Spectrum Multidisciplinary Journal
International Open Access Journal
Journal homepage: **spectrummultidisciplinary.org/index.php/smj**

VOL. 1 · NO. 1 · 2026
ISSN (Online): XXXX-XXXX
SPECTRUM ACADEMIC PRESS

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Improving Lending Mechanisms and Risk Management in the Context of an Interest-Free Banking System

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DOI: https://doi.org/10.xxxxx/smj.2026.01.xxx **Cite as:** Ziyodullayev, I.Sh. (2026). Improving lending mechanisms and risk management in the context of an interest-free banking system. *Spectrum Multidisciplinary Journal, 1*(1), 1-6.

ARTICLE INFO

ARTICLE HISTORY
Received 12 Sep 2026
Accepted 28 Sep 2026
Published 30 Sep 2026

JEL CLASSIFICATION
G21 · G32 · Z12

SECTION
Economics and Management

ARTICLE ID
SMJ-2026-01-xxx

LICENSE
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ABSTRACT

The development of interest-free banking is increasingly seen as a way to broaden financial inclusion and mobilise savings of households and firms that avoid conventional interest-based products. However, replacing interest with trade-, lease- and partnership-based contracts changes the nature of the risks a bank carries, and risk management practices designed for conventional loans cannot simply be transferred. The aim of this study is to develop scientifically grounded proposals for improving lending mechanisms and risk management in an interest-free banking system, with particular reference to countries such as Uzbekistan where the regulatory framework for such services is still being formed. The study combines a systematic review of theoretical and empirical literature, comparative institutional analysis of the standards of the Islamic Financial Services Board and AAOIFI, and a structured qualitative assessment of the risk profile of seven financing contracts. The results show that murabaha and ijara concentrate credit and asset-related risks that are manageable with conventional tools, whereas musharaka and mudaraba shift equity-type, information and governance risks onto the bank, which explains their limited use in practice. A risk-adjusted profit-rate pricing model, a two-tier reserve system for smoothing returns to investment account holders, and a staged risk management framework are proposed. The findings can be used by regulators when drafting prudential rules and by banks opening interest-free windows.

KEYWORDS

Interest-free banking, Islamic finance, murabaha, musharaka, credit risk, risk management.

HIGHLIGHTS

- Interest-free lending transforms credit risk into asset and partnership risk.
- A contract-level risk matrix maps six risk types across seven financing modes.
- Risk-adjusted profit-rate pricing and reserves are proposed for new markets.

1. Introduction

INTEREST-FREE BANKING has moved from a niche segment to a significant part of the global financial system. According to the Islamic Financial Services Board, the assets of the Islamic financial services industry reached approximately US$3.4 trillion in 2023, with banking accounting for the largest share. The defining feature of this model is the prohibition of *riba*-interest and of excessive uncertainty-*gharar*, which requires every financing operation to be linked to a real asset, a service or a shared business venture.

For economies in transition, the interest-free model has a practical rather than only a religious dimension. A part of the population and of small businesses deliberately stays outside the banking system

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because it avoids interest-based contracts, and these savings remain in cash, foreign currency or real estate. In Uzbekistan, where the banking sector has been undergoing deep reform since the liberalisation of the foreign exchange market in 2017 and the adoption of the banking reform strategy for 2020–2025, the introduction of interest-free products is discussed as one of the instruments for increasing financial inclusion and attracting long-term resources. At the same time, the replacement of interest by trade, lease and partnership contracts fundamentally changes the risk structure of the lending process. In a *murabaha* sale the bank owns the commodity before reselling it, in an *ijara* lease it remains the owner of the asset, and in *musharaka* and *mudaraba* it becomes a partner sharing profits and losses. Credit risk is therefore combined with commodity price, asset ownership, rate-of-return and Shariah non-compliance risks. Empirical studies show that these differences have measurable consequences for stability and efficiency.

The aim of this article is to develop proposals for improving lending mechanisms and risk management in an interest-free banking system. To achieve this aim, the following objectives are set: (1) to systematise the theoretical foundations and the main financing contracts of interest-free lending; (2) to identify and compare the risk profile of these contracts; (3) to propose a risk-adjusted pricing model and reserve mechanisms; and (4) to formulate practical recommendations for regulators and banks in countries where this segment is at an early stage of development.

2. Literature Review

The theoretical foundations of interest-free finance are presented in the works of Iqbal and Mirakhor, who describe it as a risk-sharing system in which the return on capital is justified by the assumption of business risk rather than by the passage of time. In this view, profit-and-loss sharing (PLS) contracts - *musharaka* and *mudaraba* - represent the "ideal" form of Islamic financial intermediation, while sale- and lease-based contracts are permissible but secondary instruments. Empirical research, however, documents a persistent gap between theory and practice. Chong and Liu, analysing Malaysian data, found that only a small share of Islamic bank financing is based on PLS principles and that deposit rates of Islamic banks closely follow conventional interest rates. They concluded that, in practice, Islamic deposits are not substantially different from conventional ones. Similar observations led researchers to describe the dominance of *murabaha* as the "murabaha syndrome" of the industry.

The specific risks of interest-free banks were first systematised by Khan and Ahmed, who surveyed Islamic banks and identified rate-of-return risk, displaced commercial risk, Shariah non-compliance risk and the high operational risk of complex contracts as the main differences from conventional banks. Their classification became the basis of the Guiding Principles of Risk Management of the IFSB, which remain the key prudential reference for regulators. Archer and Karim showed that because investment account holders formally share losses, part of the bank's risks is transferred to them; however, competitive pressure forces banks to pay market-level returns, creating displaced commercial risk that must be covered by shareholders' capital. Studies of stability give mixed results. Čihák and Hesse found that small Islamic banks tend to be financially stronger than small conventional banks, whereas large Islamic banks are weaker, which they explained by the difficulty of adapting credit risk monitoring to a growing and more complex portfolio. Abedifar et al. showed that small Islamic banks have lower credit risk and that their borrowers are less sensitive to interest rate changes, partly due to religious motivations of clients. Beck et al. found few significant differences in business orientation, but higher cost inefficiency and better asset quality and capitalisation of Islamic banks, while Hasan and Dridi reported that Islamic banks were more resilient during the first phase of the global financial crisis.

Despite this extensive literature, most studies analyse mature markets of the Gulf countries, Malaysia and Indonesia. Much less attention has been paid to how lending mechanisms and risk management should be designed where interest-free banking is being introduced in a predominantly conventional system, with limited Shariah expertise, no specialised liquidity instruments and an evolving legal framework. This study addresses that gap by proposing a contract-level risk map and a set of mechanisms adapted to such conditions.

3. Materials and Methods

The study is based on a qualitative and analytical research design. The information base includes the standards and guidance documents of the IFSB and AAOIFI, regulatory documents of the Republic of Uzbekistan on the development of the banking system, reports of international organisations, and peer-reviewed empirical studies published in international journals.

3.1. *Research design*

Three methods were combined. First, a systematic literature review was used to identify the main financing contracts and risk categories. Second, comparative institutional analysis was applied to compare how these risks are treated in the IFSB framework and in conventional prudential regulation. Third, a structured qualitative assessment was carried out: each of seven financing contracts - *murabaha*, *ijara*, *salam*, *istisna*, *musharaka*, *mudaraba* and *qard hasan*-was rated by the authors on six risk dimensions using a three-level scale-low, medium, high, based on the contractual allocation of ownership, cash-flow and loss obligations described in the literature.

3.2. *Pricing and reserve model*

To make interest-free financing comparable with conventional loans in terms of risk coverage, the profit rate is decomposed into a benchmark component and risk premia, following the logic of risk-adjusted pricing used in banking. The proposed profit rate m for a financing contract is given by Eq. (1):

$$m = b + EL + k\cdot(h - b) + c + s \quad (1)$$

where b is a benchmark rate of return, EL is the expected loss rate, k is the share of economic capital required for the contract, h is the required return on shareholders' capital, c is the operating cost ratio, and s is a premium for contract-specific risks. The expected loss is estimated in the standard way, as shown in Eq. (2):

$$EL = PD \times LGD \times EAD \quad (2)$$

where PD is the probability of default of the client, LGD is loss given default and EAD is exposure at default. In interest-free contracts LGD depends strongly on the bank's ownership of the asset: in *ijara* it is reduced because the asset remains on the bank's balance sheet, whereas in *mudaraba* it may approach unity because the bank provides capital without collateral.

Returns to investment account holders are smoothed by a profit equalisation reserve (PER) and an investment risk reserve (IRR). The return paid to investment account holders in period t is defined in Eq. (3):

$$R_t = \alpha\cdot(1 - \mu)\cdot\pi_t + \Delta PER_t \quad (3)$$

where π_t is the gross return on assets financed by investment accounts, μ is the bank's profit share as *mudarib*, α is the share of investment accounts in the funding of these assets, and ΔPER_t is the transfer from (positive) or to (negative) the profit equalisation reserve.

4. Results

The analysis of contract structures shows that interest-free financing does not eliminate credit risk but redistributes it among several risk types. The results of the structured assessment are presented in Table 1.

Table 1. Risk profile of interest-free financing contracts (authors' assessment)

Contract	Credit	Market / price	Liquidity	Rate of return	Shariah	Operational
Murabaha (cost-plus sale)	High	Low–Med.	Medium	Medium	Medium	Medium
Ijara (lease)	Medium	Medium	Medium	Medium	Low	Medium
Salam (forward sale)	Medium	High	High	Medium	Medium	High
Istisna (manufacture contract)	Medium	Medium	High	Medium	Medium	High
Musharaka (joint venture)	Medium	High	High	High	Low	High
Mudaraba (trust financing)	High	High	High	High	Low	High
Qard hasan (benevolent loan)	High	Low	Medium	Low	Low	Low

Table 1 indicates that sale- and lease-based contracts carry a risk profile close to that of conventional secured loans: the main risk is the client's inability to pay deferred instalments, while price and ownership risks are concentrated in the short period between purchase and resale or are mitigated by the bank's ownership of the leased asset. This explains why these contracts dominate the portfolios of Islamic banks and why they are the most suitable starting point for banks opening interest-free windows.

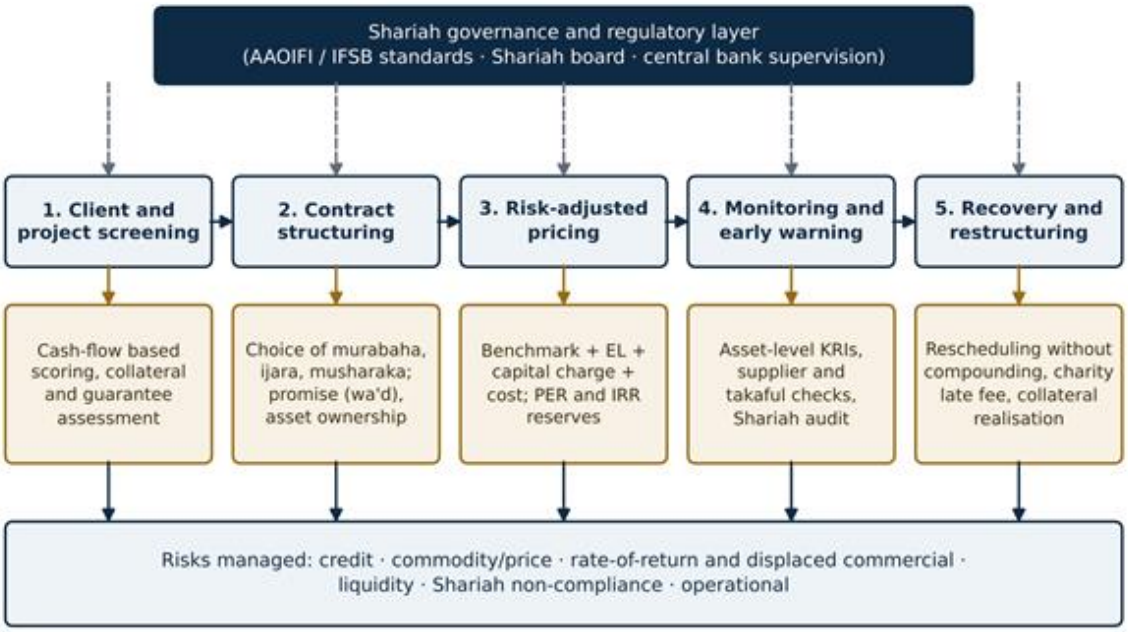
By contrast, partnership contracts shift equity-type and information risks onto the bank. Because the bank's return depends on the reported profit of the enterprise, problems of adverse selection and moral hazard become central, and the bank must monitor the business rather than only the repayment schedule. The high ratings for operational risk reflect the need for specialised staff, accounting control and Shariah audit. *Salam* and *istisna* combine credit risk with commodity and completion risks typical of agricultural and construction financing. Based on these results, the mitigation instruments that can be applied to each risk category were systematised (Table 2). The selection was limited to instruments that are permissible under AAOIFI and IFSB standards and can be implemented without a developed Islamic money market.

Table 2. Risk categories and permissible mitigation instruments in interest-free lending

Risk category	Source in interest-free lending	Proposed mitigation instruments
Credit risk	Deferred payment obligations; inability to charge penalty interest	Cash-flow based scoring; collateral (*rahn*) and guarantees (*kafala*); late-payment charges directed to charity
Market / commodity risk	Bank's ownership of goods before resale; price changes in salam	Binding purchase promise (*wa'd*) by the client; parallel salam; short holding periods
Rate-of-return risk	Fixed mark-up on assets versus market-driven return expectations	Shorter repricing periods; ijara with floating rentals linked to a benchmark
Displaced commercial risk	Pressure to pay competitive returns to investment account holders	Profit equalisation reserve (PER) and investment risk reserve (IRR), Eq. (3)
Liquidity risk	Absence of interest-based interbank market and lender of last resort	Sukuk-based liquidity buffers; Shariah-compliant central bank facility; maturity matching
Shariah non-compliance	Errors in contract sequence or asset ownership	Independent Shariah board; standardised documentation; internal Shariah audit
Operational risk	Complex multi-stage contracts; asset management functions	Automated contract workflow; takaful coverage of assets; staff certification

Combining the risk map with the pricing model in Eqs. (1)-(2) allows a bank to set different profit rates for contracts with different risk profiles instead of applying a single mark-up. For example, under identical client creditworthiness, *ijara* should carry a lower premium s than *murabaha* on movable goods because the bank retains ownership of the asset, whereas *mudaraba* requires the highest capital share k. The integration of these elements into a single process is shown in Figure 1.

Figure 1. Framework of integrated risk management in interest-free lending



The framework consists of five consecutive stages - client and project screening, contract structuring, risk-adjusted pricing, monitoring and early warning, and recovery and restructuring - each supported by specific tools and subject to the Shariah governance and regulatory layer. Information obtained at the monitoring and recovery stages is used to recalibrate scoring models and risk premia, closing the management cycle.

5. Discussion

The results are consistent with the empirical finding that Islamic banks rely mainly on sale- and lease-based contracts. The risk map in Table 1 offers an explanation for this pattern that goes beyond conservatism: partnership contracts require monitoring capacity and information quality that are costly to build, especially where corporate accounting is weak. For new markets this implies a sequenced approach in which banks start with *murabaha* and *ijara*, accumulate data on client behaviour, and only later expand to *musharaka*, for example in the form of diminishing partnerships for housing and equipment.

The proposed pricing model addresses a common criticism that Islamic banks simply copy conventional interest rates. Although a benchmark b is still needed, the explicit inclusion of expected loss and contract-specific premia makes pricing reflect the actual risks of each contract rather than a uniform interest equivalent. This is in line with Abedifar et al., who show that the risk characteristics of Islamic bank borrowers differ from those of conventional borrowers. The reserve mechanism in Eq. (3) is particularly important where competition with conventional banks is intense. As Archer and Karim argue, if displaced commercial risk is not recognised, regulators may underestimate the capital needed by interest-free banks. A transparent PER and IRR policy, disclosed to investment account holders, both protects depositors and limits the arbitrary smoothing of returns. For Uzbekistan, the analysis suggests several regulatory priorities: the adoption of legal definitions for the main financing contracts and for the bank's right to own and trade assets; a central Shariah advisory body to ensure uniform interpretation; prudential rules that adapt capital adequacy and provisioning to interest-free contracts in line with IFSB standards; and the creation of a Shariah - compliant liquidity facility. Tax neutrality is also essential so that the multiple sales involved in *murabaha* are not taxed more heavily than an equivalent loan.

The study has limitations. The risk ratings are qualitative and based on the contractual structure and existing literature rather than on loan-level data, which are not yet available for an interest-free segment in Uzbekistan. Future research should test the pricing model empirically once portfolio data accumulate.

6. Conclusion

Interest-free banking changes the nature of lending: credit risk is combined with commodity, ownership, rate-of-return, liquidity and Shariah non-compliance risks whose weight depends on the type of contract. Sale- and lease-based contracts are closest to conventional secured lending and are the most suitable for the initial stage of market development, while partnership contracts require stronger monitoring, governance and information systems. The study proposes three mechanisms for improving lending and risk management: a contract-level risk map that links each financing mode to permissible mitigation instruments; a risk-adjusted profit-rate pricing model that separates benchmark return, expected loss, capital cost and contract-specific premia; and a two-tier reserve system for smoothing returns to investment account holders. Together with a staged risk management framework, these mechanisms can help banks offer interest-free products without increasing systemic risk. Regulators are recommended to develop a dedicated legal and prudential framework, a centralised Shariah advisory function and liquidity instruments before large-scale expansion of the segment. Future research should focus on empirical calibration of the pricing model, the design of deposit insurance for investment accounts and the role of interest-free finance in small business lending.

DECLARATIONS

Author contributions. [Initials]: conceptualization, methodology, writing – original draft; [Initials]: formal analysis, writing – review and editing.

Funding.* This research received no external funding.

Conflict of interest.* The authors declare no conflict of interest.

Data availability. No new data were created; the study is based on publicly available documents and published literature.

AI tools. An AI-assisted tool (Claude, Anthropic) was used to help draft and structure the manuscript; the authors reviewed, verified and edited all content and take full responsibility for it.

** Required for all submissions.*

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