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Monetary Policy Instruments and Inflation: An Islamic Perspective

Farah ELIAS ELHANNANI, Nasreddine BENCHAIB, Mohamed BENBOUZIANE

Abstract— The efficiency of the monetary management of any government is assessed by its ability to reduce and stabilize the inflation rate. Hence, this latter is the first target of any monetary policy. Although that the term « inflation » is recent, this monetary phenomenon has been observed many centuries ago. In this context, Islamic thinkers described the phenomenon as the cheapness of money.

This research discusses the management of money to fight inflation in an Islamic finance framework focusing on the prohibition of interest « RIBA » against the classical monetary policy which concentrates on this factor « interest » as a key channel to reduce inflation. The paper starts with the traditional view to the inflation phenomenon and a comparison between conventional and Islamic finance principles. Then, it discusses the instruments of the Islamic monetary policy and their effectiveness to reduce inflation by providing some recent experiences. Our main findings clearly show that the traditional monetary management is less effective than the one based on Islamic principles, but however such effectiveness depends on the human factor and its ability to apply such monetary instruments.

***Index Terms*— Inflation, Money, Monetary policy, Islamic finance, Interest.**

I. INTRODUCTION

One of the most important challenges of any government is the sustained increase in the price level or the higher inflation rates. Regarding macroeconomic policies, inflation is the first target of any monetary policy and the efficiency of this policy is assessed by its ability to reduce inflation. As it represents a sustained rise in the price level, inflation results in a reduction of the money value. Although that the term « inflation » is recent, this monetary phenomenon has been observed many centuries ago. In the context of Islamic finance, inflation is defined as a cheapness of money.

In the conventional economic system, there exist several direct and indirect instruments of monetary policy to fight the inflation where the interest rate is the key channel. However, the recent financial crises revealed the failure of the conventional monetary system. Alternatively, there is a rapid growth in the practices of Islamic finance in Muslim and non-Muslim countries. Inflation and the monetary management take an important part in Islamic economic framework in which there exists a large literature which provides a set of monetary policy instruments working under the Shari'ah (Islamic law).

This research discusses the management of money to fight inflation in an Islamic finance framework focusing on the prohibition of interest « RIBA » against the classical monetary policy which concentrates on this factor « interest » as a key channel to reduce inflation. Our paper is divided into the following sections: the first section tackles the problem of inflation in the different economic theories and Islamic history. The second section provides the Islamic finance principles while the third one explains the monetary policy under these principles. In the forth section we show the practices of Islamic monetary policy in four Muslim countries and assess the inflation trend in those countries.

II. THE TRADITIONAL VIEW OF INFLATION

Inflation as a phenomenon is not really new, it has been observed many centuries ago when the price level and money value changed responding to changes in gold and silver available quantities. However, this phenomenon started to take interest since the occurrence of the fiat money. In practice, inflation; the condition of a continually rising price level; has become a major concern of economists and politicians. It is one of the most important monetary policy targets.

2.1 **Inflation in the quantity theory of money:**

The quantity theory of money is one of the oldest economic doctrines. It has been developed by the classical economists in the 19^{th} century. Under the assumption that the velocity of money is constant and the level of aggregate output *Y* produced in the economy during normal times would remain at the full-employment level, the theory asserts that an increase in the price level results solely from the increase in the quantity of money. This can be shown clearly by the equation of Irving Fischer (1876-1947):

$$MV= PY \Rightarrow \uparrow M - \frac{1}{\bar{V}} \uparrow P\bar{Y}$$

The equation implies that if M (the quantity of money) doubles, P (the price level) must also double in the short run because V and Y are constant.[1]

2.2 Demand-pull theory of inflation:

Demand-pull theory focuses on the Keynesian theory of aggregate demand. Keynes and his followers emphasize the increase in aggregate demand as the source of demand-pull inflation. Aggregate demand is composed of consumption, investment and government expenditure.

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Farah ELIAS ELHANNANI, University of Tlemcen, Algeria
Nasreddine BENCHAIB, University of Tlemcen, Algeria
Mohamed BENBOUZIANE, University of Tlemcen, Algeria

[1] Mishkin F., « The economics of money, banking and financial markets », Colombia University, Seventh edition, 2004, P519.

According to the Keynesian theory, an increase in money incomes will lead to an excess of aggregate demand over aggregate supply at the full employment level.[2]

On the other hand, Keynesians argued that even before reaching the full employment production factors, an increase in the aggregate demand can lead to a small rise in prices. This fact is due to the non-ability of producers to respond to the increasing demand. In this case, the policy that is effective to decrease the price level is the increase in taxes which will reduce the pressure demand.

2.3 The monetary theory of inflation:

Referring to the quantity theory of money, Milton Friedman 1956 developed the monetary theory and argued that only money matters. Friedman held that: inflation is always and everywhere a monetary phenomenon that arises from a more rapid expansion in the quantity of money than in total output. According to Friedman and followers (monetarists), the monetary policy is a more potent instrument than fiscal policy in economic stabilization.

2.4 Islamic view of inflation:

In an Islamic framework, inflation is the cheapness of money. The phenomenon was experienced in early Islamic history because of the influx of gold and silver and the occurrence of new copper coins known as "Fulus". Indeed, the ratio between the gold and silver coins has declined to 1:12 in the second half of the Ummayad period and to 1:15 in the Abbasid period after being stabilized over the era of the prophet Muhammad (P.B.U.H) and the four caliphs with 1:10.[3]

Al-Makrizi (845/1442) argued that the instability in gold-silver ratio enabled bad coins to drive good coins out of circulation[4] and he added that the fact of copper coins (Fulus) abundance worsened the situation. Accordingly, inflation phenomenon is due to the abandonment of gold and silver standard.[5]

The supply and demand analysis to explain the rise of price level has also taken a place in Islamic thought. For instance, Ibn-Khaldun emphasized that both an increase in demand or a fall in supply leads to a rise in prices.(for more details refer to Chapra 2008).

III. Islamic finance principles

Islamic finance as an important part of Islamic economics, is broadly based on some principles (prohibitions and encouragements) which any institution in the Islamic financial system should take them seriously, referring to the sources of Sharia'ah (Holy Quran and Sunnah):

3.1 **Avoiding interest (Prohibition of Riba):**

In contrast to the conventional system which focuses on the interest rate, the Islamic theory of finance prohibits this factor. The interest factor is called in Sharia'ah "Riba" and means any excess return derived on a loan or debt. It represents the return on transactions involving exchange of money for money, or an addition, on account of delay in payment, to the agreed price on sale debts/debts[6]. The prohibition of interest (Riba) is mentioned in a clear verse in the holy Quran: *"Allah has allowed trade and prohibited Riba" 2:275.* Hence, lending on interest is alien to Islamic banks and financial institutions.

3.2 **Avoiding Gharar:**

The second pillar of Islamic finance is to avoid Gharar. Gharar refers to entering into a contract in absolute risk or uncertainty about the ultimate result of the contract and the nature and/or quality and specifications of the subject matter or the rights and obligations of the parties. In fact, Islamic banks should not enter in any bargain or contract in which the results are hidden. Furthermore, this principle (prohibition of Gharar) requires Islamic banks not to engage in speculative trade in shares, short-selling, discounting of bills and securities or trading in unidentified items. This prohibition is mentioned in the Sunnah "*Don't buy fish in the sea, it is Gharar" Cited by Ahmed.*

3.3 Alternative principles:

In the absence of interest and other prohibited transactions, Islamic financial institutions have several tools and techniques to do their business based on profit sharing and participation principles. Islamic scholars argued that the profit and sharing risk concepts are more efficient. Abdu-Alhamid Alghazali defined the profit as a standard which conducts the use of capital under more logic; socially equal and economically efficient principles.[7]

The different tools available for Islamic banks are defined briefly:[8]

1. Mudarabah is a partnership arrangement in which one party provides capital to the partnership while the other party provides entrepreneurial skills. Any loss is borne by the financier; any profit is shared by the partners according to a pre-agreed ratio.
2. Musharakah may take the form of a permanent equity investment, a partnership in a specific project having a fixed duration or a diminishing partnership (the bank's share is reimbursed over time by the company acquiring funds), especially for housing and other fixed asset financing that could be leased.
3. Murabaha–Mu'ajjal involves acquiring goods upon a customer's demand or otherwise and their credit sale at a profit margin. It results in debt covering the cost plus a profit margin. This debt has to be paid back irrespective of profit or loss to the person or institution that purchased on credit and suffered loss or the wares destroyed in his ownership. To this effect, we come across a very important reference relating to the period of the second Pious Caliph of Islam Umar (Gbpwh). As reported by Ibn-e-Jarir Tabari (d. 310 AH), "Hind bint-e Utbah came to Umar and asked for a loan of 4000 (dinars) from the public exchequer so that she could trade with it and

[2] Totonchi J., « Macroeconomic theories of inflation », International conference on economics and finance, Singapore2011, P460.

[3] Chapra M.U., « Monetary management in islamic economy », Islamic economic studies, Vol4 No1, December 1996, P1.

[4] The phenomenon known as Gresham's law.

[5] Ben Daas D., « Monetary policy in conventional and islamic systems : comparative study », Dar ELKHALDUNIA, Algeria, 2007, P134. (Arabic version)

[6] Ayub M., « Understanding Islamic finance », Wiley and sons, England, 2007, P73.

[7] Alghazali Abdulhamid, "Profits and interests between the economic analysis and Islamic law" High institute of research, Jaddah, 1994, P23.(Arabic version)

[8] Ayub M., « Understanding Islamic finance », ibid,P76.

became liable to pay back the same. After getting the amount, she went to the area of banu kalb and engaged in trading; but she suffered loss. Umar (Gbpwh) said the loan could not be waived as it was from the public exchequer."

4. Salam involves providing funds against the forward purchase of precisely defined goods with prepayments.
5. Ijarah involves leasing an asset and receiving rentals; so long as the asset is on lease, the lessor owns the asset and the risk and reward of its ownership.
6. Istisna'a involves engaging a person that could also be a financing agent to manufacture or construct and supply an item at some future date for an explicit sum on periodic payment. The agent contracts with a manufacturer to produce the commodity and the customers make payments to cover the production price and the profit margin.

3.4 Role of ethics

In addition to the main prohibitions (interest and Gharar), Islamic Shari'ah provides a set of ethnical norms that govern the rights and obligations of economic parties and conduct economic and financial transactions. These norms are related to the accountability of human beings and their behaviour between them. Giving people their due right is the cardinal principle of the Islamic system of ethics namely equity and justice. Some encouragements like benevolence, purification of income, proper transparency and disclosures, documentation of transactions leading to precision about the rights and liabilities of the parties and comprehensive ethics requiring care for others are also part of the Islamic framework of business norms.[9]

IV. Islamic Monetary Policy

Inflation has always been a challenge for the economic society particularly for monetary authorities which try to fight it and keep prices stabilized. Unlike the conventional system, Islamic financial system applied in many countries deals with the inflationary phenomenon taking into consideration the principles discussed above. Hence, the Islamic theory of finance gives to central banks a set of monetary instruments to fight inflation and get the other objectives of monetary policy.

4.1Islamic monetary policy instruments:

It is the prohibition of interest which makes the difference between Islamic monetary policy instruments and conventional ones:

A. Required reserve ratio:

This ratio is the percentage of deposits that a commercial bank must hold in a form determined by the central bank.[10] The required reserves preserve the depositors' rights and push them to invest their money in banks. This instrument does not conflict with Shari'ah, it is free from interest. The central bank under Islamic principles can use it to curtail the availability of the loanable funds and money supply so that it can sterilize the uprising prices (inflation):

$$\uparrow RRR \rightarrow \downarrow credits \rightarrow \downarrow MS \rightarrow \downarrow P$$

The Islamic central bank can also use these reserves in the economic activity either by financing some sectors with priority or to give them to governments as "Qard Hassan"[11]

B. Profit sharing ratio

This instrument is available just for Islamic central banks and it replaces the interest rate as a tool of credit control in the conventional central banking. In an Islamic banking system, the money supply and the level of economic activity will be governed by profit sharing arrangements between the commercial banks and their clients on the one hand, and the banks and their depositors on the other. Thus, the central bank will regulate the "investments' share ratio" and the "depositors' share ratios".[12]

This ratio has a direct effect on money supply and the central bank can change it according to the economic activity situation. In IFS money creation is backed by increase in production that leads to no inflation, Laliwala (1982). That is, the central bank can raise the investors and depositors share ratios to enhance the investment and production and to absorb the excess money supply from depositors.

C. Open market operations

Open market operation is the fact of buying and selling government securities, gold and currency reserves by the central bank in order to influence the availability of credits and money supply. Because of the prohibition of Riba, securities with interest rate are not permissible in the open market operations in IFS. Ariff (1982) talked about interest-free bonds, in his side, Siddiqi (1982), visualised that the central bank could buy or sell commercial papers in the open market. It is also permissible for the central bank to deal with stocks since they have profit principle instead of interest rate. However, other Islamic scholars find these tools particularly commercial papers unacceptable because they offer an unlimited scope for wild speculation and all speculations are un-islam (Khan Akram 1982). This divergence in the Islamic views about open market operations implies a very limited scope for open market operations as an instrument of monetary policy in an Islamic economy.

D. Refinance ratio

The Refinance Ratio'[13] refers to the offer of the Central Bank to provide additional cash to the commercial banks to the extent of a certain percentage of the interest-free loans granted by them. Raising or lowering this ratio will have the effect of expanding or contracting the supply of short term credit by the commercial banks. For example, in order to encourage *Qard Hasan*, the central bank may lay down that it would refinance, free of charge, to the extent of, say 30 percent, or any other percentage of total loans of that particular type granted by commercial banks to the public.

E. Moral suasion

This qualitative instrument does not differ to the one in the conventional system. This method is used to influence and/or persuade member banks to implement the central bank policies in true spirit. This can be a greatly useful instrument

[9] Ayub M., ibid, P64.

[10] ZANGENEH Hamid and SALAM Ahmed, « Central banking in an interest-free banking system", Islamic economics, Vol5, 1993, P29.

[11] Ben Daas D., « Monetary policy in conventional and islamic systems : comparative study ", ibid, P242.

[12] ZANGENEH Hamid and SALAM Ahmed, « Central banking in an interest-free banking system",ibid, P31.

[13] Siddiqi M.N. "Islamic Approach to Money, Banking and Monetary Policy - A Review", Arrif book, 1982, P59.

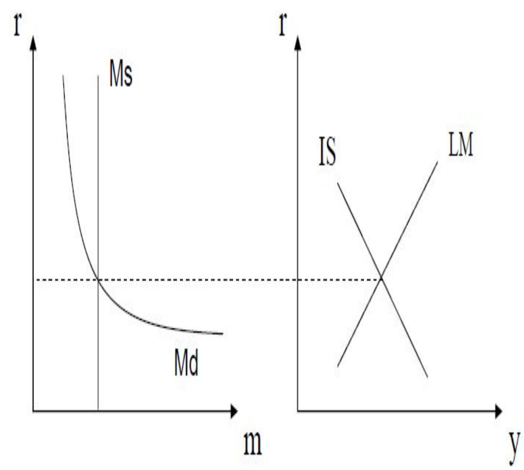
of control in an interest-free Islamic system that must depend on collective consensus building for its affairs.

4.2 IS-LM analysis under Islamic framework

As we have shown in the first section, inflation is always a monetary phenomenon. Majority of Islamic scholars believe that the monetary policy should be executed through stock of money. Although the interest rate is forbidden in Islamic system, but it is possible to use the IS-LM analysis in Islamic perspective by including the profit sharing ratio instead of the interest rate in the conventional system.

In the conventional system, IS-LM model displays the aggregate supply and aggregate demand analysis in which the IS curve shows the combinations of total output and interest rates that ensure goods market equilibrium, and the LM curve shows the combinations of total output and interest rates that ensure money market equilibrium.

Figure1: equilibrium in money market and IS-LM curves



Source: kiaa H., "monetary policy in islamic economic framework: the case of Islamic republic of Iran", P6.

The central bank intervenes with its monetary policy to control the inflation by declining the volume of money using monetary instruments. A contractionary monetary policy declines the money supply directly by using aggregate money control instruments[14] or by increasing the interest rate in open market operations which in turn leads to a decrease in money supply because of the negative relationship between interest rates and speculative demand for money. Thus, the LM curve will move to the upward which creates a new equilibrium point of the model.

In an Islamic economics framework, the IS-LM analysis for monetary policy does not totally differ. The Islamic scholars included the concept of profit loss sharing ratio (PLS) in the place of interest rate. Iqbal and Alasaly (1991) modified an IS-LM model for Islamic economy:

Equilibrium in the Goods Market – The IS Curve:

$Y = C + I + G_t + G_Z$

$C = f(Y_d)$ $f'>0$ $\quad Y_d = Y - T - Z$

$Z = z.S$ - - - - - - [Zakah is on savings.]

$I = I(P)I' < 0)$ - - - - - P is a PLS ratio

G_t and G_Z are tax- and zakah-based government expenditures, respectively (Exogenously given)

Equilibrium in the Money Market – The LM Curve:

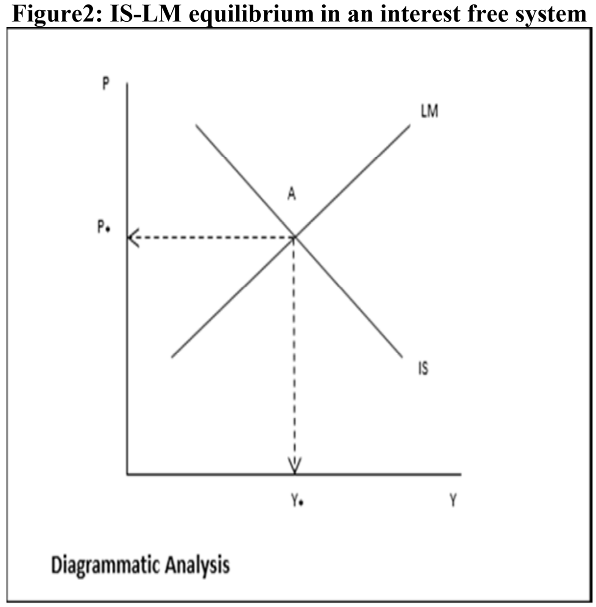
$M_s = M_d$

$M_s = M_0$

$M_d = m(Y,P)$

(Zakah-based government is not the interest of our paper, it belongs to the fiscal policy).

Figure2: IS-LM equilibrium in an interest free system



Source: Iqbal Mehdi and Al-Asaly (1991)

As shown in figure 2, the shape of the curves is similar to their shape in a conventional system. The downward slopping of IS curve in the Islamic system is due to the negative link between investment and profit sharing rate of the bank, while the upward slop of LM curve is due to the negative relationship between profit rate and money demand in Shari'ah contracts (speculative demand is forbidden). In this context, when the central bank targets inflation, it can lower the money supply Ms using the monetary instruments cited in the previous section which will increase the profit sharing ratio (PLS) which in turn decrease the investment moving the LM curve to left and leading to a new equilibrium level. We showed that the central bank in a conventional system should control also the interest rate of open market operations, so, is this possible for Islamic system?. The Islamic central bank should be prudent in its open market operations to control inflation and it should keep into consideration the abolition of interest and speculative transactions. The monetary officials use commercial shares or Musharakah certificates as a substitute tool for interest based control and open market operation. Usually the Islamic government issues commercial shares or Musharakah certificates on the base of profit sharing. So, whenever the government wants to decline the volume of money in the economy, it sells these certificates to the public. Here the profit rate of these commercial shares plays the role of interest rate in the monetary policy process and by changing this rate, central bank can persuade people to buy or sell these certificates. The important point is that, central bank should issue all papers and certificates based on some productive economic projects otherwise the profit sharing principle does not work.

[14] kiaa H., "monetary policy in islamic economic framework: the case of Islamic republic of Iran", P10.

V. Monetary policy practices and inflation trend in some Muslim countries

Islamic banking and finance field has grown appreciably among Muslim and non-Muslim countries especially after the global financial crisis of 2008 which confirmed the failure of the conventional systems. The use of Islamic rules in banking goes further to macroeconomic policies namely the monetary policy. Many Muslim countries now succeed to manage the money supply and economic stability based on *Shari'ah* rules.

5.1 Islamic monetary policy practices

A. Monetary policy in Iran

After the Islamic revolution in Iran, at 1979, there were comprehensive attempts by government to use Islamic rules and regulations. At 1983 economic experts and Shari'ah scholars provided the Interest Free Banking System Bill to the parliament that used Islamic contracts as instruments for attracting and allocating money in the banking system. After approving process by parliament, from the 1984, the whole economic and banking system of country changed to Islamic one. Unlike some Islamic countries which have both Islamic and non-Islamic banking system, there is not any bank in Iran that works according to interest rate system.

The central bank in the Islamic republic of Iran uses five important instruments to execute its monetary policy in which Musharakah certificates instrument is the most important: 1-Musharakah certificates; 2-controlling profit rates of commercial banks; 3-legal reserves; 4-special deposits to central bank and 5-credit ceiling.

Year[6]	Published Certificate (Billion Dollars)	Sold Certificate (Billion Dollars)	Expected Return (Percent)
2002	2.96	2.78	15-17
2003	3.18	3.09	17
2004	4.49	4.22	17
2005	3.78	3.12	15.5-17
2006[7]	3.92	3.03	15.5

B. Monetary policy in Malaysia

Malaysia now is operating under a dual financial system; conventional and Islamic. The monetary strategy of Bank Negara of Malaysia is currently the interest rate targeting. In the Islamic context, the BNM uses Islamic interbank money instruments to achieve its target: Government Investment Issues; Bank Negara Negotiable Notes; Wadiah Acceptance; Mudharabah; Interbank Investment; Bai Al—Inah Transaction; Rahnu Agreement; Sell and Buy Back Agreement and Sukuk BNM Ijarah.[15]

C. Sudan

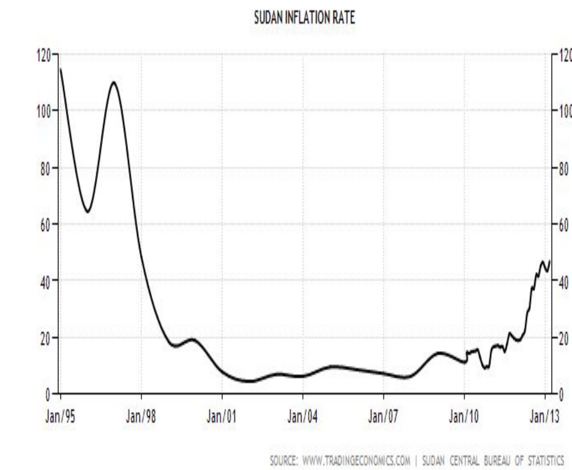
Sudan started the full application of Islamic modes in finance in the first half of the 1990s. The Islamic monetary instruments used by the central bank of Sudan since 1990[16]: 1-profit and loss sharing ratio; 2- credit ceiling policy stipulated 80 percent of total bank ceiling for priority sectors; 3- reserve requirements policy and other indirect instruments such as margins on letters of credits and foreign exchange transactions.

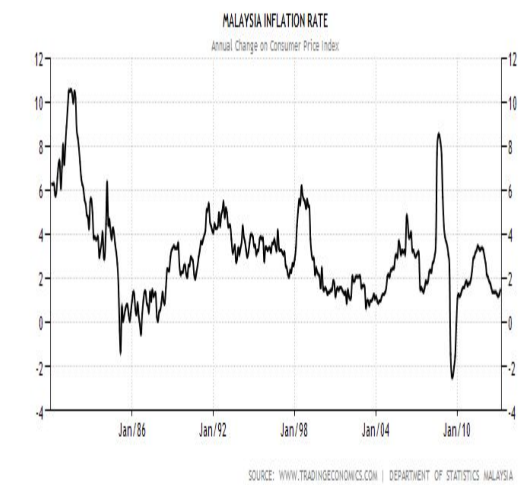
D. Saudi Arabia

The monetary policy of Saudi Monetary Agency (SAMA) relies primarily on variations in the reserve ratio requirements, since it is debarred from using the re-discount facility under Islamic law and cannot use open market operations as the Kingdom does not have any public debt in the form of government securities which can be used for such operations. A significant secondary tool is selective credit controls which include regulation of credit ceilings, cash margins, terms and conditions of customer transactions, limits, prohibitions on specific categories of loans, and fixing the assets to be held within the Kingdom by each bank. SAMA also deploys its own accounts and government deposits with commercial banks to regulate the money supply. SAMA uses ORR (Official Repo Rate) for short term liquidity management. Saudi Monetary system also has Government Development Bonds and Treasury Bills for fiscal deficit financing and liquidity management.

5.2 Inflation trend

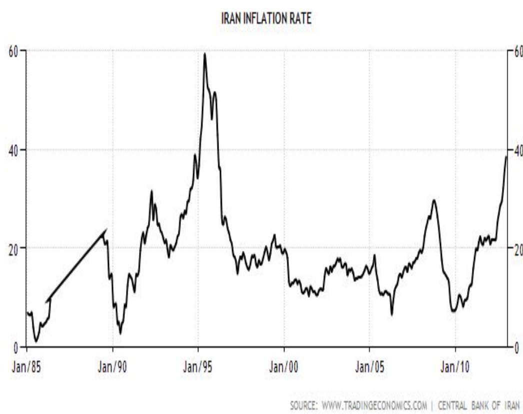
In this last section we present the inflationary trend in the countries which applied Islamic monetary policy cited above.





[15] For more details about these IIMI refer to Salman Ahmad Sheikh "role and functions of central bank in Islamic finance".

[16] Alheraika A.B., « on the design and effects of monetary policy in an Islamic framework: the experience of Sudan", Islamic Development Bank, 2004, P30.



From the figures above we notice that the four countries using Islamic monetary instruments could manage their inflation for some periods after starting the application of Islamic financial systems which confirms that the use of Islamic principles is more useful than the conventional ones. However, the periods of crises especially the recent global financial crisis affected these rates. The inflation rate of Malaysia and Saudi Arabia seems to be the lowest (between 2and 6%) except the highest spike during the 2008 crisis. For Sudan, the stability of the inflation rate is very clear in the graph after the Islamization of the monetary system (after 1994), but the rate of inflation started to increase largely after the crisis. The Iranian inflation has more response to the crises where it reached high spikes in addition to its higher rates (above 10%).

The instability in the inflation rates of countries applying Islamic systems does not belong to Islamic principles but for other reasons which are the conditions of the success of Islamic monetary policy:

- The absence of an appropriate fiscal policy with the monetary one in those countries;
- The globalization and openness to international financial markets operating under interest rate (Riba) principle; and absence of developed Islamic financial tools which makes Islamic countries more sensible to the global financial crisis;
- The role of ethics; as we have seen in the second section Islamic economics and law (Shari'ah) focuses on the ethnical aspect as a pillar to achieve social objectives. The fact is that most of Islamic countries record higher ranks of corruption which is against Islam and then it impedes the success of any Islamic policy executed in such countries.

Conclusion

This paper discussed the management of money to fight inflation in an Islamic finance framework focusing on the prohibition of interest « RIBA » against the classical monetary policy which concentrates on this factor « interest » as a key channel to reduce inflation. From the four sections we conclude the following remarks:

The set of the monetary policy instruments working under Islamic law (Shari'ah) approved an efficiency from the principles (prohibitions and encouragements) which provide equity and justice.

The prohibition of "Riba" where there is no interest to be paid can reduce the production costs which in turn will decrease the price level and reactivate the economic cycle and reduce the inflationary gap between money supply and production.

Unlike the Islamic commercial banking which is spilled over Muslim and non-Muslim countries, the central banking and monetary policy is applied in some Muslim countries that have succeeded to manage their inflation rate. However, the financial interdependence of financial markets, corruption and the large use of conventional systems still impede the success of Islamic policies. Thus, the success of Islamic monetary policy instruments to fight inflation depends on the human factor in applying these instruments and not on the Islamic principles themselves.

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