2nd Annual Note on Recent Developments in Local Currency Bond Markets (LCBMs)[1]

August 2014

The development of local currency bond markets (LCBMs) in emerging market economies (EMEs) is important for mobilizing the investments needed to support strong, sustainable and balanced growth. This is a key motivation behind the global commitment to foster sound development of these markets, and by International Organizations (IOs) to help countries establish the preconditions and capacity to develop them.

As part of the G20's efforts to foster development of LCBMs, the IOs developed a diagnostic framework in 2013 to help governments and technical assistance providers develop LCBMs and, a shared database of advisory operations to help coordinate assistance across international institutions.

In addition, the IOs committed to provide the G20 with a regular update on developments in LCBMs. The first of these notes was produced in 2013 and delivered to G20 Finance Ministers and Central Bank Governors. This year's note builds on the analysis prepared in 2013, highlighting the ongoing role of LCBMs in intermediating savings to support growth-enhancing investment. It provides an analysis of LCBMs in EMEs over the last 5 years (2009-2013[2]) and pays particular attention to key indicators used in the previous note, in order to draw comparisons and identify changes in trends or new developments. These indicators are market: (1) Size, (2) Issuance (3) Liquidity, (4) Performance, and (5) Investor Base, both Local and Foreign Ownership. An additional section was added this year on emerging trends, reflecting the increased growth of local currency denominated sukuk markets.

Finally, the Annex reflects the growing interest in the role that LCBMs can play in financing infrastructure in EMEs, by providing a vehicle (e.g., project bonds) to mobilize financing . To this end, the note provides information on the potential of local currency project bonds (LCPBs) to intermediate funding for infrastructure financing, with particular emphasis on the role of institutional investors, and provides examples of initiatives to foster the development of LCPBs to finance infrastructure.

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[1] Prepared by staff of the World Bank Group (WBG) in consultation with the staffs of the International Monetary Fund (IMF), Asian Development Bank (ADB), African Development Bank (AfDB), Inter-American Development Bank (IADB), European Bank for Reconstruction and Development (EBRD), Organization for Economic Co-operation and Development (OECD), and the Bank for International Settlements (BIS) for the G20 Investment and Infrastructure Working Group at its meeting in Jakarta, Indonesia in August 2014 and G20 Ministers of Finance and Central Bank Governors for their September 2014 meeting in Cairns, Australia.

[2] Unless otherwise indicated in the corresponding section, the analysis is at year end.

Key highlights from 2013

- **EME LCBMs continued to expand over the year. However the pace of growth has significantly slowed down in the last two years.**

- **Corporate issuance in local currencies slowed down in 2013 due to increased corporate activity in the international debt markets.** Corporations in EMEs have opportunistically accessed capital at longer tenors and lower yields than available in their local markets. It is still early to assess whether this trend will revert in 2014. However, the growth in external issuance in foreign currencies in recent years has been striking and worth examining as it partly reflects the need for improving funding conditions for corporates in local markets.

- **Concerns over the limited liquidity of EME LCBMs have increased**. Liquidity remains shallow and concentrated in government instruments and in a few markets. In addition, recent research indicates that liquidity has worsened as measured, for example, by bid-ask spreads for 10-year government bonds which have widened significantly on average across several EMEs since 2010.

- **Foreign investor participation in EME LCBMs has slowed.** For the first year, foreign investors' holdings of EME LCBs fell in 2013 –although they remained roughly aligned with historically high levels. Flows to EME LCB funds have shown a substantial drop since their peak in 2010, and have been negative during 2014. While foreign investors have not abandoned EME LCBMs as an asset class, they continue to be more selective in their investment in EMEs. Several EMEs have been through exchange rate depreciations or are in the process of adopting higher policy rates to address macroeconomic imbalances including increasing current account deficits and rising inflation. The degree to which these economies will experience a resurgence of foreign inflows into LCBMs largely depends on the effectiveness of these measures.

- **The sukuk market has shown considerable growth, although it is still limited in size and location.** More than two-thirds of the global sukuk have been issued in Malaysia and are predominantly issued in LC on the domestic market. Growth in sukuk is attributable to a number of factors, particularly: (1) an increasing demand for Sharia-compliant assets in the Islamic world; (2) investors becoming more familiar with sukuk structures as more precedents and standardization take place; and (3) since sukuk structures can back infrastructure assets, they are seen as an appealing instrument for long term financing.

- **Project bonds are re-emerging as a potentially attractive vehicle to channel investors' money to finance infrastructure development in EMEs.** However, many EMEs still need to work on implementing preconditions to support LCPBs, and design instruments that cater to the appetites of institutional investors –a key challenge for both EMEs and AEs. Further, a review of EME experience shows that capital market interventions to support infrastructure financing need to be imbedded within a strong PPP framework, and with solid options for commercial or development bank financing to ensure proper risk layering. Therefore, for many EMEs the development of LCPBs will require the implementation of a comprehensive agenda of medium to long terms reforms.

1. The Size[3] of LCBMs in EMEs

EME[4] LCBMs[5] continued to expand over the year reaching US$9.3 trillion in December 2013. However the pace of growth has slowed down in the last two years from 16-19% in 2009-2011 to 7% in 2012-2013. In US$ terms the stock has remained virtually stable during the year, primarily due to currency depreciation in EMEs (Exhibits 1 and 2).

Exhibit 1: EM LCBM Growth (%; US$ and Local Currency Terms)

	Growth in US$ Terms	Change in EM FX (1)	Growth in Local Currency Terms (2)
2009	25%	7%	16%
2010	20%	3%	17%
2011	13%	-5%	19%
2012	10%	3%	7%
2013	2%	-5%	7%

Source: BIS, Bloomberg, WBG staff calculations, Bank of America Merrill Lynch
Notes: (1) As measured by the MLFXGEMS Index[6]
(2) This is a simplified approximation using yoy change in MLFXGEMS Index

The share of local currency bonds (LCBs) to total EME debt outstanding has gradually reduced over the last years. However, LCBs continue to predominate and stand at 85% as of end- 2013 (Exhibit 3). This predominance is larger for government debt, but also holds for corporate debt. For 2013 LC government debt amounted to 90% of total government debt, while LC corporate debt amounted to 78% of total debt (Exhibits 4 and 5). The importance of LCBs, and in particular LC government debt, is expected to continue mainly due to: (i) a growing local investor base in several EMEs; (ii) expected greater participation, in the medium and long-term, by foreign investors that are still underinvested in the asset class; and (iii) increasing funding needs of governments. Growth of LC corporate debt[7] is dependent on enabling conditions and policies that could make funding in local markets more attractive than in external markets.

EME LCBMs remain heavily concentrated, both by regional distribution and across countries. This concentration reflects the different stage of development of LCBMs in EMEs and the ongoing challenge to expand the asset class to a broader range of EMEs (Exhibits 6-9). Asia and Latin America maintain their dominant positions. On a country basis, China, Brazil and India comprise more than 68% of the total EMEs government debt. The share grows to 91% if the ten largest markets are considered. EMEs Corporate debt is even more concentrated, where the top two markets (China and Brazil) comprise more than 77% of the total corporate debt and the ten largest markets represent 99%.

[3] Our analysis of size focuses on absolute levels of outstanding debt rather than as a percentage of GDP. This allows for direct comparison with other indicators presented in absolute levels, such as new issuances, trading volumes, size of institutional investors and investor flow data.
[4] EMEs includes Argentina, Brazil, Chile, China, Colombia, Croatia, Hungary, Indonesia, India, Lebanon, Malaysia, Mexico, Pakistan, Peru, Philippines, Russia, Saudi Arabia, South Africa, Thailand, and Turkey.
[5] The term LCBMs encompasses government and corporate (financial and non-financial) domestic debt securities, which are defined as issues by residents in the local market in local currency, targeted to resident investors in the BIS securities statistics. Some foreign currency issues are included in these data, but they are small.
[6] Bank of America Merrill Lynch GEM FX Index, Size and Structure of Global Emerging Markets Debt, July 2014
[7] By type of issuing sector, non-financial corporations now account for 31% of the total LC corporate debt. This compares to only 19% in 2009.

Exhibit 2: EMEs LCBM (US$ tn)

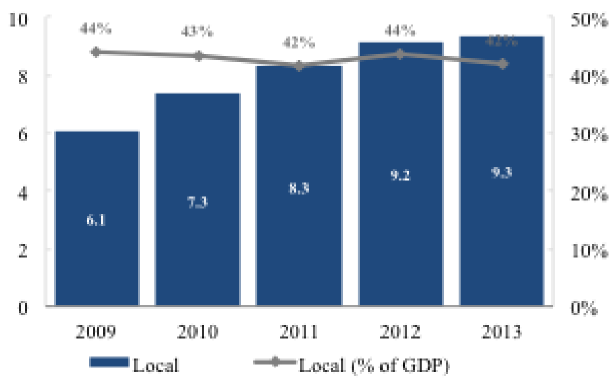


Exhibit 3: EMEs LCBM vs. Internal (US$ tn)

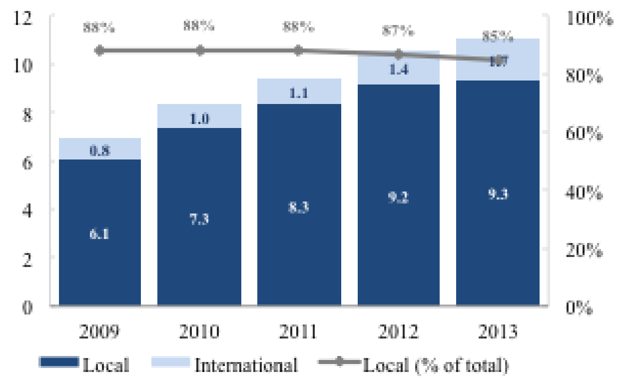


Exhibit 4: EMES LCBM by Segment (US$ tn)

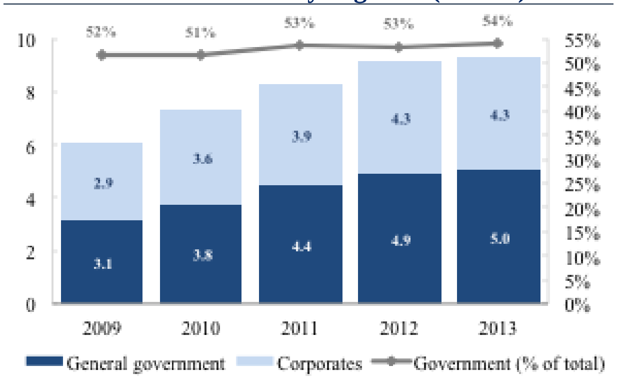


Exhibit 5: EMEs External Debt by Segment (US$ tn)

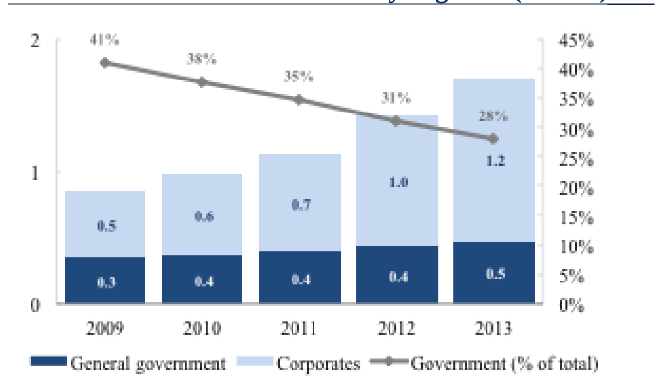


Exhibit 6: Government LCBM by Region (%)

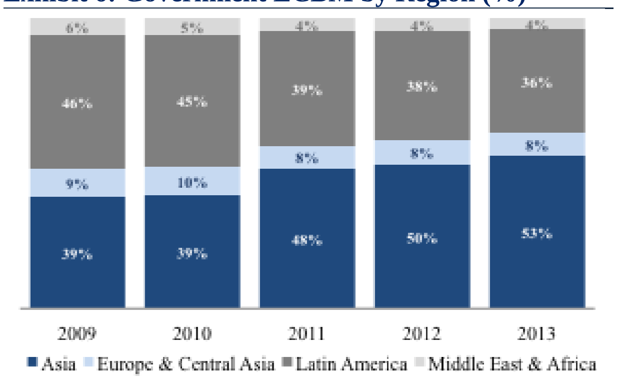


Exhibit 7: Corporate LCBM by Region (%)

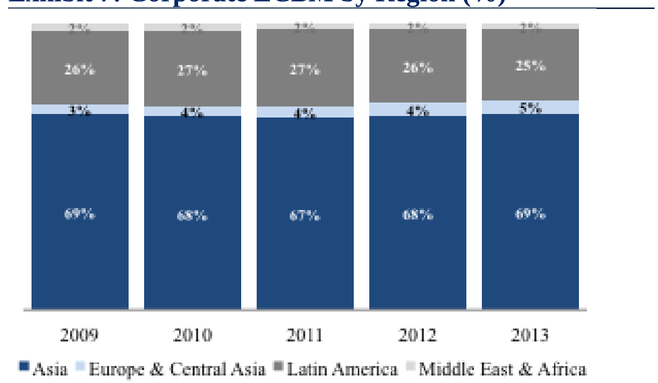


Exhibit 8: Government LCBM –Top 10 (US$ tn)

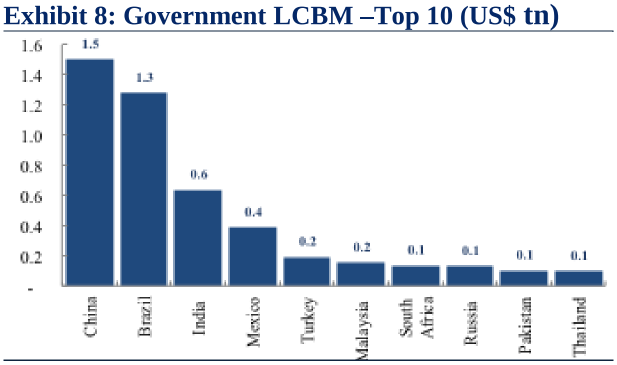
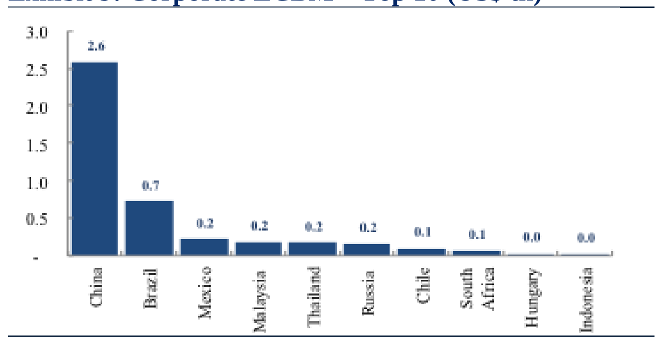


Exhibit 9: Corporate LCBM – Top 10 (US$ tn)



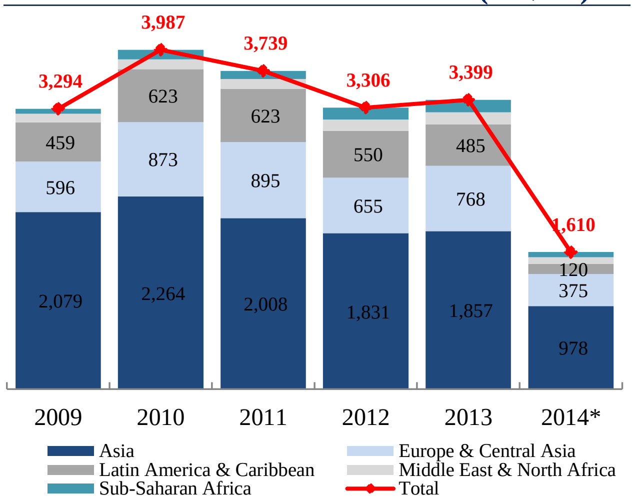
Source: BIS; WBG staff calculations

Country rankings would naturally change for both government and corporate bond markets if presented as a percent of GDP with Lebanon being the largest government debt market (84%), followed by Brazil (57%) and Malaysia (48%). As for the corporate debt, Malaysia (59%) becomes the largest market as a percentage of GDP, followed by Thailand (44%) and China (43%). However the market concentration argument would still hold to a large degree.

2. Issuance[8]

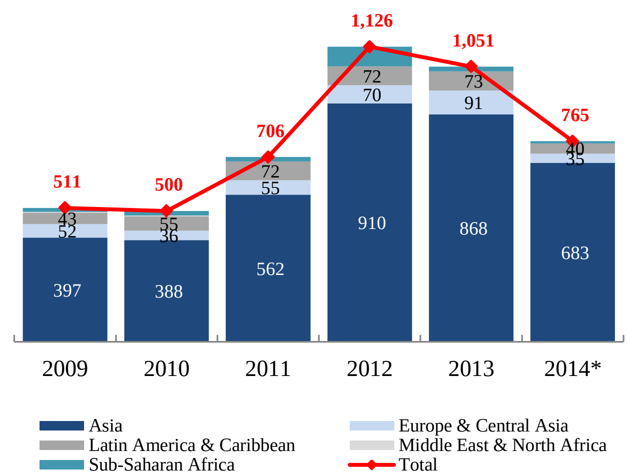
Issuance of EME LC government and corporate debt followed distinct trends in 2013 (Exhibits 13 and 14).

Exhibit 13: Government LC Issuance (US$ bn)



Source: Bloomberg; WBG staff calculations

Exhibit 14: Corporate LC Issuance (US$ bn)



Source: Bloomberg; WBG staff calculations

LC government debt issuance had a minimal increase reaching US$3,399 in 2013. This was mainly due to high financing requirements driven by large volumes of redemptions and lower tax revenue collection in almost all EMEs. For frontier markets, sovereign issuance also grew, but mainly in the dollar space,[9] as several of them are now part of EMBIG indices.[10] Further development of domestic markets could help channel some of these issuances to local markets.

Local LC corporate debt issuance slowed due to increased corporate activity in international debt markets, where EME corporations opportunistically accessed investment capital for longer tenors and at lower yields than available in local markets[11]. Further, EME corporate external debt was the fastest growing fixed income asset class over the past 3 years, reaching US$362 billion in 2013[12]. In the same year, dollar denominated corporate debt dominated the new issue market,

[8] Gross issuance, includes both short and long-term debt issuances; issuance data was compiled from Bloomberg using SRCH function for EM government and corporate bonds as classified by Bloomberg, issued at US$1million and above.
[9] PIMCO, In Depth: The Evolution and Future of Emerging Markets Fixed Income, June 2014.
[10] In 2013, Paraguay, Honduras, Tanzania, Slovakia, Trinidad and Tobago, Armenia and Mozambique joined the EMBIG indices.
[11] Growing issuance by governments also implies a crowding-out effect in some EMEs.
[12] J.P. Morgan Global Credit Research, Emerging Market Corporates, August 2014.

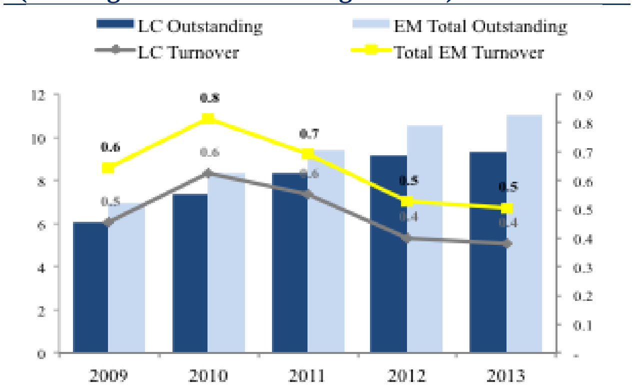
with issuance more than four times that of dollar sovereigns[13]. It is still early to assess whether the trend in corporate issuance will revert in 2014. However, the growth in external issuance in recent years has been striking and worth examining as it partly reflects the need for improving funding conditions for corporates in local markets. In addition, borrowing in foreign currency can become a source of vulnerability for the corporate sector and the wider economy.

3. Liquidity

Liquidity concerns in EME LCBMs have increased. Liquidity remains shallow, concentrated in a few instruments and markets, and showing a widening trend of bid-ask spreads.

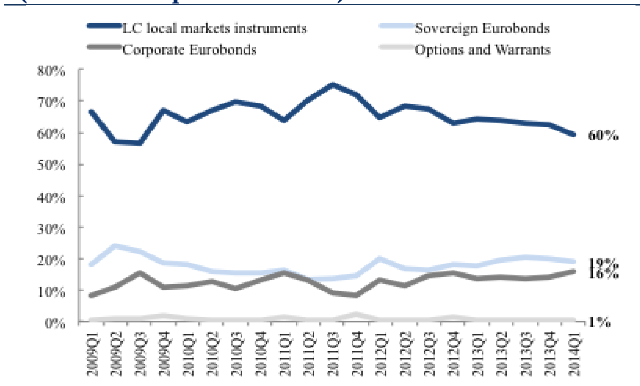
Trading volumes of EME LCBs are increasing in absolute terms,[14] and are much higher than volumes traded in external markets. However, these trades as a proportion of the total outstanding stock (i.e. the turnover ratio) have remained relatively stable at a low level compared with mature markets[15] (Exhibit 11-12). In addition, recent research indicates that liquidity has worsened as measured, for example, by bid-ask spreads for 10-year government bonds, which have widened significantly on average across several EMEs since 2010.[16] These issues need to be further explored.

Exhibit 11: Turnover Ratio (Trading volume/outstanding amount)



Source: EMTA; WBG staff calculations

Exhibit 12: EMEs Debt Trading Volumes (% of total reported volume)



Source: EMTA; BIS; WBG staff calculations

Liquidity in EME LCBMs remains concentrated in government debt instruments and in a handful of countries: 55 percent of total traded volumes in EME LC instruments were conducted in only 5 countries and 78 percent in ten countries as of Q1/2014.[17] Corporate debt instruments

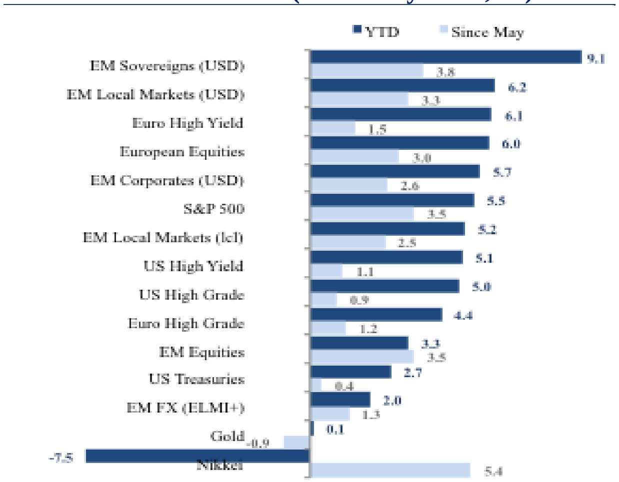
[13] PIMCO, In Depth: The Evolution and Future of Emerging Markets Fixed Income, June 2014.
[14] Trading volumes in EMEs local markets reached US$0.947 trillion in Q1/2014, a 56 percent increase compared to Q1/2009. In spite of the substantial growth, the trend is volatile and volumes still remain far from their peaks US$1.4 trillion and US$1.3 trillion reached in Q3/2010 and Q3/2011, respectively.
[15] Although secondary market liquidity has been declining in mature markets as well (For relevant details, see IIF Market Monitoring Group Background Note, June 2014 and Capital Markets Monitor July-August 2014)
[16] IIF Capital Markets Monitor, July-August 2014. See also Financial Times, "EM Liquidity: The Danger Stalking Global Markets", June 6, 2014 by Jonathan Wheatley
[17] According to EMTA data. The ranking of top ten countries in volume of trading comprised: Mexico, India, Brazil, South Africa, Singapore, Russia, Poland, Malaysia, Turkey, and Ukraine. While the order changes from quarter to quarter, data for prior quarters confirms the concentration in a handful of markets.

are rarely traded in most markets. This is partly explained by traditional factors of the asset class (e.g. smaller size and irregular frequency of issuances broken down by a number of distinct issuers at distinct credit levels). Other country-specific problems compound the problem, such as: (i) the limited supply in the face of large demand by a growing domestic investor base (exacerbating their buy-and-hold tendencies); (ii) poor price discovery and dissemination mechanisms; (iii) the absence or limited availability of hedging instruments creating a preference for holding the more liquid government debt assets and (iv) the need for enhanced portfolio management capacity on the part of many EME institutional investors, including some of the largest EME public sector pension funds. These factors have also limited foreign investment in LC corporate debt, which remains at historic lows, in spite of their interest in LC government debt instruments.

4. Performance

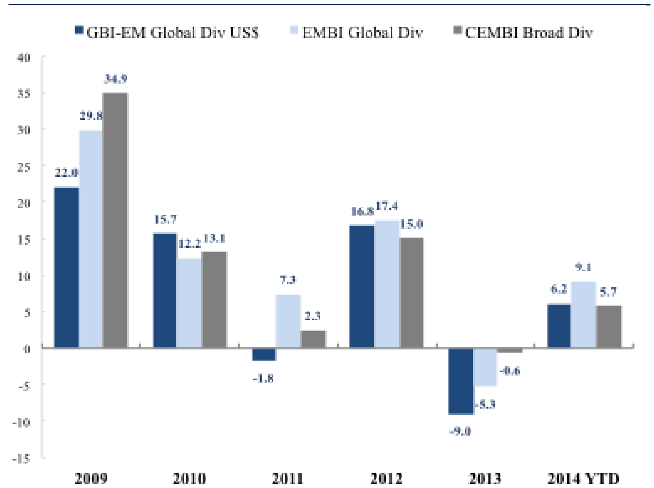
In 2013 returns on EMEs LC instruments were negative as EMEs LCBMs came under pressure due to concerns over the pace and timing of tapering of the Federal Reserve's quantitative easing program. For 2014 returns have been on average positive at 6.2 percent (unhedged)[18]—although there are important variations across countries/currencies (Exhibits 15 and 16). Positive year-to-year returns of EME LCBMs have been driven by a dovish U.S. Federal Reserve and unprecedented easing from the European Central Bank. These factors spurred the search for yield, keeping developed market yields low and making EME yields relatively attractive. Carry trades remained popular against a backdrop of historically low market volatility[19] in many asset classes including rates, equities, FX, commodities and credit spreads.

Exhibit 15: Performance (Since May-YTD, %)



Source: J.P. Morgan

Exhibit 16: Annualized Returns Across EM Assets



Source: Bloomberg, J.P. Morgan

5. Local Investor Base and Foreign Ownership

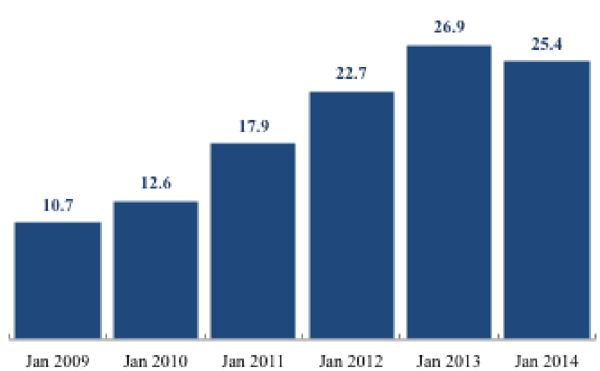
Local banks continue to dominate holdings of LCBMs in many EMEs. However, the local institutional investor base has continued to grow over the past five years, contributing

[18] As measured by the J.P. Morgan GBI-EM Global Diversified Index, year-to-date as of July 6, 2014.
[19] PIMCO, June 2014 Global Update.

significantly to the development of LCBMs in EMEs. Total insurance and pension assets have more than doubled over the past five years, amounting to US$5.5 trillion at 2012. EME insurance companies hold US$3.4 trillion of assets under management (AUM), while local pension funds hold US$2.1 trillion of AUM[20]. Evidence from selected countries indicates that their growth has stimulated demand for longer-term and local currency denominated debt. Nevertheless, the global picture is uneven with marked differences between regions. Nationalizations of private Pillar II pension funds in Eastern Europe and the former Soviet Union coupled with a reversion to unfunded state pension schemes have led to a contraction of the domestic investor base and an increased reliance on international investment flows. These issues will be further explored next year.

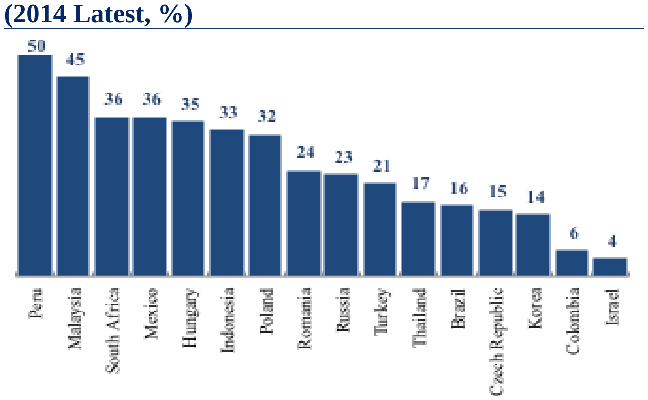
Foreign investor exposure to LC government debt decreased from the previous year. However it remained at high historical levels in spite of the weak performance of EME LCBMs in 2013[21]. As of January 2014, non-resident holdings stand at an average of 25.4 percent average across issuers. In a number of EMEs, this percentage approaches or exceeds 30 percent. The highest concentrations of foreign participation are in Peru, Malaysia, South Africa, Mexico, Hungary, Indonesia and Poland (Exhibits 17 and 18). The fact that foreign investor participation in local markets was broadly resilient, in spite of moments of sell-off pressures, is consistent with the ongoing low yielding macroeconomic environment in AEs. It potentially also reflects the gradual structural consolidation of EME LCBMs as a global asset class. However, going forward it is expected that foreign investors will continue to be more selective.

Exhibit 17: Foreign Ownership by Country (EMEs Simple Average, %)



Source: J.P. Morgan

Exhibit 18: Foreign Ownership by Country (2014 Latest, %)



Source: J.P. Morgan

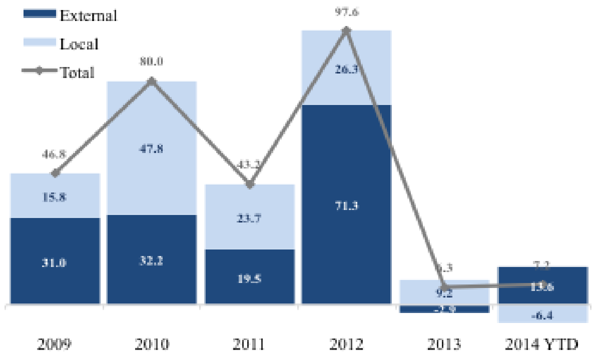
Flows to EME LCB funds have substantially reduced since their peak in 2010 and have been even slightly negative year-to-date as of July 2014. This is in line with a more discriminating appetite of foreign investors, as discussed above (Exhibit 17). In spite of the sharp reduction, total flows – including flows to EMEs external debt funds - have remained positive in the last 5 years. Several EMEs have been through currency depreciations or are in the process of adopting higher policy rates to address vulnerabilities such as increasing current account deficits and

[20] At the end of 2012, J.P. Morgan (September 2013).

[21] Foreign participation in local corporate debt markets remains historically low, as explained earlier in the text, with no statistical information available on the holdings of non-residents.

inflation. The degree to which these economies will observe a resurgence of foreign inflows to local currency debt largely depends on the outcome of these measures.

Exhibit 19: Inflows Into Dedicated EMEs Bond Funds (US$ bn)



Source: J.P. Morgan., EPFR Global, Bloomberg

6. Emerging Issues: The Growth of Sukuk Markets[22]

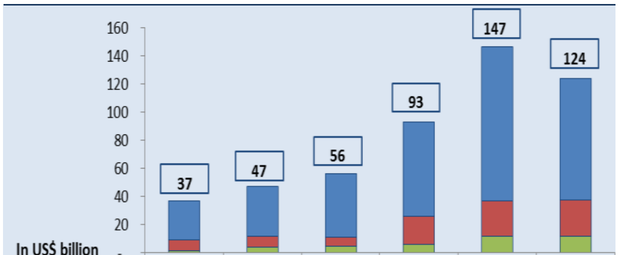
There is increased demand for Sharia-compliant assets, in particular sukuk[23], although the total outstanding market is still limited in size and location. The outstanding global sukuk market is estimated to be around USD 310 billion, which amounts to roughly 3 percent of total EME LCBMs. However, the market has exhibited a growth trend, with a record issuance of USD 147 billion in 2012. Compared to 2012, 2013 showed a slowdown in issuances in the period of May-September 2013 largely due to investor concerns over the timing and pacing of US tapering. In September 2013, sukuk issuance bounced back and is expected to maintain a long-term growth trend.

Growth in sukuk is attributable to a number of factors. First, there is an increasing demand for Sharia-compliant assets in the Islamic world. Additionally, investors are becoming more familiar with sukuk structures as more precedents and standardization take place. Finally, as sukuk structures can back infrastructure assets, they are seen as an appealing instrument for long term financing of this sector.

[22] Sukuk Markets: A Proposed Approach for Development, Ariadi, Ketut and Caputo Silva, Anderson, WBG, 2014

[23] Commonly referred to as an Islamic bond, sukuk represent an undivided, pro-rata ownership rights to the underlying assets and/or income they generate. Sukuk do not represent a claim of debt in a pure monetary sense. Under the sharia principles, money is not a tradable commodity. Therefore, interest-bearing debt – which is essentially attaching a "price" to money owed – is prohibited. Sukuk is a form of investment where there must be permissible assets or transactions for which the investment is made. Depending on the structure, a sukuk's risk and return characteristics are often similar to bonds or debt securities, hence the common reference to sukuk as a form of debt securities.

Exhibit 20: Sukuk Issuance Volume

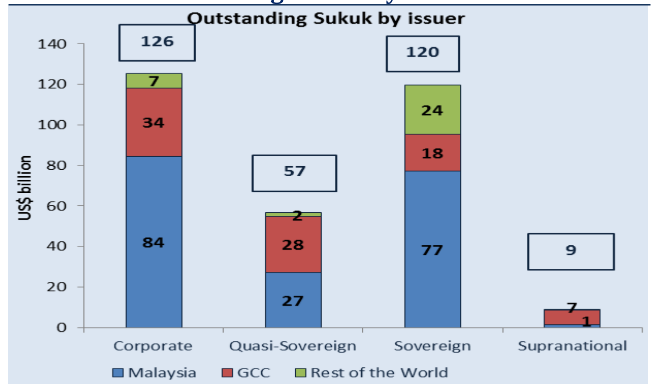


	2008	2009	2010	2011	2012	2013
Malaysia	27	35	45	67	110	86
GCC countries	8	8	6	20	25	26
Rest of the World	1	4	5	6	12	12

Source: Islamic Finance Information Service

Source: Islamic Finance Information Service

Exhibit 21: Outstanding Sukuk by Issuer



Source: Islamic Finance Information Service

More than two-thirds of the global sukuk have been issued in Malaysia, followed by issuances in the Gulf Cooperation Council (GCC) region. Malaysian sukuk are predominantly issued in LC on the domestic market. Additionally, the Malaysian market is a popular choice for foreign issuers, reflecting its efforts to promote the local sukuk market by building a favorable regulatory framework. In contrast with the Malaysian experience, issuances from the GCC region are made in the international markets and predominantly USD-denominated. This preference can be attributed to investor interest in hard currency-denominated instruments and the pegging of GCC currencies to the US dollar. As domestic markets in the GCC region develop, this trend may change. Other than Malaysia and GCC, sukuk is expanding as a financing tool in markets such as Indonesia, Pakistan and Turkey. Recently, a number of traditionally conventional markets, such as the UK, Luxembourg and Hong Kong announced plans for sukuk issuance.

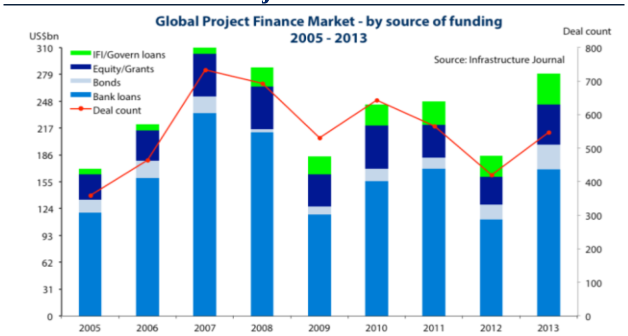
Governments account for a larger share of sukuk issuances, but corporate sukuk represent two-fifths of the overall market and have taken the lead in the long-term segment. Governments are particularly dominant in the short-term market. Short-term sukuk is viewed as essential for deepening and developing the Islamic inter-bank market and is issued in many countries by central banks to support monetary policy implementation. The Central Bank of Bahrain is a prominent example, through a regular issuance program for short-term sukuk in Bahraini Dinar. In the long-term sukuk market, corporate issuances picked up and took the lead since 2012. Particularly in GCC countries corporate issuers are far more active than sovereigns, which is partly due to the strong fiscal position of some countries in the region.

The growth of sukuk market has been substantial, but significant challenges remain. The overall market faces constraints due to lack of standardization, concerns over investor protection and narrow liquidity driven mainly by fragmentation. The Islamic finance industry is dynamic and progress is being made rapidly, among others through the work of standard setting boards, multilateral organization and other stakeholders, public and private.

Annex: Leveraging LCBMs to Finance Infrastructure in EMEs[24]

Project bonds are re-emerging as a potentially attractive vehicle to channel institutional investors' money to infrastructure financing in EMEs[25]. Institutional investors in EMEs, and in particular pension funds and insurance companies, are growing at a considerable rate amounting to USD 5.5 trillion at 2012. Project bonds have the potential to match their long-term liabilities, provide inflation protected yields along with a liquidity premium and have lower correlation to other financial assets. Nevertheless, the current conversion rate from projects funded by bank loans to infrastructure project funding through capital markets remains low in both international and particularly domestic debt markets. As of end-2013, it was estimated that bonds accounted globally for around 10% of infrastructure financing. Of this, roughly half were project bonds[26]. Institutional investment in infrastructure remains limited at an average of 1% in OECD and G-20 countries, and mostly through equity products[27]. Aside from Chile, issuance of local currency project bonds (LCPBs) in EMEs is incipient. In other EMEs such as Mexico and Peru, larger infrastructure projects have been partly funded by project bonds; however most issuances have taken place in the international markets and in foreign currency. Therefore, the challenge is to develop LCPBs since the revenues of most projects is in local currency.

Exhibit 21: Global Project Finance Market



For many EMEs, a first set of challenges involves implementing key preconditions[28], many of which are common to corporate bonds. These include development of an institutional investor' base, a suitable issuance framework for a wholesale market, a credible credit rating framework, a long term yield curve and credit enhancements. Other preconditions are specific to project bonds. Project bonds require a robust securitization framework, including flexible special purpose vehicles. They also require a robust PPP framework and a pipeline of bankable projects.

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[24] This box draws from several sources: Policy challenges for domestic fixed income markets in EMEs, Garcia-Kilroy Catiana and Harwood Alison, World Bank 2014; Swiss Re and Institute of International Finance, Infrastructure Investing. It matters, 2014; OECD Annual Survey of large pension funds and public reserve funds, 2013; and Review of international efforts to mobilize private sector financing for major infrastructure products, Report prepared by AMF Guarantee, as part of a WBG project, 2013.
25 Global estimates of future infrastructure financing needs through 2030 range from USD 50-70 trillion, of which about 37 percent is in to EMEs. This suggests that, on average, roughly USD 3 to 4 trillion in financing is needed annually. However, today just around USD 2.6 trillion are being spent annually on infrastructure.
[26] In the figure shown bonds include project bonds as well as other fixed income securities such as corporate and municipal bonds financing infrastructure.
[27] In the leading jurisdictions (Canada and Australia) pension funds' investment in infrastructure stands at roughly 5%.
[28] Mbeng, Mezui, C.A. and Bim Hundal. Structured Finance-conditions for infrastructure project bonds in African markets. African Development Bank, 2013. Tunis, Tunisia

Once such preconditions are in place, the key to unlocking the potential of project bonds is to design financial structures that cater to the risk appetite of institutional investors. This is a challenge for both EMEs as well as advanced economies (AEs). In this context, the availability of risk mitigation mechanisms – such as credit risk enhancements -- is critical. These enhancements can also make it easier to secure better pricing or better commercial terms.

During the 2000s the provision of full guarantees by monolines[29] was successfully used by AEs such as UK and US and selected EMEs, mainly Chile[30]. Most monolines stopped issuing financial guarantees in 2008 after their dramatic rating downgrades. The challenge post crisis is to develop new business models of risk sharing and credit enhancements. Initiatives in this area are at an early stage. As these initiatives are implemented and tested, lessons could be drawn for EMEs.

Some initiatives seek to revive monolines. Two of them focus on EMEs, one by the Asian Development Bank and one private initiative to create a monoline for LCPBs in EMEs. Others seek to supplant this model. For example, some AEs such as the UK and France have recently established programs of government guarantees which operate in a manner similar to a monoline. At a regional level the European Union-European Investment Bank Project Bond Initiative has a good chance of supplanting the monoline model for infrastructure financing in Europe by providing up to 20% of first-loss credit protection for senior creditors via a funded or unfunded Project Bond Credit Enhancement (PBCE) mezzanine debt piece for both the construction and operation phases. The ADB is currently developing a project bond credit enhancement product, based on the EU experience. Larger EMEs, such as Mexico and Brazil, have established schemes of partial credit guarantees via the domestic development banks. They have not yet been used to support issuance of project bonds.

Overall, the scenario post-crisis is one of limited guarantees, which will require institutional investors to enhance their capacity in assessing infrastructure investment risk or to delegate this role to other parties. In addition, institutional investors will need to either become involved in project oversight and management, or delegate most of their control rights to others. For example the latter approach is being used under the EU-EIB Initiative.

Limited guarantees are unlikely to provide the full solution to issuing project bonds in LCBM. Besides identifying bankable projects and bringing them to market, there is also a need to identify investors who are willing to assume local currency risk. This further underpins the importance of the domestic institutional investor base as a natural buyer of long term local currency infrastructure assets.

A review of EMEs shows that Chile has successfully used LCPBs to finance infrastructure in a systematic way. Several factors contributed to its success. Key preconditions were in place including a relatively well developed institutional investor base, and a robust framework for the issuance of LCPBs. The government developed a favorable PPP framework and a pipeline of

[29] One of the developments that facilitated the use of project bonds for infrastructure financing was the establishment of an insurance market for bond repayments. In particular, the monoline insurance sector offered a product to investors whereby timely payment of interest and principal was guaranteed.

[30] Mbeng, Mezui C.A. Accessing local markets for infrastructure: Lessons for Africa, African Development Bank, 2013. Working papers series No. 153. Tunis, Tunisia.

projects. Finally instruments were designed to cater to pension funds' appetite. Two characteristics were key: (i) instruments were indexed (via the "*unidad de fomento*") and (ii) were fully guaranteed by the monolines.

Post crisis, Colombia stands out due to the existence of an articulated strategy to develop LCPBs as the key vehicle to channel institutional investors' money to finance infrastructure. This strategy involves policy and regulatory changes at multiple levels, including in the securities markets and PPP frameworks, strengthening of the infrastructure agency (ANI), creating an infrastructure development bank (FDN) which will guarantee project bonds –therefore substituting the monolines—and capacity building to institutional investors.

These experiences show that capital markets interventions to support infrastructure financing need to be imbedded within a strong PPP framework, and with solid options of bank or even development banks financing to ensure proper risk layering. The latter would broaden the opportunities to leverage capital markets financing, in particular in the transition from greenfield to brownfield risk. Therefore, for many EMEs the development of LCPBs will require Governments to play a crucial role in the implementation of a comprehensive agenda of medium to long terms changes