

Islamic Banking and Finance Review



EPISTEMOLOGICAL FOUNDATION OF FINANCE: ISLAMIC AND CONVENTIONAL

Abbas Mirakhor

First Holder, INCEIF Chair of Islamic Finance, International Centre for Education in Islamic Finance (INCEIF) Kuala Lumpur, Malaysia
abbasmirakhor@inceif.org

Edib Smolo

Coordinator of Islamic Capital Market Unit International Shari'ah Research Academy for Islamic Finance (ISRA), Kuala Lumpur, Malaysia. edib@isra.my or hfz.edib@gmail.com

Research Paper Information:

To cite this article

Mirakhor, Abbas, & Smolo, Edib. (2014). Epistemological Foundation of Finance: Islamic and Conventional. *Islamic Banking and Finance Review*, 1(1), 01–24.
[Crossref](#)



Access this article online



Article



Abbas Mirakhor



<https://doi.org/10.32350/ibfr.2014.01.01>

Contact Information



INSTITUTE OF ISLAMIC BANKING (IIB)
UNIVERSITY OF MANAGEMENT AND TECHNOLOGY



C-II, Johar Town, Lahore



+92-42-3521-2801-10 (Ext – 3418)

Volume 1 1435-H/ 2014

ISSN (E): 2413-2977

ISSN (P): 2221-5239

Journal

<https://doi.org/10.32350/ibfr>

Issue

<https://doi.org/10.32350/ibfr.2014.01>

Journal



This is an Open Access Journal

Published By

Institute of Islamic Banking
University of Management and
Technology (UMT)



<https://iib.umt.edu.pk/ibfr/home.aspx>



ibfr@umt.edu.pk

This article is distributed under the terms of Creative Commons Attribution – Share Alike 4.0 International License.



Attribution-ShareAlike 4.0 International
(CC BY-SA 4.0)

Indexing Partners





EPISTEMOLOGICAL FOUNDATION OF FINANCE: ISLAMIC AND CONVENTIONAL*

Abbas Mirakhor

First Holder, INCEIF Chair of Islamic Finance
International Centre for Education in Islamic Finance (INCEIF)
Kuala Lumpur, Malaysia
abbasmirakhor@inceif.org

Edib Smolo

Coordinator of Islamic Capital Market Unit
International Shari'ah Research Academy for Islamic Finance
(ISRA), Kuala Lumpur, Malaysia
edib@isra.my or hfz.edib@gmail.com

Abstract

The main purpose of this paper is to trace epistemological roots of conventional and Islamic finance. Based on an extensive literature review, this paper aims to highlight, explain, and discuss an ideal conventional and Islamic financial system. The ideal conventional financial system is discussed in light of various writings by Smith and Arrow, plus based on Arrow-Debreu model. On the other hand, the Islamic financial system is discussed in light of *Qur'anic* verses based on which the system is built. The findings show that the present Islamic finance industry evolved from conventional finance to address a market failure in conventional finance in terms of unmet market demand for Islamic finance products. However, since most practitioners in Islamic finance were bankers and market players from the conventional background, they developed, more often than not, products that are similar to conventional ones albeit with *Shari'ah* compatibility. Hence, the focus was primarily on avoiding *riba* while ignoring the first part of the verse 275 of *surah al-Baqarah* which first ordains exchange contracts. A way forward, hence, would be to move towards more risk-sharing products which indicate a robust link between the strength of the financial system and economic growth.

Keywords: Epistemology, Arrow-Debreu, Conventional finance, Islamic finance, *Shari'ah*-compliant, Risk-sharing, Uncertainty, Debt, Interest

*An earlier, longer version of this paper was presented at the Second Foundation of Islamic Finance Conference: "Islamic Banking Products: Theory, Practice and Issues." Organized by Universiti Putra Malaysia, Kuala Lumpur, Malaysia, 8-10 March 2011.



Mirakhor, Abbas, & Smolo, Edib. (2014). Epistemological Foundation of Finance: Islamic and Conventional. *Islamic Banking and Finance Review*, 1(1), 01-24. ISSN 2221-5239. © 2014



Introduction

Simply stated, epistemology deals with the question of what we know about a phenomenon and how do we know it. For precision, it is helpful to clarify terms used currently in discussions of Islamic finance. The practitioners use the term Islamic finance industry to refer their activities in designing and trading “*Shari’ah*-compliant” ways and means of financing. Taxonomically, industries in an economy belong to a sector and sectors belong to subsystems which in turn belong to a larger system. For example, airplane manufacturing industry belongs to airline-industry sector which, in turn, belongs to the transportation subsystem and this belongs to an overall system. Similarly, a bank belongs to a banking industry which belongs to the financial sector which belongs to the financial subsystem which belongs to the larger economic system which, finally, belongs to an overall socio-political-economic system. What then of Islamic finance industry?.

Before the inception of Islamic finance industry, there was what could be called a “market failure” in the conventional financial system. There was substantial unmet demand for *Shari’ah*-compliant financial products. Islamic finance industry grew out of the conventional finance to meet this demand. Muslim scholars writing mostly since the 1970s about Islamic finance focused on development of an Islamic finance system; they not only emphasized elimination of *riba* contracts but urged their replacement with risk-sharing contracts. The practitioners, most of whom had been operating in the conventional finance, were however interested in developing ways and means of finance that, while *Shari’ah*-compatible, would be familiar to and accepted by market players in the conventional finance. The former emphasized Profit-Loss Sharing (PLS), the latter focused on traditional methods of conventional finance centered on risk transfer and risk shifting. In doing so, all financial instruments of conventional finance became subject to replicating, retrofitting and reverse engineering for *Shari’ah* compatibility. This paper argues that there are two ideal financial systems based on risk sharing, conventional and Islamic, and one actual conventional system focused on risk transfer. There are two industries within the actual system; conventional and Islamic finance industries. The paper then proceeds to discuss the epistemology and the main characteristics of each of the two ideal systems. Finally, the paper will discuss the present state of Islamic finance, challenges it faces, and prospects for the future.

Epistemology of Conventional and Islamic Finance

An overall socio-political-economic system gives rise to an economic system out of which grows a system of financing to facilitate production, trade and exchange. The idea of the contemporary conventional economic system is usually traced to Adam Smith’s conception of an economy as envisioned in his book, *The Wealth of Nations*. What has been ignored until recently, however, is the fact that, from an epistemological point of view, Smith’s vision of the economy is embedded in his vision of a moral-ethical system that gives rise to the economy envisioned in *The Wealth of Nations*. That moral-ethical system was well-described in Smith’s book: *The Theory of Moral Sentiments* which preceded his *Wealth of Nation* by a decade (Mirakhor & Askari, 2010; Mirakhor & Hamid, 2009).

Whereas conventional economics considered Smith’s notion of “invisible hand” as a coordinator of independent decisions of market participants, in both *The Theory of Moral Sentiments* and in *The Wealth of Nations* the metaphor refers to the design of the Supreme Creator “who arranged the connecting principles such that the actions of all those seeking their own advantage could produce the most efficient allocation of



resources, and thus the greatest possible wealth for the nation. This is indeed a benevolent designer” (Evensky, 1993, p. 9). Smith contended that the objective of the Devine Design must have been the happiness of humans “when he brought them into existence. No other end seems worthy of that supreme wisdom and divine benignity which we necessarily ascribe to him ...” (Smith, 2006, pp. 186-189). Major contribution of Smith in his *Theory of Moral Sentiments* is to envision a coherent moral-ethical social system consistent with the Supreme Creator’s design and how each member of society would enforce ethical positions. Recognition of human frailties led Smith to recognition of need for an organic co-evolution of individual and society in a stage-wise process of accumulation of ethical system of values from one generation to next. While it is possible for any given society to move forward or stagnate and even regress, the benevolence of the invisible hand of the “Author of nature” guides the totality of humanity in its movement toward the ideal human society. Compliance with and commitment to a set of values – virtues of prudence, concern for other people, justice and benevolence – would insure social order and cohesion (Askari, Iqbal, & Mirakhor, 2010; Askari, Iqbal, Mirakhor, & Krichenne, 2010; Mirakhor & Hamid, 2009; Smith, 2006).

Smith and Arrow

It was not until the second half of the last century when attempts were made to present a particular conception of Smith’s vision of the economy. This conception saw the economy as a market system guided by the “invisible hand” toward smooth functioning, coordinating “autonomous individual choices in an interdependent world” (Evensky, 1993). Two such attempts were the works of Arrow and Debrau (1954)(1954)(1954) and Arrow and Hahn (1971) that sought to show “that a decentralized economy motivated by self-interest” would allocate resources, such that it “could be regarded, in a well-defined sense, as superior to a large class of possible alternative dispositions ...” (Arrow & Hahn, 1971, pp. vi-vii). These attempts focussed primarily on Smith’s idea of a decentralized market economy but in the process it abstracted from much of the well-spring of his thoughts represented by the societal framework emphasizing moral-ethical values envisioned in *The Theory of Moral Sentiments*.

The work of Arrow-Debreu (1954) is fundamentally about optimal risk sharing in a decentralized market economy. It addresses the question of how best to allocate risk in an economy. The answer is that risk should be allocated to those who can best bear it. The work abstracted from the underlying institutional structure envisioned by Adam Smith in *The Theory of Moral Sentiments* and *The Wealth of Nations*. It appears that Arrow-Debreu took for granted the existence of such institutions as property rights, contracts, trust, rule of law, and moral-ethical values. Two key assumptions of this work were complete contracts and complete markets. By the former it was meant that it was possible to design contracts such that all contingencies were covered. The latter assumption meant that there was a market for every conceivable risk. Crucially, all future payoffs were contingent on specific outcomes. Arrow-Debreu model did not include fixed, predetermined rates of interest as payoffs to debt contracts. Subsequent to his seminal work with Debreu, Arrow made it clear that, while not stated explicitly in his work with Debreu and with Hahn, he envisioned it “possible that the process of exchange requires or at least is greatly facilitated by the presence of several ... virtues (not only truth, but also trust, loyalty and justice in future dealings ... The virtue of truthfulness in fact contributes in a very significant way to the efficiency of the economic system ...



ethical behaviour can be regarded as socially desirable institution which facilitates the achievement of economic efficiency in a broad sense” (Arrow, 1971, pp. 345-346). For example, if the institution of trust is strong in an economy, the universe of complete contracts can be replicated by simple contracts entered into by parties stipulating that terms and conditions of the contracts would be revised as contingencies arise. Arrow himself was to place emphasis on trust as the lubricant of the economy (Arrow, 1974). Despite Arrow’s attention to some important elements of the institutional structure that were integral to Smith’s vision of an economy, such as its value system, the economics profession developed its own vision of that economy focusing primarily on two concepts of “invisible hand” and “self interest.” The first was mentioned only once in *The Wealth of Nations* (see Smith, 1976, p. 456) and the manner in which the second was used by economists has been referred to by Vivian Walsh (2000) as “vulgar ... misunderstanding” of what Smith meant by “self interest”. This “narrowing” of Smith’s view has been subject to rather sharp criticism by Amartya Sen (Sen, 1977, 1987) who suggests that: “Indeed, it is precisely the narrowing of the broad Smithian view of human beings in modern economics that can be seen as one of the major deficiencies of contemporary economic theory. This impoverishment is closely related to the distancing of economics from ethics” (Sen, 1987).

A careful reading of *Moral Sentiments* and *The Wealth of Nations* provides immense support for Sen’s position. Even beyond Sen’s spirited criticism of economists’ misunderstanding of Smith’s self-interest motive is the latter’s insistence on the need to comply with “general rules of conduct” that “are the commands and laws of the Deity, who will finally reward the obedient, and punish the transgressor of their duty ... When the general rules which determine the merit and demerit of actions comes thus to be regarded as the laws of an all-powerful being, who watches over our conduct, and who, in a life to come, will reward the observance and punish the breach of them – they necessarily acquire a new sacredness from this consideration. That our regard to the will of Deity ought to be the supreme rule of our conduct can be doubted of by nobody who believes his existence. The very thought of disobedience appears to involve in it the most shocking impropriety. How vain, how absurd would it be for man, either to oppose or to neglect the commands that were laid upon him by infinite wisdom and infinite power. How unnatural, how impiously ungrateful not to reverence the precepts that were prescribed to him by the infinite goodness of his Creator, even though no punishment was to follow their violation! The sense of propriety, too, is here well supported by the strongest motive of self-interest. The idea that, however, we may escape the observation of man, or be placed above the reach of human punishment, yet we are always acting under the eye and exposed to the punishment of God, the greatest avenger of injustice, is a motive capable of restraining the most headstrong passions, with those at least who, by constant reflection, have rendered it familiar to them” (Smith, 2006, pp. 186-189).

Consideration of the above quotation as well as the rest of *The Moral Sentiments* leads to, at least, three observations. First, this is the Smith that has been ignored by the economics profession. The Smith of economics is the author of the self-interest motive that is the basis of utility and profit maximization at any cost to the society, including the impoverishment and exploitation of fellow human beings. Even his most ardent of supporters, Amartya Sen, has ignored the Smith of the above quotation. Second, Smith makes clear in his *Theory of Moral Sentiments* that compliance with the rules prescribed by the Creator and with the rules of the market was essential to his vision. Third, it is also clear that Smith considers the internalization of rules – being consciously aware of ever-



presence of the Creator and acting accordingly - as crucial to all human conduct, including economics. Smith succinctly and clearly shares some of the fundamental institutional scaffolding of Islam: belief in One and Only Creator; belief in accountability of the Day of Judgement; belief in the necessity of compliance with the rules prescribed by the Creator; and belief that justice is achieved with full compliance with rules. To paraphrase Sen, no space need be made artificially for justice and fairness; it already exists in the rules prescribed by the Law Giver.

Arrow-Debreu Economy

An economy in which there are contingent markets for all commodities – meaning that there are buyers and sellers who promise to buy or sell given commodities “if and only if” a specified state of the world occurs – is called an Arrow-Debreu economy. In such an economy, it is the budget constraint of the participants that determines how much of each contingent commodity at prices prevailing in the market they can buy. Since these commodities are contingent on future states, they are risky. Therefore, the budget constraint of individuals determines the risk-bearing ability of each market participant. Arrow himself recognized that requiring such a market is unrealistic. “Clearly, the contingent commodities called for do not exist to extent required, but the variety of securities available on the modern markets serve as a partial substitute” (Arrow, 1971). Such securities, referred to as Arrow Securities whose payoffs could be used to purchase commodities, would reduce the number of markets required while replicating the efficiency of risk allocation of complete contingent markets. Associated with complete markets are complete contracts. These are agreements contingent on all states of nature. In the real world, not all contracts can cover all future contingencies. Therefore, they are said to be incomplete contracts and may indicate inefficiencies in exchange. However, as suggested above, optimal contracts can be devised provided there is mutual trust between the parties to the contract. That would be a simple contract with provisions for modification of terms and conditions should contingencies necessitate change.

A compelling case can be made that in so far as the financial instruments are Arrow Securities, i.e., their payoff is contingent on the “state of nature”, that is, depend on the outcome, not fixed, predetermined, and represent risk sharing, this ideal system would have many characteristics of an ideal Islamic system (Mirakhor, 1993). However, not all Arrow Securities would satisfy *Shari'ah* requirements as some may well represent contingent debt contracts to deliver a fixed predetermined amount of money if a given state of world occurs. These may not, therefore, represent an ownership claim either. Shares of common stock of open corporations do meet these requirements. They are residual ownership claims and receive a returns contingent on future outcomes; they are “proportionate claims on the payoffs of all future states” (Fama & Jensen, 1983). These payoffs are contingent on future outcomes. Stock markets that are well-organized, regulated and supervised are efficient from an economic point of view because they allocate risks according to the risk-bearing ability of the participants. In essence, this is the contribution of Arrow-Debreu model of competitive equilibrium (Arrow, 1971; Arrow & Debreu, 1954), according to which, efficient risk sharing requires that the risk of the economy are allocated to market participants in accordance with their “respective degree of risk tolerance” (Hellwig, 1998).



From Ideal to Actual: Conventional Finance

As mentioned earlier, what Arrow-Hahn and Arrow-Debreu set out to do was analytically rigorous demonstration of the proposition that an “imposing line of economists from Adam Smith to the present have sought to show that a decentralized economy motivated by self-interest ... would be compatible with a coherent disposition of economic resources that could be regarded, in a well-defined sense, as superior to a large class of possible alternative disposition ...” (Arrow & Hahn, 1971, pp. vi-vii). But, as Evensky suggests, “the Smithian story told by Arrow and Hahn – and they are representative of modern economists – is an abridged edition. The spring that motivates action in Smith’s story has been carried forward, but much of the rest of his tale has been forgotten” (Evensky, 1987, 1993). It can be argued, as Arrow (1971) himself seems to imply, that the “rest of” Smith’s “tale” would have been his vision of the institutional infrastructure (rules of behaviour) that is envisioned in *The Theory of Moral Sentiments*, and, as such, abstracting from them would be unlikely to change the outcome of the mathematical analysis of Arrow-Debreu and/or Arrow-Hahn. Furthermore, had actual finance developed along the trajectory discernible from these works, i.e., steps taken toward completion of markets and of contracts, keeping in mind the overall institutional framework for the economy as envisioned by Adam Smith, the result might have been emergence of conventional finance different from the contemporary system. That system would instead be dominated by contingent, equity, risk-sharing financial instruments.

Perhaps the most influential factor in derailing that trajectory is the existence and the staying power of a fixed, predetermined rate of interest for which there has never been a rigorous theoretical explanation. All, so called, theories of interest from the classical economists to contemporary finance theories explain interest rate as the price that brings demand for and supply of finance into equilibrium. This clearly implies that interest rates emerge only after demand and supply forces have interacted in the market and not *ex ante* prices. In fact, in some theoretical models there is no room for a fixed, *ex ante* predetermined rate of interest. For example, introducing such a price into the Walras or Arrow-Debreu-Hahn models of general equilibrium (GE) leads to the collapse of the models as they become over determined. As Cowen suggests: “since the prices of all goods, whether present or future, are already specified by our set of Arrow-Hahn-Debreu equations, to now impose a discount rate on the economy (however derived) would over determine our system of equations. Hence, the interest rate is not the prices of capital goods or durable consumption goods. Instead, the own rates of return are given by the intertemporal price ratios we examine. Not only can there be no explanation of own interest rates that are not dependent upon our explanation of relative prices, but there can be no explanation of own interest rates which are not identical to our description of intertemporal relative prices ... However, if the goods are located in different time periods, then they must be considered different goods ... The logical status of a theory of interest across different goods is rather dubious – how is it any different from a theory of “interest” which compares the price of apples to price of oranges? ... Once we define the interest rate as the set of intertemporal price ratio percentages, GE (general equilibrium) theory losses its ability to tell us anything specific about the magnitude of interest rates. These rates may be positive, negative, or even zero. Most likely, our system of equations will simultaneously contain all three possibilities as solutions” (Cowen, 1983, pp. 609-611).

Even though no satisfactory theory of a positive, *ex ante* fixed rate of interest exists, all financial theory development post Arrow-Debreu-Hahn assumed its existence



in the form of a risk-free asset, usually Treasury Bills, as a benchmark against which the rates of return of all other assets, importantly equity returns, were measured. These include theories such as the Capital Asset Pricing Model (CAPM), Modern Portfolio Theory (MPT); and the Black-Scholes option pricing formula for valuing options contracts and assessing risk. For all practical purposes, the assumption of a risk-free rate introduced an artificial floor into the pricing structure of the real sector of the economy, and into all financial decisions. It can be argued that it is the existence of this exogenously imposed rate on the economy that transformed Arrow-Debreu vision of a risk-sharing economy and finance. The resulting system became one focused on transferring or shifting of risk rather than sharing it. Such a system needed strong regulation to limit the extent of both. However, further developments in finance theory provided analytic rationale for an ideologically aggressive deregulation. One was the Modigliani-Miller Theorem of neutrality of capital structure of firms. In essence this theorem asserted that the value of a firm is independent of its capital structure. This implied that since firms want to maximize their value and since Modigliani-Miller showed that the value of the firm is indifferent whether the firm debt finances or equity finances its capital structure, firms would prefer to incur higher debt levels for the firm rather than issue additional equity. Hence, the risk of additional debt would be shifted to other stakeholders (Jensen & Meckling, 1976).

Another was the development of the Efficient Market Hypothesis (EMH) claimed that in an economy similar to that of Arrow-Debreu, prices prevailing in the market contained all relevant information such that there would be no opportunity for arbitrage. The implication was that if market efficiency is desirable, then markets should be allowed to move toward completion, through innovation and financial engineering, in order to create a financial instrument to allow insurance against all risks. For this to happen, it had to be demonstrated that it is possible to develop such a wide array of instruments, and that regulation had to become passive or even regressive to allow an incentive structure to induce innovation. The latter was initiated in almost all industrial countries in the '80s and continued with an accelerated pace until the 2007-2008 crisis. The former had already been demonstrated by the theory of spanning developed in late 1960s and early 1970s showing that one basic financial instrument can be spanned potentially into a infinite number of instruments (Askari, Iqbal, & Mirakhor, 2010; Askari, Iqbal, Mirakhor, et al., 2010). These developments coupled with the high magnitude of leverage available from money-credit creation process characteristic of a fractional reserve banking system represented an explosive mix that reduced the vision of Adam Smith to the rubble of post crisis 2007-2008. The Arrow-Debreu vision of an economy in which first transformed risk was shared into an economy in which the focus became risk transfer but which quickly transformed into one in which risks were shifted, ultimately, to tax payers (Mirakhor & Krichene, 2009).

An Ideal Islamic Finance System

The ideal Islamic finance points to a full-spectrum menu of instruments serving a financial sector imbedded in an Islamic economy in which the institutional "scaffolding" (rules of behaviour as prescribed by Allah swt and operationalized by the Noble Messenger, including rules of market behaviour prescribed by Islam) is fully operational (Chapra, 2000; Iqbal & Mirakhor, 2007). The essential function of that spectrum would be spreading and allocating risk among market participants rather than



allowing it to concentrate among the borrowing class. Islam proposes three sets of risk-sharing instruments:

- (i) *mu'amalat* risk-sharing instruments in the financial sector;
- (ii) redistributive risk-sharing instruments which the economically more able segment of the society utilize in order to share the risks facing the less able segment of the population; and
- (iii) inheritance rules specified in the *Qur'an* through which the wealth of a person at the time of passing is distributed among present and future generations of inheritors.

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 ideal Islamic finance instruments would run 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 *Qard Hasan* that are non-interest based debt but only to facilitate real sector transactions in terms of consumption smoothing for those who have experienced 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 modern complex economy, there is need for a variety of ready-to-use means of liquidity, and so long as instruments – being developed – are, in the judgement of *Shari'ah* scholars, 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 *murabahah*, are permissible. From there, 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 late 1960s and early 1970s which led to the design and development of derivatives (see Askari, Iqbal, & Mirakhor, 2010; Askari, Iqbal, Mirakhor, et al., 2010). It is possible that a financial instrument may have weaker risk-sharing characteristic than the Islamic transaction contract it intends to serve.

Since Islamic finance is all about risk sharing, then the risk characteristics of a given instrument needs to become paramount in decisions. One reason, *inter alia*, for non-permissibility 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 and, ultimately, of shifting risk to tax payers. An example would be a sovereign *ijarah sukuk* based on the assets subject 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 (see Mirakhor & Zaidi, 2007). Clearly, a judgement 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 *fuqaha* for approval. *InshaAllah*, *fiqh* will catch up with modern finance as well as with the intricacies of risk and uncertainty.

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, liquid 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 1970s 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 which played an influential role in the recent global financial disasters. 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 and the creative imagination of *Shari’ah* scholars continue 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 evoked by the potential of the ideal Islamic financial system.

Epistemology of an Ideal Islamic Finance System

The fountainhead of all Islamic thought is the *Qur’an*. Whatever the theory of Islamic knowledge may be, any epistemology, including that of finance, must find its roots in the *Qur’an*.

The starting point of this discussion is therefore Verse 275 of Chapter 2 of the *Qur’an*, particularly the part of the Verse that declares contract of *al-Bay’* permissible and that of *al-riba* non-permissible. Arguably, these few words can be considered as constituting the organizing principle – the fundamental theorem as it were – of the Islamic economy. Most translations of the *Qur’an* render *al-Bay’* as “commerce” or “trade”. They also translate “*at-Tijarah*” as “commerce” or “trade”. Consulting major lexicons of Arabic (see among others Al-Isfahani, 1992; Al-Mustafaoui, 1995; Ibn Mandhoor, 1984; Lane, 2003) reveals that there is substantive difference between *al-Bay’* and *at-Tijarah*. Relying on various verses of the *Qur’an* (e.g. verse 254: chapter 2; 111:2; 29-30:35; 10-13:61) these sources suggest that trade contracts (*at-Tijarah*) are entered into in the expectation of profit (*ribh*). On the other hand, *al-Bay’* contracts are defined as “*Mubadilah al-Maal Bi al-Maal*”: exchange of property with property. In contemporary economics it would be rendered as: exchange of property rights claim.



These sources also suggest a further difference in that those who enter into a contract of exchange expect gains but are cognizant of probability of loss (*khisarah*).

It is worth noting also that 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 price risk for both side of the exchange; the price may be higher or lower in the future. In that case the two sides are at 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-delivery and quality risk. The seller, on the other hand, also faces additional risks including the risk that the price of 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 defer 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 known 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. *mudarabah* and *musharakah*, are risk sharing transactions. Therefore, it can be inferred that by mandating *Al-Bay'*, Allah swt ordained risk-sharing in all exchange activities.

Third, it appears that the 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 writing, if interest rate did not exist, the financier would have to share in all the risks that the entrepreneur faces in producing, marketing and selling a product (see Mirakhor & Krichene, 2009). But by decoupling his future gains, by loaning money today for more money in the future, the financier transfers all risks to the entrepreneur. Fourth, it is clear that by declaring the contract of *al-riba* non-permissible, the *Qur'an* intends for humans to shift their focus to risk sharing contracts of exchange.

It appears – and Allah knows best – that 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 expectation of gain (*ribh*); and
- (ii) contracts over time involving exchange in which there is expectation of gain or loss (*khisarah*).



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 *mudarabah* 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, *mudarabah* became quite popular as means of financing long-term trade and investment (Al-Hassani & Mirakhor, 2003; Brouwer, 2005; Fischel, 1933; Mirakhor, 1983; Udovitch, 1967, 1970a, 1970b). 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* contribution to industrial development of Ruhr Valley in Germany and in building railroads in Europe were particularly pronounced (Mirakhor, 1983). 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 *at-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, parties must have the freedom not only to produce what they wish but also with whom they wish to exchange. Third, parties must have freedom to contract. Fourth, there must be means of enforcing contracts. Fifth, exchange requires a place for the parties to complete their transactions, meaning a market. Sixth, markets need rules of behaviour to ensure an orderly and efficient operation. Seventh, the contract of exchange requires trust among the parties as to commitments to perform according to the terms and conditions of exchange. Eighth, there must be rules governing the distribution of proceeds. Ninth, there must be redistributive rules and mechanisms to correct for pattern of distribution emerging out of market 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, one way or another, they or their properties have contributed to the production of what is the subject of exchange. These implications are discussed below.

Property Rights

Briefly, the Principles of Property rights in Islam include:

- (i) Allah swt has created all property and He is the ultimate owner;
- (ii) Resources created by Allah swt are at the disposal of all humans to empower them to perform duties prescribed by the Creator;
- (iii) While the ultimate ownership is preserved for the Creator, humans are allowed to combine their physical and intellectual abilities with the created resources to produce means of sustenance for themselves and others;
- (iv) The right of access to resources belongs to all of mankind universally;
- (v) Humans can claim property rights over what is produced through their own labour or transfers through gift giving, exchange, contracts, inheritance or redemption of rights in the produced property;



- (vi) Since created resources belong to all humans, the inability of a person (physical, mental or circumstances) to access these resources does not negate the individual's right to these resources;
- (vii) These rights have to be redeemed – this establishes the rule of sharing with the less able;
- (viii) Sharing is implemented through redistributive mechanisms, such as *zakah*, which are redemption of rights and not charity;
- (ix) Since work and transfers are the only sources of property rights claims, all sources of instantaneous property rights creation, such as theft, bribery, gambling and *riba* are prohibited;
- (x) Unlike, the conventional system of property rights, Islam imposes strict limits on the freedom of disposing of property; there is no absolute freedom for the owner to dispose of property as there are rules against extravagance, waste, destruction of property or its use in prohibited transactions;
- (xi) Property rights must not lead to accumulation of wealth as the latter is considered the life blood of the society which must constantly circulate to create investment, employment, income and economic growth opportunities; and
- (xii) Once the principles governing property rights are observed, particularly the rule of sharing, the owner's right to the remaining property, cleansed of others' rights, is inviolate.

It is through its rules of property rights that Islam envisions economic growth and poverty alleviation in human societies. The latter is accomplished through the discharge of the obligation of sharing derived from the property rights principles which envision the economically less able as the silent partners of the more able. In effect, the more able are trustee-agents in using resources created by Allah swt on behalf of themselves and the less able. In contrast to property rights principles of the conventional system, here property rights are not means of exclusion but of inclusion of the less able in the income and wealth of the more able as a matter of rights that must be redeemed. In the conventional system, rich help the poor as a demonstration of sympathy, beneficence, benevolence and charity. In Islam, the more able are required to share the consequences of the materialization of idiosyncratic risks – illness, bankruptcy, disability, accidents and socio-economic disadvantaged – for those who are unable to provide for themselves. Those who are more able diversify away a good portion of their own idiosyncratic risks using risk-sharing instruments of Islamic finance. The economically well off are commanded to share risks of those who are economically unable to use the instruments of Islamic finance. It can be argued plausibly that unemployment, misery, poverty and destitution in any society are prima facie evidence of violation of property right rules of Islam and/or non-implementation of Islamic instruments of risk sharing. In Islam the risks that would face the future generations are shared by the present generation through the rules of inheritance. These rules break up the accumulated wealth as it passes from one generation to another to enable sharing risks of a larger number of people.

Contracts and Trust

Basically, a contract is an enforceable agreement. Its essence is commitment. Islam anchors all socio-political-economic relations on contracts. The fabric of the *Shari'ah* itself is contractual in its conceptualization, content and application. It's very



foundation is the primordial covenant between the Creator and humans (see verses 172-173: chapter 7). In an unambiguous verse (152:6), the *Qur'an* urges the believers to fulfil the covenant of Allah. This is extended to the terms and conditions of all contracts through another clear verse (1:5) in which believers are ordered to be faithful to their contracts. They are ordered to protect faithfulness to their covenants and what has been placed in trust with them as a shepherd protects sheep (8:32; also 34:17; 172:2; 91-92:16). Thus, believers do not treat obligations of contracts lightly; they will take on contractual obligations only if they intend fully to fulfil them. Hence, their commitments are credible.

Contracts are means of coming to terms with future risks and uncertainty. They allocate risks by providing for future contingencies and set obligations for each party and each state in the future as well as remedies for breach of contracts. Generally, there are three motives for entering into a contract: to distribute risk (via sharing of risk, transfer of risk or shifting of risk), to align incentives, or to minimize transaction costs. *Mudarabah*, *musharakah*, and the purchase of equity shares are examples of risk sharing. Entering into an insurance contract is an example of transferring risks for a fee to those who can better bear them. Risk shifting occurs when the risks of a transaction or a contract between two parties are shifted to a third party. This concept was discussed by Jensen and Meckling (1976)(1976)(1976)(1976)(1976)(1976) in the context of corporate managers resorting to debt finance instead of issuing additional equity, thus shifting the risk of debt burden to other stakeholders. To align incentives, one party (usually the principle) enters into a contract with another (an agent) through which incentives are created for the latter to take actions that serve their joint-surplus maximization objective (Hart & Holmstrom, 1987). Contracts that are designed to reduce transaction costs are usually aimed at establishing stable, long-term relationship between parties in order to avoid *ex ante* information, search and sorting costs as well as *ex post* bargaining costs (Goldberg, 1985).

There is an organic relationship between contract and trust. Without the latter, contracts become difficult to negotiate and conclude and costly to monitor and enforce. When and where trust is weak, complicated and costly administrative devices are needed to enforce contracts. Problems are exacerbated when, in addition to lack of trust, property rights are poorly defined and protected (Sheng, 2009). Under these circumstances, it becomes difficult to specify clearly the terms of contract since transaction costs – that is search and information costs, bargaining and decision costs, contract negotiations and enforcement costs – are high. Consequently, there is less trade, fewer market participants, less long-term investment, lower productivity and slower economic growth. Weakness of trust creates the problem of lack of credible commitment which arises when parties to an exchange cannot commit themselves or do not trust that others can commit themselves to performing contractual obligations. Empirical research has shown that where the problem of lack of commitment exists and is significant, it leads to disruption in economic, political and social interaction among people. Long-term contracting will not be possible and parties to exchange opt for spot market or very short-term transactions (see for example Keefer & Knack, 2005). Considering these issues, one can appreciate the strong emphasis that the *Qur'an* [as well as the Messenger (sawaws)] has placed on trust, trustworthiness (see Verse 27, Chapter 8 and 57:4) and on the need to fulfil terms and conditions of contracts, covenants, and promises one makes. These rules solve the problem of credible commitment and trust, thus facilitate long-term contracts. To illustrate the importance of trust, consider the role of complete contracts in the



neoclassical theory of competitive equilibrium (Arrow, 1971). A complete contract fully specifies all future contingencies relevant to the exchange. In the real world a vast majority of contracts are incomplete. This requirement, therefore, is considered too stringent and unrealistic. Not only ignorance about all future contingencies make writing complete contracts impossible, even if all future contingencies are known, it would be nearly impossible to write a contract that can accommodate them all. However, if the parties to a contract trust each other, they can agree to enter into a simple contract and commit to revising its terms and conditions as contingencies arise.

Markets

A major reason for a contract of exchange is that the parties to the contract wish to improve upon their own pre-contract welfare. For this to happen, parties must have the freedom to contract. This, in turn implies freedom to produce which calls for clear and well-protected property rights to permit production and sale. To freely and conveniently exchange, the parties need a place to do so, i.e., a market. To operate efficiently, markets need rules of behaviour and clear unambiguous rule-enforcement mechanisms to reduce uncertainty in transaction. Markets also need free flow of information. To reinforce the efficiency of market operations, trust has to be established among participants, transaction costs to be minimized, and rules established to internalize externalities of two-party transactions. Andrew Sheng (2009, p. 9) suggests that: “Successful markets all share three key attributes: the protection of property rights, the lowering of transaction costs and the high transparency.” To achieve these attributes, preconditions and infrastructures are needed including:

- (i) freedom of market participants to enter and exit the market, to set their own objectives within the prescribed rules, to employ ways and means of their own choosing to achieve their goals, and to choose whomever they wish as their exchange partner;
- (ii) an infrastructure for participants to access, organize and use information;
- (iii) institutions that permit coordination of market activities;
- (iv) institutions to regulate and supervise the behaviour of market participants; and
- (v) legal and administrative institution to enforce contracts at reasonable costs.

Both the *Qur'an* and *Sunnah* place considerable emphasis on the rules of behaviour. Once instated in *Madinah*, as the spiritual and temporal authority, the Messenger (sawaws) exerted considerable energy in operationalizing and implementing the property rights rules, the institutions of the market, the rules of exchange and contracts as well as rules governing production, consumption, distribution and redistribution. He also implemented rules regarding the fiscal operations of the newly formed state as well as governance rules. Specifically regarding markets, before the advent of Islam trade had been the most important economic activity in the Arabian Peninsula. A number of dynamic and thriving markets had developed throughout the area. Upon arrival in *Madinah*, the Messenger of Allah organized a market for Muslims structured and governed by rules prescribed by the *Qur'an*, and implemented a number of policies to encourage the expansion of trade and strengthen the market. Unlike the already existing market in *Madinah*, and elsewhere in Arabia, the Prophet prohibited imposition of taxes on individual merchants as well as on transactions. He also



implemented policies to encourage trade among Muslims and non-Muslims by creating incentives for non-Muslim merchants in and out of *Madinah*. For example, travelling non-Muslim merchants were considered guests of the Muslims and their merchandise were guaranteed by the Prophet against (non-market) losses. The market was the only authorized place of trade. Its construction and maintenance was made a duty of State. As long as space was available in the existing one, no other markets were constructed. The Prophet designated a protective area around the market. No other construction or facility was allowed in the protective area. While trade was permitted in the area surrounding the market in case of overcrowding, the location of each merchant was assigned on a first-come, first-served basis but only for the duration of the trading day (Mirakhor & Hamid, 2009).

After the conquest of Mecca, rules governing the market and the behaviour of participants were institutionalized and generalized to all markets in Arabia. These rules included, *inter alia*, no restriction on inter-regional or international trade, including no taxation on imports and exports; free movement of inputs and outputs between markets and regions; no barrier to entry to or exit from the market; information regarding prices, quantities and qualities were to be known with full transparency; every contract had to fully specify the property being exchanged, the rights and obligations of each party to the contract and all other terms and conditions; the state and its legal apparatus guaranteed contract enforcement; hoarding of commodities were prohibited as were price controls; no seller or buyer was permitted to harm the interests of other market participants; for example, no third party could interrupt negotiations between two parties in order to influence the outcome in favour of one or the other party; short changing, i.e. not giving full weights and measure, was prohibited; sellers and buyers were given the right of annulment depending on circumstances. These rights protected consumers against moral hazard of incomplete, faulty or fraudulent information. Interference with supply before market entrance was prohibited as they would harm the interests of the original seller and the final buyer. These and other rules – such as trust and trustworthiness as well as faithfulness to the terms and conditions of contracts – reduced substantially transaction costs and protected market participants against risks of transactions (Mirakhor & Hamid, 2009).

Achieving the Ideal: Uncertainty, Risk and Equity Markets

Now that we have discussed epistemologies of both conventional and Islamic finance and that we discussed briefly about recent financial crisis and its relevance to the Islamic finance industry, it is time to discuss how we can achieve the ideal having in mind the uncertainty and risks involved in everyday life.

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. If severe enough, it 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 decision 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 payoffs 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 can 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 payoffs to various courses of action. This situation is referred to “ambiguity.” If severe enough, this type of uncertainty too leads to reluctance or even paralysis in making decisions. People adopt various strategy of “ambiguity aversion.” One strategy is to exercise patience and postpone making decisions until passage of time makes additional “missing” information available. The *Qur’an* 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 thought? 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 *Qur’an* 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 *Qur’an* 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 reflected in verse 126 or chapter 9: “Do they not see that they are tried every year once or twice? Even then they do not turn repentant to Allah, not 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 behaviour prescribed by the Supreme Creator, that is it is “*Ahsanu ‘Amala*”, the “best action” (verse 7: chapter 11), meaning completely rule compliant, 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 payoff to one’s life within the horizon of birth-to-eternity. Muslims are recommended not to ever assume they are absolutely certain 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 *Qur’an* 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).

Risk Sharing

It follows from the above discussion that it would be difficult to imagine the idea of testing without uncertainty and risk. Statistician David Bartholemu 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" (2008, p. 230). He speculates that: "The development of human freedom requires 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" (2008, 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 behaviour, foolish or otherwise, are unavoidable. To forgo risk is to forgo freedom; risk is the price we pay for freedom" (2008, 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 to suffer its consequences. Books, 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 behaviour and taxonomy of decisions/actions and their commensurate payoffs in the *Qur'an*. Complying with these rules reduces uncertainty. Clearly, individuals exercise their freedom in choosing to comply or not with these rules. That rules of behaviour 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 to, mitigate uncertainty by 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 market means of risk sharing because of poverty, Allah swt has ordered a solution here as well: the rich are commanded to share the risks of the life of the poor by redeeming their rights derived from the Islamic principles of property rights. Islam's laws of inheritance provide further mechanism of risk sharing.

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 infrastructure 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 and when they materialize, they play havoc with people's 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 that should materialize these risks, and the shock reduce income, consumption and livelihood of the individual do not suffer correspondingly.

It is important to note a nuanced difference between risk taking and risk sharing. The former is an antecedent of the latter. The decision to take risk to produce a product precedes the decision on what to do with the risk in financing the project. The decision to share the risk in financing does not increase the risks of the project but reduces the risks for individuals involved in financing as it is spread over larger number of participants. It is also to be noted that the Islamic contract modes that have reached us are all bilateral real sector contracts. What the contemporary Islamic finance industry has accomplished is to:

- i. multilateralize the bilateral contracts as the latter move from the real sector to the finance sector, and
- ii. employ instruments of risk transfer available in the conventional finance but made them *Shari'ah*-compatible.

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 *zakah*, 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 *qard hasan*, too play the same role. They help to reduce the poor's income – consumption correlation. In other words, the poor are not forced to rely on their low (or no) level income to maintain a decent level of subsistence living for themselves and their families. It is possible that at some point in time even these levies can be instrumentalised 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 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 pains were socialized (Sheng, 2009).

Summary and Conclusion

This paper has sought to trace the epistemological roots of conventional and Islamic finance. The reason for interest in the two fields is that, the paper contends, the



present Islamic finance industry evolved over the past three decades from conventional finance to address a market failure in conventional finance in terms of unmet market demand for Islamic finance products. Most practitioners of Islamic finance were bankers and market players well familiar and often well established in conventional finance sector. Their focus was, and is, to develop financial instruments familiar to conventional finance market albeit with *Shari'ah* compatibility as an objective. Their ingenuity combined with active and creative imagination of leading *Shari'ah* scholars has managed to develop a rich array of synthetic and structured products all of which, in one form or another, are replicated, retrofitted or reverse engineered from the conventional finance. This vast array – composed of simple instruments such as lease-purchase to exchangetraded funds (ETFs) to leverage buy outs (LBOs) – are Islamic in so far as attempt is made to ensure avoidance of *riba*. This paper contents, however, that this is only meeting the second half of the part of verse 275 of chapter 2 of the *Qur'an* in which Allah swt first ordains exchange contracts and, second, He swt prohibits *al-riba* contracts. The paper argues that this approach has further entrenched the present Islamic finance industry within the conventional financial system rendering Islamic finance industry a new asset class within the conventional system. The Islamic finance industry could have taken a different course as a number of pioneer scholars had defined a trajectory for its development based on risk sharing (profit-loss sharing or PLS.) In the event, it was the conventional finance that gave Islamic finance industry its take-off platform, thus making the study of the epistemology of conventional finance relevant.

It was argued that it is an economic system that gives rise to a financial system. Therefore, to understand the knowledge of the origin of a financial system one needs to understand the epistemology of its economic system. In case of the conventional economy, the practitioners in the field of economics trace its epistemology to Adam Smith. It was the genius of Kenneth Arrow and his principle co-authors, Gerard Debreu and Frank Hahn, who attempted to provide an analytically rigorous proof of what they saw as the vision of Smith for an economy. However, numbers of contemporary scholars, including Amartya Sen, consider the neoclassical understanding of Smith's vision as distorted and an inadequate representation of the latter's works. The paper argued that Smith's vision of the institutional infrastructure of the economy, i.e. moral-ethical rules governing behaviour prescribed by "the Author of nature" echoes some of the important rules prescribed by Allah swt in the *Qur'an* and operationalized by His Beloved Messenger. There is some tantalizing evidence from Arrow in the mid-70s that suggest that he had thought those ethical-moral rules are crucial to the efficient operation of the economy.

The economy-finance nexus defined by Arrow-Debreu-Hahn general equilibrium models were risk-sharing conceptualizations in which securities represented contingent financial claims on the real sector. Equity share claims represent first best instruments of risk sharing and satisfy characteristics required of Arrow Securities. It would appear that had the financial markets in industrial countries developed their financial sector along the lines suggested by Arrow-Debreu-Hahn model, they could have had much more efficient risk sharing and, perhaps, avoided the crises that have plagued conventional financial system. A number of post-mortem analyses of the recent crisis have developed constructive insights that may help steer the conventional system away from high credit, high leverage, and high debt which are the ultimate causes of all financial crises (Reinhart & Rogoff, 2009). Almost all of the many recommendations for reform of the conventional system – from the *Stiglitz Report* (Stiglitz, 2010), at one end,



and *The Squam Lake Report* (The Squam Lake Group, 2010), at the other end of the spectrum of thought among financial-economic scholars and practitioners – include some form of control, direct or indirect, on credit, debt, and leverage within the financial system, including higher capital adequacy requirement. Some have gone beyond these recommendations and have suggested reform of the fractional reserve banking system and deposit insurance (Kotlikoff, 2010). It is likely that if such reforms are implemented reliance on debt-creating flows within the conventional system will decline in favour of greater equity. Basel III has already taken steps – albeit not as significant as scholars such as Stiglitz or Hellwig demanded – to enhance capital adequacy requirements, impose limits on leverage and curtail proprietary trading of the banks. Whether these changes are sufficient to induce the conventional system to move away from its overwhelming dominance by interest-based debt contracts, risk transfer and risk shifting or it will take a more severe bouts with crises before it does so remains to be seen.

A healthy debate is in progress regarding the future direction of Islamic finance. This paper suggests a way forward that all countries would have to follow anyway to develop an effective financial system. The paper has argued that risk sharing is the objective of Islamic finance. Theoretical and empirical research has shown a robust link between the strength of the financial system and economic growth (Askari, Iqbal, & Mirakhor, 2010; Askari, Iqbal, Mirakhor, et al., 2010).

The progress of Islamic finance over the last three decades is well recognized. In the course of its evolution thus far, the market has developed an array of short-term, liquid, low-risk instruments. While instruments of liquidity are needed in the market so are instruments of long-term investment. What is of concerns is that very little or no effort is spent developing instruments that can serve the long-term, less liquid, higher-return investments that have greater potential for generating employment, income and economic growth. There is a strong perception that Islamic finance is focusing on developments of relatively safe instruments with debt-like characteristics promising maximal return with minimal risk in the shortest possible time. It is thought that this is what is driving Islamic finance. Currently, this is a major apprehension. Concentrating market energies on these types of instrument has possible detrimental effects. There is the possibility of repeatedly reinventing the same short-term, liquid, safe instruments with only a small difference in fine tuning, slicing and dicing risk for purpose of product differentiation. Theory of spanning which provided the analytic basis for development of the derivatives market assures that this process can be never ending. The theory argues that one basic instrument can be spanned into an infinite number of derivatives. If the resources of the market are taken up by investment in these types of instruments, the economy is deprived of financing for long-term investment on risk-sharing basis.

There is a perception that the demand-driven market values safety and this is the reason why longer-term riskier Islamic finance instruments are not being developed. While the market should have instruments to meet short-term, low risk, and liquid trade financing demand, it would be unfortunate if the future evolution of Islamic finance focuses only on short-termism at the cost of neglecting investment needs of the real sector. While instruments developed so far emphasize safety, the recent crisis in the conventional system as well as the turmoil in the *sukuk* market demonstrate that no one instrument is immune to risk and that it is unrealistic to perpetuate a myth that safety with high returns in financial markets is possible. There is always risk. The question is how to allocate it to those who are in the best position to bear it and how to build system resilient



to absorb shocks emanating from materialization of risk. The answer must surely lie in a system that provides full-spectrum menu of risk sharing instruments.

A related concern is that by focusing solely on short-termism, there is the possibility of emergence of path dependency. Economic changes generally occur in increments. Growth of markets and capital formation are path dependent. That is, later outcomes are partly a function of what has inspired in the earlier rounds of economic and financial exchange (Sheng, 2009). Once path-dependency sets in, change becomes difficult. At times, path dependency is exacerbated by insularity and silo mentality generated by a perception that all is well with established way of doing things therefore no change is required. There is a concern that such path dependency may well emerge that conveys a message that short-termism, safety and liquidity, as well as no *riba*, are all there is to Islamic finance. The thrust of this paper is that this is not so. Islamic finance is more about risk spreading and risk sharing. It suggests that, for those who are able to participate in the financial sector, Islamic finance provides risk sharing through *mua'malat*. For those unable, due to poverty, to utilize instruments of Islamic finance to mitigate risk, financially able are commanded to share the risks of the less able through the redistributive instruments prescribed by Islam. Thus the financially more able have to share the risks to the life of the poor not as an act of charity but as a duty of redeeming a right of the less able; a right that is a direct result of the property rights principles of Islam. Finally, inheritance laws are also means of risk sharing.

It can be argued that one must not lose sight of the fact the Islamic finance is a new industry. After centuries of atrophy, it has begun operating at a noticeable level of commercial significance only recently. In the process, it is competing against a path-dependent financial system centuries old. It is making a serious attempt to return to its roots but systematically and within the framework of present day economic, social and financial reality. This would suggest that in time, Islamic finance will develop a full-spectrum menu of instruments to serve all risk-return appetites.

The global financial crisis revealed the weaknesses of the global financial architecture on one side and provided an opportunity for Islamic finance to show its inherent strengths and qualities on the other. Notwithstanding the limited impact of the global financial crisis on IFI, there are many lessons from the crisis that should be learned and commensurate steps taken within the IFI in order to make it more resilient to similar shocks. This is an opportune time when IFI should reduce reliance on debt-like products and move closer to equity-based, risk-sharing instruments.

Having said that, the paper suggests that lack of available equity instruments within the menu of Islamic finance instruments is akin to a market failure; creating a strong ground for government intervention. Additionally, the paper suggests that the introduction of Islamic finance at the global level represents a remedy for the failure of financial markets to meet a strong demand for Islamic instruments. It took a top-down, government commitment, dedication, and investment of resources, particularly in the case of Malaysia, to correct this market failure. Once again, government intervention can remedy the current failure of the market to develop long-term, more risky, higher return equity instruments. Some 65 years ago Domar and Musgrave (1944) argued that "if the government fully shared in gains and losses, it can actually encourage risky investment" (Stiglitz, 1989, p. 65). *InshaAllah Ta'ala!*



References

- Al-Hassani, B., & Mirakhor, A. (2003). *Iqtisad: The Islamic Approach to Economic Problems*. New York: Global Scholarly Publications.
- Al-Isfahani, A.-R. (1992). *Mufradat Alfaz Al-Qur'an*. Damascus: Dar Al-Qalam.
- Al-Mustafaoui, S. H. (1995). *Al-Tahqiq Fi Kalamat Al-Qur'an Al-Karim*. Tehran: Ministry of Islamic Culture and Guidance.
- Arrow, K. J. (1971). *Essays in the Theory of Risk-Bearing*. Chicago: Markham Publishing Company.
- Arrow, K. J. (1974). *The Limits of Organizations*. New York: Norton.
- Arrow, K. J., & Debreu, G. (1954). The Existence of an Equilibrium for a Competitive Economy. *Econometrica* 22(3), 265-290.
- Arrow, K. J., & Hahn, F. (1971). *General Competitive Analysis*. San Francisco: Holder Day.
- Askari, H., Iqbal, Z., & Mirakhor, A. (2010). *Globalization and Islamic Finance: Convergence, Prospects, and Challenges*. Singapore: John Wiley & Sons.
- Askari, H., Iqbal, Z., Mirakhor, A., & Krichenne, N. (2010). *The Stability of Islamic Finance: Creating a Resilient Financial Environment for a Secure Future*. Singapore: John Wiley & Sons (Asia).
- Bartholomeu, D. J. (2008). *God, Chance and Purpose: Can God Have It Both Ways?* Cambridge: Cambridge University Press.
- Brouwer, M. (2005). Managing Uncertainty through Profit Sharing Contracts from Medieval Italy to Silicon Valley. *Journal of Management and Governance*, 9(3-4), 237-755.
- Chapra, M. U. (2000). *The Future of Economics: An Islamic Perspective*. Leicester: The Islamic Foundation.
- Cowen, T. (1983). The Rate of Return in General Equilibrium: A Critique. *Journal of Post Keynesian Economics*, 5(Summer), 608-617.
- Domar, E. D., & Musgrave, R. A. (1944). Proportional Income Taxation and Risk Taking. *The Quarterly Journal of Economics*, 58(3), 388-422. doi: 10.2307/1882847
- Evensky, J. (1987). The Two Voices of Adam Smith. *History of Political Economy*, 19(3), 447-468.
- Evensky, J. (1993). Ethics and the invisible hand. *Journal of Economic Perspectives*, 7(2), 197-205.
- Fama, E. F., & Jensen, M. C. (1983). Agency Problems and Residual Claims. *Journal of Law & Economics*, 26(2), 327-349.
- Fischel, W. (1933). The Origin of Banking in Medieval Islam. *Journal of the Royal Asiatic Society*, 339-352.
- Goldberg, V. P. (1985). Price Adjustment in Long-Term Contracts. *Wisconsin Law Review*, 527-543.
- Hart, O. D., & Holmstrom, B. (1987). The Theory of Contracts. In T. Bewley (Ed.), *Advances in Economic Theory*. Cambridge: Cambridge University Press.
- Hellwig, M. F. (1998). Banks, Markets, and Allocation of Risks in an Economy. *Journal of Institutional and Theoretical Economics (JITE)*, 154(1), 328-351.
- Ibn Mandhoor. (1984). *Lisan Al-Arab*. Qum, Iran: Nashr Adab.
- Iqbal, Z., & Mirakhor, A. (2007). *An Introduction to Islamic Finance: Theory and Practice*. Singapore: John Wiley & Sons (Asia).



- Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*, 3(4), 305-360.
- Keefer, P., & Knack, S. (2005). Social capital, social norms and the New Institutional Economics. In C. Menard & M. M. Shirley (Eds.), *Handbook of New Institutional Economics* (pp. 701-725). Dordrech, The Netherlands: Springer.
- Kotlikoff, L. J. (2010). *Jimmy Stewart is Dead: Ending the World's Ongoing Financial Plague with Limited Purpose Banking*. Hoboken, New Jersey: John Wiley & Sons.
- Lane, E. W. (2003). *An Arabic-English Lexicon*. Lahore: Suhail Academy.
- Lopez, R. S. (1976). *The Commercial Revolution of the Middle Ages, 950-1350*. Cambridge and New York: Cambridge University Press.
- Mirakhor, A. (1983). *Muslim Contribution to Economics*. Paper presented at the Midwest Economic Association's Annual Meeting and reproduced in Al-Hassani and Mirakhor (2003), *Iqtisad: The Islamic Approach to Economic Problems* (New York, Global Scholarly Publications).
- Mirakhor, A. (1993). Equilibrium in a Non-Interest Open Economy. *Journal of King Abdulaziz University: Islamic Economics*, 5, 3-23.
- Mirakhor, A. (2009). Islamic Economics and Finance: An Institutional Perspective. [Keynote Address II]. *IIUM Journal of Economics and Management*, 17(1), 31-72.
- Mirakhor, A., & Askari, H. (2010). *Islam and the Path to Human and Economic Development*. New York: Palgrave Macmillan.
- Mirakhor, A., & Hamid, I. S. (2009). *Islam and Development: The Institutional Framework*. New York: Global Scholarly Publications.
- Mirakhor, A., & Krichene, N. (2009). *The Recent Crisis: Lessons for Islamic Finance*. IFSB 2nd Public Lecture on Financial Policy and Stability, Kuala Lumpur: Islamic Financial Services Board (IFSB).
- Mirakhor, A., & Zaidi, I. (2007). Profit-and-Loss Sharing Contracts in Islamic Finance. In M. K. Hassan & M. K. Lewis (Eds.), *Handbook of Islamic Banking* (pp. 49-63). Cheltenham, UK: Edward Elgar Publishing Ltd.
- Reinhart, C. M., & Rogoff, K. S. (2009). *This Time is Different: Eight Centuries of Financial Folly*. Princeton & Oxford: Princeton University Press.
- Sen, A. K. (1977). Rational Fools: A Critique of the Behavioral Foundations of Economic. *Philosophy and Public Affairs*, 6(4), 317-344.
- Sen, A. K. (1987). *On Ethics and Economics*. Oxford: Blackwell.
- Sheng, A. (2009). *From Asian to Global Financial Crisis: An Asian Regulator's View of Unfettered Finance in the 1990s and 2000s*. NY: Cambridge University Press.
- Shubik, M. (1978). On the Concept of Efficiency. *Policy Science*, 9, 121-129.
- Smith, A. (1976). *An Inquiry into the Nature and Causes of the Wealth of Nations (1776/1976)*. Edited in two volumes by W.B. Todd. See vol. 2 of the Glasgow Edition of the Works and Correspondence of Adam Smith. Oxford: Clarendon Press.
- Smith, A. (2006). *The Theory of Moral Sentiments (Dover Philosophical Classics)*. Mineola, New York: Dover Publications.
- Stiglitz, J. E. (1989). Financial Markets and Development. *Oxford Review of Economic Policy*, 5(4), 55-68.



- Stiglitz, J. E. (2010). *The Stiglitz Report: Reforming the International Monetary and Financial Systems in the Wake of the Global Crisis*. New York & London: The New Press.
- The Squam Lake Group. (2010). *The Squam Lake Report: Fixing the Financial System*. Princeton & Oxford: Princeton University Press.
- Udovitch, A. L. (1967). Credit and a Means of Investment in Medieval Islamic Trade. *Journal of the American Oriental Society*, 87(3), 260-264.
- Udovitch, A. L. (1970a). Commercial Techniques in Early Medieval Islamic Trade. In D. Richards (Ed.), *Islam and the Trade of Asia: A Colloquium* (pp. 37-62). Oxford.
- Udovitch, A. L. (1970b). *Partnership and Profit in Medieval Islam*. Princeton: Princeton University Press.

