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Islamic Monetary Policy: Is there an Alternative of Interest Rate?

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Abstract

At the advent of global financial crisis conventional monetary policy has failed to regulate the money market and the consequence of which was seen in the global financial and capital market. This paper takes an attempt to give a brief outline of how Islamic monetary policy can be a sustainable alternative to the conventional. In order to understand Islamic monetary policy better we went back to early Islamic period and discussed how money was evolved and monetary policy was performed at that time. Reemergence of Islamic economic system in the latter half of the last century encouraged scholars in this field to have a fresh look at this issue. Comparative analysis shows that Islamic monetary policy can adopt many conventional instruments which are in line with the Shariah guidance such as: Legal Reserve Ratio, Credit Rationing, Selective credit control, Issue of directive, and Moral suasion etc. As interest rate, the key tool of conventional monetary policy regulation, is prohibited in Islamic economic system, the need for sustainable alternative is the order of the day. Unfortunately, Islamic banks and financial institutions set their benchmark based on London Interbank Offered Rate (LIBOR) which raises doubt and controversy of the uniqueness of Islamic finance. Literature shows that this a growing field of knowledge and many theoretical works have been conducted in this area but little empirical work, moreover, very few on alternative benchmark for Islamic economic system. By analyzing literature we propose in our study that GDP growth rate adjusted for inflation can be set as a benchmark for money market instrument and reference for financial and capital market as we argue GDP growth rates reflect real balanced growth potential of an economy as it is correlated with national income, savings, inflation, exchange rate and investment compare to real interest rate, which is fixed in the money market and does not take into account the real sector.

Key words: Monetary Policy, Islamic Monetary Policy, Real Interest Rate, GDP Growth Rate, Inflation, Real Exchange Rate, Gross Savings, Foreign Direct Investment and Gross National Income

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Introduction

Interest rate mechanism has truly failed to reflect the real growth of an economy, moreover has an adverse effect on inflation, employment, exchange rate, savings and investment. The last global financial crisis was the vivid example of colossal failure of interest based economic system, where we observed frictional reserve system, soaring low quality debt financing, due to low interest rate, and numb speculation lead to the subprime mortgage collapse in the US and which ultimately has affected the global financial markets. As evidence shows this is not the last time of course, in the last 100 years global financial markets have faced several financial crisis which were directly or indirectly due to the failure of interest rate mechanism. In this article we tried to provide a clear understanding of why Islamic monetary policy is a better alternative by reviewing the history of early Islamic monetary policy during the time of Holy Prophet Muhammad (PBUH), argue why interest rate can't be an ideal instrument of monetary policy, discuss conventional monetary instruments which are suitable in Islamic economic system and propose an alternative benchmark rate, which will be determined realistically, true reflection of real economic growth by full employment, low or stable inflation, high savings and investment opportunities, moreover, based on the real sector.

Monetary policy

Monetary policy is a mechanism to control the money supply and demand by manipulating interest rate in conventional economic system while in Islamic economic system Riba i.e. interest rate is prohibited, an alternative system, method or instrument is necessary which can truly control the supply and demand of money in the economy in order to maintain a stable local currency, sustainable growth, higher income, higher savings, lower and stable inflation and lower unemployment.

Monetary policy is generally mentioned to as either being expansionary or contractionary, where an expansionary policy increases the total supply of money in the economy more rapidly than usual, and contractionary policy expands the money supply more slowly than usual or even shrinks it. Expansionary policy is traditionally used to try to combat unemployment in a recession by lowering interest rates in the hope that easy credit will entice businesses into expanding. Contractionary policy is intended to slow inflation in order to avoid the resulting distortions and deterioration of asset values.

Conventional monetary policy literatures state that monetary policy, to a great extent, is the management of expectations (Svensson, 2004). Monetary policy rests on the relationship between the rates of interest in an economy, that is, the price at which money can be borrowed, and the total supply of money. Monetary policy uses a variety of tools to control one or both of these, to influence outcomes like economic growth, inflation, exchange rates with other currencies and unemployment.

Because of the limited scope of this article we are not going to in-depth analysis of conventional monetary policy please refer to Woodford, M., & WALSH, C. E. (2005) and Clarida, R., Gali, J., & Gertler, M. (1999) for further reading.

The Holy Quran on Riba

Allah (SWT) mentions several times in the Holy Quran regarding 'Riba', Usury or Interest and strongly prohibits it in any kind and form and in any circumstances.
In the Surah Al-Bakara from verse no 275-276 and 278 Allah (SWT) clearly indicates about prohibition of Riba i.e. interest.

> "Those who consume interest cannot stand [on the Day of Resurrection] except as one stands who is being beaten by Satan into insanity. That is because they say, "Trade is [just] like interest." But Allah has permitted trade and has forbidden interest. So whoever has received an admonition from his Lord and desists may have what is past, and his affair rests with Allah . But whoever returns to [dealing in interest or usury] - those are the companions of the Fire; they will abide eternally therein."

> "Allah destroys interest and gives increase for charities. And Allah does not like every sinning disbeliever."

> "O you who have believed, fear Allah and give up what remains [due to you] of interest, if you should be believers."

Also, in Surah Al-E-Imran Allah(SWT) says
> "O you who have believed, do not consume usury, doubled and multiplied, but fear Allah that you may be successful." (3:130)

Again Allah (SWT) warns us about the prohibition and consequence of Riba in the Surah Al-Nisa:
> "And [for] their taking of usury while they had been forbidden from it, and their consuming of the people's wealth unjustly. And we have prepared for the disbelievers among them a painful punishment." (4:161)

To show how severely Allah (SWT) dislike Riba and prohibit it for believers of Islam revealed in the Surah Al-Room that:
> "And whatever you give for interest to increase within the wealth of people will not increase with Allah . But what you give in zakah, desiring the countenance of Allah - those are the multipliers." (30:39)

Moreover, there are numerous Hadith of our beloved Prophet Muhammad (PBUH) prohibited "Riba" from every part of our life.

Abdullah bin Mas'ud (May Allah be pleased with him) reported: The messenger of Allah (PBUH) cursed the one who accepts 'Ar-Riba' (the usury) and the who pays it. [Muslim]

The narration in At-Tirmidhi adds: And the one who records it, and the two persons who stand witness to it.

These show us how Allah (SWT) and His Holy Prophet (PBUH) abominate interest as a result prohibit it. Moreover, it is more than evident that it is considered as the root of all socio-economic injustice, which violates Islamic property rights, unproductivity, and creates inequitable distribution of wealth among the society.

Money in Islam

Even though the concept of money is very old one, the main purposes of money remain the same: medium of exchange, standard of account and store of value. Money has a long history of evolution: from good, metals, silver and gold, paper to electronic.

Oxford dictionary defines money as a current medium of exchange in the form of coins and banknotes; coins and banknotes collectively.

Imam Ghazali defines money as a "means of exchange" and "store of value" serving to get other goods. Money doesn't have a value itself.

From the above definition, we can say that in Islamic economic perspective money is social convention and can be divided into two types: commodity and token (paper money) which existed even in the early Islamic era.

The monetary system that prevails in the world now has come into existence after passing through several stages of evolution. The monetary system that prevailed during the Prophet's (pbuh) days was essentially a bimetallic standard with gold and silver coins (dinar and dirham) circulating simultaneously (As-Sadr, 1989). The ratio that prevailed between the two coins at that time was 1:10. This ratio seems to have remained generally stable throughout the period of the first four caliphs. Such stability did not, however, persist continually. The two metals faced different supply and demand conditions which tended to destabilize their relative prices. half of the Umayyad period (41/662-132/750)2 the ratio reached 1:12, while in the Abbasid period (132/750-656/1258), it reached 1:15 or less.3 In addition to this continued long-term decline in the ratio, the rate of exchange between the dinar and the dirham fluctuated widely at different times and in different parts of the then Muslim world. The evolution of money has given in the following figure.
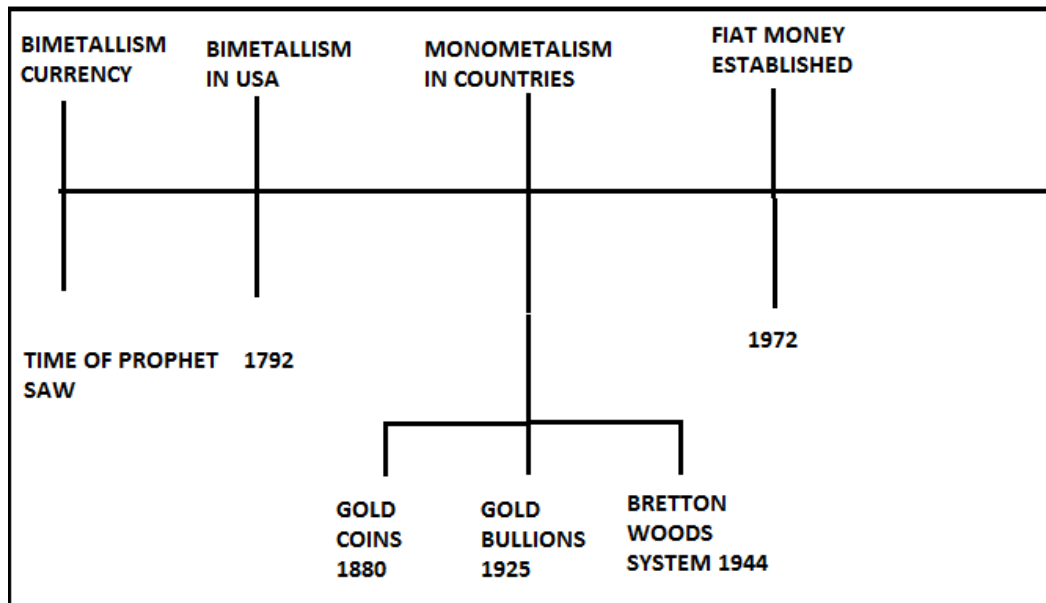
Figure 1: Evolution of money over the period of time (Based on As-Sadr, 1989)

Monetary policy in early Islam

In the early Islamic state there was no basis for changes in the money supply through discretionary measure as there were no banking system and commodity money were extensively used instead. Moreover, credit has no role to play in creating money because: first of all, credit was used only among few traders and secondly, regulations governing the use of promissory notes and negotiable instruments were in such a way that the credit was not capable of creating money.

Promissory notes or bills of exchange (draft) were issued for purchase of a real commodity or receiving an amount of money. These documents could not be issued merely for purposes of credit. After issuances of these documents, the creditor could sell the note but the debtor was not allowed to sell the money or commodity before receiving it. Therefore, there was no market for buying and selling of negotiable instruments, speculation, or use of money market fund. Thus, credit could not create money.

The above rule affects the equilibrium between the goods market and the money market based on cash transactions. In 'Nasia' or other Islamic legal transactions where a commodity is bought now but payment is made later, money is paid or received for commodity or an economic service. In other words, money is exchanged only in a trade which creates real value-added in economy which falls under the framework of Islamic legal criteria. Other transactions like gambling, usury, kali-bi-kali transactions, buying and selling of superficial promissory notes were prohibited by Islam. As a result, the equilibrium between money and goods circulation in the economy was always maintained. Considering the relative stability of velocity of money in any given period, we can conclude that the volume of money in the economy was always equal

to the value of goods produced. Like current monetary policy instrument, open market operation, buying and selling of the negotiable instrument by the Bait ul Mal (central bank) was not used in the early Islamic period. Interest rate regulation, increasing or decreasing the rate of interest on loans made by banks, was not available because of prohibition of usury in Islam. As Sadr mentions legal system governing, savings, investments, and trade has provided mandatory devices, for the execution of monetary policies which, on the one hand, guaranteed an equilibrium between money and goods, and on the other hand, prevented the diversion of savings away from real investment and creation of real wealth in the society. As Sadr further states that in addition to that, giving spiritual and religious rewards for work and all other types of legitimate economic activities and participation of the companions of the Holy Prophet(PBUH) themselves in trading and agricultural activities, had increased the worth of these activities in the eyes of Muslims (As-Sadr, 1989).

Financial markets in the early Islamic period and 'Nasiah' rate

As a result of the prohibition of usury and kali bi kali transactions, there was no market for loans or future markets and money could not earn interest. The market for goods in which consumption and investment goods were traded was the only active market in Islamic economy. Furthermore, the religious permission for cash and credit transactions, installment buying, buying and selling of permissible debt instruments, partnership contracts and other legal contracts, facilitated performance of economic activities. For this reason, comprehensive rules and regulations were developed, which governed the goods market, such as the condition of exchangeable commodities, legal capacity of buyer and seller, kind of transaction, rights and authorities of contracting parties, their obligations to perform the conditions of the contract or options for its termination (As-Sadr, 1989).

As Sadr (1989) mentions following variables in the financial markets were present in the early Islamic period:
   a) cash prices of goods and services
   b) their credit prices
   c) the period of credit transaction
   d) the rate of profit in trading activities
   e) the rate of return to investment
   f) the price of factors of production
   g) the period of qard hasan loans and
   h) the rate of discount on permissible debt instruments
The most important criterion for allocation of savings was the difference between cash and credit prices of goods i.e., 'Nasiah' rate.
For example, a saver could anticipate that if he bought a given commodity with cash and then sold it on credit, at the end of the term of transaction he would have an income equal to the

difference of these two prices. Therefore, the difference between cash and credit prices of goods determined the return to a credit transaction that, on average in any given period, an owner of savings could expect. In this circumstance, investment would take place to the point where the rate of return to investment would equal the rate of return to credit transactions.

On the contrary, creditors who wanted to sell debt instruments had to offer these instruments at a lower price than its face value in order to create an incentive for the buyer. The buyers would buy the instrument only when the rate of return from this transaction was equal to or greater than the rate of return from a credit transaction. Therefore, in equilibrium, these two rates were equal, i.e., the rate of discount would have to equal the rate of credit transaction. Accordingly, a person would allocate his savings to investment, trade, credit transaction, or discount of promissory notes to a point where the rate of return on credit transactions and the discount rate were equal. The lower the rate of return on credit transactions, relative to the rate of returns to investment, the higher the level of investment. We can restate that monetary policy in the early Islamic period seems to have been direct towards lowering the rate of return on trade credit and promissory notes as much as possible in order to encourage investment. Monetary incentives as well as rules and regulations were used in order to force a reduction in discount rates in the long run (As-Sadr, 1989).

Monetary policy: an Islamic framework

Money Demand
From the above Quranic verses and numerous Hadiths of the Holy Prophet of Islam we can firmly state that Islam does not accept interest rate so it cannot be an appropriate mechanism for the management of money demand in an efficient or equitable manner. Therefore, Islamic economic system tries to regulate money demand by a strategy that relies on a number of instruments, three of which are particularly important (Chapra, 1992).
(a) a socially-agreed filter mechanism;
(b) a strong motivating system to induce the individual to render his best in his own interest as well as in the interest of society;
(c) restructuring of the whole economy with the objective of realizing the maqasid (aim) in spite of scarce resources; and
(d) a positive and strong goal-oriented role for the government.

The above given elements of the Islamic economic system may not only help minimize the instability in the aggregate demand for money but also influence the different components of money demand in a way that would promote greater efficiency and equity in the use of money. The relatively greater stability in the demand for money in an Islamic economy may also introduce greater stability in the velocity of circulation of money.
The demand for money in an Islamic economy may thus be represented by the following equation (Chapra, 1996):

$M_d = f(Y_s, S, \pi)$, where

Y_s = goods and services that are related to need fulfillment and productive investment and are in conformity with the values of Islam;
S = all those moral and social values and institutions (including zakah) that influence the allocation and distribution of resources and that can help minimize
M_d not only for conspicuous consumption and unproductive investment but also for precautionary and speculative purposes; and
π = the rate of profit or loss in a system which does not permit the use of the rate of interest for financial intermediation.

Money supply

After successfully stabilizing money demand and maintaining general well-being and development of common people, the second most important questions of, firstly, how to bring aggregate money supply into equilibrium with such money demand, and secondly, how to bring the allocation of this money supply in conformity with the needs of goal realization without using coercion. The first question attains further significance as the two most important instruments of monetary management in the capitalist economy, discount rate and open market operations in interest-bearing government securities would not be available in an Islamic economy (Chapra, 1996).

Monetary targets

In order to create equilibrium between demand for money and money supply, the most practical approach may be to estimate the demand for money that is consistent with the implementation of the desired socio-economic goals within the price stability, and then set the target range for the growth of the money supply, which will help meet this demand adequately. Chapra (1996) argues that countries which announce monetary targets have lower inflation rate even lower in whose announcements turn out to be more precise.
However, the targeted growth in money need not be followed rigidly and mechanically. This is because monetary targeting presumes that the income velocity of money is reasonably predictable over relevant periods which may be expected to be truer in an Islamic economy, it may, nevertheless, be affected by domestic and external economic shocks. The targets should, therefore, be reviewed quarterly, or as often as necessary, and changed whenever this is warranted.

Attaining the targeted growth in M

This takes us to the instruments that may be used by the central bank to create harmony between the targeted and the actual growth in money supply (M), which is the sum of currency in circulation plus commercial bank deposits. Since deposits constitute a substantial part of money supply, it may not be possible to regulate money supply without regulating total deposits. Deposits may also, for the sake of analysis, be divided into two parts: 'primary deposits', which provide the banking system with a substantial part of M_o or high-powered money, and 'derivative deposits' which, in a proportional reserve system, represent money created by banks in the process of credit extension. M_o consists of the currency held by the public plus commercial bank cash in vaults and deposits with the central bank. The higher the savings, the greater may be the share of primary deposits in total deposits and the lower may be the need for expansion of derivative deposits. Since the growth in derivative deposits is generally recognized to be closely related to the growth in Mo, or high-powered money, the central bank has no option but to regulate closely the growth in M_o (Chapra, 1996).

Chapra (1996) discusses that there are three important sources of high-powered money: government borrowings from the central bank, central bank credit to the commercial banks, and balance of payments surplus. As many countries have experienced excessive fiscal deficits which put the entire burden of monetary stability on the central bank and it is a challenge for healthy monetary policy. It is impossible to control monetary expansion without properly regulating this major source of high-powered money. As a result it is impractical for Muslim governments to talk of Islamisation of their economies without making a serious effort to regulate their budgetary deficits in accordance with the demands of the Maqasid (aim of Shariah), particularly price stability.

The central bank can control successfully its own lending to the commercial banks. The elimination of interest rate and its replacement by profit-and-loss sharing may further reinforce this ability. The central bank lending to commercial banks would take the form of *mudarabah* advances. This suggests that the central bank would be more responsible in its lending to the commercial banks. Simultaneously the commercial banks will also be more cautious in lending to their clients in both the public and the private sectors, particularly for speculative and unproductive purposes. It may thus be possible to check the expansion in derivative deposits without resort to the prohibitive 100 percent reserve requirement which some scholars have suggested. However, if at some stage this is felt necessary, the central bank should not hesitate to resort to it (Khan and Mirakhor, 1994).

Reemergence of Islamic monetary policy literature
At the same time, Islamic monetary policy literature has been growing rapidly since the end of last century with the rapid development of Islamic economy and finance especially Islamic banks have emerged as formidable competitors for conventional interest base banking system. As interest is prohibited in Islam, scholars in Islamic economics have been relentlessly working on

to find an appropriate alternative which will be realistic replacement and also fall under the compliance of Shariah.

In the 1978 seminar in Jeddah, Ariff (1982) made some preliminary observations on the working of monetary policy in an interest-based economy and the possibilities in an interest-free economy. Three main goals of monetary policy for an Islamic economic system: a) Economic well being with full employment and optimum rate of economic growth; b) Socioeconomic justice and equitable distribution of income and wealth and c) Stability in the value of money (Iqbal and Khan, 1981; Chapra, 1983).

Chapra (1985) proposed 25% of demand deposits with the banks for advancing interest-free loan to government. Need fulfillment, optimum growth and full employment and equitable distribution and economic stability are considered as the goal of Islamic monetary policy and proposes to include such monetary instruments as statutory reserve requirements, credit ceilings (in particular, goal-oriented allocation of credit), equity-based instruments, changes in profit-and-loss sharing ratio and moral suasion (Chapra, 1996).

Khan (1986, 1992) focused on the financial side, and presented a macroeconomic model in order to establish that monetary policy would work in an interest-free economy in the same way as in interest-based economy but with better speed of adjustment economy in disequilibrium situations. Non-guarantee of the deposits provided the main ground for his argument.

Khan and Mirakhor (1987) gave a flow-of-funds matrix for an Islamic economy in which the central bank provided equity-based support to banks. However, their analytical model rested on conventional interest rate variable relabeled as an *a priori* variable rate of return. It is, therefore, not surprising that they do not find any difference in the effect of monetary policy in an Islamic versus a traditional one economy.

Khan and Mirakhor (1994, 1997) highlights the modarabah mode deposit mobilization, and list financing instruments that might be available in the Islamic financial system. They point out that apart from the Islamic banking system there would also be primary, secondary and money markets. There is great semblance between their thinking and what is available in conventional economics. Of course, the instruments like modarabah and musharakah certificates are expected to have Shari'ah legitimacy. They regard macroeconomic stability, characterized by price stability and viable balance of payments position as the chief goals for monetary policy. As for monetary policy, their conclusion is as follows: Monetary policy of an Islamic state takes place in a framework in which all conventional tools normally available in a modern economy are at the disposal of the monetary authorities with the exception of the discount rate and other policy tools that involve interest rate. All other tools, namely open market operations (where equity shares rather than bonds are traded) and credit policies, can be as effective in an Islamic system

as they are in the conventional Western system. Additionally, the authorities in an Islamic system can utilize reserve requirements and profit-sharing ratios to achieve changes in the stocks of money and credit (Khan and Mirakhor, 1994; 1997).

Choudhry and Mirakhor (1997) focus on the tools for monetary policy. Their main proposal is use of equity-based government securities with rates of returns based on budgetary surplus for the purpose of monetary management. This study, like the others noted above, does not spell out blueprint of Islamic economy and, therefore, remains silent on the role of monetary policy in Islamization of an economy. A good deal has been written on goals of Islamic monetary policy and conventional instruments suitable for Islamic economic system and unique Islamic monetary instruments have also been proposed since the developments in the Islamic finance from the late-1990s and onward.

The role of Central bank in an Islamic economic system
Functions of central bank in an Islamic economy are similar to modern economy. One of the most important functions is the regulation of money supply according to requirements of the economy. Influencing the movement and direction of bank finance in desirable directions is another vital function of a central bank. Consequently, providing a measure of safety and ensuring prudent banking.
By analyzing literature we can portray the Islamic monetary policy instruments in the following figure.
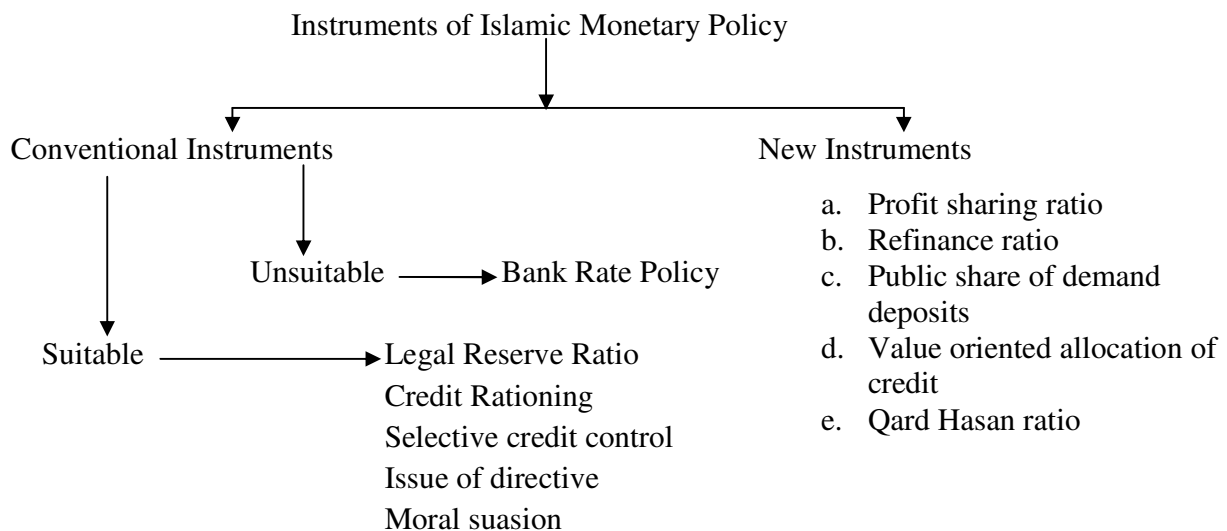
Instruments of Islamic Monetary Policy

Conventional Instruments

New Instruments

Unsuitable ⟶ Bank Rate Policy

a. Profit sharing ratio
b. Refinance ratio
c. Public share of demand deposits
d. Value oriented allocation of credit
e. Qard Hasan ratio

Suitable ⟶ Legal Reserve Ratio
Credit Rationing
Selective credit control
Issue of directive
Moral suasion

Figure 2: Islamic monetary instruments

Monetary policy in Malaysia: A viable alternative to conventional system
Malaysia has succeeded in developing the most robust Islamic money market in the world, with a range of Sharia compliant instruments for liquidity management for banks and financial institutions and other corporations. In Malaysia, the Islamic Inter-bank Money Market (IIMM)

was introduced on January 3, 1994 as a short-term intermediary to provide a ready source of short-term investment outlets based on Shariah principles.
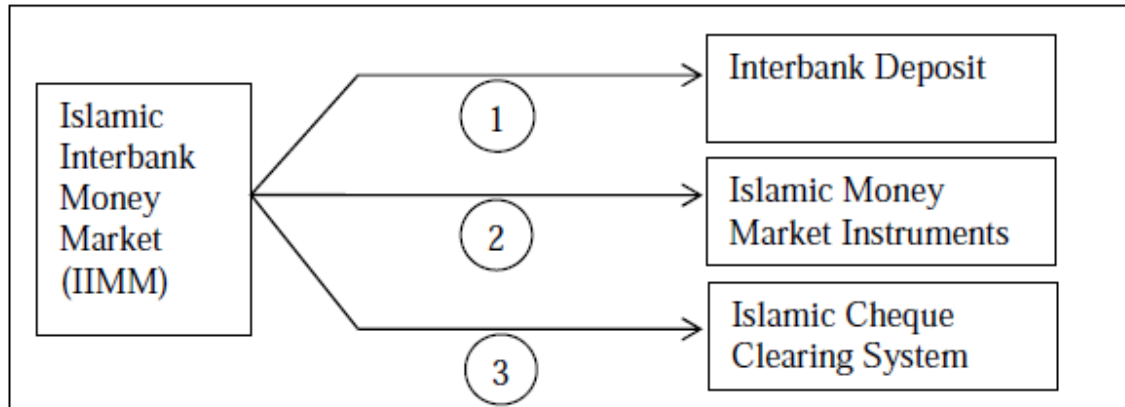

Figure 3: Overall strucutre of the IIMM in Malaysia (Bacha, 2008)

Through the IIMM, the Islamic banks and banks participating in the Islamic Banking Scheme (IBS) match the funding requirements effectively and efficiently. Some of the Islamic monetary instruments used in Malaysia for money market operations are as follows (Bacha, 2008):
1. Mudarabah Interbank Investment (MII)
2. Wadiah Acceptance
3. Government Investment Issue (GII)
4. Bank Negara Monetary Notes-i (BNMN-i)
5. Sell and Buy Back Agreement (SBBA)
6. Cagamas Mudarabah Bonds (SMC)
7. When Issue (WI)
8. Islamic Accepted Bills (IAB)
9. Islamic Negotiable Instruments (INI)
10. Islamic Private Debt Securities
11. Ar Rahnu Agreement-I (RA-i)
12. Sukuk BNM Ijarah (SBNMI)
13. Green Banker's Acceptances
14. Repurchase Agreements
15. Islamic Private Debt Securities

The Mudaraba Interbank Investment (MII) certificates are tradable instruments, which offer return based on the rate of gross profit before distribution for investments of up to one year of the bank that issues it. The rates and prices are negotiable, and in fact the central bank can intervene to influence the rate to use it as part of its monetary management regime. Government Investment Issues (GII) have maturities of one year or more, and offer dividends instead of interest. The GII are traded in the money market and the government and central bank can conduct money market operations by buying and selling them. The government of Malaysia also uses a number of other Islamic money market instruments such as Islamic Inter-bank

Cheque Clearing System, Islamic repos, Cagamas Mudaraba Bonds, and Islamic Accepted Bills for money market operations.

The success of Islamic money market operations in Malaysia weighs in favour of those who advocate the development of a sustainable framework for Sharia compliant monetary policy. The days of mere theoretical constructs of Islamic monetary policy are a story of the past, as an increasing number of Islamic tools of monetary management policy are being developed by financial institutions and markets.

The rationale behind suggesting GDP growth rate as an alternative to real interest rate

The recent financial crisis has proven to us that interest rate which is the ultimate instrument of monetary policy regulation has failed to control the economic system not only in the east but also in the west. In this circumstance, we need to look for an alternative approach to run and control monetary policy in a sustainable way and rate of interest which is fixed without considering real sector and real economy cannot solve the problem of high inflation, savings, income, investment, and growth of an economy. Therefore, we are arguing to replace real interest rate with GDP growth rate as a benchmark instrument for monetary policy as we assume it would better reflect the overall performance of an economy and ensure greater welfare of the population. Followings are the selected literature in this area.

Zangeneh and Ahmad (1993) presented an alternative to money management. They recommended that the central bank could charge the borrowing bank a weighted average rate of return in different sectors of the economy. This will create problems with reference to choice of sectors to calculate the weighted average rate of return. A particular bank may not have any investment in certain sector(s). Furthermore, this suggestion does not solve all the problems pertaining to pricing of products in Islamic finance.

Usmani (2003) proposed issuance of GDP growth linked instruments to finance public debt. Secondary market can be made for it by directing banks to meet their statutory requirements by way of trading in these instruments. This will deepen money market and the rate at which this instrument will be traded can be taken as the benchmark for pricing and structuring other products. Since the source of funds and use of funds both use the same benchmark as in the current system, adopting an alternative benchmark on the source of funds side can be used in pricing commercial banking products on the use of funds side.

Khan (2004) argued against elimination of interest by a legal decree and favored free market forces to bring the interest rates down to zero. He emphasized on providing incentives for the use of equity over debt financing. He proposed following policy measures: i) reducing reserve requirements to increase supply of loanable funds; ii) enforcing unlimited liability; iii) gradual decline in interest to make investments in debt based instruments less lucrative and shift loanable

funds towards equity based instruments; iv) allowing dividend as a tax deductible expense; and v) providing fiscal incentives to non-leveraged firms and disincentives to leveraged firms.

Hanif and Sheikh (2010) recommend the use of a nominal gross domestic product growth rate (NGDPGR) as a benchmark rate. They argue that the appeal in the use of NGDPGR is that not only can it be used as a base rate for the banking sector but also for central banks as their monetary policy tools that encompass both the conventional and Islamic financial systems. In their analysis using data from various countries, they showed that there is no statistical differences between NGDPGR and various benchmark rates (for example, discount rate, treasury bill rate, deposit rate) used in those countries under study. Therefore, this instrument can be used for indexing financing for public exchequer and could also be a major investment alternative for money market players as well as an alternate to OMO.

Data and Methodology

Data (see Appendix 1) used in this study is from the secondary source, World Bank Data Base and Bank Negara Malaysia. An estimated OLS model is used in this study by using annual Malaysian data on macro-economic indicators, which includes: Real Interest Rate, GDP growth rate, Gross National Income (GNI) growth rate, Gross savings(% of GDP), Inflation Rate (consumer price index), Real effective exchange rate, FDI net inflow(% of GDP) for the period 1983 – 2013. The correlation and multiple regression analysis of the ordinary least square (OLS) is the estimation technique that is being applied in this study to determine the impact of the independent variables on Real Interest Rate and GDP growth rate. Moreover, in order to run OLS regression we have conducted the following diagnostics tests: Jarque-Bera test for normality, Heteroskedasticity Test: Breusch-Pagan-Godfrey and Breusch-Godfrey Serial Correlation LM Test.

List of variables

RIR	Real Interest Rate (%)
GDP	GDP growth rate (%)
GNI	Gross national income growth rate (%)
FDI	Net Foreign Direct Investment percentage of GDP (%)
LOGGS	Log of Gross savings percentage of GDP (%)
LOGRXR	Log of Real Effective Exchange Rate (%)
INF	Inflation, consumer price (%)

As literature constantly mention fundamental objectives of efficient monetary policy are to maintain stable inflation, strong currency, sustainable growth, higher savings, and investment. In order for that we have chosen the following variables to check relationship and recommend a model which are briefly defined in the following section.

Variables explained:

Real interest rate: Real interest rate is the lending interest rate adjusted for inflation as measured by the GDP deflator.

Real effective exchange rate index (2010 = 100): Real effective exchange rate is the nominal effective exchange rate (a measure of the value of a currency against a weighted average of several foreign currencies) divided by a price deflator or index of costs.

GDP growth (annual %): Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2005 U.S. dollars. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.

GNI growth (annual %): GNI (formerly GNP) is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad.

Foreign direct investment, net inflows (% of GDP): Foreign direct investment are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors, and is divided by GDP.

Gross savings (% of GDP): Gross savings are calculated as gross national income less total consumption, plus net transfers.

Inflation, consumer prices (annual %): Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly. The Laspeyres formula is generally used.

Model Specification (An OLS estimation)

Model:1
Model which specifies that Real Interest Rate is significantly influenced by the Inflation Rate, Real effective exchange rate, Gross National Income(GNI) Growth Rate, Gross savings, FDI net inflow are formulated as follows;

RIR = f (INF, EXR, GNI, GS, FDI)

RIR = $\beta_0 + \beta_1$ GNI + β_2 FDI + β_3LOGGS+ β_4 LOGRXR +β_5INF

RIR	Real Interest Rate (%)
GNI	Gross national income growth rate (%)
FDI	Net Foreign Direct Investment percentage of GDP (%)
LOGGS	Log of Gross savings percentage of GDP (%)
LOGRXR	Log of Real Effective Exchange Rate (%)
INF	Inflation, consumer price (%)

β_0 = intercept
$\beta_1 - \beta_6$ = Coefficient of the independent variables

Model 2:
Model which specifies that GDP growth rate is significantly influenced by the Inflation Rate, Real effective exchange rate, Gross National Income(GNI) Growth Rate, Gross savings, FDI net inflow are formulated as follows;

GDP = f (GNI, FDI, LOGGS, LOGRXR, INF)

GDP = $\beta_0 + \beta_1$ GNI + β_2 FDI + β_3 LOGGS+ β_4 LOGRXR +β_5INF

GDP	GDP growth rate (%)
GNI	Gross national income growth rate (%)
FDI	Net Foreign Direct Investment percentage of GDP (%)
LOGGS	Log of Gross savings percentage of GDP (%)
LOGRXR	Log of Real Effective Exchange Rate (%)
INF	Inflation, consumer price (%)

β_0 = intercept
$\beta_1 - \beta_5$ = Coefficient of the independent variables

Analysis and interpretation of Result

Table 1

Correlation matrix of Islamic vs Conventional interbank rate

	Islamic interbank rate	Conventional interbank rate
Islamic interbank rate	1.0	0.90***
Conventional interbank rate	0.90***	1.0

Notes: ***. Correlation is significant at the 0.001 level (2-tailed).

To investigate the difference between current Islamic and conventional money market we have taken six months data (figure 1) from Bank Negara Malaysia database. We have observed that there is no statistically significant difference between these two rates and they are highly correlated with each other.
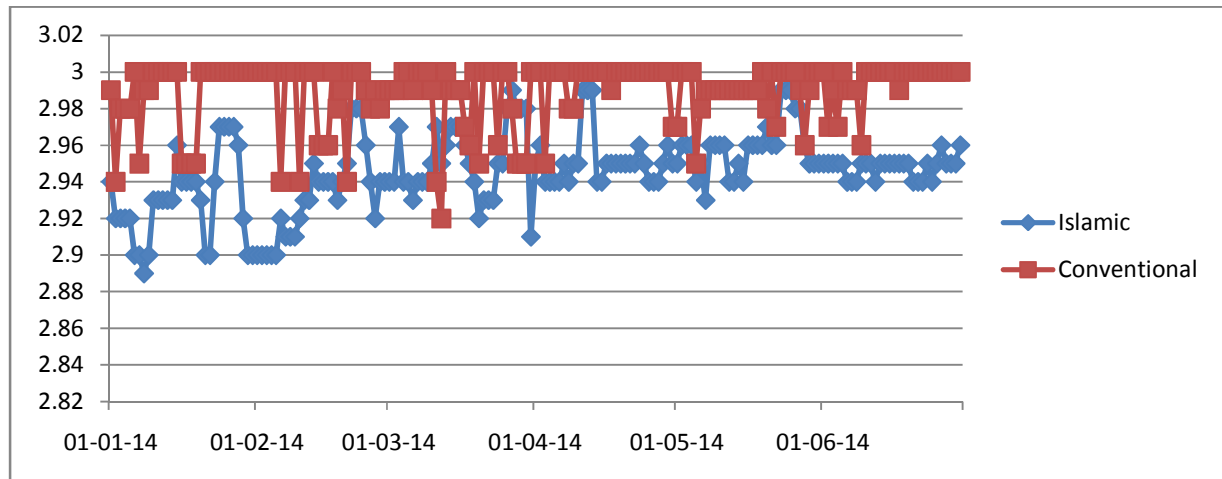

Figure 4: Islamic interbank rate vs. Conventional interbank rate (January – June 2014)

Table 2
Descriptive statistics

	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis
RIR	3.842	3.944	11.782	-3.903	3.372	-0.189	3.341
GDP	5.899	6.274	10.003	-7.359	4.023	-1.549	5.366
FDI	3.945	4.073	8.763	0.057	2.038	0.397	3.095
GNI	5.909	6.721	10.668	-7.560	3.991	-1.484	5.642
LOGGS	3.480	3.528	3.685	3.099	0.162	-1.002	3.175
LOGRXR	4.729	4.678	5.202	4.520	0.194	1.062	3.321
INF	2.647	2.704	5.441	0.290	1.413	0.109	2.236

The table 1 shows us the basic descriptive statistics of all variables which are used in the quantitative analysis.

Table 3

Correlation matrix of variables

	RIR	GDP	GNI	FDI	LOGGS	LOGRXR	INF
RIR	1.000						
GDP	-0.076	1.000					
GNI	-0.055	0.970**	1.000				
FDI	-0.002	0.587**	0.537**	1.000			
LOGGS	-0.194	0.043	0.071	0.228	1.000		
LOGRXR	0.230	0.120	0.069	-0.019	-0.840**	1.000	
INF	-0.150	0.204	0.141	0.591**	0.280	0.000	1.000

**. Correlation is significant at the 0.01 level (2-tailed).

Interest as monetary tool in conventional way is negatively related to GDP (r=-0.076) and positively related to inflation but in our study it shows it is negatively correlated (r=-0.150), this may be due to relatively low and stable inflation rate for a long time in Malaysia. Normally, the central bank will adjust the interest rate accordingly based on their economic objective that is whether it is for inflation targeting or growth targeting.
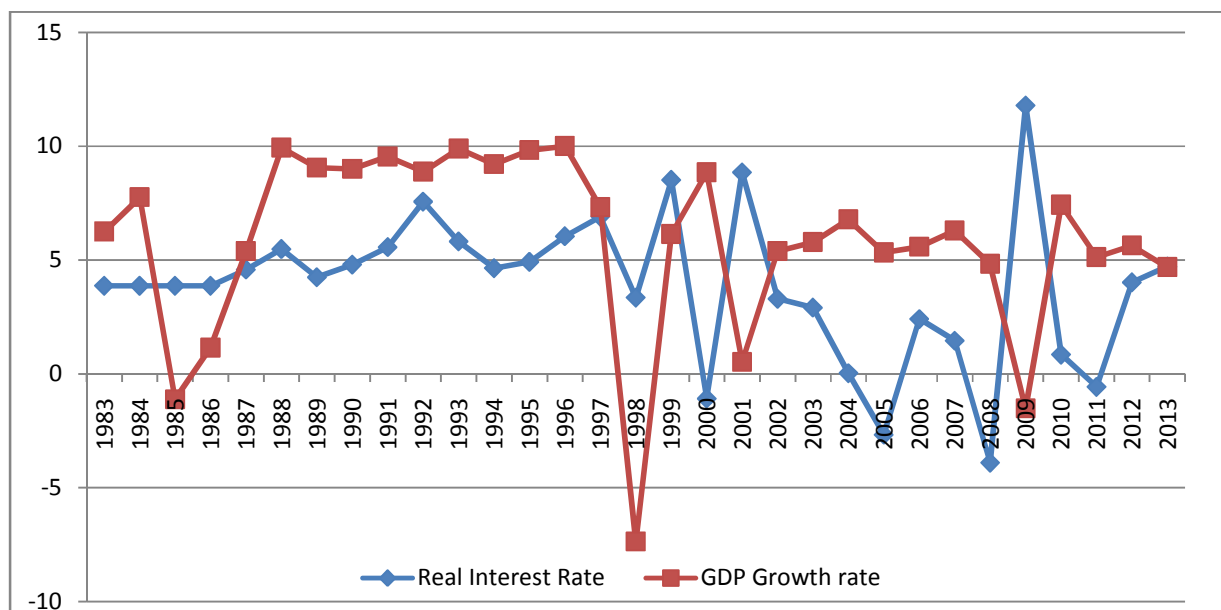

Figure 5: Real Interest Rate vs GDP Growth Rate in Malaysia (1983-2013)

On the other hand GDP growth rate is positively correlated with GNI growth rate and FDI net inflow. In other words, higher GNI and FDI growth will lead to increase in GDP growth rate which is supported by the literature. Moreover, Inflation is positively correlated with GDP growth rate which indicates low and moderate inflation can stimulate growth of an economy.

Table 4

Model 1 Summary (OLS estimation)

Dependent Variable: RIR

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	4.149*** (1.103)	4.003** (1.414)	18.788 (14.069)	-16.098 (56.722)	-45.622 (60.971)	-26.811 (53.678)
GNI	-0.048 (0.157)	-0.065 (0.189)	-0.076 (0.192)	-0.086 (0.195)	-0.161 (0.202)	-0.934** (0.320)
FDI		0.063 (0.370)	0.155 (0.386)	0.093 (0.403)	0.424 (0.480)	-1.799 (0. 873)
LOGGS			-4.341 (4.100)	0.064 (8.081)	4.465 (8.749)	2.431 (7.678)
LOGRXR				4.189 (6.609)	7.467 (7.051)	5.907 (6.186)
INF					-0.797 (0.643)	-0.338 (0.059)
GNI*FDI*LOGGS						0.081** (0.029)
R^2	0.003	0.004	0.045	0.060	0.117	0.353
Adjusted R^2	-0.031	-0.067	-0.065	-0.090	-0.067	0.185
F-Value	0.092	0.059	0.410	0.401	0.635	2.097
Probability	0.760	0.943	0.747	0.805	0.675	0.093

Notes: Standard errors are in the parentheses. *, **, and *** denotes statistical significance at the 10%, 5% and 1% levels respectively.

Table 5

Model 2 Summary (OLS estimation)

Dependent Variable: GDP

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.107	-0.312	3.573 (3.886)	-10.234 (15.534)	-7.397 (17.159)	-12.187 (15.601)
GNI	0.978*** (0.046)	0.928*** (0.052)	0.924*** (0.053)	0.920*** (0.053)	0.927*** (0.057)	1.124*** (0.093)
FDI		0.183* (0.102)	0.0627* (0.107)	0.183 (0.110)	0.151 (0.135)	0.717** (0.254)
LOGGS			-1.135 (1.132)	0.608 (2.213)	0.186 (2.462)	0.701 (2.232)
LOGRXR				1.661 (1.810)	1.348 (1.984)	1.745 (1.798)
INF					0.077 (0.181)	-0.040 (0.170)
GNI*FDI*LOGGS						-0.021** (0.008)
R^2	0.941	0.947	0.949	0.951	0.951	0.961
Adjusted R^2	0.939	0.943	0.943	0.943	0.941	0.952
F-Value	459.565	248.890	160.660	119.978	92.866	96.078
Probability	0.000	0.000	0.000	0.000	0.000	0.000

Notes: Standard errors are in the parentheses. *, **, and *** denotes statistical significance at the 10%, 5% and 1% levels respectively.

In the first model (Table 4), the result of OLS estimation indicates that real interest rate is not reflected in overall growth of the economy, not statistically significantly correlated with net inflow of foreign direct investment, gross savings, real exchange rate and inflation and only little impact when three key variables combined. In other words, increase in all three factors together would increase real interest rate by only 0.081% holding other parameters constant. However, real interest rate is negatively correlated with gross national income; in other words, increase in GNI by one point would lead to decrease in real interest rate by 0.934% assuming Ceteris paribus. It can be explained in another way, increase in real interest rate would discourage production and investment activities which will lead to decrease in gross national income. Nevertheless, the estimated model shows real interest rate is very weakly (R^2 =0.117; P-value =0.675) explained by key macro economic variables.

On the other hand, in the second model (Table 5) result of the analysis shows that gross national income and net foreign direct investment are significantly correlated with gross domestic product growth rate (**r**=0.97; p=0.001 and r=0.58; p=0.001). From the OLS estimation (3) we can explain that increase in GNI by one unit would contribute in 0.93 % of GDP growth rate. This of course is quite significant which need further investigation or variable itself is super exogenous. At the same time, increase in FDI by one unit would lead to increase in GDP growth rate by 0.063%. In other words, if we can predict gross national income and net inflow of foreign direct investment we can predict the GDP growth rate more accurately. In addition to that, when we added more dependent variables to see the impact of these variables on GDP growth rate, we observe that explaining power of the model increases. In other words, inclusion of gross savings, real exchange rate and inflation help better explaining the change in GDP growth rate (Adjusted R^2 =0.952; p=0.001). However, when we try to see the impact of three variables jointly namely gross national income, net inflow of foreign direct investment and gross savings, we find that the model even explain better but there is a sign change for inflation and decrease in coefficient from 0.077 to -0.040 which indicates weakness in this model (6). From the above discussion, we can conclude that in the model 2 option 4 and 5 better reflects the overall aim of Islamic monetary policy and estimate GDP growth rate much more accurately.

In Islamic economic system main objectives of monetary policy are: to promote a sustained and balanced economic growth and mobilize resources for economic development; to maintain stability in the value of money so as to avoid excessive periodic fluctuations; to maintain stability in the external value of money to promote an equitable distribution of income and wealth. Therefore, we can argue that it is reasonable to use GDP growth rate as the benchmark for making and refining instruments for money market. It is unlike a bond indexed for inflation which is not recommendable as inflation does not always imply growth in production especially in stagflation. Moreover, inflation is more subjective and relative a measure to index an instrument with. Moreover, if Indexation for inflation allowed in financial intermediation at broad based level, then it is not practicable in the financial system. As interest rate is prohibited in Islamic economic system, and all loans linked with inflation, then more the loans taken, more will be the credit money generation (assuming fractional reserve system) and more will be the inflation. For those who had nothing to do with all this who were neither the borrowers nor the

lenders, they will be suffering with this inflation and this cannot be controlled since there is no interest rate mechanism. So, we also need to think of how to control inflation which is in essence a tax, as argued by many economists rather than encouraging indexation for inflation and thereby fueling expected inflation.

Potential Problems and Measures with the Proposal

Shaikh and Hanif (2009) argue that in recession, Real GDP may be negative, but NGDP growth rate will be positive. They ask question whether it will not give an undue upward bias to the cost of capital when the production to which it is linked with is not increasing in recession.

They further argue that stagflation and cost push inflation can be better tackled with better supply chain management, reducing intermediaries, promoting market competition. Scarcity of Capital created by interest can better be managed through a high wealth tax and inheritance tax (Piketty, 2014) i.e. Zakat (2.5% on wealth, 5% and 10% on production) in an Islamic economy. This will boost up production, improve competition and remove obstacles giving rise to cost push inflation and increase revenues for the government by increasing the tax base. Inflation is most likely to be low in recession and hence GDP growth rate won't be that high. Even if it is high, private sector financiers like banks would give financing based on Cash Flows discounted on that GDP growth rate. Therefore, cost would have to be paid by the financees who have higher Cash Flows discounted on GDP growth rate.

We could argue that by including inflation in the public and corporate finance with the benchmark rate, GDP growth rate, which takes into account inflation; As a result the government do not need to resort to printing paper money, quantitative easing, to meet the fiscal deficit. If necessary changes are made to avoid budget deficits paper money may not need to be printed often and seigniorage, profit made by a government by issuing currency, will not be presented as a compelling problem.

Conclusions

This study reviewed literature on early Islamic monetary system and contemporary Islamic monetary policy and the current practices followed by the central bank in Malaysia. Three main goals of Islamic monetary policy are: a) economic well being with full employment and optimum rate of economic growth; b) socioeconomic justice and equitable distribution of income and wealth and c) stability in the value of money. A comparative literature review of Islamic and conventional monetary policy revealed that there are many monetary policy instruments which can be adopted in Islamic monetary policy with or without major modifications such as: Legal Reserve Ratio, Credit Rationing, Selective credit control, Issue of directive, and Moral suasion. At the same time, Islamic economists and researchers have come up with instruments which are unique and Shariah compliant such as: Profit sharing ratio, Refinance ratio, Public share of demand deposits, Value oriented allocation of credit, and Qard Hasan ratio. The success of Islamic money market operations in Malaysia weighs in favour of those who advocate the development of a sustainable framework for Sharia compliant monetary policy. For the last two decades an increasing number of Islamic monetary management tools and policies have been

developed by financial institutions and markets in Malaysia and other Muslim countries around the world. After such a long time of great moderation, a reduction in the volatility of business cycle fluctuations starting in the mid-1980s, believed to have been caused by institutional and structural changes in developed nations in the later part of the twentieth century, the recent global financial crisis has proven to us that interest rate which is the definitive instrument of monetary policy regulation has not only failed to control the economic system but also has created inequality, social injustice and rampant corruption and manipulation by global financial institutions supported by government officials. For example, during the recession the USA and many European countries have intentionally violated the so called market principles and intervened overwhelmingly to protect many giant financial institutions. In this context, it is the order of the day to look for a realistic and sustainable alternative of Interest rate, which is abhorrently prohibited in Islamic economic system. As a result, we need to look for an alternative approach to run and control monetary policy in a sustainable way and rate of interest, which is fixed without considering real sector and real economy cannot solve the problem of high inflation, savings, income, investment, and growth of an economy. Therefore, we are arguing to replace real interest rate with GDP growth rate linked instrument which could provide a benchmark rate for pricing products in Islamic commercial banking and provide an avenue for investment in the Islamic money market and capital market for example GDP growth linked Sukuk (Bacha and Mirakhor, 2013). The GDP growth linked benchmark can also be used to benchmark domestic debt as well as foreign debt. Central Bank in an interest free economic framework will continue to have statutory reserve ratio to contain money supply and credit creation. Introducing GDP linked instruments would provide a base instrument for OMO and create a secondary market for the instrument. Using Refinance ratio, Qard-e-Hassan Ratio Issue of directive, and Moral suasion the central bank will be able to manage liquidity in the banking sector. We can conclude that further research is required in this area specially by taking more countries and longer time periods in order to see the relationship and consistency across countries, region and economy.

References:

Ariff, M. (1982). Monetary Policy in an Interest-Free Islamic Economy – Nature and Scope, in Ariff, M. (ed.), *op. cit.*, 287–302.

As-Sadr, K. (1989). Money and Monetary Policies in Early Islamic Period. *dalam Al-Hasani & Mirakhor," Easy on Iqtishad: The Islamic Approach to Economic Problems", Silver Spring: Nur Corp*, 199-217.

Bacha, O. I. (2008). The Islamic inter bank money market and a dual banking system: the Malaysian experience. *International Journal of Islamic and Middle Eastern Finance and Management*, *1*(3), 210-226.

Bacha, O. I., & Mirakhor, A. (2013). Islamic Capital Markets and Development. *Economic Development and Islamic Finance*, 253.

Chapra, M. U (1996). Monetary Management in an Islamic Economy‖, *Islamic Economic Studies*, 4(1), December, 1–35.

Chapra, M. U., & Chapra, M. U. (1992). *Islam and the economic challenge*. Leicester: Islamic foundation.

Chapra, M. U. (1985) " *Towards a Just Monetary System*, The Islamic Foundation, UK.

Choudhry, N. N., & Mirakhor, A. (1997). Indirect instruments of monetary control in an Islamic Financial system. *Islamic Economic Studies*, *4*(2), 27-66.

Clarida, R., Gali, J., & Gertler, M. (1999). The science of monetary policy: a new Keynesian perspective (No. w7147). National bureau of economic research.

Hanif MN, Shaikh S (2010). Central banking and monetary management in Islamic finance environment. J. Ind. Stud. Res., 8(2).

Halid, N., & Latiff, R. A. (2012). Developing reference rate of return based on real sector economy: A case of Malaysia. *African Journal of Business Management*, *6*(8), 2871-2877.

Iqbal, Munawar & Khan, M. Fahim (1981) A Survey of Issues and a Programme for Research in Monetary and Fiscal Economics of Islam, International Centre for Research in Islamic Economics, King Abdulaziz University, Jeddah and Institute of Policy Studies, Islamabad.

Khan, M. S., & Mirakhor, A. (1994). Monetary management in an Islamic economy. *Islamic Economics*, *6*(1), 3-22.

Lars E. O. Svensson, http://people.su.se/~leosven/, January 26–27, 2004, (accessed October 28, 2014).

Mirakhor, A. (1996). Cost of capital and investment in a non-interest economy. *Islamic Economic Studies*, *4*(1), 35-46.

Piketty, T. (2014). *Capital in the Twenty-first Century*. Harvard University Press.

Sari, N. M., & Mirakhor, A (2012). Islamic Monetary Policy in Malaysia: A Conceptual Framework. 2ⁿᵈ ISRA Colloquium "Islamic Finance in a Challenging Economy: Moving Forward"

Shaikh, S. A., & Hanif, N. (2009). Role and Functions of Central Bank in Islamic Finance. *J. Ind. Stud. Res., Also available at SSRN: http://ssrn. com/abstract*, *1709368*.

Tahir, S. (2013). Fiscal and Monetary Policies in Islamic Economics: Contours of an Institutional Framework. *Islamic Economic Studies*, *21*(2), 1-22.

Zangeneh, H., & Salam, A. (1993). Central banking in an interest-free banking system. *Islamic Economics*, *5*(1), 25-35.

Woodford, M., & WALSH, C. E. (2005). Interest and prices: Foundations of a theory of monetary policy.