Appendix A. Selected Case Studies

A.1 Vietnam: Improving the Legal and Regulatory Framework to Facilitate Market Development

Context and Challenge

Before 2017, few formal laws and regulations existed to allow for the issuance of market-based government debt. Improving the legal and regulatory framework is a crucial part of the implementation of the reform agenda. The government of Vietnam approved the Vietnam Bond Market Development Roadmap 2017–2020, with a vision to 2030, as part of its commitment to develop the government bond market.

Solution

The law was changed to allow the government to borrow via the bond market. This authority was enshrined in the Public Debt Management Law in an amendment that was approved by the National Assembly in November 2017 and came into effect in July 2018. The new law regulates the issuance, registration, depository, listing, and trading of government debt instruments.[96] The law also provides a new framework for the primary dealer system and facilitates a securities lending facility operated by the Vietnam State Treasury.[97]

The updated law was complemented by several circulars[98] designed to improve the efficiency of government bond market operations. These circulars were designed to remove gaps in the legislation through facilitation of liability management (through switches and buybacks), smooth functioning of the primary dealer system, liquidity support offered by the state treasury, and same-day trading for primary dealers to enhance the efficiency of the market making system. The three circulars issued were (a) Circular 110 on the issuance and settlement of government debt instruments; (b) Circular 111 on the switch and repurchase of government, government-guaranteed, and municipal bonds in the domestic market; and (c) Circular 30 on registering, depositing, listing, trading, and providing settlement of government debt instruments and government-guaranteed bonds issued by banks for social policies and municipal bonds.

Results

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

[96] It replaced the previous Decree 01 as of July 1, 2018.

[97] The securities lending facility is called liquidity support in the Vietnamese legislation.

[98] Issued in 2018 and 2019.

A.2 Georgia: Designing and Implementing Tax Reforms to Support LCBM Development

Context and Challenge

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

Solution

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

This effort led to the enactment of various packages of tax law reforms. Reforms focused initially on the "supply side" of government securities (dealing with the tax treatment of the government securities in both the primary and secondary markets). The authorities also addressed the "demand side" (dealing with the effective and efficient alignment of that tax treatment between key institutional investor groups, including mutual and investment funds, to encourage investment and liquidity in government securities). Box A.1 is an overview of the comprehensive reforms that Georgia implemented to create a competitive tax law framework for all key classes of investors in Georgia's primary and secondary bond markets, including non-resident investors.

Box A.1. Recently Enacted Tax Law Reforms in Georgia

Package 1 (Rates and concessions)	***Package 2 (Technical amendments)***
Government securities benefit from tax exemptions on income and gains (for foreign investors).	Technical amendments remove tax impediments and provide investor certainty, covering • Secondary sales (split between capital and interest components); • Taxation of repos (consistent with box I.2); • Taxation of securities lending (similar to repos); • Treatment of financial collateral (similar to repos); and • Taxation of derivatives (mark-to-market).

Results

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

Authorities also formalized the taxation regime for foreign investors. Georgia implemented interest-withholding tax and capital gains tax concessions/exemptions (see box A.1) that were consistent with international common practice. This new regime has helped support the continued establishment of critical investment links between Georgia's bond market and Clearstream.[99]

The full benefits of these tax reforms will take time to manifest. However, the recent efforts to remove the tax impediments and create a competitive tax framework covering all key classes of investors, including nonresidents, has created conducive legislative conditions to further the aim of deepening the Georgian LCBM.

[99] Clearstream securities depository, https://www.clearstream.com/clearstream-en/products-and-services/market-coverage/europe-non-t2s/georgia/market-link-guide-georgia-1281410.

A.3 Georgia: Financial Market Infrastructure

Context and Challenge

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

Solution

In 2018, the National Bank of Georgia (NBG) consulted and worked collaboratively with the Georgian Stock Exchange (GSE) to establish a public-private centralized FMI system serving both the government securities and capital markets. The established system, the Georgian Security Settlement System (GSSS)[100] is a single system that includes the CSD and auction functionality and is fully integrated with real-time gross settlements (RTGS). The GSSS supports two CSDs that seamlessly interface between themselves and with the RTGS system and commercial bank accounts held with the NBG. This system supports the efficient transfer of securities between the CSDs and settlement in central bank money for all financial sector security transactions.[101]

The NGB owns and operates the system hardware and network, whereas software rights are shared between the NBG and the Georgian Central Securities Depository. The NBG is therefore responsible for all systemically important financial market infrastructure—that is, system capacity and performance, maintenance and development of the systems, and development and maintenance of the primary and secondary DVP sites. The GSE operates a CSD business within the GSSS under a contractual arrangement with the NGB.

The modern system meets all the needs of (a) the NBG and the Ministry of Finance to develop the government securities market, (b) the NGB to conduct monetary operations and maintain financial stability, and (c) the GSE requirements to support development of the capital market.

Result

The NBG operates the CSD business solely for government securities and NBG-issued securities. The GSE operates the CSD business for corporate debt, local currency supranational debt, equities, and other securities. The NBG and the GSE are responsible for government securities and capital market development, regulation, settlement, market monitoring and oversight. Because these CSDs operate independently, the NBG can pursue public interest policies in the operation and development of the government securities market, while the GSE can independently pursue private

[100] The system was developed by an international software vendor of FMI infrastructure systems.

[101] This is more difficult to achieve between multiple standalone CSD and central bank settlement systems.

sector objectives to develop the capital markets. For example, each CSD can set its own rules and regulations and fees, create new securities, determine investor access criteria,[102] manage corporate actions, use the appropriate trading models (over-the-counter or on exchange) and preferred settlement models (DVP1, DVP3), monitor settlements, and regulate activity.[103]

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

[102] Often there are policy differences between the access requirements for the public and private CSDs.

[103] DVP1 is the default model for government securities and DVP1 and DVP3 are used by the GSE.

A.4 Malaysia: Lowering Barriers for Foreign Investor Participation

Context, Challenge, and Solution

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

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

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

Results

These measures have resulted in an increase in the share of foreign investors in the local currency bond market. The share of foreign investors increased from 13.50 percent at the end of 2009 to a peak of 35.75 percent in September 2016 before declining to around 24.00 percent (as of March 2019). The composition of the investor base for the Malaysian bond market has also broadened with more medium-term and long-term investors, which has also contributed to better stability in the market.

The foreign exchange measures adopted in 2016–17 helped market development. The changes resulted in increased hedging opportunities and the supply of foreign exchange onshore; although turnover in the onshore spot, forward, and swap foreign exchange markets improved, bid-ask spreads narrowed and ringgit volatility declined (Grigorian 2019). The availability of an efficient foreign exchange derivatives market in Malaysia has helped attract a wider range of foreign investors and enrich the bond market through greater price discovery and liquidity (Lu and Yakolev 2018).

A.5 Malaysia: Development of Preconditions and a Sizable Institutional Investor Base to Support Domestic Government Debt Market Development

Context and challenge

Malaysia moved from holding a budget surplus to developing a government securities market. Until the late 1950s, when Malaysia gained independence (1957), the government of Malaysia had little need or incentive to borrow given its budget surpluses underscored by high commodity prices and procyclical fiscal policies.[104] A global commodity downturn in the mid- to late-1950s had a negative effect; the government began to better prepare itself to take on debt by establishing the necessary preconditions to create a viable and robust domestic government debt market.

Solution

Several measures were taken, but none as critical as developing a domestic institutional investor base. Policy makers established that there had to be a sufficiently large outstanding volume of securities, a stable interest rate environment, relevant players in the market, and a predictable timetable for regular issues. The core focus in the beginning was on the first condition: a sufficiently large volume of government securities. Malaysian government securities—mainly medium term to long term—were introduced with a dual purpose of not only financing the public sector but also becoming an investment asset for the country's largest provident fund, the Employees' Provident Fund (EPF), which was established in 1951. Although the domestic institutional investor base has since significantly widened beyond EPF, the key takeaway is that policies to create domestic long-term capital are a critical anchor to domestic government debt market development and one of the preconditions to attracting foreign investors. Currently, the government of Malaysia relies heavily on domestic issuance to finance its borrowing requirements; external borrowing comprised only 3 percent of the debt stock at the end of 2019.[105]

EPF is the cornerstone of the development of the Malaysian global bond market. EPF was established to incentivize household savings (governed by the EPF Act 1951), and it is compulsory for nearly all formally employed Malaysians (and their employees) to contribute to the fund at certain prescribed rates. Contributions are preserved as long-term capital; the policy requires that 70 percent of the members' contributions cannot be withdrawn before the retirement age of 55; the residual 30 percent can be withdrawn only under specific circumstances (such as for housing or education). EPF contributions have built up steadily over nearly seven decades; consequently, the aggregate size of the institution was considerable at RM 839.6 billion at the end of 2019 or 58

[104] A significant source of this section is derived from Malaysian Securities Commission 2004.

[105] External borrowing includes non-resident holdings of domestically issued securities as domestic debt.

percent of GDP, making it one of the largest pension funds globally by this metric. Since its inception, EPF has continued to heavily invest in the bond market; more recently it has been guided by the provisions in the 1991 act.

Further efforts are planned to grow and develop the demand side (table A.1). Over time, the capital markets authority and the central bank have taken several measures to develop a deep and broad investor base and asset management industry to include insurance companies, unit trusts, retail funds, and mutual funds. These steps have been important to allow outsourcing of the management of funds from large buy-and hold investors such as EPF to further expand liquidity in the secondary market. The development in the 1980s of a large national fund management/unit trust company—the Permodalan Nasional Berhad (PNB)—played another key role in supporting the development of a large domestic investor base that has also supported investments in Malaysian global securities.

Table A.1.: Malaysian Key Institutional Investors

	EPF (Malaysia's biggest retirement fund)	**KWAP** (Malaysia's second largest retirement fund)	**PNB** (Malaysia's largest fund management company)
AUM	**RM 839.6 billion** (end 2018)	**RM 136.5 billion** (end 2018)	**RM 298.5 billion** (end 2018)

Sources: EPF Annual Report 2018, KWAP Annual Report 2018, and PNB Annual Report 2018.

Note: AUM = assets under management; RM = Malaysian ringgit.

A.6 India: Moving from Financial Repression to Market-Based Rates

Context and Challenge

Before the 1990s, the government securities market in India was characterized by a plethora of financial repression measures. These measures included administered rates, a nonexistent yield curve, a moribund secondary market, and a captive investor base of banks. Growing fiscal deficits in the 1980s had considerably increased the volume of central government debt, in particular short-term debt, because of the automatic accommodation by the Reserve Bank of India (RBI) through the mechanism of ad hoc Treasury bills (T-bills).[106] Artificially low yields on government securities also affected the yield structure of other financial assets in the system and led to high lending rates overall. Against this backdrop, and in the context of the overall economic reform program, reforms in government securities markets commenced in the early 1990s.

Solution

The first phase of reforms (early-1990s) was devoted to building the enabling environment for the development of the government securities market. This phase included eliminating automatic monetization and improving fiscal discipline through the system of ways and means advances.[107] The system of administered interest rates was also abolished, and the issuance mechanism was restructured to reflect market prices.[108]

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

[106] Ad hoc T-bills had a maturity of 91 days but could be cancelled at any time, even before the maturity period, if warranted by the government's cash position. The ad hoc T-bills were converted into special securities at their redemption date.

[107] Although the ways and means advances arrangement formally replaced the ad hoc Treasury bills mechanism in 1997, the process was initiated in 1994.

[108] In more specific terms, an auction system for price discovery was introduced in 1991. Subsequently, in 1993, 91-day T-bills were introduced for managing liquidity and benchmarking. A historic agreement was signed between RBI and the government on the net issuance of ad hoc T-bills. Net issuance of ad hoc T-bills was progressively brought down from its high of over 38 percent in the early 1990s to 18 percent at the end of 2019.

The government also addressed the issue of conflict of interest between the implementation of monetary policy and debt management operations. The passing of the Fiscal Responsibility and Budget Management Act in 2003 prohibited the RBI from participating in the primary market, thereby mitigating the potential of such conflict of interest between debt management and monetary policy. This reform was also helped by the relative success of developing the government securities market by then.

Result

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

The successful implementation of the market-based auction system saw issuances concentrated on shorter maturities. Issuance of bonds above 10-year maturities declined from 76 percent of total borrowing in FY1992 to 16.1 percent in FY1999. During the same period, the share of securities with maturity below 5 years increased from 7.4 percent to 41.4 percent of total borrowings. In the early 2000s, the government initiated a benchmark building strategy, which also required reforms to the liquidity management regime. Since then, the government has continued to develop its yield curve and increase the weighted average maturity of its outstanding debt.[109]

[109] From 6.5 years in FY1998 to 8.9 years by FY2003 and further to 10.6 by FY2018.

A.7 Honduras: Introduction of Electronic Trading Platform for Money Markets

Context and Challenge

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

The BCH has encouraged secured interbank market development using repo and reverse repo transactions. In December 2017, the BCH issued a resolution establishing that any credit transaction denominated in domestic currency taking place between institutions in the financial system (interbank loans) may be backed by any government or central bank security, using the Central Bank of Honduras Securities Depository platform, or by a fiduciary guarantee.

Solution

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

Result

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

A.8 Brazil and Mexico: Debt Management and Monetary Policy Coordination

Context and Challenge

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

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

- **In 2006 the Central Bank of Mexico agreed to use government securities to manage excess liquidity in the banking system.** Through this new arrangement, the Bank of Mexico and Ministry of Finance hold quarterly meetings to determine the amount of government securities to be issued. The government securities consequently issued for monetary policy purposes are fungible with securities issued by the government for funding purposes.

- **In Brazil, the Fiscal Responsibility Law issued in 2002 prohibited the central bank from issuing its own securities.** Since then, monetary policy is executed through repurchase agreements that use marketable government securities as collateral.

Results

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

A.9 Peru: Improvements in Issuance Strategy

Context and Challenge

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

Solution

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

Result

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

A.10 Western African Economic and Monetary Union: Improvements in Primary Market Functioning and Issuance Strategy

Context

Before 2015, the WAEMU regional government debt market was characterized by less transparent and predictable issuance operations and the absence of regular issuance of debt instruments.[110] In most countries, issuance calendars and relevant information on issuance were not provided in advance to market participants. In some cases, calls for tenders were released the day before the auction, resulting in investor uncertainty and thereby reducing the chance for maximizing participation at auctions. From time to time, countries were competing for liquidity at the same maturity in a shallow market that lacked both depth and liquidity, by holding auctions on the same day. In all countries, issued amounts were frequently substantially larger than announced amounts. Auction results were not always disclosed in a timely manner. Issuance strategies provided an unbalanced choice of maturities, favoring long-term amortizing securities, instead of a systematic approach to gradually lengthening the yield curve. With the World Bank's and IMF's assistance, the authorities implemented several measures to improve the functioning and the attractiveness of the regional government securities market.

Solution

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

At the same time, most of the WAEMU countries strengthened the capacity of their debt management entities to prepare and implement a coherent funding strategy. With the assistance of the IMF and the World Bank, many of the countries received tailored training for the formulation and implementation of domestic marketable borrowing programs, for the assessment of investor demand, and for interactions with investors. Regional training was also

[110] Western African Economic and Monetary Union (WAEMU) countries include Benin, Burkina-Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo. They share the same currency, the CFA franc, which is pegged to the euro, the regional capital market, and regional financial authorities, including the WAEMU central bank. Each country develops and implements its own borrowing program. Investors in any WAEMU country can purchase securities issued by any WAEMU government.

offered on government securities market fundamentals (characteristics and pricing of government securities), issuance techniques, and steps for developing a yield curve.

Result

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

The WAEMU government securities market has also become quite active and has increased in importance. All eight countries now issue securities through several auctions a year compared with years prior to 2016. Investors in the WAEMU market regularly purchase from issuers across the region and there is growing expertise among officials in charge of developing and implementing the domestic marketable borrowing programs. Three- and five-year bullet bonds have now replaced amortizing medium-term bonds and a small volume of 7- and 10-year bullet bonds have been gradually introduced.

A.11 Serbia: Building Benchmark Bonds and Increasing Dinarization

Context and Challenge

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

Solution

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

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

Result

The introduction of benchmark bonds has meant improved secondary market liquidity. The 10-year benchmark issued in February 2018 and the 7-year benchmark issued in January 2019 show annualized turnover ratios of 51 and 113 percent during the first half of 2019, compared with the average turnover ratio for all dinar bonds of 39 percent. Bid-offer spreads are also much tighter for benchmark bonds. The increased demand has also supported the issuance of longer-dated bonds. In February 2020, the PDA issued a 12-year SRD 19.3 billion bond (approximately US$170 million), the longest-tenor dinar issue on record.

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

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

A.12 Albania: Market Makers Program

Context and Challenge

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

Solution

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

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

Result

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

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

A.13 South Africa: Electronic Trading Platform

Context and Challenge

Historically, structural challenges in the South African government and corporate bond market contributed to low levels of trading liquidity.

Solution

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

The National Treasury designed and implemented the ETP upon the committee's recommendation and in collaboration with the World Bank.[111] In August 2018, the Johannesburg Stock Exchange, together with the National Treasury and several partners, launched the country's first ETP for government bonds. The full spectrum of government bonds reflective of the South African government yield curve were phased into the ETP, including 14 fixed-rate and eight inflation-linked bonds, with the primary dealers quoting two-way prices within predefined criteria.

Result

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

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

A.14 Thailand: Bond Market Price Transparency

Context and Challenge

Thailand's domestic bond market for the government, state-owned enterprises (SOEs), and corporate securities lacked pre- and post-trade transparency. Secondary market price transparency and trade reporting standards were inefficient and subject to inaccuracies.[112] The mark-to-market standards of institutions and mutual funds were not standardized and regulated, a situation that opened the risk that managers would misprice their bond portfolios. The challenge was to provide the local market with primary and secondary market information through a centralized mechanism and infrastructure (database) to instill investor confidence and encourage bond trading and debt issuance.

Solutions:

In late 2005, the Thai Securities and Exchange Commission approved the Thai Bond Market Association's (Thai BMA) license and roles as a center for all bond market information and trade data collection and as a self-regulatory organization.[113] All issuers[114] were required to register (with a fee) at the Thai BMA, the center for bond market information, and created an issuer profile that included (a) bond features, (b) trading information, (c) historical information, and (d) issuers' relevant news and updates. The securities regulations required all dealers to report intraday secondary market transactions to the Thai BMA,[115] with most dealers using the Thai BMA software that automatically reports trades once entered into the dealers' back-office systems. The Thai BMA provides both intraday and end-of-day data as well as a daily market summary.

In 2006, the Thai Securities and Exchange Commission enacted a regulatory requirement that all bond mutual funds needed to mark-to-market their portfolios on a daily basis based on the Thai BMA's Bond Pricing Agency end-of-day official price references. The Thai BMA publishes the daily government bond yield curve[116] and corporate bond yield curves on the basis of reported transactions and information on market-based pricing and theoretical-based pricing for both government bonds and less liquid securities.[117]

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[112] Originally, trades were reported as morning and afternoon sessions.

[113] Original operating in 1994 as the Thai Bond Dealers Club, it changed it's name in 1998 to the Thai Bond Dealing Center.

[114] Ministry of Finance government securities in the primary market are exempt and automatically registered.

[115] Updated to a 30-minute reporting window from time of trade execution in 2012.

[116] Since 1999 when the MOF became an active issuers of government securities

[117] Interpolated pricing for illiquid bonds.

Result

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

The primary market for government securities and nongovernment securities has been on a steady upward trend due to market efficiencies and price discovery. The Thai Ministry of Finance's Public Debt Management Office (PDMO) has benefited from the Thai BMA's market development efforts to improve bond information and transparency. The PDMO has stated that the Thai BMA's government securities yield curve provides the debt managers with fairly accurate price indications for primary market auctions. Also, the yield curve and its movements assist the PDMO in their annual issuance strategy for T-bills, benchmark government bonds building program, and the extension of the yield curve. The Thai corporate bond primary market has equally enjoyed the benefits of greater market information, transparency, and price discovery as the long-term corporate bond issuance (includes rollovers) reached a historical high of B 1 trillion (US$31.2 billion) in 2019.

Appendix B. Survey Results

A recent IMF-World Bank survey assessing the current stage of local currency bond markets (LCBM) development was sent to country authorities to capture common challenges faced by developing countries and to identify potential areas of focus in market development strategy. The survey was answered by the debt management authorities (the monetary authorities for certain money market aspects) of 32 countries—10 in Europe and Central Asia, 10 in Latin America, 7 in Sub-Saharan Africa, and 5 in other regions. The survey results are presented below, organized by the key building blocks.[118]

Overall, the survey highlighted many structural issues, indicating the long-term nature of the development process of government LCBMs. These issues include the lack of a diversified investor base, the concentration of the banking sector, and the structural excess liquidity in the banking system that are perceived by many countries as important challenges. Also, the top three concerns for the secondary market relate to the investor base (see the heatmap in figure B.1). Addressing structural issues is an important element, but it requires time as well as concerted and coordinated efforts from multiple government entities.

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

It is useful to look at the survey answers using income level and regional breakdowns. Most countries, even at different income levels, consider that developing the investor base and the secondary market are the most challenging factors. However, when looking at the regional breakdown, it is noted that authorities in Latin America and Sub-Saharan Africa considered that the challenges related to market infrastructure and the legal and regulatory framework are as important as those involving the investor base and the secondary market, while in other regions, they did not (figure B.1).

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

Figure B.1. Heatmap: Challenges Faced by Countries in Developing-Government Local Currency Bond Markets

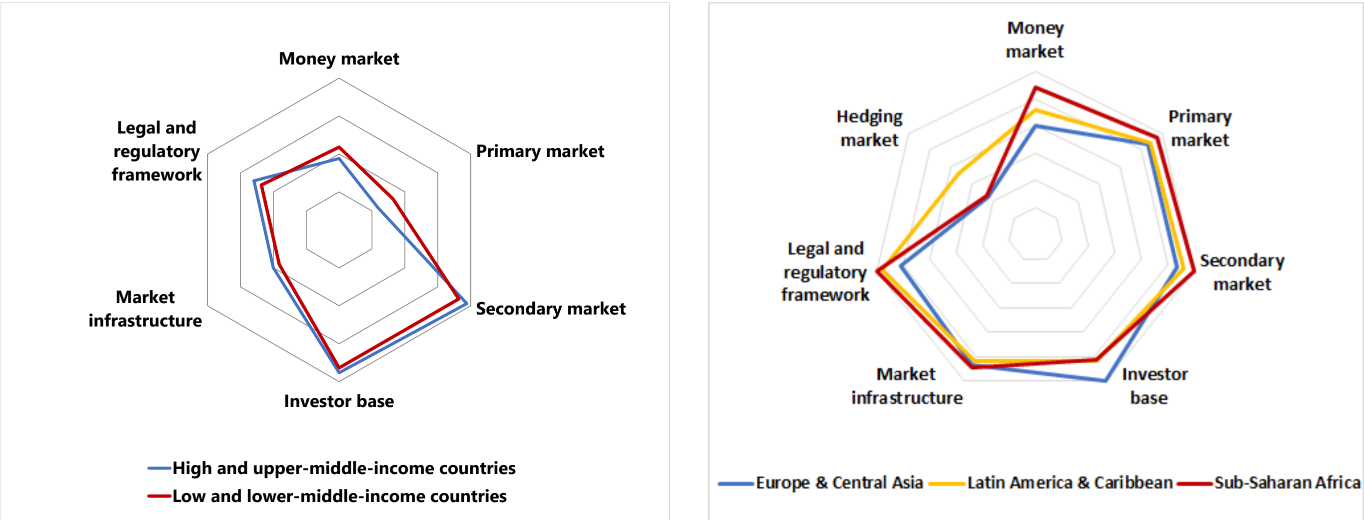
Overall				
Money Market	Primary Market	Investor base	Secondary Market	Market infrastructure & Legal
Structural excess liquidity in the banking system	Smoothen the redemption profile	Mutual funds	Limited number of domestic institutional investors	Operational risks
Concentration of banks	Create new types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

Source: IMF and World Bank staff

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

Figure B.1. Challenges in Developing Local Currency Debt Market

a. By income level of country **b. By region**



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

Source: IMF and World Bank staff

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

Money Market

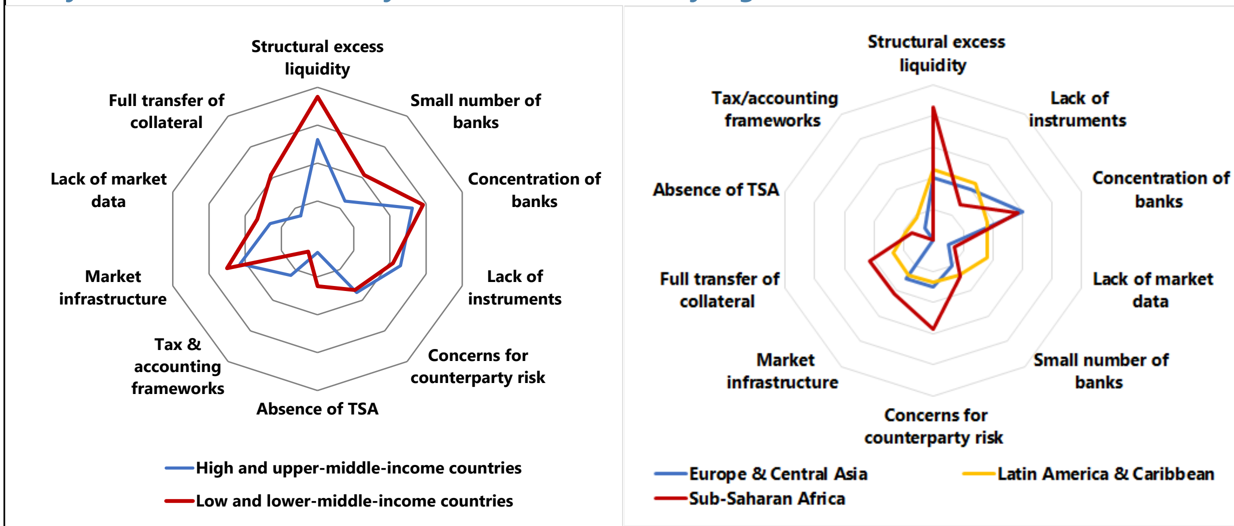
In several emerging market and developing economies, structural excess liquidity in the banking system is adversely affecting the functioning of the money market. The issue of structural excess liquidity in the banking system is reported by countries across regions, while it appears to be most prevalent in Sub-Saharan Africa. In most cases, structural excess liquidity has been driven by capital inflows (including foreign exchange interventions), fiscal deficits, or a combination of these (figure B.2).

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

Central bank officials consider that information sharing on cash flows/liquidity management with the government needs to be improved. This holds for countries at different income levels. Better government cash management and government cash flow forecasting are also seen as an important factor supporting their banking sector liquidity management. Regionally, the former is particularly important for Sub-Saharan Africa and Europe and Central Asia countries (figure B.3).

Figure B.2. Challenges in the Money Market

a. By income level of country **b. By region**

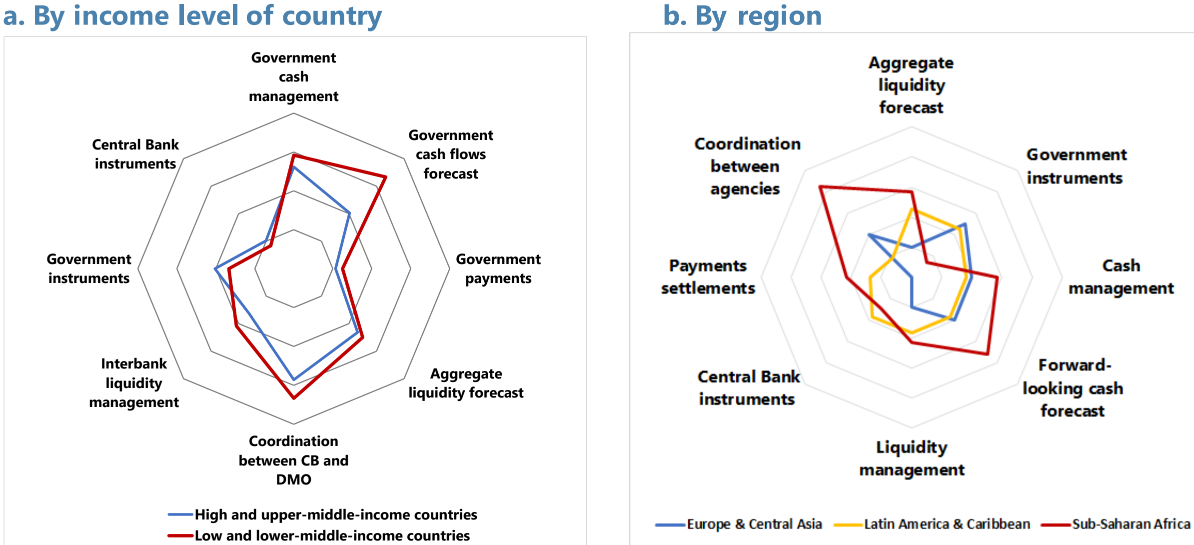


Note: Being closer to the edge signifies that more respondents address this factor as a more serious challenge. TSA = treasury single account.

Source: IMF and World Bank staff

Figure B.3. Liquidity Management: Areas for Improvement

a. By income level of country **b. By region**



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

Source: IMF and World Bank staff

Primary Market

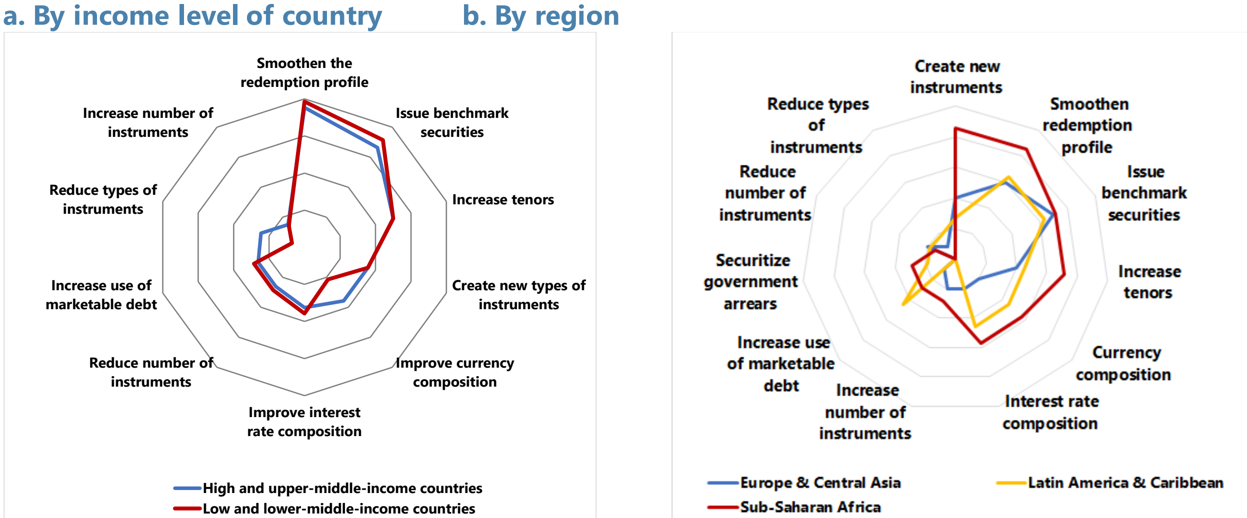
Challenges faced on the primary market vary depending on the region. Smoothening the maturity profile is particularly relevant for many Sub-Saharan African countries, but less so for others. Also, creating new types of instruments would be broadly important for Sub-Saharan Africa and Europe and Central Asia, but not as much for the other regions. On the other hand, issuing benchmark securities is perceived as an important factor across all regions (figure B.4).

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

While in recent years many countries have introduced benchmark securities, some countries struggle to implement this policy. There seems to be a widespread understanding that benchmark securities help to increase liquidity in the market and to reduce funding costs. However, implementing this policy is sometimes hindered by poor cash management or by the inability to conduct liability management operations to manage refinancing risks stemming from the benchmark instruments (figure B.5). The latter seems to be particularly relevant for European and Central Asian countries, as well as for Latin America. For the latter, issues such as market infrastructure have a relevant impact in hindering sound primary market practices.

Figure B.4. Primary Market: Areas for Improvement

a. By income level of country **b. By region**



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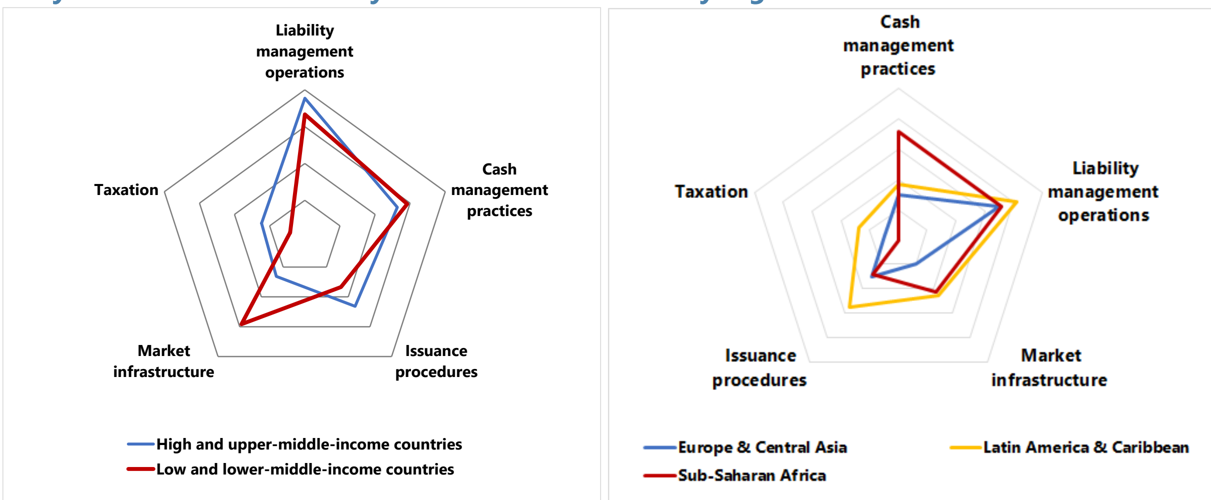
Note: Being closer to the edge signifies that more respondents address this factor as a more serious challenge

Source: IMF and World Bank staff

Figure B.5. Issuing Benchmark Securities: Areas for Improvement

a. By income level of country **b. By region**



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

Source: IMF and World Bank staff

Secondary Market

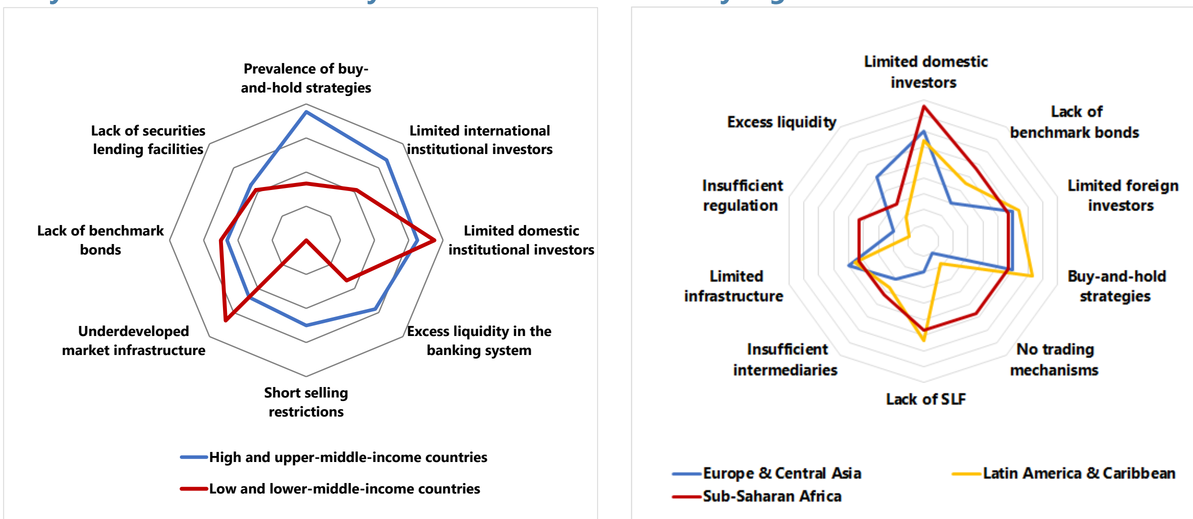
Deficiencies in the investor base structure prevent the deepening of the secondary market. The lack of a diversified investor base inhibits trading among different types of investors (which might want to buy and sell at different points in time). In addition, for those regions with excess liquidity, the banking sector may also act as buy-and-hold investors, further hindering secondary market activity (figure B.6).

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

High bid-ask spreads and fees for intermediaries are the key challenges contributing to high market transactions costs. It should be assessed closely whether high costs are mostly driven by low market liquidity or whether regulatory constraints have pushed up trading costs. The mandatory use of intermediaries seems to pose challenges for Sub-Saharan Africa, while the taxation of secondary market transactions is particularly relevant for Latin America (figure B.7).

Figure B.6. Challenges in Secondary Market

a. By income level of country | **b. By region**

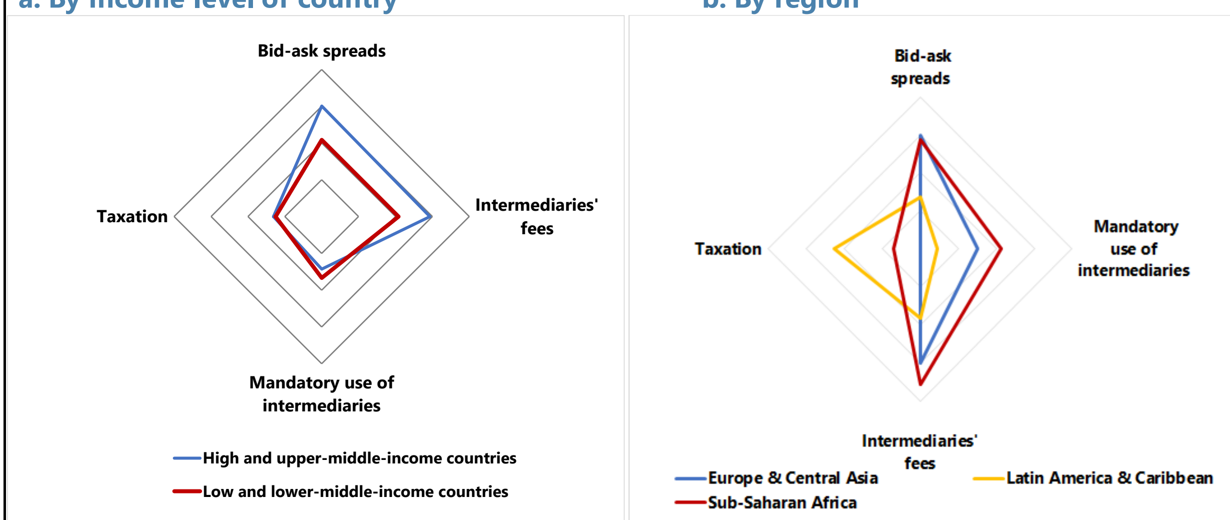


Note: Being closer to the edge signifies that more respondents address this factor as a more serious challenge.

Source: IMF and World Bank staff

Figure B.7. Secondary Market: Causes of High Transaction Costs

a. By income level of country | **b. By region**



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

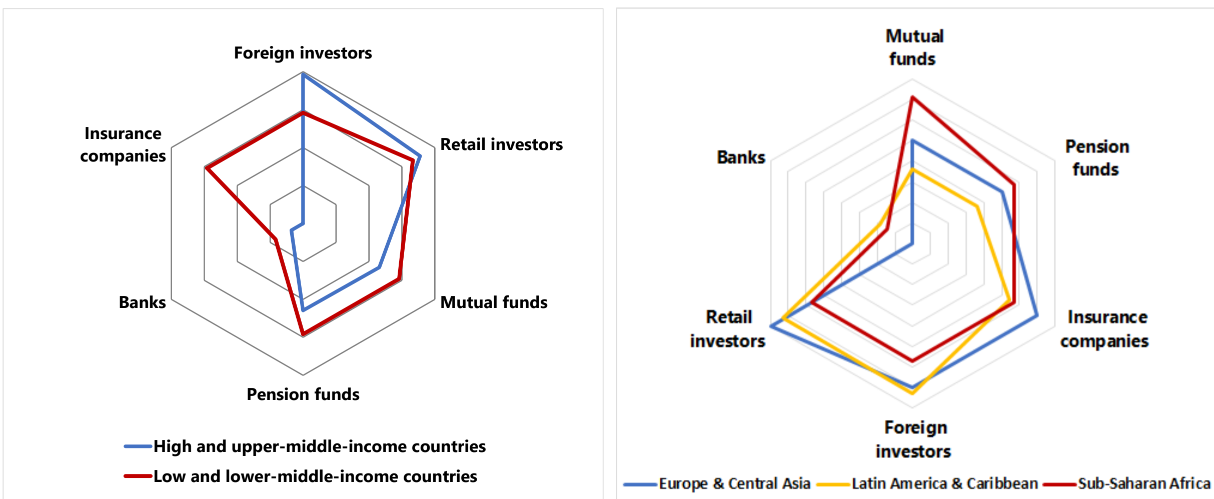
Source: IMF and World Bank staff

Investor Base

The lack of a broader investor base poses a structural problem that prevents countries from moving up the ladder on market development. There is a widespread perception that several segments need to be further developed, such as pension or mutual funds, an insurance sector, and foreign and retail investors. This thinking reflects the dominant role of banks in many countries and poses challenges to extending the maturity of government debt portfolios (figure B.8). In several cases, the status of this building block hinders the efficient functioning of money, primary, and secondary markets, as described in the respective subsections.

Figure B.8. Challenges in Investor Base

a. By income level of country **b. By region**



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

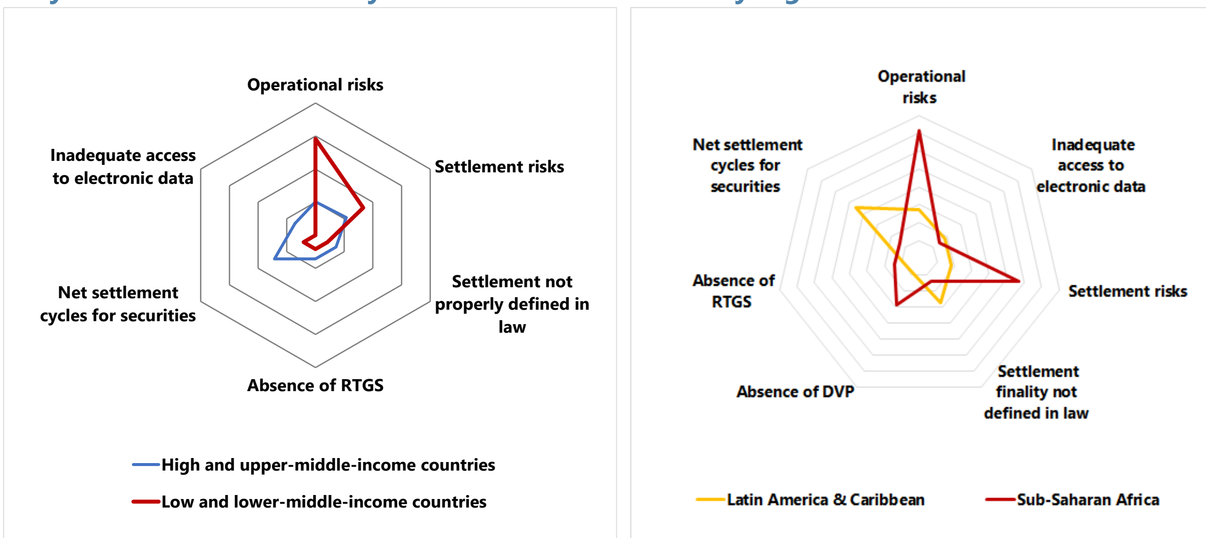
Source: IMF and World Bank staff

Market Infrastructure

Market infrastructure is crucial for low- and lower-middle-income countries. While market infrastructure is not impeding the market functioning for a large number of upper-middle- and high-income countries, in many lower-income countries the proper conditions for trading are not yet in place (figure B.9). In particular, the existence of multiple central security depositories is of concern to many of these countries. Staff capacity is another challenge reported across all income groups (figure B.10).

Figure B.9. Challenges in Market Infrastructure

a. By income level of country | **b. By region**

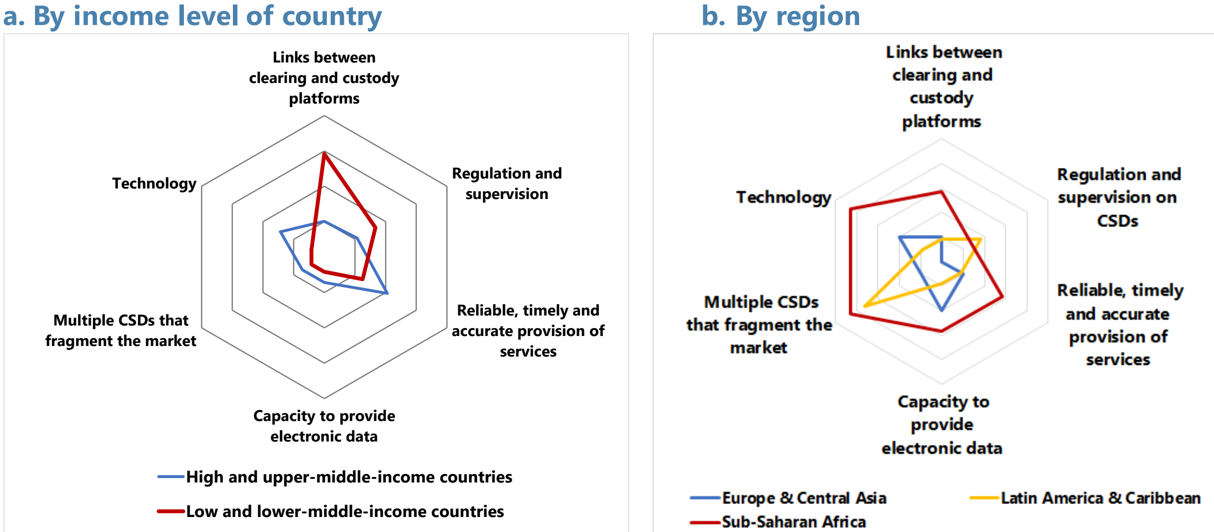


Note: Being closer to the edge signifies that more respondents address this factor as a more serious challenge. DVP = delivery versus payment; RTGS = real-time gross settlement.

Source: IMF and World Bank staff

Figure B.10. Central Security Depositories: Areas for Improvement

a. By income level of country | **b. By region**



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

Source: IMF and World Bank staff

Overall, the survey responses show that there is room for improvements in all the building blocks. The authorities could strengthen efforts to improve the foundational aspects of market infrastructure with a particular focus on reducing operational and settlement risks. They could also deal with structural constraints that are usually indicated by a nondiversified investor base. Policies in the three markets (money, primary, and secondary) can also be vastly improved.

Appendix C. Stylized Cases

Sequencing Policy Reforms

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

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

A stylized sequencing of the efforts required across all the key indicators of the six building blocks of the local currency bond markets (LCBM) framework is depicted in table C.1. The degree of effort required for each indicator is indicated by the shades depicted, where a lighter shade indicates relatively less policy effort and a darker shade indicates greater effort. Efforts may progressively increase or decrease across various indicators, depending on the market stage of a country. For each specific indicator, the policy effort may grow in relevance as the market progresses. Given the nebulous boundaries between the market stages, there could be a brief overlap between two phases in the degree of policy efforts required.[119] As such, the viability of policy measures as well as the balance of pros and cons for each of the reform actions should be analyzed on a case-by-case basis.

Phase 1

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

[119] For countries near the borderline between stages, it is likely that the policy effort could span more than one stage within and across building blocks.

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

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

Phase 2

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

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

Secondary market trades should be supported by the development of an active interbank market, especially in repos.[120] This in turn will require strengthening government cash management and central bank liquidity management. The operating framework of monetary policy during this phase needs to gradually encourage banks to reduce their reliance on central bank liquidity and incentivize engagement in interbank liquidity operations. This should be facilitated through greater transparency in money market transactions. As the central bank gains more operational independence in its monetary policy operations, authorities would need to decide on the use of government or central bank securities for monetary policy implementation, while ensuring that the market is not fragmented.

The role of market intermediaries in the primary and secondary markets should be established through supporting regulations. These rules should be supported by improvements in the supervision and risk management framework of the market participants. The initiation of the primary dealer (PD) system, where possible, can be considered to further consolidate the distribution of securities to end-investors and to provide a stimulus to the secondary market. The introduction of a PD system should be carefully assessed because for it to function well requires minimum preconditions at this stage,[121] including the viability of attracting enough PDs to the system and providing an effective balance of privileges and obligations that would stimulate an appropriate level of competition. Without the preconditions in place, primary dealers will not add value, and the risk of collusion will increase significantly.

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

[120] The interbank repo market should be supported by an appropriate legal structure that resembles classic repos and protects the lender's claims on collateral in the event of default.

[121] There are several requirements for a well-functioning primary dealer system. These include (a) stable macroeconomic conditions, (b) appropriate legal and supervisory systems, (c) an adequate payment system, (d) liberalized interest rates (the government must be committed to a market-based mechanism, (e) a stable, predictable, and transparent issuance policy (the government must be committed to transparent debt management practices), (f) a large and diversified investor base, (g) a market large enough to support a sufficient number of PDs to ensure competitive behavior, (h) sufficiently large outstanding debt to create liquid issues, (i) the debt management office's commitment to developing the market. (Silva and Baudouin 2010)

relationship between the two markets, supported by the development of a relevant yield curve. The standardization of securities and reduced frequency of primary auctions will be important during this phase to spur greater trades across various types of securities.

With the establishment of post-trade transparency, regulatory reform should aim at establishing pre-trade transparency. This could be achieved through an electronic trading screen or platform that could stimulate market-making activities of intermediaries, including PDs. At a later stage, efforts establishing exchange trades could consolidate the gains made in the secondary market.

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

Phase 3

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

The separation of debt management and monetary policy objectives would be supported by a clear and transparent institutional arrangement. To ensure such separation, the Ministry of Finance will be expected to take a lead on all debt management operational decisions in terms of the operating framework on debt management. The issuance strategy should be firmly anchored by the debt management strategy to impart greater predictability in issuances. The investor relations functions of debt management should also be fully functional during this phase. As the yield curve for longer maturities is established, much of the focus during this phase should be to enhance the robustness of the yield curve through active benchmark bond issuance policy and to promote secondary market activity. These efforts should be supported by liability management operations such as buy backs and switches. In larger countries, the issuance strategy could also aim to build a sizeable stock of benchmark bonds for inclusion in international indexes. The legal framework for debt management should provide the necessary flexibility for such operations.

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

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

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

Table C.1.: Sequencing of Policy Actions for Market Development

Reform Actions	**Phase 1**	**Phase 2**	**Phase 3**
Money Market			
(1) Well-functioning short-term securities and repo markets			
(2) Monetary policy operating framework			
(3) Monetary policy operations			
(4) Transparency			
(5) The legal framework for repurchase transactions			
Primary Market			
(1) Marketable domestic debt as a share of central government total debt			
(2) Stability of domestic market financing			
(3) Maturity of local currency marketable government securities			
(4) Length of the yield curve			
(5) Market-based pricing			
(6) Market-based placement mechanisms			
(7) Predictability and transparency of issuance			
(8) Government cash flow forecasts			

(9) Transparency of auction results			
(10) Transparency on communication between the authorities and market participants			
(11) Market fragmentation			
(12) Benchmark bonds			
(13) Cash and debt management			
Secondary Market			
(1) Market liquidity and depth			
(2) Pre-trade transparency			
(3) Post-trade transparency			
(4) Market-making duties			
(5) Market-making privileges			
(6) Trading environment			
Investor Base			
(1) Market participants			
(1.1) Depth and diversity of the banking sector			
(1.2) Depth and diversity of the non-banking sector			
(2) Investor relations management			
(3) Domestic institutional investors			
(4) Central bank monetary financing			
(5) Foreign investors			
(6) Buy-and-hold investors			
Financial Market Infrastructure			
(1) FMI technology platforms (FMI systems framework)			
(2) Security registration			
(3) Clearing and settlement risk (CSD and manual FMI processes)			
(4) Clearing and settlement risk (where there is a CCP)			
(5) Governance and access policies of CSD or CCP systems, or both)			
(6) Market segmentation			
(7) FMI liquidity support			
(8) Transparency (data and information)			
Legal and Regulatory			
(1) Borrowing authority			
(2) Market regulation and enforcement			
(3) Investor protection			
(4) Collective investment schemes			
(5) Legal framework for taxation			

Source: Staff illustration.

Note: The sequencing for each building block can be illustrated, in a stylized form, by the colors in the table. Darker colored cells indicate that greater attention should be devoted to that particular indicator. As countries move up the phases, the indicator might either become more relevant or, on the other hand, become an established practice that requires less policy effort needs to be undertaken.

CCP = central counterparty clearinghouse; CIS = collective investment scheme; FMI = financial market infrastructure.

Appendix D. LCBM and Financial Stability

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

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

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

Appendix E. Primary Dealers

E.1 Introduction

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

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

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

E.2 Outline of a PD System

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

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

- **PD obligations need to be balanced against rights and privileges.**
  Typical PD obligations include (a) bidding in the primary market, (b) placing government securities with final investors, (c) committing to quote firm prices and promote liquidity in the secondary market, (d) facilitating certain debt management operations, (e) advising the Debt Management Office (DMO) on its debt management strategy, (f) reporting on their activities in the secondary market, and (g) developing, through their marketing strategy, new client investment in the respective debt market.

  PD rights and privileges vary from country to country. In general, rights enable PDs to better perform their role, while privileges compensate PDs for their obligations. Common rights include (a) exclusive access to the primary market, (b) exclusive access to securities lending facilities offered by the DMO or the central bank, and (c) the opportunity to act as counterpart to the central bank's operations. Common privileges include (a) the right to carry the title of PD, (b) inclusion in the PD league table, (c) the right to participate in noncompetitive subscription auctions, and (d) preferential access to lucrative debt management operations. Some countries may also pay commission to their PDs, dependent on activity levels.

Rights and obligations need to be well balanced and calibrated on the basis of general considerations. Authorities should consider the following: (a) PDs need to be focused on an analysis of the LCBM building blocks, the gaps to be filled, and the value added that the PDs can bring to fill the gaps. (b) PDs should be dynamically reviewed, reflecting prevailing market conditions. (c) The DMO should not overburden PDs with excessive obligations. (d) Privileges should be carefully calibrated with privilege rewards being commensurate to the cost of the obligations taken up. (e) A broad, medium-term perspective needs to be taken on the benefits and costs.

- **A regular performance assessment framework needs to be designed.**[122]
  Performance evaluations for PDs should have at least three objectives: (a) to signal what are the most important duties and obligations on which the PDs should focus, (ii) to be a periodic assessment of how well the PDs discharge their duties, and (c) to constitute a way to encourage good performance. The pursuit of these objectives requires the design of a sound process, with the results of the performance assessment being periodically discussed with individual PDs to reach agreement on corrective actions and reward best performers. Also, the assessment should ensure the development and widespread adoption of ETPs and a sound FMI and should facilitate the enforcement of PDs' obligations and monitoring of their performance.

E.3 PDs System: Preconditions and Introduction Modalities

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

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

[122] Further information on this issue can be found in Silva and Baudouin 2010 and Jonasson and Papaioannou 2018.

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

- **Money market.** The money market facilitates short-term financing and inventory management, including covering short positions of market makers in government securities. More efficient and transparent money markets facilitate the effectiveness of a PD system. Money market institutional arrangements relating to regulation, transparency, and monetary policy framework and operations should be in a more advanced, developing stage, for a PD system to be effective. Also, PDs can help in the deepening of the money market by reducing liquidity risk premiums and thus determining effective short-term rates.
- **Primary market.** A PD system can be established if there is a long-term government commitment to domestic market borrowing, the amount of which is relatively stable and predictable over time. As additional preconditions for the efficient operation of PDs, the following primary-market policy indicators need to be in the developing stage: (a) market-based pricing and placement mechanisms should be well anchored for securities to be attractive, (b) issuance strategy should allow the liquidity to be concentrated on a few benchmark securities over which the initial market-making obligations of PDs could apply, and (c) there should also be transparency over the medium-term debt management strategy to provide a medium-term horizon for the investment strategy of market participants. Also, the introduction of a PD system can act as catalyst to improve issuance practices, increase transparency, and concentrate liquidity, thereby contributing to the advancement of the primary market from the evolving to the developing stage.
- **Secondary market.** A prerequisite for the introduction and efficient functioning of a PD system is a properly functioning secondary market, inclusive of adequate, cost-effective infrastructure for trading. This ensures an efficient and secure platform for market participants to trade securities in a fair and transparent manner. The PD system may also benefit from the introduction of an ETP to provide a platform for the market making. One of the objectives of the PD system's introduction may be to contribute to the development of the secondary market from an embryonic, evolving stage toward a developing stage. Capacity and expertise within the banking system to facilitate secondary market trading are also important.
- **Investor base**. A necessary condition for initiating a PD system is a growing domestic investor base, along with a sufficiently large number of banks of which at least five to six might act as PDs. The domestic institutional investor base will only grow if market liquidity is enhanced, which is a function of an increased number of investors. Further, because PDs function as intermediaries between the issuer and the end investors, the introduction of PDs can deepen the investor base by leveraging their distribution channels, marketing expertise, product innovation, and advisory services, and their market-making role.
- **Financial market infrastructure.** A PD system can hardly be considered if the FMI is underdeveloped or in its early evolving stage. Only a safe, sound, cost-efficient, and convenient-to-use FMI facilitates the smooth flow of transactions in the money, primary, and secondary markets, thus strengthening investor confidence and the efficient operation of

PDs. Access to a central securities depository, the existence of a delivery versus payment securities settlement system, and the dematerialization of government securities are additional indicators of an evolving stage toward development. Further, the introduction of a PD system may warrant additional investments in the FMI to fill any identified gaps.

- **Legal and regulatory framework.** The establishment of a PD system requires a robust legal, regulatory, and tax framework to ensure fair market practices, define clear rules and responsibilities of the different participants, safeguard domestic and foreign investors' interests, and deter unfair trading practices, such as market manipulation, front-running, and collusion. Further, PDs can serve as a catalyst for filling identified gaps in the legal and regulatory framework relating to participants' rights and trading practices.

Modalities for the introduction of a PD System

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

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

1. Assess that the preconditions for the introduction of a PD system are fulfilled;[123]
2. Assess that the introduction of a PD system is advantageous;
3. Canvass financial intermediaries for potential interest and assess that a minimum number of interested parties exists;
4. Call for the expression of interest and set up a working group among stakeholders and interested parties to jointly design rights, obligations, preconditions, and a roadmap;
5. Coordinate between the Ministry of Finance, the central bank, and the market conduct authority to agree on the respective responsibilities and exchange of information;
6. Formalize the relationship between PDs and authorities;
7. Design the PDs performance appraisal system with different performance parameters, weights, and reward mechanism; and

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

8. Formally launch the PD system when all steps have been completed and the necessary preconditions have been satisfied.

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

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

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

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

References

Anderson, Phillip R. D., Anderson Caputo Silva, and Antonio Velandia-Rubiano. 2010. "Public Debt Management in Emerging Market Economies: Has This Time Been Different?" Policy Research Working Paper 5399, World Bank Group, Washington, DC.

Árvai, Zsófia, and Geoffrey Heenan. 2008. "A Framework for Developing Secondary Markets for Government Securities," Working Paper 14/174, International Monetary Fund, Washington, DC.

Awadzi, Elsie Addo. 2015. "Designing Legal Frameworks for Public Debt Management," Working Paper, International Monetary Fund, Washington, DC.

BIS (Bank for International Settlements). 2007. "Financial Stability and Local Currency Bond Markets," Committee of the Global Financial System Report, No. 28, Bank for International Settlements.

BIS (Bank for International Settlements). 2019. "Establishing Viable Capital Markets," Committee of the Global Financial System Report, No. 62, Bank for International Settlements.

Bossu, W., C. Hillier, and W. Bergthaler. 2020. "Local Currency Bond Markets Law Reform: A Methodology for Emerging Markets and Developing Economies," Working paper, International Monetary Fund, Washington, DC.

Burger, John D., and Francis E. Warnock. 2006. "Local Currency Bond Markets," Working Paper 12552, National Bureau of Economic Research, Cambridge, MA.

Chan, T., K. Miyajima, and M. Mohanty. 2012. "Emerging Market Local Currency Bonds: Diversification and Stability," Working Paper No. 391, Bank for International Settlements.

Creehan, Sean. 2015. "Developing Local Currency Bond Markets Can Help Insulate Asia from Volatility." *Pacific Exchange* (blog), October 2, Federal Reserve Bank of San Francisco.

Eichengreen, Barry, Ricardo Hausmann, and Ugo Panizza. 2005. "The Pain of Original Sin." In *Other People's Money: Debt Denomination and Financial Instability in Emerging-Market Economies*, edited by Barry Eichengreen and Ricardo Hausmann, 14–47. Chicago: University of Chicago Press.

Essers, Dennis, Hans J. Blommestein, Danny Cassimon, and Perla Ibarlucea Flores. 2016. "Local Currency Bond Market Development in Sub-Saharan Africa: A Stock-Taking Exercise and Analysis of Key Drivers." *Emerging Markets Finance and Trade* 52 (5): 1167–94.

G20. 2011. *G20 Action Plan to Support the Development of Local Currency Bond Markets*, G20 Summit, Cannes.

Grigorian. 2019. "Nonresident Capital Flows and Volatility: Evidence from Malaysia's Local Currency Bond Market", Working Paper No. 19/23, International Monetary Fund, Washington, DC.

IMF (International Monetary Fund) 2002. "Chapter IV. Emerging Local Bond Markets." In *Global Financial Stability Report: Market Developments and Issues*, International Monetary Fund, Washington, DC.

IMF (International Monetary Fund). 2012. "The Liberalization and Management of Capital Flows–An Institutional View," Policy Paper, International Monetary Fund, Washington, DC.

IMF (International Monetary Fund) and World Bank. 2014. "Revised Guidelines for Public Debt Management," International Monetary Fund and World Bank, Washington, DC.

IMF (International Monetary Fund), World Bank, EBRD (European Bank for Reconstruction and Development), and OECD (Organisation for Economic Co-operation and Development). 2013. *Local Currency Bond Markets—A Diagnostic Framework*, July 9, International Monetary Fund, Washington, DC.

IMF (International Monetary Fund), World Bank. 2018 & 2020. *Staff Note for the G20 International Financial Architecture Working Group (IFAWG): Recent Developments on Local Currency Bond Markets in Emerging Economies.* Washington, DC: World Bank.

Jonasson, Thordur, Michael G. Papaioannou, and Mike Williams. 2019. "Debt Management." In *Sovereign Debt: A Guide for Economists and Practitioners*, edited by S. Ali Abbas, Alex Pienkowski, and Kenneth Rogoff. Oxford: Oxford University Press.

Jonasson, Thordur, and Michael Papaioannou. 2018. "A Primer on Managing Sovereign Debt-Portfolio Risks," Working Paper 18/74, International Monetary Fund, Washington, DC.

King, D., L. Brandao-Marques, K. Eckhold, P. Lindner, and Diarmuid Murphy. 2017. "Central Bank Emergency Support to Securities Markets," Working Paper No. 17/152, International Monetary Fund, Washington, DC.

Knight, J., B. Northfield. 2020. "Sovereign Investor Relations: From Principles to Practice," Working Paper 20/204, International Monetary Fund, Washington, DC.

Lu and Yakolev 1985. "Instruments, Investor Base, and Recent Developments in the Malaysian Government Bond Markets", Working Paper No. 18/95, International Monetary Fund, Washington, DC.

Malaysian Securities Commission. 2004. *Capital Market Development in Malaysia: History and Perspectives*. Kuala Lumpur: Malaysian Securities Commission.

Mihaljek, D., M. Scatigna, and A. Villar. 2002. "Recent Trends in Bond Markets," BIS Papers No. 11, Bank for International Settlements.

Park, Cyn-Young. 2017. "Developing Local Currency Bond Markets in Asia." *Emerging Markets Finance and Trade* 53 (12): 2826–44.

Park, Donghyun, Kwanho Shin, and Shu Tian. 2018. "Do Local Currency Bond Markets Enhance Financial Stability?" ADB Economics Working Paper Series No. 563, Asian Development Bank, Philippines.

Peiris, Shanaka J. 2010. "Foreign Participation in Emerging Markets' Local Currency Bond Markets," Working Paper 10/88, International Monetary Fund, Washington, DC.

Silva, Anderson Caputo, and Baudouin Richard. 2010. "Primary Deal Systems: Background Note." Gemloc Advisory Services for the World Bank, Washington, DC.

Silva, Anderson Caputo, Loic Chiquier, Thordur Jonasson, and Michael Papaioannou. 2016. "Development of Local Currency Bond Markets: Overview of Recent Developments and Key Themes," Seoul, Korea, June 20, Staff Note for the G20 IFAWG, International Monetary Fund and World Bank Group.

World Bank and IMF (International Monetary Fund). 2001. *Developing Government Bond Markets: A Handbook*. Washington, DC: World Bank.

World Bank. 2007. *Developing the Domestic Government Debt Market: From Diagnostics to Reform Implementation*. Washington, DC: World Bank.

World Bank. 2014. "Guide to the Government Securities Market Development Toolkit for Low-Income Countries – Finance and Markets Global Practice (GFMDR)", World Bank.