

Usury-Free Bonds and Islamic Central Banking Monetary Instruments

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Abstract

Purpose: Since bonds include Reba, are not allowed to be used in Reba-Free Central Banking; therefore, the most important monetary policy instrument cannot be used in Reba-free banking system. This means that Reba-free central banking has not the capabilities of monetary adjustments for the economy. Solving this problem will be a turning point in implementing non-Reba central banking system and policies.

Design: By introducing various non-Reba bonds for central bank, commercial banks, treasury and commercial bonds in domestic and foreign currencies as substitutes for traditional bonds, this paper provide new Islamic financial innovations and will accomplish the infrastructures for development of financial markets in both domestic as well as foreign financial markets.

Findings: The obvious characteristics of these asset-based papers is that they have no pre-fixed interest coupons, and are based upon “loan equal to future debt” or, “debt equal to future loan” with “time-drawing right” which is handed to the other party and outlines the primary market. The secondary market has been designed based on information technology of NSSSS platform in which, the buyer will take hold of the paper by offering the highest competitive price.

Value: The obvious characteristics of this financial innovation include no-short pricing of the papers below its face value, and being substitute for traditional bonds and stabilizing domestic and foreign exchange markets.

Keywords: Bond, Monetary policy, Reba-free banking, Islamic central banking

Introduction

Prohibition of Reba in divine religions especially in Islam prevents using traditional instruments which has skepticism of involving Reba. Interest is involved in calculation of most of these instruments, and therefore, for implementing monetary policies, new financial instruments should be innovated in compliance with the prohibition of Reba.

In spite of financial and economic needs for debt-based papers, the transaction of these papers has not been devoted enough considerations in traditional jurisprudence, and, therefore, these financial instruments have not been much used in Islamic financial markets³. The absence of consensus in the opinions and religious statements in transaction of these papers in general, has prevented the application of this type of financial instruments in Islamic capital markets⁴. This subject has been more considered by Islamic economists and religious jurists in recent years, but yet, there is no consensus among Sunni and Shiite sects jurists on transaction of debt-based papers.

Because of the Reba-based bonds, monetary policies and their instruments cannot be used in Reba-free banking and only few instruments can be used. Therefore, it is necessary to innovate non-Reba bonds

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³ - See: Muhammad Arham, Islamic perspectives on marketing, Journal of Islamic Marketing Volume: 1 Issue: 2, 2010.

⁴ - Azizi bin Che Seman, "Bay' al-Dayn, Bay' al-'Inah and IPDS in the Malaysian Islamic Capital Market", [http://myais.fsktm.um.edu.my/7491/1/Bay' al-Dayn, al-'Inah and IPDS in the Malaysian Islamic Capital Market.pdf](http://myais.fsktm.um.edu.my/7491/1/Bay%20al-Dayn,%20al-Inah%20and%20IPDS%20in%20the%20Malaysian%20Islamic%20Capital%20Market.pdf)

substitutes for prevailed bonds for Reba-free central banking.⁵

Monetary policy instruments

In general, monetary policies are a collection of policies which are used to fulfill macro-economic goals or reduction of damages of monetary system performance and controlling liquidity in the economy. Monetary authorities use different instruments to control liquidity which can be generally classified into two groups of quantitative and qualitative monetary instruments. Usually quantitative monetary instruments change money supply through expansion mechanism. This mechanism is practically the way that money in the economy is created. Qualitative instruments are those monetary arrangements which guide the distribution and allocation of credit to different economic sectors which are prioritized by the authorities.

In economic literature, interest rate is defined as a variable which is created by supply and demand intersection of monetary resources and is not regarded as a monetary instrument, but since it has a vast capability for re-allocation of resources, can act important role in the economy. In other words, banks can decrease the demand for money by increasing interest rate and increase the supply of deposit sources and hence, increase the free reserves of the banking system. Interest rate freeze in banking system causes the bank to confront with excess or shortage of resources. The higher interest rate causes the more banks' willing to give loan and credit. In other words, increase of interest rate, with money supply positive function of interest rate, the monetary expansion mechanism will become more active and will increase the money supply faster.

Monetary expansion mechanism operates through money circulation between people and commercial banks. Suppose that central bank buys \$100 treasury bonds. The sellers of these papers deposit this \$100 in their accounts at banks. This deposit will increase bank's loan capabilities equal to \$100. If there is no obstacle for offering loans and credits, banks will loan this \$100 to people and firms as credit. Borrowers spend this money and then it will be deposited in their deposit accounts, it again increases the capabilities of banks to give credit and loan. Money will be created equal to the numbers of circulations of \$100 between people and banks. Now, suppose that banks are obliged to keep a certain percentage (let say %20) of deposited money as legal reserve at central bank. Suppose the amount of the bought bonds by the central bank is the same \$100. This money will increase financial resources of commercial banks by \$100. Banks deposits \$20 at the central bank as legal reserve and loan the remaining \$80 as credit to people and firms. So far, liquidity has been increased by $\$100 + \$80 = \$180$. In the next stage \$80 which is at hands of people will return back to the bank as deposits and increase bank's resources equal to \$80. Banks will deposit %20 of \$80 (\$16) at central bank as legal reserve, and loans the remaining \$64 to people. Therefore, liquidity will be increased by $\$180 + \$64 = \$244$. If this circulation continues, finally, the total liquidity will be increased by $\$100 / 0.20 = \500 which is the resulted sum of the elements of the corresponding infinite geometric series.⁶

Open market operations

All quantitative monetary instruments affect liquidity and the economy through monetary expansion mechanism. Open market operations are one of the most important instruments of this kind. In this method, monetary authorities buy or sell bonds and valuable papers and change the amount of high powered money in the economy. In traditional monetary systems, transaction of these papers is based upon interest rate which involves Reba and is considered a Reba-based instrument and, hence, cannot be used in Islamic banking⁷.

⁵- Fouad H. Al-Salem, Islamic financial product innovation, International Journal of Islamic and Middle Eastern Finance and Management Volume: 2 Issue: 3 2009

⁶ - B. Bidabad (1994) General Monetary Equilibrium, <http://www.bidabad.com/doc/monetary-ed8.pdf>

⁷ - <http://www.bidabad.com/doc/siyasathayepooli-vol1.pdf> <http://www.bidabad.com/doc/yek-daheh-tahavolat.pdf>

Bank's obligations to keep a percentage of their assets in form of bonds

Sometimes, in order to control liquidity, monetary authorities force banks to keep a certain percentage of their asset in the form of bonds. The purpose of this policy is to prevent monetary expansion through reduction of free reserves of banks.

Discount window

Another quantitative monetary instrument is discount window. Commercial banks can sell some of their financial papers at a central bank discount interest rate to central bank, to solve their liquidity needs. By changing this rate, central bank can affect the banks' resources and credit capability. When banks need loan to get enough liquidity, this instrument is very helpful, but since this method uses interest rate, it is usuric.

Legal reserve rate

Legal reserve rate known as credit brake has many capabilities in harnessing banking credits. This rate has a vast range of effects on liquidity in the economy, therefore, it is considered as an important monetary instrument in controlling credit facilities through controlling monetary expansion mechanism. This rate is an obligation applied on banks and is not usuric, but increasing this rate is so costly for banks because blocks some of their resources in central bank.

Qualitative instruments

Another group of monetary instruments are called qualitative which practically tries to divert the financial resources through limiting or encouraging credits to those sectors that authorities prefer. Limiting banks in providing credit, defining credit ceilings for banks, and defining the method of allocation of deposit funds are also considered as qualitative instruments. Qualitative instruments do not have the necessary capabilities of helping monetary authorities to reach economic goals efficiently.

Regarding the above discussions, it should be mentioned that the monetary instruments of traditional banking cannot help the central bank for controlling liquidity in Reba-free banking conditions. Therefore, we conclude that we have to innovate appropriate monetary instruments for Reba-prohibition conditions. Implementation of monetary policy and efficient monetary instruments for adjusting economy in present time is inevitable.

Practicing financial papers with non-Reba approach

Application of debt purchase and substance purchase in non-Reba transaction of debt-based financial papers are considered as one of the most important contracts in Malaysia. Despite of the view of jurisprudents who believe transaction of debt-based papers are Reba (usury), these transactions are conducted in form of "Murabaha", "Partnership", and "Ijarah" (rent) contracts in that country. Purchase of "Substance" is a contract⁸ in which in the first case, the seller sells a good to a buyer at a certain price on credit terms; then again the buyer sells the same good at a lower price to the seller in cash. In the second case, a third party enters into the transaction. The primary seller sells the good at a certain price to the buyer by credit. Then the buyer sells the good to the third person at a lower price but in cash. Then the third person sells the good to the original seller at the same price in cash and pays his debt to the first buyer. Hanafi and Shafei jurists have different views about these transactions. Some of them approve it in the case of existing a third person and some approve it as Makrouh (means better not to do it) in the absent case of a third person but with fulfillment of transaction pillars⁹. Hanbali and Maleki jurists disapprove this kind of contracts and believe that they are not Shariah compliant¹⁰. As it is clear, in both

⁸ - Wahbah al-Zuhayli, *Al-Fiqh al-Islami wa Adillatuh*, 3rd ed., Vol. 4, Damascus: Daral-Fikr, p. 466; Muhammad Wafa, *Abraz, suwar al-buyu al-fasidah*, Egypt, 1984, p. 40.

⁹ - Including buying contract, good and enumeration (money) and two parties of the transactions.

¹⁰ - Wahbah al-Zuhayli, Vol. 4, p. 468; *Al-Mausu'at al-Fiqhiyyah*, Vol. 9, p. 96.

cases they only appear to be different and regarding the purpose¹¹ of this transaction, it is a kind of Shariah trick.

Islamic financial papers in Malaysia are based upon buying and selling debt. Generally, debt is the obligation of paying money or peer, in other words, selling debt to the third person is called debt purchase. Debt purchase may be in cash or credit. In the credit case, the debt is again sold in credit which is not right from the Shariah scholars' viewpoints and it is regarded as transaction of debt with debt which is forbidden in Islam¹². In cash case, selling debt to a third person in cash is not accepted by some Shariah scholars, and Shafei scholars confirm it, while Malki scholars accept it with conditions¹³.

The first private debt paper (IPDS)¹⁴ in form of "advance purchase loan" (Salaf) contract was issued in Malaysia in 1990 for a multinational company. A group of financiers bought the papers in form of some kinds of assets and sold it at higher prices including cost and a profit margin to the issuer of the papers. This transaction was actually in the form of debt purchase contract. In this case, the issuer issued two kinds of papers: the primary financial papers including the purchasing price of buying the asset by financiers from the issuer, and secondary papers, which showed the profit installments for financiers. These papers could be transacted in the secondary market on the basis of debt purchase contract¹⁵. Therefore, debt-based papers can be divided into two groups of papers with (Islamic Coupon Bond) and without (Islamic Zero Coupon Bond) coupons.

Islamic Coupon Bond

Coupon defines the profit share of the debt-based paper issued on the basis of Murabaha (MuNif)¹⁶ and future (ABBA)¹⁷ contracts. The holders of these papers receive fixed profit every six months from the issuance time to maturity¹⁸. At the first stage, the establisher sells the asset to the issuer (SPV)¹⁹ of the papers on the basis of substance purchase contract, and in the second stage, the issuer publishes the papers (primary and secondary including principle and profit) under the supervision of trustee. In the third stage, the papers will be sold to investors according to debt purchase contract and then, these papers can be transacted in the secondary market.

Islamic Zero Coupon Bond

Zero coupon papers with fixed yield were introduced to financial markets in 1982. These papers had no profit coupons for duration of issuance time to maturity. Instead, investors and buyers of the papers receive principle and interest at maturity. In other words, these papers are sold to buyers at a lower price than their face value, and are bought back at face value by the issuer. Interest rate is used in discounting the face value of the papers at purchasing time, but no profit is paid until maturity. Market price of these papers is very sensitive to market interest rate increase or decrease. When interest rate increases, the market price of these papers decrease and when interest rate decreases, they increase.

Non-Reba form of these papers are similar to traditional zero coupon papers and receive no profit until maturity and their issuance are based upon discount. Although they receive no interest until maturity, their interest rate can be calculated from the difference between their face (par) value and discounted price. The difference between non-Reba zero coupons and conventional bonds is that these papers are transacted according to the purchase contract. This subject has no Shariah respect from some

¹¹ - All the tasks are due to the intents.

¹² - Wahbah al-Zuhayli, Bay' al-Dayn fi al-Shart'at al-Islamiyyah, p 23.

¹³ - Al-Sadiq 'Abd al-Rahman al-Gharyani, Al-Mu'amalat Ahkam wa Adillah, 2nd ed., 1992, pp. 190; M. Tawfiq Ramadan al-Buti, Al-Buyu' al-Sha 'Iah wa Athar Dawabit al-Mabi ala Shar'iyyatiha, Beirut: Dar al-Fikr al-Mu'asir, 1998, pp.370-378.

¹⁴ - Islamic Private Debt Security (IPDS)

¹⁵ - Abdul Murad Khalid, ibid.

¹⁶ - Al-Murabahah Notes Issuance Facilities

¹⁷ - Al-Bai' -Bithaman Ajil Islamic debt securities (ABBA)

¹⁸ -See: Muhammad Arham, Islamic perspectives on marketing, Journal of Islamic Marketing Volume: 1 Issue: 2, 2010.

¹⁹ - Special Purpose Vehicle (SPV)

of Islamic scholars' viewpoint and is assimilated to use a Shariah trick.

Mortgage Backed Securities (MBS)

In order to increase the liquidity of banks in USA, these papers were used by selling mortgage loans for the first time in 1938. At that time, American government appointed a government organization to buy housing loans and resale them to investors. In Iran, the prudential regulations of transforming mortgage claims into securities were passed by Credit Committee of Central Bank of Iran in 1998 and were confirmed by Higher Council of Stock Exchange in 1999²⁰. According to these regulations, the theoretical goals of market development of these papers included liquidity increase, decrease of credit risk resulted from dishonoring, and to increase capital adequacy ratio. In structural application of these papers, the principle and profit of papers should be guaranteed by legal entities, but nothing was mentioned about the guarantor's conditions and the source of capital for supporting the guarantee. By studying the transaction procedures of this law regarding guaranteed profit, these papers are dubious to involve Reba; moreover, the ratio of dividing profit received from the claims among bank, paper-holders and depositors were not specified²¹.

Reba-free bonds

Because of Reba-based form of Islamic Zero Coupon Bonds, transaction of these debt-based papers at a lower price than face value, regardless of not receiving any interest until maturity, has no application in Reba-free central banking. On the other hand, although Islamic Zero Coupon Bonds contain transaction pillars and using debt and substance purchases, their transactions are not Shariah compliant, because of using tricks to pretend compliance with Shariah. The usury doubts of Mortgage Backed Securities make also these papers inapplicable. Therefore, in order to use appropriate monetary policies that are based mostly upon transaction of bonds, we need financial innovations which in addition to be in compliance with Shariah, could be efficient.

Financial papers are generally classified into Negotiable and Non- negotiable classes. Private debt securities (PDS) are those negotiable and non-negotiable papers which are issued by corporations and the issuer is bounded to pay the profit periodically and the principle at maturity to the holders of the papers. On the other hand, private debt papers can be divided into two main groups of equity-linked debt security and non equity-linked securities. The first papers are transformable to issuer's company shares and their holders can be regarded as shareholders of the company, while the second group cannot be transformed into shares and the issuer can raise short, medium and long terms financing by these debt papers. These papers can be transacted in secondary market.

In this paper four usury-free bonds are introduced, that provide compliance with Islamic Shariah without any Shariah tricks, and can be used as secure financial asset-linked instruments in Islamic central banking as well as commercial banking. These four usury-free Islamic bonds are as follows:

1. Central Bank Usury-Free Bonds, issued by central bank.
2. Banking Usury-Free Bonds, issued by commercial and specialized banks and monetary and credit institutes under the supervision of the central bank.
3. Treasury Usury-Free Bonds, issued by government treasury.
4. Commercial Usury-Free Bonds, issued by private entities with special guarantees.

The Usury-Free Bonds introduced in this paper are a kind of transactable papers which are not linked to capital. In other words, the proposed papers are a kind of asset-backed bonds and a kind of non-coupons bonds. These papers can be issued by central bank, commercial, specialized and development banks and money and credit institutes and reputable funds under the supervision of central bank which

²⁰ - For more information see: <http://www.econews.ir/fa/NewsContent.aspx?id=108111>

²¹ - For more information see: <http://banki.ir/akhbar/205-gozaresh/1446-markazi3>

have prudential and legal reserves at central bank. These bonds have substantial differences with conventional commercial bonds, papers linked to capital, and asset-backed papers and also with zero coupon bonds. Their main difference is that they have no pre-fixed interest rate, and the funds are offered to other party in form of “debt equal to future loan”, or “loan equal to future debt” with "time-drawing right". Papers could be transacted in secondary market among banks and cited institutions and therefore, their prices proportional to capital return of the economy change and regarding their characteristics, they do not involve usury. In addition, these papers are not considered as consumption loans and therefore, do not have the usury prohibition involved in consumption loans²².

Usury-Free Bonds will be issued under certain conditions and face value by central bank, commercial, specialized and development banks and private sector. Commercial, specialized and development banks and money and credit institutes and financial funds who have prudential and legal reserves at central bank, or private sector activists (by considering special guarantees) by buying these papers will have the right to use interest-free loan equal to their holding bonds and for the same equal period, and will pay it back to the issuer at maturity.

Accordingly, by buying \$A bonds with maturity of N months, the buyer will have the right to obtain \$A interest-free loan for a period of N months from the issuer of the bonds. The buyer and seller agree on fixing combinations of \$A and N months so that the buyer can choose smaller, equal or larger than one ratios from \$A in proportion with N months so that the result of the amount of money multiplied by time be equal to $A \times N$. In other words, for example, buyer instead of A Dollars, can borrow $A/2$ Dollars for $2N$ months at the N^{th} month, or $A/3$ for $3N$ months at the N^{th} month. Where, in both cases the result will be equal to $A \times N$. That is:

$$(A/2) \times (2N) = (A/3) \times (3N) = A \times N$$

Or generally speaking, instead of \$A, he receives A/k for $k \times N$ months after the N months. Parameter k can be any agreed figure accepted mutually by the parties, or offered by the buyer.

These bonds practically have two time periods and two maturity dates. The first period is equal to N months from the selling time to first maturity, and the second time period is from the first maturity date (N) until the payback date of funds ($kN+N$) or second maturity date. The first maturity is when the seller of papers is obliged to provide the loan equal to A dollars for N months, or A/k dollars for kN months to the buyer. Therefore, the first maturity occurs at the end of N months. The second maturity is the end of contract when the seller receives back his funds after $kN+N$ months after selling time.

Since banks have prudential and legal reserves at central bank, they will not face loan defaults, and regarding this, they can transact these papers in the “usury-free secondary market”. The buyers and sellers of this market are commercial, specialized and development banks and monetary and credit institutes and reputable funds under the supervision of central bank which have prudential and legal reserves at central bank. In addition, government and private sector can enter this market by considering certain conditions.

Usury-free foreign exchange bonds

It is possible to issue usury-free foreign exchange bonds similar to Usury-Free Bonds. In this relation, all four kinds of bonds mentioned earlier, could be issued. The sellers and buyers of these papers are also similar with introduced usury-free bonds transactions and have no significant difference except for the amount of transaction which may be numerated in one or two exchange rates in two cited time periods. In

²² - Bidabad, Bijan, Economic-juristic analysis of usury in consumption and investment loans and contemporary jurisprudence shortages in exploring legislator commandments. Proceeding of the 2nd International Islamic Banking Conference. Monash University of Malaysia. 9-10 September 2004. Reprinted in: National Interest, Journal of the Center for Strategic Research, Vol. 2, No. 1, winter 2006, pp. 72-90. Tehran, Iran. <http://www.bidabad.com/doc/reba-en.pdf> and <http://www.bidabad.com/doc/reba-fa.pdf> and <http://www.bidabad.com/doc/mabani-erfani-egtesade-islami.pdf>

neither case, especially when in the first period one foreign exchange is used and in the other period, another foreign exchange is used, creates no suspicion of Reba involvement. Therefore, according to the above classification, we can have the following four kinds of non-usury foreign exchange bonds:

1. Central bank usury-free foreign exchange bonds of central bank issued by central bank.
2. Banking usury-free foreign exchange bonds issued by commercial, specialized and development banks and credit and money financial institutes which are under the supervision of central bank. In this regard, foreign banks can also enter into this market by agreement of central bank.
3. Treasury usury-free foreign exchange bonds which are issued by government treasury.
4. Commercial usury-free foreign exchange bonds as previously mentioned, should have special guarantees from private companies and institutes.

The monetary effects of usury-free foreign exchange bonds are similar with usury-free bonds, plus the capability of stabilizing foreign exchange supply and demand in the economy, and central bank can adjust and manage exchange rate by this instrument and affect exchange rate by changes in foreign exchange supply. When the face values of both periods are in the same foreign exchange, there will be arrangements for risk coverage (hedging) in the second period, and if different foreign exchange is used for the second period, the same arrangements will be applied for the second period to cover foreign exchange risk. In addition to central bank, other bonds' buyers can also use it to cover foreign exchange risk.

Monetary effects of issuance of usury-free bonds

In order to study the effects of issuance of usury-free bonds it is necessary to study the effects of issuing these bonds by central bank, other banks, government treasury and private sector separately.

Issuance of usury-free bonds by central bank

If usury-free bonds are issued by central bank, practically it decreases the free balances of banks and blocks them by central bank and obliges central bank to provide banks with the same amount in the second time period and after the end of the second period, central bank will line out the issued papers. Since these operations affect high powered money, it has contractionary effects in the first period and expansionary effects in the second period.

Issuance of usury-free bonds by other banks

If usury-free bonds are issued and sold by other banks, in addition to increase the amount of these papers in the market, will not increase the liquidity. This is because these operations are like lagged borrowing of banks from each others, as much as free balances of one bank decreases, the free balances of others increase in the first time period, and vice versa will be in the second period. This will result no changes in liquidity of the economy and will only compensate the liquidity needs of banks that do not have enough liquidity and adjusts liquidity risk of the banks. In this case, seller and buyer are from the same category of banks. If government or people buy these bonds, there will be no change in the liquidity but if central bank buys these papers, it will have expansionary effects in the first period and contractionary effects in the second period.

Issuance of usury-free bonds by government treasury

As it was mentioned, usury-free bonds can be issued and supplied by government treasury, and central bank to conduct expansionary or contractionary monetary policies by transacting these bonds. In this case, necessary conditions will be available for government to finance government budget and government can adjust its fiscal policies by buying and selling these bonds.

If the buyers of these usury-free bonds are banks or private sector, and government spends the acquired financial resources, it will practically has no effect on liquidity, and if central bank buys these papers, it will have expansionary effects in the first time period and contractionary effects in the second period.

Issuance of usury-free bonds by private sector

Private companies and institutes can also issue usury-free bonds. In this case, appropriate mechanism should be arranged to decrease the probability of default to zero. For this reason, the seller will provide bank guarantee equal to the face value of bonds at the time of issuance and surrenders it to buyers. At the end of the first time period the buyer is obliged to surrender the same amount of bank guarantee to seller of bonds. After returning the funds from the seller to buyer at the end of the first period, the first guarantee will be cancelled and at the end of the second time period, after returning the fund from buyer to seller, the second guarantee will also be cancelled.

In order to have information technology-based transaction efficiency in the secondary market, special mechanisms should be designed in the software so that the guarantees could also be bought and sold through confident banks when bonds are issued, bought, sold or settled.

It is possible to use other collaterals instead of bank guarantees, but it is not easily possible and reduces the efficiency of transaction of commercial non-usury bonds. To solve the problem, it is possible to establish other institutes to have the authority to provide guarantees on the basis of collaterals. In this case, the issuer of papers offers collaterals to these institutes and obtains guarantee for in interest of buyers, and if the issuer defaults to pay back the fund at maturity, the institute will transfer the ownership of the collateral to buyer. Also in the second time period, the same institute will obtain the same amount of collateral from the buyer for the interest of the seller and after the end of the second time period and pay-back of the fund, the guarantee will be cancelled. These institutes can be affiliated to Justice Department like notary public offices and be supervised by that department.

The issuance of usury-free commercial bonds has no effects on liquidity and only transfers funds from sluggish sectors of the economy to active sectors.

Usury-free bonds and inflation, interest and exchange rates

Since central bank's operation in buying and selling these bonds are conducted by high powered money, it has contractionary effects in the first time period and expansionary effects in the second period. Therefore, central bank defines A, N, or k according to the position of the economy in recovery, prosperity, recession and crisis during business cycles²³ to decrease the severity of business fluctuations. This policy is similar with fine tuning policy in conventional central banking.

On the other hand, since these bonds can be transacted in the secondary usury-free bond market, they can have automatic adjustment mechanism through relationship of the price of these papers and interest rate. Whenever interest rate is high, the transaction price of these bonds in the first time period falls, and increases the incentive for banks to put their sources at central bank, so, they can obtain more funds in the second time period. Therefore, during prosperity, when interest rate is high, it limits free balances of banks and prevents the expansion of cycle domain. On the contrary, when interest rates are low, the price of bonds will increase during the first time period and decrease the incentive for banks to buy these papers from central bank to obtain more funds in the second time period. This means that during crisis in the economy, when interest rates are low, it expands free bank balances and does not let business cycle to expand and aggravate the crisis. On the other hand, central bank can adjust the supply of these bonds through their prices and by changing of supply of high powered money affects liquidity and thereof,

²³ – Bidabad, Bijan, (2010), Stabilizing Business Cycles by PLS Banking and Ethic Economics. <http://www.bidabad.com>

interest rate. Accordingly, usury-free bonds can substitute conventional bonds in usury-free central banking.

When expected inflation and expected interest rates are different in first and second time period, the analysis of the performance of these papers will be somewhat different. If the expected natural interest rate in the second time period is more or less than the first time period, it will have different effects on supply and demand of usury-free banking bonds. The more is the expected natural interest rate in the second period, the more will be the price of bonds in the first period and vice versa, the less is the expected natural interest rate in the second period, the less will be the bond price in the first financial period. This issue is very important from central bank point of view in adjusting proper monetary policy for stabilizing economic activities. In addition, it causes expectations to have essential role in credit behavior of banks. This means that if banks expect increase (or decrease) in the natural interest rate during the second period, they will adapt increasing (or decreasing) policy for supplying bonds. From economic point of view, this mechanism can be a factor in dampening oscillation of business cycles in recovery, prosperity, recession and crisis.

The mechanism of issuing bonds is different in continuous stable inflation case. If expected inflation rate is not different in both periods, inflation will not affect the bond transaction, but if it is different, we should expect different prices for bonds in secondary market. Accordingly, we can consider the following cases for the introduced bonds in this paper: suppose a fixed interest rate, average expected inflation rate in the first period is less than average expected inflation in the second period, bond prices will be higher in the first period than the second period, and if the average expected inflation rate in the first period is higher than average expected interest rate in the second period, we will have an opposite case and bond prices in the first period will be less than second period.

The interest rates of deposits and credit facilities have also important effects on supply and demand of usury-free bonds in the secondary market which can be studied in two financial periods and according to the length of these periods in different parts of business cycle.

The effects of issuance of usury-free bonds on exchange rate flows to foreign exchange sector through the created monetary effects. Changes of supply of domestic currency encountering foreign exchange supply, will affect the economy through monetary channels and differences created in internal and external interest rates²⁴.

Transaction of usury-free bonds in secondary markets based on information technology

These papers with a defined face value will be issued on internet platform of Non-usury Scripless Security Settlement System (NSSSS) as the primary market and without base price. The issuer fixes a deadline for the tender and receives competitive bids from the buyers. After the deadline, papers will be sold according to the highest bid to the buyer. Since the seller has not defined any price below the face value, and all principles of contract are fulfilled, the transaction is correct from Shariah point of view and no skepticism of usury is seen. Then, the papers can be transacted in cash on the same internet platform of NSSSS as the secondary market. Transactions in both markets are according to purchase contract and through tender procedure.

Usury-free bond transactions need information technology infrastructures including NSSSS sub-system, Real Gross Settlement System (RTGS), Automatic Clearing House (ACH), International Bank Account Number (IBAN), digital certificate and signature (PKI) and electronic notary offices who issue and confirm digital certificate and signatures. These papers could be issued in domestic or foreign exchange on web and NSSSS sub-system. Bonds can be sold by the issuer in primary market. Buyers should have one of the ATM cards which are accepted by the network or a creditable international

²⁴ -<http://www.bidabad.com/doc/nerkhe-arz-bahreh-1.pdf>

exchange card (if agreed) for identification. Development of IBAN for transaction of these papers in NSSSS system can be used in electronic payment and settlement. When these bonds are bought in the primary market, the secondary market is created in NSSSS system. Customers can enter this market and transact the bonds before maturity at competitive prices for speculative purposes. Transaction records of people and legal entities could be traced in NSSSS system. The bonds will be sold in the first and second time periods at highest price offered in the secondary market. Use of ACH and RTGS for interbank settlement of small and large payments is inevitable.

Summary and Conclusion

Islamic financial instruments should have two main characteristics: usury-free and efficiency in application for monetary policies, finance and liquidity management of monetary authorities, government and money and financial institutes (including banks and non-banks). One of the most important instruments for monetary expansion mechanism is bonds. The open market operation on these bonds can affect liquidity and other monetary variables such as general price level and interest rate and thereof, aggregate supply and demand in the economy through monetary expansion mechanism. Since conventional bonds include interest (usury), they are not Shariah compliant in Islamic banking and practically are legally forbidden to be used by monetary authorities.

This paper offers a substitute for conventional bonds so that in addition to be usury-free, could efficiently affect monetary expansion, and makes financing and liquidity management possible for monetary and banking sector of the economy. In order to apply efficient policies through monetary expansion mechanism, central bank can issue usury-free bonds in NSSSS system and sell the bonds with a face value and without coupon (without any profit). These papers can be bought by commercial, specialized and those monetary institutes who have prudential and legal reserves at central bank. The purchase of these bonds will decrease the monetary base and thereof, liquidity of the economy in the first time period and increase it with the same amount at second time period. These bonds can be issued and bought back in the framework of treasury bills by government to apply monetary policy. The application of these instruments by banks and other economic institutes to use free (or excess) balances of others has no effect on liquidity and can be used as a solution for decreasing liquidity risk cost and debt coverage. These papers could also be used in the framework of usury-free commercial bonds by offering bank guarantee as payback guarantee and establishment of institutes for providing digital guarantees.

The secondary market of these bonds on web and in NSSSS system with tenders without base price and acceptance of the highest competitive offers during tender time, give transaction capability to the bonds. The yield of these papers depends on their market price. No base price below its face value is considered for the bonds and competitive price offered by buyers on the basis of expected interest and inflation rates, or in other words, expected natural interest rate in the first and second time periods will be formed. In addition, the transaction mechanism designed for these bonds will create market efficiency and yields convergence between these papers and real sector returns.

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