and expenses, respectively, rather than as giving rise to capital gains and losses, and to ensure transaction amounts are free from withholding tax. Also, transaction taxes on repos are not helpful in developing repo markets. Box 2 summarizes the key tax considerations relating to repo transactions.

The legal framework should provide the necessary operational flexibility when managing a repo portfolio. It is important that the legal framework allows for different types of repo transactions involving the right of substitution, in which sellers of the security may or may not have the right to retrieve the security and substitute it with another of equal quality and value during the term of the repo. Similarly, the legal framework should allow the rehypothecation of collateral, in which buyers can reuse the securities received as collateral in separate transactions. If the underlying legal framework for repos lacks such flexibility (for example, the collateral is blocked to the benefit of the buyer of the securities), the potential benefits of repo could be significantly reduced.<sup>20</sup>

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<sup>17</sup>A repurchase agreement transaction is structured as a sale and repurchase of securities in legal terms, although economically, it is a collateralized borrowing. This could pose complicated legal challenges. The Global Master Repurchase Agreement is governed under English law, and the Master Repurchase Agreement is governed under New York law.

<sup>18</sup>Also, they enhance the operational efficiency of trade negotiations, margin provisioning, and post-trade payment and collateral management.

<sup>19</sup>Investors in several countries without robust legal frameworks for repo transactions use sell/buybacks to achieve similar functionalities to those of repos—these transactions are less efficient, more costly, and do not achieve the same legal and financial outcomes.

<sup>20</sup>An external legal opinion concerning the enforceability of the legal transaction is particularly important to the foreign investor.

**Framework for the Money Market**

<b>Outcome</b>			
<b>(1) Well-functioning short-term securities and repo markets</b>			
<b>Objectives:</b> Assess whether short-term securities and repo markets are supportive of the development of the government bond market.			
<b>Key questions:</b> (1) Has a short-term yield curve of up to one-year maturity (including treasury bills) been established? (yes/no) (2) Are treasury bills, central bank securities, or both actively traded in the secondary market? (yes/no) (3) Are repos/reverse repos actively used in central bank market operations? (yes/no) (4) Are repos/reverse repos actively used by investors for cash investments, funding, or liquidity management purposes? (yes/no) (5) Are repos/reverse repos and/or securities lending facilities actively used by dealers for market-making activities? (yes/no) (6) Is the size of haircuts (defined by the central bank or other regulator) for repo transactions conducive to the use of repo transactions? (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the six questions. The sum of six ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
0–1	2–3	4–5	6
<b>Polices/Practices</b>			
<b>(2) Monetary policy operating framework</b>			
<b>Objective:</b> Assess whether the operating framework for monetary policy is conducive to the development of money markets.			
<b>Key questions:</b> (1) Does the monetary policy framework require the extensive use of interest rates as an operational target? (yes/no) (2) Are authorities willing to accept the costs of market-based operations? (yes/no) (3) Are there an operational framework and capacity for banking sector liquidity management? (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the three questions. The sum of the three ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
0	1	2	3
<b>(3) Monetary policy operations</b>			
<b>Objective:</b> Assess whether monetary policy operations are conducive to the development of money markets.			
<b>Key questions:</b> (1) Do monetary policy operations exclude the use of interest rate controls? (yes/no) (2) Are excess reserves remunerated at below but close to market rates to avoid undermining incentives to market participants to trade in the market? (yes/no) (3) Is an interest rate corridor for overnight rates (that is, the difference between rates at which the banks can deposit with or borrow from the central bank) set at a range that does not deter interbank trading? (yes/no) (4) Are tradable securities (that is, central bank securities, government securities, or reverse repos) used in liquidity absorption operations without relying heavily on nontradable instruments (standing facility or term deposits)? (yes/no) (5) Are competitive price auctions used for open market operations by the central bank? (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the five questions. The sum of the five ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
0–1	2–3	4	5

*(continued)*

### Framework for the Money Market *(continued)*

<b>(4) Transparency</b>			
<b>Objective:</b> Assess the transparency of the money market.			
<b>Key questions:</b>			
(1) Is pre-trade quoting information consistently available to participants in the treasury bills or central bank securities market, or both? (yes/no)			
(2) Is pre-trade quoting information consistently available to participants in the repo market?			
(3) Are key short-term reference interest rates published daily? (yes/no)			
(4) Are appropriate measures taken to ensure the reliability of reference interest rates (that is, based on either transaction prices or committed quotes)? (yes/no)			
(5) Is trading information on market prices (daily, by the end of business day) and the trading volume (monthly or more frequently) of treasury bills and/or central bank securities published? (yes/no)			
(6) Is trading information (such as trading volume) on repo markets published (monthly or more frequently)? (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the six questions. The sum of the six ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
0–1	2–3	4–5	6
<b>(5) The legal framework for repurchase transactions</b>			
<b>Objective:</b> Assess the legal robustness of repurchase transactions.			
<b>Key questions:</b>			
(1) Are written standard master agreements for repo transactions adopted and widely used? (yes/no)			
(2) Does the legal framework (possibly as ascertained by legal opinions) support the legal robustness of such transactions by allowing full transfer of securities as collateral and close-out netting upon insolvency-related default of a counterparty? (yes/no)			
(3) Is the contractual authorization for substitution and reuse of collateral consistent with the broader legal framework? (yes/no)			
(4) Is the tax framework conducive to repo market development? (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the four questions. The sum of the four ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
0–1	2	3	4



## **Building Block 2: Primary Market**

The primary government bond market lays the foundation for the LCBM. The primary market provides the domestic financing to the government. Through this market, the debt manager implements the debt management strategy and establishes the relationship with market participants. Through the ability of the debt manager to directly influence several variables, such as the definition of the debt instrument, the auction calendar, and issuance procedures, the primary market is the most direct channel available to the debt manager to affect the market positively. The primary market also provides a regular opportunity for two-way communications between the issuer and market participants. Thus, primary market policies have a fundamental role in promoting the development of the domestic market.

### **Outcome Indicators**

#### **Marketable Domestic Debt as a Share of Central Government Total Debt**

The share of marketable domestic debt to central government total debt is a proxy for the degree of reliance on domestic market borrowing.<sup>21</sup> A larger share of marketable domestic debt issued in local currency, compared with total debt, is associated with more advanced stages of primary market development. This is reflected in a relatively smaller share of external debt to total domestic debt. Although some economies issue foreign currency debt in the domestic market, their inability to issue an adequate volume of local currency debt may reflect the underdeveloped stage of the LCBM.

#### **Stability of Domestic Market Financing**

The stability of domestic market financing is defined as a stable overall demand for government securities, as often captured by the bid-to-cover ratio. Persistent oversubscription of securities offered signals healthy demand and is associated with advanced stages of primary market development. However, in some emerging market and developing economies, primary dealer (PD) obligations related to minimum auction participation and the presence of large captive investors may result in persistently high bids to cover ratios and mask true underlying demand.

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<sup>21</sup>Domestic debt in this guidance note is defined as debt issued in local currency in the local market. Local market is defined by the jurisdiction of issuance and not by residency of holders.

### **Average Maturity of Government Debt**

A central government debt portfolio that shows a predominance of medium- to long-term security issuance is prima facie evidence of a more mature investor base. An increased share of medium- and long-term marketable securities in the central government debt portfolio typically is associated with more advanced stages of primary market development. As the market develops, average maturity can be increased by the issuance of long-term instruments.

### **Issuance across the Yield Curve**

The yield curve is used as a basis for bond pricing and thus investor decisions. A yield curve that is relatively long with adequate liquidity distributed across benchmark (reference) maturities typically is associated with advanced stages of primary market development.<sup>22</sup>

### **Policy Indicators**

#### **Market-Based Pricing**

The adoption of market-based pricing in auctions signals an adherence to transparency and noninterventionist policies. When bond prices are determined by the issuer rather than cleared at market rates, and when those prices are not consistent with fundamentals, the true value of the security cannot be ascertained in the primary market, and the attractiveness of securities for investors diminishes significantly.<sup>23</sup> Lower investor demand could result in pressures for monetary financing from the central bank. Market-based pricing is fundamental to extend maturities of debt, establish a yield curve, and develop the secondary market. In advanced stage primary markets, the issuer is a price-taker.

#### **Market-Based Placement Mechanisms**

The use of market-based issuance mechanisms signals a commitment to greater transparency.<sup>24</sup> Issuance on a tap basis or private placements may not facilitate price discovery when compared with issuance by syndications and

<sup>22</sup>A yield curve—also known as the term structure of interest rates—illustrates the relationship between maturities and yields of government securities.

<sup>23</sup>A cap on the interest rate set by the issuer in auctions is a form of nonmarket-based pricing.

<sup>24</sup>Types of placements include (1) auction: the predominant placement technique used by governments because of transparency and cost benefit; (2) syndication: used when the demand is uncertain (case of new issuances); (3) private placements: government issues securities, generally with specific characteristics, directly to an investor or a group of investors; and (4) tap sales: the government defines the characteristics of securities to be sold and the period to accept bids. They can be sold at a minimum or fixed price, depending on the demand.

auctions.<sup>25</sup> Advanced primary markets in advanced economies use auctions as the dominant issuance mechanism; however, syndications could be useful for new maturities or new types of instruments.

### **Predictability and Transparency of Issuance**

Predictability in the timing of issuance in primary markets enhances transparency and gives investors and intermediaries time to prepare their balance sheets. This predictability is important for long-term maturities, where the market risk is greater. Rates at which medium- and long-term government debt may have been contracted bilaterally can have a material impact on bond valuations. The transparency of issuance volume and characteristics of individual instruments also helps reduce uncertainty for investors. Primary markets at advanced stages would, in normal times, publish and adhere to at least a quarterly issuance calendar, including details on issuance volumes and the terms of individual instruments, particularly the tenors.

### **Government Cash Flow Forecasts**

The ability to produce reliable forecasts of the government's cash flow is critical for predictable and transparent issuance. A well-developed cash management function in the government allows delinking bond issuance with temporary cash shortfalls, enabling adherence with the issuance calendar and enhancing predictability for investors. Debt management authorities should have access to a reliable forecast of the government's future cash positions. This forecast should be updated frequently; the longer the forecast period, the more supportive it is for predictable and transparent issuance.

### **Transparency of Auction Results**

The transparency of auction results is crucial for market transparency. Auction results with information on bid and accepted amounts; cutoff price; and the minimum, average, and maximum prices (yields) of accepted bids should be disseminated as widely as possible on the day of the auction. More advanced stages of primary market development often are associated with greater transparency and a tighter time frame in the announcement of auction results.

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<sup>25</sup>Issuance on a tap basis, as used here, is when prices are determined unilaterally by the issuer. It should be noted that it is different from tap mechanisms used in an auction framework, which give investors access to noncompetitive subscriptions.

### **Transparency of Communication between the Authorities and Market Participants**

The transparency of communication between the authorities and market participants reduces uncertainty for investors and helps to facilitate their participation in the primary and secondary markets. This transparency requires that the authorities disseminate to the market information that can affect the pricing of government bonds, including fiscal information, debt portfolio risk indicators, the debt management strategy, and the annual borrowing plan. Regular communication between the authorities and market participants should provide a two-way dialogue on market conditions, leading to a better understanding of the supply and demand factors that can improve the execution of the issuance program.

### **Fragmentation**

A proliferation of debt instruments creates distortions in primary market bond prices and reduces secondary market liquidity.<sup>26</sup> The central government should coordinate the issuance of its own debt and its guaranteed marketable debt issued by other entities. In case the central bank issues debt, the government and the central bank should minimize fragmentation by differentiating tenors and avoid entering the market at about the same time. The central government should avoid the issuance of nonmarketable debt for financing purposes, with the possible exception of small volumes for the retail sector.

### **Benchmark Bonds**

Benchmark bonds aim to increase the size of individual securities at key tenors, thereby fostering liquidity and helping to establish a yield curve.<sup>27</sup> Developing a benchmark yield curve is an important objective for countries that want to develop a liquid secondary market. Although the benefits and costs of developing a benchmark yield curve are difficult to quantify,

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<sup>26</sup>Market liquidity can be assessed with the turnover ratio (trading volumes divided by the total size of the securities outstanding), the average transaction size, and by the bid-ask spreads. In cross-country comparisons, it is important to note that the definition of trading volumes is not uniform across countries (for example, some countries publish the sum of the reported volumes by sellers and buyers, and other countries adjust the reported volumes by taking an average. Some countries also include repo transactions and outright transactions in their reports).

<sup>27</sup>Benchmark bonds are usually fixed-rate bullet bonds for key maturity sectors, which are the most appropriate instruments to build a yield curve and tend to attract a wide range of investors with different motivations and investment time horizon. Variable-rate and inflation-indexed bonds could be used as a transitional strategy to initiate fixed-rate securities where macroeconomic stability is an issue, which reflects a rigid and high inflationary expectation. Furthermore, in some countries, variable-rate and inflation-linked securities are also financing instruments, but they tend to have much lower liquidity.

the benefits—such as the increased market competition, reduced liquidity premium, and positive externalities to the broader financial sector—tend to outweigh the costs. As the market develops, there are more regular reopenings of existing lines of securities in key maturity segments. Typically, advanced markets have benchmark bond policies that target certain amounts at key maturities, such that the size is large enough to develop a secondary market yield curve. Developing the policies in close consultation with market participants is good practice.

### **Cash and Debt Management**

Cash management plays a critical role in establishing transparent and predictable issuance practices and in controlling refinancing risks. In several markets (including in advanced economies), the government holds a certain level of cash buffer or uses various instruments (for example, short-term securities, repo, deposits) to reduce cash flow volatility and manage refinancing risks.<sup>28</sup> The increased size of individual securities from benchmark bonds creates higher rollover risks, which can be mitigated by having flexibility in prefinancing, the maintenance of proceeds, and the use of liability management operations (for example, buybacks and switches).

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<sup>28</sup>As the local market develops, the required level of cash buffer tends to be reduced, emphasizing more the efficiency of holding cash buffers.

## Framework for the Primary Market

Outcomes			
<b>(1) Marketable domestic debt as a share of central government total debt</b>			
<b>Objective:</b> Assess the degree of reliance on marketable domestic financing debt (stock).			
<b>Key questions:</b> How large is the stock of marketable domestic debt denominated in local currency as a share of central government total debt? <sup>1</sup>			
<b>Benchmarks:</b>			
<b>Stage 1</b>	<b>Stage 2</b>	<b>Stage 3</b>	<b>Stage 4</b>
Less than 25 percent	25–50 percent	50–75 percent	More than 75 percent
<b>(2) Stability of domestic market financing</b>			
<b>Objective:</b> Assess the stability of the overall demand for marketable government securities.			
<b>Key questions:</b> What is the level of demand for government securities as reflected by the bid-cover ratio?			
<b>Benchmarks:</b>			
<b>Stage 1</b>	<b>Stage 2</b>	<b>Stage 3</b>	<b>Stage 4</b>
There is a persistent undersubscription of securities offered.	Under-subscription of securities happens on an intermittent and irregular basis.	Securities are often well-subscribed.	Securities are generally oversubscribed in excess of the offered amount.
<b>(3) Maturity of local currency marketable government securities</b>			
<b>Objective:</b> Assess the ability of the government to issue long-dated fixed-rate securities and control its exposures to refinancing and interest rate risks.			
<b>Key questions:</b> (1) What is the average time to maturity of outstanding local currency marketable securities? <sup>2</sup> (2) What is the share of debt maturing in one year as a percent of the stock of local currency securities? (3) What is the average time to refixing of outstanding local currency securities? (4) What is the share of debt to be refixed in one year as a percent of the stock of local currency securities?			
<b>Benchmarks:</b> Average time to maturity <sup>3</sup>			
<b>Stage 1</b>	<b>Stage 2</b>	<b>Stage 3</b>	<b>Stage 4</b>
Less than 1 year	1–3 years	3–5 years	More than 5 years
<b>Benchmarks:</b> Percentage of debt maturing in one year			
<b>Stage 1</b>	<b>Stage 2</b>	<b>Stage 3</b>	<b>Stage 4</b>
More than 50 percent	25–50 percent	15–25 percent	Less than 15 percent
<b>Benchmarks:</b> Average time to refixing			
<b>Stage 1</b>	<b>Stage 2</b>	<b>Stage 3</b>	<b>Stage 4</b>
Less than 1 year	1–3 years	3–5 years	More than 5 years
<b>Benchmarks:</b> Percentage of debt to be refixed in one year			
<b>Stage 1</b>	<b>Stage 2</b>	<b>Stage 3</b>	<b>Stage 4</b>
More than 70 percent	40–70 percent	20–40 percent	Less than 20 percent
Final stage for the indicator defined by the consolidation of the stages for the four subindicators			
<b>(4) Issuance across the yield curve</b>			
<b>Objective:</b> Assess whether the yield curve is well-distributed across key tenors.			
<b>Key questions:</b> What is the structure and length of the yield curve?			
<b>Benchmarks:</b>			
<b>Stage 1</b>	<b>Stage 2</b>	<b>Stage 3</b>	<b>Stage 4</b>
Very short yield curve (less than 1 year)	Relatively short yield benchmark curve (1–3 years) or longer yield curve but irregular, ad hoc issuance in maturities longer than 3 years	Relatively longer benchmark yield curve (4–10 years) and regular issuance in key maturity segments	Extended and well distributed benchmark yield curve is built (more than 10 years) and regular issuance in key maturity segments

(continued)

**Framework for the Primary Market** *(continued)*

Policies and Practices			
<b>(5) Market-based pricing</b>			
<b>Objective:</b> Assess whether the issuance mechanism adopts market-based pricing.			
<b>Key questions:</b> How are prices determined in the issuance mechanism?			
<b>Benchmarks:</b>			
<b>Stage 1</b>	<b>Stage 2</b>	<b>Stage 3</b>	<b>Stage 4</b>
Prices are determined by the issuer.	Auctions and/or syndications are frequently not cleared at market rates.	Auctions and/or syndications are usually cleared at market rates.	Auctions and/or syndications are always cleared at market rates.
<b>(6) Market-based placement mechanisms</b>			
<b>Objective:</b> Assess whether the issuance adopts a market-based mechanism for placements.			
<b>Key questions:</b> What is the predominant placement mechanism for securities?			
<b>Benchmarks:</b>			
<b>Stage 1</b>	<b>Stage 2</b>	<b>Stage 3</b>	<b>Stage 4</b>
Less than 20 percent of securities are issued by auctions and/or syndications.	20–50 percent of securities are placed through syndications and/or auctions and the rest through other methods.	50–80 percent of securities are placed through syndications and/or auctions, where syndications are used for new instruments or very long-term bonds.	At least 80 percent of securities are placed through auctions and syndications, where syndications are used for new instruments or very long-term bonds.
<b>(7) Predictability and transparency of issuance</b>			
<b>Objective:</b> Assess the predictability of issuance as reflected, for example, in the details provided by an issuance calendar, market consultation, and timing of the auction announcements.			
<b>Key questions:</b>			
(1) Is an annual borrowing plan published that discloses the gross annual borrowing requirement for the government along with the volume of domestic marketable borrowings for the forthcoming fiscal year? (yes/no)			
(2) Is an issuance plan made publicly available in advance at least monthly or quarterly? (yes/no)			
(3) Is the aggregate volume of the instruments to be issued disclosed as part of the issuance plan? (yes/no)			
(4) Are aggregated volumes for individual tenors disclosed as part of the issuance plan? (yes/no)			
(5) Is the market consulted for preparation of the issuance plan? (yes/no)			
(6) Does the actual issuance closely match the issuance plan? (yes/no)			
(7) Are there transparent, clear, and consistently applied tender rules concerning eligibility criteria for participation, allotment method, treatment of outliers, and whether and when an auction size can be changed? (yes/no)			
(8) Are the auction details for issuance announced at least two business days before the issuance? (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the eight questions. The sum of the eight ratings determines the stage.			
<b>Stage 1</b>	<b>Stage 2</b>	<b>Stage 3</b>	<b>Stage 4</b>
0–2	3–4	5–6	7–8
<b>(8) Government cash flow forecasts</b>			
<b>Objective:</b> Assess how well government cash management is organized to support the issuance of domestic marketable debt in a predictable and transparent manner.			
<b>Key questions</b> Are reasonably reliable aggregate forecasts of government cash flows and cash balances available? <sup>4</sup>			
(1) Monthly forecasts for the upcoming month (yes/no)			
(2) Weekly forecasts for the upcoming month (yes/no)			
(3) Daily forecasts for the upcoming month (yes/no)			
(4) Quarterly forecast for the upcoming quarter (yes/no)			
(5) Monthly forecast for the upcoming quarter (yes/no)			
(6) Weekly forecast for the upcoming quarter (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the six questions. The sum of the six ratings determines the stage.			
<b>Stage 1</b>	<b>Stage 2</b>	<b>Stage 3</b>	<b>Stage 4</b>
0–2	3–4	5	6

*(continued)*

## Framework for the Primary Market *(continued)*

<b>(9) Transparency of auction results</b>			
<b>Objective:</b> Assess the degree of transparency of auction results.			
<b>Key questions:</b> (1) Are auction results announced within one hour of the same business day? (yes/no) (2) Is information on the bid and accepted amounts provided? (yes/no) (3) Is information on the cutoff price and the average price (yields) of accepted bids provided? (yes/no) (4) Are the maximum and minimum prices (yields) of the accepted bids provided? (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the four questions. The sum of the four ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
0	1–2	3	4
<b>(10) Transparency on communication between the authorities and market participants</b>			
<b>Objective:</b> Assess the level of transparency and communication between the authorities and market participants, which reduces uncertainty for investors and thus increase participation in the primary and secondary markets.			
<b>Key questions:</b> (1) Is information on the borrowing strategy and risk-management framework produced and updated annually? (yes/no) (2) Do the authorities engage in regular communication with market participants about borrowing strategy, market preferences, and market conditions? (yes/no) (3) Is information on in-year government finances, debt portfolio, and primary market activity published monthly? (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the three questions. The sum of the three ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
0	1	2	3
<b>(11) Market fragmentation</b>			
<b>Objective:</b> Assess the consolidation and standardization of marketable securities issuance.			
<b>Key questions:</b> (1) Are central government and central government guaranteed securities issued in a coordinated framework? (yes/no) (2) Do the central government and central bank avoid issuing securities in the same tenors? (yes/no) (3) Does the central government avoid issuance of nonmarketable securities for financing purposes? (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the three questions. The sum of the three ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
0	1	2	3
<b>(12) Benchmark bonds</b>			
<b>Objective:</b> Assess the policy on building benchmark bonds.			
<b>Key questions:</b> (1) Is there a policy to develop benchmark bonds? (yes/no) (2) Is there regular reopening of securities issued in key benchmark maturity segments? (yes/no) (3) Do benchmark bonds constitute more than 50 percent of the gross issuance of local currency marketable bonds? (yes/no) (4) Is there a target amount on the size of benchmark bonds for key maturities? (yes/no) (5) Is the size of key tenors large enough to develop a secondary market yield curve? (yes/no) (6) Is the market consulted at least annually on identifying benchmark bonds? (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the six indicators. The sum of the six ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
0–1	2–3	4–5	6

*(continued)*



**Framework for the Primary Market** *(continued)*

<b>(13) Cash and debt management</b>			
<b>Objective:</b> Assess whether cash and debt management instruments, policies, and capacity are in place to manage rollover risks, including those associated with the use of benchmark bonds.			
<b>Key questions:</b>			
(1) Do the authorities use cash management instruments to cover short-term cash shortages? (yes/no)			
(2) Are prefinancing and maintenance of proceeds allowed to deal with near-term redemptions? (yes/no)			
(3) Do the authorities have effective cash management policies and capacity to manage rollover risks associated with the use of benchmark bonds? (yes/no)			
(4) Is there a cash buffer to cope with unexpected liquidity needs? (yes/no)			
(5) Have the authorities engaged in liability management operations (such as buybacks or switch operations)? (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the five questions. The sum of the five ratings determines the stage.			
<b>Stage 1</b>	<b>Stage 2</b>	<b>Stage 3</b>	<b>Stage 4</b>
0–1	2–3	4	5

<sup>1</sup>For those countries without a national currency, the foreign currency used can be seen as the national currency for the sake of this indicator.

<sup>2</sup>Maturity in this case is remaining maturity rather than original maturity. In case central bank fiscal financing is used widely, average time to maturity might not represent the ability of the government to issue long-term debt. Adjusted average time to maturity considers the maturity of central bank debt to finance government securities purchases.

<sup>3</sup>According to BIS debt securities statistics, all countries (30 countries) reported the average time to maturity (the average over 2014–18) above three years, while 25 countries reported the average time to maturity above five years.

<sup>4</sup>According to the Debt Management Performance Assessment tool, DPI-11.1 definition of cash flow forecasting and cash balance management.

## Building Block 3: Secondary Market

The secondary market provides a cost-efficient and secure platform for market participants to trade securities in a fair and transparent manner. The market structure should involve a sufficient number of intermediaries that trade a nonnegligible volume of government securities, with standard pricing and during agreed times. These should provide wholesale investors with several options to buy and sell their securities at short notice and at reasonable cost. In broader terms, the secondary market provides liquidity for government securities that leads to term transformation, allowing investors to hold longer maturities than that of their liabilities on the assumption that liquidity will be available in the secondary market. The secondary market also provides a pricing reference for the sovereign—contributing to price discovery on the sovereign's new borrowing costs and for nonsovereign borrowers. Typically, a mature stage of LCBM development is characterized by healthy secondary market activity across the yield curve during normal times.

### Outcome Indicator

#### Market Liquidity and Depth

Market liquidity and depth enable reliable price discovery. Market liquidity can be measured by the turnover ratio, average transaction size, and bid-ask spreads. A bond market is considered liquid when bond trades of reasonable size can be executed in the secondary market (measured by the turnover ratio of government securities). A market is considered deep when there are significant orders at tight spreads, and large trades (buy and sell) have a limited impact on market prices. In deep markets, trades can be executed at low costs and tight bid-ask spreads.<sup>29</sup> Secondary markets in advanced stages of development tend to have a high turnover ratio, large transaction sizes, tight bid-ask spreads, and instruments traded across the yield curve.

### Policy Indicators

#### Pre- and Post-Trade Transparency

Market transparency, in the form of price quotes and market transactions, improves secondary market liquidity. Transparency can be measured through the availability of pre- and post-trade information. At advanced

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<sup>29</sup>Tight bid-ask spreads signify very small differences between the highest price that a buyer is willing to pay and the lowest price that a seller is willing to accept—this mainly is due to ample liquidity and high volumes of trading, and consequently strong price competition on both the buyers' and sellers' side.

stages of market development, pre-trade executable price quoting and post-trade information on prices and volumes are available in a consistent and timely manner.

### **Market-Making Duties**

Countries with a relatively developed financial system could adopt a PDs system to enhance secondary market liquidity.<sup>30</sup> It is important to emphasize that a PDs system is not a precondition for a liquid secondary market. Liquid secondary markets can develop without a PDs system, while secondary markets may remain illiquid in case of inefficient or premature PDs systems. Nevertheless, if the preconditions for the implementation of a PDs system are met, a carefully designed PDs system can contribute to increase secondary market liquidity. The key obligations for PDs include providing two-way quotes for a certain number of hours per day within a predefined spread and associated trading volume.<sup>31</sup> Although the obligation for the two-way quotes usually is based on firm prices, indicative quotes may be used to provide flexibility to PDs during the initial phase when the price discovery process is still evolving. Another obligation could be a minimum level of trading turnover over a certain period. PDs should be evaluated regularly, and nonperformers potentially replaced with new entrants in the PDs system.<sup>32</sup>

### **Market-Making Privileges**

Privileges afforded to PDs normally include exclusive access to auctions and liability management operations, access to noncompetitive auctions in the primary market, and access to securities and cash-lending facilities. Special privileges such as access to central bank credit lines could be provided in the early stages of development of a PDs system, although care should be taken so that such arrangements do not conflict with market development or monetary and debt management objectives. The privileges of PDs should be proportionate to the obligations to maintain incentives to participate in the PDs system.

### **Trading Environment**

An enabling trading environment helps to improve the efficiency of secondary market transactions. In addition to the repo market, the interest rate derivatives market (that is, interest rate swaps and interest rate futures)

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<sup>30</sup>This guidance note considers a PDs system and market making as interchangeable.

<sup>31</sup>The two-way quotes are usually mandatory for on-the-run benchmark bonds and could be extended to other bonds with market capacity of the PDs.

<sup>32</sup>See Appendix 5 for a fuller discussion of PDs systems.

and the ability to short sell securities help dealers manage risks related to market-making activities.<sup>33</sup> Electronic trading platforms also help to increase market transparency and strengthen the surveillance over securities transactions. Conditions discussed in other building blocks also affect secondary markets.<sup>34</sup>

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<sup>33</sup>The interest rate derivatives market also enables investors to adjust interest rate exposures with low cost, strengthening their capacity to invest in long-term bonds. Though short selling provides liquidity and is essential for dealer risk-management purposes, it may, at times, amplify volatility, particularly in less-liquid markets. Short selling is categorized into covered and “naked” short-selling. Covered short selling happens when government securities are bought or borrowed in the exact quantity to cover the short position. Also, a securities lending facility is an alternative to cover short selling. Naked short-selling occurs when government securities are sold without first borrowing the securities or ensuring that they can be borrowed. In general, covered short selling is permitted for market-making purposes, and naked short-selling is less usual.

<sup>34</sup>An appropriate secondary market-trading framework requires the presence of investors with different investment profiles, particularly non-buy-and-hold investors. Efficient financial market infrastructure, regulatory regime, tax systems, and dematerialized government securities are required. At advanced stages, securities lending facilities improve the quality of market making.

**Framework for the Secondary Market**

Outcome			
(1) Market liquidity and depth			
<b>Objective:</b> Assess the ability of investors to execute buy-and-sell orders in the secondary market in a cost-effective, timely manner, and with limited impact on the price of a security.			
<b>Key questions:</b> (1) Are transaction sizes and trading volumes for key tenors sufficient to meet banks' demand to buy and sell? (yes/no) (2) Are transaction sizes and trading volumes for key tenors sufficient to meet nonbank institutional investors' demand to buy and sell? (yes/no) (3) Are securities traded across the whole yield curve? (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the three questions. The sum of the three ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
0	1	2	3
<b>Supplemental Indicators</b>			
<b>Key questions:</b> (4) What is the daily turnover ratio of the government securities market?			
Range 1	Range 2	Range 3	Range 4
—	Below 0.5 percent	0.5–1.0 percent	Above 1.0 percent
(5) What is the average bid-ask spread of 10-year, on-the-run benchmark bonds (regarding yield)? <sup>1</sup>			
Range 1	Range 2	Range 3	Range 4
No spread exists, or more than 100 basis points	100—20 basis points	20—5 basis points	Less than 5 basis points
<b>Benchmarks:</b> Countries are rated as 1–4 for question (d) and (e). The sum of two ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
2	3–4	5–6	7–8
Policies/Practices			
(2) Pre-trade transparency			
<b>Objective:</b> Assess whether secondary market pre-trade reporting is available.			
<b>Key questions:</b> (1) Are prices for securities normally available on demand? (yes/no) (2) Are indicative prices quoted daily by market players for government securities? (yes/no) (3) Are firm prices quoted daily by market players for on-the-run benchmark securities? (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the three questions. The sum of the three ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
0	1	2	3
(3) Post-Trade transparency			
<b>Objective:</b> Assess the degree of transparency on secondary market trade-related reporting.			
<b>Key questions:</b> (1) Is post-trade information on price and volume for individual securities publicly available daily? (yes/no) (2) Do official sources or price vendors provide regular references for different points in the secondary market yield curve daily? (yes/no) (3) Are the model and methodology for a yield curve model publicly available? (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the three questions. The sum of the three ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
0	1	2	3

(continued)

### Framework for the Secondary Market *(continued)*

(4) Market-making duties			
<b>Objective:</b> Assess whether the framework for market-making duties is conducive to promote secondary market activity in government securities.			
<b>Key questions:</b> (1) Are market-making duties proportionate to the conditions of the secondary market? (yes/no) (2) Are market makers required to provide a two-way quote within a reasonably narrow spread? (yes/no) (3) Are market makers required to provide a two-way quote for a certain minimum volume of securities? (yes/no) (4) Are market makers required to provide a two-way quote for a certain minimum number of hours in a day? (yes/no) (5) Are market makers required to provide firm quotes? (yes/no) (6) Are market makers required to ensure a certain minimum turnover in trading? (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the six questions. The sum of the six ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
0–1	2–3	4–5	6
(5) Market-making privileges			
<b>Objective:</b> Assess whether the framework for market-making privileges is conducive to promote secondary market activity in government securities.			
<b>Key questions:</b> (1) Are market-making privileges and duties designed to be balanced? (yes/no) (2) Is the performance of market makers rewarded by the authorities in access to government securities or debt management operations? (yes/no) (3) Are market makers provided with exclusive access to repo or securities lending facilities by the authorities? (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the three questions. The sum of the three ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
0	1	2	3
(6) Trading environment			
<b>Objective:</b> Assess whether there is an enabling environment for secondary market trading.			
<b>Key questions:</b> (1) Is there an electronic trading platform that enables dealers to quote prices to each other in a seamless manner? (yes/no) (2) Is short selling of government securities allowed for market-making purposes? (yes/no) (3) Are hedging instruments (that is, interest rate swaps and interest rate futures) available? (yes/no) (4) Are hedging instruments (that is, interest rate swaps and interest rate futures) with sufficient liquidity available? (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the four questions. The sum of four ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
0–1	2	3	4

<sup>1</sup>This supplementary indicator should be interpreted with a large margin of error. Because of data limitations, the indicator does not control for the size of individual transactions, which could significantly affect the level of bid-ask spreads. The sample of countries for which data are available is also limited to only advanced economies and some emerging market economies.

## **Building Block 4: Investor Base**

A deep and diversified investor base ensures demand for government securities, strengthening the resilience of the market in times of market stress. The development of a diverse investor base comprising agents with different investment horizons and risk-return preferences, particularly institutional investors, allows the government to spread risk in its debt portfolio and helps to extend the yield curve. The absolute size of the domestic financial sector largely defines the domestic absorption capacity for government bonds, and the structure of the financial sector can have a significant impact on market liquidity.

### **Outcome Indicators**

#### **Market Participants**

The investor base significantly affects the pace and degree of development of the money market, the primary market, and the secondary market. Commercial banks usually play a major role in developing countries, typically as dominant investors for government bonds and as intermediaries for government bond trading. The size of the banking sector relative to the economy broadly defines its absorption capacity for government securities. The structure of the banking sector has a large impact on trading activities in the money and secondary markets, where a highly concentrated banking sector can undermine banks' incentives to trade.<sup>35</sup> Nonbank investors bring different risk-return preferences and investment horizons to the government bond market when compared with different risk-return preferences and investment horizons from commercial banks. Typically, pension funds and insurance companies prefer longer-dated assets to match their longer-dated liabilities, largely determining the ability of the government to issue longer-dated securities and thereby facilitate the extension of the yield curve. Meanwhile, money market mutual funds generally prefer shorter-dated securities. Hedge funds also are important market players in some government bond markets, though these intermediaries normally emerge at a later stage of development; they contribute to market liquidity via their more active trading. A developed investor base would have a deep and diverse range of bank and nonbank participants.

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<sup>35</sup>Banks tend to trade securities for liquidity management purposes, which helps bolster secondary market activity. A high concentration of the banking sector tends to become a binding constraint for market liquidity in developing countries with smaller banking systems, although it is not always the case for those with a large financial system.

## Investor Relationship Management

Active investor relationship management is useful to strengthen the investor base.<sup>36</sup> An understanding of the risk-return profile and the constraints of key investors provides a sound basis for matching issuances to potential demand and helps reduce the costs of funding in normal times. It also helps the government to maintain market access in times of stress. In advanced markets, there is a mutually beneficial two-way flow of communication between the authorities and market participants.

## Domestic Institutional Investors

The diversification of the investor base is a priority for many countries. Tax, accounting, and regulatory frameworks should be consistent with the objective of developing the institutional investor base (see building block 6 for further discussion). Collective investment schemes (CISs; for example, investment funds) are useful to encourage retail investor participation while avoiding the extensive use of dedicated products, which can create market fragmentation. Public pension reforms can contribute to increasing national savings, though such reforms should be formulated taking broader considerations into account. Markets in advanced stages typically have a supportive policy environment for the development of domestic institutional investors.

## Direct Financing from the Central Bank

Central bank lending to the government is harmful to the development of LCBMs.<sup>37</sup> Several established practices prevent monetary financing: the legislative prohibition of all forms of monetary financing, the legislative imposition of limits of purpose and duration of temporary cash advances, the legislative prohibition of central bank participation in the primary market,<sup>38</sup> and the disclosure of central bank holdings of government securities. Monetary financing tends to occur when the financing needs of government bonds exceed the absorption capacity of domestic and foreign bond investors. Aside from distorting price discovery (and secondary market development), monetary financing has adverse effects on inflation and the external position, and it undermines investor confidence in the government. Markets that are more advanced do not rely on central bank monetary financing for financing government.

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<sup>36</sup>See Knight and Northfield (2020) for further information.

<sup>37</sup>Some central banks of emerging market and developing economies have facilitated financing to government in various ways over recent months after the market volatility of March 2020 and the higher fiscal needs driven by the pandemic. Central banks with more policy credibility have had the most room to perform this role, although most market participants expect these arrangements to be only temporary.

<sup>38</sup>These legislative prohibitions or limitations are typically included in the “organic” central bank law.



### **Foreign Investors**

The participation of nonresident investors can enhance the investor base but should be subject to careful monitoring and robust safeguards. Nonresident investors add different investment perspectives to the LCBM, often increasing secondary market liquidity; however, they are more sensitive to global market conditions and could amplify market volatility. Authorities will need to weigh the trade-offs related to the participation of nonresident investors in the domestic government bond market. Nonresident investors typically invest in more mature or large markets because they usually demand sufficient market liquidity, hedging instruments, investor-friendly foreign exchange administrative procedures, and predictable tax frameworks (see building block 6 for further discussion).<sup>39</sup> In addition, the inclusion of domestic bonds in global indexes indicates that the market is well-developed and attractive to foreign investors.

### **Buy-and-Hold Investors**

A buy-and-hold investor base entails important trade-offs for market development. A strong presence of buy-and-hold institutional investors (for example, pensions funds and insurance companies) could serve as a reliable source of funding for long-term investment, thereby contributing to the resilience of the debt market. However, excessive reliance on buy-and-hold investors, especially through captive investors, can severely constrain secondary market activity and negatively affect further diversification of the investor base. Although buy-and-hold strategies could arise from several factors, including structural ones,<sup>40</sup> legal and regulatory frameworks (that is, tax, accounting, bank, and financial institution regulations) could be important contributors. Examples of these aspects include an unfavorable tax treatment of secondary sales (for example, on gains attributable to accrued interest), withholding taxes for institutional investors and transaction taxes, the lack of transparency in valuation rules, and reference rates for mark-to-market valuations that are not clearly defined in the regulatory framework.<sup>41</sup> Excessively high liquidity

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<sup>39</sup>Countries that do not meet these conditions typically issue international bonds denominated in a global reserve currency in the international capital market.

<sup>40</sup>For instance, the lack of sophistication or high concentration in the banking sector undermines banks' incentives to trade.

<sup>41</sup>The tax system should be equitable and broadly neutral across all types of investors (see Building Block 6 for further discussion). A neutral tax treatment of all types of financial institutions requires the abolition of double taxation of savings in mutual funds, pension funds, and life insurance. Similarly, investors who invest through investment funds, mutual funds, and pension funds should not be put in a worse position than if they had invested directly. The simplification of the tax regime for government securities—including removing stamp duties, preferential treatment across different types of investors, and transaction taxes—is often critical. Accounting and valuation rules pose an important interaction with the tax system because, for example, repurchase transactions could trigger valuation gains. Mark-to-market rules and the use of available-for-sale

regulations on banks and investment requirements for pension funds and insurance companies could also encourage buy-and-hold behavior.<sup>42</sup> Markets in advanced stages of development typically have an environment that mitigates buy-and-hold behaviors.

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portfolios are particularly important for creating the proper regulatory structure to allow for secondary market development because the inability of investors to sell their holdings in the market could discourage investors from holding medium- and long-term securities.

<sup>42</sup>Liquidity regulations of banks and investment requirements of pension funds and insurance companies can create an artificially stable demand for government bonds. When these requirements are presented at high levels, taking prudential aspects into account, a hold-to-maturity investment pattern emerges because captive investors can only sell their assets in the secondary market at a loss. Public sector institutions can exhibit a similar investment behavior, which undermines the price discovery function of markets and impedes secondary market development.

**Framework for Investor Base**

<b>Outcomes</b>			
<b>(1) Market participants</b>			
<b>Objective:</b> Assess whether the investor base supports local currency bond market development.			
<b>Key questions:</b> (1) Is the banking sector deep and diversified enough to develop a short-term yield curve? (yes/no) (2) Is the banking sector deep and diversified enough to develop a repo market? (yes/no) (3) Is the investor base deep enough to meet government funding requirements? (yes/no) (4) Is the nonbanking sector developed enough to extend the maturities of government securities? (yes/no) (5) Is the banking sector deep and diversified enough to support the secondary market? (yes/no) (6) Is there a significant presence of non-buy-and-hold investors? (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on six questions. The sum of six ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
0–1	2–3	4–5	6
<b>Supplemental indicator (1)-1 Depth and diversity of the banking sector</b>			
<b>Objective:</b> Assess the depth and diversity of the banking sector.			
<b>Key questions:</b> (1) What is the size of total assets of the banking sector to GDP? (database: IFS)			
Range 1 Below 50 percent	Range 2 50–75 percent	Range 3 75–100 percent	Range 4 Above 100 percent
(2) What is the share of top three banks in total assets of the banking sector? (database: World Bank Financial Structure database)			
Range 1 Above 90 percent	Range 2 75–90 percent	Range 3 50–75 percent	Range 4 Below 50 percent
<b>Benchmarks:</b> Countries are rated as 1 to 4 on the two questions. The sum of the two ratings determines the stage. Thresholds for (1) and (2) are based on the distribution of emerging markets and lower-income countries in the database.			
Stage 1	Stage 2	Stage 3	Stage 4
2	3–4	5–6	7–8
<b>Supplemental indicator (1)-2 Depth and diversity of the nonbanking sector</b>			
<b>Objective:</b> Assess the depth and diversity of the nonbanking sector.			
<b>Key questions:</b> (1) What is the size of the total assets of domestic nonbank investors (pension funds, insurance companies, and investment funds) to GDP? (database: IFS)			
Range 1 Below 10 percent	Range 2 10–25 percent	Range 3 25–50 percent	Range 4 Above 50 percent
(2) What is the share of domestic nonbank investors in government bond holdings? (database: IMF Sovereign Debt Investor Base for Emerging Markets)			
Range 1 Below 10 percent	Range 2 10–25 percent	Range 3 25–40 percent	Range 4 Over 40 percent
<b>Benchmarks:</b> Countries are rated as 1 to 4 on the two questions. The sum of the two ratings determines the stage. Thresholds for (1) are based on the distribution of emerging markets and lower-income countries in the database. Thresholds for (2) are based on the survey.			
Stage 1	Stage 2	Stage 3	Stage 4
2	3–4	5–6	7–8

*(continued)*

## Framework for Investor Base (continued)

Policies and Practices			
(2) Investor relations management			
<b>Objective:</b> Assess the communication practices between the authorities and market participants.			
<b>Key questions:</b>			
(1) Do the authorities have a formal investor relations unit that deals with investor relation functions? (yes/no)			
(2) Do the authorities engage in regular two-way communications with market participants about their borrowing and issuance strategies, market preferences, and market conditions? (yes/no)			
(3) Do the authorities reach out to broader investors through investor forums (such as annual investor conferences)? (yes/no)			
(4) Is there a dedicated government debt management webpage with content that is helpful to investors? (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the four questions. The sum of the four ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
0–1	2	3	4
(3) Domestic institutional investors			
<b>Objective:</b> Assess whether the policy framework supports the development of domestic institutional investors.			
<b>Key questions:</b>			
(1) Are the tax, accounting, and regulatory frameworks consistent with the objective of developing the institutional investor base (pension funds and/or insurance companies) in the government securities market? (yes/no)			
(2) Are there policies to strengthen distribution channels for retail investors? (yes/no)			
(3) Are there fixed-income collective investment schemes investing actively in the government securities market? (yes/no)			
(4) Have there been effective policies to encourage national saving and provide a source of demand for long-term bonds (such as the introduction of funded public pension programs)? (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the four questions. The sum of the four ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
0–1	2	3	4
(4) Central bank monetary financing			
<b>Objective:</b> Assess whether the central bank government financing is prohibited or appropriately limited.			
<b>Key questions:</b>			
(1) Is central bank lending to the government prohibited by legislation? (yes/no)			
(2) If temporary advances to the government are authorized, are they appropriately circumscribed (such as with quantitative limits of about 10–15 percent of previous ordinary fiscal receipts, remunerated against market or policy rates, for exceptional purposes and for limited periods)? (yes/no)			
(3) Is the central bank prohibited from participating in the primary market auctions of government securities? (yes/no)			
(4) Are the central bank's holdings of government securities disclosed monthly? (yes/no)			
(5) Is the central bank able to reduce its government securities holdings by selling them in the secondary market or rolling them off when they mature? (yes/no)			
<b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the five questions. The sum of the five ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
0–1	2–3	4	5

(continued)

<b>(5) Foreign investors</b>			
<b>Objective:</b>			
Assess whether the operating environment and policy frameworks related to the local bond market are conducive to attracting foreign investors (for countries that deem more foreign investment desirable, after considering the benefits and risks).			
<b>Key questions:</b>			
(1) Are foreign investors allowed to invest in government securities without quantitative limits? (yes/no)			
(2) Are administrative procedures, if any, related to foreign exchange transactions sufficiently streamlined for foreign investors? (yes/no)			
(3) Are the rules on local currency (such as cash balances, overdrafts, and borrowing) supportive of foreign investment in government securities? (yes/no)			
(4) Are withholding taxes on interest income and capital gains eliminated for foreign investors? (yes/no)			
(5) Are foreign investors able to settle and hold local government securities in the domestic market without opening local currency onshore accounts? (yes/no)			
(6) Are foreign exchange hedging markets (foreign exchange forward markets) with sufficient depth and liquidity available? (yes/no)			
<b>Benchmarks:</b>			
Countries are rated as 1 (yes) or 0 (no) on the six questions. The sum of the six ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
0–1	2–3	4–5	6
<b>(6) Buy-and-hold investors</b>			
<b>Objective:</b>			
Assess whether the regulatory framework mitigates the impact of buy-and-hold behavior among investors.			
<b>Key questions:</b>			
(1) Is the tax framework neutral to the trading activity of government securities (that is, free from withholding taxes, transaction taxes, and the prorating of coupons)? (yes/no)			
(2) Are there transparent accounting/valuation rules for the government bond holdings of banks and other institutional investors? (yes/no)			
(3) Are reference rates for mark-to-market valuations clearly defined and available daily? (yes/no)			
(4) Do the liquidity regulations for banks and implementation avoid excessively discouraging banks from trading government securities? (yes/no)			
(5) Are pension funds and insurance companies free to manage their government bond portfolios without minimum holding requirements? (yes/no)			
<b>Benchmarks:</b>			
Countries are rated as 1 (yes) or 0 (no) on the five questions. The sum of the five ratings determines the stage.			
Stage 1	Stage 2	Stage 3	Stage 4
0–1	2–3	4	5

## Building Block 5: Financial Market Infrastructure

Efficient FMI facilitates the smooth flow and settlement of transactions in the money market and the primary and secondary markets, strengthens investor confidence, and stimulates the pace of market expansion. The state of development and functioning of the custodial and settlement infrastructure is a major determinant of systemic risk. Absent a sound securities settlement infrastructure, a market may be exposed to considerable systemic risks. The failure of one party to settle a large transaction may thus lead to a series of subsequent failures.

Systems used to settle and clear financial market transactions should be safe, cost-efficient, and convenient to use. The financial market infrastructure should have a clear legal basis, provide delivery versus payment (DVP), be subject to regulatory oversight, and have the necessary capacity to process trading volumes within the chosen settlement cycle. At advanced stages, FMI can facilitate the smooth flow of transactions for different categories of investors with high certainty and low costs. In the future, new financial technologies could play a relevant role in increasing efficiency and reducing risks for issuers and market players. It is important for debt managers to monitor the developments in these technologies.

### Performance Indicators

#### FMI Technology Platforms

Electronic systems improve efficiency and reduce risks. Core FMI systems include government securities issuance systems,<sup>43</sup> security registers, real-time gross settlement (RTGS) payment systems, central securities depositories (CSDs), and security settlement systems. Interconnectivity among the core systems is critical. Modern systems support electronic payments, fast and efficient low-risk settlement for high volumes of transactions, and straight-through processing between the core systems. They improve transparency in the market, support the monitoring of anti-money-laundering compliance, and provide an opportunity to establish cross-border links. In a small financial market, partial manual and electronic systems may be more cost effective and efficient. A pragmatic assessment of cost and benefits based on the constraints of the market size is necessary.

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<sup>43</sup>Government securities auction systems are included as FMI systems for assessment purposes because it is becoming common for developing countries to acquire integrated systems that include government securities auction systems.

### **Dematerialized Securities**

Dematerialized securities increase asset safety and support settlement efficiency.<sup>44</sup> Dematerialized securities are held as credit balances on securities accounts, and they are typically kept in the form of electronic records. If issued under well-designed legal frameworks, dematerialized securities are secure and verifiable, unlike physical securities, which must be held in a secure place, and ownership is difficult to prove if they are lost or stolen. Dematerialized securities are a prerequisite for effective clearing and settlement systems.

### **Clearing and Settlement Risk (for a CSD or Central Counterparty Clearing House)**

An FMI framework should minimize counterparty and market risk during clearing and settlement. Building on the supportive legislation for dematerialization of securities, counterparty credit risk can be limited when the “finality” (that is, the definitive character) of payments and transfers of dematerialized securities is protected by law, notwithstanding bankruptcy and other laws,<sup>45</sup> and the CSD system supports simultaneous security DVP. Also, the CSD and central counterparty clearing house (CCP) should have an electronic link to the central bank’s RTGS to facilitate DVP with final security transfer against the final RTGS cash settlement. The CCP could further reduce counterparty and market risks, but this risk reduction depends on the robustness and nature of the CCP settlement guarantee, its ability to call on financial resources, and the legal capacity to enforce settlement in case of participant default. Market risk can be contained by reducing the time between trade execution and settlement finality (for example, real-time intraday trading and same-day settlement).<sup>46</sup> The more frequent the DVP model 2 (DVP2) or model 3 (DVP3) netting intraday, the lower the market risk exposure to the netting arrangement.

### **Governance and Access Policies of CSD and CCP Systems**

Sound governance and access policies strengthen the credibility and functionality of FMI. The owner and operator of the CSD and CCP should have a sound reputation; clearly defined roles and functions, including the legal mandate to develop the system that supports the development of the LCBM;

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<sup>44</sup>Dematerialization of government securities is the move from issuance in the form of physical certificates to electronic bookkeeping by depository.

<sup>45</sup>The system rules of the FMIs should clearly define at what point the payment and securities transfer is final. In many countries, specific legislative provisions are required to ensure that this finality is not put at risk by application of insolvency and other laws.

<sup>46</sup>The risk that trade settlement fails and the price to replace the bond has increased.

and the financial capacity to operate and invest in system development and absorb adverse financial and business shocks. The supervisory agency should ensure the accountability of these systems, and framework for supervision and oversight could be assessed against the principles for FMI.<sup>47</sup> The fee structure should be on a cost recovery basis so that the system could be developed consistent with the public interest. The CSD and CCP should have fair and open participation criteria that protects both themselves and the participants. Their access policies should be harmonized with financial market law and regulations, and they should not preclude any sound financial institution and investors. A direct or indirect remote CSD membership is also useful for diversifying the investor base. Nonresidents investing through a regional or global CSD may have a different risk-return profile from those investing through the domestic CSD. The owner and operator of the CSD and CCP would need to be subject to supervision and the oversight of regulators.

### **Market Segmentation**

If multiple CSDs or CCPs exist, market segmentation should be minimized. Key issues include (1) the high costs and inefficient transfer of securities between the systems, (2) different access rules between the systems, and (3) different settlement models (that is, RTGS [DVP1] or netting models [DVP2 and DVP3]). These factors add additional costs and create inefficiency, limiting the potential for secondary market development. In addition, these factors can make the repo market unviable, which has happened in some countries.

### **FMI Liquidity Support**

FMI should provide collateralization functionality. Once the market and legal framework exists, FMI should enable participants to liquidate government securities by offering low-risk, intraday settlement for an outright sale; intraday and overnight repo functionality consistent with a written master repurchase agreement; and an intraday collateralized lending arrangement.<sup>48</sup> Inefficient FMI could increase the costs of repo transactions compared with similar unsecured interbank transactions, undermining the potential advantage of repos in minimizing counterparty risks.

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<sup>47</sup>Issued by the Committee on Payments and Market Infrastructures and the International Organization of Securities Commissions.

<sup>48</sup>The over-the-counter market can deliver more immediate liquidity through repo and the outright sale of a security. It should be noted that DVP2 and DVP3 net settlement is more efficient than DVP1 settlement, which requires more cash and securities to settle individual gross obligations than if the combined transactions are netting.



**Transparency (of Data and Information)**

FMI should have the legal power and capacity to collect and publicly release data regarding transactions and categories of holders of securities. An electronic registry and CSD can extract information on transaction activity by security, security type, and security holdings by sector. This information can also be published electronically daily. Such information needs to be published in an aggregate form either by CSD or CCP systems operators or the authorities, which is a basis for establishing transparency in the primary market, secondary market, and money market. Information on the categories of holders of government securities also may be released.

## Framework for Financial Market Infrastructure

Electronic Platforms											
(1) Financial market infrastructure (FMI) technology platforms (FMI systems framework)											
<p><b>Objective:</b> Assess the modernity and efficiency of FMI systems (auction, payments, and settlement systems).</p> <p><b>Key questions:</b></p> <ol style="list-style-type: none"> <li>(1) Is an electronic auction system used to issue securities in the primary market? (yes/no)</li> <li>(2) Is there a single electronic register or depository for government securities? (yes/no)</li> <li>(3) Do commercial banks operate an electronic wholesale payment system? (yes/no)</li> <li>(4) Does the central bank operate a modern electronic real-time gross settlement (RTGS) payments system? (yes/no)</li> <li>(5) Is there a single electronic central securities depository (CSD) and/or central clearing counterparty (CCP) systems operated for government securities settlement? (yes/no)</li> <li>(6) Is there an electronic interface between the RTGS and the CSD and/or CCP and auction systems? (yes/no)</li> </ol> <p><b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the six questions. The sum of the six ratings determines the stage Note: For (5), if there is market fragmentation between two CSDs/CCPs, the rating should not exceed stage 2 if there is no electronic interface between the two systems.</p> <table border="1"> <thead> <tr> <th>Stage 1</th> <th>Stage 2</th> <th>Stage 3</th> <th>Stage 4</th> </tr> </thead> <tbody> <tr> <td>0, 1</td> <td>2, 3</td> <td>4, 5</td> <td>6</td> </tr> </tbody> </table>				Stage 1	Stage 2	Stage 3	Stage 4	0, 1	2, 3	4, 5	6
Stage 1	Stage 2	Stage 3	Stage 4								
0, 1	2, 3	4, 5	6								
Efficient and Low-Risk Custody and Settlement											
(2) Security registration											
<p><b>Objective:</b> Assess if the infrastructure supports dematerialized government securities and efficient security transfer between participants. (Note: A CSD may include the government security registry function.)</p> <p><b>Key questions:</b></p> <ol style="list-style-type: none"> <li>(1) What is the percentage of government securities issued in dematerialized form? (percent)</li> <li>(2) What percentage of tradable government securities are assigned an International Securities Identification Number (ISIN)/ Committee on Uniform Security Identification Purposes (CUSIP)? (percent)</li> </ol> <p><b>Benchmarks:</b></p> <table border="1"> <thead> <tr> <th>Stage 1</th> <th>Stage 2</th> <th>Stage 3</th> <th>Stage 4</th> </tr> </thead> <tbody> <tr> <td>100 percent of government securities are a physical security or not registered</td> <td>Less than 60 percent of securities are dematerialized or immobilized</td> <td>More than 60 percent of government securities are dematerialized</td> <td>100 percent are dematerialized securities with assigned ISIN/CUSIP<sup>1</sup></td> </tr> </tbody> </table>				Stage 1	Stage 2	Stage 3	Stage 4	100 percent of government securities are a physical security or not registered	Less than 60 percent of securities are dematerialized or immobilized	More than 60 percent of government securities are dematerialized	100 percent are dematerialized securities with assigned ISIN/CUSIP <sup>1</sup>
Stage 1	Stage 2	Stage 3	Stage 4								
100 percent of government securities are a physical security or not registered	Less than 60 percent of securities are dematerialized or immobilized	More than 60 percent of government securities are dematerialized	100 percent are dematerialized securities with assigned ISIN/CUSIP <sup>1</sup>								
(3) Clearing and settlement risk (CSD and manual FMI processes)											
<p><b>Objective:</b> Assess the efficiency of risk-mitigating factors in secondary market transactions of government bonds (counterparty and market risk) where the CSD is the primary CSD and settlements system for government securities.</p> <p><b>Key questions:</b></p> <ol style="list-style-type: none"> <li>(1) Is dematerialization of securities supported by the legal framework? (yes/no)</li> <li>(2) Is payment finality (often defined in the FMI system rules) protected by law? (yes/no)</li> <li>(3) Is security transfer finality (often defined in CSD system rules) protected by law? (yes/no)</li> <li>(4) Does the CSD support delivery versus payment (DVP1) settlement? (yes/no)</li> <li>(5) Are settlement payments settled through the central bank RTGS payment system? (yes/no)</li> <li>(6) Does the CSD support T+0 settlement (settlement day plus 1 day)? (yes/no)</li> </ol> <p><b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the six questions. The sum of the six ratings determines the stage.</p> <table border="1"> <thead> <tr> <th>Stage 1</th> <th>Stage 2</th> <th>Stage 3</th> <th>Stage 4</th> </tr> </thead> <tbody> <tr> <td>0–1</td> <td>2–3</td> <td>4–5</td> <td>6</td> </tr> </tbody> </table>				Stage 1	Stage 2	Stage 3	Stage 4	0–1	2–3	4–5	6
Stage 1	Stage 2	Stage 3	Stage 4								
0–1	2–3	4–5	6								

(continued)

**Framework for Financial Market Infrastructure (continued)**

<b>(4) Clearing and settlement risk (CCP)</b>			
<p><b>Objective:</b> Assess the efficiency of risk-mitigating factors in secondary market transactions of government bonds (counterparty and market risk) where the CCP is the primary CCP and settlements system for government securities.</p> <p><b>Key questions:</b></p> <ol style="list-style-type: none"> <li>(1) Are settlement payments settled through the central bank RTGS payment system? (yes/no)</li> <li>(2) Are net settlement DVP2, DVP3 guaranteed (such as by guarantee fund, members, owner/operators, other)? (yes/no)</li> <li>(3) Has the size of the guarantee been stress tested? (yes/no)</li> <li>(4) In the event of default, is the unwinding of netting arrangements for government security transactions transparent? (yes/no)</li> </ol> <p><b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the four questions. The sum of the four ratings determines the stage.</p>			
<b>Stage 1</b>	<b>Stage 2</b>	<b>Stage 3</b>	<b>Stage 4</b>
0-1	2	3	4
<b>Soundness and Operating Environment of FMI</b>			
<b>(5) Governance and access policies (of CSD and/or CCP systems)</b>			
<p><b>Objective:</b> Assess the extent that governance and access policies of the CSD and/or CCP support efficiency and the reduction of associated risks in the government securities market. (It is assumed the central bank operates the RTGS system.)</p> <p><b>Key questions:<sup>2</sup></b></p> <ol style="list-style-type: none"> <li>(1) Does the legal framework define who can own and operate the CSD, CCP, or both? (yes/no)</li> <li>(2) Does the owner(s) of CSD and/or CCP have a sound reputation?<sup>3</sup> (yes/no)</li> <li>(3) Does the legal framework define the role and functions of the CSD and/or CCP (including its incidental function) to support the over-the-counter market, custody, and settlement functions of the government bond markets? (yes/no)</li> <li>(4) Does the systems owner/operator have the financial strength to support the CSD and/or CCP?<sup>4</sup> (yes/no)</li> <li>(5) Are fees based on a not-for-profit/cost recovery basis?<sup>5</sup> (yes/no)</li> <li>(6) Is there supervision and oversight of the CSD and/or CCP, supported by the legal framework? (yes/no)</li> <li>(7) Does the supervisory agency ensure accountability of payment systems, including by requesting periodic reports? (yes/no)</li> <li>(8) Are FMI access rules open to sound financial institutions that are eligible to invest in securities from participation in the CSD and/or CCP?</li> <li>(9) For foreign investors, are direct and/or indirect remote CSD memberships allowed? (yes/no)</li> </ol> <p><b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the nine questions. The sum of the nine ratings determines the stage.</p>			
<b>Stage 1</b>	<b>Stage 2</b>	<b>Stage 3</b>	<b>Stage 4</b>
0-2	3-5	6-7	8-9
<b>(6) Market segmentation</b>			
<p><b>Objective:</b> Assess the degree of market segmentation where multiple CSDs and CCPs are used. (If there is only one CSD or CCP, then stage 4 is achieved.)</p> <p><b>Key questions:</b> If there is more than one CSD and/or CCP that settles government securities:</p> <ol style="list-style-type: none"> <li>(1) Are multiple CSDs and/or CCPs electronically linked for same-day or next-day security transfer? (yes/no)</li> <li>(2) Can financial institutions directly access multiple systems? (yes/no)</li> <li>(3) Do multiple systems use the same settlement model? (yes/no)</li> </ol> <p><b>Benchmarks:</b> Countries are rated as: If yes to (1), assign 4. Otherwise, assign 1 (yes) or 0 (no) on three questions (1)-(3). The sum of the ratings determines the stage.</p>			
<b>Stage 1</b>	<b>Stage 2</b>	<b>Stage 3</b>	<b>Stage 4</b>
0	1	2	3

(continued)

## Framework for Financial Market Infrastructure *(continued)*

Repo Markets											
(7) FMI liquidity support											
<p><b>Objective:</b> Assess the services provided by the FMI that support liquidity for securities and cash.</p> <p><b>Key questions:<sup>6</sup></b></p> <ol style="list-style-type: none"> <li>(1) Can the transaction proceed without mandatory predeposit of cash and/or predelivery of securities? (yes/no)</li> <li>(2) Does the CSD, CCP, or both support T+0 settlement? (yes/no)</li> <li>(3) Does RTGS, CSD and/or CCP support intraday repo? (yes/no)</li> <li>(4) Does RTGS, CSD and/or CCP support overnight repo trade settlements? (yes/no)</li> <li>(5) Does the CSD, CCP, or both support security pledges? (yes/no)</li> <li>(6) Are trading and settlements costs of repo transactions comparable to those of unsecured transactions? (yes/no)</li> </ol> <p><b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the six questions. The sum of the six ratings determines the stage.<sup>7</sup></p> <table border="1"> <thead> <tr> <th>Stage 1</th> <th>Stage 2</th> <th>Stage 3</th> <th>Stage 4</th> </tr> </thead> <tbody> <tr> <td>0–1</td> <td>2–3</td> <td>4–5</td> <td>6</td> </tr> </tbody> </table>				Stage 1	Stage 2	Stage 3	Stage 4	0–1	2–3	4–5	6
Stage 1	Stage 2	Stage 3	Stage 4								
0–1	2–3	4–5	6								
Transparency in the Money, Primary, and Secondary Markets											
(8) Transparency (data and information)											
<p><b>Objective:</b> Assess whether the FMI has the legal power and capacity to collect and publicly release the transactions and securities holders' data.</p> <p><b>Key questions:</b></p> <p>Does the FMI have the legal basis and ability to collect and publicly release (directly or indirectly through the authorities) aggregate data on transactions volumes and value (by security and instrument type)?</p> <ol style="list-style-type: none"> <li>(1) Daily (yes/no)</li> <li>(3) Weekly (yes/no)</li> <li>(3) Monthly (yes/no)</li> <li>(4) Does FMI have the legal basis and capacity to publicly release (directly or indirectly through the authorities) data on security holdings by sector? (yes/no)</li> </ol> <p><b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the four questions. The sum of the four ratings determines the stage.</p> <table border="1"> <thead> <tr> <th>Stage 1</th> <th>Stage 2</th> <th>Stage 3</th> <th>Stage 4</th> </tr> </thead> <tbody> <tr> <td>0–1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </tbody> </table>				Stage 1	Stage 2	Stage 3	Stage 4	0–1	2	3	4
Stage 1	Stage 2	Stage 3	Stage 4								
0–1	2	3	4								

<sup>1</sup>Except for nontradable securities issued to the central bank and other government-related agencies.

<sup>2</sup>The reviewer will have to make a judgment on the system owner's reputation, objectives, and financial capacity. Adequate capital should be based on the size and on the liabilities of the CSD. The capital should be higher if the CSD acts as CCP or provides lending or credit to participants. Capital for a CCP should reflect its exposures to counterparty failure.

<sup>3</sup>Yes, for a central bank, unless there have been very recent, obvious cases that discredit the central bank.

<sup>4</sup>The answer is yes for a central bank but only a guide for CSD/CCP that are 100 percent government agencies. For nongovernment FMI owners, the capital should be assessed against the nature and risk profile of their operation (for example, does the FMI include equities? Is FMI a CSD or CCP? What parent guarantees are there?).

<sup>5</sup>Cost recovery may include a reasonable return on capital.

<sup>6</sup>The assumption is that a securities lending facility can be substituted with a repo agreement.

<sup>7</sup>Predeposit cash, predelivery security, or both reduce the settlement efficiency and liquidity and increase the cost of the trading and the market making. However, they do reduce the settlement risk.

## **Building Block 6: Legal and Regulatory Framework**

A country's legal and regulatory framework affects the structure, functioning, and development of LCBMs.<sup>49</sup> When the government is the borrower and issuer of securities, legislation and other legal instruments (such as a fiscal agency agreement between the government and the central bank) provide for the ability of the government to borrow, and they provide the authorization of different government entities to operate in these markets, including the role that the central bank undertakes as an agent of the government. At the level of intermediaries and investors, rules and regulations shape the organization of the primary and secondary markets in government securities and influence the roles of different types of market participants.

Like any other securities market, the legal and regulatory framework for government securities should aim at maintaining fair, efficient, and transparent markets.<sup>50</sup> To do this, the frameworks should define and enforce fair trading practices, penalize deviations from those practices (such as market manipulation and insider trading), and ensure investor protection through adequate rules for depository intermediaries to protect the holdings of investors.

Achieving these goals depends on effective enforcement. Effective enforcement is a function of the robustness of the regulatory and supervisory framework, the overall quality of the regulator and supervisor, and the resources and independence of the regulator and supervisor. This can be a major challenge, especially for emerging market and developing economies. The legal and regulatory framework for FMI and CIS and tax issues should be reviewed together with the related discussions in the other building blocks.<sup>51</sup>

### **Policy Indicators**

#### **Borrowing Authority<sup>52</sup>**

A government's borrowing activities require a legal basis. The legal framework should clarify the roles and responsibilities of the debt management enti-

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<sup>49</sup>For the purpose of this assessment, some regulatory issues that affect the functioning of broader capital markets are not discussed here (for example, prudential regulations, internal risk control systems of intermediaries, and business conduct rules). Disclosure of material information is discussed in the primary market and the secondary market building blocks (governments as sovereign issuers are exempt from statutory regulations).

<sup>50</sup>The principles of the International Organization of Securities Commissions set important guidelines for the legal and regulatory framework of the securities markets. A deeper assessment on these topics might benefit from a more thorough analysis of the principles.

<sup>51</sup>The legal issues related to payment finality and dematerialization of securities are discussed in the FMI building block. The investor base building block discusses how a CIS contributes to LCBM development. Tax issues related to repo transactions and buy-and-hold investment behaviors are discussed in the money market and investor base building blocks, respectively.

<sup>52</sup>See Awadzi (2015) for further discussion.

ties.<sup>53</sup> The stipulation in law of the objectives of developing domestic debt markets facilitates the efforts to develop those markets. Several debt management operations (such as liability management operations) might require additional legal provisions, which should, for instance, allow for the implementation of a PD system. Ideally, the periodic preparation and publishing of a medium-term debt management strategy should be part of the law, which should help to facilitate coordination between the debt management authorities and the fiscal and monetary authorities.

### **Market Regulation and Enforcement**

Market regulation and enforcement mitigates the risk of unfair trading practices such as market manipulation, front-running, and collusion. These practices tend to distort price formation in the government bond market and undermine investor confidence. Market regulations should be backed by adequate enforcement capacity and the expertise to monitor trading activities and enforce market conduct rules.

### **Investor Protection**

Investor rights over securities should be safeguarded. The segregation and identification of customer assets in the books of depositaries is vital for maintaining investor confidence in market intermediaries. It should prevent them from using customer assets for proprietary trading or other self-financing activities without the consent of the customer. Also, it supports the orderly return of customer assets in case of default of a depositary intermediary. The competent authority should oversee compliance regularly and take prompt corrective measures when needed.

### **Collective Investment Schemes**

A robust legal and regulatory framework is the key to developing CISs (for example, mutual funds, investment funds). Because CISs are marketed typically to retail investors, it is particularly important to ensure investor protection. CIS operators must act in the best interests of clients—there should be minimum standards for the eligibility, governance, and operational conduct of a CIS operator, including rules governing the CIS operator's legal form and structure and the segregation and protection of customer assets. Disclosure and periodic mark-to-market valuation for security holdings play an important role in providing the relevant information to investors on a timely basis. The net asset value of the CIS determines the purchase price that investors would pay when investing and the sales price they would receive when

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<sup>53</sup>Debt management functions are, in some cases, executed by multiple institutions.

liquidating. Valuation methods of CISs should be regulated and disclosed properly to potential investors.<sup>54</sup>

### **Legal Framework for Taxation**

Tax impediments to LCBM development should be identified and, when possible, removed. Tax frameworks are a key determinant of investment decisions and liquidity in LCBMs; therefore, the tax treatment of primary and secondary market transactions for government securities should be clear and reasonable.<sup>55</sup> This typically requires the careful design and implementation of suitable provisions in the tax law affecting both the supply side (that is, the tax treatment of government securities) and the demand side (that is, the effective and efficient alignment of tax treatment between key institutional investor groups). Box 3 summarizes the objectives of these supply-side and demand-side provisions.<sup>56</sup>

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<sup>54</sup>For further discussion, see International Organization of Securities Commissions principles 24, 25, 26, 27, and 28.

<sup>55</sup>They should include the tax treatment of gains on secondary sales, and repo, securities lending, financial collateral, and derivative transactions.

<sup>56</sup>A similar box and further information are provided in Bossu, Hillier, and Bergthaler (2020).

## Framework for Legal and Regulatory Framework

Primary Market											
(1) Borrowing authority											
<p><b>Objective:</b> Assess whether the legal framework for government borrowing and the development and implementation of a debt management strategy are in place.</p> <p><b>Key questions:</b></p> <ol style="list-style-type: none"> <li>(1) Does the legal framework define a clear and single entity with the authority to borrow? (yes/no)</li> <li>(2) Does the legal framework clearly set out the roles and responsibilities of the debt management entity? (yes/no)</li> <li>(3) Does the legal framework allow the authority to conduct broad debt management operations for risk management (such as liability management operations)? (yes/no)</li> <li>(4) Does the legal framework require the preparation, annual revision, and publication of a medium-term debt management strategy? (yes/no)</li> </ol> <p><b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the four questions. The sum of the four ratings determines the stage.</p> <table border="1"> <thead> <tr> <th>Stage 1</th> <th>Stage 2</th> <th>Stage 3</th> <th>Stage 4</th> </tr> </thead> <tbody> <tr> <td>0-1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </tbody> </table>				Stage 1	Stage 2	Stage 3	Stage 4	0-1	2	3	4
Stage 1	Stage 2	Stage 3	Stage 4								
0-1	2	3	4								
Secondary Market											
(2) Market regulation and enforcement											
<p><b>Objective:</b> Assess whether the regulatory framework prohibits unfair trading practices and whether the regulatory authority has the power and capacity to enforce it.</p> <p><b>Key questions:</b></p> <ol style="list-style-type: none"> <li>(1) Is there a legal and regulatory framework that applies (inter alia) to the trading of government securities to prohibit unfair practices (such as market manipulation, front-running, and collusion)? (yes/no)</li> <li>(2) Does the competent regulatory authority have the capacity to monitor activities in the government bond market? (yes/no)</li> <li>(3) Does the competent regulatory authority have the power and capacity to enforce market conduct rules? (yes/no)</li> </ol> <p><b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the three questions. The sum of the three ratings determines the stage.</p> <table border="1"> <thead> <tr> <th>Stage 1</th> <th>Stage 2</th> <th>Stage 3</th> <th>Stage 4</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>1</td> <td>2</td> <td>3</td> </tr> </tbody> </table>				Stage 1	Stage 2	Stage 3	Stage 4	0	1	2	3
Stage 1	Stage 2	Stage 3	Stage 4								
0	1	2	3								
(3) Investor protection											
<p><b>Objective:</b> Assess whether the legal framework to safeguard investors' ownership rights is in place and whether the competent regulatory authority has the power and capacity to enforce it.</p> <p><b>Key questions:</b></p> <ol style="list-style-type: none"> <li>(1) Are depositary intermediaries subject to rules to safeguard investor ownership rights, such as the segregation and identification of customer assets? (yes/no)</li> <li>(2) Does the competent regulatory authority have the capacity to oversee compliance with the rules described in (1)? (yes/no)</li> <li>(3) Does the competent regulatory authority have the power and capacity to enforce the rules described in (1)? (yes/no)</li> </ol> <p><b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the three questions. The sum of the three ratings determines the stage.</p> <table border="1"> <thead> <tr> <th>Stage 1</th> <th>Stage 2</th> <th>Stage 3</th> <th>Stage 4</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>1</td> <td>2</td> <td>3</td> </tr> </tbody> </table>				Stage 1	Stage 2	Stage 3	Stage 4	0	1	2	3
Stage 1	Stage 2	Stage 3	Stage 4								
0	1	2	3								

(continued)



**Framework for Legal and Regulatory Framework** *(continued)*

<b>Investor Base</b>			
<b>(4) Collective investment schemes</b>			
<p><b>Objective:</b> Assess whether the legal framework for collective investment schemes (CISs; such as mutual funds, investment funds) ensures investor protection.</p> <p><b>Key questions:</b></p> <ol style="list-style-type: none"> <li>(1) Does the legal framework set out standards for the eligibility, governance organization, and operational conduct of a CIS operator? (yes/no)</li> <li>(2) Does the legal framework set out rules governing the legal form and structure of CISs and the segregation and protection of customer assets? (yes/no)</li> <li>(3) Does the legal framework require sufficient disclosure to ensure investor protection? (yes/no)</li> <li>(4) Does the legal framework require periodic mark-to-market valuation for security holdings? (yes/no)</li> </ol> <p><b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the four questions. The sum of the four ratings determines the stage.</p>			
Stage 1	Stage 2	Stage 3	Stage 4
0-1	2	3	4
<b>Legal Framework for Taxation</b>			
<b>(5) Tax certainty and neutrality for key primary and secondary market transactions across key investor classes</b>			
<p><b>Objective:</b> Assess whether the legal framework for taxation is supportive of the development and efficient working of the primary and secondary local currency bond markets.</p> <p><b>Key questions:</b></p> <ol style="list-style-type: none"> <li>(1) Does the tax law framework provide clear and sound rules for determining the tax treatment of returns from government bonds (such as interest, discount, and principal) for retail, institutional, and nonresident investors)? (yes/no) (See also building blocks 1 and 3)</li> <li>(2) Does the tax law framework provide clear and sound rules for determining the tax treatment of secondary market transactions for government securities that will be entered into by investors? (yes/no) (See also building blocks 1 and 3)</li> <li>(3) Does the tax law framework have clear and sound rules dealing with locally domiciled CISs that achieve tax neutral outcomes for investors (that is, the same as or better tax treatment than direct investments)? (yes/no)</li> <li>(4) Does the tax law framework achieve an effective and efficient tax alignment with respect to investing or trading in financial instruments between key institutional investor groups? (yes/no)</li> </ol> <p><b>Benchmarks:</b> Countries are rated as 1 (yes) or 0 (no) on the four questions. The sum of the four ratings determines the stage.</p>			
Stage 1	Stage 2	Stage 3	Stage 4
0-1	2	3	4

## Using the Framework

The questions and indicators in the framework allow for a comprehensive assessment of the stage of development of a country's LCBM. With answers to all the questions in each building block, it is possible to aggregate the answers and determine the development stage of the specific building block. Although assigning specific weights to each indicator may make sense in some cases, the framework at this stage assumes a simple average to arrive at the development stage of each building block.<sup>57</sup>

A comparison across building blocks for a given country would help identify gaps in the market developing process, which would provide clues to where policy priorities should rest. After the stages for each indicator have been determined, it will be possible to evaluate whether any or some of the building blocks are lagging the others. This assessment will help define the building blocks that deserve more attention and prioritization in designing reforms.

A comparison can also be made relative to other countries. Once a number of countries are evaluated using this framework, and a more robust set of country data and experiences is established, it will be possible to evaluate the stages of development for each indicator for countries similar to the one being evaluated.<sup>58</sup> This assessment should provide useful inputs to determine areas for improvement, lessons learned from other countries' experiences, and policy recommendations. for each indicator for countries similar to the one being evaluated.<sup>58</sup> This assessment should provide useful inputs to determine areas for improvement, lessons learned from other countries' experiences, and policy recommendations.

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<sup>57</sup>Once the framework is tested in practice, it will be possible to better define whether different weights should be assigned to each indicator to derive the final stage for the indicator. At a later stage, an Excel worksheet may accompany the framework to facilitate the calculation of the stage of development for each building block.

<sup>58</sup>Further work could also include refining the calibration of the parameters and identifying the appropriate peer groups.

<sup>58</sup>Further work could also include refining the calibration of the parameters and identifying the appropriate peer groups.

**Box 1. Instruments for Central Bank Monetary Policy Operations**

The marketable instruments used by central banks for liquidity absorption operations vary across countries. Although many central banks have begun to use repo transactions for liquidity management purposes, the issuance of government treasury securities and central bank securities for monetary policy purposes is rather common. A 2013 survey by the IMF (covering 125 countries) indicates that 34 percent of economies issue securities for monetary policy operations. Central banks in Latin America tend to use treasury securities, and those in East Asia and Eastern Europe tend to use central bank securities. In Africa, the evidence is mixed. Notwithstanding the type of instrument used, the coordination between the central bank and government is critical to avoid debt fragmentation, unnecessary competition, yield curve distortions, and additional costs.

Optimal instruments should be determined depending on individual circumstances. The use of both instruments has pros and cons, but key considerations guiding their usage should include

- The stock of treasury securities available in the market. The ability of central banks to use treasury securities for monetary operations would depend largely on the size of the stock of marketable treasury securities available. Some central banks have arrangements with the government to issue or borrow government securities for monetary policy purposes. In this case, the central bank can use reverse repo transactions with the central government without relying on new issuances of treasury securities (as practiced in many advanced economies).
- Market fragmentation. The use of treasury securities is generally more conducive to market development because it can avoid market fragmentation. Where central bank securities are used, the negative consequences of issuing two similar instruments should be minimized, such as through a separation of maturities (that is, central bank securities are issued short term, and treasury securities are issued at longer maturities) and a harmonization in the design of securities and the method of auction. In practice, the separation of maturities could be costly for countries at an early stage of market development, where investor demand is concentrated in short-term securities. Fragmentation could be significant for countries where sterilization needs may be large and where the maturities of central bank securities are expanded to the medium term. Price distortions may also develop with pricing abnormalities for identical securities issued by the central bank and the government.
- Autonomy of central bank operations. The use of central bank securities is more straightforward regarding maintaining the autonomy of central bank operations. The use of treasury securities (new issuances), the proceeds of which are sterilized by being held in the central bank, requires a carefully designed arrangement between the two institutions to ensure the central bank's discretion regarding the size and timing of

**Box 1. Instruments for Central Bank Monetary Policy Operations (continued)**

issuances. For countries without the legal and institutional arrangements to prevent direct central bank financing of the government, the use of treasury securities could further blur the line between government financing and central bank market operations. Often, the proceeds from treasury bills issued by the government to accommodate the central bank's monetary policy purposes are deposited in a sterilization account and have separate reporting and accounting lines from fiscal policy treasury instruments.

- **Cost considerations.** In practice, sterilization costs are usually reflected in central banks' balance sheets, regardless of the instruments used. If treasury securities are used, and the central bank typically pays market interest rates to the government (on the positive cash balance in the government account), the impact on central bank net income positions would then be exactly the same as where central bank securities are used. Sterilization costs are borne ultimately by the government. In most countries, the profits of the central bank are transferred to the government, after allowing for adequate reserves, and any lower profits or losses of the central bank would reduce the government's present or future revenue, or both.
- **Debt considerations.** New issuances of government securities for the use of central bank operations would increase the level of gross public sector debt (although public sector debt net of the deposits at the central bank will be unchanged), while central bank securities (liabilities) are not usually considered public sector debt.

**Box 2. Key Tax Treatment Considerations for Repos**

- Ensure that both the transfer and return of the securities are disregarded for the seller to avoid taxable gains or losses from otherwise being realized by the seller.
- Treat as interest (or equivalent) the amount by which the agreed repurchase price exceeds the amount of the initial sale to better align the tax treatment with the substance of the repo transaction.
- Ensure taxation of third-party (such as rehypothecation or reuse) transactions for the buyer.
- Clarify the tax law treatment of manufactured payments, which could otherwise be treated as equivalent to the receipt and payment of interest on the securities.

### Box 3. Supply-Side and Demand-Side Tax Provisions

#### Supply-Side Objectives

##### Taxation of Government Securities

- *Facilitate investment and issuance decisions* (such as by enhancing the development and efficient working of the primary and secondary markets).
- *Identify and remove tax biases* against investing in government securities (for example, when compared with other investment products such as other bonds or bank deposits).
- *Minimize inefficiencies and distortions* (including financial transactions taxes and nonstandard third-party tax obligations, such as withholding tax).

#### Demand-Side Objectives

##### Investors to Cover Include

- *Make markets attractive to investors* (for example, to channel savings into investment).
- *Avoid penalizing investors* (such as by taxing them more heavily than if they had invested through collective investment schemes)—by providing concessions for portfolio investors.
- *Consider relative tax efficiencies* between alternative investment options.
- *Simplify tax provisions.*

<sup>1</sup>In an EET system, (1) contributions are not taxed, (2) pension fund income is exempt, and (3) pension fund payouts are taxed (both pensions and lump sums). This system typically operates as a deferral system, with the tax on contributions and pension fund income deferred until payout. The advantage of an EET system is that savings can grow at a faster rate compared with normal bank savings (which typically operate under a taxed/taxed/exempt system, with deposits made out of taxed income, interest income taxed, and withdrawals untaxed).



## Part 2. Country Experiences: Common Challenges and Possible Remedies

The framework outlined in the previous section provides a path for country authorities to guide local currency bond market (LCBM) reform. The indicators identified in the framework represent key features associated with best practice measures for the effective functioning of the six building blocks.

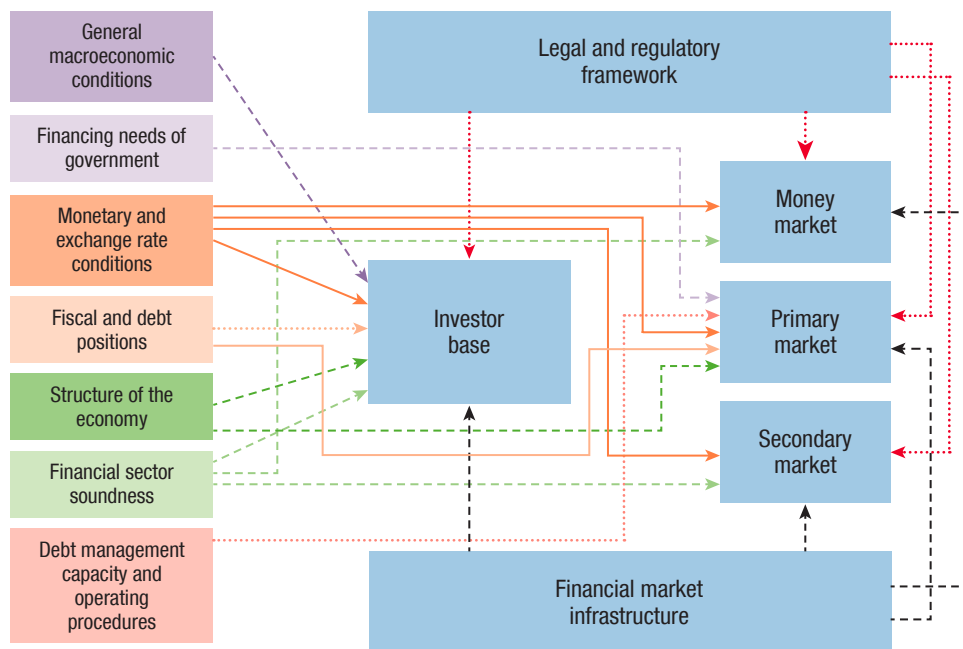
In practice, however, countries often face challenges that prevent them from adopting these best practices. These constraints can originate in factors within the same building block or reflect the conditions in other building blocks. The identified building blocks do not work in isolation, and the proper functioning of each one often depends on the stage of development of the others.

Given the interconnected nature of the building blocks, progress (or lack of it) within each building block is likely to affect the scope for progress in other building blocks. Some building blocks are more foundational than others, thus tending to determine the scope for improvement in other building blocks. For example, financial market infrastructure (FMI) and the legal and regulatory framework are foundational elements that would, to a great extent, dictate the composition of the investor base and the structure of the three markets (money, primary, and secondary). The investor base may pose structural, long-term constraints, if underdeveloped. The development of the secondary market, to a large extent, reflects the outcome of conditions in all the other building blocks. Feedback loops between the building blocks and with the enabling conditions further reinforce the relationships between them, as shown in Figure 2.

This section aims to identify constraints commonly faced by countries and provide broad guidance on how to overcome them. These common challenges are drawn from the IMF and World Bank's extensive experience in providing technical assistance in this area, and they are corroborated by the LCMB survey that sheds further light on countries' concerns (Appendix 2



**Figure 2. Building Blocks and Interlinks in LCBMs**



Source: IMF staff.

summarizes the results of the survey). The challenges presented here are illustrative and in no way exhaustive. They are grouped by building block and reflect the issues raised by the indicators described in the framework. If available, country examples are provided to point to the experience of successes in resolving these challenges. A few specific cases are discussed at greater length in Appendix 1. It is important to take the circumstances of individual countries into account and to tailor the design of policies appropriately.

### **Building Block 1: Money Market**

Many emerging market and developing economies' financial systems display structural excess liquidity, concentrated or fragmented banking systems, a lack of instruments, and inadequate market infrastructure, all of which impede the development of the money market. These and other challenges are discussed further in the following sections.

### **Difficulties in Moving to a Market-Based Monetary Framework due to Limited Fiscal Space**

An underdeveloped money market may reflect the lack of a market-based operating framework for central bank monetary policy operations. It is challenging for some countries to adopt a market-based framework because of limited fiscal space, which could lead to fiscal dominance and financial repression (for example, the imposition of interest rate controls). A shift to a market-based framework entails higher costs (for example, where higher interest rates paid by the central bank could lead to a negative capital position) that are borne ultimately by the government.

#### **Possible Remedies**

- Create sufficient fiscal space to allow for market-based monetary policy (for example, India, see Appendix 1).
- Seek a high-level commitment between the government and the central bank to move to a market-based framework, clearly recognizing both benefits and costs.
- Provide support to the central bank if balance sheet rigidities constrain the deployment of market-based monetary policy operations.
- Coordinate with reforms to adopt market-based pricing in the primary market.

### **Lack of Appropriate Instruments to Conduct Monetary Policy**

The choice of instruments for monetary policy operations requires careful consideration of the trade-offs between the potential market fragmentation and the autonomy of monetary policy operations in the political context of individual countries.

#### **Possible Remedies**

- Determine the appropriate marketable instruments, including government securities, considering the availability of instruments, the potential market fragmentation, the operational independence of the central bank, and the coordination between the central bank and the government. Establish operational capability for identified instruments.
- Start using repo transactions for central bank market operations (where sufficient government securities are available in the market), and gradually

increase the use of them to foster the development of the repo market (for example, Brazil, see Appendix 1).

### **Structural Excess Liquidity in the Banking System that Discourages Trading in the Money Market**

A sustained period of excess liquidity in the banking system in many countries has undermined bank incentives to manage liquidity and trade in the money market. If banking sector liquidity is not properly managed, and even under a market-based framework (inflation targeting or exchange rate targeting framework), central banks could have many unremunerated excess reserve balances (which reduce banks' incentives to manage liquidity).

#### **Possible Remedies**

- Strengthen the central bank's liquidity management capacity. The central bank should develop tools to undertake liquidity forecasting, conduct day-to-day liquidity management (such as by using liquidity management operations to mop up excess liquidity), and develop a framework for medium-term liquidity management, including the effective sterilization of capital flows (IMF 2012). However, difficulties in raising interest rates or the high costs of monetary policy implementation might hinder the central bank from properly undertaking liquidity management operations.
- The government should strengthen its cash management capacity and undertake public financial management reform if unpredictable government expenditures are contributing to structural excess liquidity in the banking system.
- Establish close coordination between the central bank and the government (for example, Brazil, Mexico [see Appendix 1]; Malaysia)

### **A High Concentration of the Banking System Limits the Potential for Developing Active Money Markets**

A high concentration of the banking sector has posed structural impediments in many countries, precluding trading and therefore liquidity in the money market and secondary market. This challenge is more acute for countries with a small financial system and/or an undeveloped nonbanking financial sector.

#### **Possible Remedies**

- The investor base section provides further discussion on possible remedies.

### **Concerns about Counterparty Credit Risks Fragment the Market**

Weak banking systems often face fragmented interbank markets in which concerns about counterparty credit risks compel banks to trade only with those in the same tier. Such market fragmentation is exacerbated by the absence of adequate and timely information on bank balance sheets.

#### **Possible Remedies**

- Eliminate counterparty risk by developing true repo markets based on written master agreements that guarantee access to the collateral in the event of a counterparty default.

### **Difficulties in Establishing the Repo Market Due to an Unfavorable Legal Structure and Gaps in the Financial Market Infrastructure**

Besides structural impediments (that is, high concentration and structural excess liquidity in the banking sector), the legal framework and financial market infrastructure might hamper repo market development. Many countries rely on antiquated, nonenforceable pledges that do not provide assurance of ownership rights over the underlying collateral in the event of default. The absence of appropriate close-out netting may also result in the loss of credibility of repo operations. This could happen if a court ruling on a bankruptcy case determines that the security buyer in a repo must return the collateral—even without receiving the cash from the seller—and join the creditors' queue. Furthermore, in some regions, the interest rates of repos are higher than comparable unsecured interbank rates, despite the potential advantage of repos in minimizing counterparty credit risks. This could reflect to some extent the inefficiency of the financial market infrastructure.

#### **Possible Remedies**

- Review the legal provisions related to repo transactions and assess whether they have critical features such as ownership rights over the collateral, close-out netting, and operational flexibility (for example, Thailand).
- Establish that the repo market is supported by written master agreements and ensure the enforceability of those agreements under the legal system, including through law reform when needed.
- Review the bankruptcy legislation and ensure the applicability of the close-out netting.
- Review and assess simultaneously the related market infrastructure, including the trading and settlement costs of repo transactions to ensure com-

patibility with those of unsecured transactions (see the financial market infrastructure section).

### **Absence of Short-Term Reference Rates**

Short-term reference rates are essential for the development of the government bond market and the derivatives market, and for floating rate instruments. The nonexistence of these rates creates difficulties for establishing a reliable short-term yield curve.

### **Possible Remedies**

- Collect interbank transaction data and publish aggregate volumes and average interest rates transacted on the key tenors (for example, overnight, one week, two weeks, three months, six months, and 12 months) by the end of the next business day.
- The treasury bill market can provide pricing references in case of illiquid money markets. Because treasury bills are different from lending products, they do not represent the true cost of funding by banks and thus are imperfect substitutes for interbank reference rates. Nevertheless, in the absence of interbank reference rates, treasury bill rates could at the minimum provide anchors for short-term rate expectations.

## **Building Block 2: Primary Market**

Countries can smoothen the redemption profile of public debt by undertaking liability management operations (LMOs), improving the issuance of benchmark securities, and improving cash management capacity (see Appendix 2). These issues are related because having benchmark securities may lead to large bond redemptions, which may lead to large cashflows around redemption dates. Several low- and lower-middle-income countries are facing challenges in creating new instruments, and these countries have noted that there was scope to improve the interest rate composition in their portfolios. These challenges could be related to the difficulties in establishing longer-tenor instruments.

### **The Government Does Not Behave as a Price Taker**

High borrowing costs are often linked to episodes of macroeconomic instability (for example, high inflation and exchange rate depreciation) or external events. Coupled with limited fiscal space, governments often resort to creating legislation that allows them to borrow in nonmarket terms (for example,

directly from the central banks or from other investors through financial repression, such as by placing nonmarketable securities in public institutions or imposing a cap on the interest rates in auctions). Some governments might also consider market prices to be inconsistent with country fundamentals or have concerns about collusion among market participants, further discouraging them from being price takers.

### **Possible Remedies**

- Create sufficient fiscal space to allow market-based pricing in auctions.
- Adopt a strategy to gradually phase out nonmarket practices—such as the issuance of nonmarketable securities to the central bank (or other captive investors) or imposing interest rate ceilings on government securities—in a coordinated manner with an adjustment of monetary policy operating framework (for example, India, see Appendix 1; Vietnam).
- Eliminate frequent tapping in the primary markets, and move toward issuance through competitive auction processes.<sup>1</sup>
- Establish auction rules that enhance competition and mitigate excessive market dominance by a few large players. This action would call for a detailed analysis of the demand profile and market share of each bidder.
- Limit allocations to noncompetitive bids to promote better price discovery. Set strict limits to private placements, which should be undertaken only under exceptional circumstances; disclose the terms and rationale for any private placement undertaken.
- Establish and enforce limits to (or prohibit) central bank monetary financing of the government (for example, India, see Appendix 1; see the investor base framework for further discussion).
- Increase the number of institutions with direct access to the primary market to enhance competition and minimize the likelihood of market collusion. If the direct access is the privilege of the primary dealers (PDs), ensure the fair and smooth access of other investor groups through the PDs. Strengthen the regulatory and supervisory framework of the government securities market so that it allows the timely detection of any market abuse and the timely imposition of appropriate penalties and sanctions.

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<sup>1</sup>The uniform price auction format could be the initial choice and later switched to multiple price auctions as the primary market gains experience in the bidding process.

### **Auctions Are Not Sufficiently Competitive**

A concentrated investor base or the existence of a single (or several) dominant investor(s), or both, may adversely affect competition at auctions and consequently affect secondary market liquidity. Investor base diversification is key to ensuring competitive auctions. However, building a diverse investor base may be challenging, particularly in the early stages of market development or in smaller markets. Commercial banks often dominate the primary market if the institutional investor base is shallow, increasing the risk of price collusion. In some markets, there may be a concentration of individual investors, even within the banking system. In other cases, single, dominant investors (for example, social security system funds, state-owned pension funds) may be the main source of demand for government securities.

### **Possible Remedies**

- Establish auction rules that enhance competition, mitigate excessive market dominance by a few large players, and help contribute to secondary market liquidity.
- Consider if auctions should be open only to selected entities or to broader participation.
- Consider syndications to expand investors' participation.
- Consider limitations on the share of a single investor or bidder in the primary market.
- Carefully and continuously analyze the investor base composition, the demand profile of investors, and the market share of the bidders to design an appropriate auction framework. Scrutiny of bidding behavior after each auction may help to identify potential collusion.
- Develop the investor base to instill greater competition in the primary market (see investor base section for further discussion).

### **Lack of a Predictable and Transparent Issuance Framework, Including as a Result of Cash Management Constraints**

Authorities that issue securities irregularly and in uneven amounts and maturities create market uncertainty. Such ad hoc issuance patterns frequently occur under volatile market conditions and in the absence of a strategic framework for government debt management. Capacity constraints to project and manage government cash flows for the budgetary cycle, and a lack of cash management instruments (for example, cash buffer, short-term instruments) could also result in erratic issuance patterns. In some countries, the

latter problem is a consequence of legal constraints on the use of short-term instruments. Poor communication with market participants also could result in an issuance framework that does not match market expectations.

### **Possible Remedies**

- Formulate, publish, and adhere to a medium-term debt management strategy and annual borrowing plan (for example, Brazil, Mexico).
- Release a debt issuance plan indicating issuance dates, amounts, and maturities regularly.
- Conduct treasury forecasting and active cash management to enhance issuance, reduce the cost of borrowing, and manage refinancing risk. Absent robust cash flow forecasts, the debt manager could examine historical trends in revenue and expenditure flows, and relevant forward-looking information (for example, Colombia).
- Establish a cash buffer in the treasury single account to enable a regular and predictable execution of the government's auction calendar and to better manage refinancing risk (for example, Hungary, Turkey).
- Allow the use of short-term government securities (for example, treasury bills) to serve as a flexible tool for short-term financing (for example, India) in cases where financing needs are volatile or there are cash management constraints.

### **Higher Cost and Lack of Demand for Long-Dated Securities**

Although the issuance of fixed-rate long-term bonds helps the government mitigate its refinancing risks and extends the yield curve, the government is often unable to place these types of securities because of their high costs, particularly in the early stages of market development. Extending maturities could be costly for countries that face unstable macroeconomic conditions or lack an institutional (nonbank) investor base. Also, unrealistic expectations of the issuer regarding the price of long-term instruments relative to short-term budgetary cycle cost considerations hinder the issuance of long-term bonds. The lack of an active secondary market, repo, and an interest rate derivatives market (for example, interest rate futures and swaps) also limits investor interest in long-term bonds.

### **Possible Remedies**

- The issuer (at an early stage of market development, when credibility is not yet established) may have to pay a premium to issue long-term securities.



An expanded and diversified investor base, transparency, and predictability will help increase the credibility and offset the higher borrowing costs. The volume of long-term securities issued would depend partly on the government's available fiscal space to absorb higher interest costs.

- Authorities in countries where high inflationary expectations persist (despite material improvement of the monetary policy framework) could consider issuing inflation-indexed bonds in limited amounts to enable an extension of maturities.<sup>2</sup> These type of securities could help reduce a large part of the term premium, paving the way for the formation of reference rates for fixed-rate yields on similar tenors (for example, Brazil, Mexico).<sup>3</sup>
- Develop contractual saving institutions to provide a natural source of demand for long-term bonds (for example, Chile, Mexico, South Africa; see Investor Base section for further discussion).
- Develop the secondary market by improving pretrading and posttrading transparency (see the secondary market section for further discussion).
- Develop a repo market that uses long-term bonds as collateral. This will increase the capacity of investors to invest in long-term bonds (for example, Malaysia, Poland; see the Money Market section for further discussion).
- Develop the interest rate derivatives market to provide investors with instruments to hedge their exposure on long-term bonds (for example, Brazil, South Africa; see the Secondary Market section for further discussion).

### **Lack of Appropriate Instruments, Including Benchmark Securities, and Difficulties in Creating New Instruments**

Several countries, particularly low-income countries, lack a critical mass of benchmark securities in part because of concerns about high refinancing risks related to the bullet maturity of a large benchmark bond. This is particularly problematic when government cash management capacity is weak or when there is limited ability to conduct LMOs. The lack of an adequate stock of benchmark securities impedes liquidity in the secondary market.

### **Possible Remedies**

- Gradually build up a stock of benchmark bonds that cover the life cycle of a security. When reopening securities through on-the-run benchmark issuance, the duration of a security's issuance, and hence its target size, should

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<sup>2</sup>The same solution could be applied for countries facing high financial dollarization.

<sup>3</sup>The use of linkers could be considered strategically only if such products serve as a credible signaling mechanism that bolsters the authorities' commitment to manage and contain future inflation.

be adjusted to ensure that its coupon rate does not go off market, in which case its demand will be affected (for example, India, Kenya).<sup>4</sup>

- Complement benchmark issuance and reopenings with LMOs (that is, buybacks and switches) to mitigate refinancing risks and improve the liquidity of the off-the-run instruments (for example, Hungary, South Africa, Thailand). Make sure that the legal framework and market infrastructure are supportive of LMOs (see the Legal and Regulatory section and the Market Infrastructure section for further discussion).
- Increase the size of auctions to promote greater availability of tradable stocks, which would lead to better price discovery. This should be done carefully with a precise understanding of investor preferences and constraints to minimize the risk of potential auction failures (for example, Mexico).<sup>5</sup>
- Consider reopening long-term instruments in different maturity segments if the coupon is in line with the market conditions in the new maturity bucket, to improve the liquidity of the off-the-run bonds (for example, Hungary).

### **Lack of a Representative Yield Curve, Which Tends to Produce Different Perspectives in Markets and the Government Regarding the Costs of Financing**

The yield curve normally serves as a price reference for the issuer, but its usefulness as a guidance mechanism could be limited if there is limited secondary market activity. Asymmetries in the expected yield for a specific maturity also may arise when there is no diversity in the investors' offering quotes or when a specific investor class dominates. Yield curve distortions also could arise when the bond market is fragmented because of different market conventions, tax treatments, and eligibility as a liquid asset of different bond series. In addition, a fragmented portfolio, including a large number of series and limited size of the stock of individual bonds, could impede the price discovery process.

### **Possible Remedies**

- Introduce shorter-term securities to gradually build reference prices along the yield curve. A program of systematic issuance of treasury bills

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<sup>4</sup>Although reopening of the security as a benchmark security for a specific maturity could be stopped after a certain period, debt managers could take the opportunity to continue its reopening over a different maturity as it rolls down the yield curve.

<sup>5</sup>This should be complemented with an assessment of auction results for the degree of competition in the market and if there is potential for price distortion.

helps to anchor the short end of the yield curve by providing fresh references for short tenors. Shorter-term issuances also support money market development.<sup>6</sup>

- Develop a government securities benchmark issuance policy, concentrating on amounts of benchmark tenors, and ensure that the benchmark target size is achieved consistently. The lengthening of maturity across key tenors needs to take place gradually, building on shorter tenors that anchor the new maturities being introduced (for example, Georgia, Peru; see Appendix 1).
- Syndications could be useful to expedite the creation of benchmark securities, especially for new maturities or new types of instruments.<sup>7</sup> Placement through syndications can allow for a larger initial issuance amount compared with a conventional auction, and provide better clarity for pricing in subsequent auctions while allowing for a more diverse investor base. In addition, the book-building process provides the issuer with some degree of control over the issuance price.
- Use LMOs to reduce the fragmentation of the government bond portfolio.
- Standardize the issuance of securities through a harmonized framework of tax treatment and payment conventions.

### **Inability to Conduct Liability Management Operations**

The use of LMOs in some countries could be hindered by the lack of enabling conditions. Common obstacles include the absence of efficient price formation, precarious market infrastructure systems, or inefficient cash management. In some cases, the legal framework may not provide the legal comfort for these transactions to be executed without risks to the debt manager.

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<sup>6</sup>The treasury bill issuance program at a subsequent stage should support and complement the benchmark-building program. Adjustments in the issuance volume of treasury bills may be required to accommodate regularity in bond issuance because markets tend to absorb fluctuations in the volume of short-term instruments more easily. With better capacity to manage refinancing risks, the reopening of treasury bills can increase their potential size and liquidity, further entrenching the short end of the yield curve.

<sup>7</sup>End investors are attracted by syndications because they have a greater certainty of being allocated bonds and have relatively greater assurances that the bond will be liquid because of the larger size of issuances. Syndications allow the issuer to have direct input into investor allocations and allow for a broad allocation across the investor spectrum, including trading accounts and long-term investors. Syndications result in a greater share of investment in trading accounts compared with auctions, which further enhances the bonds' liquidity. At the same time, tight quoting obligations for PDs, who are usually mandated as joint lead managers for the syndication, help to establish firm prices for the security in the secondary market.

### **Possible Remedies**

- See the legal and regulatory, primary market (for cash management), and secondary market (for lack of a price reference) sections for possible remedies. LMOs should be developed alongside the financial market infrastructure.

### **Building Block 3: Secondary Market**

The evolution of secondary markets is largely dependent on the stage of market development of the other blocks of the LCBM. Though there are specific policy measures that may generate greater liquidity in the government securities market, the functioning of the secondary market often is contingent on the proper functioning of the money market, the primary market, and market infrastructure, and on the composition of the investor base. Challenges faced in developing the secondary market typically stem from problems in developing one or more of the other building blocks.

Many emerging market and developing economies tend to have a small number of domestic and international institutional investors. The prevalence of buy-and-hold strategies among investors may be a constraint. The absence of benchmark bonds and an underdeveloped market infrastructure may also be important factors hindering trading in the secondary market (see Appendix 2).

#### **Dearth of Adequate Volume of and Properly Priced Instruments that Support Trading, Foster Liquidity, and Deepen the Yield Curve**

Many countries, particularly low-income countries, do not have enough benchmark securities, which inhibits liquidity in the secondary market.<sup>8</sup> Many countries are unable to build benchmark securities of sufficient size because of concerns related to refinancing risks when a large benchmark bond is redeemed on a single day, particularly if the government's cash management capacity is inadequate and there is limited ability to conduct LMOs. In addition, if securities are not priced at market rates, it would be difficult to develop a representative yield curve (see the primary market section for further discussion).

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<sup>8</sup>The minimum size of individual lines of securities necessary to foster liquidity is market-specific and depends on the portion of the outstanding volume likely to be held in trading portfolios and its status as an on-the-run benchmark. Also, it may be influenced by any internal limit that institutional investors may have on the proportion of outstanding volume of a single security or the minimum size requirements for a security that can be traded on an electronic trading system (for example, Euro MTS). At the extreme, the minimum size could be determined to attain the threshold size required for inclusion in global bond indexes.

### **Possible Remedies**

- Reduce the frequency of auctions, and build a large stock of benchmark bonds supported by robust cash management capacity. These actions may be especially relevant for countries with a nascent secondary market.
- Adopt market-based pricing supported by transparent and predictable issuance (see the primary market sections for further discussion).

### **Too-High Frequency of Auctions Removes Trading Incentives for Investors**

Countries that conduct auctions too frequently tend to reduce incentives for trading. A steady supply of securities in the primary market reduces the incentives for market participants to seek those securities in the secondary market.

### **Possible Remedy**

- Reduce the frequency of auctions (see the primary market section).

### **The Dominance of Buy-and-Hold Investment Strategies**

The prevalence of buy-and-hold investment strategies can stem from multiple factors. The issues directly related to the investor base include a high concentration of the banking system and distortive regulatory frameworks (see the investor base section for further discussion).

### **Possible Remedies**

- Create regulatory frameworks conducive to trading while addressing any structural constraints (for example, high concentration of the banking system; see the investor base section for further discussion.)
- Coordinate with the reform of the primary market. The reform of the investor base could have a larger impact if preceded by a move to market-related issuance rates that transform captive investments into voluntary investment (for example, Malaysia).
- Increase transparency by publishing a daily yield curve and a list of traded securities. Many investors do not sell their holdings because of low levels of price transparency.

### **An Inactive Money Market Reduces Incentives to Trading**

Without an active money market, it is difficult to develop the secondary market. The absence of a market-based monetary policy operating framework creates high volatility in short-term interest rates, which increases uncertainty for investors and creates a stumbling block for trading. Challenges that stem from the money market, such as structural excess liquidity in the banking sector, can further impede the development of a liquid secondary market. Furthermore, an underdeveloped repo market impedes market making.

#### **Possible Remedy**

- Transition to a market-based operating framework for monetary policy, supported by adequate liquidity management capacity. Establish a supportive legal framework and financial market infrastructure that supports the repo market (see the money market section for further discussion).

### **Inadequate Market-Making Capacity of Intermediaries Impedes Market Liquidity**

It is challenging to maintain an effective PDs system, particularly for countries in early stages of market development. Without an active secondary market (including repo and interest rate derivatives markets), PDs find it difficult to generate a profitable market-making business. In general, a PDs system is not feasible in economies with a small number of financial institutions because it is difficult to establish an effective dealer-broker arrangement to facilitate trades in the secondary market, and the issuer is exposed to the risk of collusion by the PDs.

#### **Possible Remedies**

- Countries with a PDs system should calibrate the obligations of PDs as the market develops so that PDs' obligations are proportionate to the stage of market development and are well-balanced with the privileges afforded. A regular evaluation process will be required to retain the most efficient PDs and to replace the noncompliant PDs with new entrants (for example, Malaysia [see Appendix 1]; Poland).
- Create an environment conducive for market-making activities by developing the repo, securities lending, and interest rate derivatives market, and by

allowing short selling of securities for market-making purposes (for example, Thailand).<sup>9</sup>

- A dealer system could begin with a single monopoly (usually a discount house) or with a small number of dealers when an active secondary market is absent and trading volumes are small. In this case, other financial institutions should be allowed to trade and to emerge as dealers over time. As the market develops, the discount house could be merged into a wider network of a PD group (for example, India).
- A call auction or an order-driven auction agency market system could be more efficient than a PD system for countries with a small number of well-capitalized dealers.
- Last-resort securities lending (or repo) facilities offered by debt management offices or central banks can efficiently support the establishment of a market-making framework, reducing the cost of the market-making (as less inventory capacity is required) and giving confidence to market makers that they can perform their trades without difficulties.

### **Lack of Transparency in the Secondary Market**

With the dominance of over-the-counter trades, most countries struggle with inadequate transparency in secondary market activities. The lack of transparent pre-trade information impedes trading. Authorities often find it challenging to have a comprehensive picture of secondary market activities.

### **Possible Remedies**

- Strengthen and streamline pre-trade transparency in the over-the-counter market through an electronic trading platform that allows dealers to quote prices to each other so that they are available on a real-time basis and support trading among themselves (for example, Korea).
- Require bond dealers to report their transactions (prices and volumes) to a centralized agency or a designated trade repository (for example, by end of business day). Collect transaction information from the central securities depository (CSD) and publish aggregated trade volumes and average yields and/or prices. Display the resulting information to all market participants through a trading platform or exchange and to the general public via bond

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<sup>9</sup>Allow short selling to support market liquidity, pricing efficiency, and enabling more effective risk management. However, concerns with systemically unrestricted short-selling activities that could result in fraud, abuse, or market collusion that could endanger market instability may require the authorities to ban uncovered short sales, which will tend to reduce bond liquidity in the cash market. It will be especially important to allow short selling by PDs to support their market-making activity.

information websites. Monitor compliance with reporting requirements and impose penalties in the case of noncompliance (for example, Malaysia).

- Facilitate government bonds listing on the local stock exchange(s) while bearing in mind that stringent requirements could hamper efficient trading (see the legal and regulatory section).
- Publish turnover statistics daily and the most recent traded price.
- Publish a daily market yield curve.
- Consider the establishment of a bond index (for example, by the stock exchange) to improve transparency.
- Promote the development of the derivatives market. Active trading in short-term futures will benefit the longer segment of the yield curve by helping to price long-term interest rate swaps. Several countries have attempted to address the problem of lack of benchmark rates by developing key interbank reference rates (for example, Brazil, South Africa).

## Building Block 4: Investor Base

Countries at lower income levels might find it challenging to develop institutional investors (see Appendix 2).

### High Concentration in the Banking Sector

A high concentration in the banking sector hinders trading and therefore liquidity in the money and secondary markets. This challenge is more acute for countries with a small financial system and/or an undeveloped nonbanking financial sector.

### Possible Remedy

- In general, fostering competition helps make the financial sector more efficient. Financial sector oversight should be strengthened to prevent excessive risk taking and to manage potential risks to financial stability.

### Lack of Institutional Investors

The absence of a large pool of institutional investors constrains the government's ability to extend debt maturities. In many countries, inadequate pension coverage often results in the lack of a contractual savings sector.<sup>10</sup>

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<sup>10</sup>Public pension and provident fund programs that adopt a pay-as-you-go model (which is unfunded) do not contribute to demand for government securities.



Because many countries have a bank-dominated financial system, deliberate policies are required to diversify the financial sector and to develop other types of institutional investors such as insurance companies and mutual funds. In developing countries, mutual funds may help strengthen market development because they provide professional management of retail savings and help attract individuals to the government bond market; also, they are likely to invest in a range of maturities.

### **Possible Remedies**

- Consider formulating a strategy to develop the contractual savings sector and introduce a supportive tax framework (see also the legal and regulatory framework for further discussion).
- Facilitate the development of collective investment schemes that can invest in government securities. Introduce supportive legal and regulatory frameworks to strengthen investor protection.
- Consider the viability and usefulness of applying new financial technologies to facilitate the retail investor's access to the government securities markets.

### **Lack of Financial Products that Meet Investor Needs**

Some countries have large institutional investors (pension funds or sovereign wealth funds) that invest mostly in overseas assets, partly because of the absence of suitable financial products in the domestic market. For example, an inappropriate mix of instruments (for example, too much issuance of short-term and medium-term notes) could create an asset-liability mismatch for certain institutional investors (for example, the pension and life insurance sectors) that have a long-term liability structure.

### **Possible Remedies**

- Strengthen the investor relationship management function to better identify the preferences and constraints of potential investors. Consider the potential demand when designing the funding mix. Ensure that institutional investors have access to government securities either directly through auctions or via PDs (market makers).
- Issue long-term bonds gradually to cater to the investment needs of the institutional investor base, while keeping in mind the cost-risk trade-offs (for example, Hungary, Thailand).

### **Buy-and-Hold Behavior in Investors Exacerbated by Distortive Regulatory Frameworks**

Buy-and-hold investment behavior could be exacerbated by distortive regulatory frameworks. Differential tax treatments of different instruments can generate distortions in the market. Withholding taxes, transaction taxes, and taxes levied on the coupon (but not prorated according to the time for which the investor has held a bond) can impede secondary market trading. Excessively high liquidity regulations and mandatory requirements to hold government securities can also reduce investor incentives to trade.

### **Possible Remedies**

- Ensure a neutral tax treatment of financial investments and avoid levying taxes on transactions (see the legal and regulatory framework for further discussion).
- Review liquidity regulations on banks and other financial institutions. Assess whether government securities are treated as cash equivalents and whether liquidity standards are set too high. In general, as the local bond market develops, banks' ability to manage liquidity will become stronger, creating room to gradually relax liquidity regulations.
- As an economy's institutional investor base matures, gradually relax any mandatory investment requirement for government securities that may affect pension funds and insurance companies.
- Allow institutional investors to repo (or failing that, to lend) securities to PDs for market-making purposes, to further improve trading.

### **Determining the Cost–Risk Balance of Foreign Investor Participation**

The appropriate degree of foreign investor participation in a domestic bond market is difficult to establish, and both benefits and risks must be considered. Countries that lack the enabling conditions to develop the local market often find it difficult to attract foreign investors. Foreign investors tend to favor local bond markets with sufficient size, liquidity, and depth. Markets with a liquid foreign exchange derivatives market to hedge currency risks also may be attractive for foreign investors. Nevertheless, countries may start receiving substantial capital inflows before the depth and liquidity of the local bond market has been established, increasing the risks to financial stability that can arise from a sudden reversal in capital flows.

### **Possible Remedies**

- Assess the potential interest of foreign investors by considering the general development stage of the local bond market (including the existence of a foreign exchange hedging market) and macroeconomic fundamentals. Simplify the investor approval process, remove tax impediments, and improve access to reputable international CSDs and more effective custodial arrangements (for example, Malaysia, Peru; see Appendix 1).
- Allow a gradual increase in the participation of foreign investment in the LCBM, if conditions are deemed appropriate. Countries can relax the minimum holding periods for foreign investors after the domestic investor base is developed sufficiently to offset the potential capital outflows (for example, Mexico).
- Consider the issuance of global depository notes (for example, Costa Rica, the Dominican Republic).

## **Building Block 5: Financial Market Infrastructure**

Operational risk is a major hindrance to developing financial market infrastructure in low- and middle-income countries. Many countries have developed complex operational requirements for market transactions, custody, and settlement; others continue to rely on manual processes. The existence of multiple CSDs fragments the market, and the lack of staff capacity is also a problem in low- and middle-income markets (see Appendix 2).

### **Difficulties in Establishing Cost-Effective FMI That Matches the Stage of Market Development**

It is challenging to set up cost-effective FMI systems. Depending on the size and development stage of the market, countries should evaluate how to establish FMI systems, taking into consideration the high costs associated with establishing them.

### **Possible Remedies**

- Assess the current FMI arrangements against the principles of financial market infrastructure, and identify gaps in good practice.
- Communicate with key stakeholders to identify their requirements (in functionality and services) to support market development.
- Define an operating model that includes the core functionalities, and identify minimum service requirements.

- Use a competitive process to procure and select a suitable FMI vendor system.
- Small countries should undertake a cost-benefit analysis of investing in integrated electronic systems versus operating a manual process.
- Evaluate the possibility of using financial technologies to increase the efficiency of the market infrastructure.

### **Difficulties in Making the Transition to a Dematerialization of Securities**

Some countries are unable to start the process of dematerializing securities because of legal constraints or the lack of capacity to do so. A lack of investor interest could also make the full completion of the dematerialization process (to 100 percent of marketable instruments) difficult, despite its potential benefits to the market.

### **Possible Remedies**

- Introduce a law that supports the dematerialization of securities. The law should recognize security ownership through credit balances in securities accounts (kept as electronic records) rather than through a physical security.
- Conduct a gap analysis of the risks and efficiency of the current registration and custody arrangements compared with good practice. Based on the analysis, decide whether the gap would be closed by introducing a new system or upgrading the current system.
- Offer an efficient, low-cost switching process (from physical to dematerialized securities) and incentives to expedite the process to full dematerialization.

### **An Unclear Legal Framework Increases Settlement Risks**

The legal frameworks for the finality of payment and the transfer of securities ownership right are not clear in some countries. Consequently, there is a risk that bankruptcy courts will override market transactions. An unclear legal framework increases settlement risks, impeding trading.

### **Possible Remedy**

- The law should clearly define the finality of payment and transfer of securities ownership right, and the legislation should clearly address any potential conflict with bankruptcy proceedings.

### **Market Segmentation Due to Multiple CSDs**

The existence of multiple CSDs (usually with one operated by the central bank and others privately-operated) poses challenges for some jurisdictions. It segments the market, increases the costs and inefficiency of security transfer, and impedes trading.

### **Possible Remedies**

- Coordinate with the key stakeholders in both the government and capital markets to establish if there are grounds to operate a single, well-integrated FMI system.
- Promote open access to the settlement systems, develop efficient electronic low-cost bridges to transfer securities between the systems, encourage the sharing of market activity data, and ensure that all systems support the same settlement models (for example, Georgia; see Appendix 2) in the interim period of transition from a multiple- to single-CSD system.

### **Lack of Market Infrastructure to Support the Repo Market**

Some countries lack the market infrastructure to support the repo market and conducive conditions for market liquidity.

### **Possible Remedies**

- Where the repo market exists, assess whether the FMI system supports the key functionalities such as DVP1 T+0 settlement (which supports liquidity management of banks, the central bank, and the debt management office), the settlement of both legs of the repo transaction on the respective settlement dates, and the substitution of securities under the repo agreement.
- Where the repo is not yet introduced, set up procedures and controls, and introduce system functionality to process collateralized loans on a T+0 basis. Small countries could focus on establishing a manual process if the costs of introducing an electronic market are too high.

### **Lack of Transparency**

In some countries, the FMI (the central bank or other institution) does not have the power (or the legal basis) to collect transaction data from market participants. In small or underdeveloped markets, concerns for confidentiality could further deter the disclosure of market activity.

### **Possible Remedies**

- Ensure that the FMI has the legal powers to require financial institutions to report transactions data daily. Determine the data and information to be released for publication after close consultation with market participants and regulators.
- The FMI should have the capacity to provide an aggregate breakdown of government securities holdings by investor category.

### **Limited Investor Access to CSD and Central Counterparty Clearing House Functions**

A lack of open access to FMI impedes the development of the investor base. Foreign investors who wish to access the local market would have to participate through a foreign CSD, and it could be costly for the country to establish these links.

### **Possible Remedies**

- Develop the access policy of FMI in consultation with the central bank, the debt management office, and regulators.
- The authorities could consider providing direct access of foreign investors to the domestic FMI for markets in later stages of development. Authorities should carefully consider the cost-benefit tradeoffs of establishing links to a foreign CSD, including on risks and risk mitigation measures (for example, Mexico).

### **Difficulties in Assessing and Ensuring Sound Governance of FMI**

It is often challenging for the authorities to assess current FMI governance arrangements, service, and supervision in a measured way against the sound practices.

### **Possible Remedies**

- Conduct a full assessment of the current FMI based on the principles of financial market infrastructure assessment methodology,

*or*

- Selectively assess high-priority issues that require good practice. These issues could include the following:
  - Transparency in operations
  - Adequate mix of skills and proper oversight
  - Objective of running CSD and central counterparty clearing house
  - Operational and business risks, financial capacity to absorb consequential losses
  - Regular reconciliation between the system's records and the Ministry of Finance's records
  - Regular operational audits
  - Business continuity and disaster recovery plans
  - Communication network and system hardware that is secure and resilient

## **Building Block 6: Legal and Regulatory Framework**

Recent technical assistance experience has identified several common challenges related to the legal and regulatory framework.<sup>11</sup> Legal and regulatory issues that affect primarily the repo market and investors (banks, institutional investors, and foreign investors) have been discussed in previous sections.

### **Lack of Legal Basis to Undertake Proper Debt Management Operations**

In some countries, the legal framework does not provide the debt management authorities with the flexibility to conduct necessary debt management operations. Some legal provisions limit certain transactions such as buybacks and debt exchanges. The legal framework also could restrict the parameters in which these transactions can take place (for example, price limitations, budget restrictions). Often, the lack of clarity on legal provisions creates legal risks and impedes the debt manager from executing necessary transactions.

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<sup>11</sup>The recent IMF–World Bank survey (Appendix 2) did not contain questions related to this building block.

### **Possible Remedies**

- If consistent with the overall legal framework, ensure that the law provides the debt manager with the flexibility to define prices, instruments, and the types of transactions to be undertaken in an agile way to avoid undue market movements during the decision-making process, while placing a proper accountability framework.
- In jurisdictions where there is ambiguity on whether the debt manager has competence to undertake LMOs, and until legal reform is possible, the debt manager can seek to clarify these competences, to the extent possible, in subsidiary legislation and/or request legal opinions from the competent legal authority.

### **Stringent Requirements for the Use of Intermediaries Posing Barriers to Efficient and Cost-Effective Trading**

In some countries, trading through dealers or brokers (market intermediaries) is mandatory, and bilateral transactions are not allowed even between institutional investors. Often, such requirements aim to protect the concerns of the intermediaries and/or to develop a dealer system. However, it can result in higher transaction costs and hamper the development of the secondary market. Undertaking all transactions through the stock exchange also is mandatory in some jurisdictions. Although such rules often aim to increase transparency, they could deter the participation of investors, particularly if brokers' commissions and stock exchange fees are not negligible.

### **Possible Remedies**

- Ensure that the legal framework applied to financial intermediaries strikes the right balance between transparency, cost efficiency, and risk minimization, considering the stage of development of the LCBM. At early stages of market development, stringent requirements tend to be counterproductive.
- Develop other measures to address transparency concerns, such as strengthening the reporting requirements of dealers. Market regulations to prohibit unfair trading practices can also help, supported by a surveillance system.
- Enable and facilitate transactions without the need for intermediaries via the definition of a price tunnel out of which transactions would be made void, protecting less-sophisticated investors from abusive or misleading prices.



### **Inadequate Legal Framework for Taxation**

Many countries have an inadequate tax law framework governing the treatment of domestic government securities, which results in material tax impediments to the development and efficient working of the primary and secondary LCBMs. The tax law framework might not provide certainty with respect to all key primary and secondary market transactions for all key investor classes.

### **Possible Remedies**

- Countries should (1) undertake a diagnostic review of their tax law framework to identify possible impediments and gaps as they relate to the treatment of LCBMs, and (2) develop and implement the necessary tax law reforms to lessen those impediments and gaps to ensure that their tax law framework reflects international good practices and remains competitive. The legislative action to be taken will ultimately depend on each country's legal tradition and baseline tax law framework, including its underlying fiscal and tax policy settings. Box 4 provides high-level guidance in relation to the scope of the tax treatment issues that the tax law framework should address for each key investor class from both a supply-side perspective (dealing with the treatment of the government securities themselves) and a demand-side perspective (dealing with the related tax treatment for key institutional investors; for example, Georgia; see Appendix 1).
- Consideration should be given to the legal modalities relating to the issuance and trading of local currency government bonds and associated FMIs, given that an integrated tax law framework requires consistency with the country's overarching legal infrastructure. For example, in the context of facilitating foreign investment, interest withholding tax and capital gains tax concessions or exemptions in relation to returns and gains on local currency government securities that are consistent with international common practice often become necessary to achieve critical investment links between LCBMs and international FMIs.

#### Box 4. Tax Treatment Issues to Be Addressed by the Tax Law Framework

Supply-Side Tax Treatment Issues	Demand-Side Tax Treatment Issues
<p><b>Taxation of Government Securities</b></p> <p><b>Primary Market</b> Treatment of returns (such as interest and discount)</p> <p><b>Secondary Market</b> (important for hedging, liquidity, and so on) Taxation of gains (such as on sales), including sale amounts attributable to accrued interest (often treated as interest if tax-favored gains compared with capital gains) Taxation of repos (see Box 1.2) Taxation of securities lending (considerations similar to repos) Treatment of financial collateral (considerations similar to repos) Taxation of derivatives (increasing trend toward mark-to-market approaches)</p>	<p><b>Investors to Cover Include</b></p> <p><b>Collective Investment Schemes:</b> Tax rules need to be attractive and neutral to investors (channel savings into investment, not put investors in a worse situation than if they had invested directly) but also need to consider treatment of investment management activity to encourage local management of collective investment schemes.</p> <p><b>Pension Funds:</b> Exempt-exempt-taxed (EET) system or otherwise<sup>1</sup></p> <p><b>Insurance Companies (Life and General):</b> Assess relative tax treatment and neutrality of long-term savings made through a life insurance policy compared with other investment options.</p> <p><b>Other Investors,</b> including local (for example, financial institutions) and foreign investors (for example, state-owned enterprises, family offices, and so on).</p>

<sup>1</sup>In an EET system, (1) contributions are not taxed, (2) pension fund income is exempt, and (3) pension fund payouts are taxed (both pensions and lump sums). This system typically operates as a deferral system, with the tax on contributions and pension fund income deferred until payout. The advantage of an EET system is that savings can grow at a faster rate compared with normal bank savings (which typically operate under a taxed/taxed/exempt system, with deposits made out of taxed income, interest income taxed, and withdrawals untaxed).



## Part 3. Designing Local Currency Bond Market Reform Plans

The local currency bond market (LCBM) framework can be used to design a reform plan for countries that want to further develop their domestic government bond markets. Reform plans should be anchored on the long-term objectives of the country and formulated by considering the country's degree of market development. The plans should include a targeted time frame (for example, three to five years) to achieve the intended outcomes. Any LCBM reform plan should be informed by comprehensive assessment of the relevant indicators of each building block and an identification of the key constraints for market development (Figure 3). This section presents seven steps to designing an LCBM reform plan.

### Seven Steps for Designing an LCBM Reform Plan

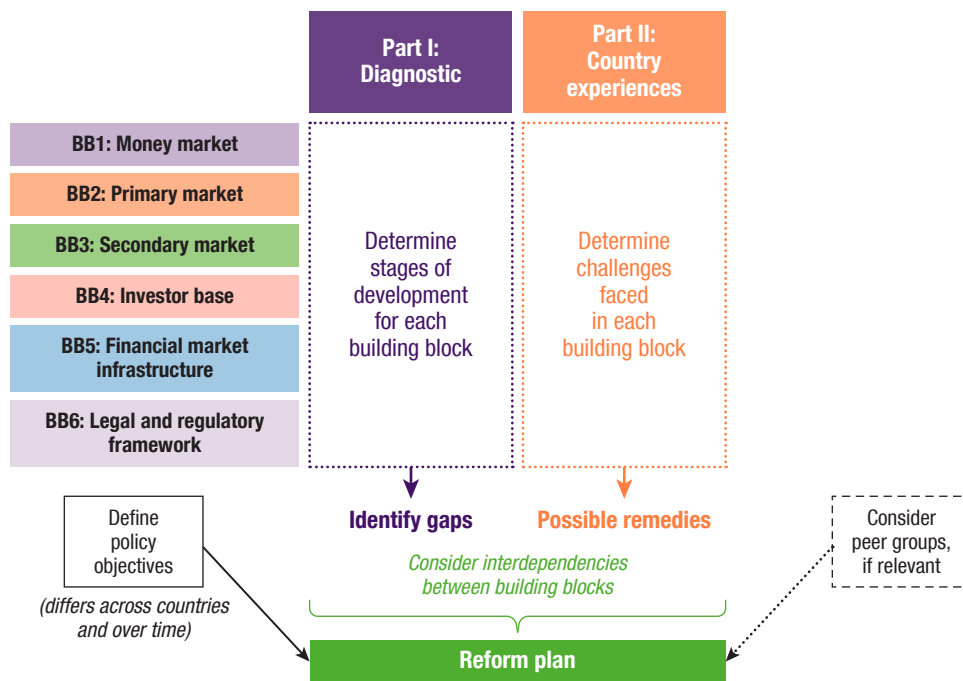
#### Step 1: Determine LCBM Objectives and Policy Priorities

The plan should be guided by the country's high-level objectives regarding LCBMs. Countries at similar stages of development may have different priorities for LCBM reform. For instance, a country with short-term instruments might have the objective of lengthening the maturity of the debt. Another country with similar characteristics may want to incentivize corporate sector funding and focus on further developing the short- and medium-term segments so that the yield curve can generate better price references. Policy priorities and the focus of reform efforts should be guided by and be consistent with the country's LCBM objectives.<sup>1</sup>

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<sup>1</sup>Objectives of LCBM reform could be but are not limited to (1) increasing the local market capacity to provide funding to the public sector, (2) making price discovery more efficient, (3) broadening the investor base, (4) strengthening the monetary policy transmission mechanism, (5) facilitating banks' liquidity management (and increasing financial resilience), and (6) increasing the sources of funding for the private sector.

**Figure 3. Designing LCBM Reform Plans**



Source: IMF staff.

A country’s LCBM objectives should consider the degree of compliance with the enabling conditions and the country’s growth strategy. The size and structure of the LCBM after the reform will depend on the size of the country’s economy and financial sector, its growth potential, and its institutional capacity.

An important consideration is whether the development of secondary markets should be an initial objective of LCBM reform. Secondary market development is a milestone that comes in the later stages of LCBM development, and it depends strongly on well-functioning money and primary markets. These two markets could be constrained by the country’s investor base, financial market infrastructure, and legal and regulatory framework. Countries at an early stage of development or that lack a strong foundational basis should focus efforts on developing the primary market to avoid the risk of overburdening the reform agenda.

**Step 2: Establish a Coordination Mechanism for LCBM Reform**

A coordination mechanism will help to accelerate LCBM reform. Because the actions required to develop the various building blocks span different author-

ities, a coordinating mechanism will help to ensure consistency in policy goals and actions. For example, money market development would require active policy measures from the monetary authorities. Financial market infrastructure development and reforms in the legal and regulatory framework typically require close interactions between the financial regulators and supervisors and the legislators. The responsibility to develop the investor base often lies within the ambit of the government. A single coordinating mechanism would drive the various actors toward a common direction. Formalizing the LCBM reform plan via a public document also may be beneficial and ensure accountability.

Setting up a high-level committee and technical-level working groups could help push the agenda along. The working group should comprise the main stakeholders in the market development process, which would typically include the debt management authorities, the monetary authorities, the relevant regulator(s), financial market infrastructure operators, and private sector participants (for example, the banking sector, insurance, and pension fund associations).<sup>2</sup> The working groups should be chaired by the main beneficiaries of the LCBM (for example, the DMO or the central bank). Ideally, the working group should be established early in the reform process. The high-level committee should be chaired at the ministerial level. Ideally, the Ministry of Finance should provide the leadership and secretariat, although in practice, the central bank's access to resources often means that it is better placed to drive the process, including many of the working groups.

Workshops and other events could serve as a starting point for drafting the reform plan. It is essential that the relevant officials participate fully and actively in the formulation of the reform plan. Public sector officials representing the relevant entities can hold discussions at the senior and technical levels while appropriately engaging private sector participants (such as through consultative forums). Given that the accountability for implementation will rest with public sector officials, the reform plans should be realistic and tailored to their respective circumstances, accounting for political feasibility and administrative capacity.

### **Step 3: Evaluate the Enabling Conditions and Stages of Market Development in Every Building Block**

Assessing compliance with the enabling conditions is critical to determine the potential for market development (see Part 1, first section). It will be challenging to make significant progress in LCBM reforms if the enabling condi-

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<sup>2</sup>Private sector participation could be less intensive (that is, through the participation in a consultative board, if not as a member of the working group).

tions are not in place. In those situations, it would be advisable to focus on complying with as many enabling conditions as possible.

The diagnostics framework should be used to assess the degree of development of each building block. The assessment would help to identify the areas in which the country has gaps in the key functionalities of market development. A heat map to identify the main priorities would be useful.

#### **Step 4: Consider Identifying Peer Groups to Benchmark Experiences**

Peer group analysis can be used to identify relevant experiences of LCBM reforms and possible pitfalls in implementation. Peer countries can be defined by income and population metrics,<sup>3</sup> or based on geographical proximity, economic structure (for example the degree of dollarization), size of the financial sector, the monetary policy regime, or on the stage of LCBM development. Once the peer group countries are identified, it can be assessed whether the experiences of those countries with more advanced stages of market development (by building block) can be replicated. In addition, peer group analysis helps to set realistic objectives for LCBM development in the short and medium term.

#### **Step 5: Identify Gaps in Each Building Block**

The framework assessment and peer group analysis can be used to identify the gaps present in a country's LCBM. The stages identified for each building block will help to identify the gaps and to focus efforts on the areas that need greater improvement. In addition, using the peer group analysis, identifying the building blocks that are lagging compared with peer countries (where data are available) can provide guidance on the successful experience of countries that have advanced further in the building block. The feasibility and applicability of the measures adopted by other countries could then be assessed.

#### **Step 6: Formulate a Plan of Action and Measures Needed to Close the Gaps, Considering Capacity and Institutional Constraints**

The reform plan should be based on a clear understanding of the obstacles and constraints for making progress in each indicator and building block. These should be used to set a realistic time frame for the reform effort and for setting intermediate goals.

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<sup>3</sup>Peer countries can be identified using the Global Financial Development database developed by the World Bank, based on GDP per capita and population size measures.

The proposed sequence of actions and measures of policy reform efforts should consider the interlinks among the various building blocks. Although some policy actions can be taken only after other actions have been fulfilled, others can be implemented simultaneously. Addressing challenges in one building block could also generate new actions in other building blocks. The reform plan should also include adequate references to or incorporate ongoing reforms in related areas, such as capacity development in public debt management, public financial management, and supervision.

### **Step 7: Propose Targets and Deadlines, and Assign Clear Responsibilities to the Relevant Agencies**

The reform plan should contain a reasonable time frame for completion. It should contain details on the expected outputs and outcomes, actions to be taken and their appropriate sequencing, and the relevant milestones.<sup>4</sup> In addition, the plan should have an estimate of the budget needs and resources to meet the various objectives. It is important to clearly define the lead agency responsible for the implementation of the reforms at each indicator level. This will facilitate the monitoring of progress and allow a continuous assessment of the efficiency and effectiveness of the plan.

#### **The steps for developing the reform agenda are summarized as follows:**

1. Determine LCBM objectives and policy priorities.
2. Establish a coordination mechanism for LCBM reform.
3. Evaluate the enabling conditions and stage for market development in every building block.
4. Consider identifying peer groups to benchmark experiences.
5. Identify gaps in each building block.
6. Formulate a plan of action and measures needed to close the gaps, considering capacity and institutional constraints.
7. Propose targets and deadlines, and assign clear responsibilities to the relevant agencies

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<sup>4</sup>Activities and outputs in the first year may be specified in more detail than those in later years, which will depend on earlier achievements and evolving circumstances.





## Appendix 1. Selected Case Studies

### Vietnam: Improving the Legal and Regulatory Framework to Facilitate Market Development

#### Context and Challenge

Before 2017 few formal laws and regulations existed to allow for the issuance of market-based government debt. Improving the legal and regulatory framework is a crucial part of the implementation of the reform agenda. The government of Vietnam approved the Vietnam Bond Market Development Road Map 2017–20, with a vision to 2030, as part of its commitment to develop the government bond market.

#### Solution

The law was changed to allow the government to borrow via the bond market. This authority was enshrined in the Public Debt Management Law in an amendment that was approved by the National Assembly in November 2017 and came into effect in July 2018. The new law regulates the issuance, registration, depository, listing, and trading of government debt instruments.<sup>1</sup> The law also provides a new framework for the primary dealer system and facilitates a securities lending facility operated by the Vietnam State Treasury.<sup>2</sup>

The updated law was complemented by several circulars designed to improve the efficiency of government bond market operations.<sup>3</sup> These circulars were designed to remove gaps in the legislation through facilitation of liabil-

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<sup>1</sup>It replaced the previous Decree 01 as of July 1, 2018.

<sup>2</sup>The securities lending facility is called liquidity support in the Vietnamese legislation.

<sup>3</sup>Issued in 2018 and 2019.

ity management (through switches and buybacks), smooth functioning of the primary dealer system, liquidity support offered by the state treasury, and same-day trading for primary dealers to enhance the efficiency of the market-making system. The three circulars issued were (1) Circular 110 on the issuance and settlement of government debt instruments; (2) Circular 111 on the switch and repurchase of government, government-guaranteed, and municipal bonds in the domestic market; and (3) Circular 30 on registering, depositing, listing, trading, and providing settlement of government debt instruments and government-guaranteed bonds issued by banks for social policies and municipal bonds.

### **Results**

Vietnam established a legal framework to underpin a modernized debt management issuance strategy. This framework has helped the government bond market record robust growth in recent years, when the domestic government securities market also has increased in importance.

## **Georgia: Designing and Implementing Tax Reforms to Support Local Currency Bond Market Development**

### **Context and Challenge**

In April 2016 Georgia released its Capital Market Development Strategy and Action Plan (Capital Markets Plan), which aimed to proactively increase access to finance, a key objective of Georgia's *Social-Economic Development Strategy, "Georgia 2020."* The Capital Markets Plan identified several impediments to the development of capital markets in Georgia, which included unsatisfactory legal and regulatory frameworks, particularly in relation to taxation.

### **Solution**

Authorities reformed the tax law framework governing Georgia's primary and secondary bond markets. The authorities reviewed the existing tax law framework to identify areas that needed reform and then designed and drafted a set of tax law measures to better support the government's policy objective to deepen domestic capital markets, including local currency bond markets (LCBMs).

This effort led to the enactment of various packages of tax law reforms. Reforms focused initially on the supply side of government securities (dealing

**Appendix Table 1.1. Recently Enacted Tax Law Reforms in Georgia**

Package 1 (Rates and Concessions)	Package 2 (Technical Amendments)
Government securities benefit from tax exemptions on income and gains (for foreign investors).	Technical amendments remove tax impediments and provide investor certainty, covering <ul style="list-style-type: none"> <li>• Secondary sales (split between capital and interest components),</li> <li>• Taxation of repos (consistent with Box 1.2),</li> <li>• Taxation of securities lending (similar to repos),</li> <li>• Treatment of financial collateral (similar to repos), and</li> <li>• Taxation of derivatives (mark-to-market).</li> </ul>

with the tax treatment of the government securities in both the primary and secondary markets). The authorities also addressed the demand side (dealing with the effective and efficient alignment of that tax treatment between key institutional investor groups, including mutual and investment funds, to encourage investment and liquidity in government securities). Appendix Table 1.1 is an overview of the comprehensive reforms that Georgia implemented to create a competitive tax law framework for all key classes of investors in Georgia's primary and secondary bond markets, including non-resident investors.

## Results

Georgia now has a tax framework that provides clear and sound rules for determining the tax treatment of returns from local currency bonds (such as interest, discount, and maturity amounts). The framework covers all key classes of domestic and foreign investors. The reforms brought about much-needed clarity with respect to the tax treatment of secondary market transactions (such as the tax treatment of gains on secondary sale for both retail and institutional investors, and repo, securities lending, financial collateral, and derivative transactions for institutional investors).

Authorities also formalized the taxation regime for foreign investors. Georgia implemented interest-withholding tax and capital gains tax concessions and exemptions (see Appendix Table 1.1) that were consistent with international common practice. This new regime has helped support the continued establishment of critical investment links between Georgia's bond market and Clearstream.<sup>4</sup>

The full benefits of these tax reforms will take time to manifest. However, the recent efforts to remove the tax impediments and create a competitive

<sup>4</sup>For more information on Clearstream securities depository, visit <https://www.clearstream.com/clearstream-en/products-and-services/market-coverage/europe-non-t2s/georgia/market-link-guide-georgia-1281410>.

tax framework covering all key classes of investors, including nonresidents, has created conducive legislative conditions to further the aim of deepening the Georgian LCBM.

## **Georgia: Financial Market Infrastructure**

### **Context and Challenge**

The post-trade infrastructure for both government and corporate securities was fragmented between the central bank and the stock exchange. The central bank's central securities depository (CSD) operations were automated, but the corporate securities segment processes were paper-based and manual, settlement took multiple days, there was moderate custody and settlement risk, and the resilience of the financial market infrastructure (FMI) to disruption and disaster was weak. The challenge in the small, developing private capital market was to enable the nongovernment securities segment of the capital market to operate and regulate business within a single FMI system independent of the government securities market.

### **Solution**

In 2018 the National Bank of Georgia consulted and worked collaboratively with the Georgian Stock Exchange to establish a public-private centralized FMI system serving both the government securities and capital markets. The established system, the Georgian Security Settlement System, is a single system that includes the CSD and auction functionality and is fully integrated with real-time gross settlements.<sup>5</sup> The system supports two CSDs that seamlessly interface between themselves and with the real-time gross settlements system and commercial bank accounts held with the National Bank of Georgia. This system supports the efficient transfer of securities between the CSDs and settlement in central bank money for all financial sector security transactions.<sup>6</sup>

The National Bank of Georgia owns and operates the system hardware and network, but software rights are shared between the national bank and the Georgian CSD. The National Bank of Georgia is therefore responsible for all systemically important financial market infrastructure—that is, system capacity and performance, maintenance and development of the systems, and development and maintenance of the primary and secondary DVP sites. The Georgian Stock Exchange operates a CSD business within the

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<sup>5</sup>An international software vendor of FMI infrastructure systems developed the system.

<sup>6</sup>This is more difficult to achieve between multiple stand-alone CSD and central bank settlement systems.

Georgian Security Settlement System under a contractual arrangement with the national bank.

The modern system meets all the needs of (1) the National Bank of Georgia and the Ministry of Finance to develop the government securities market, (2) the National Bank of Georgia to conduct monetary operations and maintain financial stability, and (3) the Georgian Stock Exchange requirements to support development of the capital market.

## Result

The National Bank of Georgia operates the CSD business solely for government securities and securities issued by the national bank. The Georgian Stock Exchange operates the CSD business for corporate debt, local currency supranational debt, equities, and other securities. The National Bank of Georgia and the stock exchange are responsible for government securities and capital market development, regulation, settlement, market monitoring, and oversight. Because these CSDs operate independently, the national bank can pursue public interest policies in the operation and development of the government securities market, while the Georgian Stock Exchange can independently pursue private sector objectives to develop the capital markets. For example, each CSD can set its own rules and regulations and fees, create new securities, determine investor access criteria,<sup>7</sup> manage corporate actions, use the appropriate trading models (over-the-counter or on exchange) and preferred settlement models (DVP1, DVP3), monitor settlements, and regulate activity.<sup>8</sup>

The result has been maximum operations efficiency through infrastructure consolidation by (1) keeping the public sector interest present with the central bank operating the system and performing CSD functions for government bonds only; (2) keeping the public sector and/or central bank away from commercial CSD operations (corporate bonds and equities), which are genuinely private sector business and entail legal, financial, and reputational risks; and (3) increasing National Bank of Georgia ownership, reputation, and financial capacity support to boost investor confidence in the FMI for both government securities and capital markets, particularly nonresident investors.

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<sup>7</sup>Often, there are policy differences between the access requirements for the public and private CSDs.

<sup>8</sup>DVP1 is the default model for government securities, and the Georgian Stock Exchange uses DVP1 and DVP3.

## **Malaysia: Lowering Barriers for Foreign Investor Participation**

### **Context, Challenge, and Solution**

The regulatory framework in Malaysia was reformed to attract international investors. Malaysia has made progressively advanced reforms to eliminate barriers constraining the participation of foreign investors in the LCBM.

In 2004 authorities eliminated withholding taxes for nonresidents that arise from income on government and corporate bonds. Restrictions on local currency convertibility were also eased considerably—in 2005 nonresidents were permitted for the first time to sell forward foreign exchange contracts against Malaysian ringgit to hedge receipts and committed outflows for divestments in ringgit assets. In 2007, to enable nonresidents to borrow in local currency to fund investments, authorities abolished the limit on overdraft facilities extended by authorized dealers to nonresident stockbrokers or custodian banks for the settlement of the purchase of listed securities. In the same year, registration requirements on ringgit-denominated loans to nonresidents also were eliminated.

In 2016 and 2017 the central bank announced several measures intended to enhance the development of onshore foreign exchange market liquidity. These measures granted investors additional flexibility to actively hedge their exposures, while residents have more interest rate hedging avenues through greater liberalization of regulated short selling. More recently, other initiatives undertaken to further develop the market included (1) enhancing the repo market by increasing the availability of off-the-run securities to be borrowed via repo, (2) enhancing the delivery mechanisms of securities, and (3) facilitating hedging operations for foreign investors.

### **Results**

These measures have resulted in an increase in the share of foreign investors in the LCBM. The share of foreign investors increased from 13.5 percent at the end of 2009 to a peak of 35.75 percent in September 2016 before declining to about 24 percent (as of March 2019). The composition of the investor base for the Malaysian bond market has also broadened with more medium-term and long-term investors, which has also contributed to better stability in the market.

The foreign exchange measures adopted in 2016–17 helped market development. The changes resulted in increased hedging opportunities and the supply of foreign exchange onshore. Although turnover in the onshore spot, forward, and swap foreign exchange markets improved, bid-ask spreads nar-

rowed, and ringgit volatility declined (Grigorian 2019). The availability of an efficient foreign exchange derivatives market in Malaysia has helped attract a wider range of foreign investors and enrich the bond market through greater price discovery and liquidity (Lu and Yakolev 2018).

## Malaysia: Development of Preconditions and a Sizable Institutional Investor Base to Support Domestic Government Debt Market Development

### Context and Challenge

Malaysia moved from holding a budget surplus to developing a government securities market. Until the late 1950s, when Malaysia gained independence (1957), the government of Malaysia had little need or incentive to borrow, given its budget surpluses underscored by high commodity prices and procyclical fiscal policies.<sup>9</sup> A global commodity downturn in the mid- to late 1950s had a negative effect; the government began to better prepare itself to take on debt by establishing the necessary preconditions to create a viable and robust domestic government debt market.

### Solution

Several measures were taken, but none were as critical as developing a domestic institutional investor base. Policymakers established that there had to be a sufficiently large outstanding volume of securities, a stable interest rate environment, relevant players in the market, and a predictable timetable for regular issues. The core focus in the beginning was on the first condition: a sufficiently large volume of government securities. Malaysian government securities—mainly medium term to long term—were introduced with a dual purpose of not only financing the public sector but also becoming an investment asset for the country's largest provident fund, the Employees' Provident Fund (EPF), which was established in 1951. Although the domestic institutional investor base has since significantly widened beyond EPF, the key takeaway is that policies to create domestic long-term capital are a critical anchor to domestic government debt market development and one of the preconditions to attracting foreign investors. Currently, the government of Malaysia relies heavily on domestic issuance to finance its borrowing requirements; external borrowing comprised only 3 percent of the debt stock at the end of 2019.<sup>10</sup>

<sup>9</sup>A significant source of this section is derived from Malaysian Securities Commission (2004).

<sup>10</sup>External borrowing includes nonresident holdings of domestically issued securities as domestic debt.



**Appendix Table 1.2. Malaysian Key Institutional Investors**

	<b>Employees' Provident Fund</b> (Malaysia's biggest retirement fund)	<b>KWAP</b> (Malaysia's second largest retirement fund)	<b>Permodalan Nasional Berhad</b> (Malaysia's largest fund management company)
Assets under Management	RM 839.6 billion (end of 2018)	RM 136.5 billion (end of 2018)	RM 298.5 billion (end of 2018)

Sources: Employees' Provident Fund Annual Report 2018; KWAP Annual Report 2018; and Permodalan Nasional Berhad Annual Report 2018.  
Note: KWAP = Kumpulan Wang Persaraan; RM = Malaysian ringgit.

EPF is the cornerstone of the development of the Malaysian global bond market. EPF was established to incentivize household savings (governed by the EPF Act 1951), and it is compulsory for nearly all formally employed Malaysians (and their employees) to contribute to the fund at certain prescribed rates. Contributions are preserved as long-term capital. The policy requires that 70 percent of the members' contributions cannot be withdrawn before the retirement age of 55, and the residual 30 percent can be withdrawn only under specific circumstances (such as for housing or education). EPF contributions have built up steadily over nearly seven decades. Consequently, the aggregate size of the institution was considerable at 839.6 billion ringgit at the end of 2019, or 58 percent of GDP, making it one of the largest pension funds globally by this metric. Since its inception, EPF has continued to heavily invest in the bond market; more recently, it has been guided by the provisions in the 1991 act.

Further efforts are planned to grow and develop the demand side (Appendix Table 1.2). Over time, the capital markets authority and the central bank have taken several measures to develop a deep and broad investor base and asset-management industry to include insurance companies, unit trusts, retail funds, and mutual funds. These steps have been important to allow outsourcing of the management of funds from large buy-and-hold investors such as EPF to further expand liquidity in the secondary market. The development in the 1980s of a large national fund management and unit trust company—the Permodalan Nasional Berhad—played another key role in supporting the development of a large domestic investor base that has also supported investments in Malaysian global securities.

## **India: Moving from Financial Repression to Market-Based Rates**

### **Context and Challenge**

Before the 1990s the government securities market in India was characterized by a plethora of financial repression measures. These measures included administered rates, a nonexistent yield curve, a moribund secondary market, and a captive investor base of banks. Growing fiscal deficits in the 1980s had

considerably increased the volume of central government debt, in particular short-term debt, because of the automatic accommodation by the Reserve Bank of India through the mechanism of ad hoc treasury bills.<sup>11</sup> Artificially low yields on government securities also affected the yield structure of other financial assets in the system and led to high lending rates overall. In this context and in that of the overall economic reform program, reforms in government securities markets commenced in the early 1990s.

### **Solution**

The first phase of reforms (early 1990s) was devoted to building the enabling environment for the development of the government securities market. This phase included eliminating automatic monetization and improving fiscal discipline through the system of ways and means advances.<sup>12</sup> The system of administered interest rates was also abolished, and the issuance mechanism was restructured to reflect market prices.<sup>13</sup>

The second phase of reforms during the mid- to late 1990s was devoted to building the market and institutional infrastructure. The primary dealer system was set up in 1995 along with a DVP settlement system, and floating rate bonds were also introduced. The market was developed further by introducing repos and allowing foreign institutional investors to invest in the LCBM within specified limits. The Reserve Bank of India and government also agreed on the introduction of a system of ways and means advances to the central government in 1997, along with an agreement to, inter alia, discontinue ad hoc treasury bills. Subsequently, over-the-counter interest rate derivatives such as interest rate swaps and forward rate agreements were introduced in 1999. Additionally, the liquidity adjustment facility was initiated in 2000 to manage systemic short-term liquidity mismatches as a primary instrument for monetary policy operations.

The government also addressed the issue of conflict of interest between the implementation of monetary policy and debt management operations. The passing of the Fiscal Responsibility and Budget Management Act in 2003

<sup>11</sup>Ad hoc treasury bills had a maturity of 91 days but could be canceled at any time, even before the maturity period, if warranted by the government's cash position. The ad hoc treasury bills were converted into special securities at their redemption date.

<sup>12</sup>The ways and means advances arrangement formally replaced the ad hoc treasury bills mechanism in 1997, but the process was initiated in 1994.

<sup>13</sup>In more specific terms, an auction system for price discovery was introduced in 1991. Subsequently, in 1993, 91-day treasury bills were introduced for managing liquidity and benchmarking. A historic agreement was signed between the Reserve Bank of India and the government on the net issuance of ad hoc treasury bills. Net issuance of ad hoc treasury bills was brought down progressively from its high of more than 38 percent in the early 1990s to 18 percent at the end of 2019.

prohibited the Reserve Bank of India from participating in the primary market, thereby mitigating the potential of such conflict of interest between debt management and monetary policy. This reform was also helped by the relative success of developing the government securities market by then.

### **Result**

The share of market borrowing by the central government in financing its fiscal deficit increased from 18 percent in fiscal year (FY) 1992 to more than 70 percent in FY2003. This was accompanied by an initial increase in the cost of the debt, which reversed over time.

The successful implementation of the market-based auction system saw issuances concentrated on shorter maturities. Issuance of bonds above 10-year maturities declined from 76 percent of total borrowing in FY1992 to 16.1 percent in FY1999. During the same period, the share of securities with maturity below five years increased from 7.4 percent to 41.4 percent of total borrowings. In the early 2000s, the government initiated a benchmark building strategy, which also required reforms to the liquidity management regime. Since then, the government has continued to develop its yield curve and increase the weighted average maturity of its outstanding debt.<sup>14</sup>

## **Honduras: Introduction of Electronic Trading Platform for Money Markets**

### **Context and Challenge**

Honduras' capital market is shallow, and the banking system has persistent excess liquidity. Intermediation in the interbank money market has been a challenge, posing constraints to local market development. Banks have traditionally favored maintaining a significant cash buffer to deal with potential and sudden liquidity needs from their clients. Also, a limited interbank lending culture results in commercial banks' preference to deposit their excess liquidity at the Central Bank of Honduras' investment facility instead of lending to other banks that may require it. Additionally, the larger banks find it difficult to trade with new or smaller banks because the smaller banks lack collateral.

The Central Bank of Honduras has encouraged secured interbank market development using repo and reverse repo transactions. In December 2017 it issued a resolution establishing that any credit transaction denominated in

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<sup>14</sup>From 6.5 years in FY1998 to 8.9 years by FY2003 and further to 10.6 by FY2018.

domestic currency taking place between institutions in the financial system (interbank loans) may be backed by any government or central bank security, using the Central Bank of Honduras Securities Depository platform or by a fiduciary guarantee.

### **Solution**

The Central Bank of Honduras implemented an electronic trading desk to improve liquidity and transparency in the repo markets. The electronic trading desk is a platform in which banks and financial firms trade repurchase agreements of either Central Bank of Honduras or government securities daily from 9:00 a.m. to 12:20 p.m. Limiting trading hours is designed to concentrate market liquidity and help make the system more attractive for market participants.

### **Result**

Activity on the interbank market has improved since the electronic trading desk's implementation in January 2019. This improvement is reflected in traded volume on the interbank loan market, which increased from a monthly average of 1.8 billion Honduran lempiras during 2015 to 2018 to nearly 30 billion lempiras during April to July 2019. The electronic trading desk has also contributed to increased liquidity on the interbank repo market, which has made it easy for investors to hold their positions in securities, financing them with repos at times when they are lacking liquidity. Meanwhile, it has also contributed to the implementation of monetary policy, helping to bring the average interbank closer to the policy rate (despite excess structural liquidity). Thus, it has contributed to defining the starting point of the yield curve in lempiras.

## **Brazil and Mexico: Debt Management and Monetary Policy Coordination**

### **Context and Challenge**

Brazil and Mexico faced challenges in coordinating debt management and monetary policy operations, as the central banks of both countries used to conduct monetary policy through the issuance of their own securities. The large capital inflows experienced by these countries resulted in significant central bank issuance. This generated not only unwanted competition between the two official issuers but also market fragmentation, which hindered LCBM development.

Both countries decided that this arrangement was not conducive to market development and agreed to coordinate their policies better. Both countries approached these issues differently:

- In 2006 the Central Bank of Mexico agreed to use government securities to manage excess liquidity in the banking system. Through this new arrangement, the Bank of Mexico and the Ministry of Finance hold quarterly meetings to determine the amount of government securities to be issued. The government securities consequently issued for monetary policy purposes are fungible with securities issued by the government for funding purposes.
- In Brazil, the Fiscal Responsibility Law enacted in 2002 prohibited the central bank from issuing its own securities. Since then, monetary policy is executed through repurchase agreements that use marketable government securities as collateral.

### Results

Monetary policy in both countries is now executed using central government securities. This process avoids the fragmentation of the market, which can arise when two different types of securities are issued. The policy also contributes to increased liquidity of government securities without harming the capacity of the central bank to execute monetary policy.

## Peru: Improvements in Issuance Strategy

### Context and Challenge

Peru faced significant challenges with low levels of secondary market liquidity in its government bond market, despite gaining investment grade status in 2008. The main reasons for the liquidity were (1) the fragmented issuance of government and central bank securities, (2) limited predictability in the primary market related to the auction calendar of the Ministry of Economy and Finance (MEF), and (3) restricted capacity of primary dealers for market making. Moreover, the auction methodology (hybrid) and the referential supply affected price formation and investors' demand. In 2015 and 2016 the lack of demand and price dispersion obliged the MEF to cancel a substantial number of auctions.

### Solution

The MEF has implemented several actions to improve the predictability of auctions since early 2017. These actions included (1) increasing communication with primary dealers and main pension funds (called AFPs) regarding auction demand, (2) replacing the hybrid auction method with the uniform price auction, and (3) reopening benchmark bonds to reduce the number of outstanding bonds.

### Result

The actions taken improved overall transparency and helped increase secondary market liquidity. The MEF has not been forced to cancel auctions since the reforms were implemented. The strategy has helped MEF to “solarize” (“soles” is the name of the Peruvian currency) the overall debt from a contribution of 5 percent in 2004 to 61 percent in 2018. Furthermore, secondary market liquidity jumped from a monthly average of 4.8 billion soles in 2015 to 14 billion soles in 2018. This has also permitted primary dealers to serve their clients better and cover their positions in the secondary market.

## West African Economic and Monetary Union: Improvements in Primary Market Functioning and Issuance Strategy

### Context

Before 2015 the West African Economic and Monetary Union (WAEMU) regional government debt market was characterized by less transparent and predictable issuance operations and the absence of regular issuance of debt instruments.<sup>15</sup> In most countries, issuance calendars and relevant information on issuance were not provided in advance to market participants. In some cases, calls for tenders were released the day before the auction, resulting in investor uncertainty and thereby reducing the chance for maximizing participation at auctions. From time to time, countries were competing for liquidity at the same maturity, in a shallow market that lacked both depth and liquidity, by holding auctions on the same day. In all countries, issued amounts were frequently substantially larger than announced amounts. Auction results were not always disclosed in a timely manner. Issuance strategies provided an

<sup>15</sup>WAEMU countries include Benin, Burkina-Faso, Côte d’Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo. They share the same currency, the CFA franc, which is pegged to the euro, the regional capital market, and regional financial authorities, including the WAEMU central bank. Each country develops and implements its own borrowing program. Investors in any WAEMU country can purchase securities issued by any WAEMU government.

unbalanced choice of maturities (favoring long-term amortizing securities) instead of a systematic approach to gradually lengthening the yield curve. With the World Bank and IMF's assistance, the authorities implemented several measures to improve the functioning and attractiveness of the regional government securities market.

### **Solution**

In 2013 the regional authorities created the Agence UMOA-Titres, a regional agency, to coordinate regional market issuance, and in the following years strengthened the regulatory framework for primary market operations. The regional agency helps member countries with the operational aspects of auctions (publication of issuance calendars, call for tenders, auction results, market sounding, and so on), the coordination between different issuers, and investor relations. In subsequent years, regional authorities implemented a series of measures, through regulations, to promote the predictability and transparency of government securities operations, including (1) the publication of the quarterly issuance calendar at the start of each quarter, (2) an announcement to the market at least five days before each auction of the amount to be sold and the maturities offered, and (3) the application of a cap for the issued amount in relation to the announced amount.

At the same time, most of the WAEMU countries strengthened the capacity of their debt management entities to prepare and implement a coherent funding strategy. With the assistance of the IMF and the World Bank, many of the countries received tailored training for the formulation and implementation of domestic marketable borrowing programs, for the assessment of investor demand, and for interactions with investors. Regional training was also offered on government securities market fundamentals (characteristics and pricing of government securities), issuance techniques, and steps for developing a yield curve.

### **Result**

Significant strides have been made in improving the predictability and transparency of auctions and in harmonizing issuance practices in the region. Since 2015 issuance calendars are published at the start of each quarter. The turnaround time for publishing auction results has been reduced substantially from an average of two days to about three hours. Although there remains room for improvement, most countries now engage in regular communications with market participants about borrowing plans and market conditions. Deviations between actual issuance and issuance plans have been reduced substantially.

The WAEMU government securities market has also become quite active and has increased in importance. All eight countries now issue securities through several auctions in a year compared with years before 2016, when bonds were predominantly issued less frequently through syndication. Investors in the WAEMU market regularly purchase from issuers across the region, and there is growing expertise among officials in charge of developing and implementing the domestic marketable borrowing programs. Three- and five-year bullet bonds have now replaced amortizing medium-term bonds, and a small volume of seven- and 10-year bullet bonds have been introduced gradually.

## **Serbia: Building Benchmark Bonds and Increasing Dinarization**

### **Context and Challenge**

As of 2015 the government securities market in Serbia was characterized by regular issuance of euro instruments and a largely fragmented dinar (SRD)-denominated government bond portfolio. On December 31, 2015 the share of SRD-denominated government debt amounted to 22.2 percent. The SRD government securities portfolio consisted of a large number of illiquid outstanding instruments and the average term to maturity of the domestic debt portfolio remained low compared with other countries in the region. In the context of a fragmented local currency government bond market, the Public Debt Administration decided to introduce the benchmark issuance program to build liquid benchmark instruments through regular reopening of the benchmark bonds. The government viewed the development of the local currency government bond market as a central part of its ambition to develop the Serbian capital market and reduce the role of the euro in the economy. The benchmark-building program was identified as a central element in increasing market liquidity, improving attractiveness of the market for investors, and enabling the government to sell longer maturities.

### **Solution**

The Public Debt Administration embarked on a set of measures to improve the liquidity of the dinar government bond market through development of a benchmark yield curve. Issuance was focused on three-, five-, and seven-year benchmark bonds, with reopenings used to build the stock of benchmark issues to the equivalent of about \$1 billion. To minimize refinancing risks, the Public Debt Administration began liability management exercises before maturity in 2018.



The debt law was changed to strengthen the legal foundation of bond issuance in Serbia. The extant public debt law tasked the Public Debt Administration with the reduction of the cost of debt, a formulation that was out of line with sound global practices and could have provided the legal justification for political interference in debt management. In addition, other pertinent provisions on the legal framework were modified to enable repo contracts closer to the Global Master Repurchase Agreement. A new Law on Financial Collaterals was approved and implemented in 2018 to strengthen the legal foundation of the repo market.

### **Result**

The introduction of benchmark bonds has meant improved secondary market liquidity. The 10-year benchmark issued in February 2018 and the seven-year benchmark issued in January 2019 show annualized turnover ratios of 51 and 113 percent, respectively, during the first half of 2019, compared with the average turnover ratio for all dinar bonds of 39 percent. Bid-offer spreads are also much tighter for benchmark bonds. The increased demand has also supported the issuance of longer-dated bonds. In February 2020 the Public Debt Administration issued a 12-year SRD 19.3 billion bond (approximately \$170 million), the longest-tenor dinar issue on record.

The development of a benchmark yield curve also attracted foreign investors and allowed Serbia to meet the conditions for inclusion in major global bond benchmark indexes. The increased price transparency, liquidity, and stability of the market are key aspects considered by the index providers for inclusion. In February 2020 J. P. Morgan announced the likely inclusion of Serbian dinar bonds in its local currency global government bond index (J. P. Morgan Government Bond Index-Emerging Markets). This has helped attract new investors to the dinar bond market.

The dinar's share in total outstanding debt has significantly increased. By the end of 2019 the share of dinar-denominated government debt increased to 27.7 percent. This has increased the ability of the National Bank of Serbia to implement an independent monetary policy while improving the speed and quality of monetary transmission, fostering macroeconomic stability.

## **Albania: Market Makers Program**

### **Context and Challenge**

Albania faced low secondary market liquidity and poor levels of price transparency. Albania relies heavily on the domestic market, given its high

debt-to-GDP ratio (66 percent in 2019) and more than half of the debt stock in local currency. Albania has had regular primary market operations in place for many years, with issuances outstanding at the key tenors, but the secondary market was illiquid. This resulted in low levels of price transparency, which also raises the government's cost of borrowing.

### **Solution**

In 2018 Albania's Ministry of Finance and Economy decided to pilot a market-maker system to improve secondary market liquidity and transparency. The ministry picked the five-year fixed coupon bond as the most suitable tenor to build a benchmark security. The pilot aimed to increase the volume of the security by issuing the same bond frequently to foster increased trading. Over the course of six months, the pilot aimed to build up the issuance outstanding of the instrument to about 12–13 billion Albanian leks, or \$120 million.

Access to the auctions was granted to market makers, who signed a contract with the Ministry of Finance and Economy. Five banks agreed to act as market makers in the pilot, with each bank committing to purchase a minimum of 3 percent of the total issuance in six months. Additionally, they agreed to quote prices for the bond on a best-effort basis, participate in the daily fixing by quoting executable prices for a certain period (30 minutes per day) at a predefined time, and report aggregate trading volumes to the Bank of Albania or the ministry weekly or daily. The ministry also established a last-resort securities lending facility, which gave more confidence to the market makers to quote prices.

### **Result**

Secondary market activity of the benchmark bond increased over time, particularly compared with other bonds. There was also increased trading in other government securities with remaining maturities similar to the five-year benchmark bond. The reference rate fixing by the Bank of Albania also helped to significantly improve transparency and price discovery of the five-year segment.

Other positive effects in the market are also observed. There are fewer supervisory liquidity concerns for the local investment funds because of the lack of an active secondary market, which are invested overwhelmingly in government bonds. After the successful six-month pilot program, authorities decided to make the market-maker program permanent starting in January 2019 and including an additional tenor (three-year benchmark bonds).

## **South Africa: Electronic Trading Platform**

### **Context and Challenge**

Structural challenges in the South African government and corporate bond market have historically contributed to low levels of trading liquidity.

### **Solution**

In 2012 the National Treasury formed an industry-wide Bond Market Development Committee to review developmental issues facing the South African bond market and to identify solutions. One of the key solutions the committee recommended was to implement an electronic trading platform (ETP) to enable more predictable, transparent, and enhanced trading in the South African bond market.

The National Treasury designed and implemented the ETP on the committee's recommendation and in collaboration with the World Bank.<sup>16</sup> In August 2018 the Johannesburg Stock Exchange, together with the National Treasury and several partners, launched the country's first ETP for government bonds. The full spectrum of government bonds reflective of the South African government yield curve were phased into the ETP, including 14 fixed-rate and eight inflation-linked bonds, with the primary dealers quoting two-way prices within predefined criteria.

### **Result**

The ETP allows users to comply with their market-making obligations. This was achieved by providing liquidity to government bonds, which increases competition, reduces transaction costs, contributes to price discovery, and allows traders to see live pricing. These measures boosted investor confidence and improved market appetite for government securities.

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<sup>16</sup>The World Bank supported implementation of the ETP, including by advising the government on suitable models based on international best practices and the domestic context, supporting the National Treasury in reaching consensus between different stakeholders, advising on the institutional arrangements that could govern the platform, defining the core functionalities of the platform, designing the settlement model, and defining the principles guiding the platform bylaws.

## Thailand: Bond Market Price Transparency

### Context and Challenge

Thailand's domestic bond market for the government, state-owned enterprises, and corporate securities lacked pre- and post-trade transparency. Secondary market price transparency and trade reporting standards were inefficient and subject to inaccuracies.<sup>17</sup> The mark-to-market standards of institutions and mutual funds were not standardized and regulated, a situation that opened the risk that managers would misprice their bond portfolios. The challenge was to provide the local market with primary and secondary market information through a centralized mechanism and infrastructure (database) to instill investor confidence and encourage bond trading and debt issuance.

### Solutions

In late 2005 the Thai Securities and Exchange Commission approved the Thai Bond Market Association's (BMA) license and roles as a center for all bond market information and trade data collection and as a self-regulatory organization.<sup>18</sup> All issuers were required to register (with a fee) at the Thai BMA,<sup>19</sup> the center for bond market information, and created an issuer profile that included (1) bond features, (2) trading information, (3) historical information, and (4) issuers' relevant news and updates. The securities regulations required all dealers to report intraday secondary market transactions to the Thai BMA,<sup>20</sup> with most dealers using the Thai BMA software that automatically reports trades once entered into the dealers' back-office systems. The Thai BMA provides both intraday and end-of-day data and a daily market summary.

In 2006 the Thai Securities and Exchange Commission enacted a regulatory requirement that all bond mutual funds needed to mark to market their portfolios daily based on the Thai BMA's Bond Pricing Agency end-of-day official price references. The Thai BMA publishes the daily government bond yield curve and corporate bond yield curves based on reported transactions and information on market-based pricing and theoretical-based pricing for both government bonds and less liquid securities.<sup>21,22</sup>

<sup>17</sup>Originally, trades were reported as morning and afternoon sessions.

<sup>18</sup>Originally operating in 1994 as the Thai Bond Dealers Club, it changed its name in 1998 to the Thai Bond Dealing Center.

<sup>19</sup>Ministry of Finance government securities in the primary market are exempt and registered automatically.

<sup>20</sup>Updated to a 30-minute reporting window from time of trade execution in 2012.

<sup>21</sup>Since 1999 when the Ministry of Finance became an active issuer of government securities.

<sup>22</sup>Interpolated pricing for illiquid bonds.

## **Result**

Thailand's secondary bond market trading volumes have been increasing steadily every year because of the policy actions taken in 2005, 2006, and 2012 to improve market information, trade transparencies, and price discovery for both the primary and secondary markets. Regarding secondary markets volumes, the average daily trading value over the past decade has increased from 18 billion Thai baht (\$520 million) as of 2006 to 90 billion baht (\$2.8 billion) in 2019.

The primary market for government securities and nongovernment securities has been on a steady, upward trend due to market efficiencies and price discovery. The Thai Ministry of Finance's Public Debt Management Office (PDMO) has benefited from the Thai BMA's market development efforts to improve bond information and transparency. The PDMO has stated that the Thai BMA's government securities yield curve provides the debt managers with fairly accurate price indications for primary market auctions. Also, the yield curve and its movements assist the PDMO in its annual issuance strategy for treasury bills, benchmark government bonds—building program, and the extension of the yield curve. The Thai corporate bond primary market has equally enjoyed the benefits of greater market information, transparency, and price discovery as the long-term corporate bond issuance (includes roll-overs) reached a historical high of 1 trillion baht (\$31.2 billion) in 2019.

## Appendix 2. Survey Results

A recent IMF–World Bank survey assessing the current stage of local currency bond markets development was sent to country authorities to capture common challenges faced by developing countries and to identify potential areas of focus in market development strategy. The survey was answered by the debt management authorities (the monetary authorities for certain money market aspects) of 32 countries—10 in Europe and Central Asia, 10 in Latin America, 7 in sub-Saharan Africa, and 5 in other regions. This appendix presents the survey results, organized by the key building blocks.<sup>1</sup>

Overall, the survey highlighted many structural issues, indicating the long-term nature of the development process of government local currency bond markets. These issues include the lack of a diversified investor base, the concentration of the banking sector, and the structural excess liquidity in the banking system that are perceived by many countries as important challenges. Also, the top three concerns for the secondary market relate to the investor base (see the heat map in Appendix Figure 2.1). Addressing structural issues is an important element, but it requires time and concerted and coordinated efforts from multiple government entities.

In the meantime, authorities could undertake several policies to help. For instance, policies related to the maturity profile or types of instruments could be implemented in the short term. Also, actions to reduce operational and settlement risks may be easier to implement than structural measures.

It is useful to look at the survey answers using income level and regional breakdowns. Most countries, even at different income levels, consider devel-

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<sup>1</sup>The survey reflects views of the country authorities and may not capture the perspectives of the private sector. It may also not accurately represent a global picture, given the low response rate from some regions (Asia and the Middle East and Northern Africa). Because this is the first survey conducted on the topic, no analysis on progress from previous years is implied here.

**Appendix Figure 2.1. Heat Map: Challenges Faced by Countries in Developing-Government Local Currency Bond Markets**

Overall				
Money Market	Primary Market	Investor Base	Secondary Market	Market Infrastructure and Legal
Structural excess liquidity in the banking system	Smoothen the redemption profile	Mutual funds	Limited number of domestic institutional investors	Operational risks
Concentration of banks	Create new types of instruments	Foreign investors	Prevalence of buy-and-hold strategies	Settlement risks
Lack of instruments	Issue benchmark securities	Retail investors	Limited participation of international institutional investors	None
Market infrastructure	Increase tenors	Insurance companies	Lack of benchmark bonds	Absence of DVP
Concerns for counterparty risk	Improve interest rate composition	Pension funds	Lack of securities lending facilities	Net settlement cycles for securities
Lack of market data	Improve currency composition	Banks	Trading mechanisms not well-established	Settlement finality not defined in law
Small number of banks	Increase use of marketable debt		Underdeveloped market infrastructure	Absence of RTGS
Full transfer of collateral	Increase number of instruments		Insufficient number of market intermediaries	High costs for custody and settlement
Tax and/or accounting frameworks	Securitize government arrears		Insufficient regulation and surveillance over market activities	Inadequate access to electronic data/information
Absence of treasury single account	Reduce number of instruments		Excess liquidity in the banking system	Other
Other	Reduce types of instruments		Short selling restrictions	

Sources: IMF; and World Bank staff.

Note: DVP = delivery versus payment; RTGS = real-time gross settlement.

oping the investor base and the secondary market the most challenging factors. However, when looking at the regional breakdown, it is noted that authorities in Latin America and sub-Saharan Africa considered that the challenges related to market infrastructure and the legal and regulatory framework are as important as those involving the investor base and the secondary market, while in other regions, they did not (Appendix Figure 2.2).

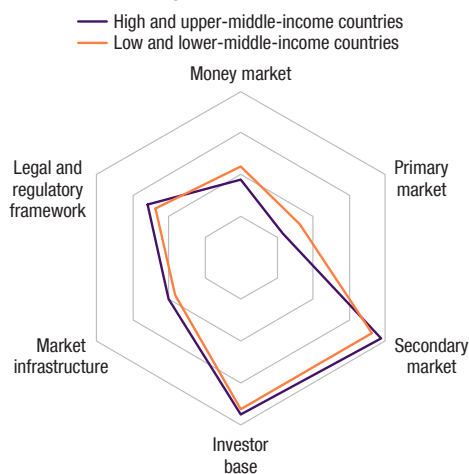
The survey also allows the identification of challenges for each of the building blocks.

## Money Market

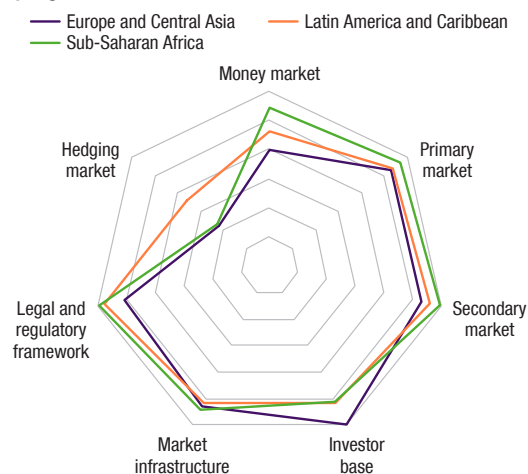
In several emerging market and developing economies, structural excess liquidity in the banking system is adversely affecting the functioning of the money market. The issue of structural excess liquidity in the banking system is reported by countries across regions, while it appears to be most prevalent in sub-Saharan Africa. In most cases, structural excess liquidity has been driven by capital inflows (including foreign exchange interventions), fiscal deficits, or a combination of these (Appendix Figure 2.3).

Appendix Figure 2.2. Challenges in Developing Local Currency Debt Market

## 1. By Income Level of Country



## 2. By Region



Sources: IMF; and World Bank staff.

Note: Being closer to the edge signifies that more respondents address this factor as a more serious challenge.

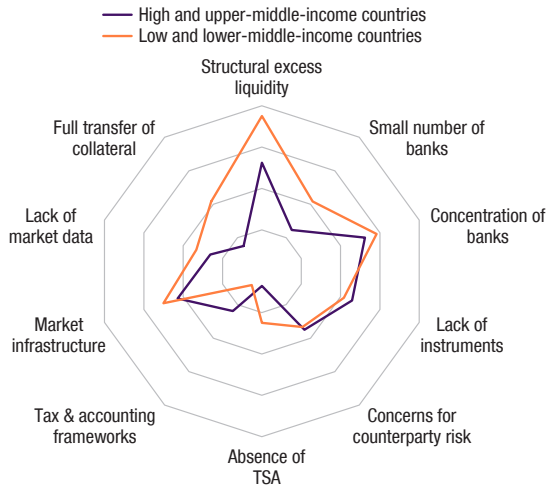
Another relevant issue for money market development is the high concentration in the banking sector. High concentration in the banking sector impedes stronger activity in the money market, an issue that seems to be more particularly acute in Europe and Central Asia and in sub-Saharan Africa. In the latter, another related issue is the concern about counterparty risks in interbank transactions, which segments the market and inhibits trading. For lower-income countries and for Europe and Central Asia countries in particular, market infrastructure deficiencies are seen as affecting the functioning of money markets.

Central bank officials consider that information sharing on cash flows and liquidity management with the government needs to be improved. This holds for countries at different income levels. Better government cash management and government cash flow forecasting are also seen as an important factor supporting their banking sector liquidity management. Regionally, the former is particularly important for sub-Saharan Africa and Europe and Central Asia countries (Appendix Figure 2.4).

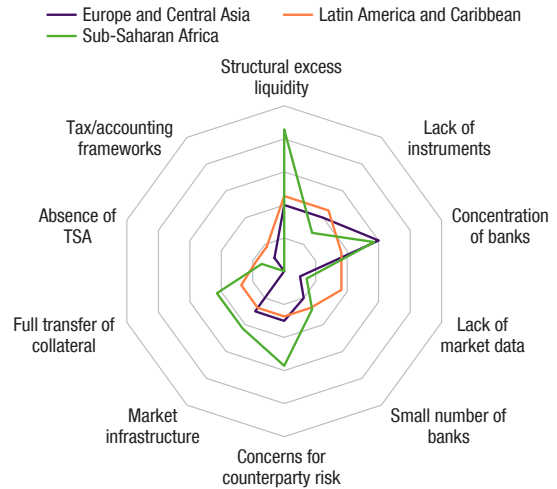


**Appendix Figure 2.3. Challenges in the Money Market**

**1. By Income Level of Country**



**2. By Region**

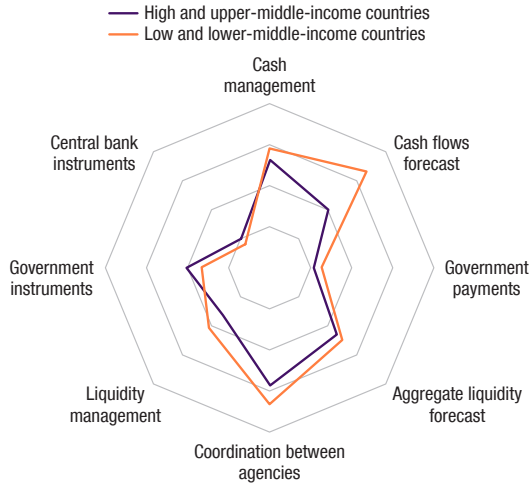


Sources: IMF; and World Bank staff.

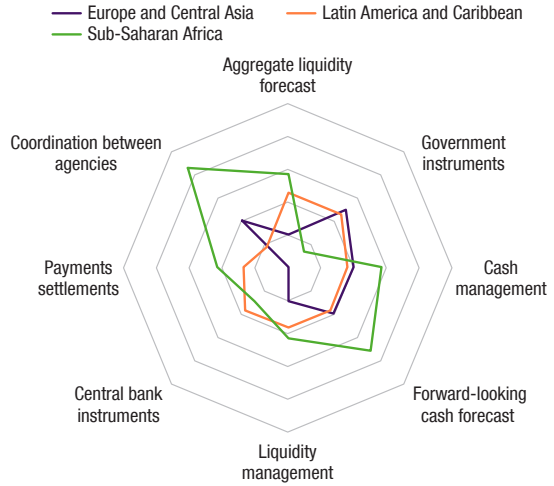
Note: Being closer to the edge signifies that more respondents address this factor as a more serious challenge. TSA = treasury single account.

**Appendix Figure 2.4. Liquidity Management: Areas for Improvement**

**1. By Income Level of Country**



**2. By Region**

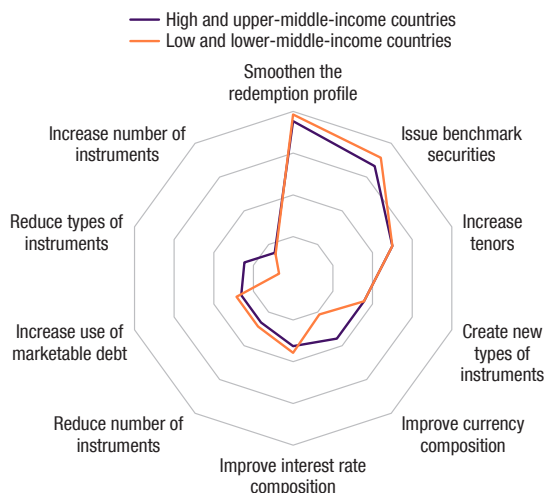


Sources: IMF; and World Bank staff.

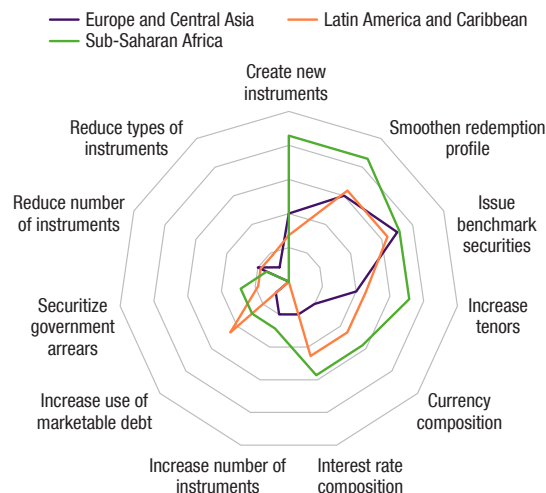
Note: Being closer to the edge signifies that more respondents address this factor as a more serious challenge. CB = central bank; DMO = debt management office.

Appendix Figure 2.5. Primary Market: Areas for Improvement

## 1. By Income Level of Country



## 2. By Region



Sources: IMF; and World Bank staff.

Note: Being closer to the edge signifies that more respondents address this factor as a more serious challenge.

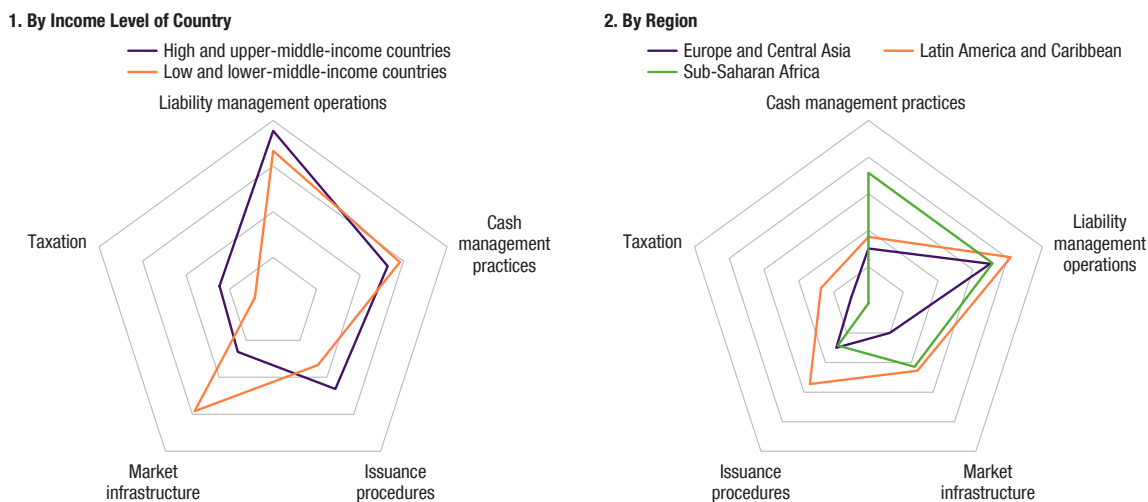
## Primary Market

Challenges faced on the primary market vary depending on the region. Smoothing the maturity profile is particularly relevant for many sub-Saharan African countries but less so for others. Also, creating new types of instruments would be broadly important for sub-Saharan Africa and Europe and Central Asia but not as much for the other regions. However, issuing benchmark securities is perceived as an important factor across all regions (Appendix Figure 2.5).

Poor cash management forecasting is seen to hinder greater efficiency in the primary markets. Associated with uncertainty of future needs, this problem harms the ability of the debt manager to follow predictable and regular issuance practices and to properly execute a debt management strategy. Coordinating the issuances of the central bank and the government is also a challenge.

Although many countries have introduced benchmark securities in the recent years, some countries struggle to implement this policy. There seems to be a widespread understanding that benchmark securities help to increase liquidity in the market and reduce funding costs. However, implementing this policy is hindered sometimes by poor cash management or by the inability to conduct liability management operations to manage refinancing risks stemming from the benchmark instruments (Appendix Figure 2.6). The latter seems

**Appendix Figure 2.6. Issuing Benchmark Securities: Areas for Improvement**



Sources: IMF; and World Bank staff.  
 Note: Being closer to the edge signifies that more respondents address this factor as a more serious challenge.

to be particularly relevant for European and Central Asian countries and for Latin America. For the latter, issues such as market infrastructure have a relevant impact in hindering sound primary market practices.

## Secondary Market

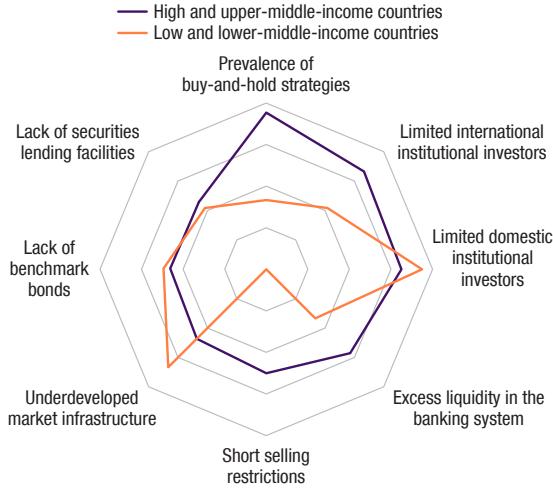
Deficiencies in the investor base structure prevent the deepening of the secondary market. The lack of a diversified investor base inhibits trading among different types of investors (which might want to buy and sell at different points in time). In addition, for those regions with excess liquidity, the banking sector may also act as buy-and-hold investors, further hindering secondary market activity (Appendix Figure 2.7).

The development of the secondary market has also been impaired by the conditions in the money and primary markets and by inadequate market infrastructure. In many cases, the structural liquidity reduces incentives for trading. In other cases, the lack of benchmark bonds in some countries also makes trading more challenging. Other issues such as the lack of a securities lending facility and an underdeveloped market infrastructure also seem to prevent trading. Although it is the exception rather than the norm, some countries do not allow over-the-counter transactions, with the aim of increasing transparency, but this prohibition limits trading possibilities.

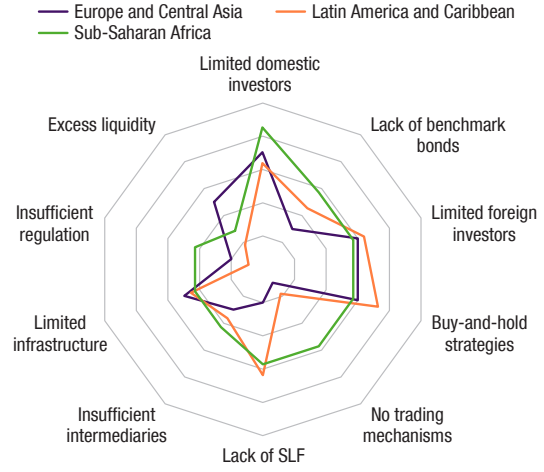
High bid-ask spreads and fees for intermediaries are the key challenges contributing to high market transaction costs. It should be assessed closely

Appendix Figure 2.7. Challenges in Secondary Market

1. By Income Level of Country



2. By Region



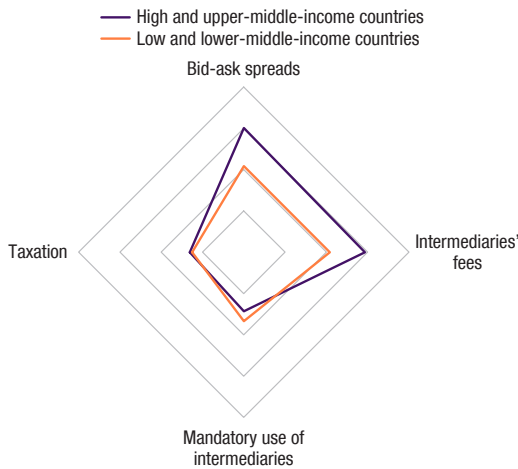
Sources: IMF; and World Bank staff.

Note: Being closer to the edge signifies that more respondents address this factor as a more serious challenge. SLF = securities lending facilities.

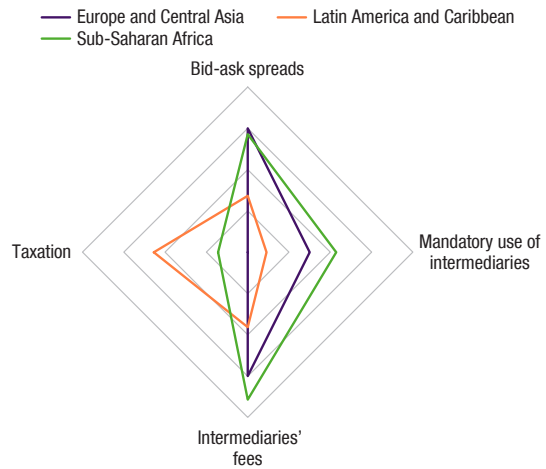
whether high costs are mostly driven by low market liquidity or whether regulatory constraints have pushed up trading costs. The mandatory use of intermediaries seems to pose challenges for sub-Saharan Africa, while the taxation of secondary market transactions is particularly relevant for Latin America (Appendix Figure 2.8).

Appendix Figure 2.8. Secondary Market: Causes of High Transaction Costs

1. By Income Level of Country



2. By Region



Sources: IMF; and World Bank staff.

Note: Being closer to the edge signifies that more respondents address this factor as a more serious challenge.

## Investor Base

The lack of a broader investor base poses a structural problem that prevents countries from moving up the ladder on market development. There is a widespread perception that several segments need to be developed further, such as pension or mutual funds, an insurance sector, and foreign and retail investors. This thinking reflects the dominant role of banks in many countries and poses challenges to extending the maturity of government debt portfolios (Appendix Figure 2.9). In several cases, the status of this building block hinders the efficient functioning of money, primary, and secondary markets, as described in the respective subsections.

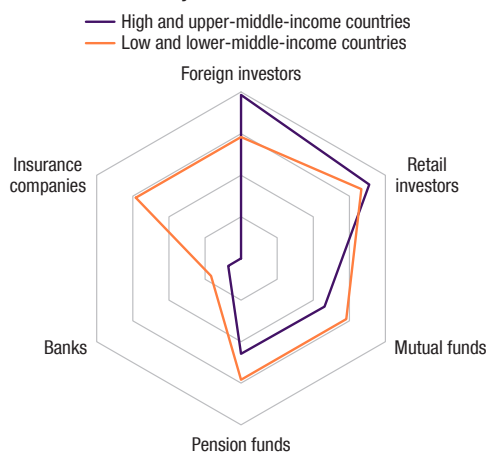
## Market Infrastructure

Market infrastructure is crucial for low- and lower-middle-income countries. While market infrastructure is not impeding the market functioning for a large number of upper-middle- and high-income countries, in many lower-income countries, the proper conditions for trading are not yet in place (Appendix Figure 2.10). In particular, the existence of multiple central security depositories is of concern to many of these countries. Staff capacity is another challenge reported across all income groups (Appendix Figure 2.11).

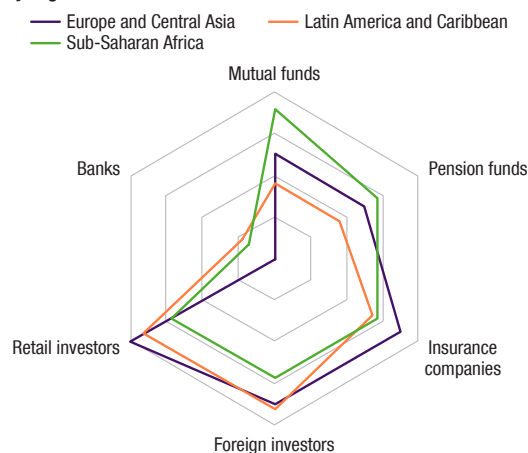
Overall, the survey responses show that there is room for improvements in all the building blocks. The authorities could strengthen efforts to improve

**Appendix Figure 2.9. Challenges in Investor Base**

### 1. By Income Level of Country



### 2. By Region

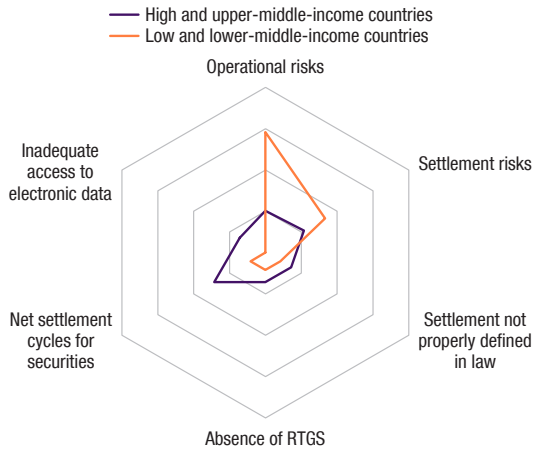


Sources: IMF; and World Bank staff.

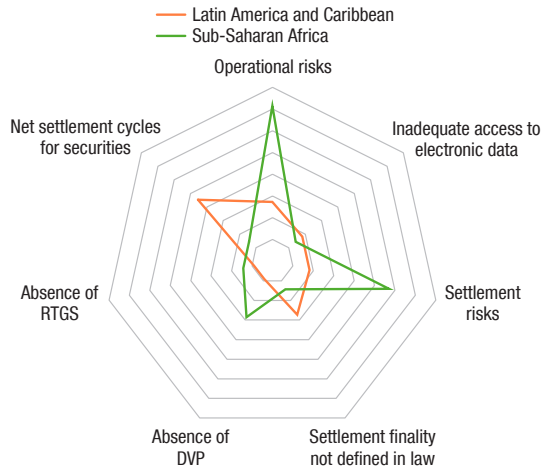
Note: Being closer to the edge signifies that more respondents address this factor as a more serious challenge.

**Appendix Figure 2.10. Challenges in Market Infrastructure**

**1. By Income Level of Country**



**2. By Region**



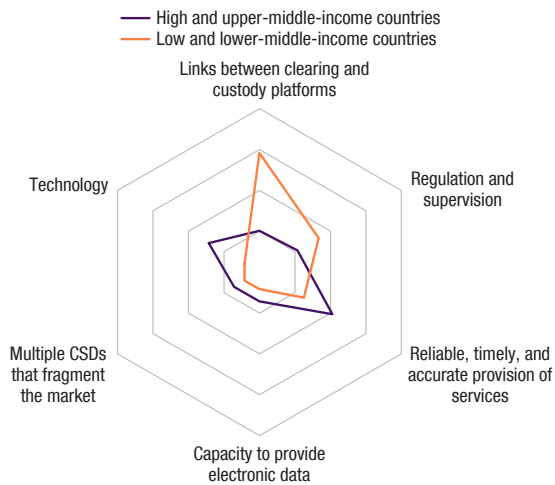
Sources: IMF and World Bank staff.

Note: Being closer to the edge signifies that more respondents address this factor as a more serious challenge. DVP = delivery versus payment; RTGS = real-time gross settlement.

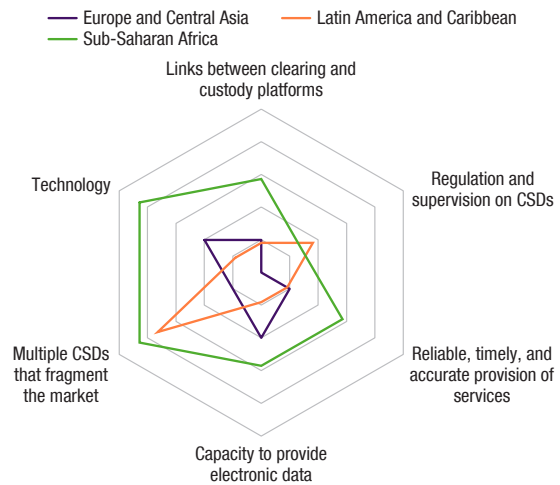
the foundational aspects of market infrastructure with a particular focus on reducing operational and settlement risks. They could also deal with structural constraints that usually are indicated by a nondiversified investor base. Policies in the three markets (money, primary, and secondary) can also be vastly improved.

**Appendix Figure 2.11. Central Security Depositories: Areas for Improvement**

**1. By Income Level of Country**



**2. By Region**



Sources: IMF; and World Bank staff.

Note: Being closer to the edge signifies that more respondents address this factor as a more serious challenge. CSD = central security depository.



## Appendix 3. Stylized Cases

### Sequencing Policy Reforms

The diagnostic assessment indicates the country's current stage of market development and will guide the design of its sequencing plan, but this plan should be informed by policy objectives and current challenges. A reform plan with the appropriate sequencing of policy actions will lay out the measures required for a country to progress from one stage of market development to the next. Broadly, there is a positive correlation between a country's government securities market development level, its overall financial market development, and its income level.

This appendix illustrates three stylistic cases of reform plan sequencing that depend on different stages of market development. These cases are meant to illustrate possible paths of progress from one stage of development to another. The reform plans are represented as phases that correspond to a country that moves progressively from the nascent to the developing stage (phase 1), from the developing to the emerging stage (phase 2), and from the emerging stage to the mature stage of development (phase 3). These stylistic phases assume existing gaps and challenges that countries frequently face in several of the key indicators across the building blocks.

A stylized sequencing of the efforts required across all the key indicators of the six building blocks of the local currency bond markets (LCBM) framework is depicted in Appendix Table 3.1. The degree of effort required for each indicator is indicated by the shades depicted, where a lighter shade indicates relatively less policy effort, and a darker shade indicates greater effort. Efforts may progressively increase or decrease across various indicators, depending on the market stage of a country. For each specific indicator, the policy effort may grow in relevance as the market progresses. Given the nebulous boundaries between the market stages, there could be a brief over-



lap between two phases in the degree of policy efforts required.<sup>1</sup> As such, the viability of policy measures and the balance of pros and cons for each of the reform actions should be analyzed case by case.

## **Phase 1**

Phase 1 (moving from the nascent to the developing market stage) would focus on laying a market-based foundation for the primary market as the macro enabling conditions are gradually being achieved. Reform efforts would typically begin in the primary market, focusing on the issuance of securities through a market-based framework. At the same time, countries should focus on improving the macro enabling conditions conducive to LCBM development. In emerging market and developing economies, these typically include addressing fiscal dominance, financial repression, and high levels of inflation.

As the macro environment issues are addressed, countries should gradually adopt market-based placement and pricing mechanisms when issuing securities. Moving to a market-based placement mechanism would entail the introduction of auction mechanisms supported by auction rules that promote competition. Most of the issuances at this stage would likely be focused on shorter-term maturities to establish a robust short-term yield curve. The adoption of market-based pricing mechanisms aims to gradually generate positive real rates of return as the government reaches sufficient fiscal space, and to ensure that cost considerations do not jeopardize debt sustainability. For many countries, it could take considerable time to achieve these objectives, particularly if the enabling conditions are not in place. Simultaneously, if the central bank does not adopt an operating framework for a market-based monetary policy, there should be a transition toward using interest rates as an operational target and repos as part of its liquidity management framework. The interbank repo market can also be initiated at this stage if only based on security pledges.

Reforms related to the legal framework and market infrastructure should focus on supporting market-based issuance. The legal framework should ensure that the authority to borrow and issue government securities is vested in the Ministry of Finance so that there is no debt fragmentation. Authorities should facilitate the development of market infrastructure that at the most basic level can ensure the efficient and secure settlement of transactions in the primary market. This could include developing an electronic auction system and a central securities depository. Issuance through the dematerialized secu-

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<sup>1</sup>For countries near the borderline between stages, it is likely that the policy effort could span more than one stage within and across building blocks.

rities should be promoted during this phase. The authorities could also begin looking at establishing basic trading arrangements.

## Phase 2

In Phase 2 of the reform plan (moving from the developing to the emerging market phase), as the primary market for short-term securities is established, the focus for reforms widens to most building blocks. Because macro conditions are also expected to have improved relative to phase 1, several areas can be addressed during this phase. Key among them will be to focus on strengthening the sovereign debt and cash management capacity by developing an appropriate debt management operating framework, strengthening the central bank's liquidity management framework, and developing market intermediaries.

The primary market should focus on gradually increasing the maturity of securities, including the refinement of auction procedures to enable a more competitive bidding process and price discovery. The debt management operating framework should be strengthened simultaneously to establish transparency and predictability in the issuance of securities. This should be supported by an enabling legal framework for debt management. The market-based pricing mechanism should be established fully during this phase with auctions usually cleared at market rates and auction results disclosed in a transparent manner. At the same time, securities should be issued through market-based mechanisms with little reliance on nonmarketable bonds and private placements. Depending on the pace of improvement in the inflationary environment, dollarization of the economy, or both, the pace of maturity extension should be calibrated to avoid any sudden fiscal pressures from higher interest payments. A key change in the issuance strategy will involve using shorter-term treasury bills mainly for cash management purposes while issuing bonds for financing purposes. At a later stage, and once proper cash management structures are in place, efforts will be required to consolidate securities and establish benchmark bonds in key tenors, including through the reopening of securities.

Secondary market trades should be supported by the development of an active interbank market, especially in repos.<sup>2</sup> This will require strengthening government cash management and central bank liquidity management. The operating framework of monetary policy during this phase needs to gradually encourage banks to reduce their reliance on central bank liquidity and incentivize engagement in interbank liquidity operations. This should be facilitated

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<sup>2</sup>The interbank repo market should be supported by an appropriate legal structure that resembles classic repos and protects the lender's claims on collateral in the event of default.

through greater transparency in money market transactions. As the central bank gains more operational independence in its monetary policy operations, authorities would need to decide on the use of government or central bank securities for monetary policy implementation while ensuring that the market is not fragmented.

The role of market intermediaries in the primary and secondary markets should be established through supporting regulations. These rules should be supported by improvements in the supervision and risk-management framework of the market participants. The initiation of the primary dealer (PD) system, where possible, can be considered to further consolidate the distribution of securities to end investors and to provide a stimulus to the secondary market. The introduction of a PD system should be assessed carefully because it requires minimum preconditions at this stage for it to function well,<sup>3</sup> including the viability of attracting enough PDs to the system and providing an effective balance of privileges and obligations that would stimulate an appropriate level of competition. Without the preconditions in place, PDs will not add value, and the risk of collusion will increase significantly.

The initial focus of regulation on secondary market trades should be on the over-the-counter market, which will continue to be the dominant segment for secondary market activity. This effort should include centralizing the reporting of trades to a single agency to improve post-trade transparency, which would facilitate better price discovery. The rollout of a delivery versus payment settlement system during this phase will be critical to support the development of the secondary market and money market repo activity. Regular publication of reference rates along with valuation norms, including mark-to-market accounting for different types of financial institutions, will generate greater trading across investor types. The pricing of securities in the primary market should aim to gradually close the gap with secondary market prices to create a symbiotic relationship between the two markets, supported by the development of a relevant yield curve. The standardization of securities and reduced frequency of primary auctions will be important during this phase to spur greater trades across various types of securities.

With the establishment of post-trade transparency, regulatory reform should aim at establishing pre-trade transparency. This could be achieved through an electronic trading screen or platform that could stimulate market-making

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<sup>3</sup>There are several requirements for a well-functioning PD system. These include (1) stable macroeconomic conditions; (2) appropriate legal and supervisory systems; (3) an adequate payment system; (4) liberalized interest rates (the government must be committed to a market-based mechanism); (5) a stable, predictable, and transparent issuance policy (the government must be committed to transparent debt management practices); (6) a large and diversified investor base; (7) a market large enough to support a sufficient number of PDs to ensure competitive behavior; (8) sufficiently large outstanding debt to create liquid issues; and (9) the debt management office's commitment to developing the market (Silva and Baudouin 2010).

activities of intermediaries, including PDs. At a later stage, efforts establishing exchange trades could consolidate the gains made in the secondary market.

Where possible, investor diversification for the debt market should be closely linked with the overall strategy for financial sector development, especially with banking sector liberalization and contractual savings sector reforms. As the investor base deepens, any reliance on buy-and-hold investors should be withdrawn gradually, especially from banks and public sector agencies. Tax policies on government securities should provide a level playing field for all types of investors. Nonbank institutions should be provided equal access for investment in government securities. To channel greater funding, the issuance of securities should match the diverse investor profile, and prudential regulations on asset management of the contractual savings sector should be established. Efforts to develop asset-management companies such as collective investment schemes could be undertaken in the initial stages. Collective investment schemes such as mutual funds can play an important role in the early phase of investor base development by attracting individuals' savings to the government securities market. The development of a simple interest rate swap market would also provide greater flexibility to investors and intermediaries. If foreign investment is desirable, and depending on the stability of the capital account, it could be allowed gradually, especially for the longer-term segment.

### Phase 3

Reforms during phase 3 (moving from emerging to mature market stage) would mainly concentrate on increasing trading activity while diversifying the investor base further. By this phase, most countries would have already implemented good primary market practices but might need refinement, particularly in the regulatory frameworks for market intermediaries.

The separation of debt management and monetary policy objectives would be supported by a clear and transparent institutional arrangement. To ensure such separation, the Ministry of Finance will be expected to take a lead on all debt management operational decisions regarding the operating framework on debt management. The issuance strategy should be anchored firmly by the debt management strategy to impart greater predictability in issuances. The investor relations functions of debt management should also be fully functional during this phase. As the yield curve for longer maturities is established, much of the focus during this phase should be to enhance the robustness of the yield curve through active benchmark bond issuance policy and to promote secondary market activity. These efforts should be supported by liability management operations such as buybacks and switches.

In larger countries, the issuance strategy could also aim to build a sizable stock of benchmark bonds for inclusion in international indexes. The legal framework for debt management should provide the necessary flexibility for such operations.

Secondary market activity could be strengthened further by making the PD system more effective, including through the enforcement of market-making obligations. Obligations such as the provision of two-way quotes should be facilitated through a clear and balanced allocation of privileges (such as access to noncompetitive subscriptions and securities lending facilities). For this purpose, the debt management entity should adopt a sound system to evaluate PD performance, potentially also with a rotation policy to induce greater competition in market intermediation. The introduction of exchange-traded funds could also be considered during this phase.

To leverage efficient money market functioning further, major participants in the LCBM should have access to the money market for liquidity purposes. The bankruptcy framework should permit the close-out netting of repo positions among market participants in the case of default. Allowing the rehypothecation of repos should facilitate market making by dealers. To mitigate systemic risks from rehypothecation, there should be prudential limits on appropriate third parties or the central securities depositories that provide repo securities substitution services.

In this phase, countries could also seek to increase the share of foreign investment, if considered desirable. This can be supported by allowing foreign investment in short-term securities, improving the market for foreign exchange derivatives, providing access to local currency resources, and allowing investors to hold domestic bonds on international central securities depositories.

Appendix Table 3.1. Sequencing of Policy Actions for Market Development

Reform Actions	Phase 1	Phase 2	Phase 3
<b>Money Market</b>			
(1) Well-functioning short-term securities and repo markets			
(2) Monetary policy operating framework			
(3) Monetary policy operations			
(4) Transparency			
(5) The legal framework for repurchase transactions			
<b>Primary Market</b>			
(1) Marketable domestic debt as a share of central government total debt			
(2) Stability of domestic market financing			
(3) Maturity of local currency marketable government securities			
(4) Length of the yield curve			
(5) Market-based pricing			
(6) Market-based placement mechanisms			
(7) Predictability and transparency of issuance			
(8) Government cash flow forecasts			
(9) Transparency of auction results			
(10) Transparency on communication between the authorities and market participants			
(11) Market fragmentation			
(12) Benchmark bonds			
(13) Cash and debt management			
<b>Secondary Market</b>			
(1) Market liquidity and depth			
(2) Pre-trade transparency			
(3) Post-trade transparency			
(4) Market-making duties			
(5) Market-making privileges			
(6) Trading environment			
<b>Investor Base</b>			
(1) Market participants			
(1.1) Depth and diversity of the banking sector			
(1.2) Depth and diversity of the nonbanking sector			
(2) Investor relations management			
(3) Domestic institutional investors			
(4) Central bank monetary financing			
(5) Foreign investors			
(6) Buy-and-hold investors			
<b>Financial Market Infrastructure</b>			
(1) FMI technology platforms (FMI systems framework)			
(2) Security registration			
(3) Clearing and settlement risk (CSD and manual FMI processes)			
(4) Clearing and settlement risk (where there is a CCP)			
(5) Governance and access policies of CSD or CCP systems, or both			
(6) Market segmentation			
(7) FMI liquidity support			
(8) Transparency (data and information)			
<b>Legal and Regulatory</b>			
(1) Borrowing authority			
(2) Market regulation and enforcement			
(3) Investor protection			
(4) Collective investment schemes			
(5) Legal framework for taxation			

Source: Staff illustration.

Note: The sequencing for each building block can be illustrated, in a stylized form, by the colors in the table. Darker colored cells indicate that greater attention should be devoted to that particular indicator. As countries move up the phases, the indicator might either become more relevant or become an established practice that requires less policy effort to be undertaken. CCP = central counterparty clearing house; CIS = collective investment scheme; CSD = central securities depository; FMI = financial market infrastructure.



## Appendix 4. Local Currency Bond Market and Financial Stability

A deep and liquid government bond market can enhance financial stability by better absorbing occasional market stresses that cause extreme price fluctuations and by limiting the financial distortions that increase systemic vulnerability (BIS 2007). An illiquid market can amplify the effect of shocks by generating large price changes, unstable price expectations, and a greater risk of spillover to other market segments. Illiquid markets during periods of heightened market uncertainty can adversely affect financial stability by reducing both agents' capacity to manage risk and the authorities' ability to monitor risk. Liquid markets with a diversified investor base are less likely to witness one-way price bets than markets that are relatively illiquid. In general, emerging market and developing economies are more concerned than advanced economies about the resilience of the government bond markets.

Some of the measures to address market liquidity during market stress conditions could include changing the volume of securities available through securities lending programs and amending collateral policies that influence liquidity premiums (King and others 2017). When markets have frozen, central bank direct intervention in markets through outright purchase or sale of securities can remove some of the underlying financial risk and help restore price discovery (IMF 2017). Similarly, simultaneous auctions of primary market issuance and buyback or exchange operations that facilitate free entry and exit from markets can also help recover price discovery. When securities dealers face funding constraints, liquidity provision by the central bank through lender of last resort-type operations could also be useful to dampen the impact of market stress.

For countries with significant foreign participation, shifts in international monetary or financial conditions may in some instances lead to sudden nonresident sales of local currency bonds, which could have a disruptive effect on the exchange rate. Most advanced economies and emerging market



economies are concerned about the potential volatility from increased foreign investor holdings of government securities (BIS 2019). The stability of foreign investors in domestic bond markets of emerging market and developing economies depends crucially on the behavior of their exchange rates (Chan, Miyajima, and Mohanty 2012). Perceptions of exchange rate misalignment may result in currencies becoming more volatile in response to a new shock than they would be otherwise, a condition which may amplify domestic bond sales by nonresident investors. Greater exchange rate flexibility and deeper derivatives markets for hedging currency risk by foreign investors are therefore essential for safeguarding financial stability related to domestic bond markets (Chan, Miyajima, and Mohanty 2012). Having a well-diversified domestic institutional investor base can help as a useful offsetting stabilizing force in countering the impact on bond yields from reversal of nonresident flows from the domestic bond market.

## Appendix 5. Primary Dealers

### Introduction

Primary dealers (PDs) can support the functioning and development of local currency bond markets (LCBMs). Although the specificities of the introduction of a PD system will differ from country to country, it is generally accepted that several preconditions should be in place before a PD system should be considered. PD rights and obligations are designed to create competition and ensure an adequately functioning primary and secondary market.

A PD system can provide key services and functions to support LCBM development and functioning. A PD system can make substantial contributions to LCBM development only when its establishment and design are appropriate considering the prevailing market conditions and the stage of market development, and when the advantages exceed the disadvantages. However, a PD system is not considered a precondition for a well-functioning LCBM.

Advantages and disadvantages of a PD system need to be assessed case by case, and these factors can change over time. PDs can enhance price discovery and the liquidity of the secondary market. However, if the necessary preconditions are not in place, a PD system can limit competition and be prone to collusion.

### Outline of a PD System

Three main issues need to be analyzed in detail when preparing a PD system:

- Designing a PD system entails defining eligibility criteria. PD eligibility criteria define the conditions that financial institutions that can be

appointed PDs need to meet at a minimum. When selecting PDs, authorities look to typical eligibility requirements that include access to financial market infrastructure (FMI), management capacity, a capital requirement, credit ratings, and exchange and/or electronic trading platform (ETP) membership. Financial institutions that do not meet these requirements are unlikely to be able to fulfill the PD role consistently and adequately.

- PD obligations need to be balanced against rights and privileges.
  - Typical PD obligations include (1) bidding in the primary market, (2) placing government securities with final investors, (3) committing to quote firm prices and promote liquidity in the secondary market, (4) facilitating certain debt management operations, (5) advising the debt management office (DMO) on its debt management strategy, (6) reporting on their activities in the secondary market, and (7) developing, through their marketing strategy, new client investment in the respective debt market.
  - PD rights and privileges vary from country to country. In general, rights enable PDs to better perform their role, while privileges compensate PDs for their obligations. Common rights include (1) exclusive access to the primary market, (2) exclusive access to securities lending facilities offered by the DMO or the central bank, and (3) the opportunity to act as counterparty to the central bank's operations. Common privileges include (1) the right to carry the title of PD, (2) inclusion in the PD league table, (3) the right to participate in noncompetitive subscription auctions, and (4) preferential access to lucrative debt management operations. Some countries may also pay commissions to their PDs, dependent on activity levels.
  - Rights and obligations need to be well balanced and calibrated based on general considerations. Authorities should consider the following: (1) PDs need to be focused on an analysis of the LCBM building blocks, the gaps to be filled, and the value added that the PDs can bring to fill the gaps; (2) PDs should be dynamically reviewed, reflecting prevailing market conditions; (3) the DMO should not overburden PDs with excessive obligations; (4) privileges should be carefully calibrated, with privilege rewards being commensurate to the cost of the obligations taken up; and (5) a broad, medium-term perspective needs to be taken on the benefits and costs.
- A regular performance assessment framework needs to be designed.<sup>1</sup>
  - Performance evaluations for PDs should have at least three objectives: (1) to signal what are the most important duties and obligations on which

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<sup>1</sup>Silva and Baudouin (2010) and Jonasson and Papaioannou (2018) provide further information on this issue.

the PDs should focus, (2) to be a periodic assessment of how well the PDs discharge their duties, and (c) to constitute a way to encourage good performance. The pursuit of these objectives requires the design of a sound process, with the results of the performance assessment being discussed periodically with individual PDs to reach agreement on corrective actions and reward best performers. Also, the assessment should ensure the development and widespread adoption of ETPs and a sound FMI and should facilitate the enforcement of PDs' obligations and monitoring of their performance.

## PDs System: Preconditions and Introduction Modalities

Several important preconditions are needed for establishing a PD system. Such PD preconditions are discussed in the context of the LCBM framework developed in this guidance note.

For setting up an effective PD system, enabling conditions for developing an efficient LCBM need to be met. Such a system can help stabilize the market demand for government securities, make this demand more reliable, and lower borrowing costs. Also, a PD system can be an important catalyst for LCBM development efforts. For example, a PD system cannot be envisioned if the government (1) relies on concessional or semiconcessional borrowing for a major share of its financing needs or (2) is inclined to exert control over interest rates (such as through financial repression policies, in case of large fiscal gaps).

Furthermore, LCBM building blocks need to be at least in stage 2, preferably in stage 3, for launching a viable PD system. However, not all building blocks need to be at the same stage for a PD system to be introduced. In particular,

- **Money market.** The money market facilitates short-term financing and inventory management, including covering short positions of market makers in government securities. More efficient and transparent money markets facilitate the effectiveness of a PD system. Money market institutional arrangements relating to regulation, transparency, and monetary policy framework and operations should be in a more advanced, developing stage for a PD system to be effective. Also, PDs can help in the deepening of the money market by reducing liquidity risk premiums and thus determining effective short-term rates.
- **Primary market.** A PD system can be established if there is a long-term government commitment to domestic market borrowing, the amount of which is relatively stable and predictable over time. As additional preconditions for the efficient operation of PDs, the following primary market

policy indicators need to be in the developing stage: (1) market-based pricing and placement mechanisms should be well anchored for securities to be attractive; (2) issuance strategy should allow the liquidity to be concentrated on a few benchmark securities over which the initial market-making obligations of PDs could apply; and (3) there should also be transparency over the medium-term debt management strategy to provide a medium-term horizon for the investment strategy of market participants. Also, the introduction of a PD system can act as catalyst to improve issuance practices, increase transparency, and concentrate liquidity, thereby contributing to the advancement of the primary market from the evolving to the developing stage.

- **Secondary market.** A prerequisite for the introduction and efficient functioning of a PD system is a properly functioning secondary market, inclusive of adequate, cost-effective infrastructure for trading. This ensures an efficient and secure platform for market participants to trade securities in a fair and transparent manner. The PD system may also benefit from the introduction of an ETP to provide a platform for the market making. One of the objectives of the PD system's introduction may be to contribute to the development of the secondary market from an embryonic, evolving stage toward a developing stage. Capacity and expertise within the banking system to facilitate secondary market trading are also important.
- **Investor base.** A growing domestic investor base is a necessary condition for initiating a PD system, along with a sufficiently large number of banks, of which at least five to six might act as PDs. The domestic institutional investor base will grow only if market liquidity is enhanced, which is a function of an increased number of investors. Furthermore, because PDs function as intermediaries between the issuer and the end investors, the introduction of PDs can deepen the investor base by leveraging their distribution channels, marketing expertise, product innovation, and advisory services, and their market-making role.
- **Financial market infrastructure.** A PD system can hardly be considered if the FMI is underdeveloped or in its early, evolving stage. Only a safe, sound, cost-efficient, and convenient-to-use FMI facilitates the smooth flow of transactions in the money, primary, and secondary markets, thus strengthening investor confidence and the efficient operation of PDs. Access to a CSD, the existence of a DVP securities settlement system, and the dematerialization of government securities are additional indicators of an evolving stage toward development. Furthermore, the introduction of a PD system may warrant additional investments in the FMI to fill any identified gaps.
- **Legal and regulatory framework.** The establishment of a PD system requires a robust legal, regulatory, and tax framework to ensure fair market

practices, define clear rules and responsibilities of the different participants, safeguard domestic and foreign investors' interests, and deter unfair trading practices, such as market manipulation, front-running, and collusion. Furthermore, PDs can serve as a catalyst for filling identified gaps in the legal and regulatory framework relating to participants' rights and trading practices.

### **Modalities for the Introduction of a PD System**

The modalities to introduce a PD system vary from country to country. Different countries have different institutional arrangements, are in different stages of LCBM development, have different enabling conditions, and envision different objectives when considering the introduction of a PD system. In many cases, a group of financial intermediaries has already developed specialized government securities market expertise and de facto operate as market makers. In these cases, the introduction of a PD system is aimed at formalizing, systematizing, and fine-tuning the prevailing arrangements. In other cases, the introduction of PDs is aimed at ensuring that vital functions for the development and functioning of the LCBM are systematically and consistently performed.

Steps for introducing a PD system can be summarized as follows:

1. Assess that the preconditions for the introduction of a PD system are fulfilled;<sup>2</sup>
2. Assess that the introduction of a PD system is advantageous;
3. Canvass financial intermediaries for potential interest, and assess that a minimum number of interested parties exists;
4. Call for the expression of interest and set up a working group among stakeholders and interested parties to jointly design rights, obligations, preconditions, and a road map;
5. Coordinate among the Ministry of Finance, the central bank, and the market conduct authority to agree on the respective responsibilities and exchange of information;

<sup>2</sup>The framework developed in this note can be used for this purpose. The development stage of the different building blocks can be assessed based on the considerations provided in this appendix, aiming at identifying the preconditions and any major gaps that need to be filled when contemplating the introduction of a PD system. It is important, however, to assess the level of the key functionalities of each building block as captured by the respective indicators rather than the composite stage at the building block level, as there are some functionalities that from a PD system perspective are more important than others. The assessment can help identify the major gaps to be filled before the introduction of a PD system to maximize the likelihood of its success and increase its effectiveness.

6. Formalize the relationship between PDs and authorities;
7. Design the PDs performance appraisal system with different performance parameters, weights, and reward mechanism; and
8. Formally launch the PD system when all steps have been completed and the necessary preconditions have been satisfied.

When introducing a PD system, it is preferable that PD rights and obligations are decided jointly between the authorities and the PDs. The PD system should be designed jointly, possibly in a working group among the interested parties, to make sure it meets the requirements and expectations of all participants. In this context, it is also important to identify the adjustments in building blocks that are necessary to make the PD arrangement successful. A road map of the initiatives to be taken for the successful introduction of PDs should be sketched, with identification of the adjustments to be made before the formal introduction of PDs and those that can follow their introduction. For these issues, consensus among stakeholders should also be sought.

Common adjustments needed in the individual LCBM building blocks to facilitate the introduction of a PD system include the following:

- Money market. The introduction of backstop cash and securities lending facilities may be necessary when the liquidity is still insufficient.
- Primary market. Issuance modalities may need to be adjusted to concentrate liquidity in fewer benchmark bonds, complement them with liability management operations, and switch to closed auctions limited to PDs.
- Secondary market. Pre- and post-trade transparency may need to be enhanced through the collection and publication of pertinent data. The establishment of a commonly agreed ETP may be necessary for market makers to discharge their obligation in an effective manner.
- Investor base. Some of the preexisting arrangements may need to be strengthened, including a combination of regulation, supervisory practices, and moral suasion to encourage existing investors to switch from buy-and-hold strategies to more dynamic holding patterns. Furthermore, officials may need to clarify the tax code, such as by addressing possible withholding tax impediments to entice foreign investors to participate.
- Financial market infrastructure. The establishment of sound and safe clearing, settlement, and custodian arrangements may be necessary for market makers to discharge their obligation in an effective manner.
- Legal and regulatory framework. Officials should establish clear market conduct rules to ensure that PDs do not use their privileges to the detriment of investors or do not benefit from privileged information on customer orders for their own trading book.

Coordination between authorities is fundamental for ensuring that all stakeholders play their role in the pursuit of efficient LCBM development. Any regulation or conduct of market transactions by authorities should be aligned with set LCBM development objectives and established market-making arrangements for PDs. Finally, a PD performance assessment of the rights and obligations should be undertaken periodically as market conditions evolve and priorities shift. Also, authorities should regularly assess whether the preconditions for a PD system are still fulfilled and whether PDs are contributing to balanced LCBM development.





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