

Government debt issuance: issues for central banks

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Introduction

The domestic bond market is critical to the economy and the financial system for many reasons. First, sovereign debt issued by either the central bank or the central government plays a major role in the development of a credit market.² It is generally safer than debt instruments issued by private parties. Second, the yield on sovereign debt serves as the baseline from which all other debt instruments in the same market can be priced by adding appropriate risk, liquidity and term premia to the underlying pure interest rate. Third, high-quality securities aid market development by providing quality collateral to secure financial transactions. Finally, a well developed domestic bond market helps the government to finance its fiscal deficit in a non-inflationary way.

Central banks have a natural interest in developing bond markets. Yet the crisp distinction between debt management and monetary policy in economics theory is far less sharp in the actual practice of government fiscal operations. Debt issuance by the government can constrain the options and outcomes of monetary policy. Similarly, debt issued by the central bank for monetary policy purposes can impact the market for government debt. It can also have implications for financial stability. Government decisions about the currency denomination and the maturity of the government's own debt have had a major impact on the development of local currency debt markets. As BIS (2007) notes, such debt issuance strategies were in the past opportunistic, paying scant attention to the possible implications for financial stability (or to the medium-term fiscal consequences). But in recent years, governments have taken a more principles-based approach to the management of debt. This involved avoiding issuance policies that undermined macroeconomic control. A more deliberate focus on balance sheets was developed, leading to efforts to quantify risk exposures.³

This brief note examines the role that the central bank can play in supporting and developing debt markets and how central bank policy could complement, or interfere with, government fiscal operations and debt management. It briefly reviews developments in African bond markets and then focuses on three aspects of the central banks' role in sovereign debt management: (i) as the manager of

¹ Retired from the US Treasury and now global consultant on sovereign debt and cash management. The paper benefited greatly from the statistical research work of Tracy Chan and Matina Negka working under the direction of Ken Miyajima. Thanks are also due to Sonja Fritz for support on all aspects of the project. I would also like to thank Madhusudan Mohanty for many helpful discussions.

² This principle was recognised at least as early as 1789 when the first Secretary of the US Treasury, Alexander Hamilton, deliberately created a national debt by consolidating debts of the individual states as a means of promoting commerce in the new nation.

³ See BIS (2007).

government debt; (ii) as an issuer of debt; and (iii) as the promoter of debt markets. It will discuss the effects on monetary policy and local financial markets. The central bank is a natural choice for this task because of its links to the financial sector. It can advise the government on the strength and capacity of local debt markets to ensure a receptive market for government debt. In acting to promote stability in the market, it can make use of its own balance sheet. This can be particularly important in emerging economies, where markets are often undeveloped and consequently thin and unstable.

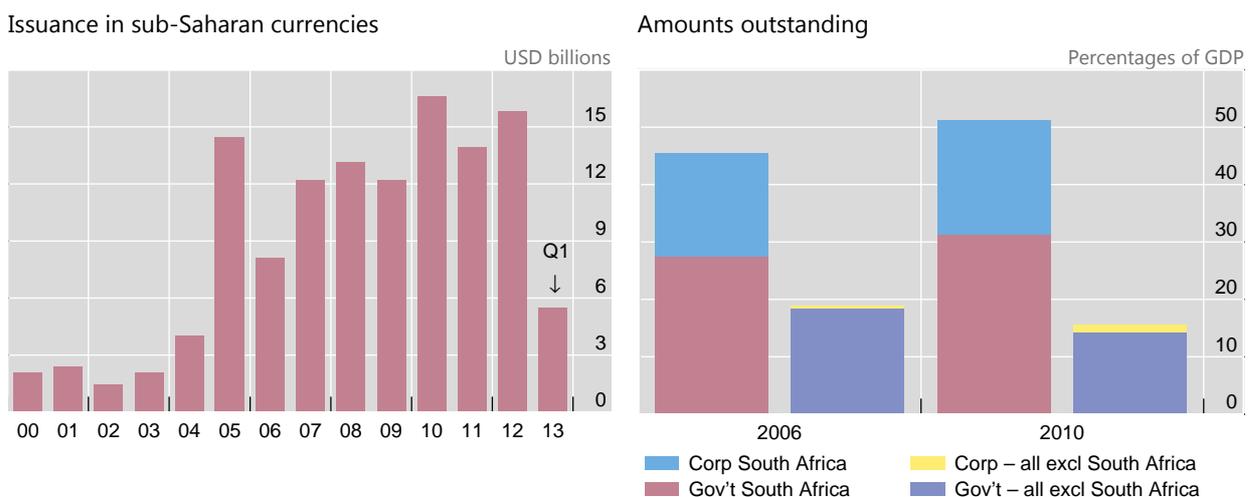
1. Domestic bond markets in Africa

Although domestic bond markets are relatively new in Africa compared with other emerging market regions, they are developing very fast. As the left-hand panel of Graph 1 shows, issuance of bonds denominated in sub-Saharan currencies by all sectors was resilient to market stress during the global financial crisis that began in 2008. This year, economies in sub-Saharan Africa have witnessed the strongest first quarter issuance ever. As the right-hand panel of Graph 1 shows, the outstanding debt stock in South Africa, which boasts the largest bond market in the region, grew from 45% of GDP in 2006 to 51% of GDP in 2010, with both government and corporate bond markets expanding. In other sub-Saharan African economies, the size of the corporate bond market grew notably, despite remaining small relative to the size of the government bond market.

Country-wise stock data are available for marketable central government bonds. As Table A in the Annex shows, South Africa is by far the largest market, with a size of €51 billion at the end of 2010, followed by Morocco (€25 billion), Nigeria (€13 billion), Angola (€10 billion) and Kenya (€6 billion).⁴ Although relatively small, the market is growing rapidly in Tanzania, Uganda, and Zambia.

Bond market in sub-Saharan Africa

Graph 1



Sources: Mu et al (2013); Bloomberg.

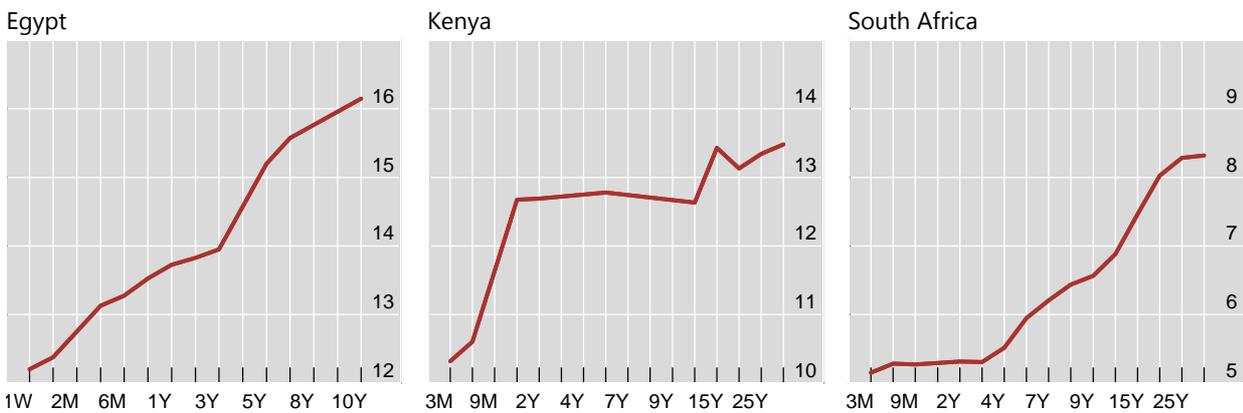
⁴ 2009 data for Angola and 2008 data for Nigeria.

Some African economies have issued long-maturity bonds. Responses to the survey for this meeting, summarised in Table B in the Annex, suggest that many countries issue bonds with a maturity of up to five years and several have issued bonds with a maturity of up to 10 years and above. Morocco has issued bonds up to 30 years of maturity, Nigeria up to 20 years, and Algeria and Zambia up to 15 years. Information from Bloomberg suggests that the 20- to 30-year segment of the yield curve is being traded in Kenya and South Africa (Graph 2). Even though more information is needed to gauge the length and solidity of the benchmark yield curve, this suggests that these bond markets are probably expanding.

Domestic government bond yield curve¹

In per cent

Graph 2



¹ As of 25 March 2013.

Source: Bloomberg.

Foreign investors appear to have become increasingly attracted to African bond markets. Data compiled by the OECD show that foreign holdings of government debt are significant only in South Africa. Information based on international investment position (IIP), however, suggests that in 2011 foreigners held Seychelles and South African debt equivalent to about 10% of those countries' respective GDP. The share was around 5% for Ghana, Mauritius, Swaziland and Tunisia. Long-term debt represented the largest share. Moreover, monthly inflows into mutual funds dedicated to African bonds suggest global investors are increasingly attracted by the asset class.

Many potential constraints on developing domestic bond markets still remain. Cassimon and Essers (2012) identify three main challenges for Africa. First, sustained monetary policy credibility is needed in order to attract investors to longer-term fixed rate bonds. Second, there is a need to diversify the investor base by attracting institutional investors that add to market sophistication and liquidity. Finally, the African authorities have to overcome many infrastructure constraints that impede development of bond markets. In each of these aspects, central banks can play a key role, as both managers and issuers of government debt.

2. The central bank as manager of government debt

The smooth operation of debt markets is critical to monetary policy. The central bank is often the fiscal agent and so helps to ensure that markets function effectively. The relationship between government and central bank is often spelt out in a fiscal agency agreement. As agent, the central bank acts on the instructions of the principal and, accordingly, it should have no independent authority over sovereign debt management. By contrast, when central banks act as debt managers, they are more directly involved in the decisions regarding the cost and the maturity structure of government debt.

Debt management and monetary policy

Whichever model is chosen, there are potential sources of conflict. Central banks are assigned the goal of macroeconomic stabilisation (ie price stability), while debt managers are typically mandated to keep governments' funding costs to the minimum. Government debt managers evaluate the trade-offs and risks of different ways of financing government borrowing. Although sovereign debt management deals primarily with fiscal policy actions, it has implications for monetary policy. Consider a simple accounting identity of the government budget that governs fiscal balance. Defining terms as follows (time is indicated by the subscript t):

D_t = budget deficit

B_t = stock of government bonds (ie paper with a maturity greater than one year)

TB_t = stock of treasury bills (with a maturity of less than one year)

M_t = base money

The simplest representation of the financing of the government is given in Table 1. Monetary policy refers to the determination of demand debt.

| The government budget constraint and links between fiscal policy, debt management and monetary policy | | | | Table 1 |
|---|---|-------------------|-------------------------------------|---------------------|
| Fiscal policy | | Debt management | Debt management or monetary policy? | Monetary policy |
| D_t | = | $[B_t - B_{t-1}]$ | + $[TB_t - TB_{t-1}]$ | + $[M_t - M_{t-1}]$ |

The maturity of long-term government bonds is the domain of debt management. But decisions about treasury bill issuance are part of debt management and part of monetary policy.⁵ The shorter the maturity of treasury bills,

⁵ Historically, the monetary authorities have often expressed their concerns about the impact of the sovereign issuance of very short treasury bills (T-notes) on the stance of monetary policy. Until the mid-1990s, for instance, the Deutsche Bundesbank took the view that the government should finance itself with medium- and long-term securities only. One compromise solution to potential policy conflicts about this is not only to coordinate the timing and to exchange information on new issuance, but in addition to agree on an issuance ceiling for bills.

the closer they are to “money”. More generally, the structure of public debt (eg maturity, currency of denomination) and its holders (eg banks, institutional investors, non-residents) will affect the transmission mechanism of monetary policy.⁶

One implication of the maturity structure of debt is that it has a significant effect on the term premium, and hence the shape and the slope of the yield curve. Excess demand for long-term securities (relative to supply) can reduce term premia, leading to a flatter yield curve; conversely, an excess supply may increase term premia, steepening the yield curve. Thus monetary conditions – hence aggregated demand – can change, without changes in the policy rate.

Another implication of debt maturity relates to its effect on bank credit. In the conventional monetary transmission mechanism, bank credit is determined primarily by demand forces, so that issuance of short-term debt or bank reserves should play little role in the determination of credit. In this case, when banks increase their holding of government bonds, they may crowd out credit to the private sector.

Under imperfect market conditions, however, debt maturity can affect banks’ lending behaviour. There are two major channels through which this may occur. One is that banks may face financing constraints. Short-term government and central bank bills could then act as liquidity buffers (bank reserves in waiting), relaxing these constraints and enhancing banks’ capacity to lend. Another is that liquid assets provide an easy way for investors to leverage up their balance sheets. Banks and other investors may use their bond holdings to build riskier exposures.

Coordination with debt management

Coordination between debt managers and monetary authority is essential, not just for the smooth operation of various monetary transmission mechanisms but also for monetary and financial system stability. One aspect of this coordination relates to the portfolio of public debt, which must be sustainable. The timing and size of debt and scheduled repayments must not overwhelm the public budget. For this reason, debt managers are expected to prepare a medium-term debt management strategy with explicit assessments of economic stresses likely to impact the cost or subsequent marketability of the debt portfolio. By sharing its assessment about probable exogenous factors and endogenous developments as well as the associated risks, the central bank can help the central government develop a debt strategy.

Public debt should be structured in ways that do not magnify the macroeconomic or financial consequences of market shocks. Such shocks could include: a sudden drop in the exchange rate; a sharp rise in domestic short-term interest rates; and a temporary loss of market access. This means limiting reliance on foreign-currency debt, even if this carries a lower coupon. It also means avoiding heavy reliance on short-term debt.

Allowing too much debt to mature at any one time may provoke market dislocations through the market’s inability to absorb or buy sufficient debt to pay off the maturing issues. A country with too concentrated a debt profile may find itself at the mercy of strong market pressures when debt is to be renewed.

⁶ See Filardo et al (2012).

Because of its ties to the local markets, the central bank can provide information regarding the local market's capacity for debt. The central bank may measure the capacity of the local market to absorb debt at different maturities. If the central bank can estimate the volume and monthly flow of investable funds, it could assess how much the potential acquisition of sovereign debt by buy-and-hold investors such as pension funds or insurance companies will influence debt auctions.⁷

A second aspect of coordination relates to management of government cash balances. This is required to avoid conflicts between debt or cash management by the treasury and the open market operations of the central bank. How does the central bank incorporate the government's short-term debt issuance into its estimate of what reserves are available and how much liquidity is in the economy? The government has the key information in its cash forecast, and it should be expected to share such data with the central bank.⁸

The key revenue and expenditure transactions are those that shift funds between the government's accounts at the central bank and accounts at commercial banks and alter the government's net position at the central bank. A shared forecast may be useful in assisting the central bank in planning monetary policy action; detailed cash forecasts are important also for the government's purposes. Building the network of information flows to consolidate the disparate data sources can support better cash management and highlight inefficiencies in the current system.

Further, an effective cash management programme can be expected to take actions to maintain cash balances within a targeted range. The effect of these cash management operations – assuming the government's funds are kept at the central bank – may tend to neutralise the effect of these receipt and expenditure flows on banking reserves. During periods of surplus, when funds are drawn in from the economy, the cash manager may place balances in bank accounts to earn interest on excess balances and add reserves to the banking sector. During spells of cash stringency, with large expenditure flows out to the economy, the ministry of finance might issue treasury bills or take other forms of short-term credit⁹ that would drain reserves from the banking system. These actions are similar to the choices that would be made by the central bank in its open market operations. Financing and cash management actions by the ministry of finance can thus be seen as liquidity shocks that the central bank must address.

Complications might arise if the government's cash management operations are conducted with the same market participants and with instruments comparable to those of the central bank. Careful coordination will be required between the ministry of finance and the central bank. Such coordination may actually curtail the central bank's use of its own bills, particularly if similar maturities are being used by

⁷ Similar analyses are common in the fixed income markets of advanced economies, where weekly estimates of investable funds and funds available for rollover are important parts of private forecasts of interest rate movements.

⁸ Ideally, a daily forecast should be made. It should be noted that a daily forecast is often assumed to be a difficult undertaking. Many countries feel they lack the capacity to build a daily forecast and settle for a weekly cash balance forecast at best.

⁹ For example, some smaller countries have tested using lines of credit from international or regional commercial banks.

both managers. Each party should keep the other well informed of its own actions and seek cooperative solutions whenever policies appear to conflict.

A final aspect of coordination requires reducing the adverse monetary effect of debt issuance, particularly short-term debt. An annual budget law will give an early forecast of how much additional government debt can be expected in the market over the coming year, but it will generally lack specificity as to timing and the actual maturities that will be issued. The financing activities of the government will alter bank reserves, interest rates and the marketability of other securities. The central bank will need to maintain effective liaison and coordination with the government throughout the budget cycle.

What are the central bank's options if, despite coordination, government debt issuance actions are contrary to monetary policy actions? The timing and amounts of government securities issuance will not always coincide with the needs of the central bank's open market policy. The government may need to issue securities when the market is already short of liquidity. The central bank must then choose the extent to which it will provide additional liquidity to the market to meet the government's needs. At a minimum, coordination requires that the issuer inform the central bank of its intentions in advance of taking action. The central bank should inform the issuer if it is advisable to adjust the timing and amount of borrowing to better conform to market conditions.

3. The central bank as an issuer of debt

In recent years, many emerging market central banks have been issuing their own securities. A review of responses to the questionnaire by African central banks, shown in Annex Table C, reveals that many central banks issue government or their own securities. When central banks issue securities, they have a direct impact on bank reserves, market liquidity and the sovereign yield curve.

There might be various reasons why central banks prefer to issue their own securities. First, central banks may issue them to neutralise the liquidity effects of other operations such as the purchase of foreign exchange reserves. They may have a strong incentive to issue short-term debt because it is often the most liquid part of the yield curve, which reduces their exposure to carrying costs and interest rate risks. Second, issuing their own securities may provide central banks with operational independence and flexibility in dealing with liquidity shocks. Their dependence on the government to conduct monetary operations can thus be greatly reduced.

Yet the twin uses of bills by both the central bank and the ministry of finance call for coordination between them. Coordination may seem to be simplified if the central bank acts both as agent for the government in securities issuance and in its own capacity for open market operations. This solution has been found, in some countries, to lead to policy conflicts within the central bank. It becomes difficult for a single institution to pursue a consistent policy course when it is confronted by the sometimes contrary objectives of debt management and monetary policy. The central bank may need to indicate clearly to the market when it is operating as an agent of government and when it is seeking to alter money market conditions for monetary policy purposes.

When debt instruments, particularly bills, are issued by both the central bank and the government, is market growth hurt and is monetary policy affected?^{10, 11} It is possible for the cumulative issuance of both parties to overwhelm the local market's capacity. Emerging market economies generally have very limited capacity for debt securities because personal savings may be low and markets are small. Each party must take account of the actions of the other.

Further, if both the central bank and the government issue securities of overlapping tenors, how should the market interpret any spread between them? The two sources of debt should be equally risk-free. Can the spread in yields be attributed to liquidity concerns? Is there something implied by the market about the two institutions? Can the difference be attributed to small variations in the date of issuance? The problem is that a spread between two seemingly equivalent debt issues can have implications for future auctions of both securities.

Similarly, the situation where one entity – usually the central bank acting as a fiscal agent – issues bills for both liquidity and cash management purposes may engender uncertainty among investors regarding the fiscal state of the government. Unless the purpose of each bill – liquidity or cash balances – is clearly reported to the market in the offering announcement, bill purchasers may misinterpret the meaning of the issuance and this may affect bidding. For example, an effort to drain a large pool of liquidity might be interpreted as a near-term worsening of the government's fiscal position.

Because it is common for central banks to issue bills for purposes of monetary policy, attention should be paid to the practical issues of credit markets and central bank securities. Does bill issuance for monetary policy purposes restrict the short-term credit market for ministry of finance debt? In many advanced economies, this problem is solved by letting the ministry of finance or debt management office issue debt in tenors as needed to manage its deficits and cash balances. The central bank acquires a portfolio of treasury securities from the market and engages in open market operations using the holdings in its portfolio. This solution offers the advantage of clarity: the market knows that if the government is issuing debt, it is for fiscal purposes and that any central bank activity is strictly for monetary policy. The problem in emerging market economies is the absence of a healthy secondary market. If there is no functioning secondary market, does the central bank have any means to achieve its monetary policy goals without issuing its own debt, that is, through open market operations using government debt?

Another item of concern is how the central bank should choose the maturity of its issuance. To the extent that central bank bill issuance is tied to waves of reserves flowing into or out of the local banking sector, the tenors of the bills issued must relate to the expected term of the liquidity events. In setting maturities, there must also be recognition of the needs of the buyers of debt. In the case of publicly traded firms holding sovereign debt, particularly banks, there will be accounting cycles that affect the demand for quality assets. This is particularly true at quarter- and year-end, when portfolios are restructured to improve the appearance of financial statements, and during central bank reporting periods. The selection of tenors

¹⁰ See the list in Annex Table B.

¹¹ Angola, Mauritania, Morocco, Nigeria, Zambia and the West African Economic and Monetary Union are reported by the OECD as having debt issued by both the central bank and the ministry of finance or the debt management office (OECD (2012)).

should balance the expected term of liquidity events and the accounting cycles used by debt buyers.

Can regular and predictable issuance of debt instruments assist issuance? Some sovereign debt issuers approach the market opportunistically: they issue debt only when funds are needed and they issue to exploit maturities that are selling dear to the yield curve, that is, at interest rates favourable to the issuer. But such a strategy may, in the long run, work against the issuer. Greater predictability (and less opportunism) would help buyers and intermediaries, such as primary dealers, to better anticipate the task ahead of them and to make the necessary arrangements to accomplish it. Therefore there will be more buyers than if the issuer insists on surprising the market with the supply of debt coming to market.

4. The central bank and the development of bond markets

The full range of monetary policy tools can be deployed only if there is an active, liquid and deep secondary market. An active secondary market, in turn, depends on many factors, including a well developed primary market, a diversified investor base and a modern market infrastructure. In addition, adherence to market-determined interest rates is essential. However, it is common practice in many developing countries to severely restrict price determination in government securities markets by constructing barriers to entry (eg foreigners), imposing mandatory investment requirements on domestic financial institutions or rejecting bids which diverge from a predetermined interest rate range.

A key question is how far the central bank should be involved in the development of debt markets. In the simplest case where it has only one objective (price stability), the central bank sets the overnight rate (or very short-term rate) appropriate to macroeconomic conditions. It is then up to the market to determine longer-term rates without central bank intervention. Many feel it is best not to tamper with market rates which convey valuable information about market expectations and about the perceived impact of policy changes. On the other hand, central banks may have a special interest in developing debt markets and, given their knowledge about markets, they may be best suited for this responsibility. Balance therefore needs to be maintained between the market and development perspectives.

Developing fair-price auction systems

One area where central banks' involvement could be important is in developing primary dealers to help ensure the success of primary issuance and the maintenance of liquidity in secondary markets. Although primary dealers are principally intended to be market-makers, they may be forced to warehouse stock in markets with a thin investor base. Given the risks and benefits of a primary dealer network, there are strong arguments for the central bank, with its closer involvement with local markets, to lead in establishing the network. The central bank may have a better understanding of the means by which it can encourage real participation by financial institutions in debt sales. Primary dealers could then be charged with supporting the sovereign debt auctions and with assisting in open market operations. In return, the dealers could be extended certain privileges, such as access to central bank liquidity.

Another important aspect of market development is ensuring a fair price discovery system. An auction market that is allowed to operate freely can be critical in facilitating price discovery in the local markets. What criteria might lead the central bank and the government to prefer either multi-price or single-price (Dutch) auctions? The US Treasury conducted its debt auctions via multiple price awards until the 1990s. It changed to a single-price auction format as a means of encouraging more aggressive bidding for its securities.

In developed auction markets, single-price auctions are seen as advantageous for the government because they encourage more aggressive bidding by market participants and lower financing costs for the borrower. This benefit, however, may not be automatic when auctions take place in the thin markets with a small number of bidders that characterise many emerging market countries. In thin markets, marginal bids can cause more volatility in the price from auction to auction under a single price regime. This is particularly true when auction coverage rates approach unity.¹²

The advantage for the seller in using multi-price auctions lies in capturing the additional revenue forgone by the seller in single-price markets.¹³ In multi-price auctions, an unintended second consideration comes into play – that is, by paying more than was necessary, the successful bidders are plagued by the “winner’s curse” paradox in which a successful bid itself is evidence of having paid too much for an asset. The rational response from all bidders in auctions in this case is to bid less aggressively by including a risk premium in the bid. Repeated instances of this are likely to generate more cautious bidding by all parties. The net effect across all bidders is to lower the full set of bids with an increase in financing costs for the government.

What can be done in small, thin markets to prevent participants from gaining an advantage over the system?¹⁴ As reviewed in Annex Table D, auction systems vary significantly across Africa. Many developing markets are characterised by a small number of banks or other financial institutions that are actively bidding for sovereign debt. Given the small number of institutions designated as primary dealers in most markets, there is always the risk of collusive behaviour in bidding and market pricing. Further, such thin markets may be highly volatile in price movements. The use of open outcry auctions assumes that no one bidder has significant market strength to affect market prices or affect other bidders’ decisions. For countries with a nascent sovereign debt market, this is rarely true. An open outcry market makes it easier for a collusive scheme to be successful because it is easy to determine who has broken faith and this allows group discipline to be enforced. A secret bid weakens the power of collusive arrangements because it is not immediately clear who has broken ranks. Once the number of bidders becomes sufficiently large, even if some brokers are serving as order-takers for other bidders, the risk of collusive behaviour abates.

¹² The effect is more pronounced in Dutch auctions than in multi-price auctions because, in the former, the last successful bid determines the price for all. In the latter, the last bid will gain an advantageous price, but it will not affect the price at which the first winning bids are won.

¹³ That is, the “consumer surplus” or the amount is equal to the area under the demand curve that is above the market-clearing price.

¹⁴ See Mohanty (2002) for a discussion of liquidity issues in emerging markets.

Scaling back buy-and-hold strategy

The central bank has a critical role in the development of a secondary market. Are there commercial or institutional impediments to an active secondary market? Central banks must find ways of dealing with local financial institutions that lack experience or authority to trade in the secondary market. Many emerging markets are characterised by debt buyers who follow a buy-and-hold strategy. This leads to thin trading markets with more volatile prices. This further discourages trading as price risks increase with each reduction in market depth. There are various reasons why market participants may choose to use a buy-and-hold strategy. Some, such as insurance or pension firms, are timing asset maturity with anticipated cash outflows. Investment restrictions, coupled with accounting rules, may discourage them from marking their portfolio to market. Other firms may be constrained by internal policies or by inexperience in how it may be done. In this situation, the foreign banks in the economy are more likely to have the staff capacity, the tools and the incentive to become traders of outstanding sovereign debt. This gives an advantage to foreign banks in conducting local business. Because of its stake in a viable secondary market, the central bank may need to educate or otherwise assist local financial institutions in actively trading debt.

There have been attempts to encourage the trading of sovereign debt as a way to induce a more liquid market. As reported in the survey responses from many African central banks, most countries have selected financial entities to serve as primary dealers with the requirement that they function as market-makers in government securities. The survey also notes that this effort has been stymied in a buy-and-hold market. Some central banks will buy tendered securities after they reach a certain point towards maturity. Pricing such trades is challenging. It can be assisted by reference to debt in more liquid markets, but this requires a strong argument for similarity of the redeemed debt instrument to the reference security. The process may also carry an arbitrage risk.

Developing debt products and foreign investor participation

A final issue relates to attracting investors by designing new debt products. In cases where investors doubt the government's commitment to price stability, inflation-indexed securities enhance the credibility of central bank policy. The survey results, reported in Annex Table E, show that four out of nine African countries for which information is available issue inflation-indexed securities.

In cases where the economy has seen very high inflation in the recent past, it is necessary for the issuer to offer such terms as will reassure the market about future inflation risks. The issuer bears the additional risk of maintaining the asset's purchasing power. It is also argued that the break-even rate of such indexed securities provides a measure of inflation expectations. This assumes that only the real rate of interest and the expected inflation rate are the significant components of the nominal interest rate, as the premium for inflation risk is eliminated by indexing. If, however, the market for indexed securities is thin or illiquid, there will also be a liquidity premium embedded in the yield. This can lead to difficulties in the measurement of inflation expectations using the break-even rate.

What are the concerns regarding foreign investors buying longer-term securities in local currency? How does the central bank accommodate these buyers? Although up to 2010 the holders of public debt in Africa were generally residents, in

recent months several countries have begun to issue foreign currency loans. These have met a ready audience searching for yield in a world where major market interest rates are at historic lows. Some resource-rich countries are now witnessing an increase of investor interest in domestic currency issues of debt. If this continues, countries will see an inflow of foreign currency which can create challenges for monetary policy and financial stability, particularly by increasing the volatility of the exchange rate. Nevertheless, to the extent that such volatility can be managed by appropriate policy instruments (eg FX intervention), a broader investor base is likely to lead to a more liquid market.

5. Conclusion

This note has discussed a number of aspects about central banks' involvement in debt markets. Sovereign debt issued either by the central bank or by the ministry of finance benefits the economy by serving as a risk-free asset for financial markets and by establishing a yield curve for market pricing. And, the usual separation between debt management and monetary policy objectives is less relevant today because both the size and the maturity of sovereign debt have significant implications for the long-term interest rate and monetary conditions in the economy. This requires close coordination between the debt management and monetary authorities in designing an appropriate debt structure that not only reduces government borrowing costs but also leads to better management of monetary conditions.

In addition, when central banks issue their own debt, such issuance needs to be closely coordinated with the government. Both government debt and central bank debt can have the same results for banking system reserves, yield curves, and market conditions more generally. For this reason, the two institutions must coordinate their operations to avoid conflicts or overlapping efforts. Finally, central bank involvement in developing markets might be essential for setting up a benchmark yield curve and improving market liquidity, but such efforts need to be carefully designed so as not to stifle private incentives and dilute emphasis on central banks' primary price stability mandate.

Appendix

Ownership of debt by residency in Africa

Amounts outstanding at end of period (in millions of euros)

Table A

| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|--------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Angola | 627 | 1,221 | 1,670 | 1,991 | 3,614 | 9,855 | 9,509 | ... |
| Resident | 627 | 1,221 | 1,670 | 1,969 | 3,614 | 9,855 | 9,509 | ... |
| Non-resident | ... | ... | ... | 23 | ... | ... | ... | ... |
| Cameroon | 814 | 401 | 383 | 295 | 262 | 249 | 248 | 520 |
| Resident | 814 | 401 | 383 | 295 | 262 | 249 | 248 | 456 |
| Non-resident | ... | ... | ... | ... | ... | ... | ... | 64 |
| Gabon | ... | ... | ... | ... | ... | 104 | 83 | ... |
| Resident | ... | ... | ... | ... | ... | 42 | 34 | ... |
| Non-resident | ... | ... | ... | ... | ... | 61 | 49 | ... |
| Kenya | 3,010 | 2,889 | 3,660 | 3,875 | 4,295 | 3,929 | 4,753 | 6,134 |
| Resident | 2,915 | 2,851 | 3,584 | 3,820 | 4,284 | 3,903 | 4,729 | 6,105 |
| Non-resident | 96 | 38 | 75 | 55 | 12 | 26 | 24 | 29 |
| Madagascar | 714 | 396 | 411 | 437 | 461 | 371 | 378 | 417 |
| Resident | 714 | 396 | 411 | 437 | 461 | 371 | 378 | 417 |
| Non-resident | ... | ... | ... | ... | ... | ... | ... | ... |
| Malawi | 376 | 418 | 492 | 363 | 446 | ... | ... | ... |
| Resident | 376 | 418 | 492 | 342 | 415 | ... | ... | ... |
| Non-resident | ... | ... | ... | 22 | 31 | ... | ... | ... |
| Mauritius | ... | ... | ... | ... | ... | 2,355 | 2,745 | 3,052 |
| Resident | ... | ... | ... | ... | ... | 2,348 | 2,739 | 3,049 |
| Non-resident | ... | ... | ... | ... | ... | 7 | 6 | 3 |
| Morocco | 17,842 | 19,104 | 23,058 | 23,334 | 22,857 | 22,468 | 22,794 | 24,870 |
| Resident | 17,842 | 19,104 | 23,058 | 23,334 | 22,857 | 22,468 | 22,794 | 24,870 |
| Non-resident | ... | ... | ... | ... | ... | ... | ... | ... |
| Nigeria | 7,696 | 7,552 | 9,995 | 10,472 | 12,622 | 12,644 | ... | ... |
| Resident | 7,696 | 7,552 | 9,995 | 10,472 | 12,622 | 12,644 | ... | ... |
| Non-resident | ... | ... | ... | ... | ... | ... | ... | ... |
| Sierra Leone | 100 | 112 | 146 | 147 | 145 | 173 | 170 | 156 |
| Resident | 100 | 112 | 146 | 147 | 145 | 173 | 170 | 156 |
| Non-resident | ... | ... | ... | ... | ... | ... | ... | ... |
| South Africa | ... | 45,229 | 47,528 | 53,795 | 41,837 | 33,499 | 34,127 | 51,554 |
| Resident | ... | 42,887 | 44,922 | 50,164 | 38,538 | 30,153 | 29,856 | 43,808 |
| Non-resident | ... | 2,342 | 2,606 | 3,631 | 3,300 | 3,346 | 4,271 | 7,746 |
| Tanzania | 954 | 1,029 | 1,748 | 1,488 | 1,855 | 1,387 | 1,164 | 1,714 |
| Resident | 954 | 1,029 | 1,748 | 1,488 | 1,855 | 1,387 | 1,164 | 1,714 |
| Non-resident | ... | ... | ... | ... | ... | ... | ... | ... |
| Tunisia | 3,066 | 3,152 | 3,244 | 3,503 | 3,491 | 3,120 | 3,165 | 3,033 |
| Resident | 3,066 | 3,152 | 3,244 | 3,503 | 3,491 | 3,120 | 3,164 | 3,032 |
| Non-resident | ... | ... | ... | 0.058 | 0.111 | 0.061 | 1 | 1 |
| Uganda | 498 | 580 | 801 | 830 | 1,117 | 990 | 971 | 1,568 |
| Resident | 498 | 580 | 801 | 830 | 1,117 | 990 | 971 | 1,568 |
| Non-resident | ... | ... | ... | ... | ... | ... | ... | ... |
| Zambia | 775 | 680 | 1,286 | 1,154 | 1,360 | 1,169 | 1,429 | 1,564 |
| Resident | 775 | 680 | 1,286 | 1,154 | 1,360 | 1,169 | 1,429 | 1,564 |
| Non-resident | ... | ... | ... | ... | ... | ... | ... | ... |

Source: OECD (2012).

Debt maturities in Africa

Table B

| Country | Bills (in weeks) | | | | Notes and bonds (in years) | | | | | | | | | |
|--------------------|------------------|---------|----|----|----------------------------|---|---|---------|---|----|----|----|----|--|
| | 13 | 26 | 39 | 52 | 2 | 3 | 4 | 5 | 7 | 10 | 15 | 20 | 30 | |
| Algeria | X | X | | | X | | | X | X | | X | | | |
| Angola | X | X | | X | X | X | X | X | | | | | | |
| BCEAO ¹ | X | | | | | | | | | | | | | |
| Egypt | X | X | X | X | | X | | X | X | X | | | | |
| Lesotho | X | X | X | X | | X | | X | X | X | | | | |
| Malawi | X | X | | X | X | X | X | X | | | | | | |
| Mauritius | X | X | X | X | | X | | X | | X | X | | | |
| Morocco | X | X | | X | X | | | X | | X | X | X | X | |
| Nigeria | X | X | | X | | X | | X | X | X | | X | | |
| Seychelles | | Various | | | | | | | | | | | | |
| South Africa | | | | | | | | | | | | | | |
| Swaziland | X | X | X | X | | X | | X | X | | | | | |
| Tunisia | X | X | | X | X | | | Various | | | X | | | |
| Uganda | X | X | | X | X | X | | X | | X | | | | |
| Zambia | X | X | X | X | X | X | | X | X | X | X | | | |

Source: Responses to BIS survey of conference participants, 2013.

¹ Central Bank of West African States (Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal and Togo).

Issuer of government securities in Africa

Table C

| Country | Government bill/bond issuer | | |
|--------------------|-----------------------------|---------------------|------------------------|
| | Central bank | Ministry of finance | Debt management office |
| Algeria | | X | |
| Angola | X | X | |
| Botswana | X | | |
| Burundi | X | | |
| Cameroon | X | | |
| DRC ¹ | X | | |
| Egypt | | X | |
| Gabon | | | X |
| Gambia | X | | |
| Ghana | X | | |
| Guinea | X | | |
| Kenya | X | | |
| Madagascar | X | | |
| Malawi | X | | |
| Mauritania | X | X | |
| Morocco | X | X | |
| Mozambique | | X | |
| Namibia | X | | |
| Nigeria | X | | X |
| Rwanda | X | | |
| Seychelles | X | | |
| Sierra Leone | | X | |
| South Africa | | X | |
| Swaziland | X | | |
| Tanzania | X | | |
| Tunisia | | X | |
| Uganda | X | | |
| Zambia | X | X | |
| WAEMU ² | X | X | |

Source: OECD (2012).

¹ Democratic Republic of the Congo. ² West African Economic and Monetary Union, comprising Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal and Togo.

Auction mechanics in Africa

Table D

| Country | Auction rules | | | | | | |
|--------------------|-------------------------|-----------------------------|--------------|-------------|-----------------------|---|--------------------------|
| | Competitive auctions? | Limit set on price? | Single-price | Multi-price | Primary dealers | Other usual bidders? | Central Bank-issue debt? |
| Algeria | X | Treasury accepts all bids | X | | | 13, incl insurance companies | No |
| Angola | X | Longer-term debt set by MoF | X | X | | 22 banks, incl 6 domestic | Yes |
| BCEAO ¹ | X | Maximum rate | | X | | General | Yes |
| Egypt | X | No | | X | 15 | Banks and other funds | No |
| Lesotho | X | Yes | X | | No | 4–12, incl banks, insurance companies and firms | Yes |
| Malawi | X | Yes | X | | No | 12 banks and 2 insurance companies | Yes |
| Mauritius | X | No | | X | 12 banks | Other financial entities | No |
| Morocco | X | Yes | | X | 6 banks | 10 other banks | Allowed but not done |
| Nigeria | X | No | | X | Yes, as market-makers | Many entities | Yes |
| Seychelles | X | By committee | | X | | 7 banks and others | No |
| South Africa | Yes, and by other means | Yes | X | | Yes | Approx 40 entities | No |
| Swaziland | Yes, mostly | Yes | | X | Yes | Banks | No |
| Tunisia | X | Yes | | X | Yes | | |
| Uganda | X | Yes, but informal guide | X | | Yes | Mostly banks | No |
| Zambia | Yes, mostly | Yes | X | | | Banks and financial institutions | No |

Source: Responses to BIS survey of conference participants, 2013.

¹ Central Bank of West African States (Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal and Togo).

Indexed securities in Africa¹

Table E

| Use of indexed securities by selected governments | | | |
|---|--------------------|--|--------|
| Country | Indexed securities | Type | Source |
| Algeria | No info | | |
| Angola | Yes | Inflation-indexed, foreign exchange-indexed | OECD |
| Botswana | No info | | |
| DRC ² | No info | | |
| Egypt | No info | | |
| Ethiopia | No info | | |
| Ghana | No info | | |
| Kenya | No info | | OECD |
| Lesotho | No info | | |
| Malawi | No info | | OECD |
| Mauritius | Yes | 15-year inflation-indexed | OECD |
| Morocco | No | | OECD |
| Mozambique | Yes | | OECD |
| Nigeria | No info | | OECD |
| Seychelles | No info | | |
| South Africa | Yes | Inflation-indexed | OECD |
| Swaziland | No info | | |
| Tanzania | No | | OECD |
| Tunisia | No | | OECD |
| Uganda | No | | OECD |
| Zambia | No | | OECD |

¹ OECD (2012).² Democratic Republic of the Congo.

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