

Towards an Economic Theory of Islamic Finance Regulation

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Abstract

Islamic finance has several comparative advantages over conventional finance. Since they are related to efficiency, stability and other macroeconomic benefits, they cannot be easily internalized by Islamic bankers. Islamic bankers have no incentive to stick to the Islamic finance paradigm and instead tend to mimic conventional finance. Regulation is therefore required to modify their behavior in order to allow the Islamic finance industry to enjoy its advantages. This paper attempts to modify the economic theory of bank regulations towards that aim.

Keywords: Islamic banking, Islamic finance, Islamic monetary and financial economics, regulations banking, finance

Why Islamic Bankers Ignore the Advantages of Islamic Finance?

Appendix I elaborates the comparative advantages of Islamic finance. The behavior of Islamic bankers without proper regulations tends to mimic the behavior of their conventional counterpart, thereby nullifying many of the advantages of Islamic finance. While conventional finance can be associated with instability and inefficiency, conventional bankers find their financing procedures to be sufficiently streamlined and cost-effective. Islamic finance applications based on multiplicity of contracts and their mixing and matching in comparison appear cumbersome and costly. The advantages of Islamic finance come through external and sometimes long-term effects that are not internalized by Islamic bankers.

Islamic bankers would therefore find it to their short-term interest to mimic conventional bankers' behavior in order to cut cost and maximize volume.

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We therefore attempt to structure a theory of Islamic banking regulation that enhances its advantages for the benefit of the whole finance system. Our guide is to motivate Islamic bankers to behave as if they have internalized all the advantages of Islamic finance to their benefits. This would eventually be to their long-term advantage, as well as to reaching macroeconomic efficiency.

The Emergence of Islamic Banks

Theoretically, financial intermediaries emerge endogenously to confront financial market imperfections arising from asymmetric information (Freixas and Santomero, 2002).

Have Islamic banks and financial institutions emerged endogenously? Historically, Islamic banks and financial institutions have emerged in the private sector not only without government intervention, but also despite unfavorable regulation that resisted their emergence². However, the superior ability to deal with information asymmetry relative to conventional finance came to be known later on (Al-Jarhi, 2001).

Since regulation changes the information environment (Stiglitz, 1994), it can hinder or facilitate the emergence and development of Islamic banking and financial institutions. Countries whose laws provide unequal treatment of Islamic finance had to change their legal and regulatory environment before Islamic banks and financial institutions could emerge³. In addition, regulation can prevent Islamic banking to the extent that it cannot reach its potential. For example, regulating Islamic banks in exactly the same manner as conventional banks deprive them from their comparative advantage in treating information asymmetry compared to conventional banking.

Market Imperfections and Regulation

Four alternative theories have developed to explain why banks exist in response to these financial market imperfections (Freixas and Santomero, 2002).

²Few exceptions can be mentioned in this regard. The Islamic development bank was founded jointly by several member countries of the OIC. Kuwait Finance House was established by the government of Kuwait. An Islamic finance system started in Sudan and Iran with the initiative of their respective governments.

³Examples are the UK, Singapore, Kazakhstan, and Indonesia. The legal environment includes banking, commercial and financial market laws that define Islamic finance contracts as well as customized regulations.

Let us consider the implications of each for Islamic banking.

Screening of Potential Borrowers

Conventional banks screen potential clients *ex ante* on behalf of depositors), either because they are better at screening (Grossman and Stiglitz, 1980), or on behalf of a large number of interested parties (Campbell and Kracaw, 1980). In both cases, banks enjoy economies of scale in monitoring (Ramakrishnan and Thakor, 1983).

In Islamic finance, there is a need as well as an incentive for Islamic banks to screen finance users.

In financing consumption, consumers “compete” for the commodities by expressing their willingness to purchase each at a price or a markup over cost that is commensurate with their marginal value in use as well as their time preference related to each commodity. Competition would result in an equilibrium that equates the price of each with its marginal value in use. Screening would therefore depend on the bidding by each customer in addition to the ability of each commodity financed to serve as collateral.

The issue of how much finance to allocate to each commodity is resolved through a process that invokes its value in use as well as the commodity time preference. Both Islamic and conventional finance benefit from the existence of economies of scale in screening consumers seeking finance. Islamic banks would also have a comparative advantage in screening sale finance customers than conventional banks in screening borrower because of the virtual non-existence of information asymmetry in the case of Islamic finance.

Regulation must therefore be directed to establishing procedures for Islamic sale finance that would properly use the financed commodities as collateral until full repayment is concluded.

In addition, procedures for penalizing delinquency and verifying temporary insolvency must be established.

Screening investors is a process that goes beyond the verification of the ability to pay. Investors, whether they obtain finance through sale, Ijarah or partnership (in product or profit), must prove their investment feasibility, which influences the ability to recover the finance they obtain. In this respect, regulation of Islamic banks must ascertain that they are properly equipped with the abilities to prepare, review feasibility studies, and monitor investments made through partnership and Wakala.

Monitoring Banks and Customers

Banking theory focuses on the monitoring of borrowers' actions after loan approval. Models here have concentrated on one of the following (Freixas and Santomero, 2002).

1. The actual use of borrowed funds (Boot and Thakor, 1993),
2. Effort involved (Allen and Gale, 1988), and
3. Ex post outcome revelation (Diamond, 1984, Gale and Hellwig, 1985).

In this context, Islamic finance monitoring of finance users' actions during the use of finance takes a different form. In partnership finance, an Islamic bank or financial institution, in its capacity as partner, and being part of the management, information flows automatically into its hands. The finance provider should ascertain that the finance user is properly equipped to collect and disseminate necessary information.

In sale finance, an Islamic bank or finance institution would provide commodities, not cash, to the finance user. Therefore, there is no need to worry about "how funds are used." What remains is that the financier must ascertain through maintenance and insurance contracts that the use of commodities provided would not be contrary to their use as collateral⁴.

The question of how the fund users use funds after obtaining finance arises only in the cases of Mudaraba and Wakala, both unrestricted and restricted. Therefore, it becomes necessary for Rabbulmal to insure against encroachment, negligence and violation of contract. Regulations can set suitable guidelines for Mudaraba and Wakala, including the following.

⁴ Consequently, an Islamic financial institution has direct interest in refusing to finance commodities for those who obtain finance for liquidity purposes, i.e., purchase goods for immediate resale, or Tawarruq. The fact that financed goods serve as collateral would not allow such behavior.

1. Making a feasibility study to estimate the expected or indicative rate of return, by whose figures and results the finance user must be bound, except for changes that occur for reasons beyond his powers. In such case, the burden of proof falls squarely on his/her shoulder.
2. The investment agent (Mudareb, managing partner, or Wakeel) must hold orderly bookkeeping and supply audited financial statements.
3. The investment agent must supply regular reports (monthly or quarterly) containing the information necessary for proper monitoring.
4. Control of payables and receivables of financed operation through an account with the bank or finance institution, where inward and outward movements would be approved by both the financier and the finance user.
5. To avoid such costly procedures, Mudaraba and Wakala could be joined with Musharaka. Regulations should therefore accept that as a substitute for the above procedure.

When it comes to monitoring banks by customers, we find that the incentive to monitor "one's bank" is rather weak in conventional banking. This is because all deposits are guaranteed, both principal and interest.

In Islamic banks, investment accounts are held under the rules of Mudaraba⁵ and are not guaranteed. Consequently, they face the risk of moral hazard whose reduction requires monitoring. Investment account holders would have a strong incentive to monitor Islamic banks, but have no effective way to do so. Regulation may fill out this gap by providing access to investment account holder to monitoring Islamic banks through enforcing a governance rule that appoints some of the holders' with highest account balances as representatives to the board of directors.

The rationale for such representation is that investment accounts face the same risks as shareholding in the bank.

How much representation should be accorded to them? Proportional representation would make account holders a majority in the banks' boards of directors.

⁵ Some also can be held under Musharaka and Wakala, which would equally require monitoring.

Meanwhile, considering that some of these accounts are transitory, regulations can set a criterion that considers both account size and maturity for eligibility to sit on the board.

Liquidity Risk Insurance

The justification of providing guaranteed deposits, offered by Diamond and Dybvig (1983), assumes uncertainty of consumption timing. Banking contracts allow for some *ex ante* insurance. Despite the possible instability of banks, their guaranteed deposit contracts are preferred to financial securities (McCulloch, 1986).

Conventional banks place proceeds from demand deposits into loans, which are salable at a loss. This creates maturity mismatch.

Islamic banks do accept demand deposits like conventional banks. Their assets, too, have longer maturity than their demand deposits and investment accounts. They have more tools to use in bridging the maturity gap than conventional finance. In particular, they can apply the following methods:

1. The use of restricted investment accounts, based on restricted Mudaraba or Wakala, to attract funds directed to financing certain projects or portfolios with maturities longer than available through unrestricted investment accounts.
2. Securitization of long-term projects, portfolios and syndicated finance into Sukuk of long maturities to attract funds with longer maturities.
3. Securitizing investment accounts into Mudaraba and investment Wakala Sukuk of various maturities in order to make them liquid to depositors. Trading investment account Sukuk will allow investment account holders to exit without deposit withdrawal.

Sukuk transfers the title to the securitized assets from banks to Sukuk holders, which provides an effective way to match maturities.

Conventional finance does not have access to attracting restricted Wakala and Mudaraba accounts. Their use of securitization of some of their assets does not change titles to the assets to security holders. Conventional banks will remain stuck with the title to their assets. Maturity mismatching relief would therefore be limited.

Regulations must therefore set rules for the holders of restricted investment accounts in order to allow them some monitoring rights with regard to the projects, funds or portfolios in which they invest. In addition, proper procedures must be set for securitization into Sukuk, in order to insure that Sukuk holders control the special purpose and the true sale of securitized assets to insure their title transfer to Sukuk holders. In addition, regulations must set proper rules for trading such Sukuk in primary and secondary markets in coordination between monetary and financial market regulators.

Creating a Safe Asset

Gorton and Pennacchi (1990, 1993) consider banks as an optimal security design. Bank deposits provide an investment in a safe asset, which is not affected by information in the financial markets and is a feasible, efficient asset in optimal portfolio decisions.

Yet, such security leads to concentration of risk in the hands of few specialists. When deposits are guaranteed by banks, (Tovar, Jaramillo and Hernández, 2011), banks react to higher risk by transferring a larger share of risk to customers through higher interest rates. In times of crises, the increased vulnerability of the system leads banks to fear a run on them started by one of the banks going bankrupt. Financial crisis reduces banks' incentives to compete acts instead as a coordinating signal for collusion.

Islamic banks guarantee only demand deposits. A share of the risk is shouldered by investment account holders in proportion to the funds they keep in their accounts. During financial crises⁶, the risk borne by Islamic banks and investment account holders increase.

Islamic banks do not shift part of their risk to investment account holders by reducing their profit-sharing ratio. In order to maintain competitive profit rates on investment accounts, Islamic banks may decrease shareholders profit-sharing ratio in favor of their customers.

⁶ Financial crises can strike Islamic finance in mixed financial systems. In a purely Islamic finance system, the possibility of crises is removed by the virtue of the absence of risk trading and strong binding of the financial with the real sector.

Other cushioning devices are used, like withdrawal from the profit stabilization reserve and the investment risk reserve in order to prop up the profit rate distributed to investment accounts.

Regulations should maintain such cushions and make sure that Islamic banks provide a rate of return on investment accounts that is higher than the interest rate paid by conventional banks on time and saving deposits to compensate investment account holders for the extra risk they take in financing real economic activities instead of providing collateralized loans⁷.

Banks' Incentives to Monitor and Asset Safety

The quality of banks assets depends upon their incentive to monitoring. Optimality requires Pareto optimal incentives for banks to screen monitor and invest. With incorrect incentives, market failures will occur in the absence of bank regulation, reducing social welfare and real economic activity (Gertler, 1988). Conventional banks incentives to monitor borrowers would require special regulations, as they do not come naturally through market mechanism. Lack of incentives to monitor emanate from conventional banks' insistence to take no business risk whatsoever, except the risk on collateral. In addition, holders of demand and time deposits with conventional banks have little incentive to monitor their banks, as their deposits are guaranteed in principal and interest.

The safety of assets held by Islamic banks will generally depend on their underlying Islamic investment and finance contracts, investment feasibility and safeguards to insure transparency and disclosure.

Islamic banks practice indicates their preference to sale over partnership finance. Sale finance is free from information asymmetry and requires no monitoring⁸.

The choice of the underlying Islamic investment and finance contracts provide Islamic banks a unique opportunity to create assets with self-mitigated risk.

⁷The nominal rate of growth of the economy could be used as a benchmark to the rate of return on investment. If an Islamic bank is not distributing the benchmark as minimum, its operations should be scrutinized to check whether the Islamic bank in question is placing some of its resources in conventional outlets.

⁸ One exception needs to be mentioned, that banks must prohibit resale of financed assets before finance repayment, without permission from the financing bank, in order to make sure that the quality of their collateral will not deteriorate due to premature sale.

There is a menu of fifteen investment and finance contracts from which to choose. Each contract has a different degree of embedded risk. Mixing and matching contracts, or what is common as *product structuring*, can be an effective method to sculpture quality assets. Joining Mudaraba or Wakala with Musharaka in one product would significantly reduce information asymmetry and its related risks⁹. Risks of Musharaka itself can be mitigated through joining it with Ijarah. The size of the menu of Islamic investment and finance contract indicates that the number of products can go into several hundreds.

Such advantage in Islamic finance may require proper regulation. Islamic bankers, interested in short-term objectives and being unable to internalize the external benefits of Islamic finance may, like conventional bankers shy away of using certain contracts, like Mudaraba and Musharaka. Therefore, regulators have to make sure that Islamic banks under their supervision use the art of product structuring to its full potential.

This can be handled through considering that failure to use product structuring effectively can be a source of operating risk. Regulations must therefore ascertain that each Islamic bank has sufficient resources and proper procedures to do so. In addition, supervision should review samples of previous structures to test for their propriety and their ability to fulfill customer objectives and bank goals.

Market Failures and Regulation

There are three sources of market failure, the presence of public goods, externalities and monopolies (market power).

Public Goods and Regulations

The banking and finance system itself renders benefits to all citizens once established, like the provision of a means of exchange and the use of monetary policy in order to gauge monetary growth to the requirements of economic growth and to control inflation. There is no way to apply the exclusion principle to citizens. Taxes must be used to finance such activities.

⁹ Notice the similarity of this approach with that used by universal banks (Al-Jarhi, 2001).

Does banking and finance in general contain an element of public goods that justify its regulation? Would that apply to both conventional and Islamic finance equally? How would regulation provide a reasonable solution to the public good problem in both cases? These are the questions we would like to look into.

Public good elements in conventional finance are elaborated in Appendix II.

1. The public good elements in Islamic banking

The Islamic banking and finance system would have the same elements of public goods as its conventional counterpart, namely the provision of a means of exchange and monetary policy. In contrast to conventional finance, Islamic finance has a much lower share of public bads, as seen below.

- Islamic banking and finance, properly applied allocates resources according to investment rather than lending criteria. The finance system would therefore be sustainable and compact.
- An Islamic bank or financial institution has no guaranteed liabilities, with the exception of demand deposits. Compared with the presence of risks associated with its assets, it appears to be more stable than a conventional bank or financial institution. In addition, sale finance (provision of commodities on credit) automatically provides for sufficient collateral. Asset creation by Islamic banks would therefore involve an element of risk self-mitigation that is not automatically available to conventional finance.
- Return on Islamic banks investment accounts is not guaranteed, providing no incentive to substitute real resources for cash in transactions. The system would therefore stay efficient.
- Eleven out of the fifteen Islamic finance contracts enjoy information asymmetry between finance providers and users. Only Mudaraba and Wakala (restricted and unrestricted) are subject to information symmetry. Their use in conjunction with Musharaka would be an inexpensive way to provide perfect monitoring.
- Islamic finance is prohibited from innovating through risk trade. Innovation comes as a result of introducing new contracts or mixing and matching of the existing fifteen contracts. An important source of instability is removed, hence.

However, innovation can lead to finance products of ill repute¹⁰. They would be instrumental in converging the Islamic finance system to conventional finance, thereby depriving the former from important comparative advantages.

- The rise of large banking units in societies using Islamic finance is still possible. Whether this can be used to support the claim that such large banks are *too big to fail*, will depend on the game-theoretic structure of the political system. However, using tax money to provide fund users with temporary illiquidity during crises through debt rescheduling instead of directly subsidizing banks would prove more effective in avoiding both recessions and bank failures simultaneously.

2. Regulation as a Solution to the Public Good Problem in Banking

2.1. Regulation by itself cannot remove the public bads described above from the system of conventional banking and finance. They turn to be systemic ills that require modifying the system.

2.2. Regulation can help Islamic finance in the following areas:

2.2.1. Placing guidelines for the use of Amana finance (Musharaka, Mudaraba and Wakala) in order to facilitate the use of the latter two, especially in conjunction with the former. Such guidelines would reduce the extent of information asymmetry imbedded in Mudaraba and Wakala¹¹.

2.2.2. To prevent products of ill repute, regulations must clearly define all Shari'ah compliant and currently prevalent non-compliant products and establish a Shari'ah Fatwa and supervisory board in the regulatory agency, while doing away with Shari'ah boards in each Islamic bank.

¹⁰ Finance products of ill repute result when Islamic banks attempt to use conventional finance products after dressing them into an Islamic garb, like 'Einah, Tawarruq, and products based on the sale of debt.

¹¹ Such guidelines would include the use of feasibility studies by whose figures and results the finance user would be bound, orderly and audited bookkeeping, supply of finance providers with regular reports, channeling cash flows from financed activities through an account with the finance provider. Forcing the finance user to guarantee both principal and return in cases of encroachment, negligence and violations of contract conditions, and finally placing the burden of proof on the shoulders of finance users.

The presence of a Shari'ah board within the monetary authority with regulatory and supervisory powers would then be sufficient. Definitions of Shari'ah permissible and non-permissible products may also have to be added to commercial and financial market laws.

2.2.3. Regulations can prohibit providing subsidies to banks that face bankruptcy risks. Instead, regulators would offer assistance to customers who face temporary insolvency at times of crises. In addition, heavy penalties should be imposed on delinquent finance users.

Externalities

2.3. Forced Wealth Redistribution

In conventional finance, banks as monopolies are allowed by law to create money collectively in the form of derivative deposits. This imposes an externality on the non-banking public. Money collectively created by banks is lent to customers at an interest rate. Charging interest on lending is rationalized by the fact that money has transactions services. Yet, such services emanate from the fact that money is generally accepted as means of exchange by the public. The reward for general acceptability, which is the source of moneyness, does not go to the public. It goes to banks instead. Therefore, conventional banks force a redistribution of wealth to their favor through their lending activities.

Regulation has only one way to internalize such externality to the benefit of the whole society. Regulators, through the enforcement of total reserves, give the monopoly of issuing money total and complete to the monetary authority. However, this may be necessary but not sufficient. Guidelines must be set on the proper disposal of signorage gained by the central bank.

2.4. Forced Hidden Taxation

In conventional banking, the central banks issues the monetary base against government debt. The interest paid by the government to the central bank on its debt returns to the government in the form of central bank surplus.

This means that the government obtains free financial resources at the expense of the whole society.

The cost of such resources would be a hidden tax that facilitates government expansion at the expense of the private sector, similar to the crowding effect.

Additional transparency rules can be introduced. Government budget should add all items of signorage to “non-tax revenues” for which the government would be accountable.

In Islamic finance, the government would not be allowed to borrow from the central bank. Instead, it would have to obtain financing for its economic activities by using the Shari'ah-compliant finance contracts. The central bank can add to the monetary base by issuing money against financial instruments based on such contracts. It would gain profits from holding such instruments, which would be considered signorage whose disposal would be subject to transparency rules. The central bank surplus is balanced by providing finance to the government through market mechanism and on equal basis to the private sector.

Market Power

Banks gain monopoly power through licensing. In addition, the banking system becomes a price setter, as central banks set the rates of interest, which are used as bases for pricing loans. Conventional banks income on lending comes from the interest differential that may not change much with the level of interest rates set by the central bank¹². The cost of funds is not therefore, market determined. This introduces an element of inefficiency to the finance system.

Lifting the central bank control on interest rates would not be acceptable. Interest rates are considered an important policy tool that central banks would not conceivably yield.

In Islamic banking and finance, funds are provided, through the provision of goods and services on credit, as well as through partnerships. The rate of return on financing is market determined.

¹² Banks would put a markup on the central bank or prime rate to calculate the borrowing rates paid on deposits. They add the interest rate differential to the borrowing rate in order to arrive at the lending rate. Assisted by monopoly power, banks could set the interest rate differential as a percentage of the central bank or prime rate. Raising that rate under this scenario would mean a higher differential in absolute terms. The total income from bank lending will ultimately depend on its volume.

Monetary policy is exercised exclusively through changing the monetary base and open market operations in Shari'ah-compliant financial instruments. Investment certificates issued by Treasury, central bank, member banks and business enterprises are classifiable by their underlying Islamic finance contracts. It is theoretically possible that the central bank would attempt to set markup, rental and profit rates through open market operations in each kind of certificates. This would be too laborious. The control of money supply would require trading certain value of certificates for each targeted level of monetary base. Selective trading by underlying contracts would not be necessary.

Regulation can enforce the competitiveness of Islamic banking and finance by reducing restrictions on entry and complete avoidance of setting rates of return on either investment accounts or financing provided by banks.

Aggregate Liquidity

Cost of Monetary Liquidity

Aggregate liquidity has become the responsibility of the central bank. This justifies its monopoly over money creation (Friedman and Schwartz, 1963). This assigns the systemic stability role to the central bank.

The need for the central bank to regulate the financial sector comes from the role played by conventional banks in asset transformation. They have illiquid assets and allegedly liquid liabilities. While economists consider deposits as money, Fama (1980) asserts that bank deposits are not liquid, but they are private contracts with different levels of risk. This compares with the basic principle that liquidity applies only to demand deposits in Islamic banks. Investment accounts are not the parallel product to time and saving deposits. They are based on Mudaraba. They can also be based on Musharaka and Wakala. Therefore, the concept of asset transformation takes a different twist in Islamic banking.

The role of the central bank, as a regulator and as responsible for aggregate liquidity may be different in the case of Islamic finance. Such responsibility will usually depend on whether banks are allowed to produce collectively derivative deposits through the imposition of fractional reserves.

In addition, the “liquidity” created by Islamic banks may have a different effect on the price level due to the fact that Islamic finance does not finance the demand side only, but extends its finance to both the demand and supply sides. Finally, the regulation of Islamic banking on the basis of “supervising liquidity” would required the regulator or the central bank to act as the ultimate “fund provider”, a role that is similar to that of the “ultimate lender” in conventional banking. We will take up each one of the three points below.

Derivative Deposits in Islamic Banking

When an Islamic finance provides Musharaka, Mudaraba or Wakala finance, it places some of the capital provided as a demand deposit into the finance user’s account¹³. Finance users, once received the funds, they will start spending on their investment activities to purchase factors of production. The flows therefrom to owners of such factors will restart another cycle of flows to other persons. When Islamic banks provide sale finance, cash is added to the demand deposits of commodity suppliers.

If all such flows or most of them end up in Islamic banks accounts¹⁴, banks will use the full value of the new balances placed in investment accounts to finance more assets in the Mudaraba pool. New balances in demand deposits will be similarly used, depending on the required reserve ratio applied on such deposits. The use of new balances in investment as well as demand deposits will cause successive rounds of derivative deposits both as investment accounts and as demand deposits.

The Effects of Money Creation by Islamic Banks on Prices

From above, we realize that Islamic banks are capable, as a group, of adding to the supply of money through derivative deposits. Banks use balances over and above their liquidity as well as required reserve requirements to invest and add to their assets.

¹³ This does not happen in all cases. The bank may provide some or all capital in kind, but this must be evaluated at the prices prevailing at the start of the partnership finance.

¹⁴ In a multiple finance system (conventional and Islamic), some funds will flow out of Islamic into conventional banks and vice versa.

Islamic banks invest through providing finance in the forms of partnership, Wakala, or sale finance. In partnership cases, finance goes to increase the supply of commodities. In the rest, finance goes to demand and supply sides. Most sale finance directs itself to suppliers before reaching demand. When a firm wishes to finance the acquisition of machinery and equipment, an Islamic bank would acquire such commodities first before selling or leasing them to the firm. Therefore, supply is reached before demand. In conclusion, the increase in Islamic finance investments due to money (derivative-deposit) creation would have no significant effect on inflation. This is contrary to conventional finance which is mostly directed to demand and can easily be inflationary.

The phenomenon of collective money creation by conventional banks and its effect on the price level, the cost of real balances and wealth redistribution against the public and in favor of banks would justify regulations in favor of total reserves. Collective money creation by Islamic banks may have less influence on the price level and the cost of real balances, but would still have the same redistributive effects in favor of banks. The enforcement of total reserves would still be in order. Meanwhile, more transparency is required in the government use of signorage.

The Ultimate Fund Provider

Should the monetary authority claim final responsibility for the aggregate liquidity of the economy, it must stand ready to play the role of the last fund provider to banks. However, the role of the lender of the last resort does not seem to apply equally to Islamic banking. The reason is that most central banks regulating and supervising Islamic banks in a mixed financial system do not have the tools to act as the ultimate liquidity provider to Islamic banks.

Central banks perform the function of the ultimate lender through a single conventional means. Through the discount window, banks requiring extra liquidity can discount some of their government-debt holdings. This would be strictly Shari'ah noncompliant. The remedy is that the government or central banks issues Shari'ah compliant investment certificates (e.g., Mudaraba certificates) whose proceeds are invested either directly or through Islamic banks. Banks holding such certificates would sell them in the open market or to the central bank to obtain liquidity relief.

Conclusions

Islamic banks has several advantages over conventional finance especially in the areas of information asymmetry, efficiency and stability. Most of such advantages are reflected as external effects in the form of macroeconomic and long run benefits. Islamic bankers, failing to internalize such benefits have little incentive to strictly adhere to the Islamic finance paradigm. Regulations are therefore required to change such behavior in a way to allow the economy to reap the benefits of Islamic finance.

Regulation that ignores the special characteristics of Islamic finance would hinder the growth of Islamic banks and deprive them from their comparative advantage in handling finance relative to conventional banking.

Authorities must seriously consider how differently Islamic banks handle market imperfections in order to design their proper regulation.

Both Islamic and conventional banks benefit from economies of scale in screening customers. However, Islamic banks have a comparative advantage in screening seekers of consumption finance, because of lack of information asymmetry in sale finance. Regulation of Islamic banks must verify the existence of proper procedures to offer sale finance and to ascertain the use of financed commodities and their availability as collateral until the finance is fully repaid.

Screening investors seeking finance by Islamic banks requires procedures to verify investment feasibility. Regulation must ascertain that Islamic banks have the capability and resources for such function.

Regulation must insure that banks properly monitor their customers and depositors and investment account holders monitor their banks. Islamic banks face no information asymmetry in sale and Musharaka finance. The monitoring problem is automatically solved, hence. Monitoring partnership finance in Mudaraba and Wakala requires procedures to make it less costly. The paper offers such procedures.

Investment account holders in Islamic banks must monitor their banks because their accounts, unlike demand deposits, are not guaranteed.

Regulations must allow for representing investment account holders on the board of directors of Islamic banks in order to reduce the risk of moral hazard. Regulation must set minimum size and maturity requirements for the representation of account holders.

Both Islamic and conventional banks face maturity mismatch between assets and liabilities. Islamic banks have more tools than conventional banks to close this gap. Regulations must therefore make sure that Islamic banks use such tools to the extent that maturity mismatch becomes negligible.

Conventional banks face greater business risks than Islamic banks. Time and saving deposits in conventional banks are guaranteed, both principal and interest. Risk is therefore concentrated in the hands of conventional banks. They tend to shift back this risk to customers at times of crises, by charging higher margins on loans. This behavior includes a higher degree of coordination between banks at times of crises.

Islamic banks, meanwhile, share risk in proportion to their shareholders equity. Investment account holders face risk in proportion to their account balances. Risk is therefore distributed more uniformly in Islamic finance. Islamic banks use the profit stabilization reserve and the investment risk reserve as cushions during financial crises in order to pay a competitive rate of return on investment accounts.

Regulation must ascertain the build up of sufficient cushions during good times and their proper use during adversity. They must also make sure that the rate of return on investment accounts is sufficiently higher than the interest rate paid on time and saving deposits, to compensate for the higher risk taken in financing real economic activities rather than providing collateralized loans.

While regulation must provide Islamic banks with procedures to tighten their monitoring of Mudaraba and Wakala investment, the quality of their assets hinges upon product structuring in order to benefit from the risk mitigation advantages of the majority of Islamic finance contracts. Regulation must therefore make sure that the internal processes include product structuring. Product structures must be tested internally for both business viability and Shari'ah compliance.

Regulation can help Islamic finance deal with the public goods problem. It can set guidelines for the use of Amana finance (Musharaka, Mudaraba and Wakala) in order to facilitate their use, especially the latter two in conjunction with the former. In order to prevent the products of ill repute, regulations must clearly define all Shari'ah compliant and non-compliant products and establish a Shari'ah Fatwa and supervisory board in the regulatory agency, while doing away with Shari'ah boards in each Islamic bank

Regulations can prohibit providing subsidies to Islamic banks that face bankruptcy risks. Instead, regulators should offer assistance to customers who face temporary insolvency. In addition, heavy penalties should be imposed on delinquent customers.

In Islamic finance, the government would have to obtain finance for its economic activities by using the Shari'ah-compliant finance contracts. The central bank signorage is balanced by providing finance to the government through market mechanism on equal basis with the private sector and enforcing transparency and disclosure rules on the signorage use by Treasury.

The role of the central bank to protect aggregate liquidity depends on whether banks are allowed to produce collectively derivative deposits through the imposition of fractional reserves. The "liquidity" created by Islamic banks may have a different effect on the price level due to the fact that Islamic finance does not finance the demand side only, but extends its finance to both the demand and supply sides. Finally, the regulation of Islamic banking based on "supervising liquidity" would require the regulator or the central bank to properly equip itself to act as the ultimate "fund provider"; a role that is similar to that of the "ultimate lender" in conventional banking.

Appendix I: comparative advantages of Islamic finance

The classical loan contract boils down to selling present for future cash at an *agio* (premium) reflecting the time preference in cash. It suffers from serious information asymmetry, as the lender and the borrower are not equally informed about the use of loaned funds. The lender would have to exercise costly monitoring of the borrower's use of funds. As a substitute, the lender finds it less expensive to take sufficient collateral.

Islamic finance has fifteen finance contracts. Six of which provide commodities against future payment or spot payment against their future delivery¹⁵. They involve a premium that reflects time preference in commodities. Such contracts are free from information asymmetry. Both the finance provider and user are equally informed about the use of advanced funds. Five of the Islamic finance contracts involve partnership in either profit or product in addition to management¹⁶. They are similar to equity finance and are equally free from information asymmetry. Two of Islamic finance contracts involve sharing in profit without management¹⁷. Two more contracts are based on investment agency¹⁸. Obviously, the last four contracts suffer from information asymmetry in a manner similar to the classical loan contract.

Islamic finance can be described as the art of product structuring. This will be explained further when asset safety is examined.

Another important advantage of Islamic finance is macroeconomic efficiency. Conventional banking take saving and time deposits, which are loans that are guaranteed both principal and interest. Such guarantee entices people to substitute real resources for cash in transactions. Withdrawal of real resources from the real to the monetary sector brings aggregate output below optimum. Islamic banks take *investment accounts* based on PLS, where neither principal nor return is guaranteed. The absence of guarantee in this case leaves no incentive to substitute real resources for cash in transactions. The aggregate output stays optimum, hence (Al-Jarhi, 2001).

The advantages of Islamic finance include bank stability, based on the structure of their balance sheets, high incentive to monitor banks by customers and *vice versa*, and a preference to assist customers who become temporarily illiquid, while punishing delinquency, which if not hindered can make bank failures a thing of the past.

Appendix ii: The Public Good Element in Conventional Banking

If we excluded the mere existence of the financial system as a whole, financing services provided by banks are not pure public goods, as the exclusion principle is easily applied in conventional finance. Finance is provided, based on creditworthiness and collateral. In addition, the conventional banking system is associated with some *public bads*.

¹⁵ Bai' Bethaman Ajel (deferred payment sale), Murabaha (sale at cost plus a markup), Istisna' (sale of goods to be manufactured by specifications), Salam (spot payment against delivery of specified goods), Ijarah (sale of services or usufruct), and Ijarah Muntahia Bettamleek (sale of both usufruct, and underlying asset against installments).

¹⁶ Musharaka (equity finance), diminishing Musharaka, Muzara'a (sharecropping), Mugharassa (sharing in horticulture by planting trees), and Mussaqah (sharing in horticulture by irrigating and mending).

¹⁷ Restricted and unrestricted Mudaraba (profit and loss sharing, PLS, with no role in management).

¹⁸ Restricted and unrestricted Wakala (investment agency).

Those result from lending at a rate of interest (Al-Jarhi, 2001).

- Finance through the classical loan contract causes the allocation of resources to be based on “lending criteria” rather than “investment criteria” (Al-Jarhi, 2001). It causes the financial system to suffer from non-sustainability and lack of compactness.
- A conventional bank or financial institution is inherently unstable. Its liabilities are guaranteed both principal and rate of interest, while its assets are subject to default risk.
- A positive interest rate, guaranteed to be paid on loans encourages the substitution of real resources for money in transactions, thereby reducing efficiency.
- Information asymmetry exposes commercial banking to risks of adverse selection and moral hazard. Mitigation of such risks require expensive monitoring or the switch from commercial to universal banking (Al-Jarhi, 2005).
- Financial innovations through the use of risk trading exposes the economy to instability and contagion.
- In a democracy with imperfect information, bank size becomes a critical element in economic policy, giving rise to the claim that some banks are *too big to fail*. Policymakers tend to draw taxpayers’ money to subsidize them during crises (Al-Jarhi, 2009).

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