

**Good Practices in Developing Bond Market:
with a focus on government bond market¹
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Association of Southeast Asian Nations Plus Three**

I. Introduction and objectives

Beginning in 1997, Asia suffered a dramatic financial crisis. Thailand was first hit, followed by Indonesia and the Republic of Korea. The root cause, which created risks and eventually led to the crisis, was the so-called “double mismatch problem.” That is, businesses borrowed short-term bank loans in a foreign currency to finance long-term investments that generated returns in a domestic currency. This problem is structural and differs from a more traditional debt crisis caused by over-borrowing, such as those in Latin America in the early 1980s. Experts inside and outside the region identified the need to develop domestic bond market to address the root cause of the 1997/98 Asian financial crisis. This paper will not focus on examining the behavior of businesses and financial institutions in creating the double mismatch problem. Instead, it focuses on how countries in Asia addressed the problem by developing their domestic bond markets.

The crisis severely impacted the banking and financial systems of three countries, with repercussions that spread well beyond. The severity of impact differed from country to country, which led to different reform agendas in response. Yet, one thing in common across the region was that governments supported the stability of the banking and financial systems by recapitalizing distressed banks and financing the losses of finance companies. To do so, some governments in the region issued massive amounts of government bonds, which jump-started the development of the bond market in these countries. Thus, the crisis not only called for the development of local currency (LCY) bond markets in the long run, but also necessitated it in the short run.

The crisis-hit countries sought to build up their bond markets by bringing together a range of stakeholders in the effort. Finance ministries and central banks took on a strong leadership role in guiding the development of bond markets. In 2002, the 10 members of the Association of Southeast Asian Nations (ASEAN) and the People’s Republic of China (PRC), Japan, and the Republic of Korea—known collectively as ASEAN+3—jointly launched the Asian Bond Markets Initiative (ABMI) to pursue the region-wide promotion of LCY bond markets to address the root cause of the 1997/98 Asian financial crisis.

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Since then, the five original members of ASEAN plus the PRC, the Republic of Korea, and Viet Nam have achieved remarkable progress in developing their respective domestic bond markets.² Total market capitalization in the region has surpassed \$10 trillion and comprises more than 60% of the underlying gross domestic product (GDP) of the eight economies, which is 18 times larger than the pre-crisis level. Indonesia and Thailand made concerted efforts to develop their markets, including strong public debt management capacity. The Republic of Korea and Malaysia developed bond markets that are well balanced between the government and corporate segments with significant depth in both, while the PRC built-up the region's dominant bond market in terms of size. Many governments in the region have put in place sound market infrastructure in line with the level of development of their bond markets.

However, bond market development has been uneven across ASEAN+3. Brunei, Cambodia, the Lao People's Democratic Republic (Lao PDR), and Myanmar have only recently begun (or will soon need to begin) to tackle the challenges of starting a government bond market. In many countries, there is a need to further develop the corporate bond market particularly in the face of the increasingly tighter prudential framework for the banking system.

This study seeks to share good practices among selected members of ASEAN+3 in developing LCY bond markets, particularly government bond markets. It is meant to provide models and references for BCLM in tackling the challenges associated with bond market development. It is also meant to share the experiences of ASEAN+3 with the rest of the Asia-Pacific community and the wider world. Within the Asia-Pacific region, there are a number of countries that could benefit from the experiences of ASEAN+3. These lessons learned can also promote South–South cooperation between the Asia-Pacific and other regions such as Africa, the Caribbean, and Latin America. Finally, this paper will also contribute to an initiative of the Group of Twenty countries to promote LCY bond markets in the developing world.

This paper is organized as follows. Section II describes the role benefits of a government bond market. Section III discusses the status of public finance in Cambodia, Lao PDR and Myanmar and their need to tackle the LCY government bond market development challenge in reflection of the experience of Vietnam. Section IV examines building blocks of bond market, particularly government bond market. Section V discusses how to organize the effort to tackle the challenge. Section VI discusses experiences of selected countries in tackling it. Finally, Section VII discusses links of non-central government and corporate bond markets with government bond market for possible further future discussion.

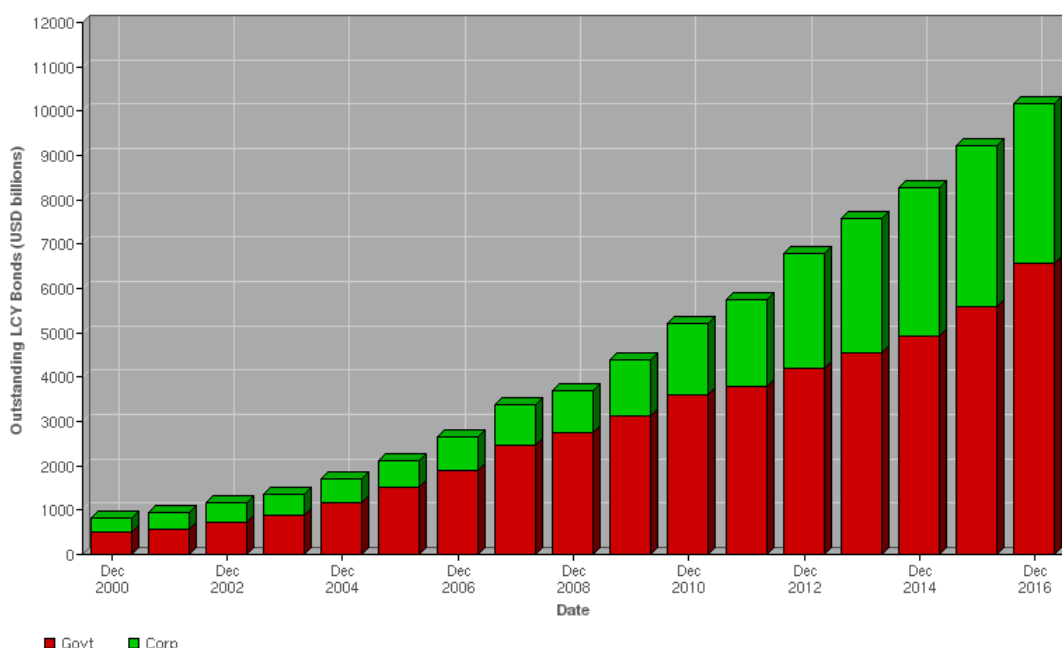
II. Role and Benefits of a Government Bond Market

LCY government bond markets enable the government to **fund public sector borrowing requirements** at competitive cost while avoiding risks associated with foreign currency funding.

² The five original members of ASEAN are Indonesia, Malaysia, the Philippines, Singapore, and Thailand. The bond markets of these five economies as well as those of the PRC; Hong Kong, China; the Republic of Korea; and Viet Nam are monitored by *AsianBondsOnline*, an online resource developed under ABMI and operated by the Asian Development Bank.

Prior to the 1997/98 Asian financial crisis, this basic role of a government bond market was barely exploited in developing Asia. Most developing countries in the region practiced conservative fiscal management while enjoying high growth rates. Public sector borrowing was largely limited to that from multilaterals and bilaterals with concessional terms and long maturities. On the other hand, the fast-growing private sector actively took advantage of low cost short-term funds that were readily available from foreign commercial sources. Ironically, governments' avoidance of borrowing from domestic markets prevented the development of their LCY bond markets. Meanwhile, private businesses relied on bank loans to finance their investments.

Historical Growth of ASEAN+3 LCY Bond Market excluding Japan



Source: *AsianBondsOnline*

The crisis changed this paradigm. As growing middle-income countries, they also needed to fund expanded infrastructure requirements lest they miss out on growth opportunities by not sufficiently investing in infrastructure and ensuring a sound business climate to enhance living standards. Most infrastructure projects generate returns in a domestic currency, thus requiring LCY financing to avoid currency risk. Borrowing from multilaterals and bilaterals also involves currency risk, although the overall risk is lower than with commercial borrowing due to concessional terms and long-term maturities. Thus, middle-income countries need to continue developing their LCY bond markets.

An LCY government bond market forms the foundation of an economy's financial and capital markets because these debt instruments are issued by the single largest and most creditworthy issuer in the economy, the government. Government debt bears the "full faith and credit of the

government” and is backed by the taxing power provided by the legislative branch. Government bonds are instruments for institutional investment and retail savings, and function as pricing benchmarks for other debt instruments in the development of wider financial and capital markets. Government bonds, as the highest-quality credit assets available, are also used as LCY collateral or margin assets to facilitate banks’ management of liquidity and counterparty risks. Their wide availability in the market facilitates banks’ mobilization of LCY deposits and promotes use of the domestic currency in the economy (i.e., de-dollarization). This enables the central bank to use government securities as a market-based instrument for monetary policy operations. Widespread use of the domestic currency in an economy enables the central bank to act as the lender of last resort and ensure the stability of the banking system.

Financial intermediaries and investors learn about fixed-income instruments by investing and trading in government bonds. Given typically high trading volumes, bond dealers can commercially justify building a dedicated fixed-income trading desk. They can also justify building a fixed-income research capacity. Without a government bond market, such business development would be difficult, especially in emerging markets. A large volume of highly standardized and creditworthy instruments held by a wide range of investors facilitates bond trading. The resulting high level of market liquidity can help to commercially justify development of a trading platform and a large-value settlement system. The establishment of such capital market infrastructure is difficult without a developed government bond market. Corporate bonds and other debt instruments can benefit from the availability of such market infrastructure, but they cannot by themselves commercially support its development due to their limited trading volume. It in turn is the result of market fragmentation of noncentral government bond market amid many diverse instruments and issuers. In that sense, a government bond market can cross-subsidize the development of the wider debt market.

Preconditions

For a government bond market to exist, the government must have borrowing needs generated by deficits and/or public investments.³ The country’s underlying economy should be of a minimum size that justifies the cost of market infrastructure, operation and supervision. Depending on the availability of alternative financing channels, a country with a very small economy might find other options more efficient.⁴ The threshold to support a government bond market has declined significantly due to falling costs for market infrastructure and bond administration with the advancement of information technology.

To ensure the healthy and sustainable growth of a government bond market, the government should put in place a prudent framework and sound capacity for **public debt management**. The government should carefully control deficits but be allowed to borrow to finance investments in

³ Examples of issuance without a public sector deficit exist but give rise to political and fund management challenges. Such borrowing can be justified in a small country with an international financial center in which the financial industry comprises an important segment of the economy.

⁴ Examples include syndicated bank loans, private placement of securities, development of retail markets, use of offshore market or regional solutions.

economically viable public projects that generate returns to ensure repayment of the money borrowed. The government should also be allowed to flexibly manage its short-term cash balances and refinance or reprofile existing debt to optimally manage it. Public debt management objectives could expressly include government bond market development.

Macroeconomic stability with controlled inflation is essential in mobilizing demand for long-term government bonds because inflation makes it difficult to evaluate the present value of future cash flows to be generated by a bond. Other things being equal, the issuance of government bonds with subsequent spending of the proceeds by the government tends to expand the money supply if the bonds are purchased by commercial banks. Direct purchase of government bonds by the central bank in the primary market is highly expansionary in terms of the money supply and, therefore, should be avoided in principle. Of course, this conventional wisdom has been recently revisited under the practice of quantitative easing by which central banks in the European Union, Japan, and the United States (US) have purchased massive amounts of government bonds to fight deflationary pressures. Either way, the authorities need to ensure price stability in order to competitively issue government bonds.

Crowding out is another macroeconomic concern that could arise. When a government regularly issues a large amount of bonds, it absorbs savings in the economy, leaving little resources available for the private sector. Even though the government will spend the proceeds from the bond sale and the money returns to the banking system, banking assets can be dominated by government bonds and banks' ability to lend to riskier private sector borrowers can be constrained. This especially happens when the central bank tries to contain expansionary and inflationary pressures generated by government spending. It could undermine private sector-led growth and compromise the effectiveness of government-led aggregate demand generation.

Another macroeconomic issue is the need to ensure adequate **intergenerational equity**. Government borrowing is expected to finance public investments rather than current expenditures or deficits. Many such public investments are expected to be in infrastructure. Assuming the average lifespan of an infrastructure is 50 years, then the borrowing to finance the infrastructure should be repaid over a period of 50 years so that the generations bearing the repayment burden can fully benefit from the infrastructure services. If the repayment period is too short, older generations would bear a higher repayment burden while younger ones will enjoy free infrastructure services. If the period is too long, older generations would receive cheap infrastructure services while allowing for the piling up of public debt with the burden falling on the shoulder of younger generations for whom the infrastructure is no longer available. The debt accumulation could continue to an unsustainable level, which could cause a public debt crisis. There are different schools of economic thought on the validity of this argument.⁵ However, it is considered prudent to set a reasonable repayment policy aligned with the life of the infrastructure.

⁵ The neoclassical or rational expectation school argues that people would start saving more as soon as they see a step up in the government borrowing, so the transfer of repayment burden would not be acute.

The financial sector should be adequately liberalized (e.g., interest rates, credit decisions), competitive, and solvent. The core of the banking sector needs to be sound, especially in a developing economy whose financial sector is dominated by banks. Banks are expected to be key participants in both primary and secondary government bond markets and to compete in pricing bonds, leading to price discovery of government bonds and the determination of market interest rates. In an early stage of bond market development, many governments struggle with volatile and unacceptably high auction yields and, understandably, often impose a ceiling rate. But as both the government and banks gain experience, the government needs to be a price taker, which will be discussed further below. Development of the government bond market will in turn facilitate interest rate liberalization.

III. Cambodia, Laos People’s Democratic Republic, Myanmar, and Viet Nam

Public finances in Cambodia, the Lao PDR, and Myanmar—collectively known as CLM—relies on concessional financing from bilateral and multilateral sources. These countries are at a critical juncture as all three have successively attained lower-middle-income status. CLM governments need to start preparing for their graduation from concessional resources and subsequently facing market-based costs for external financing. The CLM countries need to diversify their funding sources by developing domestic bond markets and reduce currency mismatch risks in financing public investments, particularly infrastructure. CLM countries are likely to have to continue importing capital goods for the construction of infrastructure. For as long as the infrastructure generates returns in local currency, it will be necessary to finance such investments with local currency as much as possible to reduce currency mismatch risks.

Governments also need to avoid currency mismatch risks and contingent liabilities in the case of public–private partnership (PPP)-based financing of infrastructure if payment commitments are in a foreign currency. If aggregate payment commitments in a foreign currency comprise a relatively large share of the (underdeveloped) foreign exchange market in an economy, it can lead to depreciation or devaluation of the local currency. This could in turn undermine the profitability of PPPs or the offtaker if the returns generated are in the local currency. It could trigger materialization of contingent liabilities on the government and cause major stress on fiscal finances and public debt management.⁶

Viet Nam has managed this transition process very well since mid 2000. It was reclassified in 2007 as an International Development Association (IDA)–International Bank for Reconstruction and Development (IBRD) Blend Country by the World Bank, and in 2009 as an Asian Development Fund (ADF)–Ordinary Capital Resources (OCR) Blend country by the Asian Development Bank (ADB). These events marked the start of Viet Nam’s graduation from IDA and ADF concessional resources and its use of IBRD and OCR priced based on a market-

⁶ The Lao PDR is a rare exception as it sells electricity to Thailand and receives royalty revenues in Thai baht. The Lao PDR’s state power company can sign power purchase agreements with independent power producers and commit itself to paying in Thai baht without leading to a currency mismatch risk because it is selling the electricity to Thailand and earning revenue Thai baht.

determined global benchmark rate, London Interbank Offered Rate.⁷ Viet Nam attained lower-middle-income status, based on the criteria of the World Bank, in 2010 when its per capita income surpassed \$996.

In anticipation of the start of graduation, Viet Nam explored ways to diversify funding sources in the mid-2000s. The Government of Viet Nam issued its first US dollar bond in the international market in 2005. The Ministry of Finance started regularly issuing domestic government bonds while consolidating domestic and external debt management functions to create a comprehensive public debt management capacity. It also started regularly publishing an issuance calendar and public debt statistics. Meanwhile, the growing availability of government bonds denominated in Vietnamese dong facilitated mobilization of dong deposits by banks and de-dollarization of the economy.

In February 2013, the Ministry of Finance issued the first comprehensive strategy for bond market development covering both government and corporate bonds. Viet Nam expects to fully graduate from World Bank IDA and be classified as an IBRD Only Country in 2017, and from ADB ADF and be classified as an OCR Only Country in 2019. The Government of Viet Nam is now revising its strategy to take domestic bond market development to the next stage in anticipation of the bond market's expanded role in funding mounting infrastructure requirements as Viet Nam strives to become an upper-middle-income country.

The CLM countries should strategize their anticipated graduation as Viet Nam has done.

IV. Building Blocks

The bond market is not a single institution but rather a place of interaction between issuers, investors, and intermediaries. It is built on market infrastructure for trading and settlement, and on laws and regulations including accounting rules and a taxation framework. Government bonds and their primary market are special parts of the broader bond market that are not governed by conventional securities law. Since government bonds are backed by the full faith and credit of the government, they are regarded as the safest asset in the economy. Disclosure of relevant financial information is provided through a parliamentary approval process for fiscal budgets and public debt management. As such, government bonds are referred to as “exempted securities.”

To strategize measures to develop a government bond market, the following building blocks should be assessed:

- (i) public finance and debt management,

⁷ Viet Nam was classified by the World Bank as an IDA–IBRD Blend Country to mark the start of graduation from IDA. Key factors in considering a graduation include (i) per capita income, (ii) public debt sustainability assessed by the International Monetary Fund and multilateral development banks, and (iii) institutional capacity and strength of the economy as assessed by multilateral development banks. Regarding (iii), ADB conducts a Country Performance Assessment and the World Bank conducts a Country Policy and Institutional Assessment.

- (ii) money markets and monetary policy operations,
- (iii) bond issuance and the primary market,
- (iv) investor base (institutions and retail),
- (v) intermediaries and secondary markets (including repurchase [repo] market),
- (vi) securities custody and settlement infrastructure, and
- (vii) accounting and taxation framework conducive to bond market development.

Challenging reforms are necessary within each building block, while some issues are interlinked and/or interdependent across the building blocks. Legal and regulatory issues are imbedded in all of them and therefore are to be considered within the context of each instead of as a separate building block.

(i) Public Finance and Debt Management

Public debt management is a foundation of the government debt market. It is built on a foundation of budget planning and execution, and fiscal management with effective monitoring, analysis, and control of revenues and expenditures. A legal framework must allow the government to borrow without undue constraints (borrowing authority), while being prudent to ensure debt sustainability. The principle of fiscal discipline and a balanced budget is very important but should not preclude the possibility of borrowing to finance economically viable public investments including those in infrastructure. A debt management legal framework should provide for a market-based funding strategy. An annual borrowing limit should be set in terms of a net, not gross, amount to allow the government to flexibly refinance and reprofile existing debt and manage short-term cash balances. A debt management legal framework should allow for effective communication and information sharing with the investor community and the central bank for coordination with monetary policy operations.

A legal and regulatory framework for government debt management should clearly state its objectives, which should include: (a) the timely and secure funding of required public sector finances and (b) doing so at the least cost in the long-term while taking into account the associated risks. The need to manage risks, in addition to minimizing costs, is particularly important. A framework should also define the delegation of the government's borrowing authority to debt managers to ensure that their borrowing binds the government to assume the liabilities arising from it. The responsibilities and functions of all officials involved should also be defined and publicly disclosed, including those related to debt issuance, restructuring, and refinancing; as well as secondary market arrangements, clearing and settlement (C&S) arrangements for government securities, and debt management policy advice. Effective execution of these actions requires an efficient and well-functioning domestic government debt market with a broad investor base. Therefore, a growing number of countries include government debt market development as the third objective of the public debt management.

Risks inherent in the structure of the government debt—currency, term, floating rate—should be monitored, evaluated, and mitigated by modifying the debt structure and identifying the cost of doing so. Debt managers should regularly conduct stress tests of the debt portfolio, taking into account possible economic and financial shocks to the government and the economy as a

whole. Debt managers should also carefully consider exposure to contingent liabilities, including those arising from PPPs, and their potential impact on the government's financial position. The government should have a policy to price guarantees and limit or deter the proliferation of contingent liabilities, and develop a mechanism and the capacity to finance such liabilities if and when they are realized (e.g., an extra-budgetary guarantee fund).

Government cash managers should consider the financial and other risk characteristics of the government's cash flows and ensure that its financial obligations are met cost effectively as they fall due. They need to be able to accurately project the volume and timing of the government's future cash inflows through tax, customs, and other revenues, as well as the volume and timing of outflows through salary payments, public expenditures, and redemption of outstanding debt, thus identifying future cash balances and profiles, including any seasonality. They should be able to timely replenish expected future cash shortfalls, typically by issuing short-term instruments such as Treasury bills or financing bills. Sound government cash management should stabilize, as well as minimize, the government's cash balance, thus enabling the government to reduce the volume of debt and associated costs.

To optimally manage the government's cash balance, funds should be kept in a single account, typically at the central bank in the form of a Treasury Single Account (TSA). A TSA not only facilitates fiscal and financial planning but also allows the relevant finance ministry to minimize the volume of idle cash with consequent cost savings. On the other hand, changes in the government's cash balance in the TSA directly impacts the reserve balance of the banking sector. The central bank therefore has to sterilize the impacts with day-to-day open market operations and stabilize the liquidity position of the banking system while influencing money market interest rates. The less volatile the cash flow across the TSA, the easier the central bank's monetary operations are to execute. The government also benefits from such operations of the central bank because a stable and predictable money market is helpful for the government to smoothly conduct its borrowing operations. Thus, the government and the central bank need to frequently communicate and systematically coordinate their actions, including exchanging cash flow forecasts, without compromising the independence of their respective monetary and fiscal policies.

Debt and cash management activities should be supported by an accurate and comprehensive management information system with proper safeguards. Sound business recovery procedures should be in place to mitigate the risk of business interruptions, including natural disasters, power cuts, social unrest, and terrorism.

(ii) Money Markets and Monetary Policy Operations

A central bank in an economy that is developing its bond market needs to avoid relying heavily on direct monetary policy tools such as interest rate control and credit ceilings, and instead use more effective indirect tools like open market operations. The Interbank market should be liberalized to allow banks to compete in pricing (interest rate) and actively trade money and bonds. The central bank can incentivize banks to trade liquidity actively by, for example, shortening the reserve compliance period. It could also exclude interbank borrowing from

reserve requirements.⁸ On the other hand, the latest regulatory approach under Basel III may encourage repo transactions to replace some interbank deposits or call loans as it could reduce capital charges against counterparty risk while allowing for repo securities to be recognized as high quality liquid assets depending on the form they take. Most importantly, the central bank needs to minimize excess liquidity in the banking system—the aggregate balance in commercial banks’ reserve accounts at the central bank in excess of the required reserves—on a day-to-day basis. It is key to creating the market conditions in which banks can competitively trade liquidity among themselves.

To manage the level of aggregate excess liquidity in the banking system, the central bank needs to closely coordinate with the government’s cash management operations because volatility in the government’s cash balance directly impacts the reserve balance of banks at the central bank. When the government receives tax and other revenues, commercial banks’ current accounts at the central bank are debited to make payments to the government. An opposite impact on the banks’ reserve balance is caused when the government spends its cash.⁹ The central bank needs to sterilize such impacts on the banks’ reserve balance with day-to-day monetary operations.

To absorb daily excess liquidity in the banking system, however, the central bank should avoid relying heavily on a standing accommodation facility. An accommodation facility offered by the central bank tends to be effective in absorbing excess liquidity because it exposes banks to no counterparty risk under the Basel III capital accords. It can be particularly effective when it is generously remunerated.¹⁰ But then banks would not trade liquidity among themselves, and the interbank money market would not develop. The central bank needs to reduce the remuneration and penalize banks that do not seek counterparties in the interbank market and come to the central bank to dump the excess liquidity.

The government needs to be able to manage its cash balance to minimize idle cash, volatility, and seasonality. Some government revenues are received periodically and some expenditures such as salaries are made periodically, which creates seasonal volatility in the government cash balance. Such seasonality should be predictable. Major payments by the government associated with procurement for public projects can be anticipated, provided that the finance ministry communicates closely with line authorities and state-owned enterprises. Thus, the finance ministry should be able to predict such seasonality and counteract its impacts by prefunding anticipated shortages with Treasury bills and redeeming those against anticipated surpluses.

A key tool in managing government cash balance is the TSA, which consolidates cash holdings of different line authorities into one account while maintaining notional subaccounts for the line

⁸ This requires that there is no conflict with the spirit of the latest regulatory approach under Basel III that discourages market-based funding (i.e., net stable Funding ratio).

⁹ Another major cause of volatility in banks’ reserve positions is the seasonality in the demand for bank notes.

¹⁰ For example, if it offers an interest rate competitive with the interbank market rate.

authorities. A TSA is to be held at the central bank and linked with an interbank payments system. The central bank can observe the TSA balance as well as outgoing and incoming payments on a day-to-day basis. Thus, the central bank is well positioned to provide management services for the government's cash balance as a fiscal agent. The central bank can manage the issuance and redemption of Treasury bills on behalf of the government and conduct the rough-tuning of the cash balance. It can also auction the remaining government cash balance daily in the interbank market to minimize idle cash and optimize returns on the balance.¹¹ Clearly, the monetary policy department of the central bank and the government cash and debt managers need to closely communicate and coordinate their daily operations while not compromising the independence of their respective monetary and fiscal policies.

The issuance of Treasury bills contributes to the deepening of the money market. The central bank can use repos on government bonds with banks to stabilize the reserve balance of banks. The finance ministry can also consider allowing the central bank to conduct add-on issuances of Treasury bills as part of its monetary operations.¹² Banks, on the other hand, trade their cash surpluses in the money market. As bond dealers, banks can also fund their holdings of government bonds in the money market. A key instrument for such funding operations is repos, whether with the central bank or with other market participants as counterparty. When the term structure of interest rates is upward sloping, banks can trade liquidity along the yield curve and earn returns through the term transformation. Such activities by banks and the central bank further deepen the money market and its linkages with the government bond market.

(iii) Bond Issuance and the Primary Market

The government should develop an issuance strategy based on the funding requirements and their timing, instruments and issuance methods, investor base, and the level of market access by different groups of investors. The government needs to provide market participants and the public with sufficient information about its debt structure, funding needs, and debt management strategies. This includes an amortization schedule, issuance calendar, description of outstanding securities, schedule for reopening and buyback operations, and treasury cash balance. In formulating debt management strategies, the government needs to systematically consult key market participants to understand sources of demand, select appropriate instruments to mobilize demand, and remove impediments to investing in them.

The government needs to develop instruments to mobilize demand from different sources. To promote wide acceptance by a broad range of investors, a simple design is important. Fixed-coupon bonds are the most common type of instrument, with the coupon rate being near auction

¹¹ The Bank of Canada auctions government's cash balance to zero it every day. It enables the Canadian government to fully earn returns on its cash balance while eliminating the impact of government cash balance seasonality on the banking system liquidity.

¹² In UK, the debt management office issues add-on Treasury bills at the request of the Bank of England to help the central bank conduct sell operations when it does not have a sufficient stock of government securities. The arrangement allows the central bank to avoid issuing its own securities, which would fragment the market. However, the government and the central bank need to agree upfront on the cost sharing for such operations.

yield. Floating-rate instruments could attract demand from investors who need to manage interest rate risk. However, floating-rate instruments are not expected to be traded actively, significantly limiting secondary market liquidity. They also require reliable 6-month money market rate to price the floating rate, which is not commonly available in emerging markets. Floating-rate instruments have been found to be useful in Latin American economies that have historically suffered from inflation and weak savings. However, many Asian economies have a strong savings culture and have been able to issue medium- and long-term fixed-coupon bonds from an early stage. Many Asian economies have struggled more with building a sound government cash management capacity using short-term Treasury bills. Inflation-linked bonds are now increasingly found in economies where pension funds are growing.

The government needs to be a price taker in issuing bonds. If it cannot avoid controlling the yield in the primary market due to an unacceptably high yield or volatility in the early stage of market development, it needs to identify steps to become a price taker as soon as possible. It is possible to place government bonds at a below-market rate by motivating market participants with regulations.¹³ However, a negative side effect of such practice can be severe: the secondary market fails to materialize because the first seller in the secondary market would be forced to accept significant capital losses.

The government needs to develop capacity to employ several issuance methods such as **competitive auction, syndicated underwriting, private placement, and tap issuance**. The government should select its issuance method and instruments depending on the market conditions and demand sources. Competitive auction is most useful for benchmark bonds regularly issued in large quantities to experienced market participants. Syndicated underwriting is useful for tapping new sources of demand or for the introduction of new instruments for which demand is uncertain. Private placement can be negotiated to place very long-term bonds to a small number of expected investors such as pension funds and life insurance companies. Tap issuance can be used to mobilize demand from retail investors and nonfinancial corporate treasuries.

The dematerialization of securities (electronic securities) has greatly enhanced the feasibility of the direct sale of bonds to end investors. Online networks offer new possibilities for the government to tap demand directly from end investors. They are particularly useful in tapping demand from retail investors because of an extensive reach to the public at low marginal costs.¹⁴ The government, or the central bank acting as its fiscal agent, must establish a sound electronic bond registry. Individuals could buy bonds through intermediaries such as banks and broker-dealers or fixed-income mutual funds. In the case where a mobile telephone company maintains retail investor accounts, special regulatory arrangements would be necessary.

¹³ For example, by accepting government bond holdings as part of banks' required reserves.

¹⁴ There are a growing number of internet-based platforms to sell government bonds around the world. For example, Kenya's M-Akiba enables individuals to buy government securities using a mobile phone.

Nevertheless, the government generally needs to emphasize competitive auctions to enhance the reliability of market-determined yield. This can be done as primary market participants gain experience in competitive bidding and as the institutional investor base is broadened. Emerging markets tend to start with single-price auctions and consider adopting multiple price auctions as market participants gain experiences in bidding. A mixed auction is another option, which has been adopted in the PRC, and is useful in promoting price discovery in the primary market by institutions with stronger pricing ability while at the same time allowing more institutions with less pricing ability to participate.¹⁵ The government needs to periodically update and announce its issuance calendar to the market to help primary market participants in preparing to bid aggressively at auctions. It needs to develop a methodology to **reopen** and refinance existing series of bonds to consolidate them into a limited number of large **benchmark** series to enhance their tradability and thus secondary market liquidity. It also needs to be able to refinance bonds series as they shift in and out of relevant benchmark maturity segments and avoid the concentration of redemptions.

More advanced issuance techniques, such as **buyback programs**, **exchange offers**, and **switch auctions** should be used to refinance existing bonds and standardize instruments to promote their liquidity in the secondary market. An issuing strategy should weigh the preferences of investors against the government's own cost and risk targets and debt management objectives. It should seek to promote benchmark issues in key maturities that facilitate the growth of secondary markets. Effective coordination between the fiscal and monetary authorities is essential for avoiding auction failures, especially when the central bank issues its own securities or bills in maturity segments in which government securities are also issued.

The government can consider establishing a **primary dealer (PD) system** to promote the development of both the primary and the secondary markets. A PD system can include a set of privileges and obligations for PDs, although there is no common international definition of what constitutes a PD system. A common idea is for the government to provide certain privileges for qualified intermediaries acting as PDs in exchange for their performing certain obligatory services to help the government meet its debt management objectives.

Generally, the privilege of being a PD comes from exclusivity in accessing the primary and secondary markets (e.g., the exclusive right to participate in government bond auctions), which can lead to reduced competition and increased risk of collusion among PDs. PDs are also often designated to be exclusive counterparties to the central bank in its open market operations, thus benefiting from seeing monetary policy signals ahead of other market participants. As such, when nonbanks are included among PDs, they are given current accounts at the central bank in some countries. On the other hand, obligatory services could include commitments to bid to purchase a certain share of government bonds issued over a certain period, sell them to a wide

¹⁵ In a mixed auction, the bidders whose bidding interest rates are lower than or equal to the average winning bid buy the bond at the average winning bid, while the bidders whose bidding interest rates are higher than the average winning bid buy the bond at their own bidding interest rates.

range of end investors, regularly and frequently provide the government with feedback on market demand, and actively make a market for government bonds. Market making to create liquidity in the secondary market for government bonds is often key to maximizing the benefit of a PD system.

Market making is a risky business for bond dealers, and only well-capitalized and competent bond dealers can perform it. It necessitates a two-step approach to establishing a PD system. The government, or the central bank acting as its agent, first needs to select qualified intermediaries based on objective criteria such as financial soundness, capital base, competency in monetary and fixed-income research, and the presence of a fixed-income trading desk with qualified fixed-income traders. Next, the authority needs to monitor an intermediary's performance against its obligations as a PD, including market making over a period of time, to eventually finalize the selection of PDs. Performance monitoring must continue indefinitely because an underperformer needs to be replaced with a qualified intermediary to make membership in the PD system contestable. Otherwise, this exclusive club could become uncompetitive. Monitoring the performance of intermediaries in terms of market making is often challenging when the secondary bond market is poorly organized, resulting in a lack of transparency.

The feasibility of market making is preconditioned upon the achievement of delivery-versus-payment (DVP) settlement of bond trades, the development of repo markets, and/or the availability of government securities lending services. It is because DVP settlement can significantly reduce the counterparty risk in market making. Repo market or government securities lending services can reduce the inventory of government bonds that a market maker needs to hold, thus reducing the interest rate risk associated with holding inventory. Interest rate or government bond futures and when-issued market can also help a market maker reduce the inventory of bonds it needs for market making and hedge the interest rate risk associated with holding inventory. When such preconditions are unmet, market making can be a highly risky business for bond dealers and may not be feasible, thus reducing the viability of a PD system.

Thus, designing a sustainable PD system requires careful consideration of market conditions. One of the most basic conditions is that there should be an adequate number of market participants and investors because otherwise limiting the participation in the primary market would excessively weaken direct demand and competition in the market. Therefore, a PD system is generally unsuitable for a very small economy.

Governments need to consider the pros and cons of a PD system in the context of the latest technology available in organizing the primary and secondary markets. In the primary market, it is increasingly possible for the government to directly reach out to end investors to place bonds and mobilize demand widely given the availability of public networks with low marginal costs such as web-based platforms on computers and mobile phones. In the secondary market, the availability of an electronic trading platform can enhance market liquidity and reduce the value addition of market-making services, although greater transparency could facilitate the performance monitoring of PDs. From the standpoint of bond dealers, the better organized and

more transparent secondary market is squeezing the bid–ask spread, leading to market making being less lucrative. These developments are altering the pros and cons of a PD system and its optimal design. Governments need to consider the adoption of a PD system in this new environment.

(iv) Investor Base (Institutions and Retail)

Government securities should be accessible to different groups of investors. A broad and diverse investor base—with different investment time horizons, risk appetites, and trading motives—is vital for ensuring stable demand for government securities across various tenures and promoting an active and stable secondary market. A heterogeneous investor base and the resultant high level of liquidity are critical for enabling the government to execute its funding strategy under a wide range of market conditions.

The structure and composition of the investor base is closely linked to the state of development and sophistication of a country’s financial system. A diverse investor base with diverse investment motives and time horizons stabilizes demand for bonds among various maturities. The development of contractual savings institutions is critical to diversifying the investor base since pension funds and insurance companies provide a natural market for medium- and long-term government debt.

In frontier market economies where the nonbanking financial sector is small, banks tend to form a core group of investors in the government securities market in addition to their role as intermediaries and custodians of these instruments. Broadening the investor base beyond the banking sector is a key challenge for such markets. It requires the development of contractual savings institutions (pension funds and insurance companies), collective investment funds, and the asset management industry. It is also increasingly important to reach out to retail investors and corporate treasuries, and allow the participation of foreign investors with appropriate macro-prudential safeguards.

Asia trails behind Latin America with respect to pension reforms. Among ADB’s developing member countries, only Kazakhstan and Georgia have second pillar pension schemes, which can be understood as funded (defined contribution) schemes, with mandatory participation for all wage earners, that are privately and competitively managed. While involving its own challenges, second pillar pension funds drive the accumulation of long-term savings over an extended time horizon in a predictable manner. With the lack of such schemes, Asian economies are struggling to meet the strong demand for long-term finances despite high levels of gross domestic savings. Some upper-middle-income Asian economies, as well as high-income ones, are already entering the ageing cycle of their population. They need to strengthen funded pension schemes to ensure the sustainability of public pension and social security systems. At the same time, Asian governments need to recognize funded pension schemes as

both providers of old-age financial security and long-term institutional investors as many Latin American and East European countries have done.¹⁶

The presence of insurance companies is growing in emerging Asian economies. In addition to their core insurance business, life insurers can offer annuities. Retirees can invest a portion of their lump-sum retirement benefits to buy annuities if their pension fund or provident fund does not directly offer annuities. In that way, insurance companies, together with pension and provident funds, can build a large pool of long-term savings that can be a major source of demand for long-term, fixed-income securities.

While pension reform is a major social and political undertaking, collective investment schemes can be developed in conjunction with the asset management industry. Contractual savings institutions could benefit from opportunities to invest in fixed-income collective funds. Fixed-income funds comprising government bonds offer a safe deposit substitute for retail investors. In pursuing such developments, investor education is important. Inexperienced retail investors in emerging markets often lack understanding of why funds in government securities can lose or change value on a daily basis. In some cases, a significant loss of net asset value has triggered panicked runs on fixed-income funds, which exacerbated volatility in the secondary market and made it difficult to place new government bonds in the primary market. Open-end mutual funds are more vulnerable to such runs, especially when they invest in long-term government bonds instead of short- and medium-term ones. Thus, appropriate securities regulations for investor protection are necessary in addition to investor education.

Government bonds as highly creditworthy and liquid securities are suitable for retail investors. That justifies direct sale to retail investors by use of today's information and communication technology to mobilize demand. Information and communication technology also enables direct mobilization of demand from nonfinancial corporates and foundations, among others. Yet, direct sale to end investors creates a pricing challenge, which can be addressed only through a competitive institutional market.

Foreign investors can bring valuable capital into emerging markets through fixed-income markets. Liquid markets like a government bond market tend to attract foreign investors, especially in high-growth Asia with its prospects for real appreciation of local currencies in the long-term. Yet, demand from foreign portfolio investors with foreign currency liabilities can be cyclical as they are sensitive to currency risk. Bond market can address the double mismatch problem in the balance sheet of businesses that caused the 1997/98 Asian financial crisis, but it in the process creates a new channel of potentially cyclical foreign capital flows that can cause macro-level stress to foreign exchange liquidity in the economy (international reserves) and the exchange rate. Thus, the government needs to put in place a macro-prudential framework to monitor and control speculative investments.

¹⁶ Chile has been a leader in Latin America in terms of pension reform, followed by Colombia and Peru, among others. In Eastern Europe and the former Soviet Union, the Czech Republic, Hungary, Kazakhstan, Poland, and Russia had developed second pillar pension funds, while Georgia is currently establishing one.

Foreign investors in LCY bonds need to hedge their currency risk to feel comfortable in increasing their investment exposure to this asset class. As such, the development of deep and liquid foreign exchange and derivatives markets complements the growth of the LCY bond market. Many developing Asian economies restrict participation of foreign investors in their onshore derivatives market, and there is limited convertibility of their currencies. This has led to the formation of offshore non-deliverable forward markets to address the strong demand for risk management and hedging tools to manage risk from onshore exposures, typically with investments in LCY bonds. More developed financial markets allow foreign investors access to the onshore derivatives market, which broadens and deepens not just the investor base for LCY bonds, but also the onshore derivatives market.

Emerging market authorities should consider making the over-the-counter (OTC) foreign exchange derivatives markets more transparent and safer for trading, for example, by use of a trade repository for transparency or a central counterparty for clearing to reduce counterparty risk. That should allow more effective regulation of the market and risk management among its participants, and help facilitate hedging by investors, including foreign investors. Doing so should help integrate the onshore and offshore markets, and deepen and broaden the integrated market. For standardized foreign exchange derivatives such as foreign exchange futures and options contracts, listing the products on an exchange can also help smaller regional institutional investors with limited access to the offshore non-deliverable forward market benefit from a regulated, safe, and inexpensive trading environment. Such arrangements should facilitate small institutional investors of the region to hedge their exposures as prime brokers have reduced their credit lines to them.

To manage capital flows, host country authorities need to understand two things. One is the source and nature of money (identities of end investors and their investment motives) and the other is the destination of the money (whether the money is invested in short-term liquid assets or long-term illiquid ones). A key challenge for the authorities is to distinguish between bona fide long-term foreign investors and short-term speculators. Even if some foreign funds appear medium- to long-term oriented, the performance of their fund managers is evaluated in the short-term based on fair value accounting rules (mark-to-market or mark-to-model). That makes their behavior short-term oriented and pro-cyclical, especially when they are open-end funds. The Qualified Foreign Institutional Investor scheme of the PRC, or a locally adapted equivalent, can be effective in addressing this. Adoption of a Legal Entity Identifier assigned to each legal entity can help identify and monitor end investors offshore and their investment motives.¹⁷ Financial regulators will be able to assess risks at the firm level as well as at the systemic level.

A more fundamental challenge in this regard is to develop a deep and diverse domestic investor base, particularly an institutional investor base, that can absorb the shocks that may be caused

¹⁷ The Legal Entity Identifier was developed by the Group of Twenty to identify business entities uniquely so that their financial transactions in different national jurisdictions could be fully tracked. It is [non-proprietary](#) data that is freely accessible to all. Over 435,000 legal entities from more than 195 countries have now been issued with Legal Entity Identifier.

by capital flows. The improved ability of emerging Asian bond markets to withstand the shocks of the tapering of quantitative easing by the United States Federal Reserve demonstrated this well. The government bond markets of Indonesia and Malaysia, which had and still have a higher proportion of foreign holdings than other Asian markets, are good examples.

(v) Intermediaries and Secondary Markets (including Repo Markets)

Well-functioning secondary markets promote efficient price discovery and **transparency**, facilitate liquidity and risk management, and bolster the development of the primary market. They do so by providing a cost-efficient environment in which market participants can trade in a fair and transparent manner. They provide an exit mechanism for investors in medium- and long-term securities, while permitting governments to issue long-term debt to better manage their exposure to interest rate and rollover risks.

Developing an active and liquid secondary market requires sufficient market intermediaries and institutional investors with diverse motives to invest and trade appropriate instruments using different transaction types and well-established trading mechanisms. Such mechanisms cover not only the standardized transaction conventions and technical infrastructure for trading, clearing, and settlement facilities, but also prudential and business conduct rules, effective market surveillance, and investor protection. Different groups of market participants—such as dealers, interdealer brokers, and institutional investors—play different roles in the market and are faced with different business interests that often conflict. A sound secondary market structure is one that reconciles and balances them well.

Trading activity and liquidity are heightened when a competitive market structure is established. To enhance the tradability of government bonds, bond instruments need to be consolidated in a limited number of standardized and simple instruments (benchmarks). Transaction costs, including transaction taxes, need to be minimized. Market infrastructure needs to be made operationally efficient and robust, and market participants should have varying transaction needs and investment horizons. Primary dealers or market-makers and interdealer brokers that facilitate trading among dealers often contribute to greater market liquidity.

Bonds are traded predominantly in OTC markets, which tend to lack transparency unless conscious efforts are made to better organize them. As a starting point, **transaction conventions** should be standardized in accordance with international standards. Private market information vendors are usually not able to fully capture all transactions because only major market participants with high trading volumes can afford to subscribe to their expensive systems. Thus, market participants, particularly bond dealers and interdealer brokers, should be required to report their transactions (post-trade price and volume) to a designated **trade repository** immediately (e.g., within 10 minutes) after the trade. There should be arrangements in place to monitor compliance with this requirement and penalties imposed for noncompliance. The trade repository or its associated trade information system should publicly provide information on benchmarks.

The role of trade associations and self-regulatory organizations (SROs), such as a bankers' or a bond market association, is important in enhancing the efficiency and transparency of the market and reliability of benchmarks. It is the role of such trade associations and SROs to promote the standardization of transaction conventions. They can also register bonds and play the role of bond pricing agency for illiquid bonds that commercial market information vendors may not be able to provide.¹⁸ Emerging bond markets as well as some more developed bond markets have a significant number of bonds that are not traded every day. The availability of pricing information for such illiquid bonds not only facilitates trading but also enables institutional investors to evaluate or disclose the net asset value of their bond portfolios and comply with prudential requirements. Therefore, bond pricing agencies need to develop models to rationally price such bonds.

Trade associations and SROs also need to play an important role as an administrator of money and bond benchmarks. Their failure to play a proper role can result in unreliable benchmarks as was seen in the case of LIBOR manipulation. Benchmarks are used to price all money and debt instruments, including loans for consumers, and their manipulation can cause profound damage to the public's trust in money and debt markets. The central bank and/or the securities regulator should consider requiring the registration of market information vendors with a requirement to provide monitoring access to the market through their terminals. It is because the administrator of benchmarks needs to rely on the platforms of the vendors and their networks to collect pricing information from market participants, process it, and disseminate it back to the market.¹⁹ In doing so, it is increasingly important to make use of post-trade transaction information instead of relying on pre-trade price quotes by dealers. If their platforms enable market participants to execute trades, they should be more formally regulated because they would be functioning as a trading platform.²⁰

They could also better organize the secondary market by using electronic trading platforms to promote market transparency and liquidity, and to enhance the reliability of benchmarks and the yield curve. The secondary market and its platforms should be designed to reconcile the conflicting business interests of bond dealers and buy-side investors. Bond dealers are reluctant to share their price quotes (pre-trade price information) beyond their clients because they invest their resources through monetary and fixed-income research. Even with their client buy-side investors, they wish to disguise the cost of their inventory of bonds, while buy-side investors wish to know it as a basis for price negotiations with the dealers.

An electronic interdealer platform should allow interdealer brokers to play an appropriate role to organize the OTC market. In a developing economy whose financial sector is dominated by banks, the interbank or interdealer market tends to form the core of the overall secondary bond

¹⁸ In the Republic of Korea, commercial bond pricing services are provided by rating agencies in a competitive manner.

¹⁹ See the relevant Principles for Financial Benchmarks by the International Organization of Securities Commissions (2013).

²⁰ Examples include Regulation of Alternative Trading Systems in Europe and the United States.

market because banks predominantly play the role of bond dealer. An electronic trading platform needs to support this market segment. An interdealer platform should allow dealers to quote prices to each other so that they can trade among themselves competitively and adjust their bond positions.

Dealers need to disguise their identities to their counterparties while controlling their exposures in accordance with the counterparty limits they set for each of them. They could do so with the help of interdealer brokers. If the trading platform provides a functionality to control counterparty exposure limits, they could do the same by use of the platform. Some interdealer brokers offer such electronic platforms and trading services. But trading in such a “blind market” must be supported by DVP settlement. DVP eliminates principal risk, the largest component of counterparty risk.²¹ Without it, market participants in a blind market would be exposed to large counterparty risk without knowing the identity and risk of the counterparty. When they face stressful market conditions, market participants might completely stop trading in the market except for in a face-to-face manner with fully trusted counterparties.²²

As contractual savings and other institutional investors grow, it becomes important to support the dealer-to-client segment of the market with a platform. In fact, it is generally desirable to support this segment of the market from a relatively early stage. By combining the two market segments (interdealer and dealer-to-client segments), a multi-dealer platform can be developed. It should allow buy-side investors to request quotes from multiple dealers to compare and choose the best price for execution, thus enhancing transparency, competitiveness, and efficiency. By capturing a wider market, the market price and volume information should also be more reliable and representative.

A repo market needs to be developed as a special segment of the secondary market. It is a key instrument for banks to trade fund liquidity while controlling counterparty risks and is critically important for promoting bond market liquidity. A well-functioning repo market is a precondition for feasible market making by dealers, thus leading to the successful implementation of a PD system. A master repurchase agreement should be adopted to standardize the repo transactions in line with international practices. The development and adoption of a master repurchase agreement should involve all key participants of a repo market, including both banks and securities brokers.

There are different legal forms of repos, which generally can be categorized into two types: pledged repos and repos with title transfer. The former does not allow repo buyers to reuse (rehypothecate) the repo securities to obtain liquidity, thus the efficiency and liquidity of the instruments and the market would be limited. It could also create uncertainty about the repo buyer’s ownership of repo securities in the event of bankruptcy of the repo seller because repo

²¹ Without DVP, if market stress mounts, market participants could shift to face-to-face trading only with a very limited number of highly qualified counterparties. In a highly stressful situation, the market could completely collapse, making it very difficult for dealers to manage their liquidity

²² An example includes the Thai Bond Dealers’ Club at the time of the 1997/98 Asian financial crisis.

securities are to be booked with the seller under accounting rules. The latter type with title transfer, or so-called classic repos, could give the repo buyer greater security in the event of default or bankruptcy of the repo seller. Most ASEAN+3 economies with a repo market have adopted this type of repo with title transfer. If the title transfer allows rehypothecation, it facilitates market making by bond dealers and, therefore, enhances the feasibility of a PD system.

However, rehypothecation could create systemic risk. A clearing and settlement system needs to provide efficient clearing of repo transactions with effective management of repo collateral and enforcement of margin requirements. Appropriate third parties and/or market infrastructure such as a central securities depository (CSD) should provide repo securities substitution services with appropriate prudential limits if rehypothecation is allowed.

It is important to ensure that the bankruptcy framework permits close-out netting of repo positions among repo market participants in the case of default by or bankruptcy of one of the participants. In countries with a continental civil code legal tradition where a core of accounting rules are built into law, the requirement to book repo securities with the seller (borrower) can compromise the right of the repo buyer (lender). It is because the court could rule in favor of the seller (borrower) if its bankruptcy is brought to it even if repo agreements give ownership right of the repo securities to the buyer (lender). This possibility is higher if the repo seller is a bank with many retail depositors who are senior creditors and are protected under banking law. Legal authorities, the central bank, the securities regulator, and market participants need to work together to address this issue to support the development of a repo market.

(vi) Securities Custody and Settlement Infrastructure

Government securities trades involve frequent transfers of large values of both money and securities that can expose market participants and investors to significant systemic risks. Frequent high-value transfers could also involve significant time value of money, requiring swift settlement. Thus, a highly safe and efficient clearing and settlement system is required to support the smooth operation of the market. A C&S system needs to provide efficient, economical, and convenient services for market participants to reduce transaction costs. It should provide fair access to broaden and deepen market participation while controlling the counterparty risk.

As a starting point, government securities should be **dematerialized** and safe-kept in a central custody system in the form of electronic records. To legally support dematerialization, securities law should recognize electronic securities records as evidence of securities ownership, registration, and transfer. On the money leg of the settlement process, the central bank's money should be used to ensure safe settlement since the central bank is the only plausible entity that can readily provide necessary fund liquidity while withstanding counterparty risk. A C&S system must achieve DVP to eliminate principal risk, the most serious element of counterparty risk. By substantially reducing the counterparty risk, DVP enables market participants to enlarge counterparty exposure limits, thus helping broaden the market and activate the trading. Active

repo transactions or market making are often impossible unless DVP is achieved in the C&S process.

As the market grows, it is necessary to adopt **real-time gross settlement (RTGS)** for payments to achieve Model 1 DVP.²³ The central bank needs to either incentivize or require banks to use an RTGS payment system by providing intraday liquidity support since RTGS requires a high level of fund liquidity. Securities custody and payments systems should be interconnected to enable the central bank to automatically collateralize the intraday credit by taking an appropriate portion of the bank's long holdings of government bonds as collateral. The interconnected systems should also be able to rapidly avail government securities for market participants as collateral or margin assets to cover their exposures in various financial instruments and to counterparties.²⁴ Market participants also need to pledge or repo government securities to readily obtain fund liquidity from the interbank market or the central bank.

In parallel, the central custodian of government securities should consider providing **government securities lending services**. The central custodian safe-keeps government securities owned by its participating intermediaries and their client investors. Therefore, it needs to make an arrangement to systematically borrow government securities to create a pool of government securities out of which it can lend. Such government securities lending services should provide only very short-term lending services limited to ensuring sure and timely settlement of government securities trades and should not allow long-term speculation.

Because of the need to build interconnected systems, it is necessary to strategize the use of government securities in a master plan for financial market infrastructure development. A consensus should be built on whether the central bank or a national CSD should safe-keep government bonds, considering pros and cons. The central bank can often offer central custody and core clearing services for government securities at low cost. When the central bank provides such services, however, arrangements should be made to allow market participants as user of the services to govern the provision of the services. The central bank should also accept qualified nonbank participants in the government bond market to have money accounts as well as securities accounts so as not to give banks unfairly advantageous access to this critical market infrastructure.

The C&S process involves a trade-off between safety and cost efficiency. Net settlement reduces the fund liquidity requirement in comparison to RTGS. However, the netting builds up interdependent trades and, therefore, creates systemic risks. RTGS eliminates systemic risk but requires greater money liquidity supported by the central bank for its operation. An efficient C&S system is one that strikes an optimal balance between the liquidity requirement and the

²³ Model 1 DVP refers to payments against the delivery of securities on a transaction-by-transaction basis instead of netting.

²⁴ In trading in various financial instruments, market participants inevitably take positions and are exposed to risks. To manage risk exposure, market participants are required by a clearing house to submit margins in the form of highly creditworthy and liquid assets. Aside from cash, government securities are often accepted to satisfy such margin requirements.

systemic risk, but the optimal balance differ from one market to another because the trading volume and patterns differ. The market authority and C&S system operator should guide market participants to strike a desirable balance. Being concerned about systemic stability under its policy mandate, a central bank often provides inexpensive intraday liquidity to entice (or require) market participants to use RTGS to minimize systemic risk in the government securities trades.

The backbone of a well-functioning C&S system is operational efficiency and reliability supported by a clear and sound legal framework which is enforceable with a high degree of certainty and speed. The legal framework includes property and insolvency laws as well as laws specific to the operation of securities settlement systems. Detailed operational rules and regulations need to be provided by the regulatory authority and the C&S system operator in line with the recommendations by the Committee on Payments and Market Infrastructures and the International Organization of Securities Commissions.²⁵

For markets aiming to attract large foreign investments in bonds and securities, efficiently linking the national CSD with an international central securities depository (ICSD) is important.²⁶ International institutional investors prefer to hold securities from different markets in one central place where liquidity from the sale of securities from one country can be readily used to fund the purchase of those from another country. In the case of possible misconduct or wrongdoing, however, market regulators are unlikely to be able to inspect or investigate an ICSD that does not have a host computer system or database within the domestic jurisdiction. Foreign investors may not be willing to directly invest in securities of an emerging market economy whose domestic currency is not fully convertible and therefore cannot be handled by the ICSD because foreign investors need to obtain convertible currency in the host country market. Regulatory authorities and national CSDs of emerging market economies need to consider these factors before establishing linkages with an ICSD.

(vii) Accounting and Taxation Framework Conducive to Bond Market Development

Taxation of financial transactions, instruments, interest, and capital gains has major impacts on the financial market development. Poor tax policies can create serious impediments to the proper functioning and healthy development of the bond and capital markets. They can also affect the saving, investment, and financial behaviors of borrowers, savers, and investors.

A framework for capital income taxation should, in principle, provide a level playing field for all savings and investment instruments, including government bonds.²⁷ An examination of the tax framework needs to take into account impacts of not only taxes on specific forms of capital income such as interest income, dividends, and capital gains, but also the underlying personal and corporate income tax framework. Any tax incentives should be carefully considered so as

²⁵ Principles for Financial Market Infrastructure, Committee on Payments and Market Infrastructures and International Organization of Securities Commissions (2013).

²⁶ Examples include Euroclear and Clearstream.

²⁷ Mervyn A. King and Don Fullerton. 1983. *The Taxation of Income from Capital: A Comparative Study of the US, UK, Sweden, and West Germany—The Theoretical Framework*.

not to create distortions, gaps, or loopholes, and to avoid unintended tax incidence caused by price elasticity of demand and supply of capital.

Tax administration should be clearly understandable, practical, and enforceable. A transactions tax is often adopted in place of an income tax for ease of tax collection and administration. But it needs to avoid inadvertently impeding the trading of government bonds, particularly repo transactions. Tax treatment of foreign investors and applications under tax treaties should be clear and understandable. The use of withholding tax for ease of tax collection and administration should avoid creating complications or uncertainty in the tax treatment of foreign investors.

Tax exemption for certain investors or instruments are found in many countries. Pension funds are usually exempted from a tax on their investment incomes. Local government bonds in some countries are tax exempt. These arrangements necessitate close monitoring of the proper application of tax exemptions and increase administrative costs. They also tend to fragment the bond market between taxable and tax-exempt investors, complicate the pricing of instruments and thus compromising market efficiency.

Accounting rules for fixed-income instruments should be clear with respect to those held to maturity and those available for trade. Fair value accounting (mark-to-market or mark-to-model) of fixed-income portfolios encourages institutional investors and banks to trade bonds actively while facilitating the management of interest rate risk. However, the implementation of International Financial Reporting Standard 9²⁸ is challenging in many emerging markets that lack liquidity and, therefore, price transparency.

V. Nature of the Task: Sequencing, Mapping, and Institutional Arrangements

The building blocks discussed in section IV identify common elements in the challenges of bond market development across countries. However, markets with different levels of development face different challenges at different times within and across these building blocks.

Challenges in addressing the issues and implementing the reform measures identified above tend to arise from two angles. First, many reform measures are interdependent in varying degrees because a bond market is not a single institution but a place of interaction. No single party, including the government, can dictate this development process, and all stakeholders must play their part. A successful implementation strategy must identify critical paths and appropriate sequencing to achieve an optimal result. Market and economic circumstances can change over time, sometimes quickly. Thus, there should be continuous consultation among stakeholders to ensure the most effective implementation.

The second challenge stems from the fact that this effort requires cooperation among stakeholders and market participants whose interests often conflict. They must be brought

²⁸ IFRS 9 promulgated by the International Accounting Standard Board addresses fair value accounting for financial instruments.

together to achieve the ultimate common goal of bond market development. This requires strong leadership from policy making authorities, particularly the finance ministry as the issuer and the central bank as the key market operator. Securities and contractual savings authorities also need to play important roles. Market operators—such as exchanges, CSDs, and clearing houses—and participants should also actively play their parts.

Many countries that have successfully developed an LCY bond market adopted a high-level interagency bond market committee, led by the finance ministry and the central bank, to guide and coordinate the implementation of interdependent tasks. Some countries faced difficulties in forming an interagency committee due to different structures of the government and/or the status of the central bank in relation with the government. It is highly preferable for both the finance ministry and the central bank to exercise leadership roles even if one (usually the finance ministry) takes on primary responsibility, or if they cannot officially form an interagency committee. Experiences show that the lack of either party playing a leading role in the effort is likely to result in limited outcomes.

Interagency committees should develop a roadmap by identifying priority reforms in the building blocks and examining interdependence among them. They should also develop more detailed action plans along the roadmap to guide and coordinate the implementation. It can then assign an appropriate member(s) of the committee to lead each task and ensure that feedback from the task teams is communicated to the committee for review and guidance. Committees need to monitor implementation progress and periodically review the action plan (and the roadmap) to ensure the relevance of actions and the effectiveness of coordination.

In prioritizing actions, studies should be conducted immediately as they facilitate identification of specific interdependencies among tasks and actions. The studies should also identify actions requiring legislation. Preparation for such actions should be initiated as soon as possible since legislation often takes time. A comprehensive study of the tax framework is recommended at an early stage because rational taxation is a key prerequisite for building a liquid and efficient secondary market. Tax reform also tends to take time if legislation and/or strict tax revenue neutrality is required. Tax reform measures are generally not pre-conditioned upon prior or simultaneous implementation of other reform measures. This effort should be led by the tax authority and the securities regulator.

Beyond studies and tax reform, efforts to enhance the public debt management framework and primary market reform should generally precede actions to boost the secondary market. This is because poor debt management or an uncompetitive primary market often leads to fragmentation or distortions that make it difficult to trade bonds in the secondary market. However, this does not mean that all actions and reform measures to enhance debt management and the primary market must be completed before any actions to improve the secondary market can be taken effectively. In fact, there are significant interdependencies between the primary and secondary markets.

Multiple **task teams** can be formed under the interagency committee. The committee can identify tasks and guide the formation of task teams. Each task team should formulate a detailed

action plan for its specific task and such plans should be aggregated to become the committee's **master action plan**. The master action plan should be publicly announced through the websites of the finance ministry, the central bank, and other members of the interagency committee, and updated periodically as needed.

Updating of the master action plan will be necessary because of uncertainties and unanticipated factors. For example, certain key policy measures may not be implemented without related legislation by the parliament or the government. Market development tends to be opportunistic, which makes the actions under the master plan moving targets to some extent. Conflicts of interest among various stakeholders can also cause delays in implementation of some reforms. Thus, the proposed updating and public announcement mechanism will be useful in keeping market participants informed of future actions and maintaining strong reform momentum.

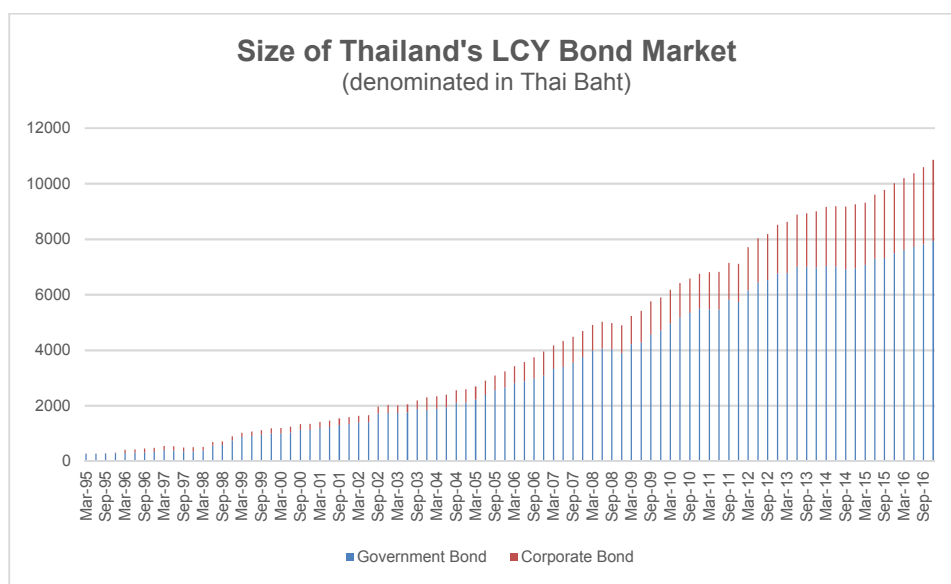
Task team leaders should be identified on the basis of the (i) relevance of the tasks to the authority and the areas of competency of potential leader institution, and (ii) absence of a potential leader institution's vested interest in the task. The former may be obvious but the latter should be carefully considered, particularly when a private sector institution needs to be a task leader. In addition, legal experts may also be invited from various authorities and the financial sector to participate in these task teams. For example, the involvement of experts from the legal department of the central bank, the securities regulator, and/or the insurance regulator will be indispensable when task implementation precipitates legislative changes.

The scope of responsibilities of the committee may be revisited over time so that the committee can revise the scope of its responsibilities after achieving its original objectives of developing the government bond market. A typical and natural step after achieving these objectives is to shift focus to the corporate bond market. It is often useful and/or necessary because state-owned enterprises and major financial institutions can play leading roles as key issuers in the corporate bond market. They can create implications on contingent liabilities of the government.

VI. Country Cases—Thailand, Indonesia, Malaysia, and Viet Nam

This section first discusses the cases of Thailand and Indonesia that were successively hit by the Asian financial crisis of 1997/98, which led them to make concerted efforts to build their markets

Thailand



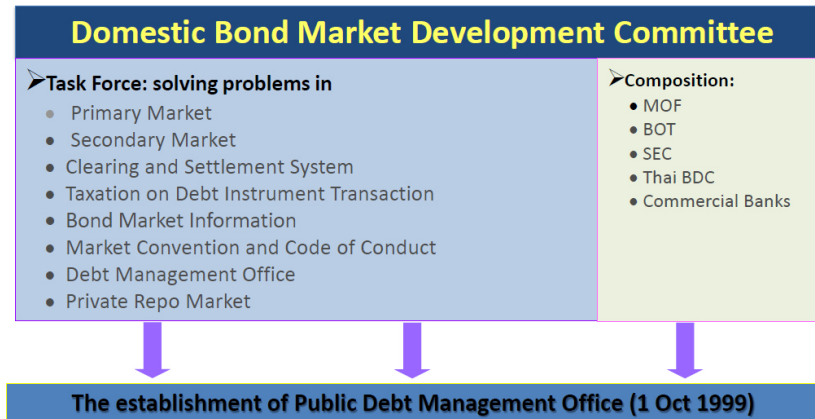
Source: *AsianBondsOnline*.

The 1997/98 Asian financial crisis forced Thailand to let the baht float, which led to more than a 50% depreciation of the currency. The depreciation brought down many businesses with foreign exchange exposures, causing massive losses to banks and finance companies. To finance the losses and ensure the systemic stability of the banking and financial system, the Ministry of Finance (MOF) issued an unprecedented amount of government bonds and government-guaranteed bonds.²⁹

Government bonds issued in 1998–1999 amounted to THB500 billion, or the equivalent of 10% of gross domestic product at that time. Since the domestic bond market had not been developed yet, Thailand's financial system relied on commercial bank loans. The Financial Institution Development Fund, which is housed in the Bank of Thailand (BOT), stepped in to absorb the losses.

The MOF examined how to develop the bond market as an alternative funding source by establishing the Domestic Bond Market Development Committee to encourage stakeholders in the public and private sectors to participate in the formulation of a domestic bond market strategy. The committee comprised representatives of the BOT; MOF; Securities and Exchange Commission, Thailand (SEC); Thai Bond Dealing Center; and commercial banks. The committee established eight task forces to resolve problems in their respective areas. The MOF worked intensively to develop legislation for the establishment of the Public Debt Management Office in 1999. Figure 2 below shows the structure of the committee and its relevant task forces.

²⁹ Government-guaranteed bonds included Financial Institutions Development Fund bonds.



Source: [Public Debt Management Office](#).

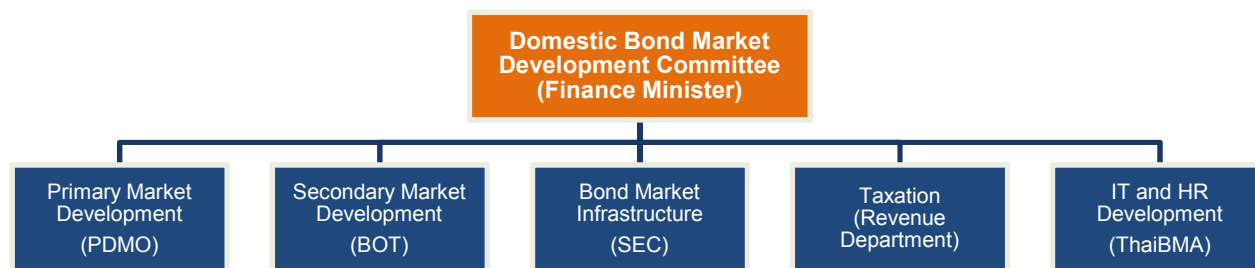
The MOF developed its first Domestic Bond Market Development Plan, 2000–2004, resulting in a notable change in terms of bond types, market infrastructure, and operation of the market for debt instruments.³⁰ Significant changes were observed, including publication of an issuance schedule and establishment of the secondary market’s interest rate yield curve that has served as a benchmark for maturities of up to 20 years. A DVP system was also introduced and RTGS was implemented through the BOT’s BAHTNET system. Other relevant reforms included the introduction of a PD system and private repo markets.

Following the implementation of the second Domestic Bond Market Development Plan, 2005–2014, the Domestic Bond Market Development Steering Committee was established. It is chaired by the minister of finance and solicits the participation of the BOT Governor; Secretary–General of the Securities and Exchange Commission of Thailand; President of the Stock Exchange of Thailand (SET), President of the Thai Bond Market Association (ThaiBMA); and key market participants.

Five subcommittees were also established: (i) Primary Market Development, (ii) Secondary Market Development, (iii) Bond Market Infrastructure, (iv) Taxation, and (v) Information Technology and Human Resources Development. As implementation has progressed, the committee reviewed and updated the roadmap and addressed new challenges. Figure 3 shows the structure of the Steering Committee.

³⁰ *A Century of Thai Bonds* published by Public Debt Management Office, Thailand

Domestic Bond Market Development Steering Committee, 2005–2014



Source: [Public Debt Management Office](#).

The Public Debt Management Act B.E. 2548 (A.D.2005) was amended to allow the MOF to issue bonds for restructuring and socioeconomic development in addition to financing the budget deficit. To promote liquidity in secondary market, the BOT established the bond lending unit and the collateral management unit to maintain market participants' confidence in short-sales transactions. The BOT also upgraded the BAHTNET payments system to BAHTNET II, which could support both large value interbank payments in RTGS and the registration and transfer of government securities. As a large volume of government bonds were introduced to the market, the BOT guided banks to use RTGS capable BAHTNET II to reduce systemic risk as the trading volume accelerated. Subsequently, the custody function for government bonds was transferred to the Thailand Securities Depository Co., Ltd., a wholly owned subsidiary of the Stock Exchange of Thailand, while the BOT's BAHTNET system was still made available to investors.

The Thai Bond Dealing Center, which operated an electronic bond trading system, was reformed to be the Thailand Bond Market Association (ThaiBMA) in September 2005 and formally recognized as an SRO by the SEC. Since then, ThaiBMA has assumed responsibility for market monitoring and surveillance to ensure compliance with relevant regulations, fairness, and efficiency. It has played important roles in establishing ethics and code of conduct, developing market convention and standards, and becoming the bond information center and bond pricing agency. Members of ThaiBMA include banks and securities firms that have securities dealing license granted by SEC.

In 2006, the Steering Committee determined that trading system should be centered at the Stock Exchange of Thailand while ThaiBMA would focus on its functions as an SRO and bond information center.

As the government bond market was further established, the Steering Committee revised its roadmap to focus increasingly on the corporate bond market. Consequently, the SEC began taking a more central role in promoting the corporate bond market.

Indonesia



Source: *AsianBondsOnline*.

Indonesia took a more authority-led approach in response to the severe losses in the banking sector during the 1997/98 Asian financial crisis. Several financial institutions were closed or taken over by the government as a precondition for getting a financial assistance package from the International Monetary Fund. The first government bond was issued in 1999 as payment for the shares bought by the government to ailing banks, which were known as recapitalization (recap) bonds. The recap bonds began trading on the secondary market in 2000 and grew significantly from IDR32 trillion in 2000 to around IDR712 trillion in 2011. The financial crisis also led to the establishment of Indonesian Bank Restructuring Agency in 1998, which was mandated to segregate bad assets and recapitalize viable banks. Government bonds were issued and directly placed to Bank Indonesia for the purpose of financing the recapitalization of banks. Most of these bonds were nontradable and index-linked.

The Ministry of Finance established a debt management unit in 2001 with responsibility for managing the government bond portfolio. In 2002, the government securities law was issued as the basis for a legal framework for the issuance of government securities.

To further enhance the development of the government bond market and serve the government's decentralization program, the Law on Fiscal Balance Between Central Government and Regional Government was enacted in 2004 (Law 33/2004). The law allowed local governments to borrow from the public by issuing local government bonds (municipal bonds). The central government does not guarantee local government bonds so as to promote market-based financing.

To manage all government debt, including foreign loans, and to develop Islamic finance instruments, the debt management unit was transformed into a debt management office in 2006

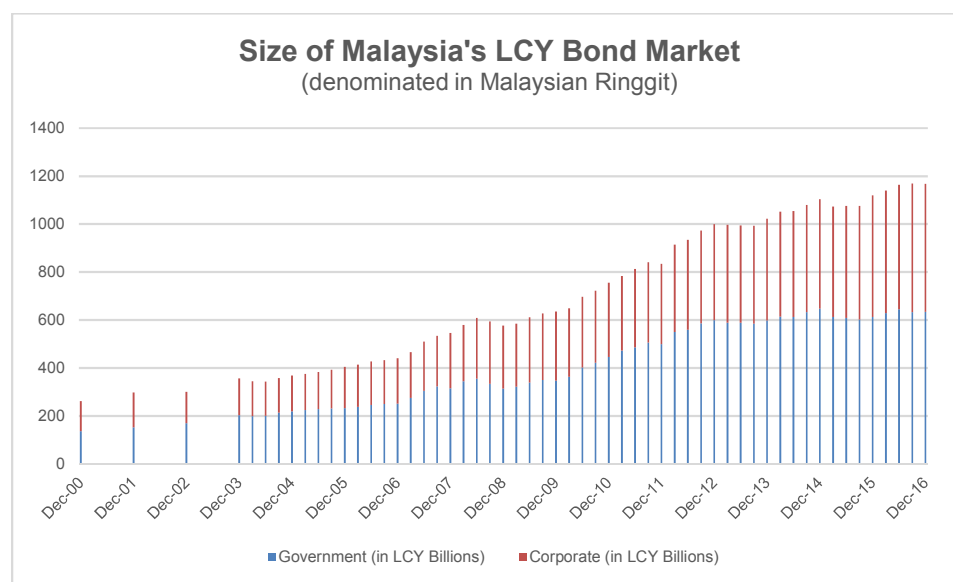
by merging the Directorate of External Funds and Directorate of Government Bonds Management. In 2011, the Ministry of Finance entered into a memorandum of understanding with the Ministry of State Owned Enterprises requiring state-owned enterprises (SOEs) to act as stand-by purchasers of government bonds in the event of sudden capital outflows. Under the scheme, a bond stabilization framework was created to help protect the economy in case of sudden capital flight.

In accordance with the mandate of Act No.21 of the Financial Services Authority, 2011, Otoritas Jasa Keuangan (OJK) was established as the single regulatory authority for financial and capital markets in Indonesia, effective 31 December 2012. As of 1 January 2013, OJK effectively took over the remit of the previous Capital Market and Financial Institutions Supervisory Agency (BAPEPAM-LK) for capital markets and of the Ministry of Finance for nonbank financial industry supervision. The functions of banking supervision and regulation effectively transferred from Bank Indonesia to OJK on 1 January 2014. Responding to its mandate for the integrated regulation and supervision of the financial sector, including the bond market, OJK established in 2014 a national team for bond market development that consists of OJK as chair plus Bank Indonesia, the Ministry of Finance, and SROs such as the Indonesian Stock Exchange and Indonesia Bond Pricing Agency. The team focuses not only on government bond market development, but also on the corporate bond. It has facilitated regulators in formulating policies and coordinating, while addressing cross-cutting issues to increase liquidity in the bond market (e.g., taxation issues). Some of the main recommendations that have been executed include the establishment of a Bond Index in 2014 and a Global Master Repurchase Agreement in 2016.

Given Indonesia's early stage of bond market development, OJK issued a regulation in January 2016 (No.1/POJK.05/2016) requiring institutional investors such as pension and insurance funds to invest in government bonds. The regulation was subsequently revised to also include bonds issued by SOEs and their subsidiaries. It is expected that the investment obligations will catalyze the bond market by familiarizing institutional investors with government bonds. The urgency is due to the fact that the majority of institutional investor assets, which should be natural buyers of long-term assets such as bonds, are heavily focused on short-term instruments, indicating a mismatch in the financial sector.

Since the Government of Indonesia issued foreign-currency-denominated government securities for the first time in 2004, all payments of principal and interest for both conventional and Islamic foreign-currency-denominated government bonds are made free and clear of withholding taxes. This policy is stipulated in the Budget Law and followed by Ministry of Finance regulations every year. For fiscal year 2016, the regulation was published in June 2016 with effectiveness from January to December 2016.

Malaysia



Source: *AsianBondsOnline*.

The Malaysian bond market has a relatively long history dating back to the pre-crisis era. It has developed on a step-by-step basis over time, attaining a level of depth and diversity exceeding that of most other bond markets in the region.

The development dates to the 1960s and 1970s when the first Malaysia Government Securities (MGS) was issued to meet the investment needs of the Employees' Provident Fund (EPF), banks, and insurance companies. The EPF, an agency under the Ministry of Finance, was initially required to invest at least 50% of its funds in any 1 year in MGS. The Government of Malaysia issued MGS to finance public sector investment during the 1970s and early 1980s. In the late 1980s, MGS were used to finance deficits and repay some of the government's external loans.³¹ Since then, the issuance of MGS has slowed partly due to a reduction in the borrowing program as well as the government's initiative to promote private-sector led investments.³² As a result, the development of debt securities in Malaysia has been largely achieved through the growth of corporate bonds.

A PD system was implemented by Bank Negara Malaysia (BNM) in 1989 to promote the development the primary and secondary markets. PDs were given privileges such as accepting repos of less than 1 month from non-interbank customers. However, this privilege was removed and replaced with the privilege of participating as both borrower and lender in the newly launched Securities Borrowing and Lending Program under Real-Time and Gross Settlement System (RENTAS) and allowed to participate in repo and reverse repo transactions for the purpose of hedging activities.

³¹ [The development of debt markets in Malaysia by Dato' Salleh Harun](#)

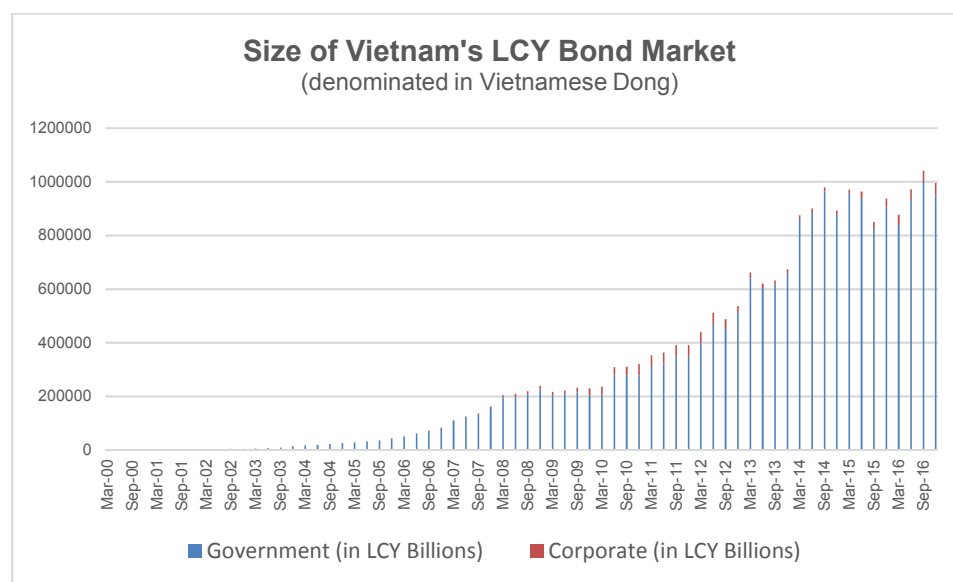
³² *ibid*

In 1999, the Government of Malaysia established the National Bond Market Committee (NBMC) to provide policy direction and coordinate a regulatory framework for the development of the Malaysian bond market. The NBMC was chaired by Secretary General of Treasury, Ministry of Finance and comprised senior representatives from BNM, the Securities Commission, Economic Planning Unit, Companies Commission of Malaysia, and Bursa Malaysia. One of the key recommendations of the NBMC was the introduction of program issuance of MGS. The purpose of regular and frequent issuance of MGS was to allow the market to use MGS as a benchmark and to develop a yield curve. The schedule of MGS auctions began in March 2000. The NBMC also suggested the prescribed percentage for the EPF to invest in MGS be reduced to 30% because the issuance of MGS was insufficient to meet the EPF's investment needs, which has greatly distorted bond market liquidity and the development of the Malaysian bond market.

In 2006, BNM launched Bond Info Hub, a one-stop center detailing all bond-related information in Malaysia. Bond Info Hub is the primary source of information on the Malaysian bond market for the global investment community. In addition to being a key initiative to promote the domestic bond market, Bond Info Hub acts as a conduit to correct misconceptions, especially among foreign investors, about the state of market development in Malaysia. Also in 2006, the SC issued Guidelines on the Registration of Bond Pricing Agencies to complement the government's objective of building more efficient and liquid conventional bond and *sukuk* (Islamic bond) markets.

In 2013, Bursa Malaysia Securities introduced the rules to facilitate Exchange-Traded Bonds and Sukuk to be listed and traded on Bursa Securities to provide access to wider group of investors. The rules were part of a project under the National Key Economic Areas aimed at offering greater choices for investors seeking products that yield stable returns with capital protection.

Viet Nam



Source: *AsianBondsOnline*.

Viet Nam developed an approach to tackle bond market development challenges in a concerted manner even though it was not impacted by the 1997/98 Asian financial crisis on the same scale as other countries in the region. By the mid-2000s, the Ministry of Finance recognized the need to develop a bond market, starting with the government bond market, because it anticipated the graduation from concessional resources of multilateral development banks and bilateral donors in the foreseeable future. It saw a need to diversify funding sources and reduce the reliance on foreign currency finances and risks associated with them. As a result, the Vietnamese bond market is mainly dominated by government bonds, while commercial banks are the largest investor group in the bond market.

The Government of Viet Nam issued the first US dollar bond in the international market in 2005. In parallel, the Ministry of Finance started regularly issuing domestic government bonds while consolidating domestic and external debt management functions to create a comprehensive public debt management capacity. It also started regularly publishing an issuance calendar and public debt statistics. The growing availability of LCY government bonds facilitated mobilization of LCY deposits by banks and de-dollarization of the economy.

To support the government's attempt to reform Vietnam's financial markets, the Vietnam Bond Market Forum was formed in November 2006 to promote bond market liquidity through dissemination of market information and standardization of commercial activities among local and international commercial banks, securities companies, fund management companies, and insurance companies. The Vietnam Bond Market Forum was later transformed into the Viet Nam Bond Market Association in 2009 following the approval by the Ministry of Interior.

In 2009, Hanoi Stock Exchange was designated as the central trading venue of domestic government bonds with around 30 market participants, including major commercial banks and securities companies. In 2013, Hanoi Stock Exchange started publishing a benchmark yield curve. The Ministry of Finance developed and issued a roadmap in February 2013 and announced its intention to expand the bond market to 38% of gross domestic product by 2020. Due to the institutional nature of its government, however, the Ministry of Finance could not form an inter-agency committee with the State Bank of Vietnam. Instead, the ministry's roadmap assigned its various responsible departments and the State Securities Commission to work with the central bank and other stakeholders in carrying out their respective tasks.

In 2013, the Ministry of Finance issued the first comprehensive strategy for bond market development covering both government and corporate bonds. Viet Nam's government bond market is now taking a critical step to move the money side of bond trade settlement from a commercial bank to the central bank in accordance with international standards.

Viet Nam expects to fully graduate from World Bank IDA and be classified as an IBRD Only Country in 2017, and to graduate from ADB's ADF and be classified as an OCR Only Country in 2019. The Government of Viet Nam is now reviewing a possible revision of its strategy to take domestic bond market development to the next stage.

VI. Links with Subnational and Corporate Bond Markets

LCY government bonds function as benchmarks in pricing most other bonds and debt instruments. This role is particularly important in pricing subnational (local government) and SOE bonds, which are important instruments in financing infrastructure. Fiscal decentralization to strengthen the revenue sources of local governments is a foundation for the development of subnational bond markets. They are seen as guaranteed, implicitly or explicitly, by the national government. As such, it is essential to build a sound framework and capacity for contingent liabilities management. The public debt management framework of the national government must capture subnational bonds in its radar and exercise appropriate control over them. At the same time, local governments should be subjected to appropriate market disciplines including credit rating.

Bonds issued by SOEs are subsovereign bonds. They sit in-between subnational bonds and corporate bonds. In most bond markets around the world, the corporate bond market is dominated by utilities or other infrastructure businesses, financial institutions, and property developers. Of those, many utilities and infrastructure businesses are partly or wholly owned by the government. To the extent that their bonds are guaranteed, implicitly or explicitly, by the government, they should be captured by the contingent liabilities management framework.

Unlike government bonds, however, corporate bonds, including SOE bonds, bear varying degrees of credit risk. The demand for them is influenced significantly by prudential rules for banks and insurance companies as investors. Unlike government bonds, corporate bonds tend to compete with bank loans in financing businesses. As such, the development of a corporate bond market is influenced significantly by its competitive relationships with the banking system

even though corporate bonds are supported by custody, payments, and other services of banks. Because both subnational and corporate bond markets are by nature fragmented (comprising many issuers with many different instruments), they tend to be too illiquid to justify adoption of a dedicated trading platform. They could instead benefit from a platform designed to trade government bonds with additional functions. As in the case of interconnected or integrated settlement infrastructure above, it is useful to strategize the use of government bond trading platforms in a master plan for financial market infrastructure development. The illiquidity of these instruments also calls for arrangements to promote their price transparency. Indonesia, Malaysia, and Thailand have established central bond pricing agencies, while the Republic of Korea took a more private-sector-led approach that promotes price transparency through competition.

Subnational and corporate bond market development involves a different set of challenges than those associated with the government bond market. Therefore, authorities and other stakeholders need to assume different roles in leading the effort. In particular, the securities regulatory authorities need to assume greater responsibility in leading it.

VII. Conclusion

In response to the 1997/98 Asian financial crisis, ASEAN+3 members agreed to launch ABMI in 2002, with its activities starting in 2003. ADB was appointed as the secretariat. It was only when the most urgent fire-fighting exercise of crisis management had been completed that authorities started focusing more on long-term bond market development issues. Involving a mix of low-, middle-, and high-income economies, ABMI has been developed and implemented around the twin pillars of market development and market integration. Middle-income ASEAN members participate in both. Viet Nam joined this group in 2000 as it made progress in developing its government bond market. The PRC, Japan, the Republic of Korea, and Singapore are active on market integration initiatives. The CLM countries now need to start tackling this challenge.

The initiative of the Technical Assistance Coordination Teams, funded by the Government of Japan, provides support for the CLMV countries as well as other interested ASEAN members.³³ Viet Nam has taken advantage of this support to build-up its government bond market. In order for all of the CLM countries to fully benefit from this assistance, it is vital that their governments ready themselves for the challenges ahead. As they begin the process of graduating from the concessional resources of the multilateral development banks, they stand at a critical juncture.

The time is now ripe for LCY bond market development in the CLM countries. Good practices and models are available within the region. Each country will need to create an institutional structure to guide the concerted efforts of multiple stakeholders and to develop their own roadmaps based on a thorough assessment of their specific market conditions. ADB stands ready to assist these important endeavors.

³³ To date, this includes Indonesia and the Philippines.

References

- Asian Development Bank (ADB). 2012. *ASEAN+3 Bond Market Guide*. Manila. Available at https://asianbondsonline.adb.org/publications/adb/2012/asean+3_bond_market_guide.pdf
- _____. 2016. *ASEAN+3 Bond Market Guide, Malaysia*. Manila. Available at https://asianbondsonline.adb.org/documents/abmf_mal_bond_market_guide_8th.pdf
- _____. 2016. *ASEAN+3 Bond Market Guide, Thailand*. Manila. Available at https://asianbondsonline.adb.org/documents/abmf_tha_bond_market_guide_10th.pdf
- Dato' Salleh Harun. 2002. The development of debt markets in Malaysia. *BIS Papers No 11*. Basel: Bank for International Settlements. Available at <http://www.bis.org/publ/bppdf/bispap11m.pdf>
- Huong Thi Thanh Nguyen and Thuy Thi Thanh Nguyen. 2016. Viet Nam's Securities Market - 16 Years of Establishment and Development (2000-2016). *Nomura Journal of Asian Capital Markets, Autumn 2016 Vol.1/No.1*. Tokyo. Nomura Foundation. Available at http://www.nomurafoundation.or.jp/en/wordpress/wp-content/uploads/2016/10/NJACM1-1AU16-09_Vietnam.pdf
- Public Debt Management Office (PDMO). 2005. *A Century of Thai Bond*. Bangkok.
- Thai Bond Market Association (ThaiBMA). 2007. *Thai Bond Market*. Bangkok
- World Bank and International Monetary Fund. 2001. *Developing Government Bond Markets: A Handbook*
- World Bank. 2006. *Unlocking Indonesia's Domestic Financial Resources: The Role of Non-Bank Financial Institutions*. Jakarta. Available at <http://documents.worldbank.org/curated/en/204991468283755820/Executive-summary-and-overview>