

Central Banking in an Interest-Free Banking System

HAMID ZANGENEH and AHMAD SALAM
Associate Professor of Economics Professor of Finance
Widener University, Chester, Pennsylvania 19013

Abstract. There is a vast literature on regulatory, monetary and institutional aspects of traditional banking system. This is not true for the interest-free Islamic banking framework. In this paper, the functions and tools of central banking in an Islamic framework are evaluated, and suggestions for adapting and revising the currently used tools of central banking for the Islamic central banking are made. It is shown that the current monetary policy tools of interest-based economies could be modified and used in an interest-free Islamic banking system. This paper shows that the needed technical and administrative modifications are to a large extent, minor. The existence of high speed computer technology and new accounting practices, it is argued, have increased the feasibility of a true interest-free Islamic banking.

Introduction

There is a vast literature on the art of central banking in an interest-based economy. This literature deals with various regulatory, monetary and institutional aspects of the central banking. This is not true for central banking in an Islamic banking framework, however. There is much to be done in this context.

The purpose of this paper is to explore feasibility, desirability, and necessity of new tools to deal with the same problems that central banks in interest-based economies have to deal with. In this process we first explain, in general, the functions of central banks. Then we explore and explain the ways that a central bank could modify, adapt, and adopt the current tools available in an interest-based economy to deal with its regulatory as well as its stabilization functions in an equity based Islamic banking framework.

Functions of Central Banks

Even though one could make a short or long list of technical, administrative, or conceptual functions for the central banks⁽¹⁾, in an Islamic economy, just like an interest-based economy, the main function of the central bank is to keep the nominal GNP under control. That is to say, the primary role of the central bank is to provide sufficient reserves and hence the money supply to avoid large fluctuations in price level and unemployment rate henceforth. This means that the nominal output and employment must be kept close, or ideally at their "natural rates". In other words, the goal of monetary policy should be the reduction of the variability of output and employment. The central bank, while keeping the level of output at its "natural rate", should preserve the value of the currency at a reasonably stable level. This is more important in an Islamic economic system than an interest-based economy for several reasons. Besides the unfair and capricious redistribution of income and the uncertainty that accompanies inflation, preserving the value of money is more important in an Islamic framework because of the paramount significance of honesty and fairness in all relationships and dealings in all aspects of life. Inflation has an unacceptable impact on the socio-political and economic fabric of the society, in general, and on the economic welfare, in particular. It undermines saving and hence investment and development in the long run. Inflation cheats people out of their livelihood and lowers standard of living on the weak unprivileged class of people who usually do not have negotiating powers. This is unjust in any system, particularly in a just Islamic system.

A closely related function of the central bank is to be able to stand by the banking system, as the lender of last resort, to prevent bank runs and bank failures. "With respect to banks, rules have to be designed to protect the interest of depositors, especially the small savers, by ensuring proper diversification of investment and safe ratio between share capital and deposits. Bank failures have to be guarded against, in the interest of the society in general, by ensuring proper management of bank funds and preventing overextension of credit." (Siddiqi 1986, p. 20).

The central bank also should cooperate with other authorities to achieve a balanced economic growth and development, characterized by social justice and equitable distribution of income and wealth. Along these primary functions, the central bank provides a number of administrative and regulatory functions for the banking system and the government such as check clearing, financial regulations, and serving as the bankers' bank and as the government's bank. Finally, the central bank is expected to keep the value of the currency at a level that fosters a healthy international trade. This does not mean, however, that a central bank does not have to pay attention to other aspects of the monetary and development policies such as distribution of income or allocation of resources, among others. The central bank must choose its policy tools in such a way that they would lead to the achievement of their monetary goals and overall improvement of the economy while, at the minimum, they do not entail potential damage to the vulnerable sectors or segments of the community and the country.

Tools of Central Banking

A central bank in an Islamic framework could use many, if not all, of the concepts available to central banks in a conventional banking framework in its operations⁽²⁾. Of course, there are qualitative differences in their composition, content, and implications in an Islamic framework. But in many cases, one has to recognize that the tools which are already developed for other environments could be modified and used in a new environment with some, sometimes minor, modifications and efforts. Modifying the current familiar tools is less costly and disruptive to the economy and the society than attempting to replace the system with a new and perhaps less familiar system. It would also be less threatening to those already accustomed to the old system. In this section some of the tools that are currently used in loan-based banking Systems which could be modified and used by a central bank in an Islamic banking environment will be suggested and discussed.

Discount rate is the rate of interest that is used to regulate the overall availability of credit in the economy rather than allocating the available credit or liquidity among competing projects directly. Of course in an interest-free environment, the practice of charging interest is not admissible. But it is possible to devise a tool which would function as the discount rate in an Islamic framework without violating the *shari'ah*. The central bank could lend commercial banks the needed liquidity and charge them a weighted average rate of return in different sectors of the economy (whether the rate of return is positive or negative) plus or minus a discretionary premium/discount factor (policy tools)⁽³⁾. That is, the central bank could charge the borrowing bank a weighted average rate of return in different sectors of the economy plus or minus a discretionary premium (surcharge) to discourage borrowing if the economy is facing inflation. Or the central bank could charge the borrowing bank a weighted average rate of return in different sectors of the economy minus a discretionary discount (i.e., provide a subsidy) to encourage borrowing from the central bank if the economy is facing a potential recession or if the economy is actually in recession. This way the central bank is charging the borrowing bank an uncertain rate depending on the profit rate that prevails in the economy, plus or minus a policy premium or discount factor depending on the condition of the economy. Even though the central bank and the borrowing commercial bank know exactly what is the policy premium or discount, since the profit rate of the economy is not known at the time, the overall rate is uncertain, therefore *shari'ah* is not violated. Of course, since the overall profit rate of the economy is not known, a practical solution is needed. The solution is very simple, indeed. At the time of providing funds, the central bank could use the last month's, last quarter's, or last year's data to calculate the relevant rate for short term borrowings of commercial banks. However, as soon as the central bank determines the actual profit rate for that particular time period, it could recalculate its share of the profit or losses, based on the agreed terms at the time resources were made available by the central bank, and charge the commercial bank for the loan or reimburse the bank for the overcharges, whatever the case might be. This is actually a simple task to undertake in our computer age. This would insulate the bank from charging a fixed rate of profit which could be mistaken with a fixed rate of interest. And this is exactly why we believe this is not a violation of *shari'ah*.

In order to clarify this proposal and show its correspondence with the *shari'ah*, a concrete example might be helpful. Let us assume that the economy is in recession and the central bank wishes to stimulate the economy through expansionary monetary policy. Let us assume that the last period's rate of profit is 11% for the banking system. The central bank could use its discretion and discount the bank's IOU at 6% which implies a recessionary discount (subsidy) of minus 5%. The commercial bank borrows more and uses the money in its operations, presumably to expand its lending to its clients. By the end of the period the bank reports a profit rate of 15%. It means that its IOU must be reevaluated and additional $4\% = \{ 15\% \text{ (actual bank's profit rate)} - 5\% \text{ (recessionary discount)} - 6\% \text{ (bank's prepaid charges)} \}$ will be assessed against the bank's account. If the bank reported a loss of 10% for the year then the central bank would have to accept a lesser amount than the face value of IOU from the bank. The central bank could accept as little as $79\% \text{ of the face value; } 79\% \{ 100\% - 10\% \text{ (bank's actual loss rate)} - 5\% \text{ (recessionary discount)} - 6\% \text{ (bank's prepaid charges that must be returned)} \}$. However, the amount that the central bank forgives as recessionary discount and its share of the loss depend on the contract that they both sign. As one could observe, the more sophisticated the bank's and the firms' accounting system is, the easier is the practice of Islamic banking. In other words, it is more applicable to the new high technology world than the old systems because of the fast access to the current economic data of the firms and the banking system.

Open Market Operation is buying and selling government securities by the Central Bank (the Federal Reserve System in the United States) in order to influence the availability of credit and hence interest rates in the economy. In spite of the fact that open market operation has limited applicability in less developed countries with limited active financial markets at this time, one could forged an instrument that could be used for monetary policy purposes. As financial markets develop in less developed economies, it becomes more and more prominent as a monetary policy tool. Because of the prohibition of interest it might seem, on the face of it, that a central bank in an Islamic framework would lose a very important tool in regulating the aggregate money supply. Even though the nature of the forged instrument is different from interest bearing treasury securities, it could play a similar role to the treasury securities used in an interest-based economy. The central bank could perform its open market operations in terms of a "composite stock" representing the central bank's ownership of all of the government and government agencies' owned enterprises and, perhaps, state-owned commercial banks⁽⁴⁾. There is a very good reason to use a "composite stock" rather than actual stocks of different government and government-related enterprises or private sector stocks. By trading a "composite stock" rather than individual private or public company's stocks, the potential problem of exerting undue influences on the price of a company's stocks is avoided. That is, the central bank, with its power to create money and receive seigniorage is not put in a position of intentionally or unintentionally speculating in the stock market for personal or other benefits.

Siddiqi (1986, p.28) proposed the use of "Central Deposit Certificates" for open market operations in an interest-free framework. However, he does not spell out how the return on these "CDs" are determined and cautions against extensive use of this tool because "Large scale sale and purchases of certificates by the central bank is bound to affect their prices contrary to the (true market value of these certificates)". This is the

very problem that the usage of a "composite stock" suggested above will avoid. There is no identifiable firm in the composite that could benefit. Also, since it represents government-owned enterprises, there would be large enough, in magnitude, of these holdings that their prices would not fluctuate widely due to open market operations in normal conditions.

Uzair suggested that the central bank could be required to "hold 25 percent or any other stipulated percentage - of the capital stock of the commercial banks operating in the country." (Uzair 1982, p.213-4) It would be ill-advised if the central bank were allowed to buy stocks of privately-owned enterprises or stocks of commercial banks. There are at least two reasons that come immediately to mind. One is that the central bank is assumed to have regulatory jurisdiction over commercial banks and therefore it would create a potential conflict of interest if it were the owner of the bank, albeit minor owner. Second, and more troubling reason, is due to the unique position of the central bank as the sole creator of bank reserves. If that were allowed, the central bank could potentially end up buying a progressively larger and larger share of the economy, which may not be desirable for a market economy. Uzair misinterprets the ownership of the Federal Reserve District Banks in the United States as a precedent for the central banks ownership of commercial banks. Even though member banks have to use some of their capital to buy stocks of the Fed, they do not have any control over the operation and monetary policy of the Federal Reserve System and profits of the Fed from different sources are turned over to the U.S. Treasury. Member banks earn only a nominal fixed return on their investment in the Fed. This is very different from the suggestion of the Fed having a share of the private banks and becoming a partner in their profits the way it was suggested by Uzair.

Required Reserve Ratio is the percentage of deposits that a commercial bank must hold in a form determined by the central bank. If the central bank decides to curtail the availability of the loanable funds, it could raise the required reserve ratio and if it wants to expand the loanable funds availability, it could decrease the required reserve ratio.

There are several possibilities pertaining to the required reserve ratio⁽⁵⁾. It is possible to eliminate all of commercial banks' credit creation ability by a 100% reserve requirement. This may or may not be desirable, but it is feasible. If this is done, commercial banks will simply be reduced to a financial institution similar to a mutual fund institution. That is, the commercial banks ability to create money is eliminated altogether. This method was suggested by Fisher (1935), Simon (1948), Friedman (1969) for the traditional banking system for reasons different from those of Islamic scholars such as Kahf (1982) and M-Jarhi (1983). Simon argued that a 100% reserves system would increase stability of the banking system. He argued:

First, there would be deposit banks which, maintaining 100 percent reserves, simply could not fail, so far as depositors were concerned, and could not create or destroy effective money. These institutions would accept deposits just as a warehouse accepts goods ... A second type of institution, substantially in the form of an investment trust, would perform the lending functions of existing banks. Such companies would obtain funds for lending by sale of their own stocks, and their ability to make loans would be limited by the amount of funds so obtained (pp. 64-65).

The argument for the 100 percent reserve requirement is not a dead concept of the past. It has reappeared again in the wake of the 1980s deregulation and the subsequent large number of bank failures in the United States. A number of current writers: Kindleberger (1985), Karecken (1985), and Golembe and Mingo (1985) have advocated a 100 percent rule to increase stability and reduce bank failures. Golembe and Mingo argued for the separation of the transaction (deposit money safekeeping) and investment activities of banks. That is, they proposed that the transaction accounts deposits, such as checkable deposits, which are mostly deposited for safekeeping and day to day business activities and transactions be backed by a 100% reserves or perhaps be 100% backed by low risk Treasury Bill while the portfolio activities of the banks be unregulated.

On the other extreme, there is a tendency by those who consider the reserve requirements as unjustified burden on commercial banks to push for zero reserve requirement. Some countries have eliminated a binding reserve requirement altogether; e.g., Switzerland in 1988. The government of Canada has implemented a zero reserve requirement for the Canadian banks effective in 1990, as well. Whether these new movements toward zero reserve requirement will be successful remains to be seen.

There does not seem to be anything in the *Shari'ah* to suggest a prohibition against zero, 100%, or any other fractional reserve method. Central banks have been rather successful to control the money supply to a very large extent with the fractional reserve system. One could only cautiously suggest that a fractional reserve system has worked reasonably well in almost all cases and there is no particularly strong reason to discard this policy tool in an interest-free framework either.

The form that reserves should be kept in and the spectrum of deposits that should be subject to the required reserve could vary from time to time or from government to government. The reserves could be required to be held in the form of vault cash, deposits in the central bank, or some kind of high grade government securities as was the case for non-member banks in the United States before the 1980s, or any combination thereof. Whether or not the required reserve ratio should be applied only to the checkable deposits, or should it cover a wide range of other deposits such as investment deposits is not very crucial. It depends on the central bank's desire for control and security of banks and the money supply. Of course, higher security means higher coverage of different types of deposits. But it means lower income for commercial banks and lower potency for the high powered money that the central bank creates. Again these are rather mechanical and administrative decisions with obvious implications that are not difficult to make.

Refinance Ratio: The liquidity of the commercial banks can be affected by manipulating the "refinance ratio" by the central bank. The central bank will extend refinancing to commercial banks for some of all types of loans granted by commercial banks to the public. 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. The central bank can manipulate this percentage downward or upward, affecting thereby the willingness and the capacity of commercial banks to extend different types of loans provided by commercial banks.

Selective Credit Control: Besides the general measures discussed above, certain selective controls should be developed in areas where conventional tools have not proven effective. For example, the central bank can regulate consumer credit (installment sales) by manipulating the size of the down payment and the number of installments. The central bank can manipulate import pre-deposit requirements to regulate imports. It can also determine ceilings on total credits for individuals from commercial banks. It would be advisable, as Uzair (1982, p.219) suggested, to put a greater reliance on selective methods in an interest-free system. It is more efficient since it hits directly at the point where a change is desirable. In other words, at times market forces do not allocate resources according to what is perceived to be a correct mix of production and distribution. This is the time that market forces must be overridden for the sake of overall development and welfare of the community and country. However, one must be conscious and cognizant of the possible distortion that it could cause in the market operations.

Moral Suasion: This is a conventional method to pressure and/or persuade member banks to implement the central bank policies in true spirit. This can be a greatly useful instrument of control especially in an interest-free Islamic system that must depend on collective consensus building for its affairs.

Profit Sharing Ratio: This is a tool of credit control that is available to Islamic central banks. In an interest-free 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".

The "investments' share ratios" will be aimed at regulating the level of economic activity in the economy, while the "depositors' share ratios" will be directed mainly at influencing the money supply. As was mentioned earlier, the central bank could establish a permissible range for profit sharing ratios which will not only provide some scope for competition among banks, but also ensure some degree of uniformity.

Profit sharing ratios are policy tools that are not available to a traditional central bank in a loan-based economy. Let profit rate earned, on average, to be m . This is divided between the capitalist $S_m m$ and the entrepreneurs $(1-S_m) m$. Once the central bank determines a particular area of the economy or a particular area of the country needs special care and financing, it could direct business there by lowering $s_m m$. That it could require banks to demand a smaller share of total profits $s_m m$ that are earned in those areas. This, in combination with the selective credit control, could be a very potent economic development policy tool.

The exchange rate determination could be kept under the authority of the central bank or under the authority of the federal government, i.e., the Treasury. The central bank or the treasury has basically three options with regard to the allocation of foreign currencies. Either they allow the market system to ration the existing foreign exchange and reach an equilibrium exchange rate or adopt a system of fixed exchange rates. Or, they could choose the middle ground and allow the market to determine the exchange

rate and the central bank would interfere in the market to prevent large fluctuations in the rate. That is, they could choose the managed float policy which is used mostly in the Western world. The choice depends on the level of distortions and control that the authorities would like to tolerate in the economy. However, the central bank can control the value of the currency by using a cautious non inflationary monetary policy. But it cannot keep the exchange rate overvalued in the face of a runaway inflation for long. The moment of truth will come and the currency must be devalued.

Under a fixed exchange rate regime, the value of the currency becomes a political decision. This is especially true under a multiple exchange rate regime where the authorities must decide several exchange rates based on their individual "merit" considerations. That is to say, the authorities must decide the political feasibility of providing or denying subsidized foreign exchange to different sectors or different political or economic groups or areas of the economy. However, one is tempted to desire a chance to determine the economy's shape and course. In this case the fixed exchange rate regime is the paradigm of choice. If one could like to depend on the market and avoid distortions created by the fixed exchange rate system, the floating exchange rate system is preferred.

In any case, as Frenkel (1980) found, an optimal exchange rate policy would depend on whether economic shocks are real or monetary. If the shocks are real, then the optimum policy would be a fixed exchange rate policy. If the shocks are monetary, then the optimum exchange rate policy would be a flexible exchange rate policy. Therefore, the degree of intervention directly depends on the variance of the real shocks and the variance of the monetary shocks. The larger (smaller) the ratio of the variance of the real shocks to the variance of the monetary shocks, the higher (lower) should the intervention in the exchange rate market be.

Summary

Problems of an Islamic central bank are the same as those that central banks in interest-based economies face. That is, an Islamic central bank must deal with the same regulatory, monetary, and institutional aspects of banking just as their counter part in an interest-based traditional central bank. Even though the pursuit of economic well being of the country is essential, it is the central bank that is responsible to deal with the current, expected, real, or perceived financial crises like bank runs and bank failures. It is the central bank that must design and implement plans to deal with the problem of inflation, unemployment, well-being and efficient functioning of the financial institutions within the prevailing legal conditions, lender of last resort, etc. Meanwhile, it must engage in such functions as promoting an equitable distribution of income and other qualitative aspects of life just like any other government agency in an Islamic society. In this study, the feasibility, desirability, and necessity of new tools that an Islamic central bank needs to deal with its problems are analyzed, evaluated, and discussed on theoretical basis. In the process of explaining, in general, the functions of central banks, we explored and explained the ways that a central bank could deal with its regulatory functions in an equity based Islamic banking framework. However, several simple modifications of the tools already available to central banks in interest-based economies are needed.

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Endnotes

- 1 - Depending on one's intention and emphasis, several short or long lists of functions for a central bank could be provided. Mohammad Uzair, "Central Banking in an Interest-Free Banking System", in Mohammad Arif, op. cit., page 212) enumerates traditional functions of the Central Bank to include: "The issue of currency; 2 - preservation of internal position and value of the currency of the country; 3 - Preservation of external value of the currency; 4 - Control and regulation of the credit in the country; 5 - Acting as the lender of last resort; 6 - Promotion of banking development in the country; 7 - advisor of the government in economic and financial matters." However, Muhammad Nejatullah Siddiqi, "Central Banking in Islamic Framework", The Royal Academy for Islamic Civilization Research, Amman, Jordan, 1986, enumerates a conceptually broader set of functions for the Central Bank to be: "1 - Economic development; 3 - Distributive justice; 4 - Stability of internal and external value of money, prices and level of economic activities."
- 2 - For a list of instruments for the Central Bank, see Siddiqi, 1986 (pp.24-5).
- 3 - One of the referees objected to this proposal as a violation of *shari'ah*. However, as it is further elaborated in the text of the paper, we think it does not violate *shari'ah* because of at least one reason. Even though the rate that is used to discount a bank's IOU by the central bank is fixed at the time of borrowing, it is only a temporarily fixed rate. As it is explained in the text, as soon as the central bank learns of the actual rate of profit or loss, the IOU is reevaluated with the new positive or negative rate of profit by the borrowing bank. Therefore, there is no violation of *shari'ah*.
- 4 - Mohammad Uzair proposed a similar method for the open market operations. He suggested "that in an interest-free banking system the central bank may resort to trading in the shares of public limited companies, state-owned enterprises or government-sponsored corporations." However he dismisses the idea because "it is not necessary conceptually or operationally-that we develop some institution to replace open market operations, simply for the sake of it." Mohammad Uzair, Central Banking in an Interest Free Banking System, in Mohammad Arif, op. cit., page 217.
- 5 - See Siddiqi, op. cit., p.26 for a discussion of required reserve ratios.

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المصارف المركزية في نظام مصرفي خال من الربا

حامد زنجنية وأحمد عبدالسلام
أستاذ الاقتصاد المشارك وأستاذ المالية
جامعة وايدنر - جستر - بنسيلفانيا

المستخلص : هناك أدبيات كثيرة جداً حول الجوانب التنظيمية والنقدية والمؤسسية للنظام المصرفي التقليدي، الأمر الذي لا ينطبق على المصارف الإسلامية الخالية من الربا.

ويحاول بحثنا هذا تقييم وظائف وأدوات المصارف المركزية في إطار إسلامي مع تقديم بعض الاقتراحات لتبني وتعديل هذه الأدوات لاستخدامها في المصارف المركزية الإسلامية.

ويلاحظ أن أدوات السياسة النقدية المعاصرة للاقتصاد الربوي يمكن استخدامها في المصارف المركزية الإسلامية.

وقد أثبتنا أن التعديلات الفنية والإدارية المطلوبة سوف تكون طفيفة إلى حد كبير. كما أكدنا على أن ظهور تقنية (تكنولوجيا) الحاسبات السريعة والأعراف الجديدة في علم المحاسبة كل ذلك يسهل إمكانية قيام نظام مصرفي خال من الفائدة.