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History of Treasury Bills Market in Ethiopia: T-bills Yield and other Interest Rates

Moges Endalamaw Yigermal
Monetary and Financial Analysis Directorate, National Bank of Ethiopia, Addis Abeba, 5550, Ethiopia

Abstract
The main objective of the paper is to the development of treasury treasury bills market in Ethiopia (which is a primary market sold directly to the primary investor on the auction) from the year 1995-2016. To meet the objective, descriptive method of data analysis has been employed to explain graphically the demand for and supply of T-bills, the yield applied for different maturing bills, the role of T-bills as a monetary policy instrument (OMO) & government financing and comparative analysis between different interest rates (Saving deposit and Time deposit interest rates), inflation and T-bills yield. The data used for the analysis is annul and is collected from National Bank of Ethiopia. The paper finds out, that T-bills market is in its initial stage even if it was started before two decades since its establishment. We also find illogical relationship between T-bills yield, saving interest rates and inflation. The yield applied for T-bills doesn't take into account the market interest rate (minimum deposit interest rate in Ethiopian case) and the level of inflation (it erodes out) the return from investing on T-bills. From the result obtained from the analysis it is recommended that, the yield for T-bill must follow the level of interest rate (deposit), take in to account the level of inflation and follow normal Yield curve to have efficient and reasonable price for government securities and to use T-bill as Open Market Operation for monetary policy.
Keywords: Government securities, T-bills Yield, Interest rate, inflation

Acronyms

CBK	Central Bank of Kenya
DBE	Development Bank of Ethiopia
IMF	International Monetary Fund
MOFEC	Ministry of Finance and Economic cooperation
NBE	National Bank of Ethiopia
OMO	Open Market Operation
Repos	Repurchase Agreements
TAD	Term Auction Deposit
T-bills	Treasury Bills
T-bonds	Treasury Bonds
T-notes	Treasury Notes
TRB	Treasury bill
USA	United States of America
WHT	Withholding tax

Chapter one

1.1Introduction

Government securities are debt instruments issued by the Government to meet its financing needs and for the purpose of monetary policy. The Central Bank is responsible for the administration of the primary market for Government securities which includes Treasury Bills, Treasury Bonds and Government Stocks.

In some countries these securities are also used by the Central Bank as monetary policy instruments to manage the level of liquidity in the economy.

Government securities can be purchased by private individuals and organizations from the Government through the Central Bank who contracts to make future payments of interest and principal according to the terms and conditions of the prospectus or notice of each security issued.

Open Market Operation (Sale & purchase of bonds or governments securities) has generally been used by countries as one of the main instruments for the development of money markets.

Under normal circumstances, open Market operations (OMO) in various forms are the main mechanism through which central banks provide or withdraw liquidity to/from the money market, steer short-term interest rates and signal the stance of monetary policy. Most central banks have at their disposal various types of open market operations and these include: outright transactions, repos, issuance of debt certificates, foreign exchange swaps and fixed-term deposits (IMF 2012).

Government securities are the main debt instruments used in different degrees, the primary issuances of them have been used to drain surplus liquidity for monetary policy and liquidity management purposes.

The National Bank of Ethiopia (NBE) currently issue Treasury Bills having a maturity period of 28, 91,182 and 364 days and sold at a discount from face value on behalf of the ministry of economic cooperation (MOFEC). The issuance of such government security is based on the borrowing demand of ministry of economic cooperation and the liquidity situation as forecasted by NBE.

1.2 Statement of the Problem

As argued by Obert Nyawata, 2012, treasury bills stand out as the first best option security to use for both debt and liquidity management. As pointed out by the author the use of treasury bill can be the following advantages (i) an integrated view of public sector finance; (ii) the public policy argument for the government's role in fostering the development of money markets; and (iii) inherent features that enable government securities to generate positive externalities for other financial instruments and the rest of the economy in a way that is not easily replicable by other instruments.

The main consideration for the choice of Treasury bill is helpful since it makes central bank to be independence operationally, for the development of money market and the strengthening of the transmission of monetary policy impulses.

The sale and purchase of treasury bills is important to provide and withdraw liquidity from the market. As it is explained in the monetary policy frame work of NBE, NBE will use open market operations (sale and purchase of government securities) as one of its monetary policy instruments. NBE also set the interest rate for the bill (yield) on government securities to be at least close to the minimum interest rate.

As it is stated in newly issued Treasury Bills directive number NBE/TRB/001/2011, the main reason for the issuance of government securities is to meet the domestic borrowing demand of the government as a short term debt instrument and to provide and withdraw liquidity from the market (it depends on the liquidity situation in the market as forecasted by NBE). But the practice is not as stated in the directive rather the supply of the bill is merely depend on the maturing amount of the existing investors, mostly public institutions (public and private organizations social security agencies).

Since the auction process is not in a competitive way the average weighted annual yield for the whole maturity period (28, 91,182 and 364) bills is approximately 1.3% in annual basis as of June 2016, which is much lower than the minimum deposit rate of 5%.

Taking such challenges of security market in Ethiopia, the paper is designed to show the trend and effectiveness of security (Treasury bill) market in Ethiopia.

1.3. Objective of the study

The general aim of this paper is to design to show the trend and effectiveness of security (Treasury bill) market in Ethiopia and to forward implication on it. Specifically the paper attempts to address the following objectives:-

- The relationship between the annual yield to maturity for T-bills and the policy rate which is the minimum deposit interest rate in Ethiopia.
- The link between the annual yield to maturity for T-bills and the inflation rate (general level of inflation) in Ethiopia.
- The role of T-bills in providing and withdrawing liquidity from the market in Ethiopia.
- The role of T-bills as a source of Government finance in Ethiopia
- To compare the level of Ethiopia's inflation, deposit interest rate and T-Bills interest rate with peer countries (Uganda , Kenya, Ghana)

1.4. Source and Method of data analysis

The data for Ethiopia used under this study was obtained from National Bank of Ethiopia for the period 1995-2016 and the paper also finds data from African Financial Sector Database for other countries used for compression. The author employed Descriptive method of data analysis to describe the historical trend of treasury bills market and to explain link between T-bills yield with policy rate variable (minimum deposit interest rate) and inflation rate.

1.5. Scope of the study

The scope of the study is bounded on the historical trend of Treasury bill market (primary market) and effective ness to meet the objective of its establishment. The time period for the study spans from 1995-2016.

1.6. Organization of the paper

The paper organized under four chapters. The first chapter deals with the introduction part which contains introduction, statement of the problem, objective, methodology and scope of the study. The second chapter includes both theoretical and country experience reviews. The third chapter is about data analysis. The final chapter, which is Chapter four, is designed to provide conclusion and policy recommendation based on the study

obtained from analysis.

Chapter Two

2.0 Literature Review

This section of the study presents conceptual reviews and terminologies about security markets and presents different countries experience in using securities in their monetary policy instruments.

2.1 Conceptual reviews

Government bonds

A government bond is a bond issued by a national government, generally with a promise to pay periodic interest payments and to repay the face value on the maturity date. Government bonds are usually denominated in the country's own currency. Government bonds are sometimes referred to as sovereign bonds. Technically any bond issued by a sovereign entity is a sovereign bond, but the term is usually used to refer to bonds issued in a currency other than the government's own currency.

T-bills - issued with short term maturities (in Ethiopia we have 1-month, three month, six month and twelve month maturity periods). They offer investors the lowest yield of all government bond issues. Similar to zero-coupon bonds, T-bills are auctioned off to investors at a discount to par. The difference between par value ($100) and the discount price is what investors view as its interest payment.

T-notes - issued with longer maturities than T-bills and shorter maturities than T-bonds, typically offered to investors with one-, five-, and seven- or 10-year terms (USA). Because the maturity date is shorter, interest rates are lower than those offered to T-bond investors and higher than those offered to T-bills. Prices on T-notes fluctuate more than T-bills but less than T-bonds, and issues that carry the furthest maturity date fluctuate in price the most. The 10-year T-note is the most widely tracked government bond, and it is used as a benchmark for banks and the Treasury market in calculating mortgage rates.

T-bonds have the longest maturities of all government-issued securities and are often referred to as long bonds. These issues are offered to investors with either a 20- or 30-year term. In return for investment, individuals who purchase T-bonds receive an interest payment every six months per the terms of the bond issue. Because T-bonds have the longest time to maturity, their prices will fluctuate more than T-notes or T-bills. This long maturity also correlates to higher interest rates for investors.

T-Bill Yield Curves

A yield curve is a line graph that illustrates the relationship between the yields and maturities of fixed income securities. Yield curve graphs provide a quick way to review and compare the yields that different types of fixed income securities offer, and to determine investor expectations for market conditions in the future. They are created by plotting the yields of different maturities for the same type of bond. The “spreads” between the yields of different maturities are what create the slope, or shape, of the yield curve for a given type of security.

Yield curves may be created for any type of fixed income security, including Treasury securities, investment-grade and high yield corporate securities, global bonds, and municipal bonds.

Discriminatory and Uniform-Price Auctions

The two auction methods most frequently used in this area are discriminatory and uniform-price auctions. In both cases, the issuer ranks the bids received for the homogeneous products by price, in a descending order. Then it accepts bids in that order, going from highest to lowest, until the intended volume is taken up or all the bids are accepted. (That is, the highest bids for the given volume are accepted.) If at the lowest accepted price the quantity demanded is higher than the residual quantity of issuable products, then the residual quantity is distributed among bidders according to the proportions of their submitted bids at this price. The two formats differ in that while in discriminatory-price auctions financial settlement occurs at the different prices indicated in the bids, in uniform-price auctions the winning bidders all end up paying the price indicated in the highest rejected bid (Zoltán Monostori,2014).

2.2 Country experience

This section discusses about the experience of different African countries in using Treasury bill for the purpose of their monetary policy as Open Market Operation and sterilization of budget deficit.

Kenya

Open Market Operations (OMO) used by the central bank of Kenya (CBK) as a monetary policy instrument which involves purchase and sale of eligible Government securities to regulate the money supply and the credit conditions in the economy. CBK also use OMO to stabilize short-term interest rates When the Central Bank buys securities on the open market, it increases the reserves of commercial banks, making it possible for them to expand their loans and hence increase the money supply. The Central Bank of Kenya uses the following options to execute Open Market Operation:

- Repurchase Agreements (Repos); which entail the sale of eligible Government securities by the CBK to

commercial banks through an auction system to reduce the level of commercial banks deposits held at CBK. Repos thus reduce the commercial banks' capacity to make loans and advances to customers. The Central Bank undertakes to repurchase the security after three or seven days depending on the mutual agreement. The Late Repo, sold in the afternoon, has a 4-day tenor and is issued at an interest rate 100 basis points below the Repo on that day.

- Reverse Repos; CBK purchases eligible Government securities from commercial banks. They enhance the liquidity of the money market during periods of tighter than desired liquidity level thereby dampening upward pressure on interest rate. The current tenors for Reverse Repos are 7, 14, 21, and 28 days.
- Term Auction Deposit (TAD); used when CBK considers it desirable to offer longer tenor options. The CBK seeks to acquire deposits through a transfer agreement from commercial banks at an auction price but with no exchange of security guarantee. Currently, the tenors for such deposits at CBK are 14, 21, or 28 day periods.
- Horizontal Repos; modes of improving liquidity distribution between commercial banks under CBK supervision. They are transacted between commercial banks on the basis of signed agreements using government securities as collateral, and have negotiated tenors and yields. Horizontal Repos help banks overcome the problem of limits to lines of credit, thus promoting more efficient management of interbank liquidity.

Uganda

The Ugandan government has issuing Treasury bills with a maturity period of 91 days, 182 days, and 364 days. These securities are issued at a discount and currently they account for less than half of total outstanding government securities that are yet to mature.

They have also Treasury bonds, which are long-term securities compared to the Treasury bills in maturities of 2, 3, 5, 10 and 15 years. Treasury bonds were introduced mainly to extend the yield curve and to mitigate the cost of sterilization.

The permitted authorized dealers for Ugandan government securities are Commercial banks, Insurance companies, Individual companies, Government agencies, Pension funds, Individuals (of at least 18 years of age) and offshore investors (individual persons and corporate entities). The income earned on Treasury bills and bonds on all investors except those that are explicitly exempted by Uganda Revenue Authority and/or other regulatory authorities are subject to Withholding tax (WHT) of 20%.

Ghana

Bank of Ghana issues Government securities on behalf of the Government of Ghana and issue securities in its own name for its Open Market Operations which is issued at the primary market through the wholesale auction process.

Government securities with a maturity period of 91-day,182-day, 1-year Treasury Note, 2-year Treasury Note, 3-year Medium Term Bond, and- 5-year Medium Term Bond sold in the primary market in Ghana can be traded in the secondary market

Bank of Ghana issued government securities for the purpose of financing of Government cash shortfalls and to redeem maturing securities. Government Securities are also issued for the development of the financial market by providing risk-free benchmark securities as reference for the issue of debt instruments in the money and capital market by corporates and non-government institutions.

The Bank of Ghana also issued securities (Bank of Ghana) for the purpose of monetary policy for its Open Market Operation for market liquidity management with a maturity period of 1 week, 2-week, 28-day (1 month) and 56-day (2 months).

2.3. Treasury bills history and Practice in Ethiopia

Treasury bills market was established on January 25th 1993 in Ethiopia with a maturity period of only 91-days (three months) and the auction was conducted on a monthly basis. After three years on December 18th 1996, a maturity period of 28-days bills and 182-days bills (six months) were introduced in to the market and the auction period were changed in to biweekly basis. In October 10, 2011, another new Treasury bill type was introduced in to the market with a maturity period of 364-days (one year). Since then there are four types of T-bills with a maturity period of 28-days, 91-days, 182-days and 364-days. Currently all the four types of bills sold weekly basis on every Wednesday.

Treasury Bills directive number NBE/TRB/001/2011, invites all Ethiopian residents including Individuals, firms, companies , corporate bodies , banks and other financial institutions. The directive prohibits foreign residents and gives authority to NBE to delete any commercial bank from the auction without reason.

Even if the return from government securities are safe and has a minimum risk than investing in another areas the participation of Individuals, firms, companies and corporate bodies found to be null in Ethiopia. The participants are mostly public institutions (public and private organizations social security agencies). The reason

for the limited participation of private individuals and enterprises is because of the low return of investing on T-bills, which is much more below than the minimum banking deposit rate.

As it is stated in newly issued Treasury Bills directive number NBE/TRB/001/2011, the main reason for the issuance of government securities is to meet the domestic borrowing demand of the government as a short term debt instrument and to provide and withdraw liquidity from the market (it depends on the liquidity situation in the market as forecasted by NBE).

The directive also proclaims that, the supply of treasury bills to the market to be issued can be based on three factors:

- The amount Treasury bills maturing on the date of the auction, which is the amount of T-bills hold by the existing investors and to be revolved for the next maturity.
- The borrowing demand of government as presented by the ministry of the former Ministry of finance and economic development (MOFED) or Currently, Ministry of finance and economic Cooperation (MOFEC) to fill its financing gap.
- The liquidity situation in the market as forecasted by NBE to provide and withdraw liquidity from the market.

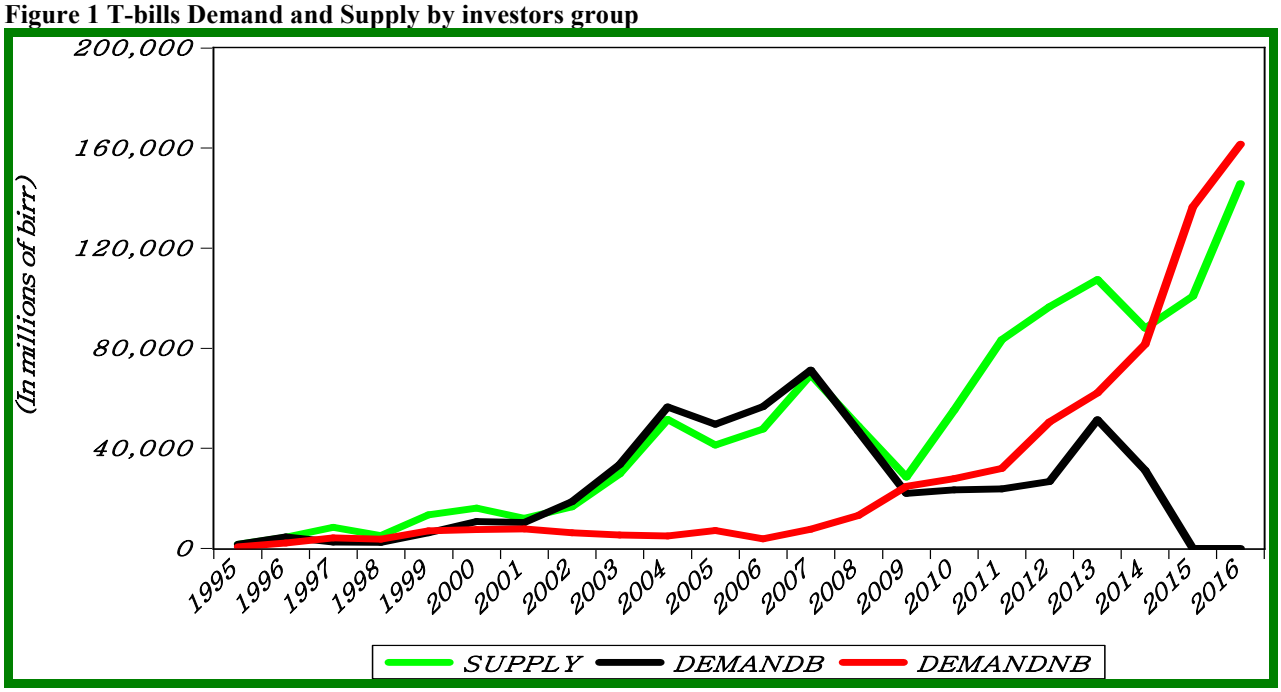
But, currently the practice is not as stated in the directive rather the supply of the bill is merely depend on the maturing amount of the existing investors, mostly public institutions (public and private organizations employees social security agencies).

Chapter Three

3.1. Data Analysis

This section of the study presents graphical explanation and analysis about the demand for and supply of T-bills, the yield applied for different maturing bills, the role of T-bills as a monetary policy instrument (OMO) & government financing.

Figure 1 T-bills Demand and Supply by investors group



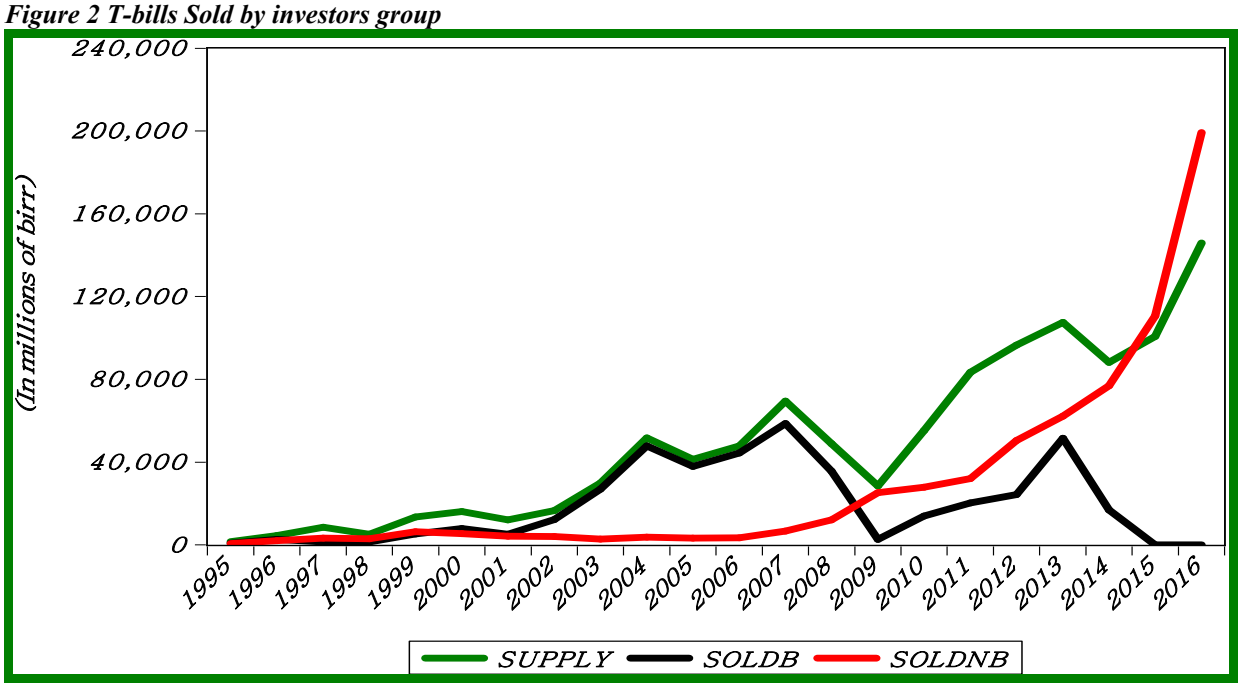
Source: own computation

The paper segments the Investors on government T-bills in to banks and non-bank categories. Under the bank category all commercial banks, participating on T-bills auction are included excluding DBE[1] and non-bank financial and non-financial organizations including DBE are categorized under the non-bank segment. Figure 1 displays the historical trend of total amount of T-bills supplied in to the market and demanded by two investor groups (bank and non-bank) over 22 years. As we can observed, from beginning up to 2001 supply in to the market is higher than what is actually demanded by banks and non- bank groups. But after 2001 up to 2009 the amount of T-bills demanded by commercial banks is higher than the market supply demanded by non-bank groups remains low. But after 2010 the demand for T-bills by non-bank groups shows higher increments and at the same point the market share of commercial banks shows down ward trend and becomes zero after 2015.

[1] In this case DBE (Development Bank of Ethiopia) are considered as a non-bank financial institution (since the service it provides is differing from the other commercial banks).

This is because of the establishment of private organization employee's social security agency and its participation on the Auction.

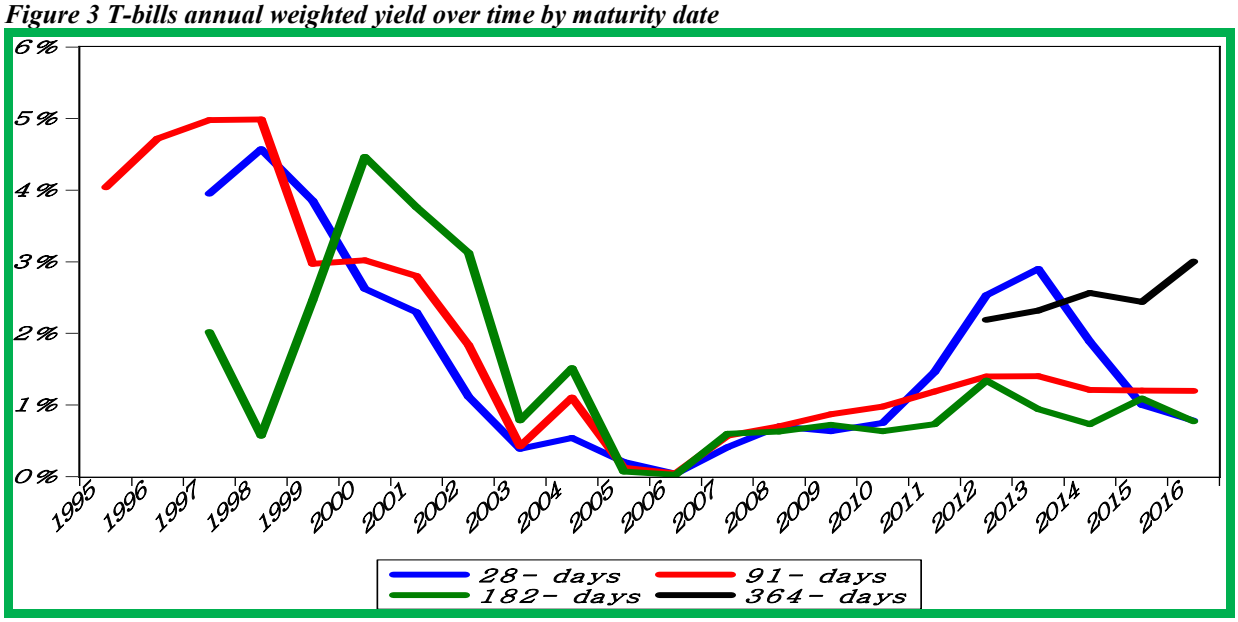
Figure 2 T-bills Sold by investors group



Source: own computation

Figure 2 displays the historical trend of total amount of T-bills supplied in to the market and the total actual purchased by two investor groups[1] (bank and non-bank) over 22 years. As we can observed from beginning up to 2015 supply in to the market is higher than what is actually sold in the auction. But after wards the amount of T-bills sold in to the market is higher than the market supply. This is because of the uncompetitive nature of the auction. Regardless of the supply of T-bills (since the supply is depending merely on the maturing amount of the existing investors) organizations participate in the auction can purchase the whole amount that they demand for. As far as the share of T-bills purchased by investor group is concerned banks has purchased higher amount of T-bills sold in to the market till 2009 and shows a declining trend and totally exit from the market after 2015.

Figure 3 T-bills annual weighted yield over time by maturity date

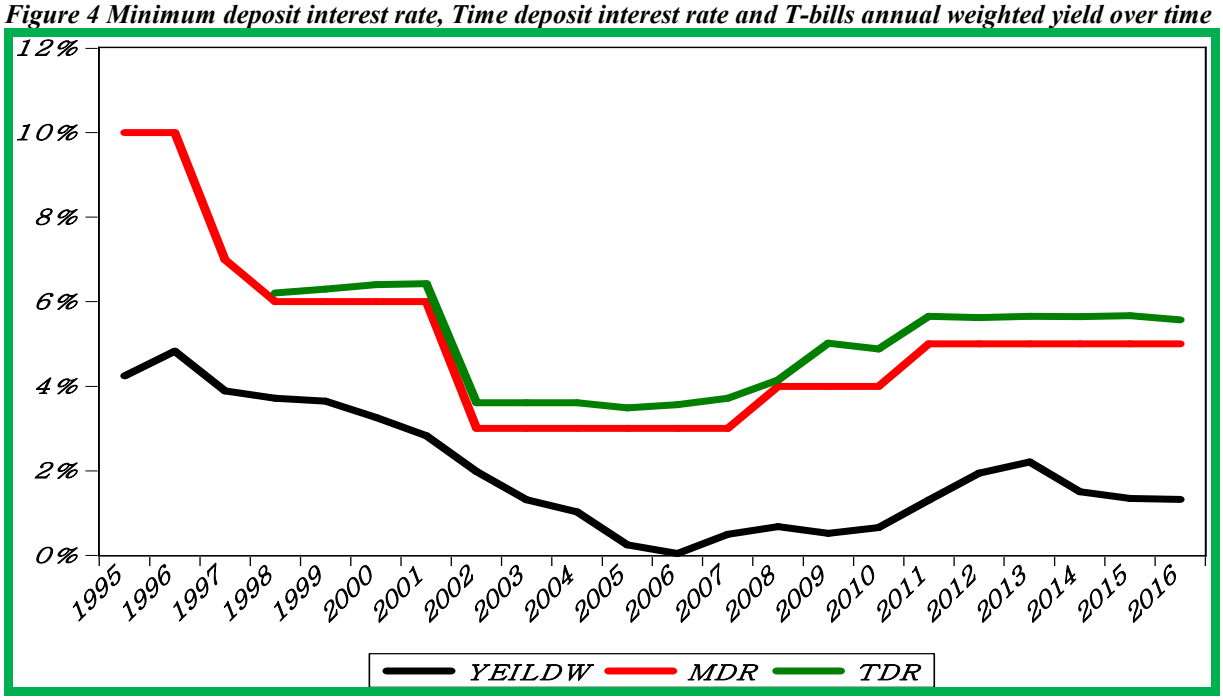


Source: own computation

[1] The paper segments the Investors on government T-bills in to banks and non-bank categories. Under the bank group all commercial banks except development bank of Ethiopia (DBE) who participating in T-bills auction are included and non-bank financial and non-financial organizations including DBE are categorized under the non-bank segment.

T-bills market in Ethiopia was established firstly by introducing a maturity period of 91-days in to the market and after two or three years after its establishment a maturity period of 28-days and 182 days were introduced in to the market. More recently a maturity period of 364-days also announced in to the market and we have four types of T-bills with a maturity period of 28-days, 91-days, 182-days and 364-days. Figure 3 displayed the historical trend of annual weighted yields over time for each maturity periods in Ethiopia. For every rational agent it is expected that, T-bills with longer maturity period must be associated with higher annual yield than for T-bills with short maturity period. When we see the yield for T-bills in Ethiopia, from the begning annual weighted yields associated with each maturity period is illogical and the yield for 182-days maturity period is even below the yield for 28-days and 91-days maturity periods. But after 1999 up to the year 2005 the yield associated with each maturity makes sense and higher yield rate is associated to longer maturity periods (182-days) than relatively T-bills with short maturity periods (28-dats and 91-days). But, after 2006 up to 2010 the annual yeild for all maturity periods is relatively the same and doesn't follow the logic of "higher yield is associated with longer maturity period t-bills". Starting from 2010 the yield for 28-days bills gets increasing (mainly banks participated on this maturity periods) startsa to decline after 2013. The yield for maturity period of 91-days bills shows a constant trend after 2008 till recently (2016). The fixed yeild observed is might be an indicator for the uncompititiveness nature of T-bills auction in Ethiopia and the same price is offered over 9 years (2007-2016). After the announcement of 364-T-bills in to the market[1] the annualwieghted yield of 3% is observed and is currently the maximum yield rate.

Figure 4 Minimum deposit interest rate, Time deposit interest rate and T-bills annual weighted yield over time



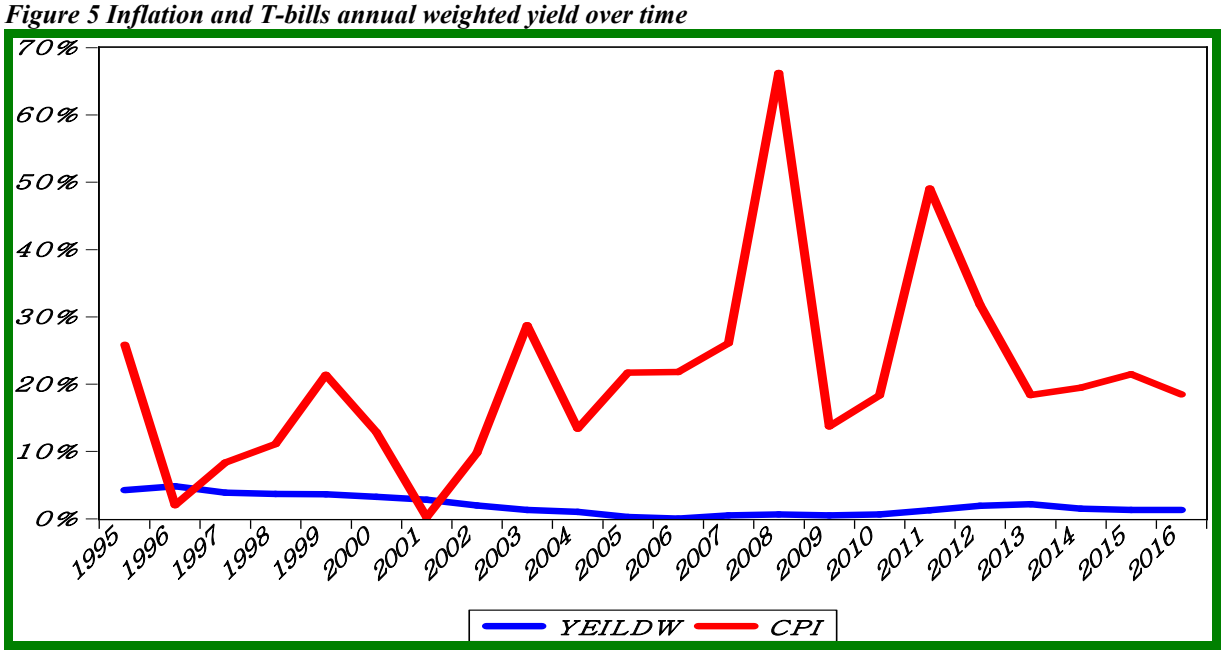
Source: own computation

Figure 4 shows the historical trend of minimum deposit interest rate (deposit interest rate set by NBE and is considered as policy rate in Ethiopia) and Treasury bills annual weighted yield in Ethiopia over 22 years. Treasury Bills directive number NBE/TRB/001/2011, specified the annual weighted yield for T-bills is set to be below the minimum deposit interest rate and the co-movement between T-bills yield and minimum deposit interest rate displayed in the above figure also assures it. As it is observed from the figure the yield for government T-bills in Ethiopia shows a decreasing trend and down to even below 1% in 2006, while it was about 4% at the starting point. After 2006, the yield curve tends to move up and reflects persistent trend. The time trend for minimum deposit interest rate is also the same as the T-bills yield rate curve and shows a decreasing trend from the beginning and reveals persistent trend after some point. The rationality behind the minimum deposit interest and T-bills yield is not only moving together or showing the same trend rather the gap between the two interest rates are vital to every rational investor to choose whether to invest on government T-bills or not. Even if, investing on government bonds is less risky and safe than depositing on commercial banks or investing on any other securities,[2] the gap must not be large. In Ethiopian context the minimum deposit rate (policy rate) is currently 5% and the annual weighted yield for all types of bills is about 1.32 as of 2016.

[1] Currently Development Bank of Ethiopia is the sole participant in the 364-days maturity period.
[2] The profit/ income earned from treasury bills in Ethiopia are exempt from any types of tax.

The average time deposit interest rate for all periods (Up to 1 year, 1 to 2 year and Over 2 year) follows the minimum deposit interest rate reasonably and does not reflect significant difference.

Figure 5 Inflation and T-bills annual weighted yield over time

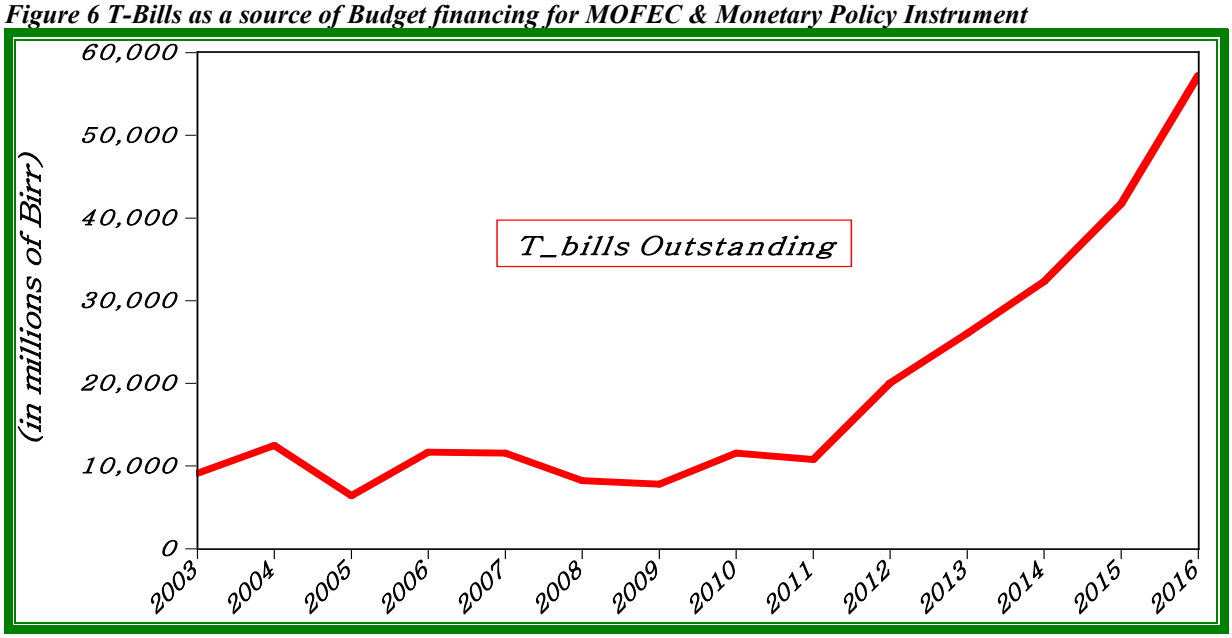


Source: own computation

As it is observed from the above figure there is no systematic co-movement between general inflation rate (CPI growth rate) and Treasury bills annual weighted yield in Ethiopia. Inflation over time reflects ups and down movement but the yield to government treasury goes through the origin and reflects slight change over time. In economics sense the return from investing on government securities is higher in real terms when inflation drops down than the return from inflation rate goes up.

When there is higher inflation the value of assets erodes in real terms over time (the return from holding government securities is wipe up by inflation and investors on such bills are subjected to lose), and the reverse holds true when inflation rate gets low. Generally speaking when there is higher inflation, investors on government securities want to be compensated there by raising yield rate. For every rational economic agent it is logical that in periods of high inflation the real return from treasury bills is negative, since the trend of yield rate doesn't follow the inflation rate over time.

Figure 6 T-Bills as a source of Budget financing for MOFEC & Monetary Policy Instrument



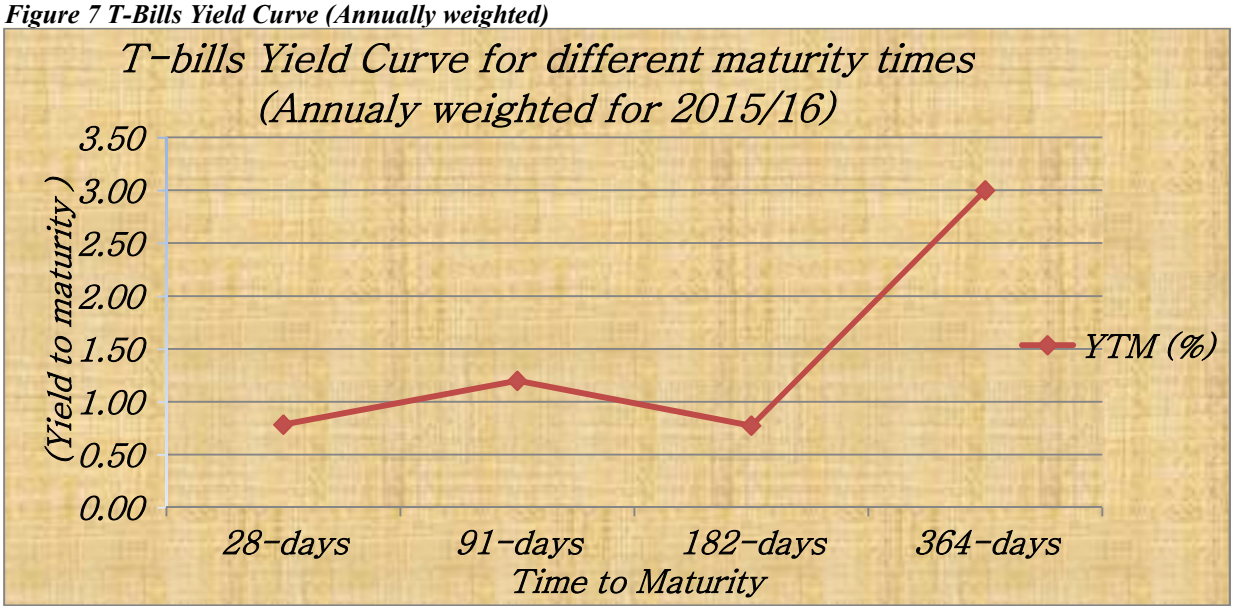
Source: own computation

The primary goal for the issuance of government securities in every nation is to find alternative source of finance for government budget deficit. Besides, using T-bills as monetary policy instrument through Open

Market Operation (Sale & purchase of bonds or securities issued by governments) the issuing of Government T-bills in Ethiopia has a primary objective of finding a domestic sources of finance through borrow money from domestic sources (since the security is entirely sold for home residents). As it is depicted in figure 6 above, Ministry of finance and Economic Cooperation (MOFEC) have an outstanding borrowing balance of around 60.00 Billion Birr from selling of T-bills as of June 2016. The figure also shows an upward movement especially after the year 2011and illustrates, Government able to borrow a significant amount of money from domestic source (even is the participants are solely public Enterprises) through issuing of T-Bills.

As far as the issuance of T-bills as monetary policy instrument through Open Market Operation is concerned, NBE has do null and has not issue T-bills exclusively for a purpose of monetary policy to drain and withdraw liquidity from the market through selling and buying of T-bills into and from the market. Since, the money collected from selling of T-bills is deposited to the account opened by MOFEC at NBE we can't deny the invisible use of T-bills to drain liquidity from the market until MOFEC withdraw the amount from NBE and use the money.

Figure 7 T-Bills Yield Curve (Annually weighted)



Source: own computation

The above line graph (yield curve) illustrates the relationship between T-bills yields (weighted annually for 2016) and respective time to maturities.

The chart shows unusual yield curve. As you can see, it is unsystematic and from the beginning it shows an upward sloping but after a maturity period of 91-days it shows downward sloping and back to normal. The yield for a maturity period of 91-days exceeds the maturity period of 182-days.It falsify the logic of longest-maturity securities offer the highest returns while the shortest maturities offer the lowest returns.

3.2 Inflation rate, Deposit interest rate & T-bills interest rate comparison across Ethiopia and some African countries

Our motive here is not to give a detail explanation about the level of inflation rate or to compare the level of different interest rates (Deposit interest rate and T-bills interest rates) across countries. Rather, the comparison has made to show, how the level of interest rate (averaged T-bills yield rate) applied for government Treasury bills in Ethiopia deviates from other African countries T-bills interest rate. Before comparing the yield applied for government treasury bills in Ethiopia with other African countries we shall to compare the level of deposit interest rate and inflation rate (which directly affects the decision of investors on government securities). Annual Data for inflation rate, deposit interest rate and T-bills interest rate from Kenya, Ghana, Uganda and Ethiopia are used from 2010-2014 to show a cross country compression.

The level of inflation rate in Ethiopia is higher than Kenya, Ghana and Uganda in 2010 and 2011 and the second higher rate next to Ghana in 2012 and following Uganda in 2013 and 2014. The annual inflation rate registered in 2014 for Uganda, Ethiopia, Kenya and Ghana were 9.9 %, 7.7%, 5.0 % and 4.7%, respectively (See Annex 1).

The average deposit interest rate for Ethiopia was almost the same for five years (2010-2014) and it was 5.3% in 2014, which is much lower than the average deposit interest rate applied 2014 in Uganda, Kenya and Ghana, which was 12.9%, 8.4% and 6.6%, respectively (See Annex 2).

Given, the level of inflation rate and deposit interest rate in Ethiopia the annual average interest rate for

government T-bills is very low and it was 1.6% (2014). When we compare it with the average T-bills interest rate of Uganda, Kenya and Ghana it was much lower (See Annex 3). Inflation erodes out the return investors got from investing on government Treasury bill (since interest rate for T-bills is very low).

Chapter four

4.1 Conclusion

The whole article is designed, to create an image about the historical trend of Treasury bills market in Ethiopia over 22 years (from 1995 -2016). To meet the objective of the paper, descriptive method of data analysis was employed (time series graphs used to illustrate T-bills market and related issues). The paper figure out the supply and demand trends of T-bills by segmenting the investors group in to bank and non-bank categories, total treasury bills actually sold to the market over the review period, the trends of annual weighted yield associated with each maturity period, the co-movement between T-bills annual weighted yield with Minimum deposit interest rate and Time deposit interest rate and over the review period and the co-movement between T-bills annual weighted yield and inflation rate(measured by CPI rate) over time. The Study reveals the following outcomes;-

- Even if it was started before two decades since its establishment T-bills market is in its initial stage and the participants are very few (mostly public institutions).
- The yield applied for T-bills in Ethiopia is unfair and much more below the level of market interest rate (minimum deposit interest rate of 5.0%).
- The price of Government treasury bills in Ethiopia doesn't take into account the level of Inflation (it erodes out) the return from investing on T-bills and shows approximately a persistent trend.
- The use of (issuance) T-bills for the purpose of monetary policy instrument (Open Market Operation) is almost insignificant in Ethiopia.
- Since the return from investing on government securities (T-bills) is low which is about[1] 1.32% in 2016 on annual basis than the minimum deposit interest rate of currently 5.00% (taken as a policy rate by NBE) investors choose to invest on other alternatives than investing on T-bills.

4.2. Policy Implication

The Market for Treasury bills is found inefficient and the auction process is directorially determined (the price for T-bills is determined not in a market basis and doesn't follow the real value money). Following from the whole finding, the researcher forwards the following policy recommendation as a policy implication:-

- To use T-bills as Open Market Operation, the price for T-bills should be determined in a market basis (currently the price offered to purchase T-bills doesn't follow the market value of money).
- Promote the participation of Private sectors and individuals in T-bills auction there by letting them to earn fair return from investment on T-bills.
- There should be a planned way in supplying of T-bills in to the market (currently the supply of T-bills merely determined by the existing investors maturing amount to be rollover for the next auction). The borrowing demand of MOFEC and the liquidity forecast of NBE should be taken in to account while, determining the amount of T-bills to be supplied.

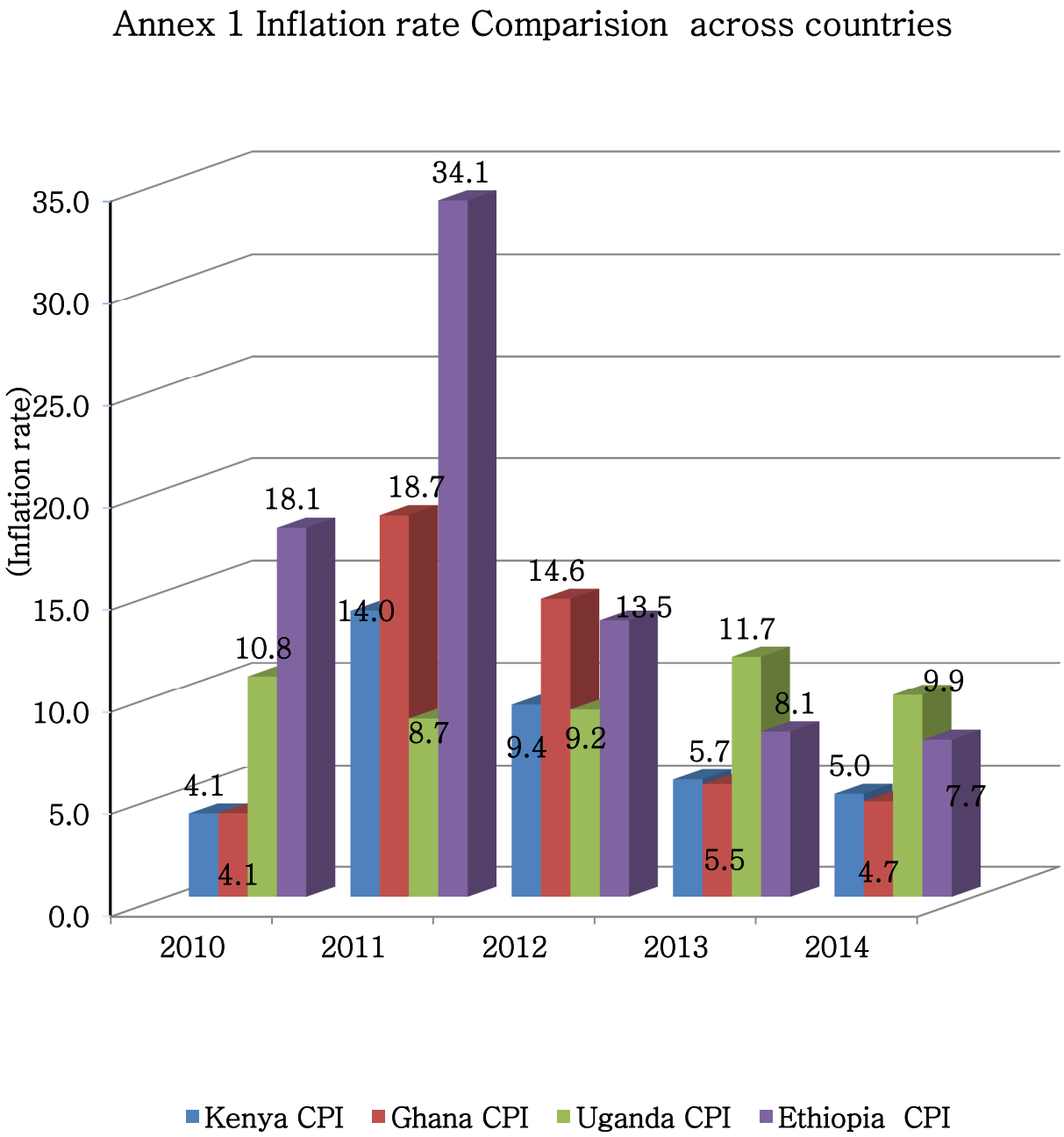
Reference

- Africa development bank group,2016 Country financial report , African Financial Sector Database
- Bank of Ghana, April 2011 Operational Guidelines for Government Securities for Primary Dealers
- Bank of Uganda 2012, Uganda Government Securities Operations www.bou.or.ug
- Central bank of Ghana, April 2011 Operational Guidelines for Government Securities for Primary Dealers www.centralbank.go.ke
- Ken Binmore, Joe Swierzbinski 1999, Treasury auctions: Uniform or discriminatory; Rev. Econ. Design 5, 387–410 (2000)
- Leonardo Bartolini and Carlo Cottarelli July, 1997, Designing Effective Auctions for Treasury Securities: Federal Reserve Bank of New York, current issues in economics and finance, Volume 3 Number 9.
- M S Mohanty, February 2014, the role of central banks in macroeconomic and financial stability bank for international settlements Papers No 76.
- NBE's Monetary Policy Framework February, 2009, National Bank of Ethiopia.
- Obert Nyawata., January 2012 Treasury Bills and/or Central Bank Bills for Absorbing Surplus Liquidity: The Main Considerations, IMF Working Paper.
- Over the counter (OTC) trading for treasury bills transactions, important information to all investors in government of Kenya securities, www.centralbank.go.ke.

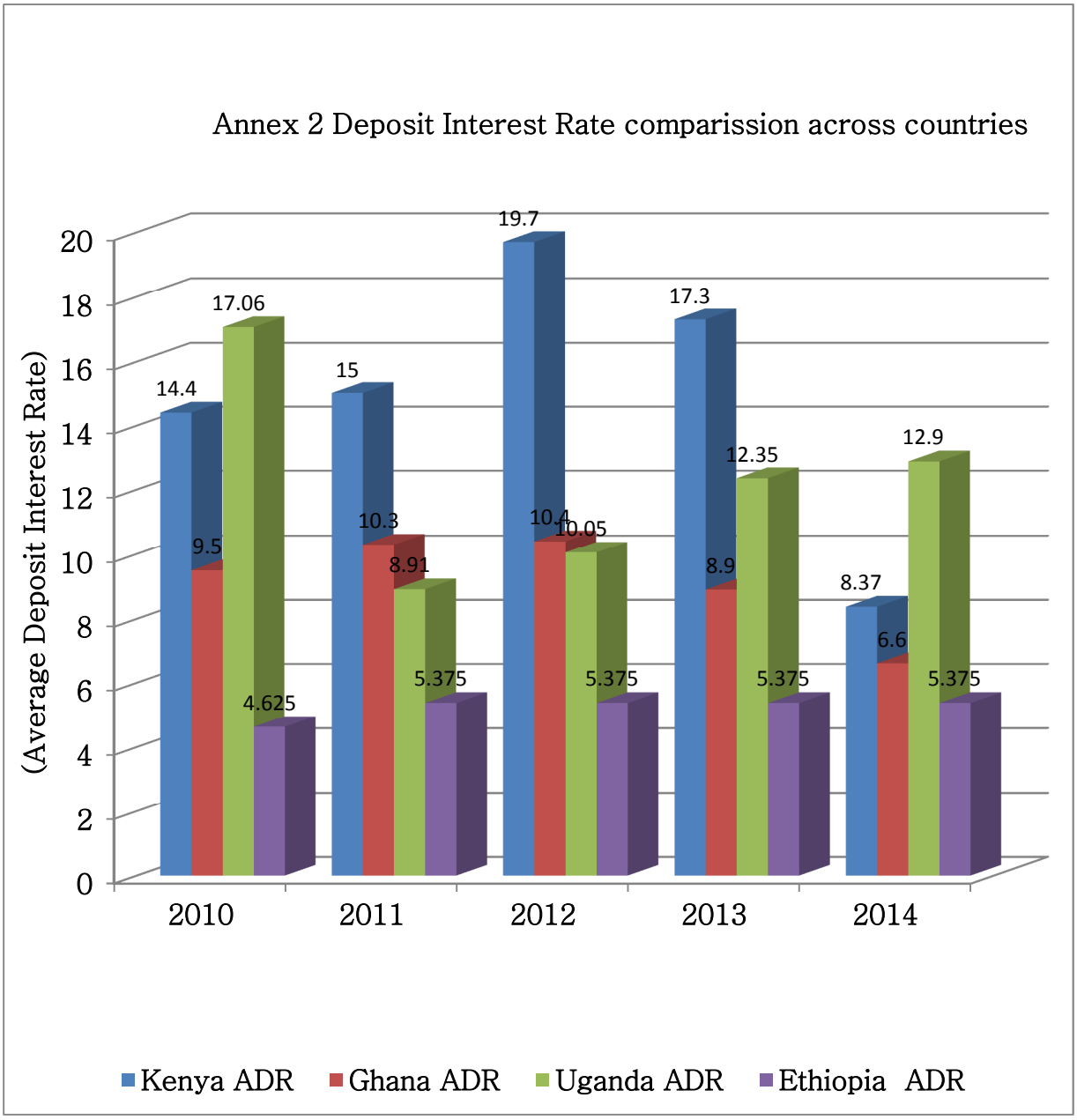
[1] Yield is weighted for the all four types of maturity (Average annual yield for 28-days, 91-days,182-days,and 364-days)

- Prudential Financial, Inc. and its related entities, 2016.
- Smita Sharma 2012, Relationship between Treasury Bill Rates in India: An Empirical Analysis.

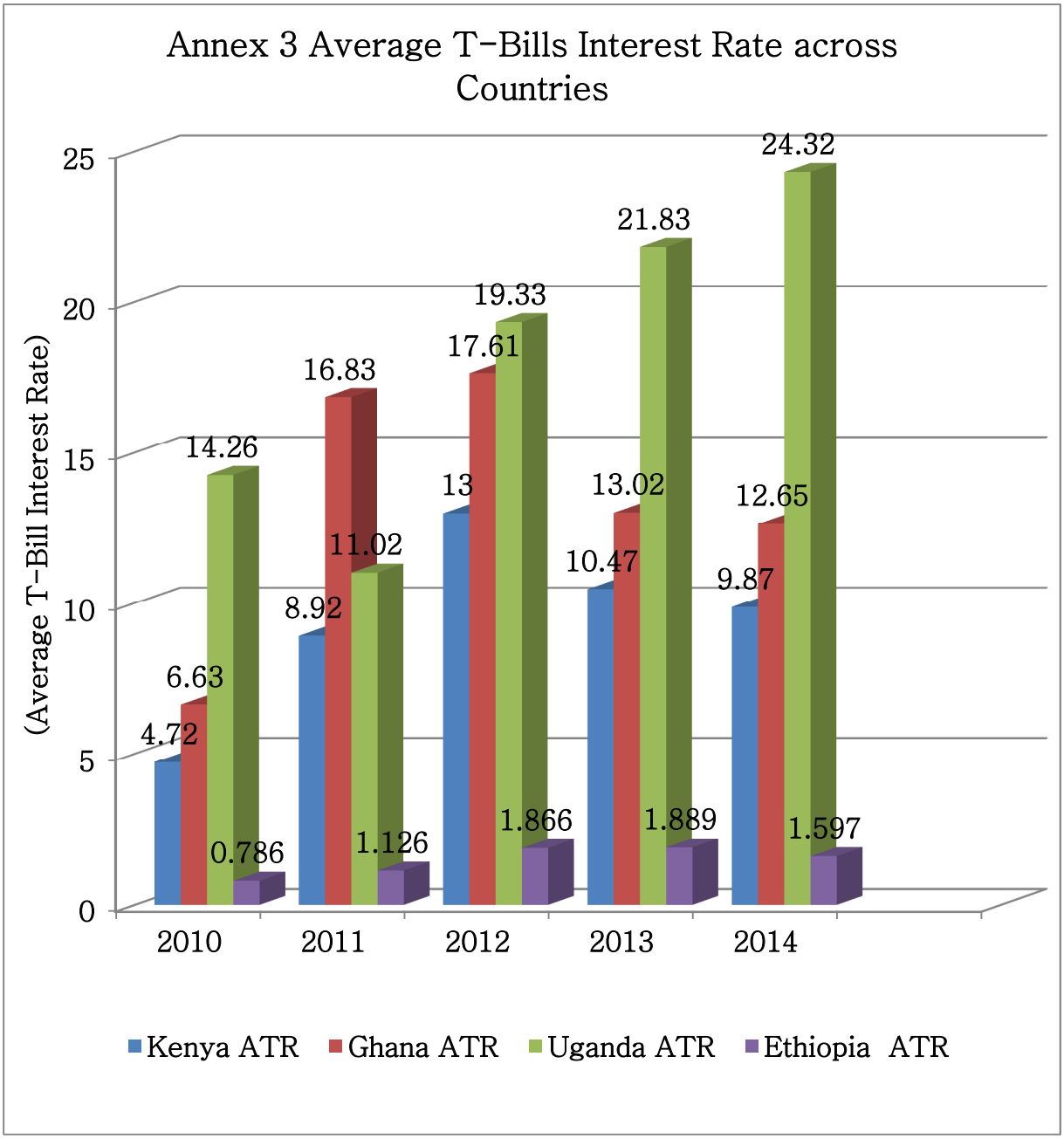
Annex



Source: African Financial Sector Database



Source: African Financial Sector Database



Source: African Financial Sector Database