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Risk sharing and the systemic fragilities of debt-economy

Abbas Mirakhor*

Abstract: This study explains risk transfer, associated with debt-based financing, as the main cause of financial crises in the world. It presents the case for a financial architecture based on risk sharing that, in turn, is likely to make the financial system less fragile and more stable. This study also highlights the significance of Islamic finance in this regard.

Key Words: Risk transfer, risk sharing, debt-based economy, anti-fragile, Islamic finance.

Abstrak: Kajian ini memperihalkan tentang pemindahan risiko, yang dikaitkan dengan pembiayaan berasaskan-hutang, sebagai punca utama kegawatan ekonomi di dunia. Ia mengetengahkan tentang rangka kewangan yang bersandarkan perkongsian risiko, yang mana kemudiannya menjadikan sistem kewangan kurang rapuh dan lebih stabil. Kajian ini juga menyorot kemustahakan Kewangan Islam dalam hal ini.

Kata Kunci: Pemindahan risiko, Perkongsian risiko, ekonomi berasaskan-hutang, anti-rapuh, Kewangan Islam.

1. Introduction

A reading of various documents presented at the 2017 Spring Meetings of the International Monetary Fund and the World Bank,[1] as well as a number of empirical and theoretical books and published research,[2] points to a number of vulnerabilities and fragilities that have,

* Former Professor and First Holder of International Centre of Education in Islamic Finance (INCEIF) Chair of Islamic Finance, Kuala Lumpur. Email: alhcmirakhor@gmail.com.

collectively, led to the warning of the emergence of a perfect storm in the global economy. These vulnerabilities include the following. With few exceptions, economies across the world are stagnating; unemployment is widespread and growing; private investment is sluggish; productivity is declining; commodity prices are low and increasingly volatile; protectionist sentiments are growing; global trade is shrinking; there is large and growing liquidity in search of yield with no place to go; financialization of economies is proceeding unabated; global debt is large and growing; governments have resorted to financial repression to service their debts; income and wealth inequality across the world is large and growing; macroeconomic policies are impaired; international financial institutions have failed in their mandates to stabilize global finance and to reignite global growth; political uncertainties across the globe have intensified; and emerging market economies, that provided a cushion for the global economy during the last crisis, are themselves in search of stability and cannot provide support for the global economy should the risks of another world-wide crisis materialize. This list does not include a plethora of environmental and ecological risks on the horizon.

What is the main cause of financial instability? What role does debt-based financing, based on credit, play in this regard? Can risk sharing-based financial architecture be a better alternative? How might it improve stability of the financial system? And, last but not least, what role risk sharing-based Islamic finance play in this regard. In what follows, these five issues are discussed one by one in sections two, three, four, five and six.

2. How did the world get here?

For most observers, the last crisis and its causes have become the reference for considering the risks of future crises. Since 2009, a number of explanations have emerged from post-crisis diagnostics. Among these, the one that has achieved considerable theoretical and empirical support from academics, practitioners, and policymakers is the Debt-Leverage explanation. The narrative of this notion can be summarized in the following chain of causation:[3]

Fractional Reserve System→ Credit→ Debt→ Leverage→ Fragility→ Crisis

Financial and economic systems based on risk transfer are basically unstable, and are prone to generating this chain of causation repeatedly.[4] Risk transfer is a method of risk management whereby one party of a transaction transfers the risks to the other party of the contract with the latter's knowledge and consent. An insurance contract is an example of risk transfer. Interest-based debt is another. A traditional bank deposit/loan intermediation contract is a bilateral risk-transfer operation whereby a depositor transfers the risk of her/his funds to the bank and the bank, in turn, transfers the risk to its client/borrower. In this transaction mechanism, the depositor retains the full property rights on her/his deposit while, at the same time, she/he has a property rights claim on the bank for the interest on the deposit. Similarly, the bank has a property rights claim on the borrower for the principal amount plus accrued interest without transferring the property rights of the amount to the borrower, regardless of the outcome of the project for which the borrower contracted the loan. Indeed, most bank lending contracts include a clause that the bank has the right to call in the loan any time.

Another method of risk management is risk shifting. Under this method, two parties to a contract or a transaction shift the risks involved to a third party explicitly, as in environmental pollution, or implicitly, as in the case of corporate managers shifting the risks of weak balance sheets to lenders without disclosing the weakness. Another example of risk shifting occurred during the 2007/2008 crisis when the financial institutions shifted the risk of their speculative activities to the taxpayers (through bailout plans) without their initial knowledge or consent. More often than not, financial risk shifting occurs during a period of stress[5] when there is regime switching where individuals, corporations and governments switch their regime of risk management from risk transfer to risk shifting (Mirakhor et al., 2012). Finally, there is the regime of risk sharing in which the risk of contracts or transactions are shared among the participants. In the 1970s, Arrow (1971) showed that when each economic agent is allocated the portion of risk of contracts or transactions commensurate with its capacity to bear it, there is optimal risk sharing.[6]

3. Risk Transfer System: Debt-Economy

Risk transfer is the dominant paradigm in the economies of the world. Often it is not realized that adoption of this method of risk management

requires assumptions and axioms that run contrary to some of the fundamental values of many societies, including Muslim societies. Where interest rate based debt systems dominate, all social relations become imbued with the spirit of debt relations as the archetype of social interactions, even between members of the same household.[7]Among the axioms of foundation of risk transfer is that of the model of man envisioned by the underlying paradigm as non-cooperative, unsympathetic, and intensely self-interested.[8] On the contrary, research in experimental economics over the past three decades have shown that not only are humans cooperative, they are also sympathetic, other-regarding and engage in reciprocity.[9] Moreover, behavioral experiments have provided evidence that not only humans share benefits and costs of transactions, even when amounts involved are substantial, they punish unfair behavior, even if it costs them. Significantly, experiments have shown that humans have a preference for "inequality aversion."[10]

During the 1980s, contract theory was born as a new field of economic inquiry.[11] One of the most important contributions of this theory—not recognized until 2016 when the Nobel Committee awarded the Nobel Prize in Economics to Bengst Holstrom and Oliver Hart for their contributions to contract theory—was the assertion that if the axioms of self-interest of humans held, then cooperation between two parties in an exchange transaction or a contract, in which the interests of both parties are served efficiently, becomes impossible due to agency problems. If both parties to a contract are self-interested, non-cooperative, unsympathetic and un-empathic, then there is no reason to assume that they could engage in a contract that serves both parties' interests. Even if they were able to arrive at a contract, there is reason to believe that self-interest would motivate non-revelation of characteristics of behavior that would conflict with self-interests of one of the parties. Hence, even if possible, these contracts would be incomplete, thus contradicting the assumption of complete contracts of contemporary economics. Contracts are termed "incomplete" because they cannot include all information that the participants to an exchange need to ensure that the interests of both parties are served by the contract. Contract theory terms the conflict between the interests of parties to a contract as principal-agent problem. This leads to coordination failure between the interests and actions of the parties to a contract. Coordination failures are due to the independent actions of self-interested parties to a

contract that lead to sub-optimal results. A labor contract, for example, cannot include factors such as trust, honesty, the level of effort that influence the actions of agents (employees) which, in turn, impact the interests of the principal (employer).

Another example of "impossible contracts" is an interest rate based debt contract. It is "impossible" because, given the axiom of self-interest, the borrower has no incentive to repay the loan. Moreover, even if such contracts were "possible," they could not include provisions for truth telling, gambling, speculative risk taking, malfeasance and other behaviors that would affect the borrower's promise to repay the loan.[12] Such contracts lead to waste and misallocation of resources, aside from the fact that there is no incentive for creditors to provide loans in the first place because such a contract would be unenforceable. In a society in which risk transfer dominates the economy, to make an "impossible contract" possible, the society has to allocate enormous amount of resources to make debt contracts enforceable. It has to use resources to fund a coercive force that includes the activities of courts, lawyers and law enforcement to make loan contracts possible. These costs are shifted to the tax payers. Additionally, private loan contracts have to incur transaction costs, collateral and resources for (out of court) dispute resolutions, all of which have to be paid by the borrower. These costs, born by taxpayers and borrowers, are generally hidden from the view of the public that has to also bear the costs of governments' borrowing. All these costs, while making impossible debt contracts possible, are, in effect, free insurance to creditors at the expense of tax payers and borrowers. These are similar to the subsidy to banks in form of deposit insurance, the costs of which are borne by the taxpayers. These costs are necessary to create an incentive structure that forces an alignment of the interests of the borrower with those of the creditor.

A major contention of contract theory is that the principal-agent problem arises because, under the self-interest axiom, the incentive structure of contracts is not efficient to elicit the kind of behavior from participants that serves the interests of both parties. This idea gave birth to "incentive economics."[13] This field searches for conditions and designs of contracts in which both parties have sufficient incentives to achieve efficient outcomes to improve gains from exchange for both as compared to contracts without such incentives. The class of contracts that meet this criterion is referred to as "incentive-compatible contracts."

Perhaps ironically, many types of incentive-compatible contracts in finance, one way or other, modify the risk-transfer nature of transactions by moving contracts toward risk sharing. Consider, for example, Basel III capital adequacy ratio (CAR). To make banks behave in such a way as to align their interests with those of the public, their CAR has to be 10.5 percent by 2019. This means that, in effect, banks are forced to modify their risk transfer model to share more of the risk with the public by putting more of their own skin (more of their own capital) in the game than they were before the crisis. Hence, banks become more of a principal than they were before the crisis. Other examples of incentive-compatible contracts are those in the labor and credit markets where the agents become residual claimants, in effect, becoming property rights claimants, meaning that they now have their own "skin in the game," thus becoming principals themselves.

Examples of "incentive-compatible contracts" in the labor market are those that allow labor to share in the profit of the firm.[14] An example of incentive-compatible contracts in the credit market is the risk-sharing contract that allows risk and rewards of a given project undertaken jointly to be shared between the parties to the contract. The major advantage of these types of contracts is that because the agents are residual claimants and have skin in the game, they elicit truth-telling, trust, cooperation, hard work, efficiency in management of resources and other behavior that enhance productivity. These factors cannot be written into contracts or be enforced. Hence, these contracts attenuate coordination problems and improve efficiency of outcomes as well as save resources that would otherwise have to be devoted to transaction, monitoring and enforcement costs involved in designing and implementing contracts. Productivity gains and output expansion in risk-sharing contracts originate from X-efficiency and allocative efficiency at the micro level and from total factor productivity at the macro level.[15] A risk-transfer economy (debt-economy) forgoes these efficiency gains.

Not only is a debt-economy inefficient, it is also fragile and subject to frequent bouts with crises. Long before Reinhart & Rogoff (2009) demonstrated this fragility from historical records, Keynes (1936) argued that a risk-transfer capitalist economy on its own, i.e. without government intervention, faces price inflation or economic growth instability. It will have either unemployment or inflation. This instability, he considered, as an "evil" of this type of capitalism. In arguing against

the classical economists' notion that a capitalist economy will always lead to full employment equilibrium, Keynes focused his attention on Say's Law that "supply creates its own demand." According to this Law, there is a circular flow in the economy such that what leaks out of the income stream in the form of savings, returns back to the flow in the form of investment, hence, the economy is always in equilibrium. Therefore, unemployment or inflation would be only temporary phenomena. A major argument of Keynes was that such results would require perfect coordination between savers and investors. This, he argued, is not possible. One reason was that savers and investors are not necessarily the same people and save and invest for different reasons. Therefore, it is not likely that their independent actions can be coordinated. Another reason, he argued, is the existence of what he called "the rentier class" that would not release loanable funds into investment flows unless they collect "rent" on the funds in the form of interest and transferred the risk of these funds to the borrowers. This behavior exacerbates the coordination problem. He further argued that such a system suffered from "two evils." One is that, left on its own, it could not generate full employment equilibrium and, another, that it would generate massive income and wealth inequalities. But the real "villain of the piece," he argued, was the existence of the interest rate mechanism that created instability.[16] When his book, "The General Theory", was translated into German in 1936, he wrote a preface to the book praising the German policy of non-reliance on interest rate mechanism in designing fiscal and monetary policies.[17]

Keynes was not the first to have noted the instability of risk transfer capitalism. However, he was the first to have so succinctly analyzed the causes as emerging from the financial sector. A brilliant follower of Keynes, Minsky went much further in detailing how the risk- transfer finance creates inherent instability and fragility in a capitalist system. Debt-leverage drives the cyclical evolution of the economy as its firms move from being "robust units", as they have little or no debt, to become "hedge units," as they assume ever larger debt but still able to service their debt, to "Ponzi finance units," where these firms can no longer service their debt. At this point the system is rendered fragile and, ultimately, leads to crisis.[18]

James Tobin, another gifted follower of Keynes and the winner of 1981 Nobel Prize in economics, had a different explanation for the

inherent instability of risk-transfer capitalism. In a short, concise and forceful article in *Lloyds Bank Review*, July 1984, he warned that the risk-transfer debt system with new financial techniques and securitization would lead a productive economy to morph into a speculative economy; what he called "a paper economy." By this he meant that finance, which was supposed to intermediate between the surplus and deficit finance units in order to serve the real economy, was in the process of de-coupling from the real sector to have an independent life of its own in which most of its activities was trading in paper debt securities or trading in stocks which were already issued without creating additional and new capital stock. He argued that in these circumstances, the speculative paper economy would grow with finance outpacing the growth of the real economy. This process was later called "financialization."[19] His prediction saw its full validation before and during the 2007/2008 crisis. Even years after the crisis, Tobin's analysis had not lost its relevance. In 2012, five years after the crisis, it was estimated that of the US$ 33 Trillion trade in the New York Stock Exchange, only 0.2 percent found its way into new capital formation; the rest constituted speculation in "paper trade."[20]

In addition to these problems, risk-transfer debt-economy faces other challenges. Its financial system is pro-cyclical and exacerbates the phases of the business cycle. It produces excess credit during the boom phase which, combined with leverage, creates pressure on prices, strengthening inflation. In the down phase of the cycle, the system creates credit crunch and adds additional force to the downward movement of aggregate demand. Moreover, the system creates massive opportunities for mismatches in the balance sheet of its banking system which again serve to exacerbate cyclical phases. Finally, the risk-transfer financial system is riddled with moral hazards and other elements of principal-agent problem. Much of the moral hazard issues stem from the fact that the credit creation (central banks) and its allocation (private financial institutions, including banks) functions are separate. Central banks (monetary authorities) have a different objective function (price stability) than the private financial institutions (profits). This separation of creation and allocation of credit reduces the potency of monetary policy because the dissonance between the two objective functions makes it difficult for the monetary authorities to achieve their aim since the financial institutions are at the core of the transmission mechanism

of monetary policy. This has been the experience of nearly all countries in the post-crisis period where monetary easing aimed at inducing higher private investment has not been very successful. Adding to the strength of the moral hazard issue is the deposit guarantee the banking sector of these economies need to, ostensibly, protect the economy's payment system.

To summarize, a risk-transfer debt-economy is inherently unstable and fragile. Balance sheet mismatches in the banking system combined with leverage operations in its firms and banks are major sources of fragility. It makes coordination between surplus and deficit financial units difficult, if not impossible. It limits the inclusion of small and medium size firms as well as that of lower income groups into the financial system difficult (credit rationing). Its financial system is prone to pro-cyclicality (high leverage in good times, credit crunch in bad). Moreover, the system is challenged by a variety of moral hazard issues that exacerbate the inherent fragility of the system. All this represent market failure of sizable magnitude as, in choosing an interest rate based debt contract, creditors and debtors ignore higher payoffs to both of them as well as to the rest of the economy.

At this juncture a question arises, with all these problems, how does the risk-transfer debt system continue to survive and dominate the world of finance? The primarily lies, primarily, in the myths that surround debt. The first myth is that, of the two ways of financing, debt or equity, the former is the cheaper of the two. It has already been pointed out that a debt-based system has huge costs that are not considered because they are mostly hidden and in addition they create misallocation of resources. Just consider the costs to the taxpayers not only from making impossible debt contracts possible—by establishing a huge institutional edifice of administrative, legal and enforcement—but also from the loss of tax revenues to the government from the write off of interest rate expense of corporations.

A second myth is that corporations prefer more debt than more equity when mobilizing resources because more equity erodes ownership. This myth ignores risk shifting phenomenon due to moral hazard of separation of corporate management and ownership. At times, particularly during times of financial stress, management borrows rather than issue additional equity because it wishes to hide balance sheet

vulnerabilities. While, ostensibly, ownership has not been eroded, the first call on corporate resources has expanded. A third myth holds that public debt is not costly. However, governments borrow either externally or domestically. In the first case, they expose the economy to the "sudden stop" phenomenon in which external creditors, for a variety of reasons, withdraw credit from a country even when its economic fundamentals are sound. This occurred during the Asian crisis.[21] Even when there is no sudden stops, resources leak out of the economy to service external debt. When governments borrow domestically, they usually issue debt securities (bonds) with very large denominations which are then purchased by high net asset individuals or institutions. The servicing of the debt however is done through tax resource, generally paid by lower and middle income groups, creating an income redistribution from these groups to the rich. This exacerbates income and wealth concentration.

A second reason why debt systems continues to thrive is the fact that governments themselves create incentive structures to promote debt contracts through administrative, legal and policy means. In addition to tax incentives provided for debt, governments fiscal and monetary policies are debt-based. A third reason is the lack of finance education among the public as well as lack of general knowledge and understanding about risk and uncertainty that keeps the public at the mercy of those who benefit from the operations of the debt system. A fourth reason is an almost theological devotion to the interest rate mechanism within finance and economics professions. It is astounding that among all the books that have been published since the crisis about debt being a major source of instability, none has questioned the near-sanctity of the interest rate mechanism.[22]

4 Is Risk Sharing a Better Alternative?

To answer this question, two other essential questions need to be addressed first: what is risk, and what is finance? Regarding the first of these two questions, when the term "risk" is used in day-to-day conversation, it refers to two different types of statements about future events. First, a risk of occurrence of an event that can be precisely defined and measured against historical records and probabilities of its occurrence calculated. Insurance does this as there are a number of events whose occurrence have known probabilities. Second, a risk that cannot be defined or measured because it relates to an unknown and

unknowable future. This conveys the notion of "constrained cognition," ignorance due to insufficient knowledge of the processes and mechanisms by which the future is generated out of the past. Technically, this is uncertainty. Complexities of social-political-economic environment can convert uncertainty into "radical uncertainty," which makes accurate predictions of the future impossible.

Turning to the second question, it can be argued that finance exists because of radical uncertainty. The most important and original function of finance is to create a bridge between the present and a radically uncertain future, to intermediate between now and later as it intermediates between financial surplus and deficit financial units. The financial resources of a surplus unit come from delayed gratification, and delayed consumption. Surplus units postpone present consumption for two reasons: (a) more consumption in the future; and/or (b) precautionary move to mitigate their idiosyncratic risks (risks that are unique to individuals, households and firms for which there are no insurance markets). Deficit units bring their consumption forward in time to the present also for two reasons: (a) available investment opportunities; or (b) actualization of idiosyncratic risks. Both face radical uncertainty. The surplus units take a risk that they will have their principal plus some addition (either interest on loans they have extended or return to their investments), in an environment that is radically uncertain. Deficit units take a risk that they can meet their obligations from future income stream which is subject to radical uncertainty.[23] In other words, surplus units trade their presently available resources for more in a radically uncertain future while the deficit units are trading their uncertain future for the certainty of now while expecting that a radically uncertain future will allow them to repay the resources they are borrowing now. The function of finance is to manage these expectations; to manage the risks of transforming the present expectations of the surplus units and the risks of future repayment of the principal, with additions, by the deficit units. This is the process of "maturity transformation"; banks are, therefore, transformation engines.

If any further argument is needed to strengthen the position that the risk-transfer debt-economy is unstable, fragile and costly to human societies, one can point to the notion that it is nearly impossible to efficiently and effectively regulate risks-transfer finance in an environment of radical uncertainty. Therefore, the system will, ultimately,

shift all the risks of financial operation to the taxpayers. In a recent book, the former governor of the bank of England, Mervyn King,[24] eloquently explains that because of radical uncertainty, there is no way one can use risk models to regulate behavior of financial institutions in order to create an efficient and effective regulatory structure. King's solution is to require a much larger CAR (more skin in the game, which in effect weakens risk transfer and brings in more risk sharing) and force banks to pledge their assets to the central bank as collateral. Similarly, Taleb (2012) argues that to make a fragile financial system not only stable but anti-fragile, more skin in the game is necessary which means converting a risk-transfer financial system into one where the risks of contracts are shared between participants.

5. How does risk sharing make a financial system anti-fragile?

The simple answer is because of four important characteristics: Mutuality, commitment, horizontal governance, and common good objective. A risk-sharing contract mutually commits the participants to share resources, risks, and rewards. Because everyone has skin in the game, the governance structure will, most likely, be horizontal rather than vertical providing agility, flexibility and greater accountability in the management and operations of the venture subject of the contract. Moreover, all participants will work to gain the most out of the operations of the contract since they all stand to gain from effective, efficient, and productive outcomes. Due to these characteristics, risk sharing resolves the issues of moral hazard associated with principal-agent problem since the parties to the contract are functioning as both. As well, in a risk-sharing system where financing is being provided by shareholders, there is no incentive to withdraw financing when there may be a potential downturn as there would be in a risk-transfer system. Similarly, during upside, financing would be available commensurate with increased productive activities only, unlike the risk-transfer system which provides greater credit during the boom and withdraws credit during the bust phases of the business cycle.[25] Hence, risk sharing reduces or eliminates pro-cyclicality of finance. Also important is the fact that in the absence of a rentier class, risk-sharing finance improves income and wealth distribution, thus reducing inequality.[26]

Risk sharing also reduces or eliminates the coordination problem since in a risk-sharing contract, savers and investors are both involved

as owners. There is no rentier demanding a premium for providing financing. All parties involved work for the objective of greatest return to be shared by all. As mentioned earlier, risk sharing creates an opportunity for firms, at micro level, and the economy, at macro level, to experience X-efficiency and total factor productivity gains that increase output and growth.[27] Another major source of output growth due to risk sharing is that the focus of contracts shifts from creditor-borrower to investor-entrepreneur relations and from credit rating/collateral to the viability/profitability of the project subject of contract. Consequently, a large number of projects that in a risk-transfer financial system would be rationed out of the market due to lack of collateral or credit record, would find funding in a risk-sharing system.

The answer to the question posed in the title of this section, therefore, is that, indeed, an economy based on risk-sharing finance would be a much better alternative to risk-transfer debt-economy.

6. Risk-sharing Islamic finance

The organizing principle of Islamic finance is stated in the Verses 275, 279 and 282 of Chapter 2 of the Qur'an[28] that identify three types of contracts, *al-riba*, *al-bay'* and *al-tijarah*. Simply defined, *al-riba* means money today for more money in the future. Contracts based on *riba* are declared non-permissible. The third contract, *al-tijarah* (trade), in all its manifestations, is dealt with in the longest Verse of the Qur'an, i.e. the Verse 282 of the Chapter 2. This is a contract of buying and selling, on spot trade of a specific product. This Verse ordains that no written contracts are needed for spot trade. However, if the product is available but financing of it is to be done in the future or if the specific product is not available until the future, then financing of the transaction requires a written contract but it cannot include interest rate charges or asymmetric information. In other words, interest rate-based debt contracts are prohibited explicitly through the rejection of *al-riba* contracts and implicitly in trade contracts. As mentioned earlier, there are only three ways to manage the risks of a contract: transfer it, shift it, or share it. Since the Verse prohibits risk transfer, by extension it also prohibits risk shifting because the Verse 279 of the Chapter 2 declares them as injustice. This leaves the contract of *al-bay'* which is defined as exchange of property rights. Since investment is not covered by the Verse 282 of the Chapter 2 and interest rate-based debt contracts

are prohibited by the Verses 275 and 279 of the Chapter 2, that leaves risk sharing as financing of *al-bay'*. It is worth noting that in 2012, a gathering of economists and well known religious scholars in Kuala Lumpur enunciated an opinion (*fatwa*) that risk sharing was the salient feature of Islamic finance and urged Muslim financial organizations and governments to implement risk-sharing finance.[29]

Beginning in the second half of the 1970s, economists and religious scholars asserted that, once it is accepted that interest rate-based contracts are prohibited, the financing of investment would have to be based on profit-loss sharing (PLS). Some have argued, therefore, that there is no risk sharing in Islamic finance but only "profit sharing."[30] This argument seems to suffer from a cognitively deficient understanding of risk, uncertainty, and finance theory. Apparently, the argument does not realize that profits can only be shared after a project has reached fruition. The question is then how are the profits or losses to be shared between the parties to a contract? The obvious answer is: profit or losses will be shared based on an agreed share ratio. The next question that poses itself is: When is the agreed share ratio arrived at? Again the obvious answer is before the project subject of the contract commences. It should now be rather clear that such a share ratio has to be negotiated under conditions of risk and (radical) uncertainty regarding the future outcome of the project subject of the contract. In other words, parties to the contract reach an agreement on how to share the resulting profits (losses) not knowing the future outcome of the project; they are sharing the risks of the project. Hence without risk sharing (*ex ante* to the start of the project), there can be no profit (loss) sharing (ex post to the ending of the project). The kind of uninformed "critical appraisal" issuing from arrogance born in ignorance of theories of risk, uncertainty and finance is perhaps one reason why there has been such a slow and weak reaction to the Kuala Lumpur Declaration. Consequently, as empirical evidence provided by Alaabed et al. (2016) suggests, the present configuration of Islamic finance continues to operate on risk-transfer. In effect, the present Islamic finance has become a new asset class within the conventional finance. As such, it has all the drawbacks of the interest-based debt finance and none of the benefits of risk sharing, the essence of true Islamic finance.

Endnotes:

1 These include reports by the UN and its affiliated agencies, such as the IMF, World Bank, UNDP and ILO as well as by various regional development banks and agencies.

2 See the recent writings of Keen (2017), King (2016), Turner (2016), Taleb (2012) as well as articles available on the website *Project Syndicate* and in *Real-World Economic Review*.

3 See Phelan (2016), Benes & Kumhof (2012), Brazilier & Hericourt (2014), Torres & Sukhdev (2012) and Kumhof et.al (2015).

4 Early observations by Reinhart & Rogoff (2009) posited that all financial crises of the past have been "debt crises." A debt-based system is a risk transfer system.

5 The current practice of Islamic finance seems to be an exception since "Islamic banks" appear to have adopted risk shifting as a risk-management tool even during normal times. See Alaabed, et al. (2016).

6 See also Maghrebi et al. (2016).

7 For an interesting article in this context see Somma (2016), as also the rich list of references of the present paper.

8 These characteristics are clearly opposed to the model of man envisioned in the Qur'an and Sunnah. This does the not mean that these sources ignore the fact that in life there are those who behave very much in the spirit of the model of man as assumed in the contemporary economics paradigm. Indeed, both sources recognize behavioral deviations in its archetypal representation with all of its manifestations.

9 See, for example, Bowles & Gintis (2011).

10 See Cameron (1999), Fehr & Gächter (2000) and Fong (2007).

11 For a good survey in this context, see Stiglitz (1987).

12 Interest-free loans, Qardh Hasan in Islamic lexicon, also contradict the axiom of narrow self-interest.

13 See Leffont (2000).

14 See, for example, Weitzman (1984).

15 See Perelman (2011) and Comin (2008).

16 See Askari et al. (2012) for a more detailed discussion of Keynes' arguments,

17 See Turgeon (1996).

18 For details of Minsky's thoughts, see Minsky (1982, 1986).

19 See Palley (2013) and Foroohar (2016) for good discussion of financialization.

20 See Boogle (2012).

21 See Sheng (2009) for an excellent analysis of the Asian crisis and the lessons that were not learned from that experience.

22 See, for example, Turner (2016).

23 For an interesting discussion of the relation between finance and radical uncertainty, see King (2016).

24 See King (2016). See also Rafi et al. (2016).

25 See Stiglitz (1988).

26 For detailed discussions of the adverse impact of "rent" on income and wealth distribution, refer to the decade of painstaking work of Thomas Piketty and his colleagues in collecting and analyzing data showing this impact; see Piketty (2014). This book may well be considered as the validation of Keynes' assertion that risk-transfer capitalism skews income and wealth distribution in favor of the rentier class.

27 See, Bowles (2012) and Lewis & Conaty (2012).

28 For a full discussion on risk sharing in Islamic finance, see Askari et al. (2012).

29 See The Kuala Lumpur Declaration on https://www.isra.my – website of ISRA (International Shariʿah Research Academy).

30 See, for example, Hasan (2015).

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In This Issue

Articles

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2289 5639