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The Governor

NATIONAL BANK OF RWANDA DIRECTIVE ON TREASURY BOND ISSUANCE

Reference Number: *DIRECTIVE/2018 – 05/DIRECTIVE*

Initiator: *Financial Markets Department*

Approved by: *BNR Management*

Date of approval: *March 2018*

Signed by: *RWANGOMBWA John, Governor*

March 2018

JR

THE GOVERNOR OF THE NATIONAL BANK OF RWANDA;

Pursuant to Law n°48/2017 of 23/09/2017 governing the National Bank of Rwanda, especially in Articles 6, 8, 45, 46 and 48;

Pursuant to Law N° 26/2010 of 28/05/2010 governing the holding and circulation of securities

In order to promote the saving culture and capital market development by availing long-term tradable securities;

HAS ADOPTED THIS DIRECTIVE CALLED TREASURY BOND (T-BOND) ISSUANCE DIRECTIVE

CHAPTER ONE: GENERAL PROVISIONS

Article one: Definition.

In this "Directive", unless the context otherwise requires, the following terms shall mean:

1. **Book building**: a method of discovering bond price through public bidding.
2. **Bond coupon:** promised annual interest rate paid by the issuer to bondholders, generally on semi-annual basis.
3. **Central Securities Depository** (CSD): is the electronic registry of all debts and equities securities maintained at and by the National Bank of Rwanda. A system, which maintains and processes Treasury bonds transactions/records.
4. **Competitive bids and non-competitive bids:** competitive bids refer to a minimum amount set by NBR in the prospectus at which the bidders are allowed to quote the yield or the price. The bids with amount below the floor set by NBR are not competitive and, therefore, are not allowed to quote the yield or the price.
5. **Primary market**: Sale and purchase of Treasury bonds at their original issuance.
6. **Prospectus**: a document that contains detailed information about the T-bond issuance and characteristics of the tender.
7. **Secondary market**: Sale and purchase of Treasury bonds after their original issuance in the primary market.
8. **Treasury bond:** The National Bank of Rwanda as a banker and fiscal agent of the Government issues Treasury bonds on behalf of the Government of Rwanda. Treasury bonds are debt instruments issued by the Government in exchange for money borrowed from the public. Treasury bonds are long-term securities maturing over a year. Treasury bonds are issued for Government financing.
9. **Yield-to-Maturity:** rate of return on a bond assuming the bond is held to maturity.

Article 2: Purpose and scope of the Directive.

This Directive aims at establishing the framework under which T-Bonds denominated in Rwandan Francs are issued and conditions to participate in the Treasury-Bond primary market.

The Directive applies to the Treasury-Bond issuer and Central Securities Depository participants.

Article 3: Rights and responsibilities of investors

On semi-annual basis, investors in Treasury bond shall be paid by the borrower, accrued interest proceeds that will be computed based on the coupon rate of the bond they hold.

On maturity, investors shall be paid the par value plus the last accrued interest of the bond they hold.

However, investors have responsibility to settle their retained amount through their settlement banks at settlement date specified in the prospectus.

Article 4: Common responsibilities of the issuer, investors and intermediaries

The issuer, investors and intermediaries shall act professionally, ethically and with integrity and fairness.

They will have to cooperate in the identification process.

CHAPTER II: PARTICIPATION AND TENDERING

Article 5: Market structure

The Market structure consists of a primary and secondary markets where the National Bank of Rwanda issues Treasury bond for the first time at regular intervals and where sales and purchases of Treasury bond are conducted subsequently in the secondary market on a continuous basis.

Article 6: Maturities

Treasury -Bond is issued for minimum maturity of two (2) years. The longer maturity is at the discretion of the issuer and depending on the genuine need noted.

Article 7: Issuance calendar

The calendar for the expected bonds to be issued during the fiscal year is published at the website of the National Bank of Rwanda at the beginning of each financial year not later than the first month of the concerned year.
The calendar so published may be reviewed from time to time if need arises.

Article 8: Call for tender

Based on published calendar the prospectus shall be issued and published on the website of the National Bank of Rwanda at least one month before the date for bidding process of T-Bond.

The National Bank of Rwanda may additionally use other means of publication of the prospectus.

Article 9: Eligibility

Investors from East African Community Member States including Rwandans living in country or abroad are eligible to participate in the bond market as residents called domestic investors.

Nonresidents are eligible as well to participate in the bond market as foreign investors.

However, Central and Local Governments or any other public institutions benefiting budget grant from the Central Government are disqualified to participate in the Treasury-bond market.

Article 10: Bidding requirements

An investor wishing to bid for Treasury-Bond should have the following:

- A current account denominated in Rwandan francs and opened in any commercial bank in Rwanda;
- A CSD account;
- A minimum amount as determined by the National Bank of Rwanda for non-competitive and competitive bidders;
- A duly filled and signed application form as an expression of intent and commitment.

Article 11: Submission of Treasury-bond application

Treasury –bond application forms are made available by the National Bank of Rwanda through all means including its website.

After getting the Treasury-bond application form, an interested investor sends it duly completed and signed to the National Bank of Rwanda through an authorized broker or commercial bank.

Article 12: Pricing method

The National Bank of Rwanda shall use either Book Building or Auction methods in its sole discretion. However, for each issuance, the prospectus will specify the method to be used to price the bond. Pricing a re-opened bond is explained in the appendix to this directive.

Article13: Allotment

The allotment process shall be based on a policy related and set by the National Bank of Rwanda and in respect of the EAC common market protocol.

If bids at the cut off price exceed the face value of the remaining amount offered for sale, the National Bank of Rwanda shall proportionally allocate amounts at the cut off price based on each bidder's amount until the amount offered for sale is exhausted.

Article14: Announcement of results

The global results of the issued Bond shall be published at the National Bank of Rwanda website: **www.bnr.rw**. Successful bidders will get their results through email or other communication channels after the closing of the bond market.

Article 15: Settlement

Settlement for successful bidders shall be performed at settlement date specified in the prospectus. Settlement shall be done by debiting bank's account opened at the National Bank of Rwanda the amount committed by a commercial bank for its own investments and/or the amount committed on behalf of its clients-investors.

Article16: Withholding Tax

Income earned from investment in Treasury bonds shall be subject to withholding tax in accordance with the applicable laws in Rwanda.

Article 17: Trading and listing

Treasury bond is listed at the Rwanda Stock Exchange (RSE). Secondary trading of Treasury-bond shall take place at Rwanda Stock Exchange to allow investors wishing to buy or sell Treasury-bonds through registered broker-dealers that provide them with details pertaining to trading procedures.

Whenever trading shall take place, the Rwanda Stock Exchange shall provide to the National Bank of Rwanda trading details to update CSD the new ownership of the bond.

Article 18: Rediscounting

The Treasury-bond rediscounting facility is available at the National Bank of Rwanda as last resort in accordance with the Directive Nº 001/2015 of 09/07/2005 on Treasury-Bond rediscounting window.

Article 19: Reopening, buy-back and exchange

The National Bank of Rwanda may decide to reopen, buy-back a bond or exchange an existing bond with another one. Before proceeding to the reopening, buy-back or exchange the securities, the National Bank of Rwanda will issue a prospectus containing detailed information in relation to that particular market.

Article 20: Repealing provision

All prior provisions contrary to this Directive are hereby repealed

Article 21: Commencement

The Directive shall come into force on the date of its signature

Done at Kigali on March 28, 2018

RWANGOMBWA John
Governor

APPENDIX : PRICING A RE-OPENED BOND

1- Introduction

Bond reopening is the action of tapping on the existing bond again in order to increase its outstanding and for price discovery purposes. A reopened bond has the same maturity date and coupon rate like the previous one. However, the remaining term-to-maturity and purchase price of the reopened bond are different from that of the original one.

T-Bond reopening aims at building benchmark bonds and facilitating price discovery in the financial markets, which are crucial in developing the capital market in particular, and deepening the financial markets in general.

2- Pricing a reopened bond

Pricing a reopened bond, an investor must understand very well a relationship between a bond yield and price; and has to do some calculations to be able to convert a yield to maturity into a price or vice-versa.

- **Bond price** is the present value of future cash flows of a bond
- **Yield to maturity**: is the internal rate of return (IRR) of a bond investment or the interest rate, which ensures that the net present value (NPV) of an investment is equal to zero. Rearranging the price formula, you can get the formula for the yield. However it is recommended to use excel spread sheet or financial calculator to easily convert yield into price or vice-versa

- **Price a reopened bond is pricing a new bond but with fixed coupon rate and with the remaining time to maturity as a tenor**. Suppose the issuer reopens a 10-year bond but with only 3-year to maturity, it is like pricing a new 3-year bond but with a fixed coupon rate. If the investor proposes a price above 100, the bond will sell at premium; if the price equals 100, the bond will sell at par and if the price is less than 100, the bond will sell at discount meaning the yield will be greater than the coupon rate.

- **Bond reopening follows the same steps as new bonds (**issue a prospectus, bids submission, price discovery, results announcement, settlement and listing).

3- Calculating the price and Yield-To-Maturity (YTM) of a bond

The price of a bond that pays coupon on a semi-annual basis and its yield to maturity are embedded in the following equation:

$$P=\frac{C}{\left(1+\frac{YTM}{2}\right)^{1}}+\frac{C}{\left(1+\frac{YTM}{2}\right)^{2}}+\frac{C}{\left(1+\frac{YTM}{2}\right)^{3}}+\ldots+\frac{C}{\left(1+\frac{YTM}{2}\right)^{n}}+\frac{C}{\left(1+\frac{YTM}{2}\right)^{n}}$$

Where **P** = price of the bond
C = semi-annual coupon
M = maturity value or face value
YTM = Yield-to-maturity
n = number of periods (number of years x2)

Example 1: Compute a price of a 3-year coupon bond with a coupon rate of 10% and YTM of 9.8%. Remember FV is generally 100 and the coupon rate is annually.

Answer:

$$P=\frac{5}{\left(1+\frac{9.8\%}{2}\right)^{1}}+\frac{5}{\left(1+\frac{9.8\%}{2}\right)^{2}}+\frac{5}{\left(1+\frac{9.8\%}{2}\right)^{3}}+\frac{5}{\left(1+\frac{9.8\%}{2}\right)^{4}}+\frac{5}{\left(1+\frac{9.8\%}{2}\right)^{5}}+\frac{5}{\left(1+\frac{9.8\%}{2}\right)^{6}}+\frac{100}{\left(1+\frac{9.8\%}{2}\right)^{6}}$$

P=4.77+4.54+4.33+4.13+3.94+3.75+75.05
P=RWF 100.51

The bond is selling at premium because the coupon rate is greater than the discount rate or YTM

Example 2: Compute a price of a 3-year coupon bond with a coupon rate of 10% and YTM of 11%.

Answer:

$$P = \frac{5}{\left(1+\frac{11\%}{2}\right)^{1}} + \frac{5}{\left(1+\frac{11\%}{2}\right)^{2}} + \frac{5}{\left(1+\frac{11\%}{2}\right)^{3}} + \frac{5}{\left(1+\frac{11\%}{2}\right)^{4}} + \frac{5}{\left(1+\frac{11\%}{2}\right)^{5}} + \frac{5}{\left(1+\frac{11\%}{2}\right)^{6}} + \frac{100}{\left(1+\frac{11\%}{2}\right)^{6}}$$

P=4.74+4.49+4.26+4.04+3.83+3.63+72.05
P=RWF 97.51

The bond is selling at discount because the coupon rate is less than the discount rate or YTM

However, manual calculation of a price or YTM of a bond can be a tedious work especially when the time to maturity is long. It is recommended use excel spread sheet or financial calculators:

Example 1: **Using excel spreadsheet**

In excel, we use price function to calculate a price of bond and YIELD OR IRR for a bond yield

Calculating a bond price		**Calculating a bond YTM**	
Settlement date	**02/15/18**	**Settlement date**	**02/15/18**
Maturity date	**02/11/21**	**Maturity date**	**02/11/21**
coupon	**10%**	**coupon**	**10%**
YTM	**9.80%**	**P**	**100.50499**
frequency	**2**	**frequency**	**2**
P=?	**100.50499**	**YTM=?**	**9.8**

Using a financial calculator:

Calculate a price:

3	9.8	?	10	100
N	I/YR	PV	PMT	FV

P=100.50

Calculate YTM:

3	?	-100.5	10	100
N	I/YR	PV	PMT	FV

YTM: 9.8%