

Gulf Journal of Advance Business Research

ISSN 3078-5294 (Online), ISSN 3078-5286 (Print)

FE Gulf Publishers

<https://fegulf.com>



The impact of Islamic finance on global asset and liability management practices

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Article Info

Volume No: 3

Issue No: 1

Page No: 186-200

Received: 01-10-24

Accepted: 01-12-24

Published: 21-01-25

DOI: 10.51594/gjabr.v3i1.74

DOI URL: <https://doi.org/10.51594/gjabr.v3i1.74>

Abstract

Islamic finance, based on Sharia principles that prohibit interest (riba), excessive uncertainty (Gharar), and unethical investments, offers an alternative approach to asset and liability management (ALM) that has gained increasing attention in the global financial system. This review explores the impact of Islamic finance on global ALM practices, focusing on how its unique principles shape financial strategies, risk management, and liquidity structures. In contrast to conventional finance, which relies heavily on interest-bearing instruments, Islamic finance emphasizes asset-backed financing, profit-sharing, and risk-sharing mechanisms. The review discusses how Islamic financial institutions manage their assets and liabilities using Sharia-compliant products such as Murabaha (cost-plus financing), Mudarabah (profit-sharing), Musharakah (joint venture), and Sukuk (Islamic bonds). These products align with the principles of risk-sharing and ethical investment, leading to distinct ALM strategies that emphasize the importance of tangible assets and real economic activity. Unlike conventional derivatives that are often used for hedging, Islamic finance promotes alternative risk management techniques such as Tawarruq (commodity-based hedging) and Wa'ad (unilateral promises), which avoid speculation and excessive uncertainty. The review also examines how Islamic finance contributes to diversification in global ALM practices, especially in markets with significant Islamic investor bases, such as the Middle East and Southeast Asia. The growing adoption of Islamic financial instruments by conventional financial institutions

further demonstrates the integration of Islamic principles into mainstream ALM practices. Islamic finance has a transformative effect on global ALM practices by providing ethical, asset-backed alternatives that promote stability, transparency, and sustainability. Its integration into the global financial system not only expands the range of financial products available but also introduces a more inclusive, risk-sharing approach to managing assets and liabilities.

Keywords: Islamic Finance, Global Asset, Liability Management, Review.

INTRODUCTION

Asset and Liability Management (ALM) is a crucial practice for financial institutions, designed to balance the risks associated with liquidity, interest rates, and capital allocation (Guzel, 2021). At its core, ALM seeks to ensure that institutions have sufficient liquidity to meet short-term obligations while optimizing the use of assets to generate returns and safeguard long-term financial stability. The importance of ALM lies in its ability to manage the delicate equilibrium between an institution's assets (such as loans and investments) and liabilities (such as deposits and debt) (Baghani *et al.*, 2019). Effective ALM can protect institutions from market volatility and enhance their resilience to economic fluctuations. Traditional ALM practices often rely on interest-based instruments such as bonds, loans, and derivatives to manage risk exposure, particularly in terms of interest rate fluctuations and liquidity management (Subramanian *et al.*, 2022). However, this conventional approach can be limiting, especially when interest rates are volatile or negative, and it may not align with the ethical standards sought by certain financial systems, such as Islamic finance.

Islamic finance, rooted in Sharia law, offers an alternative approach to financial transactions that fundamentally challenges traditional ALM practices (Alharthi *et al.*, 2022). The core principles of Islamic finance focus on prohibiting *riba* (interest), *gharar* (uncertainty), and *maysir* (gambling). These prohibitions are grounded in Islamic ethical teachings, which emphasize fairness, transparency, and risk-sharing. *Riba*, the charging of interest, is viewed as exploitative and unjust, creating an imbalance between lenders and borrowers. Similarly, *gharar* and *maysir* are prohibited because they introduce uncertainty and speculation, which could lead to unfair advantages or losses (Syibly and Purwanto, 2021). These prohibitions necessitate the development of alternative financial instruments and risk management practices that align with Sharia principles. Instead of relying on interest-based mechanisms, Islamic finance emphasizes asset-backed financing, where transactions are tied to tangible assets, and risk-sharing arrangements, such as *mudharabah* (profit-sharing) and *musharakah* (joint ventures) (Akintan *et al.*, 2021). These principles promote ethical investments, discourage speculation, and aim to foster social justice by ensuring that all parties in a financial transaction share in both the risks and rewards.

The objective of this review is to explore how Islamic finance influences global ALM practices, particularly in how its principles and products reshape the strategies used by both Islamic and conventional financial institutions. While Islamic finance has traditionally operated within specific regions and markets, its influence is expanding globally. This review will examine how Sharia-compliant financial products such as *Sukuk* (Islamic bonds), *Murabaha* (cost-plus financing), and *Tawarruq* (commodity-based financing) provide alternative solutions to managing financial risks like liquidity, credit, and market exposure. The research will also investigate how Islamic financial institutions employ risk-sharing models and asset-backed structures to manage ALM, contrasting these strategies with conventional practices that rely heavily on interest-bearing assets. Furthermore, the review will explore the growing role of Islamic fintech, which uses digital platforms and technologies such as blockchain and artificial intelligence to enhance risk management, efficiency, and transparency in Islamic ALM. In doing so, the review aims to provide a comprehensive

understanding of how Islamic finance offers innovative approaches to asset and liability management, contributing to the evolution of global financial systems by promoting ethical, sustainable, and inclusive financial practices. The findings will highlight the potential of Islamic finance to reshape the financial landscape, offering both challenges and opportunities for institutions seeking to integrate these principles into their risk management frameworks (Hasan *et al.*, 2020).

Key Components of Islamic Finance and Asset and Liability Management (ALM)

Islamic finance, grounded in Sharia law, is distinguished by its prohibition of interest (*riba*), excessive uncertainty (*gharar*), and gambling (*maysir*), which affects how financial transactions are structured and managed (Anwer and Habib, 2019; Soemitra, 2021). These principles shape key aspects of Asset and Liability Management (ALM), influencing both the instruments used and the approaches to risk management. This section discusses the essential components of Islamic finance, focusing on Sharia-compliant financial instruments, asset-backed financing, and risk-sharing models, and compares them to conventional ALM practices.

One of the key features of Islamic finance is its reliance on Sharia-compliant financial instruments that align with Islamic principles (Hameed and Siddiqui, 2020). These instruments include Murabaha, Mudarabah, Musharakah, and Sukuk. Murabaha is a cost-plus financing arrangement where the seller discloses the cost of the asset and adds a pre-agreed profit margin. This instrument is typically used for short-term financing and involves the sale of tangible goods, ensuring that the transaction is backed by real assets, thus eliminating the issue of speculation (*gharar*). Mudarabah is a profit-sharing contract in which one party provides capital, while the other provides expertise and management. Profits are shared according to a pre-agreed ratio, while losses are borne by the capital provider. This model fosters collaboration and reduces the emphasis on financial speculation, aligning with the Islamic principle of risk-sharing. Musharakah involves a joint venture in which all partners contribute capital and share in both profits and losses (Jais *et al.*, 2020). This instrument is often used for long-term investments and is particularly relevant in real estate and project financing. Like Mudarabah, Musharakah promotes shared risk and rewards, emphasizing fairness in business dealings. Sukuk, often referred to as Islamic bonds, represents a certificate of ownership in an asset or a project. Unlike conventional bonds, which rely on interest payments, Sukuk pay returns generated by the underlying asset, making them asset-backed and compliant with the prohibition of *riba*. Sukuk structures are widely used for funding infrastructure and large-scale projects, ensuring that returns are tied to actual economic activities rather than interest-bearing debt (Uddin *et al.*, 2022). These instruments form the backbone of Islamic finance and play a significant role in asset-backed financing and risk-sharing, central elements in Sharia-compliant ALM strategies.

One of the primary distinctions between Islamic finance and conventional finance lies in the concept of asset-backed financing versus interest-bearing instruments. In conventional finance, interest-based instruments like loans and bonds are used to manage liabilities, and the return on investments is often based on fixed interest rates (Ahmad and Chowdury, 2020). This practice is grounded in the time value of money, where lenders charge interest to compensate for the opportunity cost of their capital. In contrast, Islamic finance mandates that all financial transactions be backed by tangible assets, such as real estate, commodities, or equipment. This ensures that the transaction has intrinsic value, eliminating the speculative nature of interest-based finance. For example, Murabaha and Sukuk require the underlying asset to be real and usable, and the profit or return is derived from the performance of the asset rather than from interest. This structure reduces the risk of financial speculation and ensures that transactions align with the principles of fairness and transparency. The focus on asset-backed financing also provides greater financial stability in volatile markets. By tying

investments to physical assets, the value of transactions is less susceptible to the fluctuations of interest rates or inflation, providing a more stable and secure basis for financial management (Okereke, 2019, Belke and Beretta, 2020).

The concept of risk-sharing is a fundamental principle in Islamic finance. Unlike conventional financial models, which often involve risk transfer or risk-shifting, Islamic finance promotes the idea that all parties involved in a financial transaction should share both the rewards and risks (Iqbal and Mirakhor, 2020). This is particularly evident in the Mudarabah and Musharakah models. In Mudarabah, the capital provider and entrepreneur share the profits generated by the investment according to an agreed ratio. However, losses are borne solely by the capital provider, unless they arise from the entrepreneur's misconduct or negligence. This structure encourages fairness and mutual responsibility, as both parties are incentivized to work towards the success of the project. Musharakah takes risk-sharing a step further by involving multiple partners, each of whom contributes capital and shares in both the profits and losses according to their investment proportion. This model fosters collaboration and equitable participation, as all partners are exposed to the same risks and rewards. These risk-sharing models are particularly beneficial for liquidity management. By distributing financial risk among multiple parties, Mudarabah and Musharakah reduce the reliance on speculative financial instruments, promoting stability and mitigating the systemic risks that often arise from volatile markets (Mohamed, 2020). Moreover, these structures play a crucial role in financial stability, as they align the interests of all stakeholders and discourage excessive risk-taking. This risk-sharing approach can contribute to more resilient financial systems, reducing the likelihood of financial crises that are often exacerbated by speculative behaviors in conventional markets.

The key components of Islamic finance, including Sharia-compliant financial instruments, asset-backed financing, and risk-sharing models, provide an alternative and ethical framework for Asset and Liability Management (ALM). These principles emphasize transparency, fairness, and shared responsibility, distinguishing them from the conventional reliance on interest-based instruments. The growing adoption of Islamic finance globally highlights its potential to offer a stable, ethical, and effective approach to managing financial risks in diverse markets (Narayan and Phan, 2019).

Impact of Islamic Finance on Global ALM Practices

Islamic finance has increasingly influenced Asset and Liability Management (ALM) practices worldwide, challenging conventional financial systems and offering alternative models that emphasize ethics, asset-backed financing, and risk-sharing (Sandwick *et al.*, 2021). By adhering to Sharia principles such as the prohibition of *riba* (interest), *gharar* (excessive uncertainty), and *maysir* (gambling) Islamic finance has provided new frameworks that are reshaping traditional ALM strategies. This explores the impact of Islamic finance on global ALM practices, with a focus on shifting from interest-based models to asset-backed models, ethical risk management and diversification, and innovative hedging and liquidity management techniques.

A key distinction between conventional and Islamic finance lies in the approach to Asset and Liability Management (ALM) (Malhou and Maimoun, 2021). Traditional ALM models heavily rely on interest-based instruments, such as loans, bonds, and other debt securities, to manage risk and liquidity. These instruments provide fixed returns based on interest rates, but they can expose institutions to systemic risks, especially during periods of financial instability or interest rate fluctuations. Islamic finance, however, operates on asset-backed transactions, which require that financial dealings are linked to tangible assets or real economic activities. Instruments like Murabaha, Mudarabah, and Musharakah are designed to provide financing based on the actual ownership of assets, ensuring that the transactions are grounded in real value rather than speculative or interest-based expectations. This shift to asset-backed models

brings several benefits to liquidity management and balance sheet stability. First, it ensures that financial institutions hold tangible assets that can be utilized in case of liquidity shortages, reducing the reliance on non-productive, interest-based instruments. Moreover, these models promote financial stability, as the value of Islamic financial instruments is less volatile and more aligned with underlying assets, mitigating the risk of speculative bubbles common in traditional markets (Chiu and Greene, 2019). The impact of asset-backed models is particularly notable during economic downturns, as they reduce the risk of over-leveraging and enhance the resilience of financial institutions. Institutions in emerging markets, where financial instability is often more pronounced, stand to gain significantly from adopting asset-backed financing mechanisms.

Islamic finance places a significant emphasis on ethical risk management, with an inherent focus on promoting justice and fairness in financial transactions (Olorogun and Othman, 2021). Traditional ALM practices often prioritize the maximization of returns, which can lead to speculative behaviors and excessive risk-taking. In contrast, Islamic finance encourages risk-sharing rather than risk transfer, a concept that directly impacts the stability of portfolios. For example, Mudarabah (profit-sharing) and Musharakah (joint ventures) are risk-sharing contracts that allow parties to contribute capital and share the risks and rewards of an investment. These contracts help stabilize portfolios by ensuring that the potential for profit and loss is equitably distributed among stakeholders. Unlike conventional models, where risks are often shifted to others, Islamic finance encourages a more balanced and collaborative approach, fostering stronger relationships between investors and borrowers. In terms of diversification, Islamic finance has contributed significantly to global ALM, especially in emerging markets. By incorporating ethical investments such as green sukuk (Islamic bonds) and ethical investment funds Islamic financial institutions can diversify portfolios while ensuring compliance with Sharia law (Pirgaip *et al.*, 2021). This diversification, combined with asset-backed securities, has enhanced the sustainability and credibility of financial markets, helping reduce the concentration of risk in traditional sectors like real estate or manufacturing. Furthermore, the ethical underpinnings of Islamic finance have sparked interest in socially responsible investing (SRI), where investors look to integrate social and environmental criteria into their decision-making. This expansion of ethical investments aligns with global trends in Environmental, Social, and Governance (ESG) factors, further enhancing the diversification and stability of global financial systems.

Traditional hedging techniques often rely on derivatives, such as options, futures, and swaps, which are generally prohibited in Islamic finance due to concerns over gharar (uncertainty) and speculation (Meo *et al.*, 2022). As a result, Islamic finance has developed innovative techniques to manage risk and ensure liquidity without resorting to conventional derivatives. One such technique is Tawarruq, a commodity-based financing arrangement used to generate liquidity. In Tawarruq, an institution buys a commodity and then sells it to a third party for a deferred payment, often generating cash flow in a Sharia-compliant manner. This technique provides a way to address liquidity shortages and manage financial obligations without resorting to interest-based loans or speculative practices. Another innovative solution is the use of Wa'ad, a unilateral promise to buy or sell an asset at a future date. While not a binding contract like conventional derivatives, Wa'ad allows for the management of currency risks and interest rate fluctuations in a Sharia-compliant manner. By avoiding speculative elements and ensuring certainty in the transaction, Wa'ad offers a risk mitigation strategy that aligns with the ethical principles of Islamic finance (Hamid, 2019). These hedging techniques ensure that Islamic financial institutions can protect themselves against market volatility, including currency risks, commodity price fluctuations, and interest rate changes, while remaining within the bounds of Sharia law. Furthermore, they offer a viable alternative to conventional

hedging instruments, which are often viewed as speculative and prone to destabilizing markets.

Islamic finance has significantly impacted global Asset and Liability Management (ALM) practices by offering innovative, asset-backed financial models, ethical risk management approaches, and Sharia-compliant risk mitigation techniques. The shift from interest-based to asset-backed models has enhanced liquidity management and promoted balance sheet stability, while the focus on risk-sharing has stabilized portfolios and contributed to market diversification (Tekdogan and Atasoy, 2021; Abdelsalam *et al.*, 2021). Additionally, the development of Tawarruq and Wa'ad has provided effective hedging alternatives in the absence of conventional derivatives. As Islamic finance continues to grow and gain acceptance globally, it presents opportunities for both Islamic and conventional financial institutions to collaborate, share best practices, and develop more sustainable and ethical financial systems. In a rapidly evolving global market, Islamic finance offers robust alternatives to traditional financial strategies, with the potential to foster greater financial stability and diversification, particularly in emerging economies.

Integration of Islamic Finance into Conventional ALM

The integration of Islamic finance into conventional Asset and Liability Management (ALM) is an evolving trend that has seen increasing collaboration between Islamic and conventional financial institutions worldwide (Chattha *et al.*, 2020). This integration allows financial institutions to diversify their offerings and enhance their risk management strategies by combining the best practices of both systems. This explores how Sharia-compliant products, hybrid financial instruments, and global ALM strategies in Islamic markets are reshaping the landscape of ALM.

One of the key areas where conventional banks have integrated Islamic finance into their operations is through the adoption of Sharia-compliant products. As globalization and financial diversification continue to expand, many conventional banks are recognizing the growing demand for Islamic financial products, especially in regions with significant Muslim populations (Eid and Asutay, 2019). A notable example of conventional banks adopting Islamic financial products is the Sukuk (Islamic bonds). Traditional bonds in conventional finance are based on interest payments, which are prohibited in Islamic finance. Sukuk, on the other hand, represent ownership in an asset or project, and their returns are derived from the income generated by the asset, rather than interest. Conventional banks, particularly in markets such as Europe and the United States, have begun issuing Sukuk to attract Islamic investors and diversify their funding sources. For example, Standard Chartered and HSBC have both issued Sukuk, allowing them to tap into the Islamic capital markets while adhering to Sharia principles. In addition to Sukuk, conventional banks are also offering other Islamic financial products such as Murabaha (cost-plus financing) and Mudarabah (profit-sharing) contracts. These products align with the asset-backed principles of Islamic finance and help conventional banks manage risks without resorting to interest-based instruments. The adoption of these products creates synergies between Islamic finance and conventional banking practices in ALM, particularly in areas such as liquidity management, fundraising, and investment diversification (Kahf and Al-Hajjaji, 2019).

As conventional and Islamic finance continue to merge, there has been an increased demand for hybrid financial products that combine Sharia-compliant principles with conventional strategies (Tlemsani, 2022). These products are designed to meet the needs of a broader range of investors and institutions, blending the best features of both systems. One example of a hybrid financial product is the Islamic-compliant structured note, which combines the profit-sharing elements of Islamic finance with the capital protection features typical of conventional structured products. Such instruments allow investors to engage in risk-sharing while benefiting from the predictable returns of conventional structured finance. Global financial

institutions, including Goldman Sachs and JP Morgan, have created similar products that comply with Sharia law while offering the risk management and return characteristics sought by traditional investors (Poon *et al.*, 2020). Another example is the Islamic exchange-traded fund (ETF), which typically combines the portfolio diversification offered by conventional ETFs with the ethical investment criteria of Islamic finance. These hybrid instruments have become increasingly popular as investors seek to balance ethical investing with their need for market exposure and returns. These hybrid products allow for greater flexibility and market appeal, enabling conventional financial institutions to expand their offerings to Muslim clients without violating Sharia principles. The development of such hybrid instruments also encourages cross-sector collaboration and promotes the convergence of Islamic and conventional financial markets.

Islamic finance is playing a crucial role in reshaping ALM strategies in Islamic-majority markets like the Middle East and Southeast Asia. These regions have experienced significant economic growth and financial development, which has created new opportunities and challenges for financial institutions. In the Middle East, for example, financial institutions are increasingly relying on Islamic finance principles to create more resilient and sustainable ALM strategies (Zainudin *et al.*, 2019). The region's financial markets have embraced Sharia-compliant instruments like Sukuk and Ijarah (leasing) contracts to finance infrastructure projects, real estate development, and public sector investment. These asset-backed models ensure that financing is tied to tangible assets, reducing speculative behavior and enhancing financial stability. The integration of Islamic finance into conventional ALM strategies in these regions is particularly evident in liquidity management. Islamic financial institutions have developed liquidity instruments such as short-term Islamic deposits and Islamic repurchase agreements (repos) that provide liquidity to banks while adhering to Sharia law. These instruments enable Islamic financial institutions to maintain capital adequacy and regulatory compliance while managing market fluctuations. In Southeast Asia, countries like Malaysia and Indonesia are adopting Islamic finance as part of their broader economic development strategies. Malaysia, in particular, has been at the forefront of integrating Sharia-compliant instruments into the national ALM framework, with the Central Bank of Malaysia issuing Islamic debt instruments and managing the financial system through Sharia-compliant policies (Sandwick *et al.*, 2021). This integration has allowed Islamic financial institutions to expand their customer base and develop more sophisticated financial instruments, such as Islamic money market instruments and Islamic derivatives, which are gaining traction in global markets. As a result, Islamic finance is becoming an increasingly significant factor in shaping global ALM strategies. Its principles of asset-backed financing, ethical risk management, and liquidity management are being adopted by conventional institutions and governments alike, contributing to the development of more stable, transparent, and inclusive financial markets.

The integration of Islamic finance into conventional ALM practices has transformed the financial landscape, offering new opportunities for diversification and innovation (Idrees *et al.*, 2021). The adoption of Sharia-compliant products by conventional banks, the development of hybrid financial instruments, and the growing role of Islamic finance in global ALM strategies have created synergies that promote financial stability and ethical investment. As the demand for Islamic financial products continues to grow, both Islamic and conventional financial institutions will increasingly work together to create robust financial systems that can meet the needs of a diverse, global economy.

Challenges and Limitations in Implementing Islamic ALM

Islamic Asset and Liability Management (ALM), grounded in the principles of Sharia law, represents an alternative approach to traditional financial management strategies. While Islamic finance offers ethical investment options and promotes risk-sharing mechanisms, it

faces several challenges in practical implementation (Lajis, 2019). These challenges stem primarily from regulatory and standardization issues, as well as liquidity constraints and market depth limitations. Overcoming these obstacles is crucial for enhancing the effectiveness of Islamic ALM on a global scale.

One of the most significant barriers to the widespread adoption of Islamic ALM is the lack of a uniform regulatory framework for Sharia-compliant financial practices. Islamic finance operates on principles that prohibit interest (*riba*), excessive uncertainty (*gharar*), and gambling (*maysir*), making it fundamentally different from conventional finance (Wan Ismail *et al.*, 2020). However, the absence of a universally accepted definition and application of Sharia law in financial transactions creates inconsistencies in how Islamic financial products are structured and managed across different regions. This lack of standardization makes it challenging for global financial institutions to implement Islamic ALM strategies effectively, as they must navigate varying national laws and guidelines. In many countries, there are multiple Sharia boards and Islamic financial authorities, each with different interpretations of what constitutes a Sharia-compliant transaction. This diversity in jurisprudence complicates cross-border integration, with financial institutions unsure of how to create products that are acceptable across multiple jurisdictions (Allen and Lastra, 2020). For example, Sukuk (Islamic bonds) and other Islamic finance instruments may be structured differently in Saudi Arabia, Malaysia, and the United Arab Emirates, leading to a lack of uniformity in global markets. Furthermore, Islamic finance's integration into the global financial system is impeded by the absence of a comprehensive regulatory framework that aligns with conventional financial systems. International financial regulations (such as those set by the Basel Committee on Banking Supervision) are often based on conventional principles of interest-bearing financial products, leaving little room for the integration of Sharia-compliant instruments. This lack of harmony between Islamic and conventional regulations poses significant challenges to the development of a global, interoperable Islamic financial market. The absence of harmonized regulatory standards leads to inefficiencies, uncertainty, and higher costs for institutions wishing to offer Islamic ALM solutions.

Another key challenge in implementing Islamic ALM is the limited liquidity in Islamic capital markets, particularly in comparison to their conventional counterparts. Liquidity management is crucial in ALM, as financial institutions must ensure they can meet short-term liabilities without jeopardizing their long-term financial stability (Dhiraj *et al.*, 2019). In conventional markets, instruments such as government bonds and money market instruments provide deep and liquid markets for banks to manage their daily cash flows. However, in Islamic finance, the reliance on asset-backed instruments (which are prohibited from involving interest) limits the availability of comparable products for liquidity management. The Sukuk market, while growing, is still far less liquid than conventional bond markets, making it more difficult for Islamic financial institutions to quickly mobilize capital or manage liquidity risks in times of market stress. The absence of a broad range of Islamic money market instruments also hampers the ability of financial institutions to manage short-term liquidity needs effectively. Unlike conventional banks, which can rely on interest-bearing instruments such as treasury bills or interbank lending, Islamic banks must develop Sharia-compliant alternatives, such as Islamic repurchase agreements (*repos*), but these are still in nascent stages. Additionally, the market depth for large-scale asset and liability management in Islamic financial institutions is limited by the relatively small size of the Islamic finance industry compared to the broader conventional financial sector. This limitation is particularly evident in emerging markets where the infrastructure for Islamic finance is still being developed. As Islamic banks attempt to expand their operations and manage large portfolios of assets and liabilities, they face the challenge of finding sufficient, liquid, Sharia-compliant instruments to balance their financial positions (Ongera and Ndede, 2019; Mabrouk and Farah, 2021). Without a robust secondary

market for Islamic financial products, managing large-scale liabilities becomes increasingly complex.

The complexity of managing large-scale assets and liabilities in Islamic financial institutions further underscores the challenges facing Islamic ALM (Alamgir *et al.*, 2022). Islamic financial institutions often deal with asset-backed financing structures, such as Murabaha (cost-plus financing), Mudarabah (profit-sharing), and Musharakah (partnership). While these instruments align with Sharia principles by ensuring that transactions are backed by tangible assets, they require more active management compared to conventional instruments. The non-availability of standard derivatives, such as interest rate swaps or currency swaps, which are commonly used by conventional banks for hedging, further complicates large-scale asset management. Furthermore, Islamic banks must manage the potential mismatches between their assets and liabilities (Dolgun *et al.*, 2020). For instance, while some of their long-term assets may be illiquid or tied to specific projects, their liabilities may require shorter-term liquidity solutions. Without appropriate risk management tools, Islamic financial institutions may face liquidity gaps or difficulty in matching their asset-liability durations, posing a challenge to financial stability.

Islamic ALM faces substantial challenges that hinder its global implementation and integration into conventional financial systems. The lack of standardized regulations and Sharia-compliant practices across regions creates uncertainty and inefficiency, while liquidity constraints and limited market depth further complicate the management of large-scale assets and liabilities (Haddad *et al.*, 2020). Despite these challenges, the continued growth of Islamic finance and innovative solutions in asset-backed financing and risk-sharing mechanisms offer promising avenues for overcoming these obstacles. As the industry matures, overcoming these challenges will be crucial for the successful integration of Islamic finance into global ALM practices.

Future Trends and Opportunities in Islamic ALM

Islamic Asset and Liability Management (ALM) is evolving rapidly in response to both global financial trends and the increasing interest in ethical and sustainable investing (Cumming *et al.*, 2020). The integration of Islamic finance into global financial markets, advancements in technology, and a growing focus on sustainability are driving changes in how Islamic ALM strategies are implemented (Anouze *et al.*, 2019; Bukhari *et al.*, 2021). This explores the key future trends and opportunities in Islamic ALM, focusing on the growth of Islamic finance in global ALM, technological advancements, and the role of sustainable finance and Environmental, Social, and Governance (ESG) principles.

The expansion of Islamic finance in global ALM strategies is one of the most significant trends shaping the future of the industry (Dahdal *et al.*, 2021). Traditionally concentrated in Islamic-majority regions such as the Middle East and Southeast Asia, Islamic finance is now making inroads into Western markets (Stearns, 2021). Major international financial hubs, including London, New York, and Frankfurt, have begun to integrate Islamic finance principles into their financial systems. This growing acceptance presents Islamic finance with the opportunity to influence global financial markets by offering alternative models for managing assets and liabilities without relying on interest-based instruments. The shift away from interest-bearing financial products has the potential to reshape the structure of global risk management strategies. As Islamic finance continues to expand, it will introduce new financial products and services, creating diversification opportunities for financial institutions worldwide (Ibrahim and Shirazi, 2020). Islamic financial products, such as Sukuk (Islamic bonds), Tawarruq (commodity-based financing), and Islamic insurance (Takaful), provide alternatives to conventional financing tools, and their adoption by non-Islamic institutions in Western markets could encourage further integration into global ALM practices. This integration will require international regulatory frameworks that bridge the gap between

conventional and Sharia-compliant finance, which presents significant opportunities for the development of more inclusive and diversified global financial systems.

The rise of fintech, blockchain, and artificial intelligence (AI) is another key driver of change in Islamic ALM (Singh *et al.*, 2022). As financial markets become increasingly digital, these technologies offer significant opportunities to enhance Sharia-compliant financial products and improve their integration into ALM strategies. Blockchain technology, for example, offers an opportunity to increase transparency, security, and efficiency in Islamic financial transactions, particularly in the issuance of Sukuk and other asset-backed financing instruments. Blockchain can also help streamline Islamic banking operations, making it easier to track assets, liabilities, and risks in real time. AI and machine learning can further enhance Islamic ALM by providing advanced predictive analytics and real-time risk monitoring (Sarea *et al.*, 2021). By analyzing vast amounts of financial data, AI systems can help Islamic financial institutions assess and manage risk more effectively. Additionally, fintech innovations can support the creation of new Sharia-compliant financial products tailored to meet the diverse needs of both institutional and retail investors. Smart contracts, powered by blockchain, can ensure that transactions comply with Sharia principles while improving efficiency and reducing transaction costs, which is crucial for Islamic ALM operations.

The increasing demand for sustainable and socially responsible investments is also influencing the future of Islamic ALM. The integration of Environmental, Social, and Governance (ESG) principles with Islamic finance is creating new opportunities for more ethical and responsible ALM strategies (Böhm *et al.*, 2022). Islamic finance is inherently aligned with ethical investing due to its prohibition of speculative activities (*gharar*) and investments in harmful industries, such as alcohol, gambling, or weapons manufacturing. However, the growing emphasis on sustainability is prompting Islamic financial institutions to further align their practices with global ESG standards (Jan *et al.*, 2021). One of the most significant opportunities within Islamic ALM is the potential for green Sukuk and other sustainability-linked products. Green Sukuk can be used to fund environmentally-friendly projects, such as renewable energy initiatives, sustainable infrastructure, and climate change mitigation efforts (Abubakar and Handayani, 2020). These products offer both financial returns and positive environmental impact, meeting the needs of investors looking for ethical and sustainable investment opportunities. As the global focus on sustainable finance grows, Islamic financial institutions are well-positioned to offer these products, which could serve as a vital tool for managing environmental risks within ALM frameworks. Moreover, the integration of ESG principles into Islamic finance creates the potential for a new wave of innovation in ethical risk management. By incorporating social and environmental factors into their risk assessments, Islamic financial institutions can build more resilient portfolios that are better equipped to handle the growing number of risks related to climate change, social inequality, and corporate governance issues (Ali *et al.*, 2021; Raouf and Ahmed, 2022). This alignment between Sharia law and sustainable finance principles provides a robust framework for managing both financial and non-financial risks in global ALM strategies.

The future of Islamic Asset and Liability Management (ALM) presents exciting opportunities driven by the growth of Islamic finance in Western markets, advancements in fintech and blockchain, and the increasing integration of sustainability and ESG principles into financial strategies (Mohadi and Akli, 2022; Talukder *et al.*, 2022). The expansion of Islamic finance can reshape global financial systems by offering alternative, ethical risk management practices that challenge conventional, interest-based models. At the same time, the rise of technological innovations, particularly AI and blockchain, offers enhanced capabilities for risk mitigation and real-time monitoring of assets and liabilities. Finally, the growing importance of sustainable finance and green Sukuk provides a powerful avenue for integrating ethical and environmental considerations into global ALM practices (Siddique *et al.*, 2022).

As these trends continue to evolve, Islamic ALM will likely play a key role in the future of global financial risk management.

CONCLUSION

The integration of Islamic finance into global Asset and Liability Management (ALM) practices has proven to be transformative, offering innovative and ethical alternatives to conventional financial systems. Through the use of Sharia-compliant financial products, such as Sukuk, Murabaha, Mudarabah, and Musharakah, Islamic finance has reshaped how institutions approach asset-backed financing, risk-sharing, and liquidity management. The key findings highlight the significant role of Islamic finance in challenging traditional interest-based models, while introducing risk-sharing frameworks that align with both ethical and financial objectives.

The implications of this shift are profound for global financial stability. Islamic finance promotes a more ethical approach to managing risks, emphasizing asset-backed transactions and equitable profit-sharing, which reduces exposure to speculative activities. By excluding harmful investments, such as those related to alcohol, gambling, or weapons, Islamic finance contributes to the diversification of investment portfolios, thereby enhancing financial stability. Its emphasis on social responsibility and sustainable finance, particularly through instruments like green Sukuk, further enhances resilience in global markets, creating a more balanced, diversified financial landscape that can better withstand economic shocks.

For financial institutions, the integration of Sharia-compliant products into global ALM frameworks presents both opportunities and challenges. To fully harness the potential of Islamic finance, it is essential to encourage regulatory harmonization across jurisdictions. This will facilitate the broader adoption of Islamic financial products and promote consistency in their application. Financial institutions should continue to innovate by developing hybrid financial products that combine Islamic principles with conventional strategies, ensuring a seamless integration into global financial systems. By doing so, they can enhance their ability to manage risks, promote ethical investment, and contribute to a more stable and diversified financial environment.

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