

## The Evaluation of Government Bonds Market of Issuance Separated Trading of Registered Interest and Principal Securities

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### **Abstract**

*This study outlines intended to the issuance of Bonds (SBN) and on developing Separated Trading of Registered Interest and Principal Securities (Strips). Researchers have a specific target, i.e., comparing the most efficient government securities and the possible methods of strips can be applied in Indonesia. This study uses qualitative and quantitative approaches. Qualitative methods: a comparative study conducted on methods such as the issuance of government securities multiple price method, the uniform price, and Strips. Researchers will look at the liquidity and volatility of government bonds from each of these methods. Researchers use several countries such as India, Korea, Germany, Canada, Spain, the United States, and Canada as a comparison. Quantitative methods: a comparative study conducted on the comparison Separated Trading of Registered Interest and Principal Securities (Strips) in each country.*

**Keyword:** Strips, government bond, short-term interest rate volatility

**Field:** Contemporary Issues in Finance

### **Introduction**

Bonds (SBN) is one source of financing that is used to cover the budget deficit. Issuance of government securities made to financing needs of the state budget and the government's efforts in developing the domestic government securities market through diversification of sources of financing instruments and expansion of investor base. According to Ministry of Finance (2009), in the period 2005-2008, in nominal debt interest payments increased by Rp 30.3 trillion, or grew at an average 13.6 percent per year, from Rp 65.2 trillion in 2005, to Rp 79.8 trillion in 2007, and reached Rp 95.5 trillion in 2008. However, the ratio of interest payments on debt to GDP in that period tended to decrease, from 2.3 percent in 2005 to 2.1 percent in 2008. Of the realization of debt interest payments in the period 2005-2008, more than 67 percent of the interest payments on domestic debt, which was entirely the interest of domestic government securities, and the rest is interest payments on foreign debt, which is comprised of international government securities and interest rates of foreign loans .

More specifically, in order to develop the primary market, the Government is doing the following things: first, to evaluate and develop methods of issuing government securities, whether conducted through auction and non auction method. Second, improve the quality of the determination of the issuance of government securities auction schedule. Third, improve the quality of SBN series setting benchmarks that can encourage the development of secondary market for government securities (Treasury, 2011). In order to achieve the target of financing government securities in a cost efficient it is necessary to study the best method of issuing government securities without causing an increased risk of excessive debt. Other countries like the United States, Canada, India and South Africa using the model on the application of Separate Trading of Registered Interest and Principal Securities (Strips) in government bonds (Jensen, 1999).

The process of stripping the coupons and principal of the separation process of a conventional fixed interest bonds, so that each coupon and principal of a zero coupon bond instruments that can be traded separately. Coupon bonds represent the original and residual interest is the proportion of principal.

Strips bond prices will depend on current interest rates and fluctuate from day to day (Longstaff, 2000). The price difference between strip coupon with a notional strongly associated with differences in liquidity (Ehrardt, 1993). Based on this it would require in-depth review of comparative studies on methods of issuing government securities..

### **Research Objectives**

The purpose of this study are:

1. To evaluate methods of issuance of government securities by several countries in Asia, Europe and America.
2. Comparative *Liquidity, maturity average, volatility and Structure of the primar market* government securities in several country which affect in issuance of government securities.

### **Urgency of the Research**

Based on data from the Ministry of Finance (2009), financing policy which has run in previous years, the future sources of financing the budget will still be prioritized on the issuance of Bonds, Surat Berharga Negara (SBN), especially SBN dollars in the domestic market with the main considerations: first increasingly limited resources of non-debt financing deficit. Second, reducing the exposure of foreign loans in order to reduce exchange rate risk (exchange rate risk).

Looking at the big SBN role as a source of financing for development in Indonesia and to achieve financial targets in a cost efficient SBN will require a review of the best methods of issuing government securities without causing an increased risk of excessive debt. Research on this has not been widely carried out in Indonesia, so hopefully this study will contribute significantly to the Government, particularly for the Ministry of Finance and the Directorate General of Debt Management.

### **Research Methods**

This study uses qualitative and quantitative approaches. Qualitative methods: a comparative study conducted on methods Surat Berharga Negara (SBN) whether using strips or not. This study will look at the application of each method in some countries. For example, the application of the method strips in some countries such as Indonesia, India, South Korea, Germany, Holland, Belgium, Spain, the United States, and Canada.

### **Stages of Analysis**

Phases of analysis is the following:

1. Dimensional analysis carried out liquidity from the market either country using strips or not, either using uniform price method and multiple price (Asia, Europe and the United States). Analysis in terms of the bid ask spread, term of maturity, the average turnover ratio of government bonds, the average volume of bonds that exist at the central bank. This is to see the level of liquidity of bonds in each country because the liquidity is an indicator of how easily a bond held by the owners of capital to be used as cash in the secondary market of a country.
2. Analysis of interest rate volatility in these countries that affect the fluctuations in bond yields.
3. Analysis on the money market in each country, based on the daily interbank or call money rates in each country. From this analysis will look average short term interest rate volatility and standard deviation. Short term interest rate volatility using the unweighted average daily interbank 5 years in each country.
4. Analysis of the average maturity of government bonds in each country. (10 years, split (3)
5. Analysis of structure of the primary market (the frequency of the tender), the issuing techniques (using a uniform price and multiple price), the average size of the issue of government bonds on offer and the settlement system of government securities using the Real Time Gross Settlement (RTGS), as well as delivery systems vs. payment.
6. Possible models on Separate Trading of Registered Interest and Principal Securities (Strips) that can be applied in Indonesia.

### Operational Definition of Variables

The following are operational definitions of variables used in this study:

- Bond liquidity, measured using the Frequency of government bond trading after trading of the type of bid ask spread for 10 years with a variety of basis points. Data obtained from Bloomberg stream data research.
- Maturities (term of maturity), measured from maturities of government bonds in each country. Data government bond maturity term of each country's central bank data obtained from each country.
- Turnover of government bonds (as a percentage).
- Volatility risk of each country with daily interbank data in each country with 5 years observation. we get the average bond Interest rate volatility and the standard deviation. Data volatility risk in each country is obtained from the database and Bloomberg streamdata Osiris.

### Research Analysis

#### a. Bond Market Liquidity

This section discusses the broader policy framework to enhance liquidity in government bonds in some countries in Asia, Europe and America. Provide specific knowledge of the role of central banks and governments in improving primary and secondary market liquidity for the next section. The role of policy could be important in several directions such as the extent to which bond markets are allowed to function in accordance with the principles of market clearing and the nature of policy coordination between governments and central banks. Overall financial sector policies that affect the investor base and the implementation of monetary policy also has significant implications for the depth and maturity bond market. Another reason why interest rates may not determined the assumption that the market is the market clearing level does not always correspond with the price of bonds that weaken investor confidence and inhibit the development of bond markets, Fry (1997). This may be true if the rules are not strict bond issuance in accordance with market principles. For example, auctions may be canceled because interest deemed inappropriate or improvement of the minimum reserve price for auction, or keep the right to allocate less than that amount if the price is too high dispersion. In Korea, before the 1998 crisis, the government sets the maximum rate for the auction, which is generally below market interest rate. While this result is often under allocation of the amount of bonds, the shortage is met by government bonds and guarantee agencies at a lower interest rate than the average rate bond auctioned.

Industrial countries have experience shows that when the commitment to a strong market determined rates, interest rates were allowed to move in both directions, the volatility of interest rates is significantly reduced through the establishment of more diverse expectations and trading positions taken by bond market participants. Based on this view, there is broad consensus among the players of bonds that central bank intervention in the pricing process is not desirable. In addition, the central bank actions may lead to the formation of habits among market players. However, it also suggests that interventions may be desirable when the volatility of the market comes from parties outside.

Some argue that the potential benefits of domestic bond market can not be realized for asian countries. One reason may be that small markets can restrict the range of valuable instruments and selling power of effective, Turner & van't dack (2006). Simple indicator of the development of money market volatility seen in the interbank rate in each day, as shown in illiquid market interest rate volatility is high.

**Table 1: Volatility Interest Rates of Government Bonds**

	Mean	
	2005	2010
Asia <sup>2</sup>	8.	6.1
Latin	5	
America <sup>3</sup>		11.6
Central	27.	
Europe <sup>4</sup>	1	14.8

**Table 2**

	Standard deviasi	
	2005	2010
Asia <sup>2</sup> Latin	0.9	0.4
America <sup>3</sup> Central	5.6	1.0 0.9
Europe <sup>4</sup>	1.9	0.4

<sup>1</sup> based on daily interbank or call money rates. <sup>2</sup> Unweighted average of China, Hong Kong, India, Indonesia, Korea, Malaysia, the Philippines, Singapore and Thailand. <sup>3</sup> Unweighted average of Argentina, Brazil, Chile, Colombia, Mexico and Peru. <sup>5</sup> Unweighted average of Germany, Japan and the United States.

Sources : data arrangement bloomberg data stream

### Government Bond Auction Technique

Auction techniques generally followed in the treasury market is discriminatory and uniform price auction. In Table 3.4, EMEs seem fairly divided between the types of auctions. Auction is not used in Indonesia, where most of the recapitalization bonds are bonds. Korea has recently switched to uniform price auctions to reduce the problem. India has introduced a uniform price auction for 91-day treasury bills experimentally although incomplete migration is limited by the lack of empirical evidence about the possible cost difference to the government (Trohat, 2001).

A strategy followed by many developing countries have concentrated on the issuance of benchmark bonds maturing. This avoids the problem of market fragmentation arising from the issuance of a large amount of maturing bonds with a small size. The major industrial countries generally concentrates on the issuance of bonds maturing. (Inoue, 2009).

Many countries have taken special initiative to develop a pricing benchmark bond issue. South Korea is integrated on the issuance of Grain Fund Bonds into treasury bonds, which increase the share of marketable bonds in new issuance of bonds. In addition, in order to improve the three-year bond issue benchmarking, publishing an average size doubled between 2008 and 2010

**Table 3: Average Maturity Government Bonds (years)**

country	2000	2005	2008	2010
india <sup>3</sup>	6.5	7	7.5	7
hongkong	1.4	1.2	1.1	1.2
singapore	3.8	4.1	3.0	3
indonesia	5.5	6.0	7.2	6
Korea <sup>1</sup>	6.0	5.2	5.2	6.2
Malaysia	5.2	4.7	4.5	4.7
Philippines <sup>3</sup>	13.5	14.7	13.7	13.2
Brazil	1.7	2.5	3.5	2.5
mexico	1.2	1.5	1.2	1.5
Peru <sup>1</sup>	7.2	6.4	8.5	6.4
Hongaria	1.5	2.4	2.3	1.4

<sup>1</sup> Distribution maturity <sup>2</sup> Domestic. <sup>3</sup> International

Sources: central bank each countries

**Comparative Countries technique issuing Strips.****Korea**

In 2005, Korea introduced the Strips on bond sales. Product strip separating the Korean Treasury Bond (KTB) into two constituent parts: interest and principal obligations. New instruments coupon bonds. From this table, the bond market liquidity can be seen that the turnover ratio of 0.05% bonds with a level of maturity of 3 years.

**India**

Interesting development has occurred in the bond market in India. The RBI has allowed the 'stripping' bonds on April 1, 2010. For the uninitiated, strip, or a separate Trading Registered Interest and Principal Securities (strip) refers to the process of separation of principal and coupon payments on bonds and turn them into zero-coupon securities (zero coupon bond)

In the past, RBI has introduced several non-conventional Treasuries, such as coupon bonds, bonds with floating interest rate, index linked bonds, where bond coupons is quite popular with the market. However, the discount bonds, cash inflows occur for the smaller size of the particular issue that goes with the face or nominal value, the lower the number the greater the term to maturity of bonds. In India, discount tax on income from bonds can arise in two ways: interest or capital gains. By law the interest must be shown on the accrual basis for the bonds at a large discount, issued after February 2002.

**Germany**

Government bonds in Germany known BOBLs or Schatze. These terms refer to the maturity of bonds and has a small impact on trade patterns. Bunds pay coupons annually and, of course, now denominated in euros .. There are more than 30 Bunds bonds in circulation for about half of the outstanding securities German government bonds traded in the secondary market. Approximately two-thirds of the volume in circulation has more than € 20 billion. In 2010, total outstanding volume of an average of more than € 620.000.000.000. According to data from the Board of Finance, in the secondary market for securities.

**United States**

Separate Trading of Registered Interest and Principal Securities (strips) are used on T-Notes, T-Bonds and TIPS in America. The U.S. government does not directly publish the strip, they are formed by investment banks or brokerage firms, but the government did not register the strips in book entry system. This investment can not be bought through TreasuryDirect, but only through a broker.

Since the beginning of the program strip in 1985, the creation of products such as bonds and CATS TIGRs has stopped, and now dominates the strip method in dunia.Pasar strip bond market is significantly less liquid U.S. Treasury bond market. Investors found an offer broader value and subject to higher commissions. In addition, liquidity may fluctuate significantly in the current unstable market. However, because the dealer could do the strip or bonds will be restructured in a way that is flexible enough, if the zero-coupon prices deviate too far from their equilibrium level, new bonds can be created or reduced through the process of stripping and reconstitution.

**Canada**

In Canada, investors can buy bonds in the package strips, that the adjusted cash flow to meet their needs with a single security. These packages may consist of a combination of interest (coupon) and / or certificate. Denominasi strip strip bonds can vary from the value of a strip bond, as long as the aggregate value equal to or less than the value of the interest or principal payments to be received from a corresponding interest or principal payments. Two great package value of the first government bonds in Canada are structured to pay interest and principal of such bonds from the same publisher, but with a lower coupon rate than conventional bonds with the same maturity date.

**Spain**

Since the early 1990s, the Spanish government bonds only on short-term assets (Letras and commercial paper, which last up to 1993) and then increased with the instruments of medium and long-term bonds (Bonos and Obligaciones). In accordance with the policies that operate across the whole curve of debt, Treasury publishes Spanish 3 and 5 years for the Bonos and 10, 15 and 30-year Obligaciones Spanish

**Table 4: Treasury nominal bid & average interest**

issue	2010	2019
Nominal bid	1 586	718
Nominal allotted	912	381
Stop-out price	97.970	95.400
Marginal interest rate	5.08%	5.563%
price	98.015	Average
Average interest	5.07%	95.439
stop-out issues	65	5.559%
First price rejected	97.960	Allotted
Volume at this price	113	177
Amount of non-competitive bids	14	95.350
		75
		2

Source: data central bank spanish

Stripss command and reconstitution processed by the market maker must involve a minimum nominal amount of 500,000 euros, with additional amounts in multiples of 100,000 euros. In particular, the amount of outstanding debt amounting to € yg distripss 37.5 million in March 2008, more than 16% of total debt strippable.

### **Conclusion**

Based on the analysis it is known that a country such as United America, Germany, Singapore and Asian countries shows that when the bond market is determined commitment to a strong rate, interest rates were allowed to move in both directions, the volatility of interest rates is significantly reduced through the establishment of a variety of expectations and trading position taken by the government bond market participants. In addition a small number of market participants and the dominance of a few players in Asia could reduce competition in the world bond market. Availability of benchmark securities with different maturity helps develop markets and increase the protective value of trade since the prices of securities trading at a price close to par and thus more able to influence market interest rates. Limited government bonds in the range of five to 10-year maturity in many countries. Average maturity of government bonds tend to be shorter in Latin America and Central Europe than in Asia. The application of strips for the issuance of government bonds that are most relevant to be applied in Indonesia is the application Strips in India. India has a ratio of turnover to average outstanding and the average remaining maturity government bond relatively stable and similar to Indonesia.

From observations of several countries that have been applying for government bonds Strips no reinvestment risk arising from the sale of coupons bondnya. Some countries such as Canada, and India offer package purchases of government bonds in particular strips. This research is laying the early foundation of research on application of Separate Trading of Registered Interest and Principal Securities (Strips) in our country, and would require further studies in the volatility, structure of the primary market as well as techniques of government bond issuing countries who has applied Stripss model

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