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Sub-Saharan Africa International Sovereign Bonds

Part II

Risks for Issuers

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Abbreviations

CFM	Capital flow management
DR	Democratic republic
FX	Foreign exchange
GB	Great Britain
GNP	Gross National Product
HIPC	Heavily indebted poor countries
IMF	International Monetary Fund
MDRI	Multilateral Debt Relief Initiative
MSCI	Morgan Stanley Capital International
OTC	Over-the-counter
SSA	Sub-Saharan Africa
US	United States of America
VIX	Chicago Board of Exchange Volatility Index

1 Introduction

Sovereign bond issues for sub-Saharan Africa have surged since the global financial crisis of 2007-08 with particularly strong levels of issuances in 2013 and 2014.¹ Drivers included strong investor demand because of the exceptionally loose monetary conditions in advanced economies creating a “search for yield” and because of improved macroeconomic fundamentals in the issuing countries.

These trends in sovereign bonds represent an opportunity for sub-Saharan African countries to broaden their investor base and source funds for development purposes including infrastructure and human capital development.

However, they also carry significant risks. Similar risks have repeatedly cause economic instability in other developing countries through macroeconomic disruption and financial crisis. Sub-Saharan Africa has the potential to repeat the problems which occurred in the early 1990s in Asia and Latin America when damaging financial crisis pushed millions back into poverty for a decade. Financial history warns us that a complacent approach to debt is the greatest policy mistake of all.

Examination of these risks is the focus of this paper.

The paper considers each in detail and asks how material are they today? It concludes that risks are currently moderate but growing. The paper identifies the key risks as;

- **Exchange rate risk.** If the 2014 market disruptions were to be repeated across the region it would cause an exchange rate loss of \$10.8 billion. This loss can be scaled against GDP in order to assess the materiality of the absolute value of the losses. It represents a value equivalent 1.13% of GDP. This risk is largely unhedgable except for commodity exporters. The IMF concur that exchange rate risk is a major concern (IMF, 2014b)
- **Debt sustainability ratios** are reasonable but dependent upon continued strong GDP growth. Future debt levels – including the pace of sovereign bond issuances – need to be kept in balance with GDP growth.
- **Sub-Saharan African financial systems are vulnerable to financial fragility.** Volatile private capital portfolios flows – such as those driven by “stop-start” cycles in debt – could be the trigger for financial contagion and – in the worst case – financial crisis.

The paper calls for active policy by issuing government and development agencies to ensure that these growing risks remain manageable. Whether these risks are contained depends on whether the current strong macroeconomic growth continues and that needs strong government action. Governments need to be held accountable for responsible use of funds. They need to build better debt management capacity and sound macroeconomic management. This includes capital flow management policy.

However, policy effectiveness is constrained by the structure of financial systems which limit risk management and create vulnerability to disruptive capital flows. Policy needs to reform international financial architecture in order to avoid the risk of financial instability.

¹ Detailed in the accompanying paper “Sub-Saharan Africa International Sovereign Bonds: Investor and Issuer Perspectives”.

2 What are the risks?

2.1 Bond specific risks

Sovereign bonds² create financial risks for the issuer. These include exchange rate, interest rate and liquidity risk.

Different types of bonds carry different types and levels of risk (figure 1).

Figure 1: Bond characteristics, related risk and issuance levels

Risk	Low risk	% of bonds issued	High risk	% of bonds issued
Foreign currency risk	Local currency	0%	Hard currency	100%
Interest rate risk	Fixed coupon	96%	Floating coupon	3%
			Step up coupon	1%
Liquidity risk	Amortizing principle	32%	Bullet principle	68%
Maturity	Short maturity	6% (5 years and below)	Long maturity	94% (10 years or more)

Source: Author

Exchange rate risk is high for bonds denominated in “hard currency” – such as US dollars, Euro, Japanese Yen or GB pounds - and low for those in local currency.

Interest rate risk is high for bonds issued with floating interest rates and low for those with fixed interest rates. This is because for bonds with floating interest rates if the rate increases payments increase³.

Liquidity risk⁴ is high for bonds with bullet repayments⁵. This is because the total principle is repayable at the maturity date which concentrates refinancing risk (MF, 2014c).

Longer-dated maturity increases exposure to all risks because it increases uncertainty.

All bonds that have been issued to date have high exchange rate risk because they are denominated in hard currency (US dollars). This is the most important risk of sovereign bonds issued to date and is discussed in more detail below.

They have moderate liquidity risks with 66% having bullet principle repayments. Interest rate risk is low because 95% of bonds have fixed coupons⁶.

² See appendix for details of bonds

³ Floating bonds can also be lead to cost savings through reduced interest payments if interest rates fall.

⁴ Liquidity risks include refinancing and roll-over risk. Refinancing risk is the risk of refinancing at unfavourable terms such as punitive interest rates and shorter maturities (IMF, 2014c).

⁵ Bullet bonds have the total principle repayable at the end of the bonds maturity. Amortizing bonds have staggered repayments of principle spread over the time span of the bond.

⁶ Interest rate risk is presented through a stress scenario in the appendix. It averages 0.09% of GDP for the region with a range of 0.01% and 0.61% and so is less significant than for foreign exchange risk. See appendix for calculations.

Exchange rate risk

Bonds issued in non-domestic currency create foreign exchange risk relating to the need to make interest payments and principle repayments during the life of the bond in “hard” currency. The risk is increased by longer maturities and by bullet repayments because uncertainty – and hence risk – is increased with larger and longer-dated cash flows.

Exchange rate risk is the most material risk for sovereign bonds issued to date. This is because all sovereign bond issues to date have been issued in US dollars. A significant proportion (68%) of bonds issued also have bullet repayments of principle.

Further, exchange rates in the region have suffered from both long-term depreciation and short-term volatility, making these risks palpable. Long-term nominal depreciation has averaged 3-4 percent annually between 2000 and 2013 – an equivalent of a 44 percent cumulative devaluation (IMF, 2014b)⁷. In 2014, significant volatility in exchange rates occurred in the region. This includes the Ghana Cedi and the Nigerian Naira which both depreciated by more than 20% in 2014 with a peak depreciation of over 60%.⁸

Such risks can lead to increases in repayments in local currency equivalent that can make debt more costly (IMF, 2014b) or – in the worst case – unpayable. The risk is greatest where currency devaluations occur suddenly (because the automatic stabiliser through increasing export competitiveness has a lead time to occur) or where there are insufficient reserves to provide for stabilization.

The extent of the foreign exchange risk can be understood more deeply by examining a “stress test”⁹ for bonds issued to date (figure 2). The stress test scenario uses the worse actual currency moves in the region in 2014 (which were for Ghana) and applies the devaluation to all currencies. It uses the actual 2014 currency moves in order to present an adverse - but realistic – scenario.

The value of losses for all countries under this stress test resulting from exchange rate moves is \$10.8 billion (Figure 2).

This loss can be scaled against GDP in order to assess its materiality of the absolute value of the losses to issuing countries. It represents a value equivalent 1.13% of GDP (Figure 2).

⁷ The IMF comment “Countries have to reimburse the bonds in foreign currency at the prevailing exchange rate—at a much higher cost for those that experience large currency depreciation during the maturity of the bond. This is of particular relevance in sub-Saharan African countries, whose nominal effective exchange rates have depreciated by 3 percent to 4 percent per year on average during 2000–13—that is, 44 percent on a cumulative basis over that period”. (IMF, 2014b, page 16).

⁸ The Ghana Cedi had depreciated by over 60% by September 2014 but recovered after program of fiscal reforms was agreed with the IMF. The Nigerian Naira is floating but managed exchange rate and suffered devaluation due to oil price declines. The Central Bank devalued the managed trading band in late 2014 after the pressure became unmanageable and after IMF discussions.

⁹ A stress test takes the total cash flows for each bond over its life, including interest and principle payments, applies a stress test scenario and calculates anticipated losses. It presents a worst case but based on actual market events. The test above uses cash, not present, values includes all cash flows over the life of the bond and uses 2013 GDP.

Figure 2: “Stress test” scenario of foreign exchange risk

Row Labels	Values USD millions		% of 2013 GDP
	Sum of Cash flows	Sum of FX impact (1)	
Angola	1,503	451	0.36%
Cote d'Ivoire	12,398	3,719	11.60%
Gabon	2,552	766	3.97%
Ghana	3,325	998	2.09%
Kenya	3,178	953	1.73%
Mozambique	1,530	459	3.00%
Namibia	792	238	1.94%
Nigeria	2,322	697	0.13%
Rwanda	670	201	2.64%
Senegal	2,063	619	4.18%
Seychelles	302	91	6.55%
Tanzania	864	259	0.78%
Zambia	3,034	910	3.39%
Ethiopia	1,663	499	1.05%
Grand Total	36,196	10,859	1.13%

Source: Author

See appendix for full details of methodology and calculations.

The results vary by country. For some countries the risk is considerably lower than average and is relatively immaterial. This includes Angola – because of its relatively high GDP - and Tanzania - because of its relatively low issuance levels.

Conversely, some countries have much higher than average foreign exchange risk and are significantly exposed to exchange rate movements. This can be because countries have not issued high levels of bonds in absolute levels, but have relative to GDP. This includes the Seychelles who would lose \$0.3 billion (or an equivalent of 6.55% of 2013 GDP and are also exposed to highest interest rate risk relative to GDP in the region – see appendix), Senegal who would lose \$2.1 billion (or an equivalent of 4.18% of 2013 GDP) and Gabon who would lose \$2.6 billion (or an equivalent of 3.97% of 2013 GDP).

It also includes the Cote D'Ivoire which would lose \$3.7 billion (an equivalent of 11.60% of its GDP). However, this is because it has high risk due to high levels of debt combined with long maturity of issuances (Up to 22 years).

This demonstrates that for a number of sub-Saharan African countries – particularly poorer and smaller countries - the scale of the exchange rate risk created by the current levels of bond issuances is concerning. This concern was reiterated by the IMF who commented that countries are “particularly sensitive to adverse shocks to the exchange rate” (IMF, 2014f)¹⁰.

These risks can change or diminish over time. In the event of currency devaluation macroeconomic stabilisers – particular export competitiveness – could offset currency losses on bonds effectively. Most importantly, continued strong GDP growth would reduce the ratios significantly and ensure debt remains manageable even if moderate currency devaluation occurred.

¹⁰ The IMF found similar results by calculating the cost of Ghana's 2007 Eurobond following the 2014 devaluation in its currency and projected its cost to be about 60 percent more than the equivalent local currency bond (IMF, 2014b)

Risk mitigation and management

Risk arising from sovereign bond issuances can be mitigated and managed in a number of ways.

Firstly, it can be mitigated where countries have fiscal revenues in hard currency. This is typically the case for commodity exporters where prices are dominated in US dollars. Such a macroeconomic structure provides a “natural hedge”¹¹ when borrowing in hard currency but is dependent upon the stability of global commodity prices and demand.

Secondly, risk can be managed by hedging with financial instruments such as futures, options and swaps.

This includes risk relating to interest rate risk. Interest rate risk is composed of two elements – base rate risk and credit spread risk. For bonds denominated in hard currency, the base rate risk can be hedged using liquid markets in futures, options or swaps. The credit risk could be hedged through use of credit derivatives but there is variability in the liquidity of credit derivatives for sub-Saharan Africa countries with liquidity in South Africa only (International Swap Dealers Association, 2014).

Currency risks can be mitigated through such derivatives. However, liquidity for these instrument is currently very limited or non-existence for many sub-Saharan African countries (IMF, 2014c). Amongst the 13 sovereign bonds issuers 5 have limited liquidity in currency derivatives (Defined as “undeveloped” currency markets). The other 8 issuing countries currency derivative markets are illiquid. None have liquid currency markets (Figure 3).

Figure 3: Sub-Saharan Africa currency market liquidity

Ranking (1=most liquid to 5 = least liquidity)	Sub-Saharan countries and currency
1 Pegged currencies	Central African franc (Cameroon, Chad, Equatorial Guinea, Gabon and Congo) West African Franc (Benin, Burkina Faso, Cote d’Ivoire, Senegal, Guinea Bissau, Mali, Niger and Togo)
2 Developed offshore markets	None
3 Undeveloped offshore markets	Botswana Pula; Ghanaian Cedi; Kenya shilling; Nigerian Naira; Tanzanian shilling; Ugandan shilling; Zambian Kwacha
4 No liquid currency market but benchmark available (Mainly T-bills)	Angola Kwanza; Madagascar Aviry; Mauritania Ouguiya; Malawian Kwacha; Mozambican Metical; Rwandan franc
5 No liquid market and no benchmark	DR Congo franc; Ethiopian Birr

Source: TCX. See appendix for full definitions

¹¹ A natural hedge is where the risks – such as currency or interest rate risks – from an entity’s cash flows from its normal operations offset each other, reducing risk. This concept can be applied to a country where fiscal revenues and expense offset each other, reducing net risk. For example if a country has US dollar revenues from commodity exports they provide a “natural hedge” for US dollar payments on bonds.

This is of concern because, as discussed, the exchange rate risk that has been created for issuers by the recent sovereign bond issues is significant and – because of the illiquidity of hedging instruments - effectively unmanageable. The exceptions are those countries with “natural hedges” through commodity revenues such as Angola and Nigeria.

2.2 Debt sustainability

Debt sustainability – that is the ability and willingness to repay interest and principle payments as they fall due - is a concern when sovereign issue bonds and other forms of debt is present. Problems with sovereign debt defaults have been frequent including in sub-Saharan Africa in the 1980s and 1990s. These were only resolved following prolonged debt workout including the highly-indebted poor country initiative (“HIPC”) (Reinhart and Rogoff, 2009).

Current levels of debt sustainability in sub-Saharan Africa is mixed. Public sector debt in sub-Saharan Africa had an average debt-to-GDP ratio of 37 percent in 2013, down slightly from 41 percent of GDP in 2008 (IMF, 2014b).

Since 2000 public debt ratios in LIDCs have, on average, declined substantially. This is due to reductions in absolute debt levels (Including due to HIPC) and reductions in relative debt levels due to strong macroeconomic growth (IMF, 2014c).

These positive factors are reflected in the IMF’s debt sustainability risks ratings (figure 4) which assesses the debt sustainability of public domestic and international and private international debt. No issuing countries were rated as “high” risk, 4 were rated as “moderate” and the remainder were rated as “low”.

Figure 4: IMF debt sustainability risk rating

Risk Rating	All countries	Sovereign bond issuers (2006-2014)
High	Burundi, Chad, Comoros, Congo, Dem. Rep., Central African Republic, Djibouti, Sao Tome and Principe, Sudan	None
Moderate	Burkina Faso, Cameroon, Cote d'Ivoire, Ghana, Gambia, Guinea-Bissau, Guinea, Lesotho, Mauritania, Mali, Malawi, Mozambique, Niger, Seychelles, Sierra Leone, Togo	Cote d'Ivoire, Ghana, Mozambique, Seychelles
Low	Benin, Congo, Rep., Ethiopia, Gabon, Kenya, Liberia, Madagascar, Moldova, Namibia, Nigeria, Rwanda, Senegal, Tanzania, Uganda, Zambia	Ethiopia, Congo, Rep., Gabon, Kenya, Namibia, Nigeria, Rwanda, Senegal, Tanzania, , Zambia

Source: IMF, 2013c; IMF, 2014c; IMF country reports for Upper MICs (See appendix for comment on methodology)

However these ratios and risk ratings have been dependent upon strong GDP growth rather than fiscal and debt management (IMF, 2013c). Real GDP growth contributed to lowering debt to GDP ratios by 4.5 percent between 2008 and 2013.

Primary fiscal balances contributed to higher debt to GDP ratios by 2.5 percent in the same period. Some countries saw fiscal deficits return to 2009 levels on the back of current – not capital – spending. The largest of these was Ghana with a fiscal deficit of 10 percent of GDP in 2013 and who had to request IMF assistance in 2014 in order to

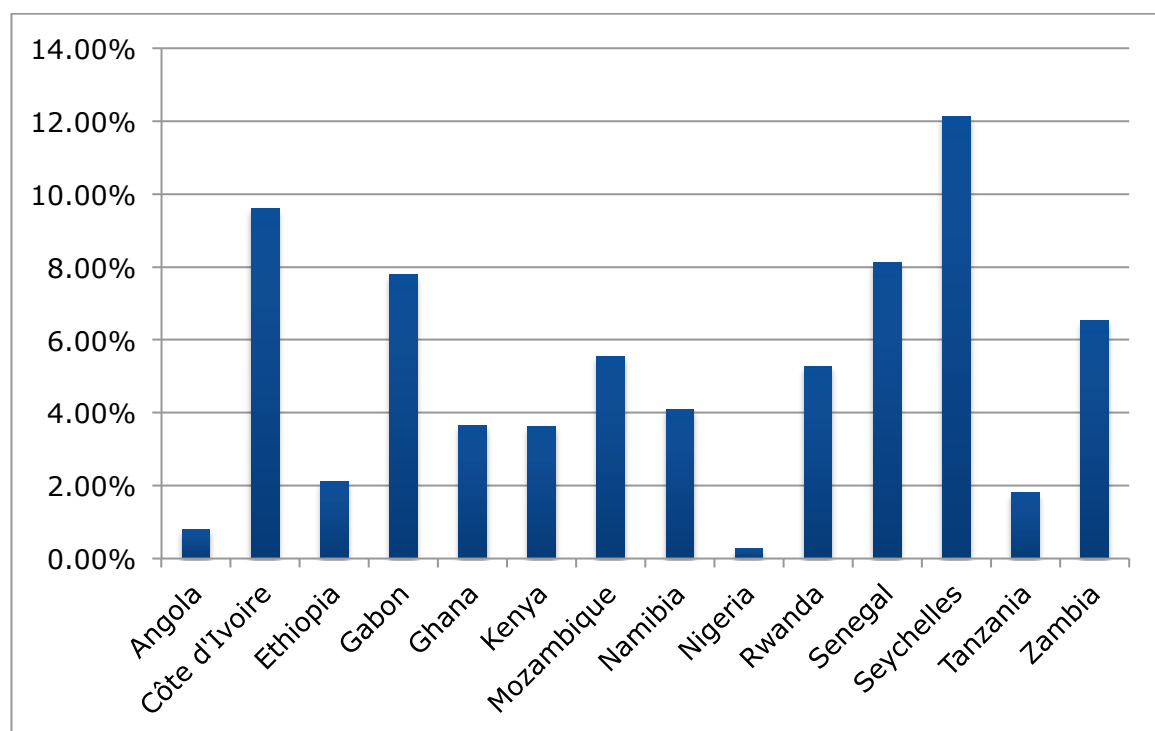
finance it. 12 Other issuing countries that saw fiscal deficits widen included Angola, Nigeria, Rwanda, Kenya, Zambia and Tanzania. (IMF, 2014b).

For those countries with access to international markets – such as those who have issued sovereign bonds – further debt is driving deterioration in the debt to GDP ratios. Their ratios of debt to GDP have increased more than average. By 2013 their average ratios of public debt to GDP had increased from 27 percent in 2008 to 41 percent by 2013 (IMF, 2014b).

The contribution of sovereign bond issues to these increased debt to GDP ratios varied between countries by 2014 (figure 5). Some countries saw minor contributions. This includes commodity exporters such as Angola, Nigeria and Zambia whose strong commodity exports drove strong GDP growth, reducing the relative ratio to sovereign bonds.

However, the majority of countries have issued bonds that account for 5 to 10 percent of GDP. The Seychelles ratio exceeded this at over 12 percent of GDP due to its high issuances and relatively small absolute GDP (Figure 5).

Figure 5: Outstanding sovereign bonds as a percentage of 2013 GDP



Source: IMF World Economic Indicators, October 2014; World Bank database; Elaborated by author

The outlook for future maintenance of reasonable ratios is dependent upon both the level of debt issuances and of GDP growth.

Growth for sub-Saharan Africa is currently forecast to accelerate from about 5% in 2013-14 to 5.75 percent in 2015 (IMF, 2014b). Maintaining the current reasonable debt levels is dependent upon this strong continued GDP growth (IMF, 2014f).

¹² The fiscal deficit was one of the concerns which drove the exchange rate depreciation in the Cedi discussed earlier. Fiscal reforms were included in the IMF mission. They commented on the need "to contain growth in Ghana's comparatively high public wage bill" and that "Efforts to clean up the payroll and enhance its management have been initiated and should be pursued swiftly. These efforts, together with the implementation of appropriate pay and hiring policies, will help further control the wage bill, which has been a significant source of fiscal risk". (Staff Concludes Mission to Ghana, Press Release No. 14/532, November 21, 2014).

However, there are significant risk factors for sub-Saharan Africa that may adversely affect GDP growth. Exports are being challenged by the slowdown in global growth including from China. It is particularly affecting commodity exporters including Zambia, Angola, Gabon and the DR Congo (Tyson, Kennan and Hou, 2014; IMF, 2014b; IMF 2014c). This slowdown will impact both their GDP but also reduce the level of the “natural hedge” provided by having US dollar export revenues.

In 2014 these risks contributed to credit ratings downgrades for Nigeria and Ghana and negative outlook warnings for Nigeria, Ghana, and Zambia.

Overall debt sustainability ratios are manageable. But any negative shocks to the current buoyant GDP growth – which is possible given the “new mediocre” in sub-Saharan Africa’s export markets - will create a deterioration in the situation.

2.3 Increased financial fragility

Portfolio flows – including those related to bonds - have repeatedly been associated with damaging financial instability in developing countries. This includes in sub-Saharan Africa in the 1980s, Asia in 1997 and in Latin American in the 1990s and 2002 (Kindleberger and Aliber, 2005; Reinhart and Rogoff, 2009; Griffith-Jones and Tyson, 2013; McKinley and Tyson, 2014). Contraction of portfolio flows were a key channel for transmission of the global financial crisis from developed to developing countries (Ocampo et al, 2010).

The potential of portfolio flows to create financial instability is associated with the transition in developing countries financial systems from being underdeveloped to a developing – but not mature – financial system (Ocampo et al, 2010; IMF, 2012; Velde and Griffith-Jones, 2013; Ocampo, 2014).

This has been linked to a number of differentiating factors in such transitioning financial systems as follows;

- The level of integration into international private capital markets and trade and its role in attracting large-scale cross-border flows (Ocampo et al, 2010; IMF, 2012; Velde and Griffith-Jones, 2013; McKinley and Tyson, 2014).
- The extent of financial liberalization¹³, particularly liberalization of capital accounts which permits unfettered cross-border capital flows (Diaz-Alejandro, 1985; Arestis et al 1997; Kaminsky and Reinhart, 1999; Ocampo et al, 2010; IMF, 2012)
- Large scale of inflows relative to recipient domestic financial markets (IMF, 2012; te Velde and Griffith-Jones, 2013; Tyson, 2014a).¹⁴

Amongst the recent issuers of sovereign bond issuers, these risk remain moderate because the levels of capital flows from bonds is low relative to GDP (figure 5) and to the scale of domestic financial markets (IMF, 2012; Griffiths-Jones and te Velde, 2013).

However, vulnerabilities are increasing (IMF, 2014c).

Some sub-Saharan African – such as Nigeria¹⁵, Kenya and Ghana - are currently undergoing transitional phases in their financial systems (Beck et al, 2009; Griffiths-

¹³ The opening of capital accounts has also been associated in sub-Saharan Africa with capital flight. Capital flight, as a share of GDP for sub-Saharan Africa between 1980-2008 averaged 6% of GDP for petrol exporters, 9.7% for conflict-affected countries and 4.7% for other countries (Ndikumana, & Boyce, 2011).

¹⁴ Most commonly financial fragility has been associated with capital outflows. Outflows can cause rapid currency depreciation that cannot be fully offset by policy instruments such as interest rates or reserve. However inflows can also cause financial instability including rapid currency appreciation and asset bubbles. Both inflows and outflows cause disruption to exports and growth through exchange rates (although currency depreciation generally has a positive impact). (Griffiths-Jones and te Velde, 2014; Sidaoui et al, 2011).

¹⁵ Nigeria also suffered a banking crisis in 2009 (Tyson, 2014a).

Jones and te Velde, 2013) and may be especially vulnerable to sources of financial fragility. Other are less vulnerable because links to global financial systems are limited.

There are also domestic financial sector vulnerabilities. This includes from banks' balance sheet weaknesses associated with rapid credit growth (Kenya, Nigeria, Côte d'Ivoire, Mozambique, and Senegal), a sharp rise in foreign liabilities as percent of domestic credit (Côte d'Ivoire) and stretched loan-deposit ratios (Cameroon, Kenya). (IMF 2014c; IMF, 2014d; Tyson and Patel, 2014).

These factors make the financial markets of countries issuing sovereigns bonds vulnerable to financial fragility from volatile cross-border capital flows. Such volatility could occur if international investor sentiment in relation to sub-Saharan Africa was to become negative.

These risks partially materialised in 2013 and 2014 amid speculation relating to the reversal of quantitative easing and loose monetary policy in advanced countries¹⁶. This drove rapid deterioration in both liquidity and costs of debt for developing countries including sub-Saharan Africa (Hou et al, 2014; Tyson, Kennan and Hou, 2014; McKinley and Tyson, 2014). (figure 6)

There were further sharp currency and yield moves on early and late¹⁷ 2014 in sub-Saharan countries accompanied by sharp net equity and bond outflows. Sovereign spreads and market interest rates rose. Currency devalued by up to 40 percent. The largest market moves were in Ghana, Zambia and Nigeria. (IMF, 2014a; IMF, 2014b)

International credit agencies downgraded the credit ratings of Ghana, Zambia and Uganda.¹⁸

The sharp risk reversions caused disruption in sovereign debt issuances by sub-Saharan African. Ghana, Kenya, Tanzania and Ethiopia had to cancel or delay¹⁹ planned issuances.²⁰

Such market disruptions – while short-term – underline the liquidity and exchange rate risks of sovereign bond issues and how they could lead to no or adverse liquidity for new issues or refinancing.

More worryingly they show the increasing vulnerability of sub-Saharan Africa countries to systemic financial instability. The financial fragility that is building in their financial systems – increasing integration into international private capital markets combined with financial liberalization and immature but developing financial systems – when combined with similar sharp volatility in capital flows has repeatedly led to financial crisis and damaging macroeconomic instability in other developing countries. There is building risk of such events repeating in sub-Saharan Africa.

¹⁶ See appendix for detail of each countries bond and currency prices.

¹⁷ The Financial Times. October 22, 2014 "Africa bond rally halts amid Ebola fear".

¹⁸ Although there were also positive credit events including the credit outlook for Rwanda being revised to positive and for Senegal to stable in 2014.

¹⁹ Although Kenya returned to the market and issued in late November 2014. Ethiopia planned to issue in December 2014 although at the time of writing the issue has not been completed.

²⁰ The Financial Times. November 27, 2014 "The good, the bad and the ugly of emerging market debt".

3 What is needed to manage risks?

Strong policy can mitigate and manage these risks. This includes policy by national governments within the region and by development agencies. Policy options are discussed below.

3.1 Domestic policy

Building debt management capabilities

Countries with strong institutions and mature financial markets are able to manage the risks arising from sovereign bonds.

However in sub-Saharan Africa the institutional environment has significant weaknesses. There is a lack of the required resources and skills to undertake comprehensive management and analysis of international debt issuances. High staff turnover is a problem. (IMF, 2014c). Failure in these institutional capabilities can create significant problems. This includes poorly executed transactions, deterioration in medium-term debt sustainability and misuse of funds.

Building strong debt management capacities to manage the sovereign bond portfolios is needed²¹. This includes a need for governments to establish a debt management strategy, manage more effectively on-going risks and establish stronger institutional structures surrounding sovereign debt. Of particular immediate importance is the need to build capabilities in relation to the pricing and currency of issues because these cannot be corrected post-issuance.

Ensuring the pro-growth use of funds

The proceeds from sovereign bond issues needs to be used for pro-growth purposes. This is because funds are urgently needed for economic and human needs that will underpin future growth and because debt sustainability is dependent upon that growth being attained.

As highlighted in the discussion the track record to date relating to the appropriate use of funds is mixed. Some countries are using them responsibly but others are not.

Governments need to establish institutional structures to ensure proceeds from the issuances are used for intended purposes and that they are incremental – not substitutional – funds. In addition to the capabilities for general debt management this could be implemented through high levels of parliamentary oversight, public transparency and independent auditing.

Restricting levels of “unhedgeable” risks

Bond-specific risks – particularly exchange rate risk - are “unhedgeable”²² because of illiquid and immature markets for hedging instruments. Development of more mature and deep markets for such instruments should develop in the medium term but have not yet done so. This means that – even if institutional capacity is strong – risk exposures will be present.

Issuing countries need to carefully monitor the levels of these risks to ensure they do not become excessive. Established banking techniques could be used for these purposes

²¹ Full detailing of these structures is beyond the scope of this paper. However the World Bank highlights the core requirements for debt management as being: (1) governance and strategy development; (2) coordination with macroeconomic policies; (3) borrowing and related financing activities; (4) cash flow forecasting and cash balance management; (5) operational risk management; and (6) debt records and reporting. (World Bank, 2013)

²² “Unhedgeable” is defined as a financial risk for which there is no executable mitigating strategy. This includes, for example, an absence of liquid hedging instruments or diversification strategies.

such as risk limits – possibly as thresholds of GDP – using value-at-risk and stress testing.

Public transparency of such risk limits would assist in their monitoring and compliance.

Policy to manage “disruptive” capital flows

“Pull” factors that protect economies from damaging short-term capital flows are the responsibility of governments. This includes prudent macroeconomic policies in relation to fiscal, monetary and exchange rate management and macro-prudential regulation of domestic financial markets.

However “push” factors – including “disruptive capital flows” (IMF, 2012)– are not. Such “push” factors leave economies – and especially those with relatively small and underdeveloped financial systems such as those in sub-Saharan Africa – vulnerable to damaging economic and financial instability.

Management of “push” factors through macroeconomic policy instruments is not always being feasible for vulnerable countries. For example, this may be the case where outflows are large and sudden, when reserves are not adequate to manage exchange rate movements or where effective macroeconomic policy requires time to be effective (IMF, 2012).

An alternative policy to protect economies from such volatility is capital flow management (“CFM”) (IMF, 2012). Such policies have proved effective in protecting countries from financial instability. Examples include Malaysia during the 1997-98 Asia financial crisis (Kaplan and Rodrick, 2001; Kawai and Takagi, 2003) and Spain, Indonesia, Brazil, Hong Kong and Korea during the 2007-08 global financial crisis (IMF, 2012; Leung, 2014). Because of this CFM is gaining a broad consensus as acceptable policy (IMF, 2012).

In circumstances where capital flows threaten financial and economic stability – such as if there is a sharp risk retraction in response to reversal of loose monetary policy in advanced economies - capital flow management is a valid policy option and should be prepared and implemented.

3.2 Development agencies

Domestic Institutional Capacity Building

Development agencies can be important partners for countries to build institutional capacity. They can provide valuable resources and know-how. This should be provided to assist countries who are issuing sovereign bonds in sub-Saharan Africa.

Two specific areas would be improved by providing technical expertise;

- **Debt management capacity.** This was discussed in the section above; and
- **Independent deal advice and review:** Issuing countries are currently being advised and represented by global investment banks. Many banks have strong reputations and can be trusted to provide the best possible execution of bond issues for their client. However, some banks may also be influenced by their liabilities as underwriter and by their client relationships with investors to whom bonds are marketed. A valuable role for development agencies would be to provide countries access to independent advice during deal execution and post-deal review on such issues as pricing, legal conditions and fees.

Stimulating development of financial markets for “unhedgable” risks

As discussed, countries issuing sovereign bond issues face “unhedgable” risks because of a lack of mature financial markets in hedging instruments. Development of such markets could have positive effects both on sovereign risk management and on the

development of local and corporate bond markets. Promoting the development of such markets could be a valuable role for development agencies.

However policy needs to be carefully designed to avoid creating moral hazard amongst private sector investors. Equally important is to ensure that that policy effects are incremental to developments that would have occurred in the private sector as financial markets mature regardless of policy interventions. They also require comparative assessment against other policy interventions with the same goals.

An example of a policy intervention that requires careful assessment in regard to these factors is the provision of risk-reducing instruments or returnable capital investments to private sector investors in sub-Saharan African financial markets. Such investments may reduce risk for investors who would have assumed the risk regardless or create moral hazard for investors who will assume excessive risks as a result with an assumption of a "government bail-out" if defaults or other losses occur.

Current research methodology to make such impact assessments is underdeveloped. We recommend development agencies consider all policy options and facilitate development of stronger assessment methodology to ensure their effectiveness and value.

Reform of International Financial Architecture

Sub-Saharan Africa countries are not the only interested parties in the success of their recent sovereign bond issues. If problems occur investors in advanced economies – including socially-valuable investors such as pension funds – will be losers. Failures that lead to economic instability, financial crisis or default in developing countries serves no one's interests.

Such risks can be mitigated by international policy coordination and consistency. In relation to capital flows, cross-border policy coordination between source and recipient countries could help protect against these failures (IMF, 2012).

This includes in relation to a consensus on capital flow management. However, financial investors are particularly resistant to capital controls because they prevent them removing their capital in the event of market disruption. Greater support of CFMs in policy formulation is needed.

International cooperation is needed to implement policy that benefits all countries as the international financial architecture continues its post-crisis reforms. Development agencies can act positively in promoting this agenda and ensuring that developing countries are fairly represented in it.

4 Conclusion

Sovereign bonds offer issuing countries and opportunity for finance development but create risks. The risks – and how significant they are - relating to the increasing levels of sovereign bond issuances in sub-Saharan Africa can be summarised as follows;

- Bond issuances create liquidity, interest rate and exchange rate risk for issuing countries. Of these, today the most significant is exchange rate risk. This risk is largely unhedgable except for commodity exporters who have a “natural hedge” through US dollar denominated revenues.
- Debt sustainability can be threatened by excessive issuances. Current debt sustainability ratios are moderate. However, this has been due to strong GDP growth and debt restructuring. As issuances increase debt sustainability is dependent upon continued strong GDP growth. However, this is threatened by the “new mediocre” in global economic environment including China (Tyson, Kennan and Hou, 2014) and by irresponsible use of funds by some issuers (See paper I). Future debt levels – including the pace of sovereign bond issuances - need to be kept in balance with GDP growth. Governments need to be held accountable for responsible use of funds.
- Sub-Saharan African financial system have been liberalised and are deepening. This is increasing linkages to the global financial system, makes them vulnerable to financial fragility. Volatile private capital portfolios flows - such as those driven by “stop-start” cycles in debt – have repeatedly been the triggers for financial crisis. There is a risk that any shock to currency bullish investor appetite could be the trigger for financial contagion and – in the worst case – financial crisis.

Governments and development agencies have a range of policy options to address these risks. Governments need to build debt management capacity – including taking responsibility for the “pro-development” use of funds - and sound macroeconomic management. Exchange rate risks will be mitigated by sound macroeconomic management that ensures currency stability. Debt sustainability will most effectively be ensured by strong economic growth. They also need to prepare the groundwork for implementation of CFMs in the event of disruptive capital flows.

However, policy options are limited by the current structure of domestic and international financial systems. Risk management is constrained and all financial systems are vulnerable to disruptive capital flows. Both Governments and development agencies need to recognise these risks and promote - through policy relating to financial architecture – financial systems that deliver on their important functions in economic growth whilst avoiding a repeat of damaging financial instability.

Today, sub-Saharan Africa shares many similarities with Asia or Latin America in the early 1990s – strong growth, supportive capital inflows, and the aspiration of achieving middle-income status within a decade. However, the comparison is illustrative –this period ended in a hugely damaging crisis’s that pushed millions back into poverty for a decade. Financial history warns us that a complacent “This time is different” (Reinhart and Rogoff, 2009) approach to debt is the greatest policy mistake of all.

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Appendix

Figure 6: Sub-Saharan Africa Sovereign Bond Issuances (2006 - 3Q 2014)

Country	Year	Yield at iss	Teno	Size (\$mn)	S&P (rating at iss)	Curr	Bond type	Coupon typ
Senegal	2009	9.473	5	200	B+	USD	Bullet	Fixed
Seychelles	2010	5	16	168	Not rated	USD	Sinkable	Step-up
Cote d'Ivoire	2010	17.354	22	2330	Not rated	USD	Sinkable	Flat trading
Nigeria	2011	7.126	10	500	B+	USD	Bullet	Fixed
Senegal	2011	9.125	10	500	B+	USD	Bullet	Fixed
Namibia	2011	5.835	10	500	Not rated	USD	Bullet	Fixed
Angola	2012	7.19	7	1000	BB-	USD	Sinkable	
Zambia	2012	5.625	10	750	B+	USD	Bullet	Fixed
Tanzania	2013	6.284	7	600	Not rated	USD	Sinkable	Floating
Rwanda	2013	6.746	10	400	B	USD	Bullet	Fixed
Nigeria	2013	6.625	10	500	Not rated	USD	N/A	N/A
Nigeria	2013	5.375	5	500	Not rated	USD	N/A	N/A
Ghana	2013	8	10	750	B	USD	N/A	N/A
Mozambique	2013	8	10	850	B+	USD	N/A	N/A
Gabon	2013	6.375	11	1500	BB-	USD	Sinkable	Fixed
Zambia	2014	8.625	10	1000	B+	USD	N/A	N/A
Kenya	2014	6.875	10	1500	B+	USD	N/A	N/A
Kenya	2014	5.875	5	500	B+	USD	N/A	N/A
Cote d'Ivoire	2014	5.625	10	750	Not rated	USD	N/A	N/A
Senegal	2014	6.25	10	500	B+	USD	N/A	N/A
Ghana	2014	8.125	12	1000	B	USD	N/A	N/A
Ethiopia	2014	6.625	10	1000	B	USD	N/A	N/A

Source: Bloomberg, Dealogic, The Financial Times

Figure 7: Stress test for foreign exchange and interest rate risks (USD millions and as percentage of GDP)

Row Labels	Values			FX impact	IR impact
	Cash flows USD	FX impact (1) USD	IR impact (2) USD	% of 2013 GDP	% of 2013 GDP
Angola	1,503.3	451.0	50.0	0.36%	0.04%
Cote d'Ivoire	12,397.5	3,719.3	154.0	11.60%	0.48%
Gabon	2,551.9	765.6	75.0	3.97%	0.39%
Ghana	3,325.0	997.5	87.5	2.09%	0.18%
Kenya	3,178.1	953.4	100.0	1.73%	0.18%
Mozambique	1,530.0	459.0	42.5	3.00%	0.28%
Namibia	791.8	237.5	25.0	1.94%	0.20%
Nigeria	2,321.9	696.6	75.0	0.13%	0.01%
Rwanda	669.8	201.0	20.0	2.64%	0.26%
Senegal	2,063.5	619.0	60.0	4.18%	0.41%
Seychelles	302.4	90.7	8.4	6.55%	0.61%
Tanzania	863.9	259.2	30.0	0.78%	0.09%
Zambia	3,034.4	910.3	87.5	3.39%	0.33%
Ethiopia	1,662.5	498.8	50.0	1.05%	0.11%
Grand Total	36,196.0	10,858.8	864.9	1.13%	0.09%

Source: Author

Notes:

(i) A stress test is a standard method to examine risk and involves applying adverse historical market events to current positions.

(ii) The "losses" assume that repayments would then be made under the stress scenario. For FX this is the additional value that would need to be paid in local currency. For interest rate risk this is the additional per annum re-financing risk.

(iii) The stress test scenario applied for foreign exchange risks was a 30% devaluation. This was based on 2014 devaluation of the Ghana Cedi from peak to trough of 40% in August 2014 and the Nigeria Naira which was devalued by 10% in November 2014.

(iv) The stress test scenario applied for interest rate risk is the market disruption which would take yields to junk bond levels with an increase of 5% to compatible bonds trading in 2014.

(v) The stress test presented here does not account for net present values or yield curves.

IMF Debt Sustainability Framework ("DSF") – Methodology

The IMF's debt sustainability framework assesses on a country-specific basis debt sustainability. It incorporates both domestic and international public debt and international private debt but not domestic private debt.

Its principle indicator is debt to GDP ratios. However, the rating is then adjusted to reflect individual countries' policy frameworks, institutions and vulnerabilities. The DSF includes indicative thresholds that facilitate the assessment of solvency and liquidity risk. Both baseline and stress test scenarios are examined.

There are four ratings for the risk of debt distress:

- **low risk**, when all the debt burden indicators are well below the thresholds;
- **moderate risk**, when debt burden indicators are below the thresholds in the baseline scenario, but stress tests indicate that thresholds could be breached if there are external shocks or abrupt changes in macroeconomic policies;
- **high risk**, when the baseline scenario and stress tests indicate a protracted breach of debt or debt-service thresholds, but the country does not currently face any repayment difficulties; or
- **debt distress**, when the country is already having repayment difficulties.

Source: International Monetary Fund (2013c).

TCX Market Liquidity Classification of emerging market currencies

TCX quotes (from the most liquid to the least liquid markets) on the following basis:

- 1 Pegged currencies: liquid currency to which the local currency is pegged, plus a risk premium
- 2 Developed Markets: TCX uses the available offshore screen rates. Because these markets are deemed to be liquid and widely covered by commercial banks, TCX is not meant to provide liquidity in these currencies. TCX needs to be additional to the market to make usage of its capital to quote. Notable exceptions would apply for investors having no credit lines to trade with commercial banks, or facing high bid-offer spreads when market liquidity dries up.
- 3 Undeveloped offshore markets with existing onshore curves: TCX uses the onshore curve, plus a spread derived internally based on the assessment of the prevailing circumstances. TCX will separately derive the spread (premium or discount) needed to correct for observed distortions in local market conditions such as implied credit risk in the local reference rates, local liquidity effects, or extreme political risks feeding through to markets. This spread will be currency specific and subject to change.
- 4 Inexistence of offshore and onshore curves but availability of a benchmark: TCX prices floating rate swaps only based on an approved benchmark plus an internally derived basis risk spread. This spread is based on the maturity of the transaction and the historical correlation between the selected benchmark and the exchange rate, to cover the transaction's price roll-over risks and instability in the selected floating rate benchmark. This spread will always be positive (premium).
- 5 Inexistence of offshore and onshore curves or even a benchmark: In the presence of very thin or inexistent markets, TCX prices fixed swaps only based on internal macro-economic models for a selection of countries.

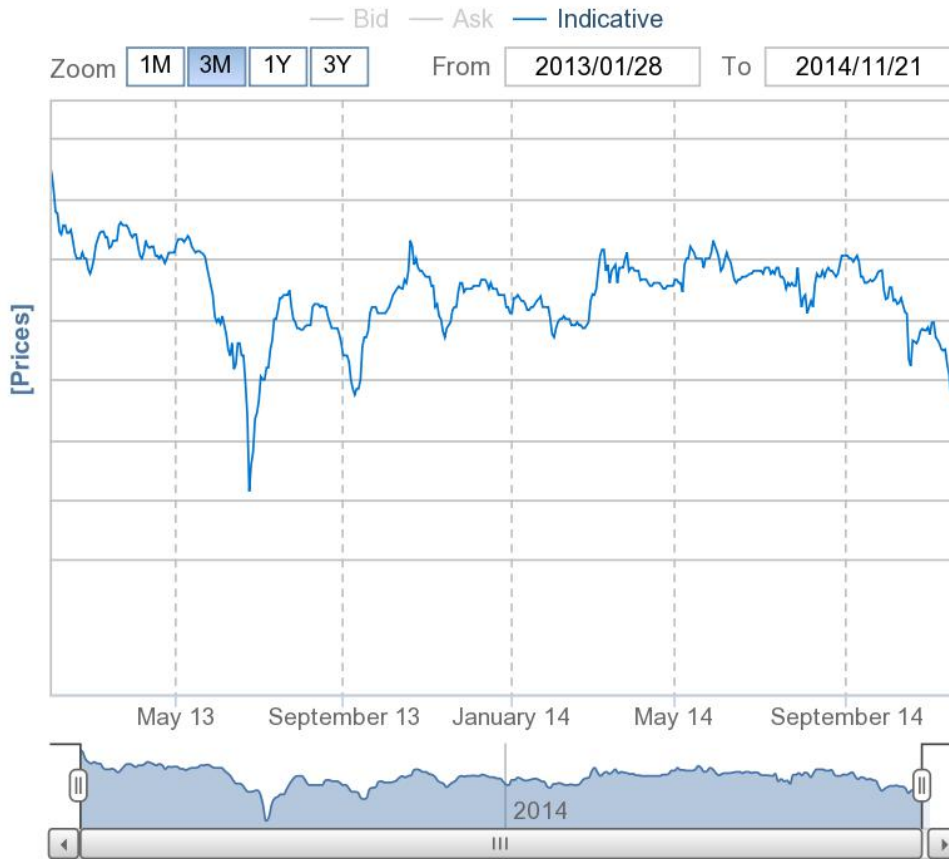
Source: <https://www.tcxfund.com/pricing>

Figure 8: Bond Prices and FX rates for selected issuance and countries (2013-2014)

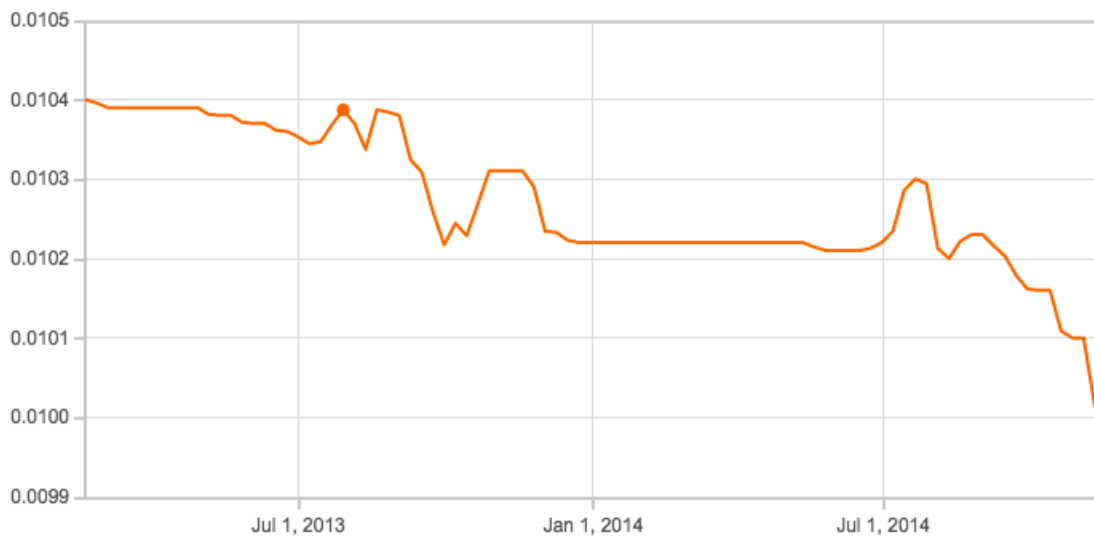
Source: cBonds (em.cbonds.com).

ANGOLA 2012

Cbonds Valuation (previously OTC Market)

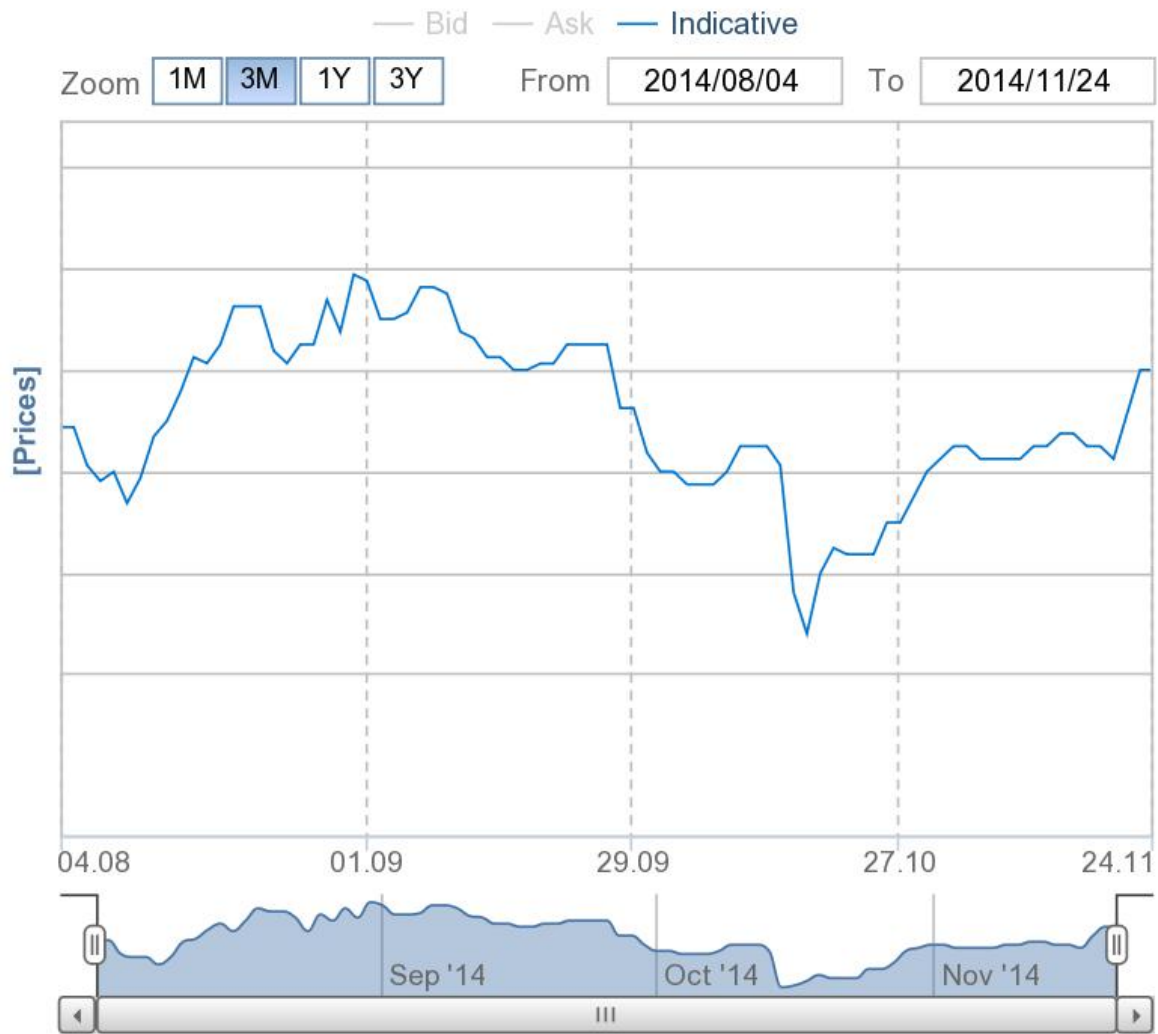


AOA / USD
0.0104

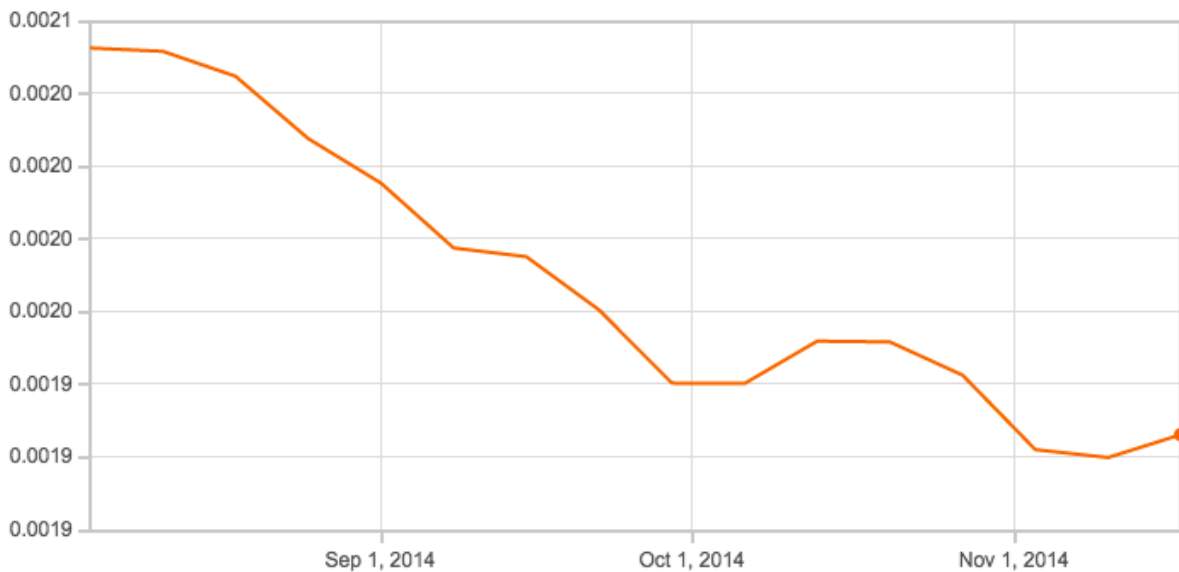


Cote d'Ivoire 2014

Cbonds Valuation (previously OTC Market)



XAF / USD
0.0019

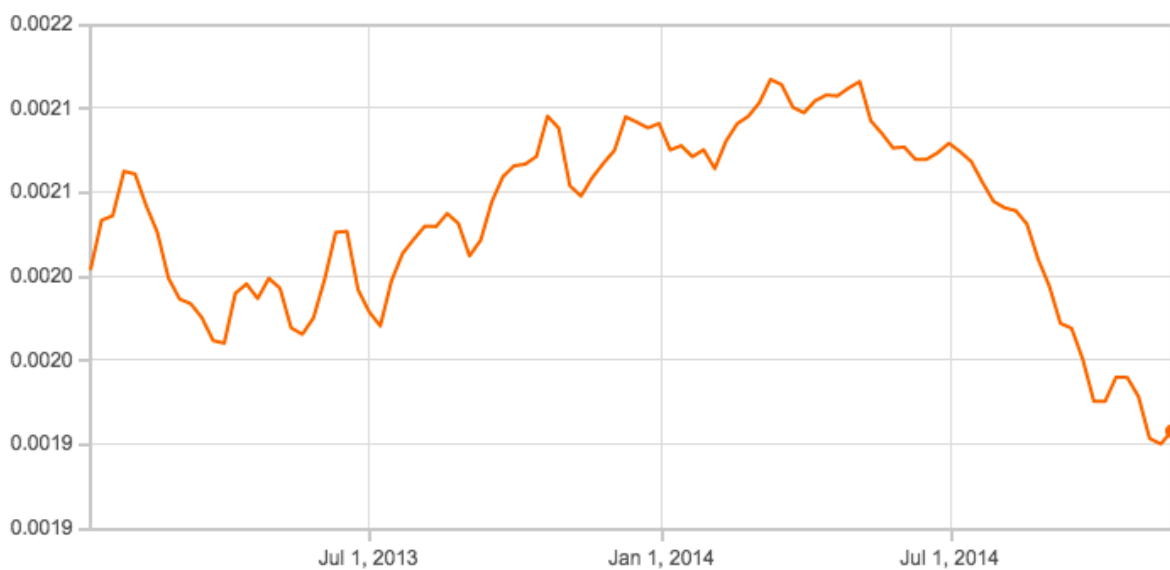


Cote d'Ivoire 2010

Cbonds Valuation (previously OTC Market)

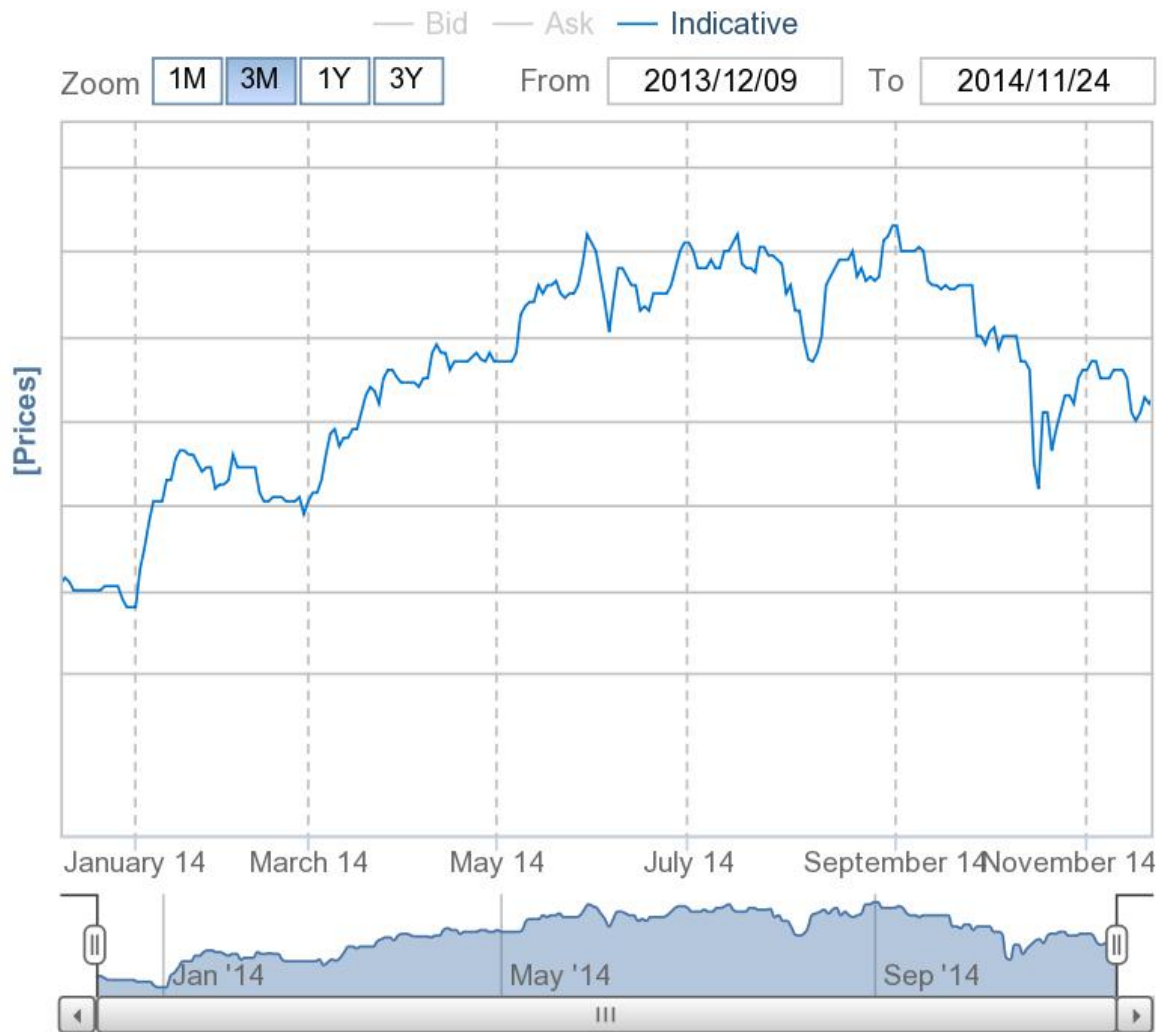


XOF / USD
0.0019

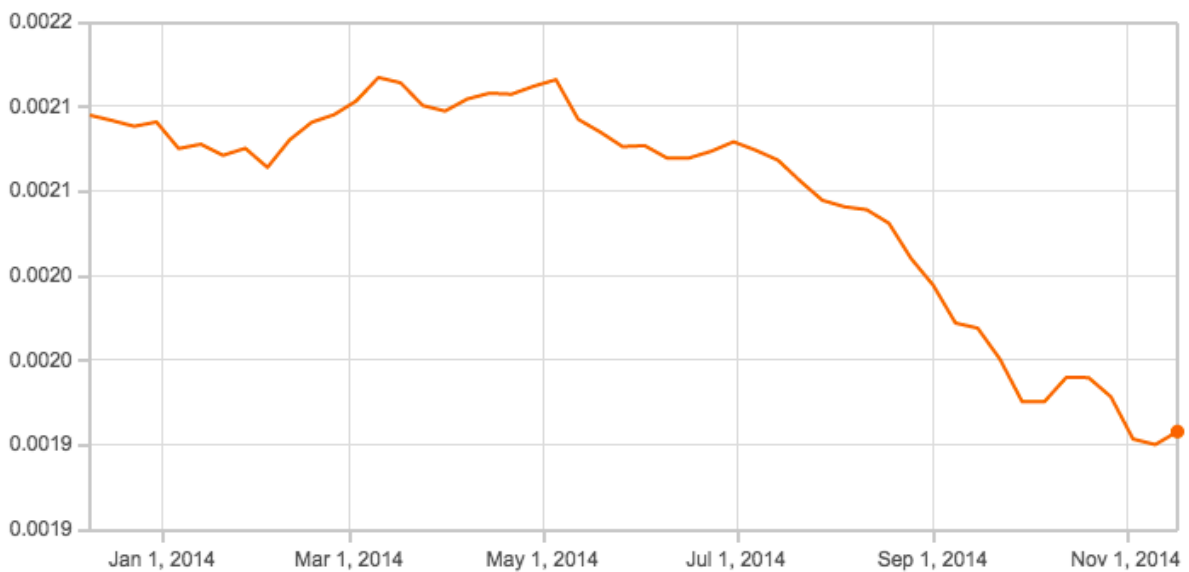


Gabon 2014

Cbonds Valuation (previously OTC Market)

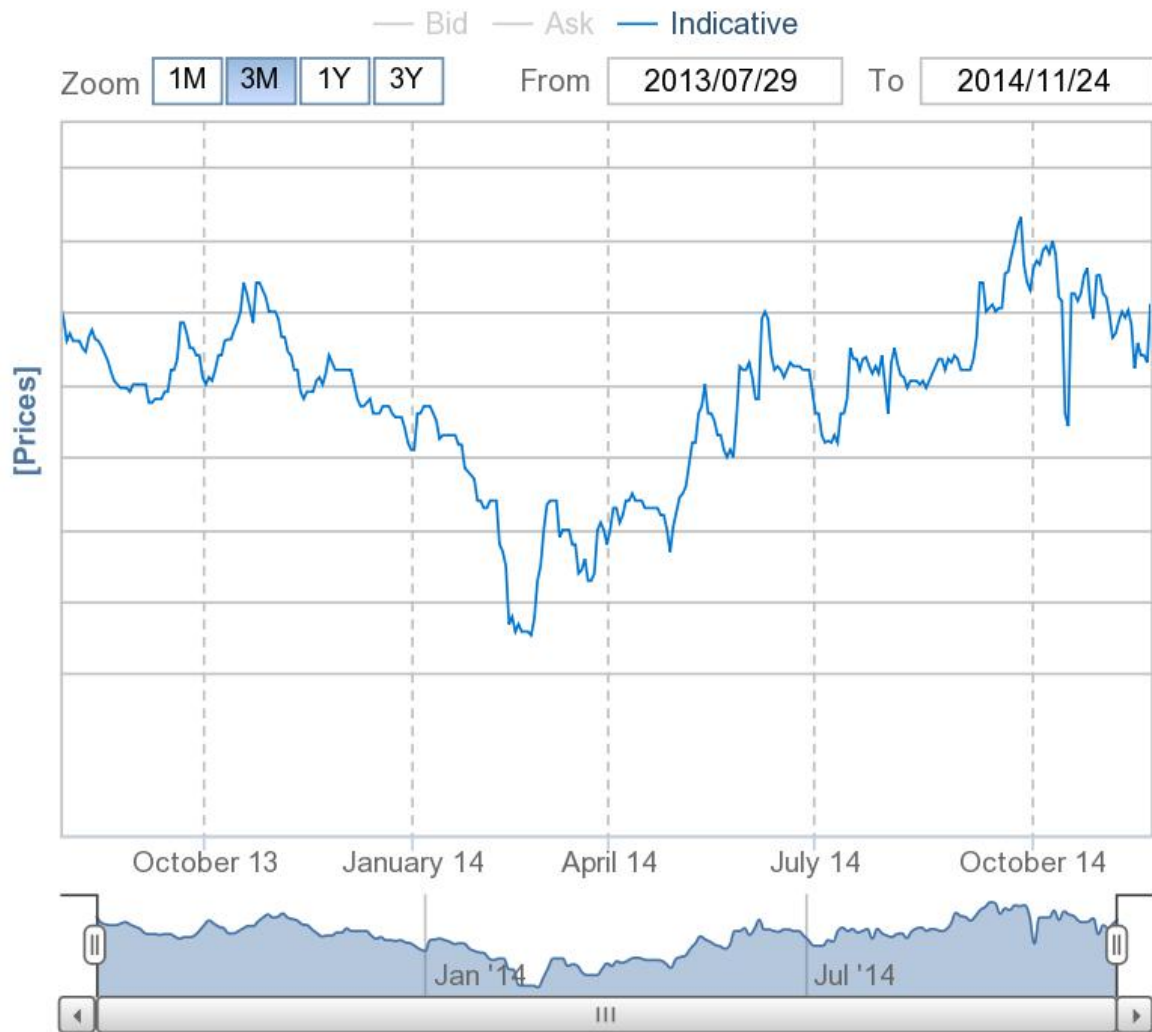


XOF / USD
0.0019

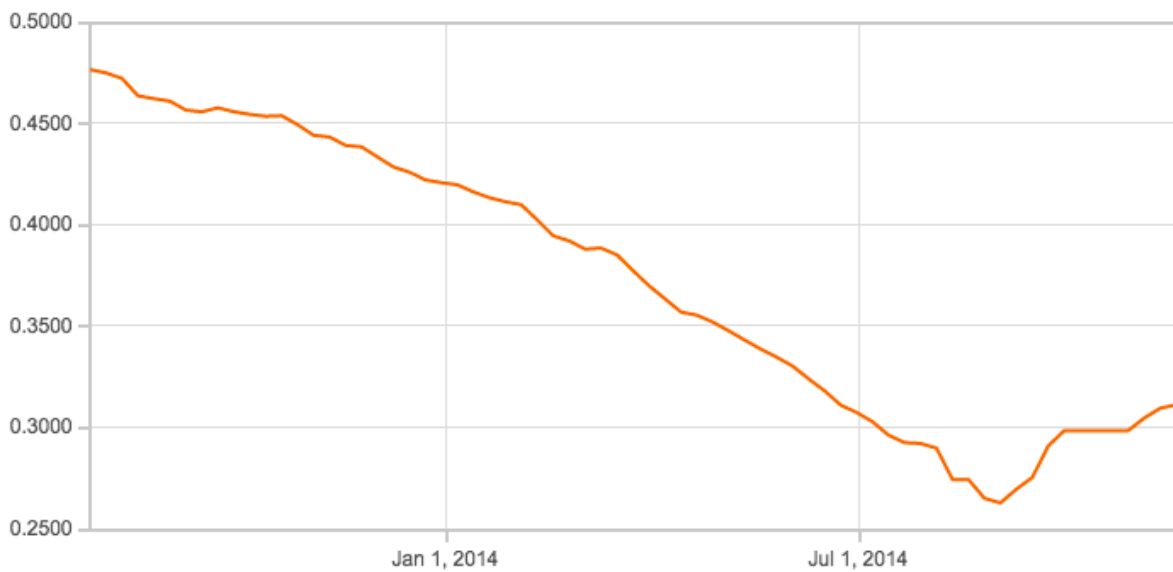


Ghana 2013

Cbonds Valuation (previously OTC Market)



GHS / USD
0.3110

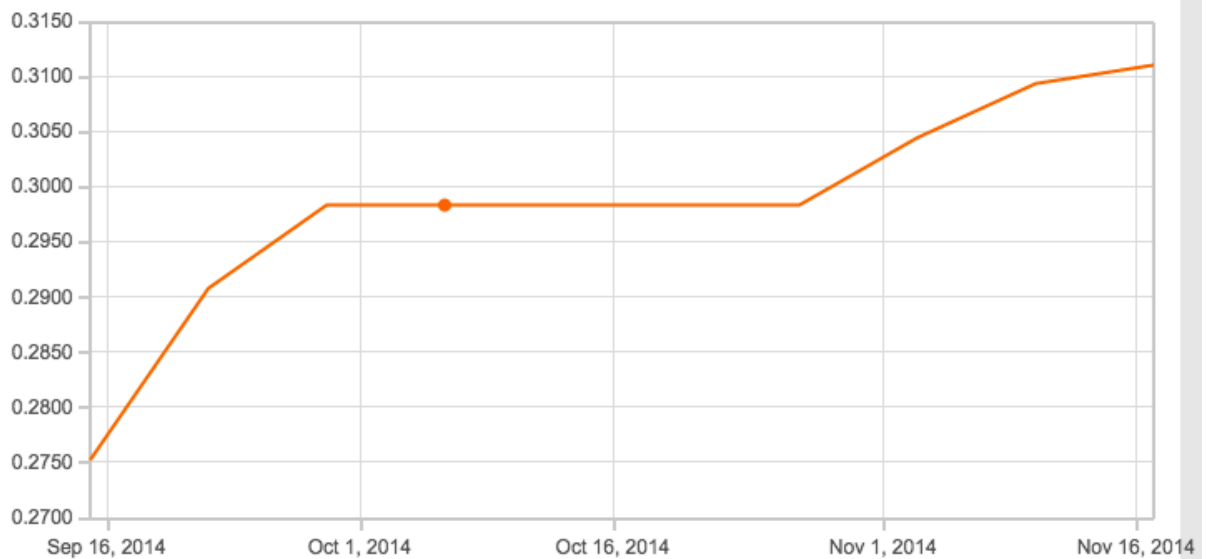


Ghana 2014

Cbonds Valuation (previously OTC Market)



GHS / USD
0.2983

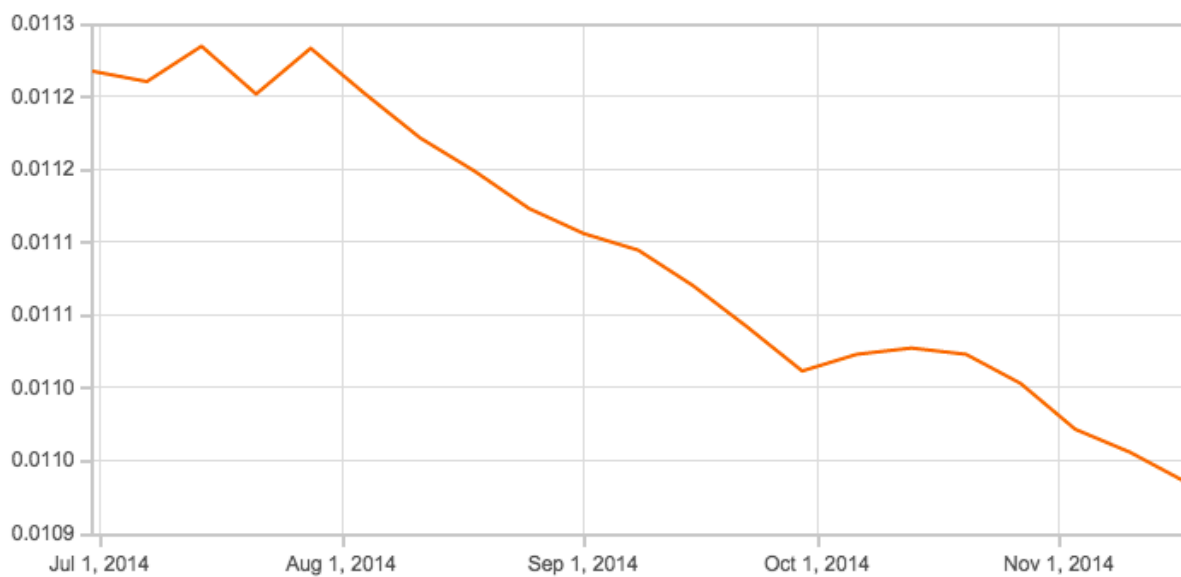


Kenya 2014 (\$500 mn.)

Cbonds Valuation (previously OTC Market)



KES / USD
0.0109

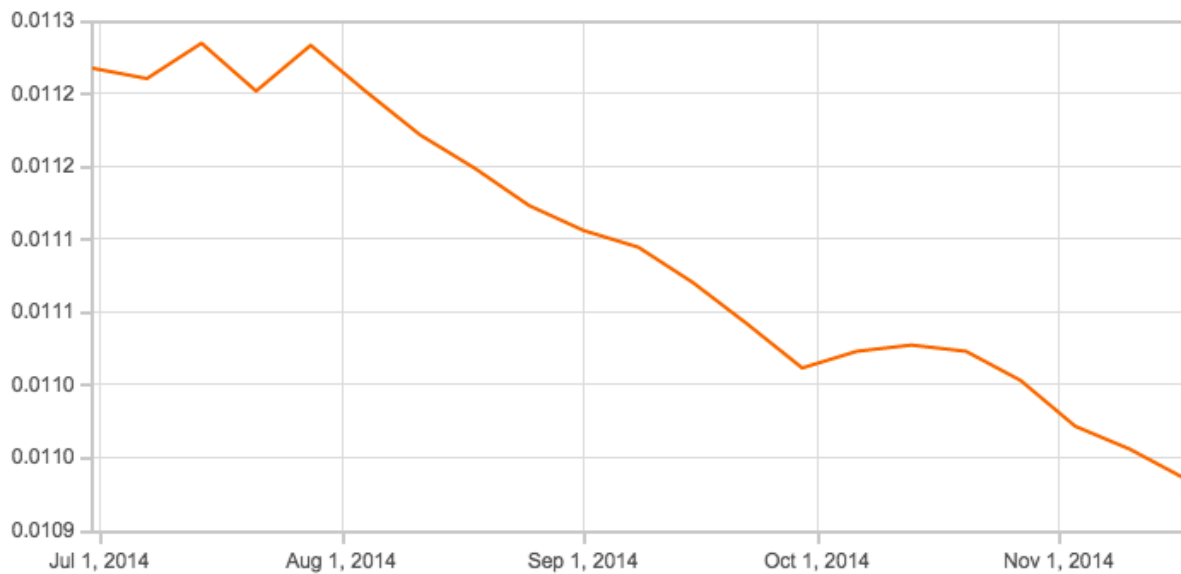


Kenya 2014 (\$1,500 mn.)

Cbonds Valuation (previously OTC Market)



KES / USD
0.0109

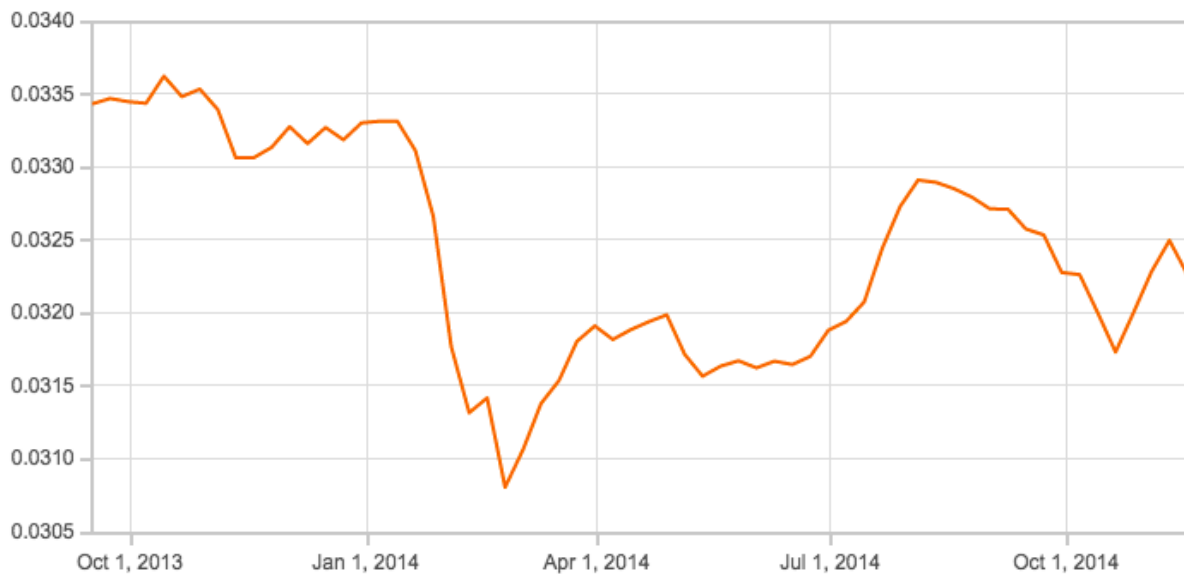


Mozambique 2013

Cbonds Valuation (previously OTC Market)



MZN / USD
0.0335



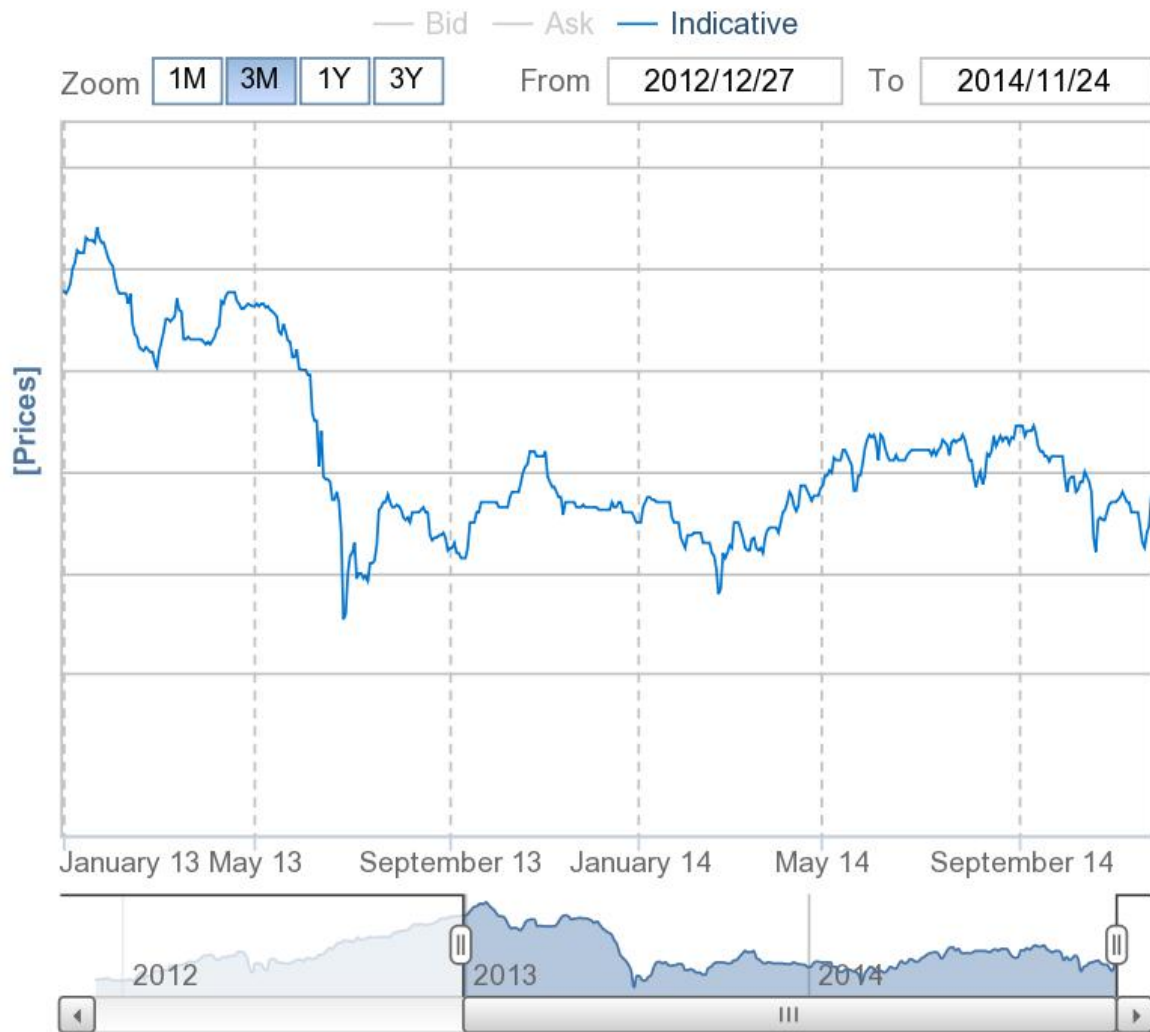
Namibia 2011

Cbonds Valuation (previously OTC Market)



Nigeria 2011

Cbonds Valuation (previously OTC Market)



NGN / USD
0.0057



Nigeria 2013 (5 year)

Cbonds Valuation (previously OTC Market)



NGN / USD
0.0062



Nigeria 2013 (10 year)

Cbonds Valuation (previously OTC Market)



NGN / USD
0.0062

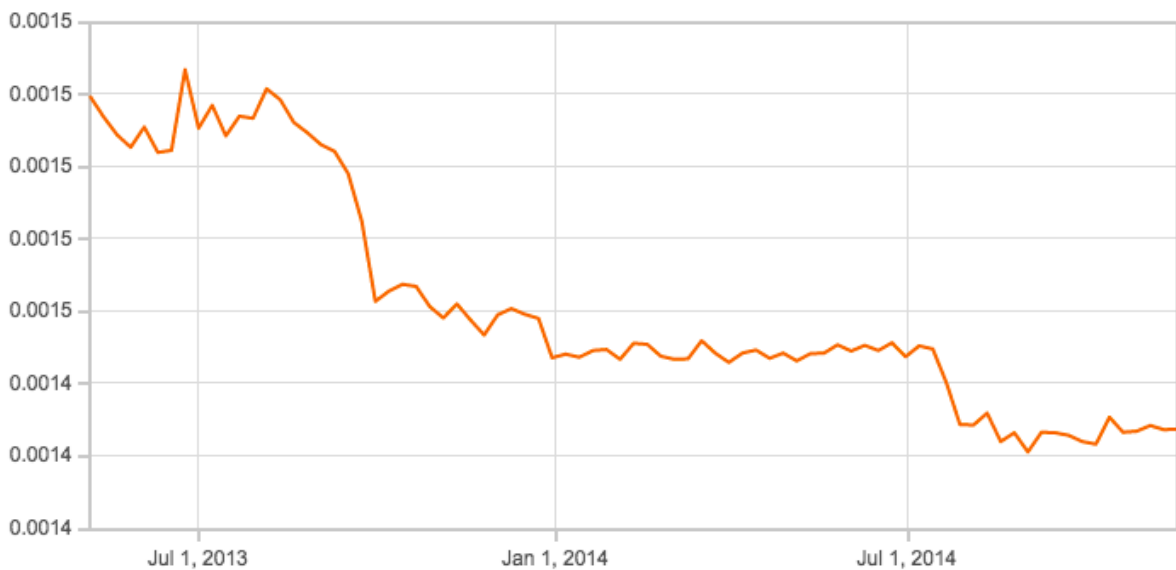


Rwanda 2013

Cbonds Valuation (previously OTC Market)



RWF / USD
0.0015



Senegal 2011

Cbonds Valuation (previously OTC Market)



XOF / USD
0.0021

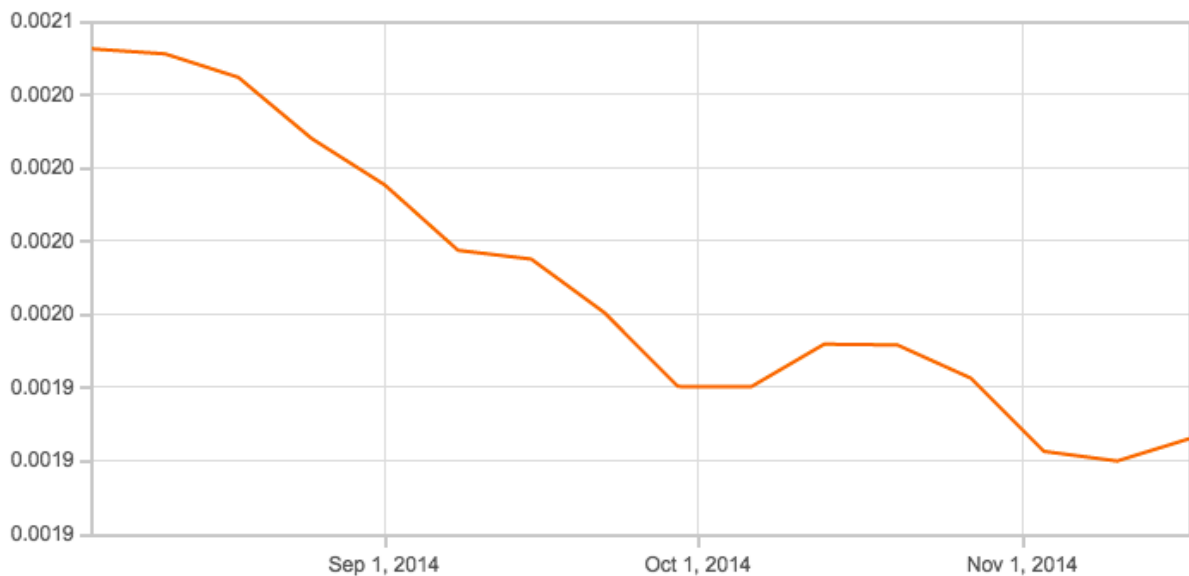


Senegal 2014

Cbonds Valuation (previously OTC Market)



XOF / USD
0.0019



Seychelles 2010

Cbonds Valuation (previously OTC Market)

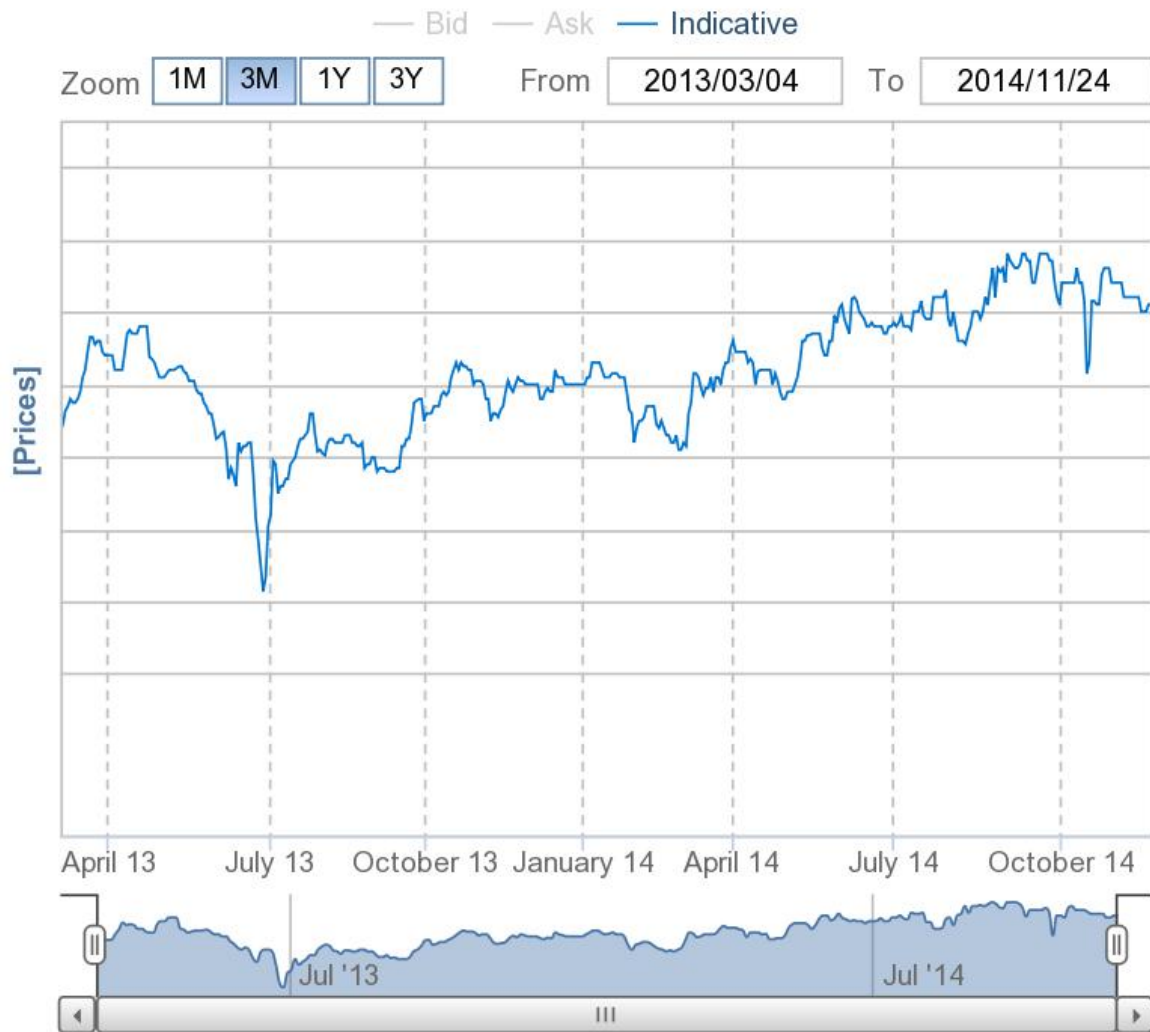


SCR / USD
0.0669

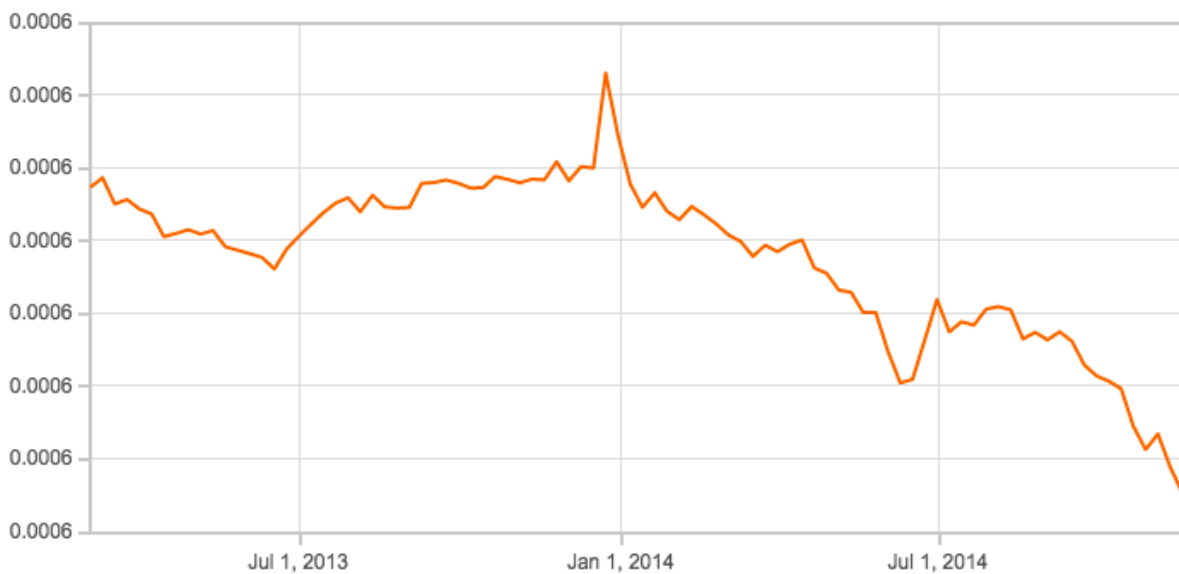


Tanzania 2010

Cbonds Valuation (previously OTC Market)

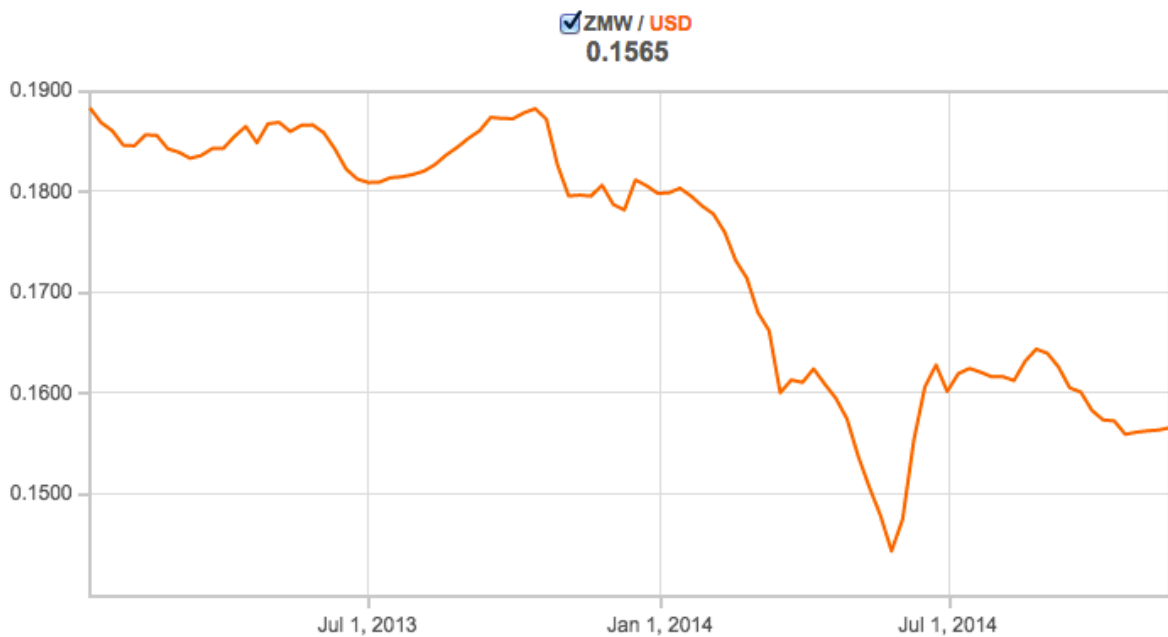
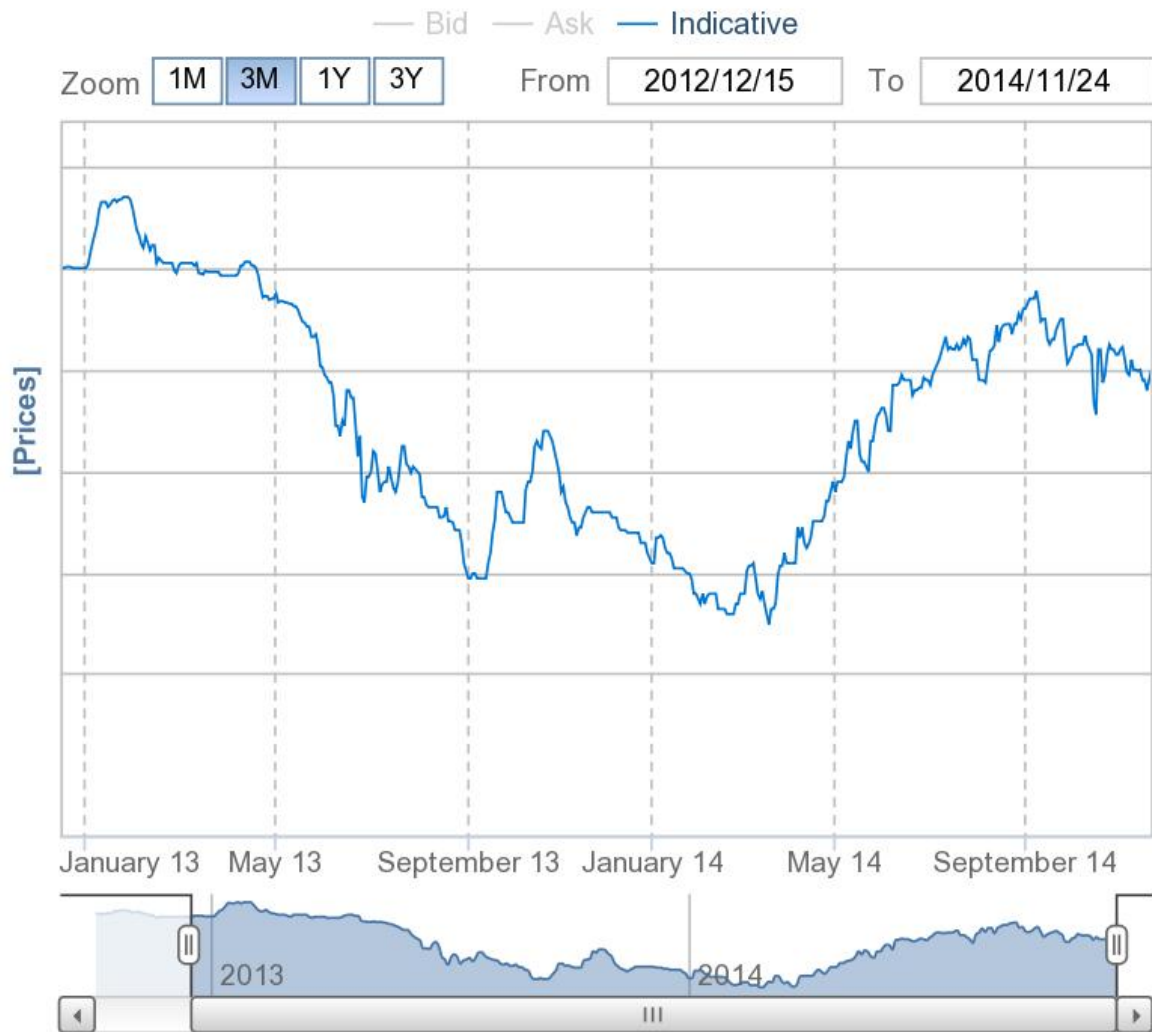


TZS / USD
0.0006



Zambia 2012

Cbonds Valuation (previously OTC Market)



Zambia 2014

Cbonds Valuation (previously OTC Market)



ZMW / USD
0.1565

