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Severe Financial Crises and Fundamental Reforms: The Benefits of Risk-Sharing

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1. Introduction

Over the last decade, we have established a number of ideas about Islamic finance. Most importantly, the core of Islamic finance; the concept of sharing of risk and the prohibition of such debt contracts that include the payment of interest has attracted a lot of attention.(1) Risk-sharing serves one of the most important objectives of Islam: the unity of humanity. Humanity faces a multitude of risks from shocks, over which individuals and families have little or no control, but which significantly affect their livelihood and wellbeing. Risk-sharing has many benefits.These include among others: reducing human angst, increasing human interactions, enhancing trust (an important factor in economic growth), increasing social capital (another impetus to growth), promoting social cohesion, linking the real and financial sectors of the economic system, and ameliorating financial conditions to potentially preclude financial crises.

(1) Since about 2005, I have had the privilege and good fortune of collaborating with three outstanding scholars — Zamir Iqbal, Noureddine Krichene and Abbas Mirakhor— to develop my knowledge of Islamic finance. They have generously taught me and shared their insights about Islamic finance with me. I owe a special debt to Abbas Mirakhor, a pioneer in the field and a patient mentor. Here, I repeat and summarize some of our joint work. While any good ideas I convey here should be attributed to them, any shortcomings, mistakes and errors are undoubtedly all mine. Our collaborations, in different combinations, has resulted in a number of books and journal articles, some of which are listed in the bibliography.

We wrote a book in 2011 on the benefits of risk-sharing contracts as compared to debt contracts (Askari et.al, 2011). We were honored with a book foreword by the late Sir Andrew Crockett, a leading figure in international finance and banking, and by endorsements from a number of noted conventional economists, including Nobel Laureates George Akerlof and Robert Merton, and a keen observer of financial crises Laurence Kotlikoff. Unfortunately, our presentations of risk-sharing in the framework of Islamic finance have not penetrated the field of conventional economics, much less the Western media. In contrast, another book published much later (Mian and Sufi, 2014), which essentially puts the blame for financial crises on excessive run-up in household debt has been widely praised as affording a new explanation for the recent financial crisis and an innovative proposal to prevent future crises. The book indeed is outstanding. However, it recommends only a limited form of risk-sharing finance. One must wonder if addition of "Islam" or "Islamic" to a book title negates the academic value of a professional work. If there are such biases, it is really unfortunate. Mian and Sufi provide convincing arguments (supported by data) that place the blame for severe financial crises (and the ensuing job losses and recessions) on a rapid rise in household debt, as opposed to banking (intermediation) freeze and other conventional explanations. We would also join the chorus of praise that debt contracts and increasing recourse to debt (that include bank lending) are the culprits for severe financial crises. We have been saying this for years and at many forums. But we must also add our disappointment that Islamic finance, which predates the Mian-Sufi thesis (and indeed that of others who seek to limit debt contracts), is never mentioned in their valuable contribution. In this paper, we hope to provide some background to risk-sharing contracts and Islamic finance.

We present a brief and general discussion of risk, followed by a summary of the essential characteristics of Islamic finance and the structure of Islamic banking. We then turn to the stability features of Islamic finance, followed by summary of the Mian–Sufi contribution for comparative and contextual purposes. We end with issues surrounding the implementation of risk-sharing finance and where in the world it might be first introduced and tested.

2. General Considerations of Risk

Overtime, the perception of risk and its fallout has evolved from one of resignation to one of assessment and management. Moreover, in the last few decades, this has moved from an individual perception of risk also to embrace its collective management for strengthening social solidarity. The number and intensity of crises in the last two decades have sharpened the focus on "social risk management". It is being emphasized now that social solidarity requires heightened sensitivity to what each owes to other members of the community not only in terms of prevention and mitigation but also in terms of the sharing of risk (Ericson and Doyle, 2003; Holzmann and Jorgensen, 2000).

Contemporary perception of risk and uncertainty is largely attributable to Frank Knight who nearly a century ago defined decision making under uncertainty as a series of pay-offs that could be determined with known probability distributions, allowing risk to be insured. Uncertainty, on the other hand, would be faced if the decision maker has no known probability distribution to determine pay-offs to decisions, making outcomes uninsurable. Over the last century, developments in the probability theory and techniques of subjective probability distributions have led to a semantic alteration. Uncertainty has come to mean what Knight referred to as risk, while his conception of uncertainty has become "ambiguity". Whether this is due to lack of sufficient data or due to what philosophers refer to as "vagueness" (or normally thought of as "ignorance") is a matter of personal judgment. Two interrelated strategies of avoiding ambiguity are patience and acquiring more knowledge. Defining knowledge as "the accumulation of regularities and patterns in the physical and human environment that result in organized explanations of aspects of these environments," Douglass North argued that clearly prescribed rules (institutional framework) could attenuate ambiguity. Additional knowledge reduces ambiguity, either within the existing institutional framework or lead to alterations in the framework to make it more effective in reducing ambiguity (North).

Human beings face two types of risks: systemic (market risk, aggregate risk, or un-diversifiable risk) and idiosyncratic risk (specific risk, residual risk, diversifiable risk). The first relates to risk that is posed by general economic conditions dependent on macroeconomic factors

such as growth of the economy, fiscal and monetary policies, and other macroeconomic factors elements such as interest rates and inflation. Such risks are un-diversifiable and hence, uninsurable. However, sound macroeconomic policies and the stability of the domestic and financial system can mitigate such risks to a significant degree. Idiosyncratic risk, on the other hand, relates to risks that are specific to individuals or firms. Such risks are diversifiable and hence, insurable. High correlation between consumption and an individual's employment income means that sickness, accidents, layoffs, all pose idiosyncratic risks that can be mitigated through risk-sharing arrangements that reduce dependence on wages as the only source of income, thus weakening the correlation between income and consumption, and enabling "smoothing" of consumption patterns. They can use coping mechanisms to increase the variability of their income relative to their consumption. In more developed financial systems, the coping mechanism is investing in financial assets or in acquiring insurance to mitigate personal risk. In developing countries, with limited and weak financial markets, individuals rely on informal insurance; family, borrowing, or own savings to cope with idiosyncratic risks. In such societies, theory suggests that informal insurance is possible if communities fully pool their incomes to share risks. Then, each member of the community could be assigned a level of consumption dependent on the aggregate level of income and not on that of the member. This arrangement would assure perfect risk-sharing (Morduch, 1999) to mitigate idiosyncratic risk so that household income would not affect consumption. Sound public policy and strengthened institutional framework go a long way to reducing risk. In terms of institutional framework, clear and secure property rights, contract enforcement, trust among people and between government and people, and other institutions can reduce risk, uncertainty and ambiguity, strengthen social solidarity, bring private and public interests into closer harmony and ensure coordination to achieve risk-sharing (Mirakhor 2009, 2010).

In the case of systemic or aggregate risk, such as exposure to financial crises, fiscal and commodity price shocks, the availability of institutions that shape risk-sharing and the resilience of the domestic economy determine how well the economy copes with shocks. The serious dissatisfaction with and the subsequent public protests driven by a strong perception of response to recent shocks, which appear to have

privatized benefits of financial crises and socialized subsequent losses, highlight the response to fundamental question of how should risk be shared or allocated across the society ex-ante and what criteria should determine the outcome.

Arrow (1954) demonstrated that in a competitive market economy, with complete markets and securities whose pay offs are state-contingent, it would be Pareto optimal if participants shared risk according to their ability for risk bearing (Mirakhor, 2010). In the absence of complete markets, which include all possible future contingencies, the efficiency of risk-sharing mechanisms will depend on the institutional structure, the degree and intensity of informational problems and policies designed to render the economy resilient to shocks. Because, in Western thought, risk-sharing procedures and objectives are perceived to involve trade-offs between efficiency and fairness, the distributional impact of ways and means of risk-sharing are considered important. For example, a society can ex-ante decide, on the basis of equity, efficiency, or both, to allocate the burden of a shock to those who either benefit the most from, or exacerbate, the shocks by their behavior. Shocks may be so large and their consequences so serious that even if such a policy were accepted ex-ante, institutional consideration (e.g., limited liability) and political economy forces (powerful special interest lobbies) may prevent a fair and efficient distribution of costs ex-post. They may also the hinder assignment of residual costs after the initial costs of the shocks have been socialized.

3. The Foundation of Islamic Finance

Islam is a rules-based religion. The Islamic financial system is based on Islamic teachings (Qur'ān and Sunnah). In Islamic finance, the essential function of the financial sector is to serve and support the operation of the real sector. There are no interest rate-based debt instruments. All financial transactions are built on sharing risk and return (Askari et al., 2011).(2) Hence, all financial claims are contingent claims. In such a financial system, deposit-taking institutions operate on a 100% reserve system (as opposed to the conventional fractional reserve system); and

(2) The absence of debt means the economy is highly efficient and saves considerable resources, which are involved with the cost of issuing loans, administrating, recovering, and litigating loans.

non-deposit-taking institutions operate on risk and return sharing with no public guarantees of their liabilities (similar to a mutual fund).

In the Qur'ān, many verses explicitly condemn interest, interest-based transactions and debt contracts. Likewise, many sayings of the Prophet (SAAW)[3] severely condemn interest-based dealings. For instance, Verse 2:275 states that "…they say that indeed *al-bayʿ* (trade) is like *al-ribā* (interest-based debt contract). But Allah has permitted *al-bayʿ* and has forbidden *al-ribā* …" This verse is the cornerstone of the Qur'ān's conception of an economy since from this verse major implications flow as to how the economy should be organized. A creditor cannot make interest-based loans. A creditor has to invest his money directly and bear the risk of his enterprise. He is the direct owner of the assets of his enterprise. A borrower cannot make wealth on the basis of borrowed money that carries interest but can only do so if it is borrowed free of interest and invested at his own risk. He cannot contract interest-based debt and use it either for consumption or investment. In Islamic finance, the borrower-creditor conflict is absent. Entrepreneurs individually or jointly participate directly in an enterprise with their material and human wealth and share all the attendant risk. In a loan contract, the creditor assumes no enterprise risk. Borrower bears that risk. If the investment fails, the borrower is still legally bound to reimburse the loan. In fact, in the Qur'ān, the repayment of debt is an over-riding obligation. No wealth can be inherited prior to the discharge of every debt.

Risk-sharing has been an integral part of human activities long before the formation of modern day corporations, banks and other financial institutions. It has been a natural activity, whereby parties find it profitable to pool resources, be it financial, entrepreneurial, technical, or other forms of resources, as opposed to operating individually. The sharing of risk is undertaken with the expectation that the combination of numerous participants (investors, entrepreneurs, scientists and those from many other professions and walks of life), larger resources, and diversified skills and technologies would result in greater output and larger profits than operating individually. In some instances, projects that would not have been undertaken otherwise, would be developed. Partners in business ventures have contractual arrangements that define the

(3) For meaning, see glossary in the intro-pages of this issue.

contribution of each party, including the financing, the managerial, the technical and contingencies that could arise, and the distribution of the fruits of their undertaking. Risk-sharing enterprises have evolved over the centuries into the modern corporate structure that have diversified equity ownership and are the dominant source of economic output and employment in most advanced economies. Brouwer (2005) traced the evolution of the modern day corporation in Europe. She described how the equity-based '*commenda*' organizations supported trade in medieval Europe. The *commenda* organization, which was especially popular in Pisa and Venice, has over the centuries evolved into the limited liability corporation of today. The *commenda* was based on equity financing, as opposed to debt financing, and became the most popular organizational form of maritime ventures in medieval Italy. Weber (1889) has described the evolution of these organizations into limited liability companies with autonomous management, then into corporations with many investors and a managing partner, and evolving into widely held share ownership to become prominent corporations.

Proposals along these lines for the commercial banking structure are not new. Financial systems in some such form or other have been practiced throughout recorded history. Such an approach was recommended in the 'Chicago Plan,' formulated in a memorandum written in 1933 by a group of renowned Chicago professors, including Henry Simons, Frank Knight, Aaron Director, Garfield Cox, Lloyd Mints, Henry Schultz, Paul Douglas and A. G. Hart, and was forcefully advocated and supported by one of the greatest economists of all time, Yale University professor Irving Fisher in his book titled *100% Money* (1936). Noting the fundamental monetary cause underlying the severe financial crises of 1837, 1873, 1907 and 1929-1934, the Chicago Plan calls for a full monopoly for the government in the issuance of currency and prohibits banks from creating any money or near money by establishing 100 percent reserves against checking deposits. Investment banks that play the role of brokers between savers and borrowers were to undertake financial intermediation. Hence, the inverted credit pyramid, the high leveraged financial schemes (e.g., hedge funds), and monetization of credit instruments (e.g., securitization) are excluded. As stated by Irving Fisher: "the essence of the 100% plan is to make money independent of loans; that is to divorce the process of creating and destroying money from the business of banking. A purely incidental

result would be to make banking safer and more profitable; but by far the most important result would be the prevention of great booms and depressions by ending chronic inflations and deflations which have ever been the great economic curse of mankind and which have sprung largely from banking." According to Fisher, the creation of money depends on the coincidence of the double will of borrowers to borrow and of banks to lend. Keynes (1930) deplored this double want coincidence as a source of large swings in the circulating medium.(4) Why? In a time of recession, borrowers are over-indebted and see narrower profit prospects. They become less willing to borrow. Banks are saddled with impaired assets and are less willing to lend. Jointly, they cause a contraction of money and, in turn, an aggravation of the economic downturn. Fisher wrote: "I have come to believe that that plan is incomparably the best proposal ever offered for speedily and permanently solving the problem of depressions; for it would remove the chief cause of both booms and depressions." More recent than the Chicago Plan, Laurence Kotlikoff (2010) has made a proposal along similar lines, coining his approach "Limited Purpose Banking." Freixas and Rochet (2008) have observed that the conventional banking sector was recurrently undermined by crises; and that bank runs and bank panics were inherent to the nature of conventional banking, and more specifically to the nature of the fractional reserve system. Indeed, bank deposit contracts usually allow depositors to withdraw the nominal value of their deposits on demand. As soon as a fraction of these deposits is used for financing illiquid and risky loans or investments, there is a possibility of a liquidity crisis.

The basic principles for a stable banking (financial) sector advocated by many of the authors of the Chicago Plan happen to be similar to those of Islamic banking. Basically, Islamic finance has two pillars: (i) prohibition of interest and interest-bearing debt, and (ii) 100 percent reserve money depository banking system and equity-based investment banking. Thus, the only significant difference between the recommendations of these authors and Islamic finance is that *all* interest-bearing debt is prohibited in Islam. In the Islamic system, credit plays a

(4) The separation of the banking system into 100% depository banking and equity-based banking does not reduce the profitability of banks, nor does it curtail their short-term liquidity. It makes banking immune to crises and ties the financial sector to the real sector. Investment is financed by savings and not by fictitious credit.

negligible role; there are no borrowers or lenders (using interest); there is no conflict between borrowers and creditors.(5) There are only equity holders. There is no money creation out of thin air or through the credit multiplier. Money injection does not multiply through the banking system as banks do not lend deposits. Deposit-taking (safekeeping) banks cannot cause general financial crises as they do not lend money, and there is little or no leveraging. Investment banks cannot cause a financial crisis as they invest their clients' money only on a pass-through basis and thus systemic risk is minimized. As a result, Islamic finance is inherently stable.

4. Structure of Islamic Banking

Islamic finance strictly prohibits interest (*ribā*), positive or negative. No economic entity, be it individual, enterprise, state, bank, or central bank, is allowed to contract interest-based debt. Free-of-interest lending, called *qarḍ ḥasan*, is permitted. However, since this form of lending has no pecuniary reward for investors, it can be assumed to be negligible. Therefore, in contrast to conventional finance, interest-based credit plays no role in Islamic finance. Because credit is almost absent in Islamic finance, there is no credit expansion or contraction, no fixing or targeting of interest rates by the state and no conflict between borrowers and creditors. Islamic finance can be defined as a two-tier financial system: a 100% reserve depository and safekeeping banking system for payments; and a profit-loss sharing investment banking system that places real saving (domestic or foreign) directly in private or public projects or indirectly via the stock market for domestic or foreign shareholders.

The first banking entity keeps money deposits (e.g., cash, gold, silver, etc.) and cannot breach the deposit contract by lending these deposits. Banks can charge fees for keeping deposits and settling payments. The payment of fees will induce depositors to hold financial and real assets instead of keeping idle deposits. The investment banking entity has no monetary role and no impact on money aggregates. It receives domestic and foreign savings, which it invests in productive projects or in more liquid investment such as mutual funds or stocks. Depositors receive transferable or marketable shares that enable them to

(5) We define credit as loan in cash, which is to be reimbursed in cash. We exclude commodity transactions that are settled according to a time schedule.

liquidate their investment, if they chose to do so, on secondary markets. The nominal value of equity shares is not guaranteed. Depositors share in profits and losses as well as in capital gains and losses. Islamic capital markets intermediate between saving units and investing units (domestic and foreign) in a way that precludes interest. They do not issue money (demand deposits) or debt. They include investment banking, stock markets, mutual funds, exchange-traded funds, and other forms of intermediary risk-sharing institutions. Interest-based credit in the form of money against money plus interest in money, or wheat against wheat plus interest in wheat cannot exist in Islamic finance. In conventional finance, credit plays a major role in commerce, production, and investment. It is self-liquidating. For instance, cotton is financed through loans from the cultivation of land to crop collection, to exports, manufacturing, selling to clothiers, and even to consumers who would buy cotton clothes on credit. The receipts at the end of each step pay the bank loan and interests contracted at the beginning of the step. Hence, farmers pay the bank loan and interest they contracted prior to seeding from the proceeds of cotton sales. The exporter draws a bill on the foreign manufacturer, which he rediscounts with a local or foreign bank and uses the proceeds to pay the cotton farmers. The manufacturer settles the bill when the cotton textile is delivered to the clothier. The clothier borrows money from the bank to buy cotton textile from the manufacturer. The owner of the dress shop buys cotton clothes with loan, which he uses to pay the clothier.

In Islamic finance, money is not exchanged against money plus interest. It is replaced by Islamic financing modes of *bayʿ salam*, *istiṣnāʿ*, *murābaḥah*, *muḍārabah*, or risk-sharing financing. There is cash-in-advance at the beginning of each step and delivery of a commodity at the end of the step. In *bayʿ salam*, farmers sell the future cotton crop against immediate payment and delivery upon cotton harvesting. In a risk-sharing scheme, the bank and the farmers are partners in a risk-sharing venture. Farmers own land and labor and the bank owns the working capital. Farmers and the bank share the risk in the profits and losses of cotton operations from seeding to the export of cotton.

In Islamic finance, money cannot be expanded through credit. There is no banking institution that emits interest-based credit. Tables 1 and 2 describe the balance sheet of the Islamic depository and investment banking institutions, respectively.

Table (1) ***Balance-sheet of Islamic depository banking institution***

Assets		**Liabilities**	
Gold reserves	$1,000	Currency in circulation outside	$300
		Deposits	$700
Total	$1,000	Total	$1,000

Table (2) ***Balance-sheet of Islamic investment banking institution***

Assets		**Liabilities**	
Reserves in cash	$30	Saving deposits	$5,000
Reserves in deposits at depository banks	$70		
Investment (equities, *ṣukūk*, *bayʿ salam*, *istiṣnāʿ*, *murābaḥah*, *muḍārabah*, and other risk-sharing instruments)	$4,900		
Total	$5,000	Total	$5,000

In Table 1, the total money supply is $1,000, with $700 in the depository system and $300 in circulation. In Table 2, cash reserves of the investment banking ($30) are part of the money in circulation, implying that $270=($300-$30) in cash are held by the non-financial private sector. On the one hand, reserves in deposits are part of the deposits held at the depository banks; cash and deposit reserves are working balances that emanate from the closing of some operations and serve to finance new operations such as a cotton campaign. On the other hand, depositors in the investment banking are investors who share state-contingent profits or losses and their deposits are not secured in nominal terms and are marked to market. They may be withdrawn according to an agreed maturity or may be liquidated in the secondary market if they are in the form of equity shares, *ṣukūk*, or shares in funds.(6) Assuming that the investment banks acquire foreign equities for $70, which they pay out of their deposits at banks, the operation creates a balance of payments deficit of $70. The money supply is reduced by the same amount. Gold reserves are also depleted in the same amount. The balance of payments

(6) **Mirakhor** (1993) studied the real demand for money and financial assets in an Islamic economy in the context of both a closed and open economy. Savings rise with the rate of return. He showed the existence of an equilibrium rate of return that establishes equilibrium in money and assets markets as well as in the goods markets.

adjustment operates according to the traditional price-specie flow mechanism. Prices of goods and shares decline in the deficit country while they rise in the surplus country. Exports of the deficit country rise. Its shares have higher yields. The combination of higher exports and foreign direct investment reduces or eliminates the balance of payments deficit and re-establishes the initial amount of money in the country.

A major property of Islamic finance is that it is tightly linked to the real economy. It operates according to Say's Law; namely, supply creates its demand. Demand is generated from incomes in the economy and not from fictitious credit. Investment cannot exceed saving, and no price inflation appears. There is no credit expansion as in the fractional depository system, and no over-and-under production.

5. The Stability of the Islamic Financial System

At the outset, we note that the universal application of risk-sharing contracts and the prohibition of interest-bearing debt in the context of the Islamic banking system eliminates the possibility of default and thus reduces the likelihood of severe financial crises. The losses on any contract are shared between the parties to the contract and do not reverberate throughout the economy as in the case of leveraged debt. Debt-fueled asset bubbles and banking crises are almost eliminated as banks can only invest in projects on a pass-through basis, akin to a mutual fund. Banks cannot increase the money supply by leveraging and demand deposit creation and become insolvent from bad loans, in turn affecting the overall financial system. Fraud and other dishonest behavior can still bring about a financial crisis and sound regulations, supervision, and enforcement will as always be needed.

Given that all financial assets in an Islamic economy are contingent claims and there are no debt instruments with fixed predetermined rates of return, Mirakhor (1993) showed that a fundamental principle that emerges from theoretical studies of such a system is that the returns to financial assets are primarily determined by the endogenous rate of return in the real sector that could replace the monetary interest rate. Thus the rate of return to capital is the mechanism for equilibrating the demand and supply of loanable funds because the source of profit in such an economy is the addition to total output, and once labor is paid its distributive share, the

residual is divided between the entrepreneur and the saver. The rate of return to capital equilibrates savings and investment, the differential between the domestic and foreign rates of return to equity determines the direction of capital flows, and that under a fixed exchange rate system, adjustments are channeled through the asset accounts; all without a fixed and predetermined rate of interest. For the most general case of an open economy with trade in goods and equity shares, the direction of capital flows depends on the differential between the domestic and foreign rates of return to equity shares and, ultimately, on differentials in the marginal product of capital. The main conclusions are two: there is an equilibrium with no interest-bearing assets, and the system is stable to debt shocks. In an Islamic financial system, the rate of return to capital is determined by the rate of return to the ownership position (equity) related to the marginal product of capital as well as to the portfolio balance equilibrium.

Similar to the theoretical stability of banks that operate on the basis of Islamic precepts, Islamic stock markets are free from two major sources of instability; namely interest rates and un-backed money creation by the banking sector. High degree of instability makes a stock market inefficient requiring a large amount of resources for trading and hedging risk and dissuades savers from participation in the markets. Stock market crashes following stock market booms have often been ruinous to household savings. A high degree of stability will encourage savers and enable stock markets to achieve efficiency in financial intermediation, reduce trading cost, and enlarge participation.

In the absence of speculation arising from dysfunctional credit (debt) markets, equity prices would tend to show less volatility. Essentially dividends and real savings would drive demand for equity shares. Fictitious credit can not fuel it. The supply would be influenced by initial public offerings. Hence, both the demand for and supply of equity shares are influenced by stable variables in the absence of interest rates and debt, and equity prices would tend to display a stationary pattern. Assuming that the institutions govern economic and financial relations in the society (rules of behavior) prescribed by Islam, one would expect that there would be a low probability of emergence of speculative bubbles. Asset prices in Islamic finance would feature low correlation with the market portfolio and would be more influenced by idiosyncratic risks.

Two elements explain the absence of systemic risk (Askari et al., 2010). First, the Sharpe Ratio in the capital asset pricing model (CAPM) is very low.(7) Expected returns are compared to the average rate of return in the economy. Such a rate of return would display a stable pattern over time and would not fluctuate in a manner similar to interest rates. Interest rates on risk-free bonds cannot influence the Sharpe Ratio in Islamic finance. Consequently, the equity premium would be small since households do not hold risk-free assets. The deviation between the expected return and the market return would be very small and result from non-systemic factors such as the scale of the firm, the efficiency of its labor force, or its entrepreneurship. Second, the magnitude of the beta coefficient in the CAPM would be small in Islamic finance. The performance of one firm would be influenced by its competitiveness, cost-efficiency, promotional efforts, and investment plans. In the absence of common systemic risks, the correlation of a firm's return with the market portfolio would be very low. In Islamic finance, the pool of real savings rather than credit would determine asset demand. Real investment plans would determine the supply of equity shares. Hence, demand for and supply of shares would tend to be stable. The rate of return would essentially comprise dividends, with very small changes in equity prices. Equity share prices would be stationary variables, with no persistent upward or downward trend.

While ethical benefits of Islamic finance are evident, most observers have largely ignored the stability of Islamic banking (and finance). Conventional banks fail to meet inherent stability conditions even in the presence of prudential regulations. First, credit losses from debt default or depreciation of assets may create a large divergence in relation to liabilities that remain fixed in nominal value, which in turn puts pressure on bank capital. For banks that are highly leveraged, losses that may at first appear not to be excessive relative to total assets, can wipe out a bank's capital and thus render it insolvent. This cannot happen to an Islamic bank. There are no loans. All investments (that could sour) are channeled through the bank on a pass-through basis. Essentially,

(7) The Sharpe ratio is defined as $\frac{R_i - R_f}{\sigma_i} = \rho_{iM} \frac{R_M - R_f}{\sigma_M}$ where the variables are: R_i = expected return of share i; R_f = rate of return of riskless asset; R_M = expected return of market portfolio; σ_i = risk of share i; σ_M = risk of market portfolio; ρ_{iM} = correlation coefficient between share i and market portfolio returns.

Islamic banks cannot become insolvent unless there is embezzlement(8). Second, in the conventional system bank credit has no fixed relation to real capital in the economy and bears no direct relation to the real rate of return. Credit expansion through the credit multiplier is a fundamental feature of conventional banks. Cash flow could fall short of expectations and force large income losses on banks, especially when the cost of funds is fixed through a pre-determined interest rate (the classic asset-liability mismatch). Third, banks caught in a credit freeze with a drying up of liquidity, may default on their payments. Fourth, banks are fully interconnected with each other through a complex debt structure. In particular, assets of one bank become instantaneously liabilities of another, leading to fast credit multiplication. A credit crash causes a dramatic contagion and a domino effect that may impair even the soundest of banks.

Credit (debt) has other ominous implications. Credit can be issued to finance consumption, and hence may rapidly deplete savings and investment. The depletion of savings could be significant if credit finances large fiscal deficits. Hence, credit is no longer directly related to the productive base as in the equity-based system. The income stream from credit is no longer secured by real output as shown for the equity system. Credit can expand through leverage to an unsustainable multiple of real national income, increasing default risk. Credit expands through the credit multiplier, which is determined by the reserve requirement system, whereas equity in the equity-based system cannot expand more than real savings. In the case of securitization, theoretically, credit can expand to an infinite degree. In an Islamic financial system financial intermediation consists of redeploying real savings into real investment. As Islamic banks cannot create or destroy money through debt issuance, the integration of money does not affect the stability conditions of Islamic banks. Equilibrium in the capital market retraces the real rate of return in the economy. The latter operates at full-employment equilibrium. Because of the classical assumptions of full factor price flexibility and the absence of distortions. Such equilibrium is stable; short

(8) If the bank bets every dollar of its own capital on a risky investment that goes sour, still depositors' money and investors' assets are safe as long as the bank is properly supervised so that there is no embezzlement and misappropriation of investor deposits and investment.

deviations are self-correcting with the economy returning to full employment (Askari et al., 2010).

When we compare the Islamic model of banking to the conventional model, we see that in the latter credit expansion may have no bearing to the real capital base and has no direct relation to the real cash flow in the economy that may be required for debt servicing. If financing were to be extended to consumption, then credit could erode the capital base and economic growth. The equilibrium interest rate that clears money market may instantaneously have no direct relation with the real rate of return in the economy. Such a deviation (between the real rate of return and the market clearing, or equilibrium, rate) has been acknowledged by the classical economists and was seen to be a cause of booms and busts, and excessive speculation in commodities and assets (Garrison 1991). Banks are obliged to pay the face value of their liabilities. In the case of credit loss, banks have to fully absorb these losses from their capital reserves or recapitalization. Governments may be compelled to extend large and costly bailouts to rescue impaired banks and prevent a total collapse of the financial system. The conventional system is vulnerable to these numerous sources of instability. Besides the inability to reach full-employment output, the system can suffer from interest rates distortions in relation to a natural interest rate and can suffer from absence of direct link to a real capital base that generates cash flow for servicing debt. Minsky (1986) described the conventional system as endogenously unstable, evolving from temporary stability to periods of crisis. Credit losses play havoc with the real economy and can cause massive unemployment. The resulting unemployment may be persistent and stubborn because the required time for deleveraging (both public and private) may be significant and the ensuing financial uncertainty may result in a slow recovery of investment expenditures that is necessary for growth and increasing employment.

The issue of instability in conventional finance is not limited to the role of commercial and investment banks. In conventional finance, a critical role of the central bank is to act as a lender of last resort. In the absence of the central bank assuming such a role, conventional banks would risk simultaneous failure as banks are inter-connected through loans. Banks are exposed to credit and interest rates risk and may become illiquid. In order to maintain their payments, the rediscount and

borrowing from the central bank are necessary for the smooth functioning of conventional finance. In Islamic finance, banks are not supposed to have or cause any liquidity mismatch and are not dependent on the central bank finance to maintain their liquidity. Moreover, as all deposits are in safekeeping (100% reserve requirement), investors will not panic and cause a run on the banking system. Thus, there is no need for deposit insurance.

In sum, in an Islamic economy, the financial sector functions to support the real sector. Financial assets are based on risk and return sharing and are contingent claims. Real, as well as monetary forces, determine the rate of return. As in traditional general equilibrium theory, there is a price system comprised of a real rate of return to capital and a price level of commodities that simultaneously clears asset and commodity markets. An Islamic financial system is stable. The economy evolves from short-term equilibrium to a stable long-term equilibrium (Askari, Krichene and Mirakhor, 2014).

6. The "House of Debt" and Risk-Sharing Finance in the Conventional System

The Mian-Sufi thesis is that household debt contracts are the root cause of severe financial crises and recessions. Debt contracts impose most of the risks on those who are least able to bear and tolerate risk; namely the poor. The imposition of risk on the poor in turn results in debt servicing defaults. These defaults and the loss of equity lead to a disproportionate fall in demand because the poor have a higher (than the rich) marginal propensity to consume from wealth which in turn culminates in severe reductions in output and employment. Meaningful financial reforms must introduce more flexible contracts, replacing strict debt contracts by contracts that are risk-sharing, or at least allow for some risk-sharing contingencies. Mian-Sufi contest the three mainstream explanations for major financial crises and the severe recessions that follow them. They convincingly argue with supporting data that neither a major economic shock (e.g., natural or political disaster), nor a general credit freeze (banking crisis) nor "animal spirits" (irrational exuberance and beliefs) provide a convincing thesis for the root cause of the recent, or historical, severe financial crises and their ensuing recessions. The Mian-Sufi thesis, backed up by data, may be summed up in more detail as follows:

- Recessions may be triggered by a collapse in asset prices (such as housing prices), access to large and unsustainable external borrowing (current account deficits) that abruptly end in large banking sector losses with credit freezing up, but invariably *severe* crises are *preceded* by large run-up in household debt.

- Banking-financial sector crisis will be more severe, is if it is preceded by a rapid rise in household debt; with the severity of ensuing recession largely determined by the extent of the increase in household (private) debt.

- A big run up of household debt leads to a decline in household spending (and bigger the run up in debt, the bigger the decline in household spending) during a recession because of defaults and loss of wealth. Households cannot service their debt commitments, which in turn lead to more job losses and then a banking crisis with credit freezing up; leading to even more job losses. But the important element is household debt.

- These facts lead Mian-Sufi to conclude: "…support the argument that the lending boom fueled house-price growth, not vice versa." (p. 85) Households then borrowed more as home prices rose. All asset price bubbles are a result of excessive supply of credit.

- Timing indicates that the fall in household consumption (not a decline in investment) is the catalyst and the root cause of the initial big fall in GDP. Only later is there a fall in fixed investment because of job losses, lower private consumption and demand. Thus, GDP falls further. All of these factors feed on each other, reducing demand and in turn output.

- Because of the large run-up in household debt leading to such crises, financial crises hurt the poor more adversely and this in turn exacerbates the recession, job losses and the crisis. The reason is that in the event of bankruptcies, borrowers with debt contracts (especially mortgages) end up losing some or all of their initial down payment (equity). Foreclosures are a result of debt and lead to housing prices going down even further. Lenders (ultimately the wealthy who own financial assets, including bank shares) have contracts that impose all initial losses (the down payment equity) on the borrower. Thus, depending on the extent of the asset price collapse, the borrower may be

forced to absorb most, if not all, of the losses. Moreover, the monetary and fiscal authorities invariably bail out lenders. As a result, severe financial crises and recessions exacerbate wealth inequalities by exposing borrowers (the less fortunate) and protecting lenders (the fortunate). "Debt amplifies the decline in asset prices due to foreclosures and concentrating losses on the indebted, who are almost always households with the lowest net worth in the economy….it forces the debtor to bear the brunt of the shock." (Mian-Sufi, p. 70)

- Because of the deteriorating distributional wealth effect of debt contracts (concentrating losses on the poor) and job losses, it is the expenditures of poorer households that get specially affected. Poorer households have higher marginal propensity to consume from housing wealth, and thus their expenditures are more affected from a collapse in housing prices. This impact is further corroborated by the fact that the Tech Bubble did not lead to the same decline in spending, job losses and recession.

- There is fraud in both debt and equity markets, but it is more prevalent in debt markets. Moreover, the lenders feel that they have a senior claim in debt contracts and thus they don't think fraud is as important. Thus, they do not do their needed due diligence.

- The proper policy response should have been to restructure household debt given levered losses and not to bail out bank shareholders.

In sum, they rightly note that debt contracts are inflexible and anti-insurance; they do not facilitate risk-sharing but concentrate and impose risk and its fallout on those who are least able to bear it. They stress that the decline in housing prices was not the root cause of the financial crisis and the great recession but instead it was the big run-up in household debt from 2000 to 2007 (with the amount of household debt doubling from $7 trillion to $14 trillion). Bankruptcies resulted in foreclosures that were a direct consequence of debt and resulted in housing prices going down even further and reducing the purchases (demand) of the poorer segment of society.

The book of Mian-Sufi is a welcome addition to the literature and an important contribution to the debate on the reasons of financial crises. We have no disagreement with them as far as they go, but we think that they do not go far enough. Their focus is on household mortgage debt and student loans. They do not argue for a comprehensive risk-sharing financial system coupled with a banking system that does not create money that leads to its own insolvencies. We believe that risk-sharing should be the norm, not the exception, in *all* financial and insurance contracts. Risk-sharing contracts for mortgage, car and other consumer purchases are important, but they are just as important for all corporate and government financing, if not more. Default in these categories could lead to even more severe economic downturns. Moreover, we believe that fractional reserve banking left to itself can also lead to systemic and serious financial crises. On the basis of their data, Mian and Sufi might argue that by controlling household debt severe economic downturns would be avoided but we are not so sure as other debt (corporate and government) and leveraging by financial institutions could also lead to the same perilous results.

7. The Adoption and Implementation of Risk-Sharing Finance

The practice or implementation of Islamic finance, namely risk-sharing contracts and the prohibition of interest bearing debt, raises a number of questions. We now turn to a brief discussion of some of these issues: government financing; the conduct of monetary policy; promoting risk-sharing and conducting public policy; the role of the state in risk-sharing, and mutual insurance.

(i) *Government Financing*: The state can use a number of other avenues to finance expenditures that exceed tax revenues, resulting in securities that can be bought and sold by the central bank to conduct monetary operations (see below). The state can finance all needed capital expenditures through private-public partnership programs (Askari, Iqbal and Mirakhor, 2014). Similarly, a number of projects could be combined, and equity shares sold in the aggregate number of projects. Alternatively, the combined projects could be the assets that back a bond that generates a fixed income with the bondholders having access to the underlying assets. Even under conditions where there was no direct revenue from an infrastructural project, the government could resort to private sector

financing with dividends paid by the government on the basis of the rate of return in the real sector.

While it may be argued that money and value cannot be created out of thin air in Islam, others could counter that this is permissible if it is being done to benefit particular members of the community. Moreover, there is nothing in the Qur'ān or in the Sunnah that recommends or prohibits the state from creating money (of course there was no paper money at the time of the Prophet). Yes, the state cannot issue interest-bearing bonds and paper money that earns interest. But if the state prints money in order to facilitate business transactions and enhance prosperity for the benefit of the community because the economy's output is below its potential, then it should be permissible. This can be operationally defined as when there is unused productive capacity in the economy. Also, the central bank can print money to accommodate expected additions to productive capacity. This would mean that there is an accurate estimation of full employment output and expected future growth of the economy. The state gets the normal advantage of seignorage, it could be useful but only if this is used for the equitable benefit of all members of society; not rulers and privileged classes. But then why should the central bank be barred from issuing paper money? It is in the interest of the community in the same manner. Similarly, the central bank should be permitted to act as a lender of last resort as long as it does not charge interest in order to sustain economic growth. It could charge a financially sound investment bank in need of liquidity a rate consistent with the rate of return in the real sector of the economy ex post (i.e., the actual real rate of return). Alternatively, the central bank could purchase assets from the investment bank, which in the end is akin to acting as a lender of last resort.

(ii) ***The Conduct of Monetary and Fiscal policy with No Debt Instruments*****:** Monetary policy in an Islamic economy has all the same conventional tools normally available in a conventional modern economy with the exception of the discount rate and other policy tools that involve an interest rate (buying and selling of interest-bearing bonds). All other tools; namely open market operations (where equity shares rather than bonds are traded) and credit policies, can be as effective in an Islamic system as they are in the conventional Western system. The authorities in an Islamic system can utilize reserve requirements and profit-sharing

ratios to achieve changes in the stocks of money and credit, and monetary policy could be considered to operate through a more direct channel in the Islamic financial system. The central bank, by buying and selling risk-sharing securities, *directly* affects the financial portfolio of the private sector – households and firms – and indirectly by affecting the holdings of banks and conditions in capital markets that in turn affect real economic activity. The decision of households and firms impacts the real rate of return in the economy, which again affects economic activity; while financial signals to capital markets through central bank policies affects the availability of real resources for investment.

A commercial banking system that is 100% reserve banking prohibits lending and eliminates the need for reserves and changes in the reserve requirement of these commercial banks as a policy instrument. But the other mode of banking; namely investment banking, affords important policy options. These banks channel investor funds into different investment projects (by risk, maturity, rent/dividend, etc.) and issue the investor with equity shares or bonds (backed by the investments) that are traded in the market. The central bank can affect the operation of these banks in two principal ways. First and foremost, the central bank can buy and sell the securities that they issue directly to investors, and those that they issue on their account by investing their own capital. In the case of security purchases, the central bank injects cash into the hands of investors and the banks, resulting in investors and banks having cash to invest in new projects.

Note the power of this instrument and compare it to open market operations in the conventional banking system. Here, the central bank puts cash *directly* into the hands of investors who decide their investments; whereas in the conventional system, the cash is put into the hands of bankers who *may* or *may not* lend. Open market operation is a much more potent policy instrument in Islamic finance than it is in the conventional system. Second, the central bank can change the reserve requirement of investment (mutual fund activities) banks. Investment banks essentially invest the capital of investors in projects of different sorts in a pass-through mode and invest their shareholders capital in these or other projects. The central bank can require reserves of these investment banks, not because of their exposure to risk but to influence their ability to channel funds into projects and in turn reducing the return

to investors. By requiring reserves, these banks can invest less of the investors' assets (keeping a part as reserves) and thus they reduce the attractiveness of investing (lower rate of return as a portion is kept as reserves and does not earn any return). In addition to open market operations and reserve requirements for the central bank, we should note that the central bank could also use its guidance advisories to form market expectations and thus affect the investment/saving decision, which in turn will affect economic activity. The impact and effectiveness of central bank guidance, including inflation targets, will be directly proportional to its credibility.

In addition to the implementation of monetary policy, central banks in an Islamic system could take the lead in evolving financial institutions and instruments that facilitate efficient mobilization of savings and allocation of resources consistent with the economic development objectives of the Islamic economy. The central bank, in particular, must initiate and foster the development of primary, secondary, and money markets. Mere adoption of Islamic rules of finance will not necessarily create the impetus for financial and economic development where the shallowness of financial markets and lack of attractive financial instruments have created impediments to the saving-investment nexus and for the process of financial intermediation. The central bank in the Islamic system can be expected to perform the usual regulation, supervision and control functions of central banks as in the conventional financial system. A further opportunity for enhancement of the control of the banking system is available to the central bank through its purchase of equity shares of not only the banks but also of other financial institutions.

(iii) ***Promotion of risk-sharing and Public Policy*****:** The government has an important role in conducting public policy, promoting risk-sharing and, simultaneously, increasing the effectiveness of monetary policy while creating greater fiscal space and more stable macroeconomic environment (Askari, et.al., 2011; Debrun and Kapoor, 2010; Duval, et. al., 2006). Empirical evidence suggests that the vast potential for risk-sharing existing within, between and among countries remain un-exploited suggesting a lower level of human welfare. A government can remove many of the barriers impeding it. It can reduce informational problems, such as moral hazard and adverse selection through its potentially vast investigative, monitoring and enforcement capabilities.

Through its power of implementation of civil and criminal penalties for non-compliance, a government can demand truthful disclosure of information from participants in the economy. It can force financial concerns that would attempt to appropriate gains and externalize losses by shifting risks to others to internalize them by imposing stiff liabilities or taxes. It can use its power to tax to create an incentive structure for intergenerational risk-sharing, whereby the proceeds from taxation of current income-earning generation are redistributed to reduce risks to human capital formation of the youth of current and future generation. Without government intervention, individuals are unable to diversify the risk to their most valuable asset – human capital. The young have significant human capital but insufficient financial capital. For the old, the case is the opposite. As Robert Merton (1983) suggested, trade is possible between these generations but laws prohibit trade in human capital (except through wage employment), the young cannot make credible commitment of their human capital through private contracts. There is no possibility for private contracts to commit future generations to current risk-sharing arrangements. This, in effect, represents another case of commitment failure. Using its powers of taxing and spending, unparalleled monitoring and enforcing capabilities and its control of the money supply, only a government can effectively address these issues.

Instruments that would allow governments to improve risk-sharing are "macro-market" securities that allow people to mitigate risks to their income and countries to enhance international risk-sharing (Shiller, 1993). While there are now ways and means available in many economies that allow protection against idiosyncratic and systemic risks, evidence suggests that much of individuals' incomes are still exposed to considerable risk. Even in rich economies where a wide array of instruments of risk mitigation is available, the most important instrument of risk-sharing is the equity market instrument, a significant portion (about 90 percent in the US) of "an average person's income is sensitive to sectoral, occupational, and geographic uncertainty" (Athanasoulis, et.al., 1999). Moreover, these macro-market instruments could be used to hedge risks of a country's economy by investing in foreign macro-market instruments. For example, in a macro-market for a given economy, an investor could buy a long-term claim on that economy's national income. Such an instrument would represent a claim much like a share in a corporation. Prices of these instruments in the macro-markets would

fluctuate as new information about national and international economic developments become available, similar to what happens when new information regarding corporate profits becomes available in equity markets (Athanasoulis, et.al., 1999; Shiller, 2003). These instruments can be effective means of improving inequalities of income within and among nations and allow faster international convergence. They would also facilitate inter-generational risk-sharing. Such instruments issued by governments can also have the benefit of replacing government debt instruments that, while advantageous in terms of risk-sharing, have adverse impact on income distribution because they mostly benefit already wealthy bondholders (Folden, 2000).

(iv) ***The Role of the State, risk-sharing and Islamic Finance*****:** The foundational belief that that the Islamic system facilitates real sector activities through risk-sharing has its epistemological roots firmly in the Qur'ān, 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-bayʿ*) and not through interest-based debt contracts (*al-ribā*). Since in this verse the contract of exchange appears first and before the reference to banning debt-based contracts, it is reasonable to argue that requiring that contracts be based on exchange constitutes a necessary condition for a permissible contract. Based on the same logic, the requirement of "no-*ribā*" constitutes the sufficient condition of contracts. The necessary condition (*al-bayʿ*) and sufficient condition (no *ribā*) must be met for a contract to be considered Islamic. Classical Arabic Lexicons of the Qur'ān define contracts of exchange (*al-bayʿ*), as contracts involving exchange of property whereby 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 first to 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. Failure

to clarifying this distinction has led to the 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 of 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 their losses but internalized the gains; hence, the concept of "privatized gains and socialized losses" (Sheng, 2009). Another related confusion is between an underlying real sector contract and the instrument that financially empowers that contract. All contracts (*ʿūqūd*) that have reached us originate in the real sector, and all are permissible risk-sharing contracts (Mirakhor, 2010). 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-*ribā*, but fails to meet the necessary condition of risk-sharing.

Empirical research provides evidence of failure of financial integration to achieve the hoped-for degree of risk-sharing. Financial innovations 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. The slow progress of conventional finance to promote risk-sharing provides Islamic finance with a valuable opportunity to demonstrate its benefits as an alternative system on a global level.

Theoretically, the operational requirements of Islamic finance are: (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 in the latter determines that in 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 move simultaneously and in the same direction in response to changes in asset prices; and (vi) limitations on credit expansion and leverage. As discussed above, such a system would be stable and capable of generating employment, income and growth (Askari, et.al. 2011). 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 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 products to allow greater production; thus, greater employment of resources. At the higher end, it would provide financing for planned production in the future, with all financing through risk-sharing contracts (Mirakhor, 2010). 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 "*dūyūn*" and *qarḍ ḥasan*, but their main purpose would be to facilitate consumption smoothing for those experiencing liquidity and other shocks.

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. 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. 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 sufficiently high quality to meet the liquidity needs of the market. Those that are of high quality are bought and held. Many of the *ṣukūk* 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 the case of the former, assets are concentrated in *murābaḥah*-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 Sharīʿah. Without concerted efforts aimed at the development of the high-end of the spectrum of Islamic finance instruments, there is a real possibility of emergence and persistence of a path-dependent process whereby the industry continues churning out more – albeit in greater variety for branding purposes – of the same types of instruments. After all, finance is 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).

The state has the unique power to act as society's agent and risk manager. If and when convinced of the need to intervene, government action can generate enough incentives to stimulate the private sector's progress toward adopting risk-sharing instrument. 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 expenditures financed by taxes and/or domestic and external borrowing. Domestic government debt, something that could serve risk-sharing purposes has an adverse impact on income distribution. Externally funded government debt 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 the added advantage of improving domestic income distribution. If these instruments are issued in low denominations sold in the retail market, these instruments can serve households and firms in their attempts to hedge their idiosyncratic risks. In essence, they would be macro-market instruments similar to

those proposed by Shiller (1993). These instruments 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 of the citizenry, could commit to service such an instrument on their behalf. They again would have the same beneficial effects provided that these securities are also in low denomination and sold in the retail market. Moreover, a government could use these securities, which would resemble equity shares in a corporation, to convert its debt into what are risk-sharing instruments; thus achieving a far greater 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.

(v) *Mutual Insurance*: Risk can be shared among members of society in many areas. In particular, Mian-Sufi give the example of sharing of risk associated with educational expenditures. In many societies, individuals incur oppressive levels of debt to finance their education. In the process, they assume a great deal of risk. They have to service their debt whether they gain employment or not. While a straight debt contract shifts all associated risk to the borrower, a contingent or risk-sharing contract would account for the risk of unemployment and other reductions in salary. A risk-sharing contract would thus mitigate default. We have long argued that risk-sharing could account for such risks and more broadly the sharing of risks associated with individual livelihoods that entail lay-offs, sickness, accidents, asset price collapse and other unforeseen events. Perfect informal insurance is possible if communities fully pool their incomes to share risks. Then, each member of the community could be assigned a level of consumption dependent on the aggregate level of income and not on that of the member. This arrangement would assure perfect risk-sharing (Morduch, 1999) to mitigate idiosyncratic risk so that household income would not affect consumption and result in default.

More generally, Islamic insurance or *takāful* is recommended as a mechanism to promote cooperation and risk-sharing among members of society. Members of a society pool their resources, and share risk to protect each other against loss. It is akin to a system of mutual insurance and can be applied to any risk faced by individuals, families and groups.

If risk-sharing and in turn risk-sharing contracts have such benefits – especially reducing the likelihood of severe financial crises and ameliorating societal cohesion – why have they not been more readily adopted? The answer is evident. The powerful financial industry in the West, especially in the United States, is opposed to risk-sharing finance. Bankers and financiers don't see it in their financial interest, especially when they have managed to secure a number of lucrative subsidies (and structural concessions) for debt and its proliferation – preferential tax treatment for debt servicing, subsidized deposit insurance, fractional reserve banking, lender of last resort, and "too big to fail" bailouts. As Mian and Sufi and the popular press have confirmed, the financial industry has clout with US politicians as major campaign donors, and they use their power of persuasion effectively often and without any reservation whatsoever.

Are Muslim countries more likely to embrace risk-sharing finance as recommended in the Qur'ān and by the practice of the Prophet (SAAW)? On the one hand, many Muslim countries are followers of Western dictates and have little confidence to adopt an Islamic solution of their own. On the other hand, their financial sectors are not as developed as those of the West and thus special interest impediments might be less entrenched. Even more important, these are Muslim countries, and risk-sharing is central to their religion. We think that Malaysia is moving in this direction. If Malaysia succeeds, it could be the catalyst for other Muslim countries, and even smaller Western countries, to follow. But it should be emphasized that risk-sharing in finance is only the tip of the iceberg, risk-sharing contracts are likely to be beneficial in numerous other areas and increase human interactions, societal trust, family welfare, and human prosperity, happiness and welfare.

8. Conclusions

Almost 80 years ago, the great American economist Irving Fisher (and other renowned economists along with him) cautioned against fractional reserve banking and its creation of money. He recommended 100% reserve banking and investment banking as a separate endeavor. The vast majority of academics and all policymakers did not listen and much less take action while banking (financial) crises have occurred and reoccurred many times over.

For a number of years, my teacher, thesis committee member and friend, the late Charles Kindleberger, had said that excessive credit (debt) is the fuel of manias, asset price bubbles and the resulting panics. Academics, much less policymakers, did not take heed. Kindleberger then wrote it all in his book in 1978. Paul Samuelson later hailed it as a book that all should read and heed. In the years before the 2007-2008 financial crisis, they did not. The crisis of 2007-2008 and the "Great Recession" followed.

The 2007-2008 financial crises devastated the global economy and the lives of millions of individuals and families around the world. Mian and Sufi pulled together the data and have made a convincing case that a big run-up in household debt fueled the 2000-2008 housing price bubble (not vice versa); foreclosures resulted in the less fortunate loosing their equity, while the lenders (and in turn, bank shareholders) lost little. The big drop in demand caused massive layoffs and the great recession. Beside the present author, Mian and Sufi have argued that debt contracts are inflexible. They do not accommodate sharing of risk and losses and eventually lead to defaults and financial crises. Introduction of risk-sharing contracts is being recommended by many scholars. Still policymakers are not listening and are unlikely to take notice.

Risk-sharing contracts in finance and in other endeavors are at the foundation of Islamic teachings. The foundation was laid down over 1300 years ago in the Holy Qur'ān and practiced by the Prophet (SAAW). Risk-sharing financial contracts coupled with 100% reserve banking, the two pillars of Islamic finance, almost eliminate the likelihood of severe financial crises as long as markets are supervised and fraud and other acts of malfeasance are prevented. Risk-sharing in Islam

goes beyond the Mian-Sufi proposal. The application of risk-sharing in corporate and public finance and 100% reserve banking are important as a *package* to reduce (almost eliminate) the likelihood of future financial crises. Moreover, and more broadly, risk-sharing reduces human angst and increases societal trust, cooperation and social capital to bring humankind ever closer in support of the Unity of Allah's Creation.

Still risk-sharing contracts are unlikely to be heavily embraced in the conventional financial system in Western countries, especially in the United States. A powerful special interest group, the financial industry, benefits from debt contracts and its preferential treatment and subsidies. Financial crises will assuredly recur as they have in the past as there is no serious reform on the horizon. It is, however, possible that one or two Muslim countries, in particular Malaysia, might little by little embrace risk-sharing finance and show the way for others to follow.

Bibliography

Arrow, K.J. and **G. Debreu, G.** (1954) "The Existence of an Equilibrium for a Competitive Economy," *Econometrica*, Vol. XXII, 265-90.

Askari, Hossein, Zamir Iqbal and **Abbas Mirakhor** (2008) *New Issues in Islamic Finance and Economics: Progress and Challenges*, Singapore: John Wiley and Sons.

Askari, Hossein, Zamir Iqbal and **Abbas Mirakhor** (2009) *Globalization and Islamic Finance: Convergence, Prospects, and Challenges*, Singapore: John Wiley and Sons.

Askari, Hossein, Zamir Iqbal, Noureddine Krichene and **Abbas Mirakhor** (2010) *The Stability of Islamic Finance: Creating a Resilient Financial Environment for a Secure Future*, Foreword by Sir Andrew Crockett, Singapore: John Wiley and Sons.

Askari, Hossein, Zamir Iqbal, Noureddine Krichene and **Abbas Mirakhor** (2011) *Risk-sharing in Finance: The Islamic Finance Alternative*, Singapore: John Wiley and Sons.

Askari, Hossein, Zamir Iqbal and **Abbas Mirakhor** (2014) *Economic Policy Formulation in an Islamic Financial System*, New York: Palgrave Macmillan.

Askari, Hossein and **Noureddine Krichene** (2015) *The Gold Standard Anchored in Islamic Finance*, New York: Palgrave Macmillan.

Askari, Hossein (2012) "Islamic Finance, Risk-sharing and International Financial Stability," *Yale Journal of International Affairs*, Volume 7, Issue 1, Winter, March 2012.

Askari, Hossein, Zamir Iqbal and **Abbas Mirakhor** (2014) "Understanding Development in an Islamic Framework," *Islamic Economic Studies*, Volume 22, Number 1, May 2014.

Askari, Hossein and **Noureddine Krichene,** (2014) "Islamic Finance: An Alternative Financial System for Stability, Equity, and Growth," *PSL Quarterly Review*, **67**(268), March 2014.

Askari, Hossein, Noureddine Krichene and **Abbas Mirakhor** (2014) "On the Stability of an Islamic Financial System," *PSL Quarterly Review*, **67**(269), June 2014.

Askari, Hossein and **Noureddine Krichene** (2014) "A Gold Standard International Payments System Anchored in Islamic Finance," *ISRA International Journal of Islamic Finance*, June 2014.

Athanasoulis, S., Robert Shiller and **Eric van Wincoop** (1999) "Macro Markets and Financial Security," *Federal Reserve Bank of New York, Economic Policy Review*, 21-39.

Brouwer, M. (2005) "Managing Uncertainty through Profit Sharing Contracts from Medieval Italy to Silicon Valley," *Journal of Management and Governance*, 9: 237-755.

Debrun, X. and **R. Kapoor** (2010) "Fiscal Policy and Macroeconomic Stability: New Evidence and Policy Implications," *Nordic Economic Review*, 37: 1457-1482.

Duval, R., J. Elmeskov, L. Vogel (2006) "Structural Policies and Resilience to Shocks," Working Paper: OECD.

Epstein, G. (2006) *Financialization and the World Economy*, New York: Edward Elgar.

Ericson, R.V. and **A. Doyle** (2003) *Risk and Morality*, Toronto: University of Toronto Press.

Fisher, Irving (1936) *100% Money and the Public Debt*, New York: Adelphi Company, p.8.

Folden, M. (2000) "The Effectiveness of Government and Transfers as Insurance," SSE/EFI Working Paper series in Economics and Finance, No. 377.

Freixas, Xavier and **Jean Charles Rochet** (2008) *The Microeconomics of Banking*, Cambridge, MA: MIT Press.

Garrison, Roger W. (1991) "New Classical and Old Austrian Economics: Equilibrium Business Cycle Theory in Perspective," *The Review of Austrian Economics***, 5**(1): 91-103.

Holzmann, R. and **S. Jorgensen** (2000) "Social Risk Management: A New Conceptual Framework for Social Protection and Beyond," Social Protection Discussion Paper Series, No. 0006, World Bank.

Keynes, J.M. (1930) *A Treatise on Money*, New York: Harcourt Brace.

Kindleberger, Charles P. (1978) *Manias, Panics, and Crashes: A History of Financial Crises*, New York: Macmillan.

Knight, Frank (1921) *Risk, Uncertainty, and Profit*, Boston, Mass: Houghton Mifflin Co.

Kotlikoff L.J. (2010) *Jimmy Stewart Is Dead: Ending the World's Ongoing Financial Plague with Limited Purpose Banking*, New York: John Wiley & Sons.

Menkoff, L. and **Tolksorf** (2001), *Financial Market Drift: Decoupling of the Financial Market from the Real Economy?* Heidelberg-Berlin: Springer-Verlag.

Merton, R. (1983) "On the Role of Social Security as a Means for Efficient risk-sharing in an Economy Where Human Capital is not Tradeable," in Z. Bodie and J. Shoven (Eds.) *Financial Aspects of the United States Pension System*, Chicago: University of Chicago Press.

Mian, Atif and **Amir Sufi** (2014) *House of Debt*, Chicago, Illinois: The University of Chicago Press.

Minsky, Hyman (1986) *Stabilizing an Unstable Economy, A Twentieth Century Fund Report*, New Haven and London: Yale University Press.

Mirakhor A. (1993) "Equilibrium in a Non-Interest Open Economy", *Journal of King Abdulaziz University: Islamic Economics*, Volume 5, Number 1, pp. 3-23.

Mirakhor, Abbas and **Hossein Askari,** (2014) "Risk-sharing, Public Policy and the Contribution of Islamic Finance," *PSL Quarterly Review*, Volume 67, Number 270, September 2014.

Mirakhor, Abbas and **Hossein Askari** (2010) *Islam and the Path to Human and Economic Development*, New York: Palgrave Macmillan.

Mirakhor, A. (2009) "Islamic Economics and Finance: An Institutional Perspective", *IIUM Journal of Economics and Management*, Vol. 17, No. 1.

Mirakhor, A. (2010) "Whither Islamic Finance? Risk-sharing in an Age of Crises," *Paper presented at Securities Commission of Malaysia, Kuala Lumpur*, March 15.

Mirakhor, A. (2011) "Epistemological Foundation of Finance: Islamic and Conventional," *Keynote address presented at the Foundations of Islamic Finance Conference Series*, Kuala Lumpur, March 8-10, 2011.

Mirakhor, A. and **Edib Smolo** (2011) "Do Conventional and Islamic Finance Share Common Epistemology?" *Global Islamic Finance*, August.

Morduch, Jonathan (1999) "The Microfinance Promise," *Journal of Economic Literature*, December, Vol. **XXXVII**, 1569-1614.

North, D.C. (1990) *Institutions, Institutional Change and Economic Performance*, New York: Cambridge University Press.

Sheng, Andrew (2009) *From Asian Global Financial Crisis*, Cambridge, UK: Cambridge University Press.

Shiller, R.J. (1993) *Macro Markets: Creating Institutions for Managing Society's Largest Economic Risks*, New York: Oxford University Press.

Shiller, R.J. (2003) *The New Financial Order: Risk in the 21st Century*, Princeton, New Jersey: Princeton University Press.

Weber M. (1889) *The History of Commercial Partnerships in the Middle Ages*, Lanham, MD: Rowman & Littlefield.

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