INTEREST RATE DETERMINATION UNDER A MULTIPLE CURRENCY

ENVIRONMENT: THE CASE OF ZIMBABWE

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ABSTRACT

This paper attempts to estimate the yield curve for Zimbabwe under a multiple currency environment. The paper was motivated by the lack of a properly discernible yield curve that has typified the economy since the adoption of multiple currencies in 2009. The estimation of the yield curve is based on foreign yield curves adjusted for observed credit risk premium and inflation differentials. The yield curve was simulated to be in the range of between 5-6% for short term instruments and up to 8% for long term instruments. The estimated rates are, however, significantly lower than the observed interest rates in the market averaging 12%. Results of this study underscores the need for banking institutions and monetary authorities to find a lasting resolution to the high interest rate regime that has characterized the multiple currency regime. Specifically, the paper recommends the need to align the interest rate structure in the economy to the implied yield curve which is based on macroeconomic fundamentals.

SECTION 1: INTRODUCTION

In the history of world economies, interest rates have perpetually occupied a central role in the formulation of effective monetary policy measures in both developed and developing countries. This largely stems from the critical role that interest rates play as the cost of capital in determining the deployment of surplus investable funds to key export and productive sectors of the economy (RBZ, 2014). In essence, the extent to which credit is extended to productive sectors is intricately bound to interest rate developments, which in turn determine the affordability of loans.

Ultimately, the nexus between inflation and interest rates has far reaching effects on the price formation mechanism, as the cost of capital is encapsulated in production costs and the price of goods and services. In turn, the competitiveness of a country's products both in the domestic and export markets is contingent upon the evolution of interest rates in that economy. Broadly, interest rate developments also determine the flow of capital across international frontiers, as cross-border investors search for favourable returns on their investment (RBZ, 2014). In this respect, domestic interest rate developments in relation to foreign interest rates, ultimately influences the direction of capital inflows, exchange rate developments as well as export performance (Giovanni and Shambaugh, 2006). In consequence, the attainment of sustained macroeconomic stability and accelerated economic expansion is contingent upon the maintenance of a supportive interest rate structure.

Ordinarily, interest rates should be anchored by a reference policy rate, notably the Central Bank's overnight accommodation rate or the Bank Rate. Under the multicurrency system, however, lack of an effective Lender of Last Resort (LOLR) function[5], implied that tools/instruments to influence the levels of interest rates in the market, were not at the Central Bank's disposal. As such, the lack of monetary policy autonomy which accompanied the adoption of the multiple currency system, entailed that the Reserve Bank of Zimbabwe seized to perform its lender of last resort function and its interest rate signaling role. The resuscitation of the LOLR function of the Central Bank to is, however, envisaged to provide the market with an anchor rate and lower market liquidity risks, consequently facilitating increased interbank trading.

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[5] To some extent the AFTRADES structure recently introduced is playing the lender of last resort function.

The LOLR alone is, however, not enough to kick start the money market. In this regard, there is need for the Government through the Central Bank to issue short term tradable paper such as Treasury Bills (TBs), which are necessary to resuscitate and facilitate the smooth functioning of the money market. The instruments should be issued in small parcels with tenors ranging from 91 days to 365 days. Issuing the instruments in small batches allows Government to properly plan its cash flows without unnecessary pressures of large maturities which ordinarily requires huge outlays of resources. Importantly, the interest rates quoted on the instruments should reflect a proper yield curve, which takes into account the investment horizon and compensates investors for expected inflation. Market conditions are also a determinant of the yields on the instruments. In this regard, the Zimbabwean yield curve should be discernible in order to act as a guidepost to the rest of the market.

It is against the background of the central role played by interest rates that recurrent and topical discussions on interest rate developments in Zimbabwe, have gathered substantial momentum. The debate has largely been sustained by the marked disparity between lending and deposit rates that has deterred both borrowers and savers. This development took a pronounced path since the adoption of the multiple currency system in 2009.

The meager deposit rates being offered by banks have combined with high bank charges to militate against efforts geared at broadening the country's deposit base from which productive sectors tap funds to finance their operations. These adverse developments have seen banks attracting short term and highly volatile deposits with an estimated US$2 billion circulating outside the banking system. Against the background of these developments, the Zimbabwean economy has failed to gain traction required to attain fast-paced growth which creates employment and improve the livelihoods for the generality of its populace. Within this context, this paper seeks to investigate supportive policy alternatives that can be explored to adopt an interest rate structure based on best international practices within the auspices of the yield curve.

The rest of the paper is organized as follows; section two provides an analysis of the interest rate structure under the multiple currency environment. Section three provides empirical and theoretical literature review on interest rate determination under a dollarized environment. Section four discusses the methodology for computing a yield curve. Section five provides analysis of the

estimated yield curve for Zimbabwe. The last section provides concluding remarks and proffers policy recommendations.

SECTION TWO: STYLISED FACTS ON ZIMBABWE'S INTEREST RATE STRUCTURE

The issuance of Treasury bills by government since adoption of the multicurrency regime has produced an inverted yield curve which does not bode well for the re-acceleration of economic activity. Notably, the term structure of interest rates on Treasury bills issued by Government up to December 2015, exhibited an inverted yield curve, where short term rates are higher than long term rates as shown in the Figure 1 below.

Figure 1: Yield Curve as per current Government Issuance of TBs

	3 months	1 year	1year	3 years	4 years	5 years
Yields	9.31%	10%	13%	7%	7%	7%
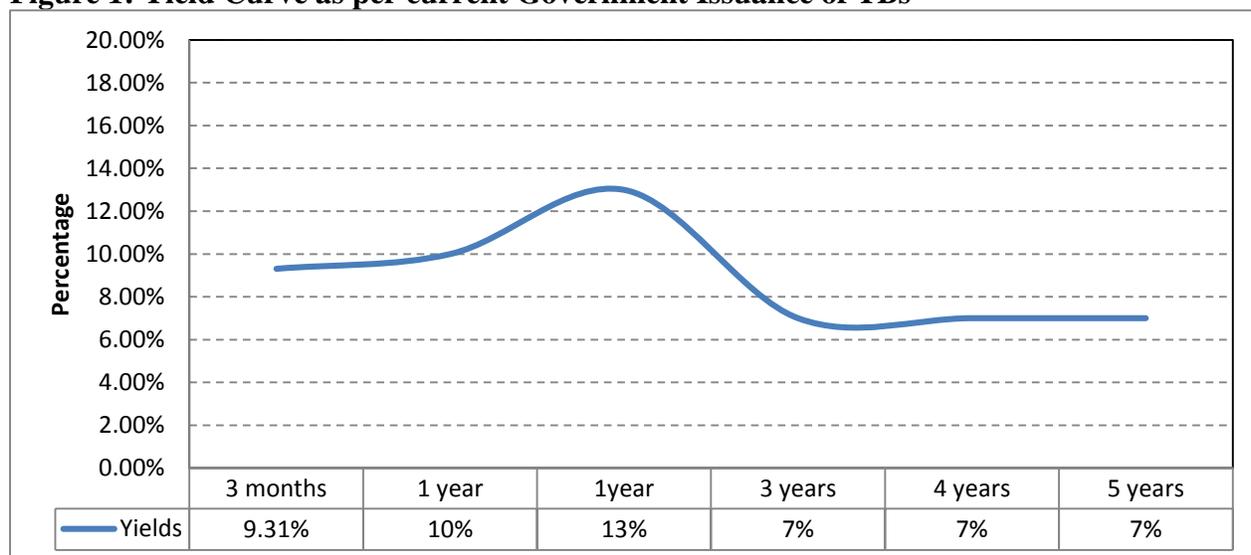
Source: Reserve Bank of Zimbabwe, 2015

As shown in Figure 1, the 90 day and 365 (1 year) Treasury Bills had yields of 9.3% (effective) and 13%, respectively while 3-5 year Treasury Bills had yields of only 7%. In addition, 365 day Treasury Bills that had the same maturity, were issued at different interest rates of 10% and 13%, thereby sending mixed signals to the market. An inverted yield curve is normally viewed as an indicator of an impending economic recession. This is largely so as the excess of short term rates over long term rates suggests that the economic outlook is gloomy and that yields will continue to

decline. Additionally, a negatively slopping yield curve implies declining future inflation and in some instances a deflationary phase.

Moreover, lending rates quoted by banks have been very high, ranging between 6% and 25% with most banks quoting average lending rates of around 20%. The high lending rates have been a result of high premiums sustained by persistent liquidity shortages that characterized the multicurrency regime. Reflecting the subdued nature of deposit rates prevailing in the economy, average interest rates quoted by most banks for demand deposits ranged from 0.5% to 5% whilst savings deposits ranged from 0.3% to 17% as at 31 December 2015.

Similarly, time deposits ranged between 1% and 16%. The margin between lending and deposit interest rates is a key variable in the financial system. It reflects the additional costs related to banks intermediary role of linking borrowers with the ultimate lenders. Typically, large margins are counter-productive and a disincentive to both savers and borrowers, culminating in financial disintermediation. This has undesirable repercussions on efforts geared at fostering savings culture as low returns deter depositors. This in turn, undermines efforts to broaden an economy's deposit base which ideally finances recapitalization of industrial operations. Table 1 below shows the average 90 day interest rates as at end 2015.

Table 1: Average 90-day Interest Rates as at 30 December 2015

	Lending rates	Deposit rates	spread
Min	12.4	1.0	5.7
Max	19.6	17.0	9.8

Source: Reserve Bank of Zimbabwe, 2015

Regrettably, the high interest rate spread obtaining in the Zimbabwean economy has continued to dampen economic recovery prospects as private sector-led growth requires adequate liquidity support from the country's financial sector, at affordable prices. Marked disparities in interest rate spreads reflect different cost of credit lines secured by banks from both regional and international capital markets. International banks and some large indigenous banks have experienced relative stability on the back of a sizable deposit base as well as easy access to external finance. Accordingly, deposit rates quoted by these banks are low as attested to by time deposit rates, ranging from 1% to 5%. In contrast, smaller banks have been quoting rates ranging from 5% to 10% as a way of attracting deposits.

Lending rates have, however, softened beginning October 2015, as banks adhere to the agreed interest rate guidelines which were announced in the 2015 Mid Term Monetary Policy Review Statement. The Table 2 below shows the interest rate guidelines agreed between the Reserve Bank and the Bankers Association of Zimbabwe (BAZ), which become effective from the 1st of October 2015.

Table 2: Interest Rate Guidelines

Category	Lending Rates
Lending to Productive Sectors	
Prime Borrowers with low credit risks	6%-10% pa
Borrowers with Moderate Credit Risk	10%-12% pa
Borrowers with high Credit risk	12%-18% pa
Housing	
Housing Finance	8%-16% pa
Consumptive	
Consumptive Lending	10%-18% pa
Default Rate	3%-8% above the interest rate charged to the borrower

Source: Reserve Bank of Zimbabwe, 2015

The high interest rate environment has largely been sustained by persistent liquidity shortages, high credit demand and high liquidity risks, affecting mostly the small indigenous banks. Ironically, the country has experienced low inflation rates that have remained below annual levels of 5% 2009. Currently, inflation rates are in the negative territory, yet interest rates have remained high.

The country has also been accessing expensive offshore credit lines owing to the high perceived country risk attributed to the perpetual accumulation of external payment arrears by Zimbabwe. Within this context, banks have been accessing offshore loans at around 10% per annum, a rate which is way above the 365 day London Interbank Offered Rate (LIBOR) of 1.07% per annum. In addition to the high interest rates, the utilization of approved offshore credit lines has remained low on account of stringent conditions precedent notably, drawdown fees and commitment fees, associated with most offshore lines of credits. As such, the cost of capital as embodied in the interest rates charged by domestic banks has been out of sync with both regional and international developments.

SECTION THREE: LITERATURE ON INTEREST RATE DETERMINATION

Yield Curve Theory

A yield curve depicts the relationship between yields of money and capital market instruments with their term to maturities (PIMCO, 2004; Vinci L, 2010). The yield curve plots the relationship between yields to maturity and time to maturity for instruments of the same asset class and credit quality. Typically, a yield curve will plot instruments with similar characteristics (SF Fed, 2004). A notable instrument in the Zimbabwean market would be the Treasury Bill, which can be rated as having the same credit risk across its range of maturities. There are three main economic theories which attempt to explain how yields vary with maturity (Guruprasa, 2015; SF Fed, 2004). Two of the theories are extreme positions, while the third attempts to find a middle ground between the two extreme scenarios.

Market Expectations Hypothesis

This hypothesis assumes that the various maturities are perfect substitutes and suggests that the shape of the yield curve depends on market participants' expectations of future interest rates. These expected rates, along with an assumption that arbitrage opportunities will be minimal, is enough information to construct a complete yield curve. For example, if investors have an expectation of what 1-year interest rates will be next year, the 2-year interest rate can be calculated as the compounding of this year's interest rate by next year's interest rate.

$$(1 + i_{lt})^n = (1 + i_{st}^{\text{year } 1})(1 + i_{st}^{\text{year } 2}) \cdots (1 + i_{st}^{\text{year } n}) \tag{3.1}$$

More generally, rates on a long-term instrument are computed as the geometric mean of the yield on a series of short-term instruments. This theory perfectly explains the observation that yields usually move together. However, it fails to explain the persistence in the shape of the yield curve. Shortcomings of expectations theory are that it neglects the risks inherent in investing in bonds (because forward rates are not perfect predictors of future rates), such as interest rate risk and reinvestment rate risk.

Liquidity Premium Theory

The Liquidity Premium Theory is derived from the Pure Expectations Theory. The Liquidity Premium Theory asserts that long-term interest rates not only reflect investors' assumptions about future interest rates but also include a premium for holding long-term bonds (investors prefer short term bonds to long term bonds), called the term premium or the liquidity premium.

This premium compensates investors for the added risk of having their money tied up for a longer period, including the greater price for uncertainty. Because of the term premium, long-term bond yields tend to be higher than short-term yields, and the yield curve slopes upward. Long term yields are also higher not just because of the liquidity premium, but also because of the risk premium added by the risk of default associated with holding a security over the long term (Cowell F, 2013). The market expectations hypothesis is combined with the liquidity premium theory:

$$(1 + i_{lt})^n = rp_n + ((1 + i_{st}^{\mathrm{year1}})(1 + i_{st}^{\mathrm{year2}}) \cdots (1 + i_{st}^{\mathrm{yearn}})) \tag{3.2}$$

Where rp_n is the risk premium associated with a n year bond.

Market Segmentation Theory

Under the Market Segmentation Theory, financial instruments of different terms are not substitutable (Krichene 2012). As a result, the supply and demand in the markets for short-term and long-term instruments is largely determined independently (Cowell F, 2013). Prospective investors decide in advance whether they need short-term or long-term instruments. If investors prefer their portfolio to be liquid, they will prefer short-term instruments to long-term instruments (Brown, Bessant, and Lamming, 2013). Therefore, the market for short-term instruments will receive a higher demand.

Higher demand for the instrument implies higher prices and lower yield. This explains the stylized fact that short-term yields are usually lower than long-term yields. This theory explains the predominance of the normal yield curve shape. However, because the supply and demand of the two markets are independent, this theory fails to explain the observed fact that yields tend to move together (i.e., upward and downward shifts in the curve).

Preferred Habitat Theory

The Preferred Habitat Theory is another guise of the Market Segmentation theory, and states that in addition to interest rate expectations, investors have distinct investment horizons and require a meaningful premium to buy bonds with maturities outside their "preferred" maturity, or habitat (Brown, Bessant, and Lamming, 2013). Proponents of the Preferred Habitat Theory contend that short-term investors are more prevalent in the fixed-income market and, therefore, longer-term rates tend to be higher than short-term rates, for the most part, but short-term rates can be higher than long-term rates occasionally (Cowell F, 2013). This theory is consistent with both the persistence of the normal yield curve shape and the tendency of the yield curve to shift up and down while retaining its shape.

The Typical Shape of the Yield Curve

Yield curves are usually upward sloping asymptotically, the longer the maturity, the higher the yield, with diminishing marginal increases, that is, as one moves to the right, the curve flattens out. There are two common explanations for upward sloping yield curves. First, it may be that the market is anticipating a rise in the risk-free rate. If investors hold off investing now, they may receive a better rate in the future (Madhumathi and Ranganatham, 2012). Therefore, under the arbitrage pricing theory, investors who are willing to lock their money now need to be compensated for the anticipated rise in rates—thus the higher interest rate on long-term investments (Madhumathi and Ranganatham, 2012).

Interest rates can, however, fall just as they can rise. Another explanation is that longer maturities entail greater risks for the investor. A risk premium is needed by the market, since at longer durations there is more uncertainty and a greater chance of adverse developments that impact the investment. This explanation is premised on the notion that the economy faces more uncertainties in the distant future than in the near term. This effect is referred to as the liquidity spread. If the market expects more volatility in the future, even if interest rates are anticipated to decline, the increase in the risk premium can influence the spread and cause an increasing yield (Madhumathi and Ranganatham, 2012).

The shape of the yield curve is influenced by supply and demand. If there is a large demand for long bonds, for instance from pension funds to match their fixed liabilities to pensioners, and not enough bonds in existence to meet this demand, then the yields on long bonds can be expected to be low, irrespective of market participants' views about future events. The yield curve may also be flat or hump-shaped, due to anticipated interest rates being steady, or short-term volatility outweighing long-term volatility. Typically, yield curves continually move all the time that the markets are open, reflecting the market's reaction to news. A further "stylized fact" is that yield curves tend to move in parallel (i.e., the yield curve shifts up and down as interest rate levels rise and fall).

Normal Yield Curve

A normal yield curve means that yields are rising as maturity lengthens (i.e., the slope of the yield curve is positive). This positive slope reflects investor expectations for the economy to grow in the future and, importantly, for this growth to be associated with a greater expectation that inflation will rise in the future rather than fall. This expectation of higher inflation leads to expectations that the Central Bank will tighten monetary policy by raising short term interest rates in the future to slow economic growth and dampen inflationary pressure (Madhumathi and Ranganatham, 2012).

The expectations also create a need for a risk premium associated with the uncertainty about the future rate of inflation and the risk this poses to the future value of cash flows. Investors price these risks into the yield curve by demanding higher yields for maturities further into the future. A positively sloped yield curve has, however, not always been the norm. Through much of the 19th century and early 20th century the developed economies have experienced trend growth with persistent deflation, not inflation. During this period, the yield curves were typically inverted, reflecting the fact that deflation made current cash flows less valuable than future cash flows.

Inverted Yield Curve

An inverted yield curve occurs in an environment where, interest rate in long-term debt instruments has a lower yield than short-term debt instruments of the same credit quality (Standard and Poor, 1990). This type of yield curve is the rarest of the three main curve types and is considered to be a predictor of economic recession. Partial inversion occurs when some of the

short-term Treasuries (five or 10 years) have higher yields than the 30-year Treasuries. An inverted yield curve is sometimes referred to as a "negative yield curve".

Flat Yield Curve

This is a yield curve in which there is little difference between short-term and long-term rates for bonds of the same credit quality (Downes and Goodman, 2003). This type of yield curve is often realized during transitions between normal and inverted curves. When short- and long-term bonds are offering equivalent yields, there is usually little benefit in holding the longer-term instruments - that is, the investor does not earn any excess compensation for the risks associated with holding longer-term securities.

SECTION FOUR: METHODOLOGY

This section outlines the methodology applied in simulating a yield curve for Zimbabwe. The methodology was derived from the concept of Uncovered Interest Rate Parity (UIP), which assumes that interest rates on instruments in domestic currency should be equal to the foreign interest rate plus the expected rate of depreciation of the domestic currency. This UIP can be expressed as follows:

$$r^d = r^* + \Delta s + rp_c \tag{4.1}$$

Where r^d is the domestic interest rate, r^* is the foreign interest rate, Δs is the rate of expected depreciation of the domestic currency and rp_c is a risk premium related to other factors that would drive a wedge between the global rate of return and that demanded by investors in the domestic economy (Swiston, 2011). In the Zimbabwean case, the expected depreciation in the local currency (Δs) is zero since the country is dollarized. The domestic interest rate is, therefore, determined by the foreign interest rate plus the credit risk premium as shown in equation 2 below.

$$r^d = r^* + rp_c \tag{4.2}$$

The risk premium is, however, unobservable and can only be determined using observed variables. The premium in this paper is derived from the long run trends in observed foreign interest rate and domestic interest rates. The estimated risk premium should be consistent with the real UIP written in long-run trends.

$$rp_c = \bar{r}^d - \bar{r}^* \tag{4.3}$$

Where, $\bar{r}^d$ and $\bar{r}^*$ are the long run trends in domestic interest rates and foreign interest rates, obtained from univariate filtration.

After determining the risk premium, the domestic yield curve can then be simulated through adjusting a foreign yield curve for risk premium. The spreads are added to the current yield curve of the foreign currency to generate the yield curve for the country. Before a country secures offshore credit lines, international lenders factor in a premium for the country to reflect the country credit risk. As such, in the construction of a yield curve there is need to make this adjustment.

From the observed points of the country's borrowing rates in foreign currency, estimates may be made for the credit risk premium for some maturities. The observed values may be interpolated or fitted by some algorithm to estimate risk premium for other maturities. Adding the country premium and the borrowing rate for the external currency will give the borrowing rate for the country in that currency.

Given that Zimbabwe is using the US dollar as its principal currency, the US par yields is used as the reference curve upon which the domestic yield curve in US dollar terms and domestic yield curves in domestic currency, which in the case of Zimbabwe is either the USD or Rand, are constructed. The US dollar denominated yield curve facing Zimbabwe is computed as:

$$i_{dom,US,t} = i_{US,t} + \partial_t \qquad\qquad (4.4)$$

Where $i_{dom,US,t}$ is the domestic interest rate in USD terms, $i_{US,t}$ is the US interest rate, and ∂_t is the credit spread. The credit spread is then modeled as $\partial_t = 275bp + 0.0075t$, assuming the acceptable spreads over and above libor of 350 basis points and 650 basis points for short term and long term offshore borrowings, respectively. These spreads are also consistent with an average of about 600 basis points for developing economies, which currently issue with a spread of about 600 basis points over US Treasury bills on average.

Ghana's 2017 8.5% issue currently trades at 6%; Gabon's 2017 8.2% bonds currently yield 5%; while Nigeria's 2021 bonds, which carry a coupon of 6.75%, now trade at 6.2%. The Senegal transaction was priced at a yield equivalent to US Treasuries plus 596.4 basis points, which was well inside the US Treasuries plus 680bp level of the 2014 treasury notes. Moreover, developing country Credit Default Swaps (CDS) rates, which can also provide a reasonable guide to credit spreads have increased since August 2011, mainly due to the resurgence of market concerns about fiscal sustainability in Europe and the exposure of banks to stressed sovereign European debt pushed CDS rates of most countries (including developing countries) upwards beginning in August 2011.

In January 2012, emerging-market bond spreads had widened by an average of 117 basis points from their end-of-July levels. Since October, however, the median CDS rates of developing

countries with relatively good credit histories have declined to 162 points and average developing country sovereign yields have eased from 672 to 616 basis points.

The domestic yield curve is calculated as the yield curve in US dollar terms adjusted for the inflation differential between the local currency (LC) and the US dollar as follows:

$$i_{dom,LC,t} = i_{dom,us,t+\Pi_{lc}-\Pi_{us}} \qquad\qquad (4.5)$$

Where $i_{dom,LC,t}$ is the domestic yield on a domestic bond with maturity m, m = 1…30 years that the government of Zimbabwe would pay if it were to issue that bond. Π_{LC} is the domestic inflation rate and Π_{US} is the US inflation rate.

Moreover, the shorter end of the yield curve in Zimbabwe can be anchored through Indexing to month-on-month or quarterly inflation rate; and Linking to corresponding USD Libor. Indexing to inflation should, however, be considered cautiously as it can engender a culture of indexation in the whole economy, which may prove difficult and costly in the medium to long term. In addition, yields for near-term Government securities should not be too high since the paper can be used to mop up any RTGS balances, which will be idle and earning no return.

Data and Estimation

The data for domestic interest rates is based on average deposit rates reported by Zimbabwean banks over the review period. The commercial interest reference rate (CIRR) was used as a proxy for foreign interest rates. The average US par yields were obtained from Bloomberg. The long run trends were extracted from observed values of foreign interest rates and weighted average interest rates on deposits, using the Hodrick Prescott (HP) filter univariate filtration methodology.

SECTION FIVE: RESULTS AND ANALYSIS

The analysis starts by estimating the risk premium applicable to Zimbabwe based on the long- run trends in foreign interest rates and domestic interest rates. Figure 2 below shows the estimated risk premium derived from the difference in observed trends in foreign and domestic interest rates over the period 2009 to 2015.
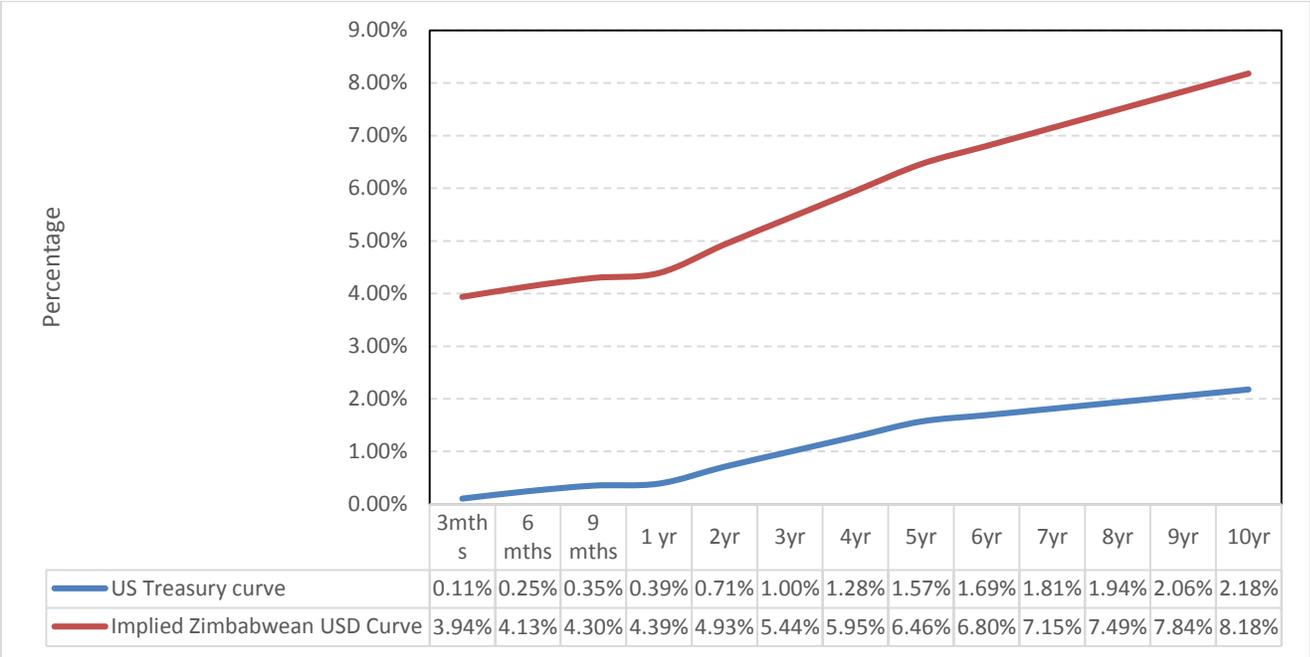
Figure 2: Trends in Foreign and Domestic Interest rates and Risk Premium
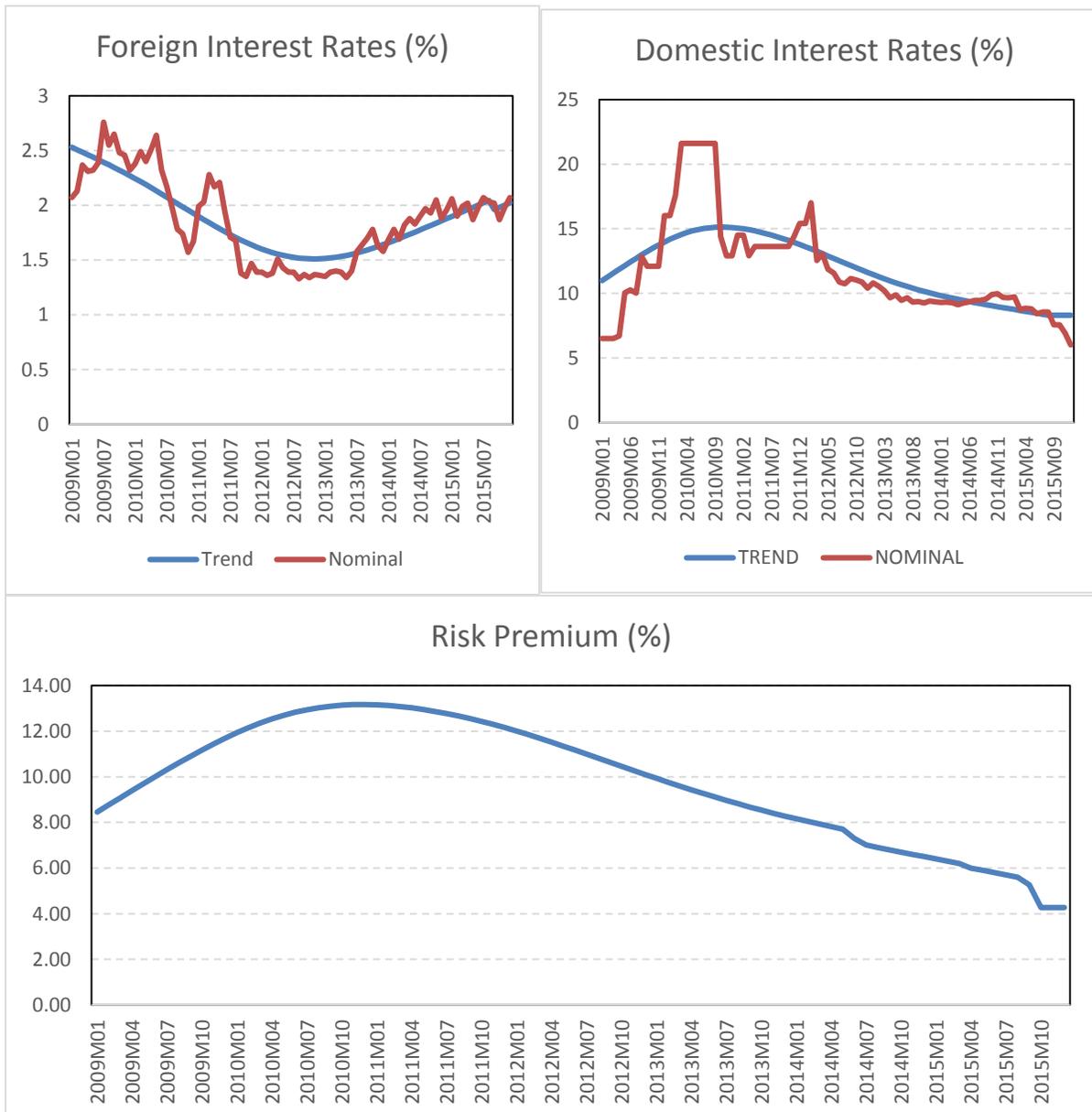
Source: Authors' Own Computations, 2015

As shown in Figure 2, the risk premium significantly increased between 2009 and 2011, reflecting the impact of the global financial crisis and demand for credit in the domestic economy. The premium however, gradually declined and remained fairly stable at around 4% from 2015 onwards. This reflects the general decline in interest rates following the call by the Reserve Bank for banks to reduce interest rates. Accordingly, the estimated implied curve for Zimbabwe assuming an estimated risk premium of 4% is depicted in Figure 3 below.

Figure 3: Implied Sport Yield Curve for Zimbabwe for 2015

	3mths	6 mths	9 mths	1 yr	2yr	3yr	4yr	5yr	6yr	7yr	8yr	9yr	10yr
US Treasury curve	0.11%	0.25%	0.35%	0.39%	0.71%	1.00%	1.28%	1.57%	1.69%	1.81%	1.94%	2.06%	2.18%
Implied Zimbabwean USD Curve	3.94%	4.13%	4.30%	4.39%	4.93%	5.44%	5.95%	6.46%	6.80%	7.15%	7.49%	7.84%	8.18%

Source: Reserve Bank of Zimbabwe, 2015

Under normal circumstances, the implied Zimbabwe USD Curve above should be the yield curve for the Zimbabwean market under a multicurrency system. Discrepancies may, however, arise due to domestic credit conditions and other structural factors. To align the implied curve with conditions prevailing in the market, observed interest rates are utilized to calculate the assumed country risk premium. Accordingly, the assumed country risk premium was estimated to be 1.4 % and applied to the implied curve to obtain an estimated curve which is depicted below.

Figure 4: Estimated Yield Curve for Zimbabwe for 2015

	1 YR	2YR	3YR	4YR	5YR	6YR
Yield	6.34%	6.53%	6.70%	6.79%	7.33%	7.84%
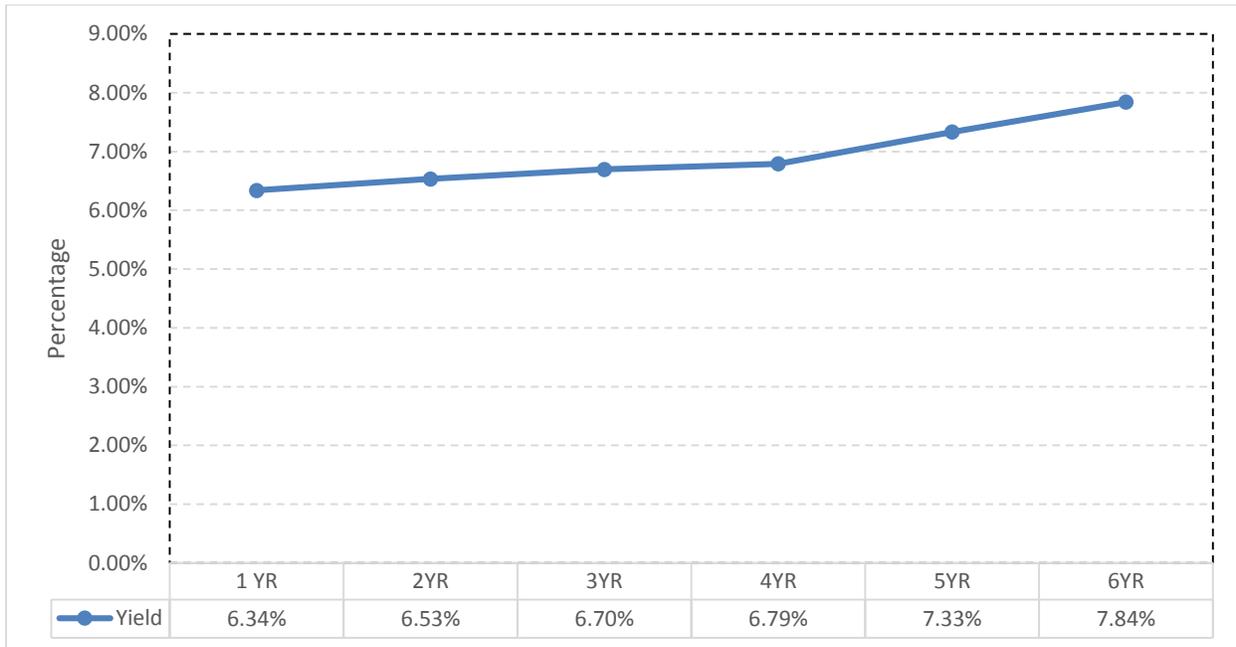
Source: Reserve Bank of Zimbabwe, 2015

Given an implied yield of about 4.39% and an estimated yield of about 6.34% per annum for one year instruments, it is recommended that the average of the two yields, that is 5.37% be taken and used as a reference rate. There should, thus, be a balance between the two ends, where the interest rates offered on instruments should allow and encourage banks to trade on the secondary market, while the debt issuance should not be expensive to Government. Figure 4 below shows the estimated short term yield curve for Zimbabwe.

Figure 5: Proposed Yield Curve for Zimbabwe

	3mth	6mth	9mth	1yr
Yied	5.26%	5.29%	5.32%	5.37%
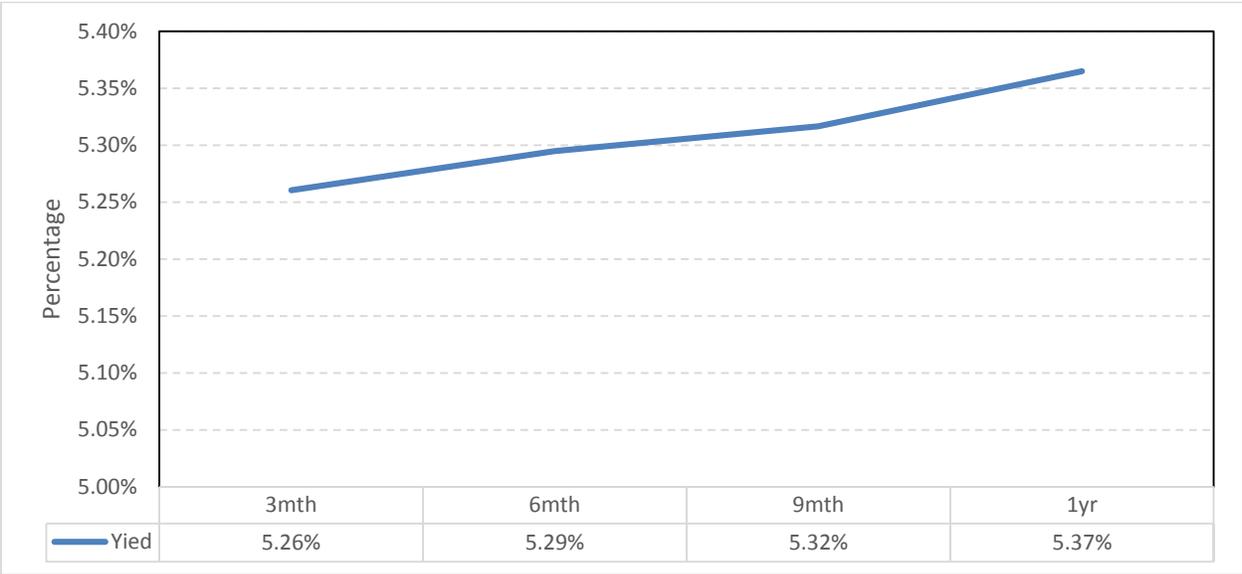
Source: Reserve Bank of Zimbabwe, 2015

The simulated money market rates on average fall in the range of 5-6%. In this regard, yields on Treasury Bills which are risk free in nature should be set within these levels.

SECTION SIX: CONCLUSION AND POLICY RECOMENDATIONS

This paper has estimated the yield curve for Zimbabwe under a multi-currency environment. The yield was simulated to be 5.4% for one year instruments. Given the sustained high interest rate regime, the results underscore the need for sustained moral suasion efforts by the Reserve Bank with emphasis on the need to streamline lending rates to levels that support the successful revival of the Zimbabwean economy.

This automatically takes steam off the exorbitant interest rates currently offered by banks, promote financial intermediation, encourage competition for deposits and most importantly, foster the narrowing of the interest rate spread. Once deposit rates are attractive, banks will absob the bulk of the cash circulating outside the banking system, broaden the country's deposit base and enhance their financial intermediary role in support of sustained economic growth.

Although Government has short term financial requirements that usually arise from cash-flow mismatches, there is need for utmost care to be taken to avoid the contraction of expensive short term debt. This can be achieved through the appropriate pricing of Treasury Bills in a manner that ensures consistency with the normal yield curve. Mixed signals associated with the current interest rate structure undermine the efficacy of policy measures enunciated by Government, through the unintended generation of adverse expectations.

The maintenance of yields within these levels is envisaged to sanitize the country's interest rate structure to promote deposit and credit growth. Any rates on the accommodation window that differ from the high yields obtaining on TBs creates arbitrage opportunities emanating from possible profits that accrue to banks that move funds between the LOLR facility and TBs. By its nature the accommodation rate is supposed to be punitive. As such, the high rates on short term TBs, compound the challenges of setting a policy rate at levels that are not only punitive but provide the correct interest rate signals in the market. At the same time the accommodation rates cannot be set below the risk free TB rates, which are already exceeding long term rates. In essence, the obtaining high yields for short dated paper have the potential to result in an unnecessarily high accommodation rate that may in turn result in banks further pushing lending rates to high levels.

This may have the effect of discouraging institutions from participating in future TB issuances in which yields fall below the current rates that they have benefitted from. Essentially, this adverse development has the potential to undermine any efforts to raise funds for Government through the issuance of TBs in the future. Ultimately, the general interest rate levels may remain high, a development that discourages borrowing, thereby imposing a constraint on economic growth prospects. To avoid the undermining effect of high interest rates in the short term, there is need to exclude banking institutions from participating in private placements. Instead, other non-banking institutions, notably, pension funds, insurance companies, NSSA and other institutions with surplus funds could be offered preferential rates in a manner that does not distort the country's interest rate structure.

There is also need for Authorities to come up with a sustainable medium term borrowing strategy aimed at minimizing the cost and risk of borrowing. The plan should clearly stipulate the proportion of external and domestic borrowing as well as the borrowing terms. Effectively, this would ensure that debt secured by Government remains sustainable and affordable. In this regard, interest rates on Treasury Bills would be deliberately aligned with the proposed indicative yield curve in a manner that sends correct signals of Government's view on future economic prospects.

The sustenance of a normal yield curve requires that liquidity conditions in the economy be improved significantly. Towards this end, the meaningful attraction of foreign direct investment, improvement of export capabilities and the shedding off, of import dependence remain integral. This coupled with an effective debt resolution strategy would unlock external credit lines that are critical for the re-tooling of industry. These key ingredients are envisaged to rejuvenate aggregate demand in the domestic economy and spur inflation to levels that are promotive of sustained economic growth and development. These developments ultimately culminate into a normal yield curve that has lower short term rates that bode well for Government's borrowing.

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