Islamic Finance, Risk Sharing and Macroeconomic Policies

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1. Introduction

Much concern has been expressed regarding the trajectory of current configuration of Islamic finance industry. On the one hand, it has been argued that one must not lose sight of the fact that Islamic finance is a new industry. It has begun operating at a noticeable level of commercial significance only recently. In the process, it is competing in a system centuries old. It is making a serious attempt to return to its roots both systematically and within the framework of present-day economic, political, social and financial reality. This view would suggest that in time, Islamic finance industry would converge to its ideal paradigm of providing ways and means of serving the ultimate objectives envisioned by the Qur'an and Sunnah. On the other hand, there is concern that the industry has embarked on a path-dependent trajectory of concentrating on design and development of instruments that, in all but name, resemble those in the conventional system with the added vulnerability of focus on short-termism. Continuation on this trajectory means the sacrifice of the most advantageous features of the ideal Islamic finance, including close link with the real sector, development of full-spectrum financial instruments that can serve long-term investment needs of the real economy as well as the short-term liquidity needs. Moreover, through its close links with the conventional system, it develops the capacity to transmit shocks and vulnerabilities to a system one of whose chief characteristics is resilience and stability. The recent scandal of Libor rate fixing demonstrates one such vulnerability that the present Islamic

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finance industry is exposed to since many instruments and contracts in the industry are benchmarked to Libor.

Arguable, the ideal Islamic finance paradigm points to a full-spectrum menu of instruments serving a financial sector imbedded in an Islamic economy in which all rules of market behavior prescribed by Islam are fully operational (Iqbal and Mirakhor, 2012; Chapra, 2000). The essential function of that spectrum would be spreading and allocating risk among market participants rather than allowing it to concentrate in the borrowing class. Islam proposes two sets of risk-sharing instruments: (i) mu'amelat risk-sharing instruments in the financial sector, and (ii) redistributive risk-sharing instruments through which the economically more able segment of the society utilizes in order to share the risks facing the less economically able segment of the population. As will be argued here, the second set of instruments is used to redeem the rights of the less able in the income and wealth of the more able. These are not instruments of charity, altruism or beneficence. They are instruments of redemption of rights and repayment of obligations.

The spectrum of Islamic finance instruments runs the gamut between short-term liquid, low-risk financing of trade contracts to long-term financing of real sector investment. The essence of the spectrum is risk sharing. At one end, the spectrum provides financing for purchase and sale of what has already been produced in order to allow further production. At the other end, it provides financing for what is intended or planned to be produced. In this spectrum there does not seem to be room provided for making money out of pure finance where instruments are developed that use real sector activity only as virtual license to accommodate what amount to pure financial transactions. There are duyun and Qardh Hassan that are non-interest loans to facilitate real sector transactions in terms of consumption smoothing for those who have

experienced a liquidity shock. This is a case when a financier shares liquidity risk with the firms or consumers for whom the risk is materialized or who use non-interest borrowing as an insurance against liquidity shocks.

It may be argued plausibly that in a contemporary economy, there is need for a variety of ready-to-use means of liquidity, and so long as instruments being developed are, in the judgment of Shari'ah scholars (specifically fuqaha), permissible where is the harm? Usually, this argument starts with the reasoning that financial instruments that serve short-term, trade-oriented transaction contracts, such as murabaha, are permissible. From here, the argument goes that any instrument with connection, no matter how tenuous, to the real sector transactions is also permissible. It is worth noting that transaction contracts permissible in Islam and the financial instruments intended to facilitate them are not the same thing. Islamic real sector transactions contracts ('Uqud) that have reached us are all permissible. However, it is possible that a financial instrument designed to facilitate a given permissible contract may itself be judged non-permissible. As the proliferation of derivative instruments in the period of run up to the global financial crisis demonstrated, the number of financial instruments that have some relation, even if only nominal, to a real sector transaction is limited only by the imagination of financial engineers. This is the essence of the theory of spanning developed in finance in the early 1970's which led to the design and development of derivatives. It is possible that a financial instrument may have weaker risk-sharing characteristic than the Islamic transaction contract it intends to serve.

So long as the fuqaha have not developed a self-regulating organization that quality controls Shari'ah advice, non-fuqaha can only raise questions and issues of concern. It is, however, important to suggest that if Islamic finance is all about risk sharing, then the risk

sharing characteristics of a given instrument needs to become paramount in decisions. One reason, inter alia, for impermissibility of the contract of Al-Riba is surely due to the fact that this contract transfers all, or at least a major portion, of risk to the borrower. It is possible to imagine instruments that on their face are compatible with the no-riba requirement, but are instruments of risk transfer. An example would be a sovereign ijarah sukuk backed by the assets of subjects of ijarah but credit-enhanced by other means, say collateral. All costs taken into account, such a sukuk may well be more expensive and involve stronger risk transfer characteristic than a direct sovereign bond. Clearly, a judgment call needs to be begged of the financiers and financial engineers when they design and develop an instrument to consider its risk-sharing characteristic. This is a call with which fiqh alone should not be overburdened. Financiers and financial engineers should assure of the risk-sharing characteristics of instruments they present to fuquha for approval. Insha'Allah, fiqh will catch up with modern finance as well as with the intricacies of risk and uncertainty. At the present, fiqh can give only a binary response: Yes, no; halal, haram. It is not clear how much finance, risk, and uncertainty expertise are brought to bear on these binary decisions. Or if fiqh has the capacity at the present to make suggestions on how instruments could be improved in terms of the risk sharing.

It appears that at the present, the energies of financiers and financial engineers are focused on the design and development of instruments to accommodate the low-end of time and risk-return, higher-liquidity transactions. Without effort at developing long-term investment instruments with appropriate risk-return characteristics, there is a danger of emergence of path-dependency where the market will continue to see more – albeit in greater variety – of the same. That is more short-term, liquid and safe instruments. This possibility should not be taken lightly. After all, as mentioned earlier, since early 1970's finance has been quite familiar with the theory of spanning.

According to this idea, an infinite number of instruments can be "spanned" out of a basic instrument. This is what led to the explosion of derivatives that played an influential role in the 2007/2008 global financial crisis. At one point it was estimated that in 2007, the total financial instruments, mostly derivatives, in the world was 12.5 times larger than the total global GDP. Similar development could be awaiting Islamic finance if the ingenuity of financial engineers continues to serve the demand-driven appetite for liquid, low risk, and short-term instruments. In that case, the configuration of Islamic finance would have failed to achieve the hopes and aspirations that expectations generated by the vision of benefits that truly Islamic finance could bring to mankind. In what follows, this paper will discuss an alternative trajectory that could allow the industry to converge to the ideal. In the next section, the paper will consider the epistemological roots of risk sharing as the essence of Islamic finance. Section three will address some issues related to risk, uncertainty, risk taking, and risk sharing. Section four discusses the role of risk sharing in Islamic finance. In section five, the argument is made that the role of governments in Muslim countries in promoting risk sharing is crucial to further progress of Islamic finance and then proceeds to discuss the design and development of risk sharing instruments by government which, while crucially important in developing the long-term end of the market could also serve as instruments of macroeconomic policies. Section five concludes the paper.

2. Epistemological Roots

The foundation of the belief that an Islamic financial system facilitates real sector activities through risk sharing has its epistemological roots firmly in the Qur'an, specifically, verse 275 of chapter 2 (Mirakhor, 2011; Mirakhor and Smolo, 2011). This verse, in part, ordains that all economic and financial transactions are conducted via contracts of exchange (al-Bay') and not

through interest-based debt contracts (al-Riba). Since in the Ayah the contract of exchange appears first and no-riba after, it is reasonable to argue that requiring that contracts be based on exchange constitutes a necessary condition of a permissible contract. Based on the same logic, the requirement of "no-riba" constitutes the sufficient condition of contracts. The necessary condition (al-Bay') and sufficient condition (ro-riba) must be met for a contract to be considered Islamic. Classical Arabic Lexicons of Qur'an define contracts of exchange (al-Bay') as contracts involving exchange of property in which there are expectations of gains and probability of losses (Mirakhor, 2010) implying that there are risks in the transaction. By entering into contracts of exchange, parties improve their welfare by exchanging the risks of economic activities, thus allowing division of labor and specialization. Conceptually, there is a difference between risk taking and risk sharing. The former is antecedent to the latter. An entrepreneur has to first decide to undertake the risk associated with a real sector project before financing is sought. In non-barter exchange, it is at the point of financing where risk sharing materializes or fails to do so. The risk of the project does not change as it enters the financial sector seeking financing. Not clarifying this distinction has led to a confusion that the two concepts are one and the same. In the contemporary economy, at the point of financing, risk may be shared but it can also be transferred or shifted. The essence of financial intermediation is the ability of financial institutions to transfer risk. All institutional arrangements within the financial sector or contemporary economies are mostly geared to facilitate this function. One of the chief characteristics of the 2007/2008 global crisis was the fact that many financial institutions shifted the risk of losses but internalized the gains of their operation. Hence, the concept of "privatized gains and socialized losses"(see Sheng, 2009). Another related confusion is between an underlying real sector contract and the instrument that financially empowers that contract. All

contracts (‘uqud) that have reached us originate in the real sector and all are permissible risk-sharing contracts (see Mirakhor, 2010 for a detailed discussion). However, a given instrument designed to finance anyone of these contracts may be permissible from fiqh point of view, in that it meets the sufficient condition of no-riba, but fails to meet the necessary condition of risk sharing.

All Islamic contractual forms, except spot exchange, involve time. From an economic point of view, time transactions involve a commitment to do something today in exchange for a promise of a commitment to do something in the future. All transactions involving time are subject to uncertainty and uncertainty involves risk. Risk exists whenever more than one outcome is possible. Consider for example a contract in which a seller commits to deliver a product in the future against payments today. There are a number of risks involved. There is a priced risk for both sides of the exchange; the price may be higher or lower in the future. In that case, the two sides are at a risk which they share once they enter into the contract agreement. If the price in the future is higher, the buyer would be better off and the price risk has been shed to the seller. The converse is true if the price is lower. Under uncertainty, the buyer and seller have, through the contract, shared the price risk. There are other risks that the buyer takes including the risks of non-deliver and quality risk. The seller, on the other hand, also faces additional risks including the risk that the price of the raw material may be higher in the future, and transportation and delivery cost risk. This risk may also be lower. Again, these risks have been shared through the contract. The same argument applies to deferred payment contracts. Second, it may appear that spot exchange or cash sale involves no risk. But price changes post-completion of spot exchange are not unknown. The two sides of a spot exchange share this risk. Moreover, from the time of the classical economists it is know that specialization through

comparative advantage provides the basis for gains from trade. But in specializing, a producer takes a risk of becoming dependent on other producers specialized in production of what he needs. Again, through exchange the two sides to a transaction share the risk of specialization. Additionally, there are pre-exchange risks of production and transportation that are shared through the exchange. It is clear that the other contracts at the other end of the spectrum of Islamic contracts, i.e. mudharabah and musharakah, are risk sharing transactions. Therefore, it can be inferred that by mandating Al-Bai', Allah swt ordained risk sharing in all exchange activities.

It is worth noting that perhaps one reason for the prohibition of the contract of Al-Riba is the fact that opportunities for risk sharing are non-existence in this contract. It may be argued that the creditor does take risk—the risk of default. But it is not risk taking per se that makes a transaction permissible. A gambler takes risk as well but gambling is haram. Instead what seems to matter is opportunity for risk sharing. Al-Riba is a contract of risk transfer. As Keynes emphasized in his writings, if interest rates did not exist, the financier would have to share in all the risks that the entrepreneur faces in producing, marketing and selling a product. But by decoupling his future gains from the activities of the entrepreneur through loaning money today for more money in the future the financier transfers all risks to the entrepreneur. Moreover, it is clear that by declaring the contract of Al-Riba non-permissible, the Quran intends for humans to shift their focus to risk-sharing contracts of exchange.

A number of interpretations suggest that trade and exchange are the same. The terms of Al-Bay' (exchange) and Al-Tijarah (trade) appear in a number of verses. In at least one verse (verse 37: chapter 24) they appear together. Question arises why would the Quran use two words to refer to the same transaction contract? The reason for the question is that among the many

miracles of the Quran, its eloquence (fasahah) and its superlative, profound rhetoric (balaghah) are well known. Both of these characteristics require efficiency, meaning that the Quran uses minimum number or words to convey complex ideas, yet it produces beautiful, eloquent and profound composition. It would seem out of character for the Quran to use two words particularly in one verse (as in verse 37: chapter 24) to mean the same thing. Consulting major lexicons of Arabic language—for example, Al-Tahqheeqh Fi Kalamat Al-Quran Al-Kareem; Lisan Al-'Arab; Mufradat Alfadh Al-Quran--reveals that Al-Bay' (exchange) and Al-Tijarah are not the same. Based on the Quran itself (verse 16: chapter 2; 254:2, 111:9; 29-30:35; and 10-13:61), these sources suggest there is a major difference between contracts of exchange (Al-Bay') and trade (Al-Tijarah). Trade contracts are always entered into with the expectation of making a profit (ribh). In a contract of exchange on the other hand, there is a possibility of gain but there is also the probability of a loss (khisara).

It can be inferred from the above discussion that there are two types of contracts involving time; (i) contracts over time (or on spot) involving trade in which there is an expectation of gain; and (ii) contracts over time involving exchange in which there is expectation of gain or loss. The latter must refer also to contracts of investment with uncertain outcome in terms of gain or loss. This, of course, does not mean that mudharabah and musharakah could not be used for longer-term trade in expectations of profits to be shared and for long-term investment as was the case for centuries in the Muslim world as well as in Europe in the Middle Ages. Borrowed from Muslims and known as commenda in Western Europe, mudharabah became quite popular as means of financing long-term trade and investment (Mirakhor 1983 and Al-Hassani and Mirakhor, 2003; Brouwer, 2005; Fischell, 1933; Udovitch, 1970, a,b, 1967). Lopez (1976) suggests that there is a consensus among Medieval historians that the commenda was of

the highest importance and contributed greatly to the fast growth of trade and investment which led to economic change and growth in Europe. Commenda's contributions to industrial development of Ruhr Valley in Germany and in building railroads in Europe were particularly pronounced. Therefore, what needs emphasis is that Al-Bay' covers long-term investment contracts that allow the growth of employment and income and expansion of the economy. The focus of Al-Tijarah and all its financing instruments is trade of commodities already produced. In effect, Islam meets the financing needs of trade as well as the requirements of resource allocation, investment, production, employment, income creation and risk management.

Given the above, major economic implications follow. First, as the definition of AL-Bay' indicates, it is a contract of exchange of property. This means that the parties to exchange must have property rights over the subjects of contract antecedent to the exchange. Second, exchange requires a place for the parties to complete their transactions, meaning a market. And, markets need rules of behavior to ensure an orderly and efficient operation. Third, the contract of exchange requires trust among the parties that the terms and conditions of exchange will be met and are enforced. Fourth, there must be rules governing the distribution of proceeds post contract performance. These are rules that govern the redemption of the rights of those who are not parties to the contract directly but who have acquired rights in the proceeds because, in one way or another, they or their properties have contributed to the production of what is the subject of exchange. (For detailed discussion of these rules, see Mirakhor, 2010; Mirakhor and Hamid, 2009; Mirakhor and Askari, 2010)

3. Uncertainty and Risk

Uncertainty is a fact of human existence. Humans live on the brink of an uncertain future. Uncertainty stems from the fact that the future is unknown and therefore unpredictable. Uncertainty if severe enough can lead to anxiety, decision paralysis and inaction. Lack of certainty for an individual about the future is exacerbated by ignorance of how others behave in response to uncertainty. Yet, individuals have to make decisions and take actions that affect their own as well as others' lives. Making decisions is one of the most fundamental capabilities of humans; it is inexorably bound up with uncertainty. Facing an unknown, and generally unknowable future, individuals make decisions by forming expectations about payoffs to alternative courses of action. They can do so using subjective estimates of pay offs to actions based on personal experiences. Alternatively, the person can use known probability techniques to form an expectation of returns to an action. Either way, the expected outcomes will form an expression in terms of probability of occurrence of consequences to an action. In other words, uncertainty is converted into risk. Risk, therefore, is a consequence of choice under uncertainty. Generally, "even in the most orderly societies the future is by no means certain. Even if an individual or organization has defined goals they must reflect their attitude toward risk. In some cases risk may be evaluated statistically… when a population is large enough, some odds can be calculated with fair accuracy as is exemplified by some calculations in life insurance area. In general, however, many of the aspects of uncertainty involve low probability or infrequent events"(Shubik, 1978, p. 124). This makes decisions difficult and actions risky. Risk exists when more than one outcome is possible. It is uncertainty about the future that makes human lives full of risks.

Risk can arise because the decision maker has little or no information regarding which state of affairs will prevail in the future, the person, nevertheless, makes a decision and takes action based on expectations. Risk can also arise because the decision maker does not or cannot consider all possible states that prevail in the future. IN this case, even if the decision maker wants to consider all possible states of the future, there is so much missing information that it is impossible to form expectations about pay offs to various courses of action. This situation is referred to as "ambiguity". If severe enough, this type of uncertainty leads to reluctance or even paralysis in making decisions. People adopt various strategies of "abiquity aversion". One strategy is to exercise patience and postpone making decisions until passage of time makes additional "missing" information available. The Quran has many references to the need for patience so much so that in a number of verses it is said that: "Allah is with those who are patient" and "Allah loves those who are patient."

Question may arise how can existence of uncertainty and its overwhelming influence in human life be explained within the context of Islamic though? Why is life subjected to so much uncertainty necessitating risk taking? Since Allah swt is the Creator of all things why create uncertainty? A full discussion of possible answers is beyond the task of this paper. Suffice it to say that in a number of verses the Quran makes reference to the fact that this temporary existence is a crucible of constant testing, trials and tribulations (see for example verse 155: chapter 2 and 2:76). Not even the believers are spared. In verse 2 of chapter 29 the Quran asks: "Do humans think that they will be left alone when they say: we believe, and they therefore will not be tested?" The fact that this testing is a continuous process is reflected in verse 126 of chapter 9: "Do they not see that they are tried every year once or twice? Even then they do not turn repentant to Allah, nor do they remember." (See also verse 155: chapter 2). To every test, trial

and tribulation in their life-experience, humans respond and in doing so they demonstrate their measure of being self-aware and Allah-conscious. If the response-action is in compliance with the rules of behavior prescribed by the Supreme Creator, i.e., it is "Ahsanu 'Amala", the "best action" (verse 7: chapter 11), meaning completely rule compliant action, then the trial becomes an occasion for self-development and strengthened awareness of Allah swt. Even then, uncertainty remains. No one can be fully certain of the total pay off to one's life within the horizon of birth-to-eternity. Muslims are recommended not to ever assume absolutely certainty of the consequences of their action. They are to live in a state of mind and heart suspended between fear (khawf) of consequences of their actions and thoughts, and the hope (raja') in the Mercy of the All-Merciful Lord Creator. All actions are risky because the full spectrum of future consequences of action is not known. The Quran refers to this idea of uncertainty by suggesting that "…at times you may dislike a thing when it is good for you and at times you like a thing and it is bad for you. Allah knows and you do not." (Verse 216: chapter 2)

4. Risk Sharing and Islamic Finance

It follows from the above discussion that it would be difficult to imagine the idea of testing without uncertainty and risk. Statistician David Bartholemu (2008) asserts that: "it could be plausibly argued that risk is a necessary ingredient for full human development. It provides the richness and diversity of experience necessary to develop our skills and personalities (p. 230). He speculates that: "The development of human freedom requires that there be sufficient space for that freedom to be exercised. Chance seems to provide just the flexibility required and therefore to be a precondition of free will" (p. 200). Further, he suggests that: "…we value our free will above almost everything; our human dignity depends upon it and it is that which sets us apart from the rest of the creation. But if we are all individuals free, then so is everyone else, and that

means the risks created by their behavior, foolish or otherwise, are unavoidable. To forgo risk is to forgo freedom; risk is the price we pay for freedom" (pp.239-240). While life and freedom are gifts of the Supreme Creator to humans, and uncertainty and risk are there to test and try humans to facilitate their growth and development, humans are not left unaided to face the uncertainty of life and suffer its consequences. Prophets and Messengers have brought guidance on how best to make decisions and take actions to mitigate the risks of this life and to improve the chances of a felicitous everlasting life.

Islam, in particular, has provided the ways and means by which uncertainties of life can be mitigated. First, it has provided rules of behavior and a taxonomy of decisions – actions and their commensurate pay offs. Complying with these rules reduces uncertainty. Clearly, individuals exercise their freedom in choosing to comply or not with these rules. That rules of behavior and compliance with them reduce uncertainty is an important insight of the new institutional economics. Rules reduce the burden on human cognitive capacity, particularly in the process of decision making under uncertainty. Rules also promote cooperation and coordination (Mirakhor, 2009). Second, Islam has provided ways and means by which those who are able mitigate uncertainty through sharing the risks they face by engaging in economic activities with fellow human beings through exchange. Sharing allows risk to be spread and thus lowered for individual participants. However, if a person is unable to use any of the means of risk sharing because of poverty, Allah swt has ordered a solution here as well: the rich are commanded to share the risk of the life of the poor by redeeming their rights derived from the Islamic principles of property rights (Mirakhor and Hamid, 2009; Mirakhor and Askari, 2010).

Individuals in a society face two types of risks. The first is the result of the exposure of the economy to uncertainty and risk due to external and internal economic circumstances of the

society and its vulnerabilities to shocks. How well the economy will absorb shocks depends on its resilience which will in turn depend on the institutional and policy infrastructures of the society. How flexibly these will respond to shocks will determine how much these risks impact individual lives when they materialize. The second type of risk individuals face relates to the circumstances of their personal lives. These include risks of injuries, illness, accidents, bankruptcies or even change of tastes and preferences. This kind of risk is referred to as idiosyncratic risk. When idiosyncratic risks materialize, the shock to individuals' income can play havoc with their livelihood. This is because often the level of their consumption that sustains them is directly dependent on their income. If their income becomes volatile so will their livelihood and consumption. Engaging in risk sharing can mitigate idiosyncratic risk and allow consumption smoothing by weakening the correlation between income and consumption such that should these risks materialize, and the shock reduces income, consumption and livelihood of the individual do not suffer correspondingly.

Instruments of Islamic finance allow risk sharing and risk diversification through which individuals can mitigate their idiosyncratic risks. On the other hand, mandated levies, such as zakat, are means through which the idiosyncratic risks of the poor are shared by the rich as an act of redemption of the former's property rights in the income and wealth of the latter. Other recommended levies, beyond those mandated, such as Sadaqat and Qardh Hassan, too play the same role. They help reduce the poor's income–consumption correlation. In other words, the poor are not forced to rely on their low level (or no) income to maintain a decent level of living for themselves and their families. It is possible that at some point in time even these levies can be instrumentalized to be included in the full-spectrum Islamic finance menu of instruments for risk sharing. In the event, Islamic finance becomes a risk manager of the society. Its instruments of

risk sharing will help blunt the impact of economic shocks, disappointments and suffering on individuals by dispersing their adverse financial effects among a large number of people. It will have instruments of finance available for all classes of people to allow them to reduce their idiosyncratic risks and smooth their consumption. It will ensure that innovators, entrepreneurs, small and medium size firms have access to financial resources without the need to take all risks on themselves or, alternatively, abandon productive projects altogether. It will have instruments of insurance that not only provide protection against health and accident risks but also insure against risks to livelihood and home values to protect people's long-term income and livelihood. Such a full-spectrum Islamic finance can then truly be said to have "democratized finance" without transferring risks of any venture to a particular class or to the whole society. This would be in sharp contrast to the results of the "democratization of finance" project which led to the recent global financial crisis of the conventional system in which the risks of financial innovations were shifted away from financiers. Consequence was that while the gains of this "democratization of finance" project were privatized, its pain was socialized (Sheng, 2009).

Risk sharing serves one of the most important desiderata of Islam: the unity of mankind. Islam is a rules-based system in which a network of prescribed rules governs the socio-economic-political life of society (Mirakhor and Hamid, 2009: Mirakhor and Askari, 2010). Compliance with these rules renders the society a union of mutual support by requiring humans to share the risks of life (Mirakhor, 2010; Askari, et. al., 2012). Risk sharing intensifies human interaction. This was a powerful argument in favor of globalization. It was asserted that trade and financial integration increase interaction among peoples resulting in greater degree of familiarity which facilitates risk sharing. Feedback processes triggered by integration create a virtuous cycle leading ultimately to a "global village". However, empirical research provides evidence of

failure of financial integration to achieve the hoped-for degree of risk sharing. The dizzying pace of financial innovations of several decades prior to the crisis created opportunities and instruments of risk shifting – where risks were shifted to investors, borrowers, depositors and, ultimately, to taxpayers (Sheng, 2009) – rather than risk sharing. The financial sector became increasingly decoupled from the real sector with the growth of the former outpacing that of the latter by double-digit multiples (Epstein, 2006; Mirakhor, 2010; Menkoff and Tolksorf, 2001). Emergence of a crisis was inevitable since it was the real sector that had to validate the mountain of debt sitting on top of a relatively small hill of real output. Ultimately, much wealth was destroyed, many people became unemployed and substantial fiscal costs were imposed on governments and taxpayers the world over. Slow progress of conventional finance to promote risk sharing provides Islamic finance with a valuable opportunity to demonstrate its usefulness as an alternative on a global scale.

Characteristic operational requirements of Islamic finance are known. These include: (i) transparency, trust and faithfulness to terms and conditions of contracts; (ii) close relationship between finance and the real sector activities such that the rate of return to the latter determines that of the former; (iii) asset/liability risk matching; (iv) coordinated asset/liability maturity structure; (v) asset/liability value matching such that the value of both sides of the balance sheet more simultaneously and in the same direction in response to changes in asset prices; and (vi) limitation on credit expansion and leverage. It has been demonstrated that such a system would be stable and capable of generating employment, income and growth (Askari, e.al. 2010). This implies that the litmus test of usefulness of Islamic finance would be its ability to induce growth and reduce poverty through its chief characteristic: risk sharing. Islam ordains risk sharing through three main venues: (i) contracts of exchange; (ii) redistributions and transfer payment

programs, and (iii) risk sharing with the future generation via its rules of inheritance. The full spectrum of instruments of such a financial system would be expected to run the gamut from short-term, liquid, and low-risk financing of trade contracts to long-term financing of real sector investment. At the lower end, the spectrum would provide financing of sales and purchases of produced products to allow greater production, thus, greater employment of resources. At the higher end, it would provide financing for planned production in the future; all financing taking place through risk sharing contracts (Mirakhor, 2010; Askari, et.al, 2012). Such a system would leave no room for pure financial transactions, i.e., financial activities with no relations to the real sector of the economy. There would be non-interest rate based debt contracts, such as "duyun" and Qardh Hassan, bur their main purpose would be to facilitate consumption smoothing for those experiencing liquidity and other idiosyncratic shocks. Since these instruments would be non-interest bearing, even they become instruments of risk sharing.

The evolution of Islamic finance thus far points to its development as a new asset class intended to remedy a market failure in conventional finance to develop instruments demanded by Muslim investors. Rooted in the conventional finance, the practitioner-designers of this new asset class had to design instruments that resembled those prevalent in the host system without violating the "no-riba" sufficient condition. More often than not the relationship of these instruments to the real sector has been one of "marriage of convenience" where, out of necessity, a backward linkage was created between the instrument and the "book" purchase of a real product. A large number of conventional instruments were thus reverse-engineered, retrofitted and re-designed. Demand-driven energies of financiers and financial engineers were thus focused on the design of instruments that served the lower-end of the spectrum; low-risk, short-term, and liquid instruments. These have been generally large-denomination securities placed mostly in the

wholesale markets. They have not been available in the secondary, retail markets to serve the risk hedging needs of ordinary households and firms. Very few are of high quality enough to meet the liquidity needs of the market. Those that are of high quality are bought and held. Many of the sukuks with tenuous, or at best weak, relations to the real sector suffer from opacity, lack of clarity and legal certainty in their contract design, formation, and operation. Moreover, there is the problem of asset concentration in both the short-term and the medium-to-long-term maturities. In case of the former, assets are concentrated in murabaha-type contracts while in case of the latter they are concentrated in real estate. Additionally, there is the more worrisome question of uncertainty created by lack of clarity regarding the existence of speedy resolution and work out mechanisms compatible with shariah. Without concerted efforts aimed at development of the high-end of the spectrum of Islamic finance instruments, there is the real possibility of emergence and persistence of a path-dependent process whereby the industry continues churching out more – albeit in greater variety for branding purposes – of the same types of instruments. After all, as mentioned before, finance is well familiar with the theory of "spanning" – the idea that an infinite number of instruments can be "spanned" out of one basic instrument. This theory served as the foundation of development of the derivative market. The mushrooming of low-risk, short-term, and highly liquid instruments may well be a signal that the same process is at work in the Islamic finance industry (Mirakhor, 2010).

5. Design and Development of Risk-Sharing Instruments

For Islamic finance to achieve its objectives, development of medium-to-long-term risk-sharing instruments is an imperative. Given the track record of the industry thus far, it appears unlikely that the industry by itself will produce such instruments. This is a clear case of market failure justifying government's affirmative action to motivate progress. Earlier discussion focused on

the enormous and unique power of government as the risk manager of the society. If and when convinced of the need to intervene, government action can generate enough incentives to kick-start a process of energizing the private sector's progress toward adopting risk-sharing instruments. Government itself has substantial incentive to do so. As a first step, government could design medium-to-long-term instruments of risk sharing to finance its own development budget. A typical emerging market or developing country devotes 30 to 40 percent of its budget to development expenditure financed by taxes and/or domestic and external borrowing. Domestic government borrowing, though it could serve risk-sharing purposes, has adverse impacts on income distribution. Externally funded government borrowing represents leakages out of the economy, worsens income distribution and exposes the economy to the risk of "sudden stop". Issuing an equity instrument on the portfolio of domestic development projects has none of these problems and it has an added advantage of improving domestic income distribution. Provided that these instruments are issued in low denominations sold in the retail market, they can serve the households and firms in their attempts to hedge their idiosyncratic risks. In essence, these would be macromarket instruments similar to those proposed by Shiller and could anchor the development of the high-end of the spectrum.

Government could also develop a second risk-sharing instrument to finance the remainder of the budget. This instrument could be a perpetual security whose rate of return would be a function of the growth of the national income of the country or tied to the rate of return in the real sector of the economy. Government as an agent (wakeel) of the citizen could commit on their behalf to service such an instrument. These securities—resembling equity shares in a corporation—could be used by the government to convert its debt into these risk-sharing instruments; thus achieving a larger fiscal space.

Importantly, these securities could be utilized as instruments of monetary policy replacing interest rate based government bonds. Since banks and financial institutions anchor asset and liabilities sides of their balance sheet on the central bank's overnight rates, so long as these rates are determined by interest rates, the portfolio of the banking system, as well as the rest of the financial sector, are anchored to interest rates even if the entire banking system becomes Islamic. Elsewhere it has been argued that using the described instruments to signal the private sector can invest significant potency in monetary policy and its transmission mechanism (other benefits of these instruments have been discussed in Mirakhor, 2010; Askari, et.al., 2012). These instruments can also be utilized to improve international risk sharing as other governments and investors buy these securities to diversify their own risks. Such securities will also provide greater vitality to equity markets. As part of governance structure of issuance and use of proceeds of these instruments, strengthened legislative or parliamentary oversight could enhance the credibility of these instruments.

6. Conclusions

The financial crisis of 2007/2008 has had serious impacts on the global and individual economies across the world. Its effects are still reverberating in the economies of Western Europe and North America threatening the economies of emerging markets and developing countries. The aftermath of the crisis has created events that only a year ago would have been though unlikely. These include the downgrading of the highly coveted triple A rating of the United States, threat to Eurozone, Brazil's suggestion that emerging markets and developing countries should help bail out Western economies, China's reported interest in buying Italian debt, Switzerland trying to convince the rest of the world that its currency is not as strong as believed in order to ward off rush to it as a safe haven currency, and, most importantly, the growing possibility of sovereign

debt default in a number of West European economies with dire predictions of catastrophic consequences. While a large number of causes have been suggested by analysts, the most important cause of all seems to be the growing uncertainty regarding the regime of interest rate-based debt financing system that has been the centerpiece of the conventional financial structure. Some fundamental research has pointed out the justification for this growing regime uncertainty. A study by Reinhart and Rogoff (2009) suggested that all crises of the past have been, at their core, debt crises, regardless of whether they were labeled as "currency" or "banking" crises. In a more recent study of 44 countries over a 200-year period, Reinhart and Rogoff (2010) divided the debt-to-GDP ratio into categories of 30, 30-60, 60-90, and greater than 90 percent. They concluded that at ratios above 30 percent, the growth of economies become under stress and beyond 90 percent economic growth suffers significantly. At 100 percent of debt-to-GDP ratio, an economy can grow to the extent it can only service its debt. It is now estimated that the richest members of G-20 will have debt-to-GDP ratios of around 120 percent by 2014. It is also estimated that there are about US$200 trillion worth of paper securities in the global economy of which US$150 trillion are interest rate-based debt instruments (Rogoff, 2011). Comparing this significant amount to the total global GDP estimated optimistically at $65 trillion in 2011 growing at about 4 percent, it is difficult to envision how the global GDP, representing the word's productive capacity, can validate this mountain of debt. This dire circumstance has led to regime uncertainty and the underlying belief that continue shifting and transfer of risk with interest rate-based instruments are not serving the collective welfare. The search is on for an alternative regime, and risk sharing has been shown as an efficient replacement. However, it has also been demonstrated that private markets do not have a track record giving hope of

willingness to develop risk-sharing markets. This circumstance suggests a market failure justifying government intervention.

Over the past two decades, there has been an important call for the development of instruments called “macromarket” securities that could promote collective and individual risk sharing (Shiller, 1993). Globalization was expected to improve significantly international and domestic risk sharing. A large body of empirical work has demonstrated a sizeable failure in this regard. Governments have enormous potential for intervention in this area to promote risk sharing as they are the ultimate risk managers of their respective societies. Their power to tax, spend and enforce gives them not only the necessary clout but also the ability to make credible commitments on behalf of their societies as their agent (wakeel).They can use this capacity to issue securities that allow household and firms to mitigate their idiosyncratic risks against which they are not insured. These instruments can also allow countries to share their risks by expanding opportunities for international risk sharing. What has become disappointingly clear is that, even in the richest societies, public policy-generated means of protecting people against the risk of shocks, over which they have no control but which affect their livelihood significantly, have been woefully inadequate. Macromarket securities can provide significant opportunity to individuals, households, firms and countries to mitigate the adverse consequences of shocks to their economic well being through diversification.

Islamic finance is in a unique position to offer an alternative to the present interest rate-based debt financing regime that has brought individual and global economies to the verge of collapse. The core principle of Islamic finance is risk sharing. Although still a young, if not an infant, industry and deserves much praise for its accomplishment thus far, Islamic finance industry has not managed to develop truly risk-sharing instruments that would allow individuals,

households, and firms as well as whole economies to mitigate systematic and un-systematic risks. Nor is there any sense of direction that could compel an expectation that such developments are on the horizon. It appears, therefore, that this situation has all the hallmarks of a market failure justifying government intervention. This paper suggests that governments could issue macromarket instruments that would provide their treasuries with a significant source of non-interest rate based financing while promoting risk sharing, provided that these securities meet three conditions: (i) they are low denomination; (ii) sold on the retail market; and (iii) have a strong governance oversight. It is also suggested that, given that evidence across the world suggests that monetary policy's transmission mechanism appear to be impaired, using these government issued securities for monetary policies can impart significant potency to monetary policy (Mirakhor, 2010). Finally, consider also the present problem facing Europe and the global economy. Could a macromarket instrument such as those discussed above help mitigate the risk of sovereign default threatening the global economy at the moment? Consider the possibility of a macromarket instrument that could be issued jointly by the IMF, World Bank and the European Central Bank, with additional resources provided by some members of the G-20, with its rate of return tied to the growth of the debtor country

GDP. This could give immediate relief to the countries at risk of sovereign default, allow the economies of these countries fiscal and growth space, and remove the threat to the global banking and financial system.

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