LOCAL CURRENCY BOND MARKETS—A DIAGNOSTIC FRAMEWORK

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EXECUTIVE SUMMARY

In November 2011, the G-20 endorsed an action plan to support the development of local currency bond markets (LCBM). International institutions—the IMF, the World Bank, the EBRD, and the OECD—were asked to draw on their experience to develop a diagnostic framework (DF) to identify general preconditions, key components, and constraints for successful LCBM development. The objective is to provide a tool for analyzing the state of development and efficiency of local currency bond markets. The application of the DF is expected to be flexible, bearing in mind that the potential for LCBM development depends on economic size, financing needs, and stage of economic development.

Diversifying the financial sector to include an active LCBM can play an important role in mitigating the impact of financial crises on the domestic economy, and facilitating absorption of capital flows. During the global financial crisis, domestic bond issuance became a complement to external issuance and bank financing in a number of countries, thus insulating the real economy from financial stress. More broadly, efficient LCBM can facilitate the absorption of large and volatile capital flows and aid global rebalancing by providing domestic channels to deploy large emerging markets savings.

The DF provides guidance on analyzing the money market, government and corporate bond markets, and the derivatives market. The government bond market is the cornerstone of domestic financial markets. It shapes the structure of the corporate segment and leads the development of the fixed-income market more broadly. Well-functioning money and derivatives markets are critical for improved price discovery and risk management, as well as secondary market liquidity. The key components of the diagnosis include: the macroeconomic policy framework, composition and needs of the issuer and investor base, primary and secondary market structures and related market dynamics, regulatory and legal frameworks, and market infrastructure.

In-depth analysis of each market segment would reveal the factors contributing to their structure and market outcomes and indicate priority reform measures. Desired reforms would range from high-level policy measures to more technical or operational reforms. In general sequencing of reforms should be gradual, taking account of risks and benefits and exploiting potential complementarities among various measures.

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PURPOSE AND APPLICATION OF THE FRAMEWORK

1. In November 2011, the G-20 endorsed an action plan to support the development of local currency bond markets (LCBM). International institutions—the IMF, the World Bank, the EBRD, and the OECD—were asked to draw on their experience to develop a diagnostic framework (DF) to identify general preconditions, key components, and constraints for successful LCBM development.[1]

2. The purpose of the diagnostic framework is to provide a tool for analyzing the state of development and efficiency of local currency bond markets. Such a tool can provide the basis for designing a strategy for market development and deepening with appropriate sequencing of policy action and associated delivery of technical assistance (TA) where needed. The broad users of the framework are country authorities targeting the development and deepening of their local capital markets, as well as providers of TA.

3. The application of the DF is expected to be flexible and take into account country-specific circumstances, stage of economic development, and feasibility for market deepening. While the aim is to develop a comprehensive analytical approach to identify the main elements and obstacles for bond market deepening, the application of the DF should be adapted to take account of the diversity of country circumstances and particular needs. In broad terms, more advanced emerging markets (EM) may require a targeted assessment of a particular component of their local market, such as the corporate segment or derivatives markets; while other EMs with less developed bond markets would benefit from analyzing the full set of components to design a comprehensive strategy for market development. Alternatively, small economies with limited scale and low-income countries (LICs) may require a more focused approach on the relevant aspects of the DF, such as the development of a government bond market or only primary markets. In some cases, the policymaker may conclude that LCBM development is not a priority or that it would not be feasible to develop a market of substantial depth and scale.

4. The DF focuses on analyzing the following market segments: the money market, government and corporate bond markets, and the derivatives market. The government bond market is the cornerstone of domestic financial markets. It shapes the structure of the corporate segment and leads the development of the fixed-income market more broadly, including sub-national government debt, housing finance and other asset-backed securities (ABS) markets. Well-functioning money and derivatives markets are critical for improved price discovery and risk management in the primary market, as well as for secondary market liquidity.

[1] The authors are grateful for the discussion and valuable suggestions from participants at the 4th International Workshop on Developing Local Currency Bond Markets, hosted by the Bundesbank in Frankfurt, Germany, December 6–7, 2012. We also appreciate invaluable input and suggestions by Udaibir Das and Allison Holland at the early stages of developing the framework.

5. The key components of the diagnosis include: the macroeconomic policy framework, composition and needs of the issuer and investor base, primary and secondary market structures and related market dynamics, regulatory and legal framework, and market infrastructure. In-depth analysis of each market segment would reveal the factors contributing to the market structure and outcomes and would suggest priority reform measures and related TA needs. Desired reforms would involve a mix of high-level policy actions—such as adopting broader growth supporting policies that encourage the private sector to increase investment or relaxing capital account restrictions to broaden the investor base—to more technical or operational reforms —such as increasing price transparency or improving the efficiency of a particular segment of the market. Many of the reform measures are likely to be mutually reinforcing, and their sequencing should be considered with that in mind.

6. Assessing the regulatory and legal framework and market infrastructure is critical for understanding market dynamics and needed reforms. These elements can be divided into: (i) the regulatory framework that controls and monitors market participants behavior, influencing their incentives; (ii) the legal framework for public debt management and primary and secondary market operations, including government and nongovernment fixed-income instruments; and (iii) the infrastructure environment—such as the payment, clearing and custody system, and the settlement framework of financial transactions. These elements contribute to enhancing the robustness of the environment in which financial transactions are undertaken.

7. Application of the DF requires a clear understanding of the institutional roles, linkages, and market structure to identify gaps and obstacles that hinder market deepening. The diagnostic assessment should seek an understanding of the primary and secondary market architectures and the interaction among market participants, and the impact on competition and cost-effectiveness. Understanding the technical details of various market operations would be critical in this effort, with transaction mechanics varying considerably and impacting market liquidity and incentives to trade. Micro structural policy choices strongly impact market development; such as: OTC vs. exchange traded bond markets or order-driven vs. market-making; obligations and privileges for market-makers; linkage between interbank transactions and central bank operations (e.g., segregated vs. integrated); secured vs. unsecured transactions; and custodial arrangements. This detailed technical understanding would help identify bottlenecks in the market that could be addressed to improve market liquidity.

8. The rest of the paper is organized as follows: first, the broader macroeconomic benefits for market development are outlined, along with a set of indicators useful for the diagnostic and for cross-country analysis.[2] Section III discusses the enabling macroeconomic policies for market deepening; Section IV discusses the main markets addressed by the DF: money market, government bond market, corporate bond market, and derivatives markets. The paper concludes with a

[2] The proposed indicators draw on the database and template proposed by the Bundesbank in the context of implementing the G-20 action plan to improve the database for local currency bond markets.

discussion of potential sequencing issues. Appendix I summarizes a set of quantitative indicators useful for the assessment, and Appendix II outlines a detailed set of diagnostic questions.

BENEFITS OF LCBM DEVELOPMENT

9. The potential for LCBM development depends on economic size and financing needs, supporting a wide range of policy objectives. It is important that senior policymakers explicitly recognize the potential benefits and costs of creating and deepening LCBM so that sufficient high-level support can be sustained throughout the process. It should acknowledge, however, that the degree of required and feasible LCBM development will depend on the economy's size, level of development, and the needs of the public and corporate sectors.

10. At a direct and operational level, efficient LCBM can provide an additional source of funding for governments and corporations. In normal times—which pre-suppose fiscal and monetary discipline—a well-functioning and liquid bond market provides the government with a stable source of funding at reasonable costs and desirable maturity. Well-developed LCBM is also important for a sustainable market-oriented debt management strategy. The issuance of bonds in the local market can impose discipline on governments, as opposed to central bank financing or reliance on captive sources of financing. The ability to increase the supply of bonds, without a significant negative impact on their pricing and the overall cost of capital, creates an additional tool for countercyclical policies and policy space at times of crisis. LCBM help the corporate sector finance its investment needs and generate economic growth.

11. Even in the absence of any budgetary financing needs, issuing government bonds for LCBM development could be an important policy objective. A number of countries issue government securities, despite having budget surpluses, to: (i) provide a benchmark yield curve for the corporate debt market; (ii) support liquidity management operations of the central bank; (iii) provide an investment alternative with little or no risk of default for investors; (iv) maintain and develop smooth functioning and efficient financial markets; and (v) provide market infrastructure through a robust payment and settlement system and a strong legal framework (i.e., collateral and bankruptcy laws). A strategy of maintaining the domestic debt market despite the lack of fiscal needs will imply a fiscal cost, typically in the form of negative carry. However, given a favorable macroeconomic environment and lack of financing need, the net interest cost is likely to be low, against the benefits described above. The financial cost may even pay off when financing needs do arise and the domestic market is readily available.

12. The cost of creating and deepening LCBM should also be recognized explicitly. It is often the case that the real interest cost of domestic issuance at longer maturities is high compared to foreign borrowing (assuming the country has market access). This may be due to a difficulty of anchoring inflation expectations or lack of secondary market liquidity that enables investors to manage their holdings of longer-dated bonds. Policymakers should be aware of these costs and consider a sequencing of reform measures to minimize these costs as market depth and liquidity

improves. Deepening LCBM should be paced carefully and must also be based on the market's underlying capacity to absorb the supply of securities.

13. Overall, these benefits and costs should be considered in the context of a broader policy agenda to enhance the economy's resilience to shocks. LCBM can contribute to this broader agenda by providing economic agents with outlets for domestic savings and additional tools to effectively manage assets and liabilities on their balance sheets, facilitating risk management and reducing risk exposure, and providing insulation against various shocks. In particular, robust LCBM can contribute to a better allocation of capital, enhancing economic growth prospects, and facilitate the implementation of key policies. In particular, it allows better and more effective public debt management and improves the transmission of monetary policy.

14. Evidence shows that LCBM can play an important role in diversifying the financial system and mitigating the impact of financial crises on the real economy. Provided there is sufficient economic scale, corporate bond market development creates competition with banks, which is useful in countries with concentrated banking systems. During the global financial crisis, a number of countries showed resilience and rebounded faster due, in part, to earlier efforts to develop bond markets to reduce currency and maturity mismatch on sovereign and corporate balance sheets. Domestic bond issuance became a complement to external issuance and bank financing for the corporate sector, thus insulating the real economy from financial stress in the banking sector. In Asia, local bond markets served as a "spare tire" when other financing channels (e.g., bank and equity) were impaired at the onset of the global financial crisis, thus mitigating its impact. Similarly, countries in Latin American were able to manage the impact of the crisis and the volatility of large portfolio flows through well-functioning bond markets, such as Mexico.

15. Globally, efficient LCBM in emerging markets can facilitate resolution of global imbalances and absorption of capital flows, contributing to financial stability. By expanding the opportunities to deploy domestic savings and complementing bank financing, the domestic bond market can reduce negative spillovers from weaknesses in the banking sector and the transmission of global financial stress. More broadly, efficient LCBM can facilitate the absorption of large and volatile capital flows, thus contributing to domestic and global financial stability. LCBM development and deepening would also aid global rebalancing by providing channels to deploy large emerging market savings domestically, thus reducing the concentration of investments in advanced market assets and improving global risk-sharing.

16. A common set of indicators can be used to analyze the size, liquidity, and contribution of LCBM to domestic and global financial stability. These indicators could be monitored over time to assess progress towards market deepening objectives and the impact of policy reforms over time. A number of initiatives are underway to improve the compilation and monitoring of LCBM indicators, including efforts by the Working Group on Securities Databases (WGSD),[3] and the G-20

[3] See also Bank for International Settlements, European Central Bank, and International Monetary Fund Working Group on Securities Databases (2009), "Handbook on Securities Statistics."

action plan to improve the database for local currency bond markets. Building on these initiatives, a set of market indicators can include the following (see Appendix I for template):

- Macroeconomic variables: (i) GDP growth and inflation; and (ii) fiscal balance and public debt to GDP ratio; (iii) current account and level and volatility of capital flows; and (iv) share of household savings to GDP.
- Market structure: (i) debt securities statistics; (ii) yield curve and structure of benchmark instruments; (iii) composition and diversity of the investor base; (iv) foreign holdings of local bonds; (v) types of fixed-income instruments; and (vi) derivatives market and types of hedging instruments.
- Market liquidity: (i) volume of outstanding benchmark instruments; (ii) size of transactions and turnover ratios; and (iii) bid-ask spreads.

FOUNDATION OF LCBMS: MACROECONOMIC POLICY AND FINANCIAL SECTOR STABILITY

17. The assessment of the macro and financial stability aspects of LCBM should cover the monetary policy framework and its objectives; the exchange rate regime; monetary policy operations and tools; fiscal policy framework; fiscal constraints and debt management strategy; and capital account restrictions and relevant controls on cross-border flows. Banking sector activities and bank balance sheet dynamics are also important to analyze the status and potential for market deepening.[4]

18. The macroeconomic framework for both fiscal and monetary policies strongly influences market development priorities and its growth potential. A stable macro environment, including sustainable levels of private and public debt levels gives investors and savers confidence that the real value of their assets will be preserved, thus ensuring adequate demand for local currency-denominated debt that could be potentially issued. This contributes to the objective of meeting the economy's financing needs. Similarly, a stable macro framework encourages the corporate sector to increase investment and consequently expand the supply side of the market by issuing long-term bonds. This also enables investors to achieve their savings objectives, potentially encouraging greater savings. Finally, a market-based monetary framework sets the foundation for a robust financial sector that can intermediate savings efficiently to achieve an appropriate risk-return structure for both borrowers and savers.

[4]A pre-existing database may be consulted to collect key data, for example, the Coordinated Portfolio Investment Survey (CPIS) for foreign holdings of securities. See http://cpis.imf.org/. See also "Handbook on Securities Statistics" (Parts 1 and 2 dealing with debt securities, 2009) produced by the Bank for International Settlements, European Central Bank, and International Monetary Fund Working Group on Securities Databases.

19. A strong high-level government commitment to upgrade and reform LCBM is necessary to ensure sustainability of the reform efforts. Deepening LCBM requires a strategic vision and a medium-term action plan to address several issues where joint inter-institutional effort and policy coordination is required across fiscal, monetary, and regulatory authorities. The commitment and ownership of the reforms process at a high-level is essential to sustain the course of reform. Similarly, buy-in and commitment at the technical level is necessary to facilitate implementation of the higher-level strategy. Establishment of mechanisms for coordination across agencies and interaction with private sector participants are important tools to implement reform. Positioning LCBM development into broader programs, such as public sector or public financial management reforms, may serve to ensure project sustainability.

20. Common pitfalls in market development are often related to the government's commitment to the reform process. Credibility can easily be lost if the authorities backtrack on their policy commitments, such as resorting to below market rate financing or failing to implement a market-based monetary policy regime. Another common pitfall is to focus attention on more technical issues, for example, whether to use single versus multiple price auctions, instead of dealing first with more fundamental issues such as, for example, the lack of competition among bidders.

21. In addition, clear communication to build and foster credibility among market participants should be maintained at all stages of the reform process and beyond. A communication strategy that lays out the authorities' reform objectives and strategy to upgrade and deepen their bond market is critical to build market confidence. As the market develops, maintaining confidence will also hinge on the clarity and predictability of policies and reform initiatives. This issue is particularly relevant to build and maintain investor relations and build the investor base for the government bond market.

22. Credibility of key policies is critical to create appropriate market expectations. Past policy performance would condition perceptions of market participants about inflation risks, exchange rate risk, and commitment to fiscal discipline. Putting in place a credible policy framework with an appropriate communication strategy would lay the foundation to encourage and sustain a market dynamic that can efficiently process and absorb changing supply and demand for financial assets in local currency. This effort may be particularly important for countries at earlier stages of market development or for those that have experienced relatively recent episodes of crisis or high inflation. For those cases, reform efforts should prioritize establishing durable macroeconomic credibility and establishing or restoring a robust regulatory framework to ensure that local markets operate efficiently and anchor investor expectations.

23. Macroeconomic policies and the stage of economic development shape the needs of borrowers and investors. Fiscal policy will strongly influence market size and potential growth, especially in shallow markets. This would also drive private sector demand for capital and would influence the potential scale of any corporate bond market that could develop. In this context, the interactions between the monetary policy framework, fiscal policy, and public debt management become critical for outlining the broader parameters of domestic credit conditions and bond market size, liquidity, and yields. Potential policy conflicts require having in place proper communication

and cooperation (or coordination) channels. An independent monetary policymaker would have to consider the impact of the government's financing need on overall liquidity conditions and will have to face a trade-off between accommodating a large fiscal financing need against maintaining an appropriate level of credit to the private sector and stable inflation. For instance, fiscal dominance or financial repression could crowd out credit to the private sector. Conversely, an explicit policy to encourage the development of the local bond market may require the state to issue debt beyond its immediate financing need with associated fiscal costs.

24. The monetary policy framework and central bank operations strongly influence the broader fixed-income market. For instance, interest rate controls or extended periods of excessive systemic liquidity would not be conducive to money and bond market development. On the other extreme, lack of predictability and credibility of monetary policy that would lead to excessive interest rate volatility would also impede market development. In this context, it is important to distinguish between market volatility that is endogenous to the development process (e.g., due to thinness of the market) and exogenous volatility (e.g., due to broader macroeconomic policies, high inflation, volatility of economic activity, or political uncertainty). Additionally, depending on the operational design of monetary policy (e.g., central bank instruments for sterilization of structural excess liquidity and for open market operations), it could either be supportive or detrimental to money and debt market development.

25. Financial stability and a sound banking sector are important preconditions for bond market development. The banking sector (private and central banks) is a large component of the investor base in many countries, and it usually plays a critical role in the development of both the government and corporate bond markets, investing directly or on behalf of its clients. Financial stability risks can impair banks' ability to perform these functions. On the asset side, a high rate of nonperforming loans across the banking sector could lead to a reduction in interbank credit lines, as well as impair private banks' capital base and ability to assume credit and/or market risks. On the liability side, the stability of the deposit base, debt maturity profile, currency composition, availability of alternative funding sources (e.g., a back-up line from parent banks, access to capital markets, refinancing facility at central banks), and bank stress testing results are key measures for assessing banking sector conditions. In addition, an active interbank market is critical for improving bond market liquidity (see below).

ASSESSMENT OF MARKETS

26. The efficiency of the government and corporate bond markets and liquidity of secondary market trading is predicated on various factors, including: (i) sound macroeconomic policies and debt management strategy (see above); (ii) a diversified investor base (banks, domestic institutional investors, and foreign investors); (iii) sound legal and regulatory frameworks and (iv) an efficient and robust infrastructure (payment system, trading, settlement, and clearing). The rest of this section will elaborate further the relevance of these factors in connection to key fixed-income markets: money markets, government bond markets, corporate bond markets, and derivatives markets.

A. Money Market

27. The money market is the starting point to developing the broader and longer-tenure fixed-income market. An adequately functioning money market provides key market pricing at the short-end of the local currency yield curve, influencing the price-setting of longer-term bonds and forming the basis for creating and pricing derivative instruments, which are essential for market intermediation and risk management. In doing so, it facilitates implementation of monetary policy and aids policy transmission.

28. Well-functioning money markets are also integral to broader financial sector stability as they strengthen the banking sector's ability to manage risk and provide term financing in local currency. By strengthening a bank's ability to manage interest rate and liquidity risks, money markets can have a positive impact on the bank's maturity transformation and their ability to provide term financing in local currencies. This is especially important for markets where there is limited scope to develop the corporate segment of the capital market and where financial intermediation through banks is more efficient even for larger institutional borrowers.[5]

29. The diagnostic assessment of the money market segment would, thus, analyze market dynamics, including reference rates, market instruments, participants, and trading activities across banks and other market participants. Monetary policy operations and the central bank's intervention policy, as well as the availability of reliable and market-determined reference prices or indices are important areas for the assessment as these impact market liquidity and other segments of the bond market. In addition, the robustness of the legal framework and trading infrastructure should also be covered in the analysis. These essential elements of the assessment are elaborated below.

Market dynamics

30. A transparent and reliable money market index or reference rate is needed for money market development. Technical details such as underlying inputs, contributors, calculation method, calculation agent, data ownership, and timeliness of information dissemination should be comprehensively outlined. Thus, the assessment should describe the use and market acceptance of the index/reference rates, including types of financial instruments indexed to the reference rates, such as bank loans, floating rate bonds, swaps, and other financial derivatives.

31. Pricing of most derivative instruments, necessary for risk management, requires a reliable and transparent money market reference rate. These reference rates are also a key input for asset-liability management (ALM), particularly for banks. In many emerging markets, where the local bond market is at an early stage of development, banks play a key role in the provision of

[5] For example, credit monitoring by banks is often more effective than through capital markets in countries with widespread governance issues. Countries that lack adequate economic size to support a capital market may also find financial intermediation by banks more efficient.

long-term credit. Bank holdings of bonds are predominantly for their own investment portfolio rather than market-making activities or purchases on behalf of clients. Thus, in shallow bond markets, risk management tools, such as interest rate swaps, help banks provide long-term local currency financing while controlling risk (see detailed discussion in Section IV. D.).[6]

32. An active money market, especially securities repurchase (repo) market, enables market makers to finance their inventories of bonds flexibly and cost-efficiently, while providing risk management and position-taking tools.[7] The ability of dealers to hold inventory, which depends on their ability to finance it, is a fundamental building block for market-making activities.

Market participants

33. The composition of money market participants varies, depending on the structure and the stage of development of the country's overall financial market. In markets where banks dominate the financial sector, as is often the case in less-developed markets, the diagnostic work should focus on banks, the central bank, and the government bill markets. For more diversified financial markets, the scope of diagnostic analysis should be extended to also cover institutional investors. In terms of scope, the diagnostic should cover the functionality of the money market for processing interbank transactions, both secured and unsecured, including repo market operations, which are important for liquidity provisions. However, at early stages of market development, repo transactions can be a: (i) source of legal risk if not properly regulated (e.g., disposition of the collateral in the event of default); and (ii) source of liquidity and principal risk if collateral is not properly valued (and haircuts applied) and the market is illiquid.

34. The diagnosis should discuss monetary policy operations by the central bank, as it impacts interbank money market activities and, in some cases, may limit its activities. The frequency of central bank interbank intervention and the instruments used shape the interbank market and influence the dynamics of demand and supply for liquidity. For instance, too frequent intervention may limit trading opportunities among banks and hinder the development of a reliable market rate. Similarly, extended periods of excess banking system liquidity lead to money market inactivity and promote a buy-and-hold culture for government securities. In cases where the central bank issues its own instrument to sterilize excess liquidity or to finance a quasi-fiscal deficit, specific attention should be given to analyzing the impact on market segmentation and yield-curve development. The assessment should also explore interbank market dynamics and the impact of monetary policy operations.

[6] Without strengthening the banks' ability to manage risks from maturity transformation, the yield-curve extension in the government bond market simply transfers the risks from the government to the banking sector. In a financial crisis, these risks may quickly return to the government as a fiscal risk from supporting the banking sector.

[7] This includes taking short positions with borrowed securities.

35. Money market activities and trading opportunities would depend on the liquidity needs at different institutions, availability of interbank credit lines, and central bank instruments. The assessment should identify factors which affect the provision of unsecured borrowing among financial institutions. Absence or limits on interbank credit lines often prevent banks from creating a meaningful volume of interbank deposits. Credit line constraints may include: corporate governance standards; bank regulations and supervision; and financial reporting and disclosure standards. Secured deposits, notably securities repos, usually allow banks to overcome this constraint.

36. The market analysis would also catalogue available money market instruments and analyze transaction mechanics. Common types of money market instruments include unsecured deposits and secured deposits, including securities repos, as well as foreign exchange swaps. Secured transactions need to be legally sound and bankruptcy remote and may include repurchase agreements and securities lending. It should be noted that a broader variety of instruments may not always be desirable; in some cases, especially at initial stages of market development, a narrower set of instruments with deeper markets may better address investor needs.

Regulatory framework and market infrastructure

37. A robust legal framework is particularly important for the development of secured money markets. Assessing enforceability of collateral is a key issue. Without enforceability, market participants would shy away from engaging in secured-lending activities, such as repo market transactions, and develop alternate transaction structures, such as full sale and buybacks, that may be inefficient with regards to taxation, proper documentation, and regulation. Certainty over close-out netting under the master repo agreement would be another important aspect so that exposures from OTC transactions among market participants would not cumulate and build up systemic risks. Without legal certainty, the variety of secured transaction devices put in place to mitigate counterparty credit risks would be ineffective, eliminating the benefits of secured money market lending.

38. The assessment of market infrastructure needs would have to account for the stage of market development and needs of market participants. In less-developed markets, the central bank may be the only party able to act as custodian for secured money market transactions. In such cases, a relatively simple pledge mechanism at the central bank could address a large part of the market participants' needs, even though it may not entirely mitigate counterparty credit risks.[8] A more sophisticated transaction mechanism, such as tripartite transactions with a custodian bank or the use of a central counterparty (CCP), may provide a more complete mitigation of counterparty credit risks. Tripartite repos assume efficient and effective collateral enforcement by custodian

[8] In these transactions, typically the security is simply pledged at the central bank, and it is often the case that there is no haircut for the pledged security or margin requirements. While such a mechanism may mitigate a large part of counterparty credit risks, there will be residual risks from market price movements, which would limit the tenor of such transactions.

banks, and the use of CCP assumes availability of reliable market price information to determine the appropriate levels of haircuts for the security and margin call requirements. These conditions may not be met in many emerging markets.

39. Broader policies may also impact money market functioning and should be highlighted in the assessment. For instance, tax policies should be conducive to facilitating the development of secured money markets, especially for the securities repo market. As observed in some markets, imposing a securities transaction tax and/or stamp duty can direct market participants away from buy/sell-back transactions towards security borrowing/lending transactions to overcome such tax issues. In other cases, tax rules could simply impede the development of a secured money market. While certain hurdles may be overcome by structuring transactions, this could result in increased administrative burden for secured money market transactions and overall higher transaction costs. If the relevant tax rules are deemed to impede the efficient functioning of the market, this should be clearly captured in the diagnostic.

B. Government Bond Market

40. The structure of the government bond market and financing strategies have a decisive impact on the potential for other segments of the bond market to develop. The public debt market influences markets beyond government securities, such as corporate bonds and mortgages. Development of a well-functioning government bond market will often precede, and very much facilitate, the development of other segments of the LCBM. In particular, the existence of a government bond yield curve is necessary to price nongovernment instruments efficiently; and the financing needs of the central government determine the scope for corporate bonds, especially in relatively small markets where the government and private entities typically compete for limited long-term funding. In this context, government bond issuance ought to take into account possible constraints in the domestic markets' absorptive capacity with regards to debt issuance volumes. Banking and non-banking sector regulation would similarly be expected to introduce safeguards to ensure the application of sound ALM practices for market intermediaries and investors.

41. Ideally, the government bond market will rely on a market-based debt management strategy to establish a liquid benchmark yield curve; thus, the diagnostic analysis should cover: broad legal framework; primary market framework (public debt management operations and medium-term debt management strategy (MTDS)); analysis of the government bond yield curve (size and liquidity of benchmark instruments); secondary market activities; analysis of the investor base in terms of diversification and stability; and the necessary infrastructure to support the functioning of the market.

Legal framework

42. The legal framework for government borrowing is an important element of the diagnostic, influencing primary and secondary market dynamics. The authority to borrow should be clearly stipulated in legislation. The legal framework should also define limits on the issuance of new debt and guarantees on overall debt levels and clarify the authority to undertake

transactions on behalf of the sovereign. Well-defined legislation should therefore also cover the government's power to invest, enter into financial obligations, and amortize, redeem, and repurchase government debt. Taxation of financial instruments has significant implications for government bond market development. Attempts should be made to create a level playing field between taxation of different financial products. For government bonds, taxation needs to include treatment of interest income and capital gains for investors. Financial transaction taxes should be avoided whenever possible, and if withholding taxes are used for collection, they should be applied efficiently in order to avoid market segmentation and high collection costs.

Primary market

43. The process of formulating and implementing a debt management strategy sets the broad parameters of the government bond market.[9] The DF should assess the adequacy of the operational framework for debt management to create a transparent and predictable environment in which reference prices are available for different segments of the yield curve. A transparent and adequate framework for public debt management can: (i) enhance price efficiency by providing appropriate reference prices or yields; (ii) facilitate market intermediation by providing an appropriate risk management tool; and (iii) help improve the effectiveness of operations by providing a core volume of business to spur the creation of the necessary market infrastructure.

44. There is a two-way interaction between a well-functioning sovereign debt market and a sound risk-based debt management strategy. Liquid sovereign bond markets are important to have the ability to implement the chosen debt management strategy, ensuring continuous market access and minimizing borrowing costs subject to a preferred level of risk. Transparent and predictable implementation of a market-based debt management strategy improves the liquidity of sovereign bonds, supports secondary market trading, and contributes to building a solid and diversified investor base.

45. Assessing operational aspects of the government bond market is also important, particularly: bond issuance format; the structure of the auction calendar; structure of the primary market (use of auctions, syndication, etc.); communication channels; and coordination with the monetary authorities (see Box 1). The debt management strategy should be designed and implemented by a dedicated debt management office, responsible for designing the strategy based on a formal cost/benefit analysis of different financing options. Debt management objectives should be clearly communicated to the market and its implementation transparent and predictable.

Investor base

46. The diagnostic should analyze the structure, diversification, and stability of the investor base and assess the "natural habitat" and incentive structure of different groups of

[9] For further discussion on the MTDS, see IMF-World Bank (2009), "Developing a Medium-Term Debt Management Strategy (MTDS))—Guidance Note for Country Authorities."

investors. While the structure of the economy and stage of economic development shape the structure of the investor base, encouraging a diversified investor base is a key element of market deepening. Policy measures to encourage competition, increase transparency and incentives to trade could assist diversification. Understanding the asset and liability structure of different types of investors will aid the design of a financial deepening strategy and would help determine whether the market is meeting investor needs. In principal, diversifying and gradually expanding the types and maturity structure of different financial instruments will contribute to meeting the needs of investors and improve diversification. For instance, a debt management strategy aimed at gradually lengthening the maturity structure of public debt and creating benchmarks for pricing reference meet the needs of institutional investors (e.g., pension funds or insurance companies), thus attracting different types of investors and deepening the market. Similarly, attracting foreign participation, which is an important catalyst to improve market liquidity, would depend on the availability of benchmark instruments with sufficient volume and liquidity, in addition to the credibility of the broader monetary framework, economic growth potential, and resilience to external shocks as discussed in Section III.

47. A stable and diversified investor base supports adequate functioning of the local markets as it ensures varied sources of demand, including institutional investors (banks, pension funds, insurance companies, mutual funds); nonfinancial investors (nonfinancial corporations, retail investors); and foreign investors. This diversification is essential for financial stability and for mitigating the impact of any funding pressures at times of stress. Building a stable and diversified investor base requires taking into account investor preferences when designing the issuance strategy and introducing new instruments. Maintaining excellent investor relations and having a good communication strategy are also priorities.

48. Foreign investor participation can significantly expand the investor base, improving liquidity and demand for longer-maturity government securities, especially when the market is dominated by shorter-term instruments. However, significant reliance on foreign participation may amplify financial stress, given the volatility and rapid reversal of foreign capital flows. At the same time, the benefits of capital flow liberalization are largest when countries have achieved certain levels of financial and institutional development to be able to productively absorb capital flows. In this context, policymakers may need to develop a view on the preferred composition of the investor base and the share of foreign investors.

49. Analyzing the composition of debt holders and participants in the secondary market would reveal areas of investor concentration and vulnerabilities to shifts in demand. The diagnostic work would analyze the composition and relative size of different groups of investors to understand the role played by different investor groups, including traditional investors (banks and pension funds as stable funding sources), official sector players (domestic and foreign central banks, sovereign wealth funds, and other state-owned entities), and potential roles of other players, such as foreign investors, investment funds and retail investors.

Box 1. Implementation of a Government Bond Market Strategy

Debt management offices need to develop proactive strategies in both the primary and secondary market to support government debt market development. The approach and combination of policies are country specific, but should incorporate the following elements:

(i) *Issuance strategy based on regular auctions of benchmark instruments*:

A transparent and predictable debt management strategy involves the publication of an annual borrowing plan with information on expected borrowing needs and future funding plans, as well as the use of monthly or quarterly issuance calendars. Instruments should be clearly understood fixed-interest securities, free of embedded options. Typically sovereigns use auctions for issuing government debt and are increasingly using electronic auction systems. Auctions allow broad participation, and automation procedures increase efficiency vis-à-vis the use of manual procedures, as they enhance speed, reliability, and cost-effectiveness. Together with the publication of auction calendars, the introduction of electronic auction systems has increased transparency. Other complementary placement mechanisms for newly introduced or less liquid issues can be contemplated such as syndications.

(ii) *Selection of auction participants to ensure competition and secondary market liquidity:*

Ideally, selected participants should ensure successful placement of issuance, competitive pricing at the auction, and secondary market liquidity. In many markets primary dealers (PDs) play a key function in bidding in primary markets and provide two-way quotations (prices) in certain (designated) government securities in the secondary market, thereby contributing to liquid markets. These obligations are also expected to mitigate volatility and market dislocation during periods of stress. The selection of PDs is typically subject to specific requirements, including sound financial capacity and healthy a balance sheet, active market presence, and good risk management capacity. There are several models ranging from auction with exclusive access to PDs to those where non-PDs can also access the auction. In some countries primary dealers do not exist as they are not necessary or the market structure is not supportive of their development. In the latter case, other rules would need to be developed to ensure competitive price formation in the auction.

50. Balance sheet structures can also shed light on the risks faced by the investor base, pointing to areas for further market deepening. The nature of the capital base and balance sheet structure of different types of investors is another important factor to consider as it sheds light on their objective function and dictates their investment strategies. Examining the balance sheets of key private and public investors (e.g., banks, pension funds, insurance companies, mutual funds, and relevant public bodies) can reveal various risks—such as maturity or currency mismatches—and identify the limitations in the market that could be improved to manage those risks. In addition, the concentration of investors, including across instruments and markets, would also be important to identify from a financial stability perspective. This could point to an excessive reliance on one type of

investor, which could aggravate the impact of specific shocks. To the extent possible, regulatory and monetary authorities could take policy measures that would facilitate the participation of particular investor groups.

Secondary market and intermediaries

51. Active secondary market trading improves liquidity of the securities market and improves the price discovery process. Actual trading reveals the price that market participants consider to be fair, thereby providing essential information for fair pricing in the primary market and investment portfolios. It also facilitates the development of a credible benchmark yield curve. Active secondary market trading also enables holders of securities to liquidate their holdings when they need the cash. This facilitates greater risk taking and willingness to purchase longer-dated securities by investors whose natural habitat may not be in the longer end of the yield curve.

52. In addition to the above elements, secondary market liquidity and active trading relies on several microstructure aspects that should be considered: (i) concentrated issuance of key benchmark tenors; (ii) well-functioning spot and repo markets; (iii) ability to short-sell bonds; (iv) derivatives markets; and (v) automation and electronic market structures; and (vi) well-functioning clearing and settlement systems (Box 2).

53. Having in place a skilled and well-capitalized dealer community for fixed-income instruments is an important element to catalyze the investor base. At the early stage of market development, designated dealers (such as primary dealers or other official market makers) can assist in improving liquidity in the local currency government bond market. However, informal market making activities often precede formalized market making arrangements and can be sufficient to meet the needs of investors at the early stages. Over time, a formalized network of intermediaries would typically play a useful role in encouraging trading and improving instrument liquidity. Building the capacity of market participants through a bond market association that acts as a self-regulated organization (SRO) for fixed-income dealers and sets bond market standards could be a useful initiative early on.[10]

54. It is also desirable to establish mechanisms for trade transparency for government securities for effective supervision. A mechanism should be established so that all transactions, including OTC, are reported to a central authority such as an exchange, central securities depositary (CSD), or industry association that efficiently disseminates information publicly. Pre-trade transparency, while desirable, is often harder to implement in less-developed markets that do not

[10] The use of designated dealers is often successful in the early stages of bond development when bond prices tend to rise. However, when the interest rate cycle turns, without derivatives or repos markets, dealers cannot protect themselves, and developmental objectives are undermined as dealers withdraw. Consequently, there is a need to ensure that dealer arrangements are robust and viable through all parts of the interest rate cycle so that entities see it as a viable long-term part of their business. Not all countries will want to introduce dealer arrangements or market makers in their markets as the underlying market either does not (yet) support a sustainable primary dealer arrangement or countries find that it is not necessary to reach their debt market development objectives.

have continuous trading activity. Hence, emphasis is usually on establishing post-trade transparency mechanisms.[11]

Box 2. Elements of Secondary Market Microstructure

(i) Concentrating issuance in critical benchmark tenors

Local bond liquidity is enhanced by concentrating government bond issues in relatively limited key maturities, thereby also lowering borrowing costs for the issuer (relative to a preferred risk level). Issuers need to create a benchmark strategy that involves the standardization of debt instruments, the establishment of a maturity distribution for benchmark issues, and the determination of the ('optimal') size and frequency of these issues, taking account of rollover risk and possible constraints in government cash management. Building a "benchmark yield curve" is also important for facilitating the pricing of private fixed-income securities. This is a gradual process, and countries at the early stages of development may not be able to develop a "full" yield curve. In those instances, issuers ought to develop a fairly limited number of benchmark securities. Over time, they may be able to expand the range of maturities in line with market demand.

(ii) Spot and repo markets

The efficiency of secondary bond markets is impacted by the standards for executing transactions, such as standardized conventions regarding pricing, trade execution services, as well as final settlement. Secondary market activity can be further promoted by the use of repurchase agreements (repos). Securities dealers use repos to fund their inventories of government securities required for market making. The terms and conditions of a repo transaction should cover the following elements: payments and transfer, default and netting, margins, substitution, and interest payments. Standardization can be achieved by using Master Repurchase Agreements.

(iii) Short selling and secondary market liquidity

Short selling or shorting can be described as the practice of selling securities (that usually have been borrowed from a third party, although this is not necessarily the case) with the intention of buying these identical securities back at a later date to return to the lender. The majority of short selling activity is undertaken to hedge outstanding positions. Short selling provides the market with important benefits, including support for market liquidity and allowing for improved management of investment risk. Moreover, short selling can foster market-determined pricing as securities prices reflect both optimistic and contrarian views or sentiments. Short selling also enhances the efficiency of the price formation process by ensuring markets reflect underlying fundamentals. Shorting also allows for complex trading strategies (including hedging and arbitrage) that have a positive impact on the functioning of government securities markets. However, such strategies are more appropriate for sophisticated participants that are well-capitalized and have appropriate risk management systems in place.

(iv) Use of derivatives by sovereigns

Derivatives have become important instruments for many sovereigns to manage risks related to debt management operations. By using derivatives, sovereigns seek to reduce expected borrowing costs and/or

[11] Such post-trade transparency mechanisms should be carefully designed, especially in terms of the required timeliness of reporting and the transacted volume, as they may discourage market-making activities by posing additional inventory risk to market makers.

improve the risk profile of their debt portfolio. Swaps are simple but important tools of risk management, which have long been used by debt managers. For example, sovereigns have been using swaps to reduce the costs of borrowing and to manage the currency composition and interest rate risk on the stock of domestic and external debt.

(v) Automation and electronic market structures

Debt management procedures and techniques are increasingly supported by sophisticated electronic systems. The explosive growth of electronic trading systems (ETS) is reshaping secondary markets for government securities. Two types of secondary trading systems are usually distinguished: single and multiple (co-mingled) dealer systems (to clients) and cross-matching systems (between dealers and client to client). ETS are used on both inter-dealer markets (D2D) and dealer-to-customer markets (D2C). ETS support the development of more sophisticated pricing engines and enhanced security, while also making the transfer of information faster and cheaper (e.g., Bloomberg and Reuters). ETS also improves transparency, reducing information asymmetries and allowing market-wide integration of real-time trading information. It is not expected that a sophisticated electronic trading system would necessarily be in place at the inception of the market or at early stages of development. As the market grows in terms of transaction volumes and investor participation, more sophisticated trading systems could be considered to enhance secondary market activities.

Market infrastructure

55. Adequate clearing and settlement infrastructure must be in place for both government and non-government bond instruments. An adequate institutional arrangement is essential to ensure the viability and effectiveness of the clearing and settlement infrastructure. Countries can have two CSDs, one for government debt, generally owned by the central bank, and another one for private securities. A single CSD model owned by the private sector can also operate. Both models are appropriate depending on the market context. What is relevant is that the ownership and governance arrangements preserve neutrality vis-à-vis different interest groups, cost effectiveness, sufficient capitalization, and strong oversight from a public sector agency. The latter to ensure that the business plan of the CSD is aligned with the government financial sector strategy. Models with exchange exclusive or dominant ownership of the CSD should evolve into CSDs with broader participation so that all market stakeholders needs, including those of the central bank and the DMO, are properly taken into account.

C. Corporate Bond Market

56. An active corporate bond market with adequate scale is built on sound corporate governance, robust legal framework, and the availability of long-term savings and a professional investor class. As an asset class, nongovernment bonds compete against other financial products, including equity, government bonds, and bank products. Various factors, including taxation policy, ease of market access, and the relationship with investors contribute to market size, level of competition, and crowding in/out of nongovernment issuers. Understanding the trade-offs across products from the point of view of the investor is important to determine the willingness of market participants to incorporate corporate bonds into their portfolios. This will require an assessment of key elements that influence investment and issuance decisions, such as tax

treatment, and the relevant regulatory and supervisory frameworks. Finally, macroeconomic conditions, particularly interest rate volatility, also impact overall demand for corporate bonds.

57. An assessment of the corporate bond market ought to consider the realistic scale for developing the primary market for this market segment and possible structural constraints. This is especially the case where corporate governance and transparency is not robust, or where prevalent governance issues exist. In some countries there is limited need for capital market financing to the corporate sector due to well-established and effective banking relations with large corporate borrowers. In such countries, it may be more challenging and may take longer to stimulate growth of the corporate bond market. Small countries often lack the necessary economic scale to develop a corporate bond market with adequate supply of instruments, liquidity, and efficient price signals, thus limiting the benefits of efforts to develop capital markets.

58. Given the relatively illiquid nature of corporate bonds, the main focus of a development agenda should be on enhancing the efficiency of the primary market, while ensuring a safe and efficient secondary market to provide investors with an adequate exit mechanism. The DF of this market segment should cover a primary market framework (assessment of issuing and listing requirements; transparency and disclosure regulations); secondary market trading, the investor base, and intermediaries; accounting and corporate governance standards; and the necessary infrastructure to support the functioning of the market.

Primary market framework and supply of instruments

59. Determining the financing need of potential domestic bond issuers is the starting point to assess the potential to develop the corporate bond market. Having a sizeable pool of quality companies that can become attractive bond issuers is critical. Assessing the potential market size and type of issuers determines the priorities for market development and policy action. In the initial stages, financial institutions are often the largest issuers along with countries' major companies that are well-known by investors. The challenge is to expand beyond the best known companies over time and encourage a variety of sectors to tap the bond market. This will be reflected in real economic activity; particularly supporting growth and insulating the productive sector of the economy from financial shocks.

60. Facilitating access to the corporate bond market requires a regulatory framework that is not unduly onerous in terms of disclosure requirements, approval procedures, duration, and costs. This is especially critical given the importance of the primary market in the overall development of corporate bonds. The registration process and requirements are expected to be disclosure-based with a reasonable timeframe for approval so that issuers do not miss the market window for issuance. Disclosure requirements should also take into account differences between equity and debt securities as certain equity-oriented disclosure requirements may not be appropriate and may be overly burdensome for bonds.

61. The regulations should also consider the diverse needs of issuers, including large, well-established companies that could tap the market on a regular basis, smaller first-time issuers,

or one-time issuers for particular projects (e.g., infrastructure). Accommodating such a diverse set of needs would require a menu of issuance modalities (e.g., public offers, shelf registrations, private placements, etc.). Private placements and hybrid offer regimes, which combine elements of public offers and private placements, are particularly attractive for nongovernment bond issuers, as these regimes are aimed at institutional investors and usually have simplified disclosure requirements. However, in implementing these approaches, it is critical to ascertain that institutional investors have the adequate level of professionalism to invest in nongovernment instruments, with the ability to evaluate complex transactions and credit risk.

62. Instruments and structures in the corporate segment tend to be more plain vanilla and shorter term in less developed markets. Overtime, more structured and longer-term products may be introduced as conditions mature and investors become more comfortable with more complex instruments. Macroeconomic conditions, such as the level of interest rates, also play an important role in determining the type and tenor of nongovernment products being offered in the market.

Secondary market framework

63. Nongovernment bonds are intrinsically less liquid than equity and government bonds, because they lack key characteristics that are conducive to secondary market liquidity, such as large size, regular, and predictable issuance, and wide and transparent distribution. Rather, they are fragmented, non-fungible instruments, often with complex structures. In addition, investment decisions are more involved, requiring greater access to information and credit risk assessment compared with domestic government debt markets. For these reasons, nongovernment bond investments are usually better suited for institutional players, which have the proper sophistication to invest in these types of products, and less appropriate for retail investors that lack these skills and resources. Real money institutional investors, such as pension funds and insurance companies, in turn reinforce the low liquidity of these instruments, since these investors typically seek to match their long-term payout obligations with long-term assets, resulting in a buy-and-hold behavior rather than active trading.

64. Despite the inherent lack of liquidity, adequate arrangements to provide exit mechanisms should be in place. Trading systems should be efficient and easily accessible by eligible market participants, particularly over-the-counter (OTC)/negotiated trading, which is more conducive to trade in nongovernment bonds than automated and/or broker-based exchange trading.

65. To ensure price transparency, all trades, including OTC, should require centralized reporting, such as an exchange, CSD, or industry association that efficiently disseminates information publicly. Pre-trade transparency, while desirable, is often less feasible to implement in less developed markets; emphasis is usually on establishing post-trade transparency mechanisms. In general, post-trade transparency involves some trade-off as greater transparency can encourage greater participation by less informed market participants, adding liquidity to the market; on the other hand, it may pose additional inventory risk to market makers.

Investor base and intermediaries

66. An institutional investor base is often a key prerequisite for developing a corporate bond market. Banks tend to dominate the financial sector in many emerging markets and are also the main investors. Banks typically view corporate bonds as substitutes for loans but have a preference to extend loans rather than invest in corporate bonds because of more tailor-made covenants and closer credit monitoring through overall banking relationships. Although banks can play an important role at an initial stage, for example, by restructuring companies' loans into bonds, a sustainable corporate bond market relies on a well-diversified institutional investor base consisting of insurance and pension funds. Retail investors often lack adequate knowledge to evaluate corporate credits, such that the development of collective investment schemes is often necessary to facilitate such investments.

67. Regulations affecting investment decisions should not unduly place nongovernment bonds at a disadvantage relative to other types of assets such as government securities or bank products. For instance, investment guidelines that limit pension funds to invest in listed securities may prevent them from holding nongovernment bonds issued via private placement or hybrid offer regimes that are not listed on the exchange.

68. A skilled and well-capitalized dealer community for fixed-income instruments is an important element to catalyze the investor base for corporate bonds. However, particularly at early stages, it is not expected that a country would necessarily have designated dealers or market makers for nongovernment bonds. Rather, emphasis should be on ensuring that all relevant market participants are allowed to trade. Informal market making could be sufficient until secondary market activities are well-established, although a formalized network of intermediaries could play a role in encouraging trading and improving instrument liquidity. Dealers are likely to focus on government bonds as their main business and engage in nongovernment bond transactions as the need arises.

69. A wide range of regulations, including tax treatment, influences the development of the non-government bond market and needs to be considered in the assessment. The broader framework of laws and regulations, including those pertaining to commerce, banking, contract, bankruptcy, accounting frameworks, and tax code should not create an undue burden for issuing and investing in nongovernment bonds. For instance, it is critical that contracts are reliably enforceable in a transparent and credible legal framework, with clear bankruptcy laws that allow investors to recoup their assets and a well-functioning arbitration system for resolving disputes. Adequate accounting and corporate governance standards can signal a certain level of quality for issuers that are able to meet them, providing some assurance to investors.

70. Adequate regulatory capacity and supervision is the backbone of a well-functioning legal framework. It is critical to have in place a capable, credible, and well-resourced regulator that understands the nature of nongovernment bond instruments (i.e., less liquid, institutional) and is able to develop and implement suitable regulations to facilitate market development. The regulator also needs to recognize that the market is not static and should be willing and able to adjust regulations as the market develops.

Market infrastructure

71. Adequate clearing and settlement infrastructure for nongovernment bond instruments that trade relatively infrequently rely on the following: (i) a single CSD for all securities products to contain costs and allow for dematerialization of securities;[12] (ii) ability to handle dematerialized securities; (iii) registrar function ideally consolidated within the CSD; (iv) delivery versus payment (DVP) regime; and (iv) central bank as the final settlement bank for cash.

72. Credit rating agencies (CRAs) provide independent analysis of the credit worthiness of an issuer or issue and can facilitate access of nongovernment issuers to the bond market. It may be useful to have locally based CRAs that have closer knowledge of the companies they rate and the country's overall business environment, but it would be important to establish and ensure the credibility and independence of local CRAs to gain the trust of investors. However, in many small and emerging markets that have limited or discontinuous market activity, it is highly unlikely that CRAs will be able to generate sufficient business from just rating bonds.[13] Rating agencies that have been commercially successful typically have taken on activities such as selling information or rating deposit-taking banks that broaden their revenue base. Introduction of CRAs without due regard to qualification standards and commercial viability may have unintended consequences—most importantly investors may excessively rely on these unqualified CRAs which could increase systemic risks. These CRAs may lobby for mandatory use of their services to secure an income, adding extra cost burdens to investors as well. While CRAs can play an important role in developing a corporate bond market, benefits and risks for introducing local CRAs should be thoroughly examined in each specific country context.

D. Derivatives Markets

73. Efficient derivatives markets can help deepen LCBM by linking price formation processes in otherwise disconnected and shallow markets, while providing risk management tools to borrowers and investors. For example, in emerging markets, it is often the case that the market for a particular instrument lacks adequate volume to establish reliable market prices. Interest rate swaps link price information in the short-term money market to that in the long-term debt market by forming a market expectation of future money market rates and extending the yield curve. Borrowers, investors, and market intermediaries compare financial terms in bonds and derivatives markets, and consequently pricing dislocations across markets are likely to be arbitraged away. Similarly, notional futures contracts on government securities could improve the secondary market liquidity of deliverable government securities, also for less liquid side issues. In that way, derivatives could help establish more reliable market prices across otherwise segregated markets.

[12] Securities issued in the form of securities account, rather than in paper form.

[13] In some cases, the commercial viability of CRAs is dealt with by having them (i) rate a number of institutions with fiduciary responsibility (banks and, for correspondent banking relationship purposes, mutual funds, insurance companies, etc.) and/or (ii) assume an additional function of an information provider for bond markets.

74. While there is a strong market development synergy between cash and derivatives markets, the development of cash markets comes first in terms of sequencing. The existence of functioning money and government bond markets is a precondition for the development of a sound derivatives market. Until the money and government bond markets reach a certain threshold in terms of market depth, there will be limited scope for developing a derivatives market or exploiting synergies between the cash and derivatives markets. In these less-developed markets, it is also often the case that institutional capacities of market participants are not adequate to apply derivative instruments in a sound manner, and the risks from potential abuses of financial derivatives may outweigh their potential benefits.

75. Simple derivatives based on money market rates, currencies, and government securities would adequately address LCBM development needs in emerging markets. The focus of the diagnostic should be on the conditions for creating a deeper market for rate products and risk management instruments. These plain vanilla derivative products could include: interest rate swaps, cross-currency swaps, and perhaps forward rate agreements for OTC derivatives; government bond and interest rate futures for listed derivatives; and security repos and foreign exchange forwards and swaps. While credit derivatives could help enhance the liquidity of credit products, including corporate bonds, evidence suggests that widespread use of credit derivatives could entail considerable systemic risks. Similarly, structured derivatives often build hidden exposures with large and nonlinear leverage, and sudden unwinding of positions by large market participants or defaults could create severe dislocations in the market. It is important to note that the availability of a wider variety of these instruments or proliferation of more sophisticated structured instruments per se does not indicate financial market development. More sophisticated products should be introduced in line with the needs of market participants and as regulatory and supervisory capacities are able to handle their complexities.

76. Derivatives markets also strengthen the banking sector's ability to provide term financing in local currency by expanding the availability of risk management tools. By strengthening the banking sector's ability to manage market and liquidity risks, money and derivatives markets can have a positive impact on a bank's maturity transformation and their ability to provide term financing in local currencies. This is especially important where financial intermediation through banks is the dominant form of financing and bond markets are at an early stage of development. As the market develops, regulators should develop the capacity to monitor and regulate bank's derivatives positions in light of the rest of the bank balance sheet to avoid buildup of risk.

77. Based on the functions and role of derivatives markets, the main elements to consider in the diagnostic assessment include examining market fundamentals, such as: money market and bond market reference rates; the legal and regulatory environment for enforcement of contracts (swaps and repos); bankruptcy and close-out netting clauses; risk management instruments available to market participants; and adequacy of market regulation and supervision.

Reference rates and underlying assets

78. A reliable, transparent and market-based money market reference rate is a key prerequisite for interest rate derivatives. Shallow domestic money markets and consequently excessively high levels of price volatility can suppress development of interest rate derivatives due to prohibitively high hedging costs.

79. Where domestic interbank money market reference rates are not reliable, an active foreign exchange-based derivatives market may develop as a substitute and should be analyzed. It is often the case in emerging markets that local currency interest rates are implied from FX swaps or cross-currency swaps due to the shallowness of the domestic money markets. Cross-currency swaps (as well as FX swaps) link price information in the foreign exchange and international capital markets to that of the domestic debt markets. Consequently, the implied domestic interest rates would price in the country's access to international capital markets, as well as foreign exchange flows, which could be very volatile. While foreign exchange-based derivatives provide a practical way to circumvent certain deficiencies in the domestic money and debt markets, the benefits and risks should be carefully examined from both an institutional and a systemic perspective.

80. Establishing a futures market for government securities requires a relatively well developed government bond market. Notional futures contracts on government securities could help enhance secondary market liquidity of medium- and long-term government securities. Several advanced markets enhanced the secondary market liquidity of government securities in this manner in the 80's and the 90's, and a few emerging markets also pursued similar market development strategies more recently. However, evidence suggests that a relatively high threshold, in terms of the stage of development of the government securities market and market volume, is needed to establish a futures market that can exploit synergies between cash and futures market dynamics.

Regulatory framework

81. The DF should cover the regulatory framework and analyze the adequacy of supervision to identify potential gaps that might hinder sound market development. The use of derivatives could expose market participants to a set of more complex and opaque risks. Valuation of outstanding OTC derivative transactions relies on financial models, rather than observed market prices of traded securities. Thus, it requires strong institutional capacity to manage such risks in terms of analytical skills, model risk, as well as corporate governance.

82. The roles and responsibilities of the involved regulatory authorities should be clearly defined and coordinated across relevant agencies. Derivatives come in many different forms; different underlying assets, OTC or listed contracts, contracts or marketable securities, etc., posing challenges for effective supervision. It is sometimes difficult to determine which authority should be responsible for regulating and supervising different products and institutions, which underlines the importance of strong interagency coordination to provide a consistent and effective regulatory framework.

83. The DF should try to gauge regulatory consistency across different types of derivatives and underlying financial assets to identify potential regulatory arbitrage issues. Accounting and tax rules for different types of derivatives should be clear and consistent to prevent regulatory arbitrage opportunities, but should not discourage the sound use of derivatives. For example, coupon payments of plain vanilla interest rates or cross-currency swaps executed at market levels are cash flows that arise from the counterparties who agreed to exchange risks from two different cash flows, and they are different in economic terms from interest on investments. Taxing the receipts of such cash flows as interest income would discourage market participants from using these swaps as hedging instruments. Similarly, inconsistent hedge accounting for the hedged assets and the OTC derivative placed as a hedge could increase swings in financial accounting results instead of stabilizing them, thus reducing incentives for the market participants to utilize such derivative instruments for risk management purposes. Inconsistent accounting and tax rules could also create opportunities for regulatory arbitrage, which includes tax optimization, shifting returns and risks across accounting periods or between related parties, or disguising financial problems.

84. The regulatory framework should also address the issue of investor suitability. Some OTC derivatives are complex, and the knowledge gaps between the professional dealers and end-user counterparties often pose information asymmetry issues. While the professional dealers may be interacting with the end-users as counterparty at arm's length, they typically provide product information and sometimes informally provide advice in soliciting business. In such cases, it is more likely that disputes and litigations between the counterparties will arise during the life of the transaction, which in turn may put the market's integrity into question.

Legal infrastructure

85. An adequate legal infrastructure is critical for derivatives markets to operate appropriately, especially for OTC contracts. OTC derivatives are bilateral contracts, often customized to suit specific needs of the involved parties, binding them for the medium and long term. Certainty of contract enforcement, especially predictable and speedy enforcement of provisions for default events, is crucial. This involves not only securities market laws and regulations, but often other laws also, such as commercial code, and the broader legal framework in a country. Furthermore, even if the laws and regulatory system are adequate, there may be institutional capacity issues within the court system, such as availability of qualified judges with relevant knowledge.

86. Experiences in more advanced markets provide some precedent in terms of common legal issues which need to be clarified. For example, OTC derivatives involve counterparty risks, and the use of a master derivatives agreement may help to reduce these; however, this risk reduction benefit can be achieved only if the relevant laws allow close-out netting of the transactions covered by such a master agreement. The use of collateral mechanics could further reduce counterparty risks, but again, only if the relevant laws and the judicial court system can facilitate effective and speedy enforcement of collateral upon a default event. Establishing a standalone CCP in emerging markets may not be feasible in case of small trading volumes. Instead, client clearing at an established CCP via large local participants would be a practical option.

Trading and market infrastructure

87. The choice between OTC and exchange trading should reflect the financial instrument's characteristics and the market needs that each instrument addresses. For example, maturity and cash-flow structures of interest rate swaps are typically tailor-made for end-users, thus OTC trading would be more suitable. In contrast, highly standardized products, such as notional futures contracts for government securities, which allow traders to take positions on or hedge medium- and long-term government bond yields, would be more suited to exchange trading.

88. Derivatives exchanges require very different risk management arrangements than exchanges for cash instruments. Unlike securities exchanges, derivatives exchanges need to manage the associated risks for its listed contracts throughout the life of the contract, well beyond the settlement of the trade. This requires a more sophisticated margin and collateral management system and/or higher capital requirements.

89. The DF should discuss the adequacy of market transparency and the scope for reducing systemic risks, while also identifying areas where transparency could be enhanced. Various regulatory reforms are underway globally on OTC derivatives to enhance market transparency and reduce systemic risks; policymakers in emerging markets should stay abreast of the discussions and technical details. Broadly speaking, the discussions cover the mandatory use of trade repositories, central clearing requirements, and increasing margin requirements for OTC derivatives. As with any such mandatory measures, it is important to clearly define the scope of the requirements in terms of instruments, as well as types of market participants covered. Policy measures should aim to address transparency and systemic risk issues without jeopardizing the development of an appropriate derivatives market. Various new regulatory measures, currently underway in more advanced markets, assume adequate institutional capacities of market participants, infrastructure operators, and regulators. In emerging markets, institutional capacity issues should be carefully examined to ensure that the set of policy measures actually helps reduce systemic risks, which may arise from OTC derivatives; otherwise such policy measures may result in risks simply shifting from one party to another without reducing systemic risks.

DEVELOPING AN ACTION PLAN: SEQUENCING CONSIDERATIONS

90. Many developing and emerging countries have struggled to create LCBM comparable to those in advanced economies despite having sound fundamentals. It is important to note that developing LCBM will not be a policy priority in all countries. There are fixed costs that the authorities and market players must pay to set up the infrastructure, requiring sufficient scale of market operations to reap the benefits, which itself largely reflects the size of the economy. Smaller countries and countries with shallow financial systems may not be able to reach a comparable level of development as larger economies, but can nonetheless achieve a sound LCBM.

91. Market development is a medium-term process that requires a comprehensive approach to address sequentially and in parallel several elements, taking account of their interconnections. Each element can suffer a range of deficiencies to be addressed; in addition, the inter-linkages with other elements and links with financial stability and sovereign risk should also be understood to ensure risks are effectively managed. The technical nature, relevance, and implications of some issues vary across countries and should impact the design and sequencing of the market development plan.

92. The DF identifies key areas for policy measures along with broad sequencing to support LCBM development. The need for policy action may arise to address shortcomings in any of the preconditions for market development, including an enabling macroeconomic environment, a debt management strategy, issuance policy supportive of market development, building the investor base, and laying out a robust market infrastructure. Appropriate sequencing considerations should be taken into account when taking policy actions. Depending on the stage of market development and desired reforms, a broad sequencing in this context would begin with the appropriate macroeconomic reforms and establishing robust legal, regulatory, and supervisory frameworks before moving to any specific measures of market deregulation or expansion of the investor base.

93. Diversifying the financial sector to include an active LCBM envisages improved pricing of capital, a competitive banking system, and an effective monetary framework. Thus, the macroeconomic policy framework, particularly monetary policy, should safeguard price stability and rely on market-based instruments to reflect the appropriate cost of capital. Ensuring the resilience of the banking sector and addressing any weaknesses would be critical to enable banks both to perform their catalytic role in market development and to withstand competition across types of funding markets and avoid risk of disorderly disintermediation.

94. Financial sector development typically entails moving towards greater competition and risk-taking, calling for a robust regulatory and supervisory framework. The legal, regulatory, and supervisory framework should be sufficiently wide to capture all financial intermediaries. It is critical to have supervisory bodies able to develop and implement suitable regulations to facilitate market development, while safeguarding financial stability at time of transition, where increased competition and financial innovation could lead to increased risk-taking and financial stability risks.

95. As a general principle, sequencing reforms of the capital market should be gradual, complementary, and implemented over appropriate time horizons. Sequencing will also depend on the relative stage of market development and an assessment of medium-term needs. For instance, if the level of national savings is low and unlikely to support significant discretionary saving in the short to medium term, prioritizing pension reform or the introduction of a central clearing counterparty may not be effective. The reforms could be prioritized on the basis of a risk assessment and taking account of the potential benefits and complementarities to other steps.

96. At the early stage of development, the focus should be on building a robust and efficient government bond market to set the stage for other segments of the bond market to

develop as discussed earlier. Early efforts should focus on: (i) developing and strengthening the short end of the yield curve; (ii) improving the primary market through transparency (e.g., publishing issuance calendar, communicating with market players) and standardization of instruments; and (iii) developing depositary and settlement systems. Developing the money markets is critical at the initial stage to anchor the short end of the market and build market liquidity. Once short-term instruments are well established, the longer end of the yield curve could be introduced gradually along with widening the investor base, including due consideration to allowing foreign participation in the local market. As the market develops, a deep and liquid secondary market contributes to the reduction of liquidity risk by providing an exit mechanism for investors in long-term government securities. The regulatory, tax, and legal framework should be developed in tandem with the increase in volume. At this stage, reforms for the corporate bond market are not expected.

97. As LCBM develops, the focus of reforms will shift to creating a broader and deeper investor base, improving market efficiency, and deepening secondary markets for government securities. At this stage, a basic functionality in the primary market and the money markets should already have been achieved. The main reforms at this stage typically include (i) development of institutional investors, such as mutual funds and pension funds; (ii) removal of hurdles that obstruct access of non-banks to the LCBM; (iii) implementation of primary and secondary market architecture that provides the appropriate level of market transparency; (iv) supervision of prudential norms and risk management practices of market participants; (v) extension of the yield curve;[14] (vi) increasing size of benchmark bonds; (vii) stimulating market-making activities (including a primary dealers system, where it is appropriate); (viii) moving towards a more market-based implementation of monetary policy; (ix) more emphasis on, the interbank repo market and less dependency on central bank operations to stimulate more market-based interest rates; (x) development of a simple interest rate and currency swaps markets; and (xi) identifying the role foreign investors can play.[15]

98. Reforms related to corporate bond markets should focus on establishing a broad based regulatory framework and the building of relevant agencies for the regulatory, supervisory, and enforcement functions covering issuers and investors. The regulatory framework should cover (i) procedures for issuance (focusing on the key areas that are discouraging bond issuers); (ii) reducing cost of issuance, simplifying the issuance and approval process; (iii) establishing standard documentation for corporate bond issuance; (iv) defining in regulation the

[14] The extension of the yield curve should be carried out together with development of the investor base and appropriate risk management instruments. Yield-curve extension in a market in which banks are the predominant investors could simply shift the interest rate and liquidity risks from the government to the banking sector; and the risks may return to the government in the form of fiscal risks (as the government may be forced to recapitalize the banking sector). It is also crucial that the yield-curve extension is carried out only after liquidity for shorter-dated instruments reaches an adequate level.

[15] Foreign investors can have different investment horizons and preferences than domestic investors, which can result in improved demand structure and secondary market liquidity. Notwithstanding possible benefits, introducing foreign investors into an illiquid market can have drawbacks such as capital flow, interest rate, and exchange rate volatility.

role of intermediaries and their functions (including licensing structure); (v) establishing an investment framework for nonbank institutional investors needs (that allows them to invest in corporate bonds); (vi) establishing OTC trading, custody and settlement mechanisms, and price reporting for corporate bonds, and (vii) possible credit rating requirements.

99. At a more advanced stage of LCBM development, the focus shifts to further refining existing arrangements and the development of a broader range of more sophisticated instruments and segments: (i) developing interest rate forwards and currency swaps and possibly including those in the implementation of the debt management strategy; (ii) making the LCBM more internationally competitive through cost reduction and links to other markets; (iii) implementing a more sophisticated debt management strategy, building liquidity and extending the yield curve through larger benchmarks, introduction of buybacks/exchanges, and moving towards active cash management capacity to have a positive impact on secondary market liquidity; and (iv) continuing refinements of reforms implemented at an earlier and intermediate stages as they need to be brought into line with a more advanced market. Foreign investors could be allowed to operate in local markets with fewer restrictions, and foreign financial institutions may assume new roles in the domestic market, such as intermediaries or asset managers. It may also be necessary to develop full functionality for cross-border settlement by establishing links to international clearing and settlement providers**.**

100. Advanced reforms for corporate bonds shifts the emphasis to refinement of the existing framework. These are (i) moving towards compliance with international standards; (ii) introduction of alternative offering mechanisms (non-public offering, qualified institutional buyers); (iii) streamlined procedures (e.g., shelf registration, program issuance); (iv) structured products (partial guarantees, asset-backed securities); and (v) regulation applicable to intermediaries and nonbank institutional investors' needs to reflect the greater product variety that introduces additional challenges for their risk management.

101. If a long-term reform process is envisaged, it may be useful to set some interim markers. That would ensure that focus is maintained and targets could be met, helping maintain support for the overall reform process. In addition, it would be important to assess at regular intervals the balance across all key components of the bond market to avoid potential risks to financial stability. In the process, country authorities may need to put in place appropriate buffers to facilitate transition. For instance, to mitigate the potentially destabilizing effects of volatile capital flows, country authorities may want to review prudential limits and reserves buffers before increasing their efforts to diversify the investor base to include foreign investors.

102. Sequencing of reforms should consider both advancing the market to the next stage, while maintaining a perspective on longer-term reforms. For example, even though pension and life insurance reform should not be seen as fundamental to the early stages of government securities market development, starting the process of pension and insurance reform might be prudent because of the time it takes to impact the capital market. Taking concurrent initiatives with short- and long-term effects, therefore, needs to be considered. Initiatives with immediate effects would include standardization of issues, changes in auction procedures and schedules, and

reduction and eventually elimination of reliance on captive sources of funding. Medium-term initiatives include upgraded trading facilities, settlement systems, securities depositories, and market regulation. Longer-term initiatives are mostly related to the development of an institutional investor base.

Appendix I. Main Quantitative Indicators

	Data needs
Macro stability	Growth rate Inflation Credit dynamic Fiscal debt Current account balance Primary balance
Debt securities statistics	Market size Currency Maturity
Outstanding stock of central government debt	
Debt management (strategy, organization, capacity)	
Issuers Governments Financial institutions Corporates	Size of each market segment
Diversity of the investor base Banks Domestic institutional investors Foreign institutional investors Structure of bond holders in EMEs Bank`s holdings of government and central bank securities Foreign holdings by country	Share of each type of investor …
Derivatives markets	Market size Instruments
Share of investors in turnover	
Transaction costs	
Capital in- and outflows to LCBM	

Appendix I. Main Quantitative Indicators (continued)

Instruments Floating rate notes Fixed rate (nominal) Variable notes etc.	
Market and refinancing risk indicators	Share of external debt Average duration of debt Cost-at-risk (CaR) Share of fixed-rate debt
Liquidity in the government bond market	Turnover ratio Bid-ask spread

Appendix II. Assessment Checklist

The Assessment Checklist provides support for the employment of the Diagnostic Framework, which is used for assessment of LCBM. The Assessment Checklist follows the structure of the DF, starting with (i) foundation of LCBMS; (ii) money market; (iii) government bond market; (iv) corporate bond market; and (v) derivatives markets. The Assessment Checklist contains indicative questions to ask, but is not designed to be exhaustive. It is intended to assist with collection of information through interviews and data gathering from public institutions and private sector participants.

1. Foundation of LCBMs

1.1. Policy objective for market development

- What are the objectives? What rationale explains the choice of objectives?
- Which of these are short- or long-term objectives?

1.2. Assessing the macroeconomic environment

- Describe the macro-fiscal policy framework.
- Are there any specific fiscal rules or constraints on debt accumulation?
- Describe the monetary policy framework (quantitative or inflation targeting).
- Describe the exchange rate regime.
- Are there any capital controls in place?
- What are the main sources of domestic savings, and how are they invested?
- Are there any floors, ceilings, or other controls on interest rates, official or unofficial?

2. Money market

- Describe the monetary policy operating framework including central bank signaling, the operating target, and the instruments of monetary policy (both market and non-market based).
- Describe the trading activities between the central bank and banks and across banks and market participants. This includes information on (i) the participants (banks, institutional investors, others); (ii) price discovery (bi-lateral dealing/interdealer brokers/electronic platform); (iii) activity in secured and unsecured markets; (iv) activity beyond the very short dates (focus is often on the overnight but 30/60/90/180 day, etc. points are important for pricing derivatives); and (v) whether the market is dominated by one or a few players or if it is segmented in any way.

- What price/turnover information is supplied to the market and how often?
- Has a money market index been established?
- What reference rate is used as basis for derivative transactions? Is it considered reliable?
- Do banks conduct credit assessments for their interbank counterparts? Are credit limits constrained by issues such as corporate governance standards, bank regulations, financial reporting?
- Are secured interbank transactions based on Master Repurchase Agreements with adequate collateral, netting, and close out provisions? Can securities borrowed in a repurchase transaction be re-hypothecated?
- Does the payment and custody arrangement support interbank transactions (e.g. Real Time Gross Settlement for payments and DvP for collateral?
- Has the structure of the money market been defined by the appropriate regulator and have market participants established a code of conduct for their money market activities?

3. Government bond market

- What are the projected financing needs (e.g., annual needs over the next 5–10 years)?
- What are the projected financing needs for infrastructure and housing development (e.g., annual needs over the next 5–10 years)?
- How are auctions conducted? If the central bank conducts auctions on behalf of the government, is there an adequate agency agreement that specifies the roles and responsibilities?
- What type of auctions are conducted (multiple price or uniform price), and who can participate in the auction?
- Are there benchmark bonds?
- What is the longest maturity?
- How flexible are the investment guidelines for different investors (pension funds, insurance companies, mutual funds, hedge funds)?
- What is the structure of institutional investors? Is it concentrated or diversified? Is there a dominant class of investors (e.g., banks, domestic and foreign central banks, national pension system, etc.)?
- What is the role of foreign (nondomestic) investors?

- What is the capacity and level of professionalism of institutional investors?
- Is there active trading in government securities? Are there intermediaries, and if so, how are they structured?
- What is the level of government bond interest rates? What is their volatility?
- Does the regulator have adequate capacity and authority to supervise the market and enforce the rules?
- Clearing and settlement (C&S) structure:
    - Is there a single CSD that handles all securities (equity, government, and nongovernment bonds)?
    - Is the registrar function located within the CSD? Or is there a separate registrar entity(ies)?
- Is there a true DVP regime in place?
- Is the central bank the final settlement bank for cash?

4. Corporate Bond Market

4.1. Issuers

- Is there a sizeable number of companies who can use the bond market to raise funds? Are these companies profitable, well-known, and able to meet required regulations? Are any of these companies government-owned?
- Do companies see a need for using bonds from a financing/risk management perspective?
- Do companies feel constrained by any regulations or other factors that make bond issues challenging and unattractive?
- Are banks willing and able to provide long-term loans to private entities? What are the longest maturities of bank loans?
- Is there a reliable and liquid government bond yield curve?
- Is there regular issuance by the government?

4.2. Secondary market arrangements

- Is there a reliable, accessible, and efficient trading arrangement in place?
- Is OTC trading permitted alongside exchange trading?

- Who is allowed to trade corporate bonds? Are there designated dealers/brokers?
- Is there a consolidated, timely, reliable, and accessible post-trade reporting system?
- Is there any pre-trade transparency (bid and ask quotes) arrangement easily accessible by market participants? Are corporate bonds dematerialized?

4.3. Investors and intermediaries

- How developed is the credit culture? Are institutional investors capable of assessing credit risk or are they only comfortable with investing in top tier, highly rated companies (AA or higher)? Are there credit registries that keep track of borrowers?
- What is the capacity and level of professionalism of intermediaries (brokers, dealers, investment advisers, etc.) to generate transactions?
- How flexible are the investment guidelines for different investors (pension funds, insurance companies, mutual funds, hedge funds)?
- Are there regulations or incentives that make investors captive in certain markets, such as government securities?
- Are there portfolio allocation limits related to investments in any one issue, or any one issuer, investments in non-listed securities, or investments in ABS instruments?
- Do intermediaries see a business case to participate in nongovernment bond transactions?

4.4. Regulation and Supervision

- Does the regulator have adequate capacity to supervise the market and enforce the rules?
- Do intermediaries have sufficient business in government securities to have a base of fixed-income business from which to build operations in nongovernmental transactions?
- Are capital requirements set at a reasonable level to manage risk exposure without undue cost to intermediaries?
- Is there a self-regulatory organization SRO that oversees, sets standards, and provides training for fixed-income dealers?
- What is the level of the regulator's commitment? What other priorities does it have on its agenda that are likely to delay nongovernment bond market-related reforms (e.g., developments in other product areas, enforcement actions, corruption scandal, etc.)?
- Is there a level playing field between corporate bonds and other investment instruments (government bonds, equities, bank products)?

- Are there tax, regulatory, or other issues that make nongovernment bonds less attractive financing/investment options from an issuers'/investors' point of view (i.e., compared to bank products and equity)?

4.5. Offering regulations and mechanisms

- Does the regulator take into account differences between equity and debt issues (i.e., retail and institutional investors)?
- Is there any element that makes it especially complex or cumbersome?
- What are the initial disclosure requirements?
- How onerous are the requirements?
- Is it disclosure or merit-based? Merit-based requirements often include profitability requirements for a certain number of years, leverage ratio, debt/equity ratio, minimum number of years in operation, etc.
- Are there different issuance options besides a public offer, such as:
  - Shelf registration,
  - Well-known seasoned issuers (WKSI),
  - E-prospectus,
  - Private placements, or
  - Hybrid offer regimes.
- How long is the approval process?

4.6. Market infrastructure

- Is there a designated pricing agency, such as a bond market association (BMA)? Are there credible and independent CRAs that are based locally/regionally?
- Are international CRAs active in the country?
- Is credit rating mandatory? If so, is there also a minimum rating requirement?
- Are there qualified SROs that can help shorten approval times?

4.7. ABS regulations

- Are the necessary legal preconditions for ABS in place?

- Are there sound ABS regulations in place, or is ABS issuance allowed under the issuance framework for nongovernment bonds?
- Are there appropriate regulations that allow issuance of ABS through a trust that is recognized as a legal entity or through a special purpose vehicle (SPV) that can be structured as either a trust or a company?
- Are there any guarantee schemes or other credit enhancement facilities available for corporate bond issuers?

5. Assessing the Derivatives Market

- Describe the legal infrastructure for derivatives.
- Has a money market index been established?
- What reference rate is used as the basis for derivative transactions? Is it considered reliable?
- Has a Master Derivatives Agreement (MDA) been agreed among market participants? Is it used as the basis for transactions?
- Does the MDA contain necessary support for enforcement and close-out netting? How is collateral monitored?
- What types of derivatives are used in the market? Describe the interaction between local currency and FX-based swaps/cross-currency swaps?
- What type of clearing mechanism is used for derivatives? Is it considered adequate? Are counterparty risks adequately assessed?
- Is there sufficient institutional capacity to supervise the derivatives market? Is there reporting of derivatives transactions to a central entity, such as the regulator or a central bank?
- Do market participants have sufficiently robust risk management systems to monitor and manage their derivatives exposures?
- Do tax and accounting rules provide neutrality for derivatives vis-á-vis other financial instruments?