Risk Management in the Islamic Finance and Banking System : A case study of Sukuk

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Abstract:

Islamic finance operates under distinct principles that prohibit interest (riba), uncertainty (gharar), and excessive speculation (maysir), creating unique challenges for risk management. This paper offers a conceptual examination of how risk is approached within the Islamic financial system, with a particular focus on sukuk, an increasingly prominent Shari'ah-compliant financial instrument. The research addresses a key gap in the literature concerning how Islamic institutions manage financial risks without relying on conventional hedging tools. Using a descriptive, literature-based methodology, the study synthesizes scholarly perspectives and regulatory frameworks to identify the key types of risk inherent in Islamic finance—credit, market, operational, and Shari'ah compliance risks—and how these are addressed structurally in sukuk issuances. The findings reveal that while Islamic finance emphasizes ethical and asset-backed risk-sharing, practical implementation often mirrors conventional risk mitigation, albeit within Shari'ah constraints. The paper concludes by recommending areas for further empirical research, particularly in stress testing Islamic financial instruments and assessing sukuk performance in volatile markets.

Keywords: Islamic financial and banking system, risk, gharar, risk management, sukuk, Sharia-compliant.

JEL Classification Codes: G32, G21, Z12, E44.

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Introduction:

The understanding and interpretation of risk among Muslim jurists remains very narrow. Their debate revolves around gharar, and the main question is whether it is a matter of uncertainty in commercial and financial transactions. Some scholars have also considered that gharar represents risk-taking, gambling, and the illegal appropriation of other people's property. The real reason for this is: what is the relationship between risk and gharar in banking and financial activities? Moreover, what are the activities considered prohibited? Islamic finance, which is today a stakeholder in the international financial system, cannot escape a set of risks, which it must protect itself against through the development of risk management methods and tools.

Islamic financial certificates, known as sukuk ، are one of the most influential components of Islamic finance today. According to Bloomberg data, the global Sukuk market reached $908.51 billion by the end of the first quarter 2024 ***(Finvizier; 2024).*** However, sukuk investors also face a number of risks, such as market risk, credit risk, rate of return risk, etc. However, the ability of investors to manage and mitigate various risks is significantly hampered. Indeed, several risk management methods and tools are prohibited under Islamic law due to their use of prohibited instruments (riba, gharar, maysir, etc.), such as derivative products; this represents a challenge for jurists, who are in this case called upon to develop Sharia-compliant risk management methods.

Thus, the purpose of our contribution is to analyze the following problem: " ***What are the risks observed in the Islamic financial and banking system? In addition, how are the methods of their management?".***

To carry out our study, we used a descriptive and conceptual research design grounded in a review of secondary academic and regulatory sources. The aim is to examine risk management approaches within Islamic finance and how they are reflected in sukuk structures. Key sources include peer-reviewed journals, books, industry reports, and standards issued by bodies.

As for the structure of our research, it is organized around three main points in which we first tried to explain what a risk is, in a conventional and Islamic conception, and its importance in financial operations. Then we presented the main risks related to the Islamic financial and banking system (IFBS), and their management methods. Finally, we tried,

through a case study, to offer an overview of the different risks and the nature of their management in the case of sukuk.

Firstly. Conceptual and theoretical review of the notion of risk

1. Understanding risk

The word "risk" derives from the Latin word "resicum, risicum, and riscus," meaning a cliff or reef. Similarly, the Latin word derives from a Greek nautical term "rhizikon, rhiza," meaning "root, stone, cut off from the mainland," which was used as a metaphor for "difficulty to be avoided in the sea."

To define the word "risk," one should refer to several fields: sociology, psychology, human development, human geography, anthropology, culture, experimental science, and physics. Experimental science and physics seek to quantify, measure, objectify, and scientifically calculate risk in order to reduce it. In the social sciences, risk is viewed within a contextual framework and as a cultural construct. Thus, the definition of risk depends on who defines it. (Kelman, 2003)

Table 1 presents a set of proposed definitions for understanding risk in the social sciences.

Table 1: The notion of risk in the literature

Total risk = risk impact, risk elements and vulnerability of risk elements *(Blong, 1996, UNESCO)*
Risk is the probability of loss that depends on three elements: hazard, vulnerability, and exposure. *(Crichton, 1999)*
Risk is a combination of the chance that a particular event will occur, with the impact that the event would have if it did occur. Risk therefore has two components: the chance (or probability) of an event occurring and the impact (or consequence) associated with that event. Therefore, risk = probability * consequence. (*Sayers et al. 2002)*
Risk is the actual exposure of something of value to humans to danger and is often considered to be the combination of probability and loss. *(Smith, 1996)*

Risk can be defined simply as the probability of an adverse event occurring, but can be better described as the likelihood of a risk contributing to a potential disaster…importantly, it involves the consideration of vulnerability to risk. *(Stenchion, 1997)*
Risk is an expected loss (of life, damaged property, or economic activity) due to a particular hazard in a given time and space. Based on mathematical calculations, risk is the product of hazard and vulnerability. *(UN DHA, 1992)*

Source: Kelman Llan. (2003). " *Defining risk* ";Floor Risk Net Newsletter; Issue 2; p 7.

2. Gharar, uncertainty and risk

The perception and involvement of Muslim jurists in risk and uncertainty is not far from that of economists. Economists recognize risk as a measure of uncertainty about the frequency and consequences of unacceptable or unpleasant events. Uncertainty arises when an agent cannot assign the true probabilities of alternative possible occurrences to the event in question. Thus, their objective is to model these uncertainties and find the optimal behavior of the economic agent in the face of uncertainty; similar to the work of Von Neumann and Morgenstern (1944), Friedman and Savage (1948), and Savage (1954).(Al-Saati, 2003)

The concept of gharar is very often equated with that of risk and uncertainty; that said, what is gharar? Literally, the word gharar, which derives from the verb "taghreer" (to expose oneself to danger), means (Siddiq, 1997)"risk", "chance" or "deception"(lisaanularab.com). In the perception of Sharia, gharar has known various definition proposals by jurists and this according to the different Islamic schools. However, scholars agree to define ghara as (Gait&Worthingto, 2009): " any transaction of probable items, the existence or characteristics of which are not certain, due to a lack of information relating to them, or ignorance of the essential elements of the transaction to one of the parties, or the uncertainty of a contracting party to honor the contract."

In classical Islamic law, it has been suggested that Shari'ah classifies all risks into three meaningful categories(El-Khatib , 2009):

a. Essential risk and *al-kharaj bi-dhaman* (which translates to: the benefit belongs to the one who bears the responsibility). This maxim summarizes the notion of risk of return (*alghunm bil ghurm*). The parties, who conclude an agreement, are entitled to its gain, as long as some form of risk is associated with it; without this risk, the transaction would not be Shari'ah compliant. If a person demands a return from a certain form of an agreement, then he should be able to take a level of risk associated with it.
b. *Gharar khateer* , which translates to excessive uncertainty or even speculation (according to some interpretations of the jurists). This type of risk is strictly prohibited by Sharia law. This form of risk is also known as *gharar jaseem* , and can in turn be presented in different types:

- Risk in existence : the sale of a non-existent asset;
- Risk in taking possession : sale of an asset which must be returned to its owner;
- Quantity risk : sale or rental price being unknown in a sale or rental contract;
- Risk in quality : the type, quantity or characteristics of the object of the contract being unknown; and
- Risk in the payment time : a deferred sale without fixing an exact period of payment.

c. The third category can fall somewhere between the two previous categories. This can include a variety of risk types, including market risk and operational risk. These are not inherent risks built into the financing tools themselves. Therefore, these types of risks can be mitigated or avoided.

3. The Importance of Risk Analysis in Financial Decisions

Risk analysis is the most common factor in financial decisions. These decisions are based on expectations of what is likely to happen in the future. Therefore, analyzing the forces that may eventually lead to deviations from the expected development is exactly what is required in risk analysis. The goal is not to eliminate risk (which is virtually impossible), but to measure it in such a way as to ensure that the person

making the decision receives compensation proportional to the magnitude of the risk they bear. The rule requires compensation appropriate to the degree of risk, especially since economic agents very often prefer risk aversion.(El-Gari, 2003)

In the field of finance, any notion of risk is closely linked to that of «*profitability*" (*the optimization of the profitability/risk pair*); because the goal of a financial or banking institution is not to take the least possible risk, but to achieve maximum profitability for a given risk. In fact, measuring risk will allow the calculation of the capital required to ensure each financial operation and to determine performance measures. Frequently, the most used performance measure is "return on equity (ROE)". Financial and banking institutions also sometimes use risk-adjusted measures (RAPM).(Roncalli, 2001)

To this end, it would be important to consider risk measurement as a strategic decision-making tool and not just as a regulatory tool. That said, " *...the management of a bank consists of global and coordinated management, under internal and external constraints, of the profitability and risks linked to the activities of the establishment.* " (Augros & Queruel; 2000)

Secondly. Risks in the SFBI: typology and management methods

1. Risk typology in the SFBI

Islamic finance presents a typology of risks which can be incommon with conventional finance, called " *generic risks* " (credit risk, market risk, etc.) and risks which are called " *specific risks* " (risk of non-compliance with Sharia, rate of return risk, etc.). We will present the main types of risks in Table 2.

Table 2: Risk typology in SFBIs

Risk categories	Types of risks	Definition
Generic risks	*Credit risk*	Represents the possibility that a counterparty will fail to meet its obligations under the terms of an agreement and the conditions of a credit contract, such as murabaha.
	Market risk	This is the potential impact of adverse price fluctuations, such as exchange rates or stock prices, on the economic value of an asset.
	Liquidity risk	Represents the potential loss resulting from the inability of a financial institution either to honor its obligations or to finance the increase in assets as they fall due, particularly due to the Sharia prohibition on the use of interest-bearing borrowing and bank securitization.
	Operational risk	This relates to losses resulting from failures of personnel and technological systems, or from the adoption of standards (accounting, for example) and strategies that are inappropriate for the specific operation of Islamic financial institutions.
Specific risks	*Risk of non-compliance with Sharia law*	This is a risk that arises from non-compliance with Sharia teachings in the creation and implementation of Islamic financial instruments, contracts or standards (accounting or governance) (whether intentionally or involuntarily).
	Rate of return risk	Represents the potential impact on yields caused by the unexpected change in their rate.
	Transferred commercial risk	This is a risk that a financial institution may face as a result of commercial competition to pay returns that exceed the rate earned on its assets funded by investment account holders. The institution will therefore have to give up some or all of its profit share in order to retain its lenders.
	Equity investment risk	Represents the loss that shareholders in a partnership contract (the case of moucharaka and moudaraba) suffer, following a drop in the value of their shares on the market.

Source: Adapted from: Laldin Mohamed Akram; " *Risk management in Islamic finance* "; International Shari'a Research for Islamic Finance; Kuala Lumpur; Malaysia; p10-11. And Habib, Ahmed & Khan, Tariq Ullah (2003). *Risk Management: A Case Analysis*. Islamic Research and Training Institute, Islamic Development Bank, Jeddah, Saudi Arabia, PP : 64-66.

2. Overview of risk management methods in the SFBI

There are many types of risk management tools and methods for Islamic finance, due to the diversity of risks it is exposed to. The implementation of more rigorous governance is also necessary to minimize the risks incurred by Islamic financial practices.

In the case of generic risk management, the methods used in conventional finance are very often adopted in Islamic finance, with the exception of those that are not Sharia-compliant (such as certain derivative products). These methods may include: diversification of investment portfolios (for greater risk spreading); definition of credit assessment and granting criteria; development of a system for managing and identifying liquidity needs (in particular, given that in Islamic finance; it is forbidden to use interest-bearing loans and bank securitization); adoption of financial monitoring within Islamic financial institutions, etc (Habib & Khan, 2003).

As for specific risks, these can be managed by using certain means, such as: developing more rigorous control and monitoring systems in Shari'a boards, ensuring that contracts comply with Shari'a principles before signing them; determining an appropriate level of reserve balances for rates of return and investment; establishing a system to manage the expectations of shareholders and investment account holders, etc **.** (Qurashi, 2012).

In terms of governance, Islamic finance is required to respect and apply a number of standards. First, the standards established by the Basel Committee (Cook ratio, McDonough ratio and Basel III standards) and central bank (Shari'ah Review Bureau, 2007)**.**Also, Islamic finance stakeholders must respect and apply the standards developed by the AAOIFI and the ISFB, the two main governance bodies of Islamic finance. Indeed, since its creation, the AAOIFI has established 95 standards, which are divided as follows: 26 accounting standards, 05 auditing standards, 07 governance standards, 02 ethics standards and 45 Shari'ah standards.As for the IFSB, it has established seven main standards of governance of Islamic financial institutions (IFIs), with the exception of Islamic insurance (takaful) and Islamic mutual funds, and which are divided into approaches to the general governance of IFIs, the rights of investment account holders, compliance with Shari'ah rules and principles and transparency of financial information with regard to investment accounts.(IFSB; 2006)

Thirdly. Essay on the analysis of sukuk risk management

1. Presentation of sukuk

Sukuk are an alternative to conventional financial bonds. They are issued against assets, most often real estate or securities. They are generally issued for a medium- to long-term period (but short-term sukuk are not excluded).

According to AAOIFI (Ayub; 2007) sukuk are "*certificates of equal value representing shares in tangible assets, usufructs and services, or in assets of particular projects or any specific investment activity*". Sukuk are also defined as " *financial products backed by a tangible asset and with a fixed maturity, the Sak confers a right of ownership on the assets of the issuer, and its holder receives a part of the profit attached to the performance of the underlying asset. Thus, the interest is replaced by a profit warned in advance with almost zero risk*"(financialislam.com). Sukuk are documents of equal value issued in the name of the owner, which thus confers the right to income. Sukuk represent a share of ownership of the assets and not a debt for their holder.

Sukuk are a means of financing, but above all a means of mobilizing savings. They allow for remuneration of an investment in accordance with Sharia law. Thus, the investor has a share of ownership of an underlying asset; in exchange, this guarantees them an income. To do this, the issuing company must identify assets intended for sale in order to offer them to sukuk investors. This operation is carried out with the intervention of an *ad hoc company* called SPV (Special Profit Vehicle). Investors will then receive the usufruct of these assets based on the proportion of their investment (Islamic Affairs and Charitable Activities, 2009)

In the case of real estate financing, where sukuk are particularly used, the SPV acquires the property and leases it to the issuing bank or company. The lease rental income will constitute the income on which the sukuk holders' remuneration will be based. The transaction is closed either gradually by means of a split payment of the capital paid, or at the end of the contract, with the repurchase of the property by the issuer.

2. Risks and their management in the case of sukuk

The introduction of sukuk into the Islamic financial and banking system leads IFBIs to greater exposure to certain risks. To this end, we

will attempt to present the nature of the different risks that sukuk investors face, and which we summarize in Table 3.

Table 3: Summary of the main risks relating to sukuk

Types of sukuk	Zero coupon Sukuk	Fixed rate Ijara sukuk	Ijara sukuk at variable rate	Fixed-rate hybrid Sukuk	Musharaka sukuk	Salam sukuk
Description of sukuk	Istisn'a, Murabaha debt certificate - non-negotiable	Owner of part of the assets or usufruct of the property, and earns rents at a fixed rate - negotiable	Owner of part of the assets or usufruct of the property, and earns rents according to the market reference index, such as LIBOR - negotiable	Securitized asset pool; debts must not exceed 49%; possibility of a floating rate - negotiable	Medium-term repayable mouchataraka certificate based on a decreasing mouchataraka - negotiable and redeemable	Securitized Salam; at a non-negotiable fixed rate
Credit risk	A specific risk	Default on rent payment; fixed rate makes default risk higher	Default on rent payment; the variable rate makes the risk of default lower	Part of these sukuk, by default on rents; very high risk due to the fixed rate	Mouchataraka has a high risk of default, however it could be based on the strength of the entire balance sheet	A specific risk

Rate of return risk	Very high due to the fixed rate; exists through out the sukuk period	Very high due to the fixed rate; exists through out the sukuk period	Exists only during the floating period (usually six months)	Very high risk due to the fixed rate	If the rate is not indexed to a reference like LIBOR, then the sukuk is less exposed to this risk	Very high due to fixed rate
Exchange rate (FX) risk	If all other conditions are similar, the currency risk will be the same for all sukuk cases. However, liquid or relatively short-term sukuk will have less exposure. The composition of hybrid sukuk contributes to the degree of FX risk. Therefore, it could be a risk management tool, diversifying the composition of sukuk in different currencies.					
Price risk	Price risk relates to the prices of commodities and underlying assets relative to market prices. Ijara sukuk are most exposed to the risk that the values of the underlying assets may depreciate faster than market prices. Asset maintenance plays an important role in this process, as does the liquidity of the sukuk. Salam sukuk are also exposed to significant price risk. However, these risks can be overcome through parallel contracts.					
Other risks	**Liquidity risk:** very high if the sukuk are non-negotiable. **The issuer's operational risk:** significant riskon the underlying assets of sukuk compared to traditional fixed income. **Sharia-compliant risk:** a specific risk. **Infrastructure rigidity:** i.e., the non-existence of effective institutional support increases the risk of sukuk compared to traditional fixed income.					

Source: Dar Humayon and Tariq Ali Arsalan.(Marc-April 2007). " *Risks of sukuk structures: Implications for resource mobilization* "; Thunderbird International Business Review; Flight. 49 (2);; p.211.

In any financial transaction, investors protect themselves and manage a number of risks, and this applies to sukuk. However, unlike the risk management methods used in bonds, those adopted for sukuk must be compatible with Sharia principles. Thus, in this article, we will try to review the main sukuk management tools proposed and developed(Syed Faiq; 2013):

- Although the vast majority of derivatives are prohibited in Islamic finance, a set of alternatives have been developed to allow investors to protect themselves against market risks, through the use of certain instruments; such as: murabaha, waâd and tawarrouq. Indeed, it is now possible to use Sharia-compliant derivatives, namely: Islamic FX Forward, Islamic Swap and Options;
- Maintaining a certain level of reserves, such as the Profit Equalisation Reserve (PRR) and the Investment Risk Reserve (IRR), in sukuk moucharaka/moudaraba transactions; so that a proportion of profits are set aside to cover future losses;
- Diversify the currencies of sukuk issuance, in order to diversify and mitigate exchange rate risks;
- Secure borrowings to mitigate credit risk. Any debt creation financing or debt representing sukuk could be supported by collateral. Thus, in the event of a default, the collateral could be used by debt holders or sukuk leaseholders to recover their due rights;
- Use of guarantees to manage credit and yield risk in sukuk ijara and sukuk murabaha;
- The creation of secondary markets to facilitate investors' access to liquidity, with the aim of managing and mitigating liquidity risk. Examples include the secondary sukuk market in Malaysia and the International Liquidity Management Corporation;
- The creation of international organizations responsible for issuing standards for the governance and regulation of various Islamic financial operations, including sukuk. These institutions include the AAOIFI (the Accounting and Auditing Organization for Islamic Financial Institutions) and the IFSB (International Financial Services Board);
- Standardization of Islamic law compatibility standards within Sharia Boards and to develop better expertise in order to manage operational risks and Sharia compliance.

Conclusion :

This paper set out to explore how risk is understood and managed within the framework of Islamic finance, with a specific focus on sukuk as a representative instrument. Through a conceptual, literature-based analysis, it has been shown that while Islamic finance offers a distinct ethical and legal foundation for financial transactions, its practical mechanisms for risk management often converge with those of conventional finance, albeit adapted to Shari'ah constraints.

Sukuk, in particular, illustrate both the strengths and tensions inherent in Islamic financial engineering. While designed to promote risk-sharing and asset-backing, many sukuk in practice resemble conventional debt instruments, raising questions about Shari'ah compliance in substance. Moreover, the presence of risks unique to Islamic finance—such as Shari'ah non-compliance risk and reputational risk—requires frameworks and governance mechanisms that go beyond standard financial regulation.

In light of these findings, future research should move beyond conceptual models and engage in empirical investigations that assess sukuk performance under stress, evaluate investors' perception of Islamic risk mitigation tools, and compare jurisdictions in terms of regulatory robustness. Such studies would enrich our understanding of how Islamic finance can both preserve its ethical distinctiveness and remain competitive and resilient in global capital markets.

Recommendations

1. **Develop Empirical Assessment Tools**: Institutions and scholars should prioritize the development of empirical tools to evaluate sukuk structures under market stress and in diverse economic environments.
2. **Promote Standardization**: There is a pressing need to harmonize Shari'ah interpretations across jurisdictions to reduce compliance risk and promote investor confidence.
3. **Enhance Governance Mechanisms**: Islamic financial institutions should strengthen their internal Shari'ah governance systems and ensure regular audits and reviews of financial products.

4. **Expand Shari'ah-Compliant Risk Management Instruments**: Financial engineers should continue developing and promoting alternative instruments—such as Islamic hedging products—that comply with Shari'ah and meet market needs.
5. **Improve Transparency and Disclosure**: Sukuk issuers should provide clearer, more comprehensive disclosures regarding asset structures, underlying risks, and Shari'ah board decisions.
6. **Support Secondary Markets**: Policymakers should work to enhance the liquidity of sukuk through active development of secondary markets and support mechanisms, as exemplified in Malaysia.
7. **Invest in Human Capital**: Training and capacity-building programs for Shari'ah scholars, financial analysts, and compliance officers are essential to bridge the gap between Islamic legal theory and financial practice.

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