

Risk Transfer, Risk Sharing, and Islamic Finance

Risk is normally associated with danger, harm, or loss. At first instance, it depicts something that one should avoid or run away from. In normal term, risk is a probability or threat of damage, liability, or any other negative occurrence that is caused by external or internal vulnerabilities. Usually, it could be avoided through preemptive action. In finance, risk is the probability that an actual return on an investment will be lower than the expected return. The general view of risk has been that it needs to be transferred as in the case of debt-based financial transactions.

WHAT IS RISK?

Risk is generally defined as uncertainty, a deviation from an expected outcome. The etymology of “risk” can be traced to the maritime trades of the fourteenth-century Italian city-states in search of profit opportunities from adventurous trade with the Middle East and Asia (Mirakhor and Askari 2014). During that period of commercial revolution, a contract known as *commenda* was widely used to finance a massive increase in trade. *Commenda* is essentially a type of partnership in which a person could invest as a silent partner in someone else’s business with a promise of a share in the profits. The history of *commenda* has been traced back to the concept of *mudharabah* used by the Muslims (Mirakhor 2003; Mirakhor and Askari 2014; Udovitch 1962, 1967, 1972). Ventures that were usually financed by loans transitioned to *commenda* as soon as the

state was able to develop ways and means of verifying the outcome of contracts. In the late medieval period, Italian city-states such as Venice were able to enhance their ability to verify information regarding the outcome of ventures through the role of the state as information transmitter as well as the enforcer of contracts. It is generally understood that one of the reasons for the existence of debt contracts is costly verification.

The concept of risk has evolved in Western thought over time. Reaction to risk too has progressed from one of resignation to fate to one of “assessing,” “managing,” and “mastering” risk. The perception of risk as a danger to be avoided has now advanced to a calculated behavior that perceives risk in terms of its accompanying opportunities for gains (Bernstein 1996). Over the last few decades, view toward risk has evolved further from a perception that risk is mostly an individualistic responsibility to that which envisions risk management as a collective, social, and moral opportunity to strengthen social solidarity (Mirakhor 2011). The number and intensity of crises in recent decades have highlighted the focus on social risk management. This is evidenced by the share of the losses arising from crises originating at the institutional level, that have to be borne by the general public. Bailouts of “too big to fail” institutions or increases in taxes to fund shortfalls in public deficits are often put upon the general public. It suggests that there should be increased sensitivity concerning what each individual owes to other members of the community in terms of prevention and mitigation of risk. One way of managing risk is to share the risk with others. Risk sharing is the foundation used in Islamic finance. Sharing of risk is one of the ways of mitigating uncertainties as provided in Islam. In this perception, public policy plays a crucial role in creating an effective incentive to promote risk sharing, as elaborated further below.

RISK, UNCERTAINTY, AND AMBIGUITY

Risk exists when more than one outcome is possible. Being in a risky situation can also potentially result in an outcome that is favorable. This is because the outcome of any endeavor taken is uncertain. Taking a risk is like flipping a coin. There are two sides to it—head or tail. Likewise, risk can result in a positive or negative outcome, a gain or a loss.

We live in an uncertain environment. Uncertainty is a fact of human existence. The uncertainty stems from the fact that the future is unknown and therefore unpredictable. Yet, individuals have to make decisions and take actions that affect their own as well as the lives of

others. Worse still, an individual is ignorant about how others behave in response to uncertainty. Facing an unknown future, individuals make decisions by forming expectations about payoffs to alternative courses of action. They can estimate the payoffs based on personal experiences. Alternatively, the person can use the known probability techniques to form an expectation of returns to an action. A statement of the probability of occurrence of consequences to an action can be formed from the expected outcomes. In other words, uncertainty is converted into risk (Mirakhor 2012). Risk, therefore, is a consequence of choice under uncertainty (Iqbal and Mirakhor 2011).

Risk can arise because the decision maker has little or no information regarding which state of affairs will prevail in the future. Therefore, when the decision maker enters into a state of uncertainty, such state results in exposing the person to certain risks. A decision nevertheless has to be made and action taken based on expectations. Risk can also arise because the decision maker does not or cannot consider all possible states that prevail in the future. In this case, even if the decision maker wants to consider all possible states of the future, there is so much missing information that it is impossible to form expectations about payoffs to various courses of action. This situation is referred to as “ambiguity.” If severe enough, this type of uncertainty leads to reluctance or even paralysis in making decisions.

Different people have different attitudes to risks even though their goals may be the same. People are risk averse when they shy away from risks and prefer to have as much security and certainty as is reasonably affordable in order to lower their discomfort level. This category of people, who is represented by a majority of the population, would be willing to pay extra to have the security of knowing that unpleasant risks would be removed from their lives. A risk seeker, on the other hand, is the person who hopes to maximize the value of investments by investing in risky ventures such as a pioneering business and the stock market. A risk seeker is also someone who will enter into a venture or transaction as long as a positive long-run return on the money is possible, however, unlikely. In between both ends of the spectrum is a person who is said to be risk neutral. His risk preference lies in between these two extremes. Risk-neutral individuals will not pay extra to have the risk transferred to someone else nor will they pay to engage in a risky endeavor. In some cases, risk may be evaluated statistically. When the population is large enough, the same odds can be calculated with fair accuracy. However, many aspects of uncertainty involve low probability. This makes decisions difficult and actions risky.

Mirakhor and Askari (2014) described that contemporary perceptions of risk and uncertainty invariably begin with Knight (1921) who defined decision making under uncertainty as a series of payoffs 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 that could help determine payoffs to decisions, making outcomes uninsurable. Over the past decades, developments in probability theory and in techniques of subjective probability distributions have led to a semantic alteration—uncertainty has come to mean as risk, and uncertainty becomes “ambiguity.” The term ambiguity refers to the subjective experience of missing information, whether due to lack of sufficient data or vagueness of the subject matter. Ambiguity seems to be driven by the impossibility of cognitive completeness. The limitations of the power of cognition have the effect of making decisions under conditions of ambiguity difficult (Ellsberg 1961; Erbaş and Mirakhor 2013; Mirakhor 2010; Mirakhor 2011; Smithson 1989). In order to overcome this, one can either acquire more knowledge or be patient. Additional knowledge either reduces ambiguity within the existing institutional framework or leads to alterations on the framework to make it more effective in reducing ambiguity. The other choice is to wait and postpone decision making until passage of time makes additional information available.

The study of the “theory of intuitive judgments and choice” gave an understanding of behavior under risk (Erbaş and Mirakhor 2013; Kahneman and Tversky 2000; Mirakhor and Askari 2014). It postulates that the behavior of man under the condition of uncertainty, risk, and ambiguity is determined by the way they respond to two mechanisms: framing and prospect, both of which can cause asymmetries in risk perception leading to behavior different from that expected under rational theory. Framing refers to how people form their perception of a given situation. How an event is formulated affects their response to a risky situation. People react differently to the same situation when it is framed differently. Prospect refers to the perception of gains or losses attached to decisions. The prospect of a given decision depends on the choice of a reference point, the status quo to which they assign a higher value. The way prospects are framed can lead to inconsistent behavior. The same objective outcome if framed differently, may result in different responses. If the outcome is framed as either a gain or loss, people prefer to choose gain because, intuitively, people are generally loss averse.

The findings of prospect and framing theory provide guidelines for the formulation of public policy relating to risk sharing, and the way policies are formulated, framed, and presented to the public. These guidelines suggest that: (i) When it comes to a choice between certain and uncertain gains, people generally prefer certainty even if the prospect of uncertain gains is demonstrably much larger than certain gains; (ii) in choosing between certain and uncertain losses, people generally prefer uncertain alternatives even if the prospective loss is larger than the certainty case; and (iii) people generally overestimate small short-term risks and underestimate long-term risks (Erbaş and Mirakhor 2013; Mirakhor and Askari 2014).

The purpose of the above elaboration and analysis of risk is to suggest that it is possible to promote a certain attitude toward risk management, in particular, a concept of risk sharing if the prospective gains are framed and formulated with thoughtful consideration to the process of formation of the general public's perception toward risk.

TYPES OF RISK

There are two types of risks faced by individuals in a society: one is insurable and the other one is not. Systematic risk, also known as market risk or aggregate risk, refers 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 elements of the macroeconomy such as interest rates and inflation. Such risks are undiversifiable and therefore uninsurable. However, such risks can be mitigated by sound macroeconomic policies that strengthen economic fundamentals and stability of the financial system. The other type of risk is unsystematic risk, also known as idiosyncratic risk, which relates to risks that are specific to individuals or firms. Such risks are diversifiable and therefore insurable. Examples of idiosyncratic risks are sickness, accidents, and unemployment. These risks can be insured through risk-sharing arrangements that reduce dependence on wages as the only source of income. As such, the income and consumption become less correlated. In other words, risk sharing allows individuals to smoothen their consumption.

Risk can be shared among members of the society. People find ways and means of sharing risks to their livelihood by using 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, where the financial markets are less developed, people rely on informal insurance, borrowing, or saving to cope with idiosyncratic risks. In such societies, theory suggests that 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 that of the individual member (Mirakhor and Askari 2014; Mirakhor 2011). In low-income countries, however, where such institutions where pooling and sharing of income and risks are almost non-existent, saving, borrowing, using buffer stock, working longer hours, taking second jobs, and transferring cash and assets are some of the mechanism used in sharing risk. Therefore, sound public policy and a strengthened institutional framework in developing countries can be beneficial in reducing risk. Public policy could help mobilize savings of the poor households to more productive use to reduce vulnerability to income shocks. Policies can be improved to introduce better governance to reduce adverse consequence from mismanagement by households, and adoption of policies to achieve and sustain economic and political stability, and encourage financial sector development. In terms of institutional framework, clear and secure property rights, contract enforcement, trust among the people and institutions and between the government and the people, can reduce risk, uncertainty and ambiguity, strengthen social solidarity, harmonize private and public interests, and ensure coordination to achieve risk sharing (Mirakhor 2009, 2010; Mirakhor and Askari 2014). Therefore, public policy that takes into account the above features can help build resilience to shocks.

With regard to systematic risks, the availability of institutions that shape risk sharing within or outside the economy and the resilience of the domestic economy determine how well the economy copes with shocks. How risks should be allocated across society *ex ante* and what criteria should determine the outcome would be the main consideration. Arrow (1964) postulates that in a competitive market economy with complete markets and Arrow securities (whose payoffs 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, the efficiency of risk-sharing mechanisms will depend on the institutional structure, intensity of informational problem, and design of the policy. The distributional impact of ways and means of risk sharing is considered important. Sometimes, the allocation of burden of

adverse macroeconomic shocks *ex ante* between the society and institutions on the basis of equity or to those who benefit the most from may be dampened by the institutional considerations, such as limited liability of a company and political power. The aim of this book is to incorporate the above considerations in the design of macroeconomic policy.

CONCEPT OF RISK IN FINANCIAL TRANSACTIONS

Despite the negative connotation of risk, people take risks quite happily. People do things knowing that there are risks involved. Even the act of walking down the street poses the pedestrian to some risks. People take on a risky action because in their mind, if they were careful, the chances of an unwanted event happening would be low. When evaluating a risk, people normally take into account two factors—the probability of the risky event happening and the consequences if it does. Sometimes, the probability of an event happening is low, but the consequences if the event were to occur are high, and vice versa. Therefore, the combination of the two factors needs to be considered when deciding whether to accept or decline a risk.

Risk is inherent in most economic activities. The appreciation of risk as central to financial theory was the important building block in the development of modern finance. The importance of risk, arbitrage pricing, and efficient markets formed the relatively recent foundations of conventional finance. At its core, conventional finance is seen today as the management of risk. The last five decades have witnessed the development and innovation of many instruments of risk management, such as futures, options, and swaps. Risk management is the entire process through which a financial institution identifies risk, quantifies those risks, and takes appropriate actions either to contain them or to mitigate them. The developments of credit derivative products allow banks to more actively manage their credit portfolios than ever before. In all these instruments, the risk associated with a change in price of the underlying asset is shared between the two parties to the contract. The field, or activity, of risk management essentially entails risk sharing between buyers and sellers.

In the financial world, the nature of the risk depends on the type of financial transactions involved. In banking, the risks may be surrounding its credit operations. In investment, the risk is the decline in value of investment arising from various events happening in the market. In investment, risk and return are closely related. The risk may be accepted if it is compounded with an additional gain that can be predicted with

some probability. With the exception of spot exchanges, all financial transactions involve time. From an economic point of view, time transactions involve a commitment to do something today in exchange for a promise or a commitment to do something in the future. All transactions involving time are subject to uncertainty, and uncertainty involves risk. As market volatility increases, financial innovations expand, competition and regulatory environment increase, financial institutions are facing an array of new risks. These developments have increased the need for risk management and controls.

Financial institutions exist to improve the efficiency of the financial markets. If savers and investors, buyers and sellers, could locate each other efficiently, purchase assets without cost, and make their decisions with freely available perfect information, then financial institutions would have little scope for replacing or mediating direct transactions (Oldfield and Santomero 1997). However, this is not the case in the real world.

Being involved in intermediation process makes risk management an important process to financial institutions. Several risk factors such as credit, liquidity, operational, and market risks have to be managed to ensure a bank's position remains intact amid intense competition in the industry. The survival and success of a financial organization depend critically on the efficiency of managing these risks (Khan and Ahmed 2001). Prudent risk management is normally adopted to avoid financial distress that could lead to a full-blown financial crisis. Frictions in the market such as moral hazard and adverse selection problems lead banks to actively manage their risks. The cost of bank failure also gives banks the incentives to risk-managed loan portfolios and hold liquid assets and capital buffers.

Risk management has long been an integral part of any commercial transaction, in particular, banking and financial transactions where the stake involves stability of the financial system. For this reason, the Bank of International Settlement came up with international regulatory framework for banks (Basel III¹) to help raise the resilience of the financial institutions.

RISK TRANSFER, RISK SHIFTING, AND RISK SHARING

When faced with risks, the choice that is available is to take the risk, transfer, or share the risk. Conceptually, there is a difference between risk taking and risk sharing. Risk taking is antecedent to risk sharing. An

entrepreneur has to first decide to undertake the risk associated with a real sector project before financing is sought. It is at the point of financing that the risk sharing materializes or fails to do so. The risk of the project does not change as it enters the financial sector seeking financing. In contemporary economy, at the point of financing, risk may be shared but it can also be transferred or shifted (Mirakhor and Haneef 2012; Mirakhor 2012).

Risk Transfer

Risk transfer is a risk management and control strategy that involves the contractual shifting of a pure risk from one party to another. Transfer of risk is the underlying tenets behind insurance transactions, where the party who does not want to bear the risk transfers the risk to another party who is willing to take on the risk for a fee. When done effectively, risk transfer allocates risk equitably, placing responsibility for risk on designated parties consistent with their ability to control and insure against that risk. Risk transfer is most often accomplished through an insurance policy, which is a voluntary arrangement between two parties: the insurance company and the policyholder, where the insurance company assumes strictly defined financial risks from the policyholder. In very simple terms, if a worker is injured, the insurance company will pay the cost. If a building burns down, the insurance company will pay to replace it. Insurance companies charge a fee, or an insurance premium, for accepting this risk. In addition, there are deductibles, reserves, reinsurance, and other financial agreements that modify the financial risk the insurance company assumes.

Risk transfer can also be accomplished through non-insurance agreements such as contracts. These contracts often include indemnification provisions. An indemnity clause is a contractual provision in which one party agrees to answer for any specified and unspecified liability or harm that the other party might incur. Indemnification agreements are completely independent of insurance coverage and transfer the financial consequences of legal liability from one party to another. The effect of these contracts is to transfer financial losses in the event of an unfortunate incidence.

The essence of financial intermediation is the ability of financial institutions to transfer risk. A clear example of a risk transfer is a loan transaction. The financial intermediaries transfer the risk of the financial

transaction by requiring a guaranteed return to the money lent. This is fixed upfront and is an amount due to the financier notwithstanding the financial position of the borrower at any point in time. Inability of the borrower to settle the loan taken may render him a bankrupt, as the financier or the bank can take judicial actions to recover the debt due. In some cases, collaterals are taken as further safeguards, which would be foreclosed upon default of the loan. Therefore, the risk of a loan transaction is substantially transferred in an interest-based debt financing.

Risk Shifting

Risk management can also be performed through the shifting of risk to third parties. The most common connotation for risk shifting is when managers make overly risky investment decisions that maximize shareholders' value at the expense of bondholders' interests. Risk can also be shifted in hedging transactions. This may come in the form of hedging instruments such as futures, options, and swaps. This is a common mode of operation in conventional banking. Risks are also shifted when loan portfolios are packaged and sold to hedge funds. Shifting risk to third parties benefits the individual firms but may have disastrous consequences on the financial market. This is especially so when an economic trigger, such as a burst in the property market bubble, renders the financial instruments as "junk." The use of these complex derivatives was partly the genesis of the current crises as they mostly involve speculation.

Risk Sharing

Risk sharing, on the other hand, is a risk management method in which the cost of the consequences of a risk is distributed among several participants in an enterprise, such as in syndication.² Risk sharing is a proactive risk management tool, which is often misunderstood as a position of taking on risk as opposed to dissipating risk. The key element in risk sharing is the mutuality to bear risk. Risks in the economy should be shared according to the risk-bearing ability of the participants (Arrow 1964). In a broader context, risk sharing involves a "contractual or societal arrangement whereby the outcome of a random event is borne collectively by a group of individuals or entities involved in a contract, or by individuals or entities in a community" (Askari et al. 2012). Risk sharing requires "skin-in-the-game" (Taleb 2012) where all participants

are entitled to returns that are contingent on the outcome. Under this arrangement, the upside potential (profit) and the downside risk (loss) are shared *ex post*. As opposed to risk transfer where return to investor is guaranteed, risk sharing involves taking monetary risks, which may or may not result in the desirable return. No risk is to be shifted or transferred, and any liability must always be tagged to the right to profit (Mirakhor 2014).

Risk sharing, on the other hand, means the lender will participate in the risk of the venture undertaken by the borrower. Both parties will share in the risk and rewards of the venture. One important inference of the risk-sharing concept is that it can become a powerful tool to reduce the uncertainty of future ventures, yet without reducing the undertaking of risk itself. Risk sharing could help consumption smoothing to address the idiosyncratic risk of individuals. A more detailed explanation of the concept of risk sharing will be given in Chap. 4.

THE ROLE OF DEBT IN FINANCIAL CRISES

At the core of a conventional economic system is the interest-based financial system with banks being the main institution that operates the financial system. The traditional function of a bank is to accept deposits from the surplus sector of the economy and channel it to the deficit sector in the form of lending. This financial intermediation has an important function in the economy in that it facilitates the circulation of surplus wealth for productive use within the economy. Over time, the fractional reserve banking system emerged which allows lending activities to be a multiple of the deposits held by the banks (Othman and Mirakhor 2013).

A fundamental feature of the interest-based system is that the risks of a debt transaction are transferred from the lender to the borrower. The lender is guaranteed a return regardless of the outcome of the business undertaking of the borrower. The current fractional banking system that allows multiple amount of money to be created out of a given amount of deposits received, and the development of complex financial derivatives have resulted in credit expansion outpacing the growth of the real sector of the economy. The decoupling of the financial sector from the real sector of the economy renders the financial system unstable. When a call on the financial obligations created is made, there are not enough real assets to back them. Very often than not, the solution taken to resolve

the problem is to create more debt. This creates a vicious cycle that never seems to end.

One of the chief characteristics of the 2007–2008 crisis was the fact that many financial institutions shifted the risk of losses (through government bailouts of “too big to fail” organizations) but internalize the gains of their operations. Hence, the concept of “privatized gains and socialized losses” (Sheng 2009). The practice of risk transfer will make the rich gets richer and the poor becomes poorer. In view of this, the issue of risk management is a topic of interest not only to the financial institutions but also to the policy makers.

A study by Reinhart and Rogoff (2009) suggested that all crises of the past have been, at their core, debt crises, regardless of whether they were labeled as “currency” or “banking” crises. It is also estimated that there are about USD200 trillion worth of paper securities in the global economy of which USD150 trillion are interest rate-based debt instruments (Rogoff 2011). Continued transfer and shifting of risk with interest rate-based debt instruments are not serving the collective welfare. Risk sharing could well provide an efficient replacement (Mirakhor 2012). In this regard, Public policy plays a crucial role in creating an effective incentive structure to promote risk sharing.

THE ROLE OF THE GOVERNMENT AS RISK MANAGER

Government is the ultimate risk manager in society. It could be argued that in contemporary societies, risk management is a central role of the government. The spectrum of government risk management policy could be considered as a series of responses to shortcomings on the part of the market and non-governmental sector to correct risk-related failures. In a well-functioning free market economy where risk would be optimally shared among market participants according to their risk-bearing ability, government would play a minimal role. However, in reality, such perfect market may not exist. To ensure the collective well-being of the society is at full potential, the government needs to assume the role of risk manager.

One of the most important roles of the government is the design and implementation of incentive structures that encourage coordination and cooperation in the market to achieve a desired economic goal. These incentive structures are incorporated in government policies that should create a just and equitable outcome for all. Usually, the government

objectives for the economy are stability and material growth. In market economies, government does this by taking actions that affect private sector portfolios (in terms of consumption and investment). In recent years, there has been more emphasis on attaining economic well-being. This means economic growth should not be at the expense of deteriorating quality of life and equity for the players in the economy.

In the wake of the recent financial crisis, for example, astronomical sums of public tax money have been poured into the affected economies to avert a complete breakdown. Whether or not bailouts are justified, the risk of reckless leveraging for high private profits was shifted ultimately to taxpayers, as they have had to bear the costs. In the process, economic justice has suffered. A policy design that favors a rich minority over an increasingly impoverished majority is not a credible economic policy for social equality. If the social aspects of economic growth are a matter of central concern, then the adequacy and appropriateness of the policies currently being implemented to regulate the economy need to be reviewed (Othman and Mirakhor 2013).

The role of the government is broadly divided into two functions: A policy function that ensures that private interest does not diverge too far from public interest and a function to design and implement an incentive structure to encourage rule-compliance, coordination, and cooperation. The presence of market failures can impair economic relations and transactions. In such a situation, government intervention is justified to protect the public interest. The state, through the government, is empowered to use all available means permitted by law to achieve the objectives and duties prescribed for the society, including synchronization of individual and public interests. An important function of government is to reduce uncertainty for members of society to allow them to overcome the obstacles in decision making caused by lack of information. The rules prescribed specify what kind of conduct is most appropriate in achieving just results when individuals face alternative choices. The degree of effectiveness of rule enforcement is determined by the degree to which the members of the society internalize the objective of social justice (Othman and Mirakhor 2013).

The market can be used as a mechanism to solve part of the coordination problem within the economy. The government enters the market as the supervisor/regulator of economic activity. It is the combination of state supervision/regulation and free enterprise that will be used to maximize social welfare. The government must actively complement

market forces to ensure that individual initiative does not degenerate into a private greed for gains, especially when the gains are non-productive. In other words, contemporary governments have become ultimate risk managers of their societies to promote social justice and equality.

NOTES

1. "Basel III" is a comprehensive set of reform measures, developed by the Basel Committee on Banking Supervision, to strengthen the regulation, supervision, and risk management of the banking sector. These measures aim to:
 - improve the banking sector's ability to absorb shocks arising from financial and economic stress, whatever the source.
 - improve risk management and governance.
 - strengthen banks' transparency and disclosures.
2. <http://www.businessdictionary.com/definition/risk-sharing.html>.

REFERENCES

- Arrow, K. J. (1964). The role of securities in the optimal allocation of risk-bearing. *The Review of Economic Studies*, 31(2), 91–96.
- Askari, H., Iqbal, Z., Noureddine, K., & Mirakhor, A. (2012). *Risk sharing in finance: The Islamic finance alternative*. Singapore: John Wiley & Sons (Asia) Pte Ltd.
- Bernstein, P. L. (1996). *Against the gods: The remarkable story of risk*. New York: Wiley.
- Ellsberg, D. (Nov 1961). Risk, ambiguity, and the savage axioms. *Quarterly Journal of Economics*, 75(4), 643–669.
- Erbaş, S. N., & Mirakhor, A. (2013). The foundational market principles of Islam, Knightian uncertainty and economic justice. In Z. Iqbal & A. Mirakhor (Eds.), *Economic development and Islamic finance*. Washington, DC: The World Bank.
- Iqbal, Z., & Mirakhor, A. (2011). *An introduction to Islamic finance: Theory and practice* (2nd Edition). Singapore: John Wiley & Sons (Asia) Pte Ltd.
- Kahneman, D., & Tversky, A. (2000). *Choices, values and frames*. Cambridge, United Kingdom: Cambridge University Press.
- Khan, T., & Ahmed, H. (2001). Risk management: An analysis of issue in islamic financial industry. *Occasional Paper, IRTI*, 5(5), 1–192.
- Knight, F. H. (1921). *Risk, uncertainty and profit*. New York: Sentry Press.

- Mirakhor, A. (2003). Muslims contribution to economics. In B. Al-Hasani & A. Mirakhor (Eds.), *Essays on iqtisad—The Islamic approach to economic problems*. New York: Global Scholarly Publications.
- Mirakhor, A. (2009). Islamic economics and finance: An institutional perspective. *IIUM Journal of Economics and Management*, 17(1), 31–72.
- Mirakhor, A. (2011). Risk sharing and public policy. In *5th International Islamic Capital Market Forum, Securities Commission of Malaysia*. Kuala Lumpur, Malaysia.
- Mirakhor, A. (2012). Islamic finance, risk sharing and macroeconomic policies. *Munich Personal RePEc Archive (MPRA)*, No. 47061.
- Mirakhor, A., & Askari, H. (2010). *Islam and the path to human and economic development*. New York: Palgrave Macmillan.
- Mirakhor, A., & Askari, H. (2014). Risk sharing in corporate and public finance: The contribution of Islamic finance. *PSL Quarterly Review*, 67, 345–379.
- Mirakhor, A., & Haneef, R. (2012). Islamic finance industry: Can it achieve its ideals? In *3rd Asia Pacific Regional Forum Conference of the International Bar Association*.
- Oldfield, G. S., & Santomero, A. M. (1997). The place of risk management in financial institutions. *Sloan Management Review*, 39(1), 33–46.
- Othman, A., & Mirakhor, A. (2013). Islam and development: Policy challenges. In Z. Iqbal & A. Mirakhor (Eds.), *Economic development and Islamic finance*. Washington, DC: World Bank Publications.
- Reinhart, C. M., & Rogoff, K. S. (2009). *This time is different: Eight centuries of financial follies*. Princeton, NJ: Princeton University Press.
- Rogoff, K. S. (2011). Global imbalances without tears. *Project Syndicate*, 2011-3–1.
- Sheng, A. (2009). *From Asian to global financial crisis: An Asian regulator's view of unfettered finance in the 1990s and 2000s*. Cambridge: Cambridge University Press.
- Smithson, M. (1989). *Ignorance and uncertainty: Emerging paradigms*. New York: Springer.
- Taleb, N. (2012). *Antifragile: Things That Gain From Disorder*. New York: The Random House Publishing Group.
- Udovitch, A. L. (1962). At the origins of the Western Commenda: Islam, Israel, Byzantium? *Speculum*, 37(2), 198–207.
- Udovitch, A. L. (1967). Credit as a means of investment in medieval Islamic trade. *Journal of the American Oriental Society*, 87(3), 260–264.
- Udovitch, A. L. (1972). Partnership and profit in Medieval Islam. *The Journal of Interdisciplinary History*, 3(2), 420–426.

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