Share
Jurnal Ekonomi dan Keuangan Islam
Journal of Islamic Economics and Finance

ISSN:
2089-6239 (Print)
2549-0648 (Online)

Reassessing Islamic Hedging Fatwa in Indonesia: Accounting, Regulation, and Market Practices

ABSTRACT - Exchange rate volatility remains a major challenge for businesses, including institutions operating within the Islamic financial system. In Indonesia, Dewan Syariah Nasional–Majelis Ulama Indonesia Fatwa No. 96/DSN-MUI/IV/2015 serves as the primary reference for Sharia-compliant hedging transactions. However, concerns related to Sharia compliance, inconsistencies between regulations and market practices, and limited understanding of operational hedging mechanisms continue to hinder the development of the Islamic derivatives market. This study examines the reliability and practical applicability of the Fatwa through the perspective of PSAK Syariah, relevant regulations, and foreign exchange market practices. Using a qualitative approach, the study employs content analysis, comparative analysis, and critical analysis of the Fatwa and related accounting standards. The findings show that the Fatwa contains four hedging mechanisms: *Aqd al-Tahawwuth al-Basith* (ATB), *al-Murakkab* (ATM), and *Aqd al-Tahawwuth fi Suq al-Sil'ah* (ATFSS) Mechanism-1 and Mechanism-2. Among them, ATB, ATM, and ATFSS-1 are operationally capable of producing actual currency settlement, although ATFSS-1 introduces financing and operational complexities that reduce efficiency. Meanwhile, ATFSS-2 does not result in actual currency exchange because settlement occurs through netting. The study also identifies several misalignments between the Fatwa, accounting standards, financial regulations, and prevailing market practices, which may weaken the effectiveness and practical benefits of Sharia hedging transactions. This study contributes a new analytical framework for assessing the reliability and alignment of Sharia rulings with accounting governance, regulatory structures, and market realities in a dual banking environment.

ABSTRAK - Menilai Ulang Fatwa Lindung Nilai Syariah di Indonesia: Akuntansi, Regulasi, dan Praktik Pasar. *Volatilitas nilai tukar masih menjadi tantangan besar bagi dunia usaha, termasuk lembaga yang beroperasi dalam sistem keuangan syariah. Di Indonesia, Fatwa Dewan Syariah Nasional–Majelis Ulama Indonesia No. 96/DSN-MUI/IV/2015 menjadi rujukan utama transaksi lindung nilai berbasis syariah. Namun demikian, persoalan kepatuhan syariah, ketidakselarasan antara regulasi dan praktik pasar, serta keterbatasan pemahaman mengenai mekanisme lindung nilai masih menghambat perkembangan pasar derivatif syariah. Penelitian ini bertujuan menelaah keandalan dan daya terap Fatwa melalui perspektif PSAK Syariah, regulasi terkait, dan praktik pasar valuta asing. Penelitian menggunakan pendekatan kualitatif dengan metode analisis isi, analisis komparatif, dan analisis kritis terhadap Fatwa serta standar akuntansi terkait. Hasil penelitian menunjukkan bahwa Fatwa memuat empat mekanisme lindung nilai, yaitu Aqd al-Tahawwuth al-Basith (ATB), al-Murakkab (ATM), serta Aqd al-Tahawwuth fi Suq al-Sil'ah (ATFSS) Mekanisme-1 dan Mekanisme-2. ATB, ATM, dan ATFSS-1 terbukti mampu menghasilkan penyelesaian transaksi valuta asing secara nyata, meskipun ATFSS-1 menimbulkan kompleksitas pembiayaan dan operasional yang mengurangi efisiensi transaksi. Sebaliknya, ATFSS-2 tidak menghasilkan pertukaran valuta asing secara riil karena penyelesaian dilakukan melalui mekanisme netting. Penelitian ini juga menemukan adanya ketidakselarasan antara Fatwa, standar akuntansi, regulasi keuangan, dan praktik pasar yang dapat mengurangi efektivitas serta manfaat praktis transaksi lindung nilai syariah. Penelitian ini menawarkan kerangka analitis untuk menilai keselarasan fatwa syariah dengan tata kelola akuntansi, regulasi, dan praktik pasar dalam sistem perbankan ganda.*

Rovila El Maghviroh[1*]
Indra Suwandi[2]
Nurdina[1]
[1]Universitas PGRI Adi Buana Surabaya
[2]Banking Practioner/instructor
**Corresponding email:*
rovilaelm@unipasby.ac.id

Article History
Submitted: 25 Oktober 2025
Revised: 18 February 2026
Accepted: 19 January 2026
Published: 11 May 2026

Keywords
Fatwa, Islamic Hedging, Murabahah, PSAK, Wa'd

JEL Classification
G18, M41, G32, Z12, G15

INTRODUCTION

Exchange rate volatility has attracted growing attention in emerging economies with open financial systems due to its implications for macroeconomic stability and business activity. Indonesia represents a relevant case as a small open economy (FSB, 2021) that operates under a free-floating exchange rate regime (BIS-ACC, 2022) and remains vulnerable to both external and domestic shocks (Cantú & Chui, 2020). These structural characteristics position exchange rate movements as an important dimension of financial risk within the Indonesian economy. Fluctuations in the Indonesian rupiah (IDR), particularly against the United States dollar (USD), have posed persistent challenges for economic actors. At certain points, the rupiah depreciated to approximately IDR 17,000 per USD before stabilizing around IDR 16,800 (Xe.com, 2025). These pressures are reinforced by the relatively shallow structure of Indonesia's foreign exchange (FX) market, which is characterized by limited liquidity and a global transaction share of around 0.5% (BIS-ACC, 2022; Siregar & Ronaldo, 2023). Such conditions have intensified policy and institutional concerns regarding the availability of effective hedging instruments and the governance of FX transactions.

Figure 1. The USD to IDR History
(Source: Xe.com, 2025)

Within this context, derivatives have been increasingly discussed in Islamic finance as instruments for hedging (*tahawwut*) exchange rate risk. Alongside the expansion of Islamic financial activities, demand for risk management instruments has grown. However, the development of Islamic derivatives remains constrained in many jurisdictions. Existing challenges are commonly associated with debates over Sharia compliance and the absence of standardization and harmonization among Islamic hedging instruments (Al-Natoor & Shawqi, 2020). In Indonesia, these constraints are compounded by differing interpretations among

Muslim scholars and business practitioners concerning the permissibility of foreign exchange hedging and its appropriate contractual structures (Muhtadi et al., 2023).

Institutionally, Islamic hedging practices in Indonesia were formalized through the issuance of DSN-MUI Fatwa No. 96/DSN-MUI/IV/2015 concerning Sharia Hedging Transactions (*Al-Tahawwuth al-Islāmī*), hereafter referred to as the Hedging Fatwa. As products of *ijtihad*, DSN-MUI fatwas constitute Islamic legal opinions rather than positive law (Awaludin & Febrian, 2020; Hasyim, 2019). Historically grounded in religious and sociological legitimacy, the authority of DSN-MUI fatwas has expanded through their incorporation into Indonesia's regulatory framework, including the Sharia Banking Law, Bank Indonesia regulations (PBI), and Financial Services Authority regulations (POJK) (BI, 2016; Nafis, 2023; OJK, 2023). In addition, DSN-MUI fatwas function as key references for non-governmental standard setters, particularly the Institute of Indonesia Chartered Accountants (IAI), in the development of Sharia Financial Accounting Standards (PSAK) (IAI, 2024a), and as operational guidance within Sharia governance structures of Islamic financial institutions (Hidayati et al., 2023; Ibrahim, 201).

Prior studies on Islamic hedging have largely focused on normative issues, including legal permissibility, contractual design, comparative *fiqh* analysis, and the classification of Sharia-compliant instruments (Muhtadi et al., 2023; Shabri, 2022). While these studies contribute to doctrinal understanding, limited attention has been given to the operational realization of Islamic hedging within financial reporting and accounting practices. In particular, existing literature has not sufficiently explored whether accounting recognition and transactional substance accurately reflect core Sharia principles, such as *qabd*, the avoidance of *gharar*, and the principle of substance over form. However, little is known about how Islamic hedging practices in Indonesia align with these principles when examined through Sharia accounting standards. This study addresses that gap by employing Sharia accounting as an analytical lens to evaluate the operational implementation of Islamic hedging. Attention is directed toward how recognition and measurement under Sharia-PSAK standards capture the economic substance of hedging transactions, including the realization of contractual commitments, asset transfers, and risk allocation. Accordingly, the study examines the implementation of DSN-MUI Fatwa No. 96/2015 as reflected in transaction structures and accounting treatment in relation to the objectives of Sharia (*maqāṣid al-sharīʿah*).

This study pursues two objectives. First, it evaluates the reliability of the Hedging Fatwa through reference to relevant Sharia accounting standards (Bakhtawar et al., 2023). Second, it assesses the applicability of the fatwa through its alignment with related DSN-MUI fatwas, financial regulations, operational guidelines, and prevailing practices in the foreign exchange market. Through this approach, this study highlights the gap between normative legal discourse and practical financial applications, an aspect that remains underexplored in the existing literature.

LITERATURE REVIEW

Foreign Exchange Market

The foreign exchange (FX) market refers to the global marketplace in which currencies are exchanged and exchange rates are formed. Exchange rates represent the relative prices of currencies and reflect interactions among national economies and financial systems (C. T. Bauer

College of Business, 2024). The FX market is widely recognized as the most liquid financial market globally, operating continuously over a 24-hour cycle and structured predominantly as an over-the-counter (OTC) market without centralized exchanges (C. T. Bauer College of Business, 2024). Trading activity remains highly concentrated in the United States dollar (USD), which functions as the dominant currency for settlement and denomination in international transactions (Kazuaki & Yoichi, 2020).

FX transactions exhibit operational characteristics that distinguish them from other financial market activities. Transactions are executed electronically through communication networks, enabling rapid execution in response to frequent price movements. These features contribute to elevated exposure to market risk. Settlement typically occurs on a cash basis, with counterparties ensuring fund availability prior to execution. Although settlement may involve electronic clearing systems for large-value transactions, such mechanisms remain separate from financing arrangements related to the underlying FX trade (C. T. Bauer College of Business, 2024).

The FX market is commonly divided into three main segments: spot transactions, forward contracts, and FX swaps (Majka, 2024; Zahan & Kenet, 2012). Spot transactions involve currency exchange with settlement occurring within two business days following the transaction date and are classified as cash transactions under regulatory frameworks (BI, 2024a; BI, 2024b). Transactions with settlement periods exceeding two business days are categorized as derivative transactions, encompassing forwards, non-deliverable domestic forwards, futures, swaps, cross-currency swaps, and options, excluding FX-to-FX futures exchange contracts (BI, 2024a; BI, 2024b).

Technological developments and digital banking services have increasingly supported same-day FX settlement, particularly for transactions conducted within a single banking institution or involving FX conversion into Indonesian rupiah (IDR) (Bank Syariah Indonesia [BSI], 2025; OCBC, 2023). Retail FX transactions are now commonly conducted through online platforms, while longer settlement periods persist primarily in interbank or cross-border transfers. FX swap transactions, often described as two-leg arrangements, combine a spot exchange with a forward exchange for an identical currency amount.

Foreign Exchange Hedging

Hedging in General

Hedging is commonly defined as a risk management strategy through which economic agents seek to mitigate potential losses arising from adverse price movements by establishing offsetting positions in related assets (Majka, 2024). Business entities routinely face exposure to financial risks such as interest rate fluctuations, commodity price changes, and exchange rate volatility, which heightens the relevance of hedging instruments in financial decision-making (Juma, 2018). Derivative instruments, whose values are derived from underlying assets, are widely utilized for hedging purposes and, in certain contexts, as strategic tools within competitive market environments (Bacha, 1999; Majka, 2024).

Notwithstanding their functional role, derivative-based hedging instruments entail specific transactional and institutional risks. Pre-settlement risk arises from the possibility of

counterparty default prior to settlement, while settlement risk occurs when one party fulfills its contractual obligation without reciprocal performance by the counterparty (HKMA, 2017; Wybieralski, 2023). These risks highlight the importance of robust transaction structures, counterparty assessment, and regulatory oversight in hedging activities.

Sharia Hedging

Within Islamic finance, Sharia-compliant hedging instruments are recognized for their role in managing financial risks for both investors and Islamic financial institutions. Such instruments facilitate the distribution of risks related to exchange rate volatility, market movements, rate of return uncertainty, and default exposure (IFSB, 2024; Sari et al., 2024). However, the scope and institutional development of Islamic hedging instruments differ significantly across jurisdictions.

Malaysia represents an example of a jurisdiction with a comparatively broader Islamic derivatives framework. Malaysian law defines Islamic derivatives as Sharia-compliant agreements, including options, swaps, futures, and forwards, whose values are derived from Islamic securities, commodities, assets, rates, or indices (IFSA, 2013; Juma, 2018). In contrast, Indonesian regulations limit Sharia-based derivative activities to exchange-rate hedging instruments structured primarily as forward agreements (BI, 2008; BI, 2024a). This regulatory orientation gained formal recognition following the issuance of DSN-MUI Fatwa No. 96/DSN-MUI/IV/2015 concerning Sharia hedging.

At the international level, the International Islamic Financial Market (IIFM) identifies *murābaḥah* and *waʿd* as the most frequently utilized contractual arrangements in Sharia hedging practices, reflecting limited consensus on alternative structures (Alvi, 2019; Moosa, 2023). Subsequent developments introduced additional arrangements, including Single Binding *Waʿd* and Two Unilateral and Independent *Waʿd*-based Islamic FX forwards, expanding structural options for Sharia-compliant hedging instruments (Alvi, 2019).

DSN-MUI Fatwa No. 96 sets out three principal provisions. First, hedging transactions must culminate in actual currency exchange at maturity. Second, hedging may be conducted through the FX market using *Aqd al-Tahawwuth al-Basīṭ* (simple hedging) or *Aqd al-Tahawwuth al-Murakkab* (complex hedging), or through commodity-based mechanisms conducted on the Sharia Commodity Exchange (*Aqd al-Tahawwuth fī Sūq al-Silʿah*). Third, settlement requires full contractual commitment, with commodity-based hedging structured through *murābaḥah* contracts that permit cash or deferred payment arrangements.

Related Fatwas, Guidelines, and Regulatory Framework

Guidance on currency trading (*al-ṣarf*) in Islamic finance is established in DSN-MUI Fatwa No. 28, which permits currency exchange transactions subject to immediate settlement and execution at the prevailing exchange rate when different currencies are involved (DSN-MUI, 2002). This fatwa reflects fundamental Sharia requirements concerning certainty and immediacy in currency exchange. Additional normative direction is provided by DSN-MUI Fatwa No. 82 on Sharia-based commodity trading, which clarifies that *tawarruq* is permitted only due to necessity and under specific conditions (DSN-MUI, 2011). Commodity trading may aim either at physical delivery to buyers or financing objectives conducted through *tawarruq* using *murābaḥah*

contracts. Resale of commodities is permitted only after possession (*qabd*) has occurred. Contemporary scholarship generally permits Classical *Tawarruq* under conditions of genuine, independent transactions, although debate remains regarding its use for liquidity management (Komarudin & Hidayatullah, 2021).

In Islamic commercial law, sale–purchase (*baiʿ*) contracts relevant to hedging structures include *baiʿ al-musāwamah* and *murābaḥah*. *Musāwamah* involves price negotiation without disclosure of acquisition cost, whereas *murābaḥah* requires cost disclosure and agreement on profit margins (DSN-MUI, 2017; OJK, 2023). Indonesian regulations and scholarly literature consistently conceptualize *murābaḥah* as a financing arrangement rooted in sale–purchase mechanisms rather than a pure commercial sale (Ascarya, 2006; Moosa, 2023; Shofawati, 2014; Mikou et al., 2024).

Following the issuance of the Sharia Hedging Fatwa, Bank Indonesia introduced regulations governing Sharia-based hedging transactions. These regulations explicitly recognize hedging conducted through the foreign exchange market, namely *Aqd al-Tahawwuth al-Basīṭ* and *Aqd al-Tahawwuth al-Murakkab*, which require settlement through foreign currency exchange at maturity (BI, 2016; BI, 2024a). Explicit regulatory provisions governing hedging through commodity exchange mechanisms are not provided. With respect to settlement, Bank Indonesia emphasizes gross settlement requirements for Sharia hedging transactions involving foreign exchange against the rupiah. Updated regulations maintain this principle while allowing limited netting arrangements only in the event of default and subject to regulatory conditions (BI, 2014; BI, 2024a; BI, 2024b). Consistent with this framework, banks and designated parties are prohibited from providing overdrafts, credit facilities, or financing for foreign exchange transactions against the rupiah (BI, 2014; BI, 2024a).

Accounting Standards for Islamic Hedging

In Indonesia, Sharia Financial Accounting Standards are issued by the Sharia Accounting Standards Board of the Institute of Indonesia Chartered Accountants (DSAS–IAI). These standards are grounded in general accounting concepts adapted to Sharia principles, with the Statement of Sharia Financial Accounting Standards (PSAK) serving as the primary reference for the preparation of financial statements. PSAK regulates recognition, measurement, presentation, and disclosure of transactions undertaken by Sharia entities and functions as an interface between accounting practices, Sharia principles, and stakeholder information needs (Lubis et al., 2023).

The PSAK most directly related to the Sharia Hedging Fatwa is PSAK 411, which governs accounting for *waʿd*. Other relevant standards include PSAK 401 on the presentation of Sharia financial statements and PSAK 402 on *murābaḥah* transactions, which are particularly relevant to commodity-based hedging structures (IAI, 2024a; IAI, 2024b; IAI, 2025). These standards have received statements of Sharia conformity from the DSN-MUI, and DSAS-IAI routinely harmonizes them following the issuance of new fatwas (IAI, 2024a; IAI, 2024b; IAI, 2025). Prior studies highlight the role of Sharia accounting standards in strengthening financial reporting quality, accountability, and transparency in Islamic financial institutions (Alfidyah, 2025; Purba et al., 2025).

From a conceptual standpoint, accounting treatment related to Sharia hedging focuses on the distinction between contracts (*ʿaqd*) and promises (*waʿd*). A contract arises from a Sharia-compliant offer (*ijab*) and acceptance (*qabul*), producing legal effects on the object of the transaction, while a *waʿd* represents a unilateral commitment to perform or refrain from an action in the future (IAI, 2020; IAI, 2023). In substance, Sharia hedging transactions based on exchange rates resemble swap agreements rather than swap contracts (IAI, 2023).

PSAK 411 distinguishes between simple and complex hedging arrangements involving *waʿd*. In both structures, no assets or liabilities are recognized at the promise stage, while execution entails recognition of foreign currency using the prevailing spot exchange rate. Complex hedging arrangements incorporate an initial spot transaction in the opposite direction, producing a two-leg structure comparable in economic effect to conventional swap arrangements. Hedging transactions conducted through Sharia commodity exchanges rely on contractual structures that fall outside the scope of PSAK 411 (IAI, 2020; IAI, 2024b; IAI, 2023).

At the international level, Sharia standards on currency trading and hedging are also provided by the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI). These standards emphasize full transfer of ownership (*qabd*) in currency exchanges, the requirement of spot settlement in *ṣarf* transactions, and strict conditions for monetization (*tawarruq*) to avoid prohibited *ʿīnah* practices (AAOIFI, 2017). AAOIFI standards further underscore restrictions on excessive *gharar*, particularly where uncertainty affects the principal subject matter of a contract, thereby undermining its validity (AAOIFI, 2017).

METHODOLOGY

Research Design

This study adopts a qualitative research design to examine the operational reliability and applicability of DSN-MUI Fatwa No. 96/DSN-MUI/IV/2015 on Sharia Hedging Transactions (*Al-Tahawwuth al-Islāmī*). A qualitative approach is appropriate given the study's focus on interpreting regulatory substance, institutional structure, and practical implications of Islamic hedging within the interaction of Sharia principles, accounting standards, and market practices. To maintain trustworthiness, the study refers to criteria of credibility and dependability commonly used in qualitative research (Shenton, 2004).

The analytical framework combines content analysis, qualitative comparative analysis, and critical analysis. An initial selective review of the Hedging Fatwa was undertaken to refine the research focus, identify relevant analytical dimensions, and determine appropriate data sources, thereby strengthening conceptual sensitivity at an early stage (Yin, 2016). Subsequent analysis emphasized comparative and critical perspectives to address institutional complexity and the possibility of multiple pathways through which regulatory provisions operate.

Data Collection Method

The study relies on documentary data from authoritative institutional sources. The primary data source is DSN-MUI Fatwa No. 96/DSN-MUI/IV/2015, which serves as the central normative framework for Islamic hedging practices in Indonesia. Secondary data sources include Sharia Financial Accounting Standards, particularly PSAK 411 on *waʿd*, PSAK 401 on the presentation

of Sharia financial statements, and PSAK 402 on *murābaḥah* transactions, which function as the main references for assessing operational reliability.

Additional data comprise related DSN-MUI fatwas, Bank Indonesia regulations, Financial Services Authority (OJK) guidelines, AAOIFI standards, institutional publications, academic literature, and documented foreign exchange market practices. Documents were systematically identified, categorized, and examined according to their relevance to Islamic hedging structures, Sharia principles, accounting treatment, and transaction settlement mechanisms.

Data Analysis Method

Data analysis proceeded in three interrelated stages. First, content analysis was used to identify key concepts, contractual forms, and operational provisions within the Hedging Fatwa and related regulations, with attention to *waʿd*, currency exchange settlement, and hedging mechanisms. Second, qualitative comparative analysis was undertaken to examine alignment and divergence between the fatwa, Sharia accounting standards, regulatory provisions, and AAOIFI standards, acknowledging causal complexity, equifinality, and asymmetry in institutional outcomes (Mogashoa, 2014; Intrac, 2017).

Third, critical analysis focused on the fatwa as an institutional message that shapes financial practice, emphasizing how its provisions operate in transaction structures, accounting treatment, and market implementation rather than on the intentions of its formulators (Mihalescu, 2019; Oranga & Matere, 2023). This approach aligns with critical inquiry aimed at evaluating institutional arrangements and generating insights relevant for future regulatory development (Bakhtawar et al., 2023). Finally, operational reliability testing of the hedging arrangements referenced in the fatwa was conducted using PSAK 411, PSAK 401, and PSAK 402 as the primary analytical framework, given their direct relevance to accounting recognition, measurement, presentation, and disclosure of Sharia hedging transactions.

RESULTS AND DISCUSSION

This section is divided into three major parts, namely: 1) General Content Analysis of Hedging Fatwa; 2) Content and Critical Analysis of Hedging Fatwa Using Related PSAK; and 3) Alignment Testing of the Hedging Fatwa Against Other Provisions and Market Practices, which is more technical and operational in detail. Furthermore, to provide a complete and comprehensive explanation in a series of discussions, content, comparison, and critical analysis are carried out in a mixed manner, not separated by specific analysis groups.

General Content Analysis of the Hedging Fatwa

The analysis shows that the Hedging Fatwa contains two principal dimensions: normative-legal foundations and practical-economic objectives. First, the fatwa establishes its methodological basis through references to the Qur'an, Hadith, classical and contemporary *fiqh* opinions, and Islamic legal maxims. The fatwa also refers to several related DSN-MUI fatwas, including the Fatwa on *al-Sharf*, Fatwa on Commodity Trading Based on Sharia Principles on Commodity Exchanges, and Fatwa on *Wa'd* in Sharia Financial and Business Transactions. In addition, the fatwa incorporates recommendations and considerations from parties involved in Islamic financial practices and DSN-MUI deliberations.

Second, the fatwa explicitly emphasizes the objectives of *maqāṣid al-sharī'ah* within Islamic hedging activities (Salahuddin, 2017). This objective appears at the beginning of the fatwa and reflects two expected outcomes: (1) supporting the development of the Islamic financial industry and economic benefit creation, and (2) preventing harm (*mafsadah*) arising from exchange-rate volatility. However, the content analysis also reveals several areas that receive limited explanation within the fatwa. Although the fatwa introduces commodity-based hedging structures involving *murabahah* contracts, the conceptual basis and limitations of *tawarruq* are not discussed in detail. Likewise, the fatwa does not elaborate extensively on the concept of *qabd* (possession), despite its importance in currency exchange and commodity transactions (AAOIFI, 2017).

Although the Hedging Fatwa incorporates a *murābaḥah* contract scheme, it is not explicitly identified as a source of consideration. Conversely, several transaction schemes refer to commodity sale–purchase arrangements that involve monetization through *tawarruq*, as discussed in the commodity trading fatwa; however, the Hedging Fatwa does not provide an explanation of *tawarruq* or its limitations. This omission is significant, particularly when *tawarruq* is proposed as an alternative hedging mechanism, as the absence of clear parameters may allow practices that resemble organized *tawarruq*, which is prohibited. Moreover, the fatwa does not address issues of ownership (*qabḍ*) in the context of exchange processes, whether involving currencies or commodities (AAOIFI, 2017).

Content and Critical Analysis of the Hedging Fatwa Using Relevant PSAKs

Content and critical analysis of the Hedging Fatwa, using relevant Sharia Financial Accounting Standards (PSAK) as analytical testing tools, are presented in Tables 1 and 2, with Figures 2 and 3 serving to clarify the process flows and operational activities of Sharia-compliant exchange rate hedging.

Content and Critical Analysis of Aqd al-Tahawwuth al-Basith (ATB) and al-Tahawwuth al-Murakkab (ATM)

To enhance clarity, this subsection employs illustrative case examples as explanatory tools, presented in Case 1 and Case 2 boxes.

Box Case-1: ATB
Part 1): On 01 Maret 2022, the **Importer**_Customer (**IM**) received an import document bill of USD.1 million ($.1 m.) which must be paid on April 10, 2022, but does not yet have the FX funds at the time or the funds are used for other needs.
Part 2): Related to this obligation, to avoid the risk of USD exchange rate fluctuations against the rupiah, the customer did the following: 1) On 01 Maret 2022 (**T0**), make a one months-*Forward agreement* where **IM** and Syariah Bank (**SB**) promise each other to make a sale and purchase from **IDR to $** as follows: ➢ Worth of $.1 m.; ➢ Bank's spot rate on 10 April 2022 agreed 1 $ (Buy/**Sell**)= Rp13,900/**14,000**. ➢ Settlement date on 10-04-2023 **(T0+40).** 2) **Assume**, Spot rate 1 $/IDR (Buy/Sell) on 01 Maret 2022 =Rp13,300/400; on 31 Maret 2022, $ stabel at=Rp13,300/13,400; and on 10 April 202=Rp13,900/14,**000**. Then, on 10 April 2022-Settlement date, as a continuation of the initial agreement, IM and SB made ***a currency exchange*** transaction to settle their agreement.

Box Case-2: ATM

On **01 Maret** 2022, An **Export-Import_**Customer (**EXIM**) currently has funds from previous exports of **$.1 m**. and needs IDR funds to cover the operational costs of its factory. Furthermore, on **April 10**, 2022, EXIM will have to pay off import documents of $.1 m. Related to these needs; to avoid the risk of $ exchange rate fluctuations against the rupiah, EXIM conducted a Complex Hedging (ATM) transaction with SB as follows:

1) On the initial date **01 Maret** 2022 (T0), EXIM and SB made a contract: ATM sells $.1 m., exchanged into IDR (Rp.) at the Spot Bank rate on 01 Maret 2022 is 1 $/IDR (**Buy**/Sell)= Rp.**13,300**/400; and
2) and then, referring to Case-1-ATB Part 2) above.

(Source: modified from PSAK-411)

Table 1 is structured as follows: Column I presents the Mechanism Provisions stipulated in the Hedging Fatwa, while Column II contains the corresponding accounting tests based on related PSAKs, presented in a comparative format to support analytical evaluation (DSN–MUI, Fatwa No. 96, 2015). Figures 2 provides overviews of the process flows for each hedging mechanism outlined in Part Four (Mechanism Provisions) of the Hedging Fatwa. Columns combining ATB and ATM, or ATFSS–Mechanism 1 and ATFSS–Mechanism 2, indicate identical operational descriptions or accounting journal entries. Separate columns reflect differences in descriptions or accounting treatments.

Table 1. Content and Comparative Analysis of ATB and ATM Mechanisms Using PSAK Syariah

<table>
<tr><th rowspan="2">No</th><th colspan="2">(I)
Contents of the Hedging Process of Fatwa No: 96/2015 (p.8-9)</th><th colspan="2">(II)
Accounting Analysis Using Sharia PSAKs
*(the USD value is in millions, and IDR in billions [written as "$ m." and "Rp b."], unless specifically written)</th></tr>
<tr><th>ATB (1)</th><th>ATM (2)</th><th>ATB (3)</th><th>ATM (4)</th></tr>
<tr><td>1</td><td></td><td></td><td colspan="2">01-03-2022 (T0)</td></tr>
<tr><td></td><td>----</td><td>(p.8_2.a.) The parties make a Spot Transaction;</td><td>----</td><td>Two activities:
First, Spot_Transaction-1 (‘near leg’): EXIM sells $.1 m. currency to IDR to SB:
Two activities:
First, Spot_Transaction-1 (‘near leg’): EXIM sells $.1 m. currency to IDR to SB:
<table><tr><th>Date</th><th>Account</th><th>Debit Rp.</th><th>Credit Rp.</th></tr><tr><td colspan="4">EXIM journaling</td></tr><tr><td>1-03-2022</td><td>Cash-IDR</td><td>13.3 b.</td><td></td></tr><tr><td></td><td>Cash-($.1 m.)</td><td></td><td>13.3 b.</td></tr><tr><td colspan="4">SB journaling</td></tr><tr><td>1-03-2022</td><td>Cash-($.1 m.)</td><td>13.3 b.</td><td></td></tr><tr><td></td><td>Cash-IDR</td><td></td><td>13.3 b.</td></tr></table>* Note: Rp.13,300x$.1 m.=Rp.13.3 b.</td></tr>
<tr><td></td><td colspan="2">(p.8_1.a.)-ATB, or (p.8_2.b.)-ATM: The parties promise each other (muwa'adah), either in writing or not, to carry out one or more Spot Transactions in the future which includes an agreement on: (1) the currency being traded, (2) nominal amount, (3) the exchange rate or exchange rate calculation, and (4) implementation time;</td><td colspan="2">01-03-2022 (T0): At beginning time Forward Agreement:
IM (first activity)/EXIM (second activity) will buys $ against IDR from SB.
No Accounting Journal/posting, just an administrative recording (PSAK-411, p.8; PSAK 401, p.18).</td></tr>
</table>

2		**31-12-2022_Time of Reporting (TR):**
	(no specific guidelines)	No journaling.
3		10/04/2022 **(T0+40)** *Settlement Time*-maturity of the forward agreement**:**
	(p.8_1.b.)-ATB, or (p.9_2.c.)-ATM: "At the **settlement time**, the parties carry out a Spot Transaction (*ijab-qabul*) at an agreed price which is followed by *the handover of the exchanged currency*".	

Date	Account	Debit	Credit
IM/EXIM posts			
10-04-2022	Cash-($.1 m.)	13,5 b.[2)]	
	Profit/***Loss***	0,5 b.[3)]	
	Cash-IDR		14,0 b.[1)]
SB posts			
10-04-2022	Cash-IDR	14,0 b.	
	Profit/Loss		0,5 b.
	Cash-($.1 m.)		13,5 b.

Notes:
[1)] IM/EXIM **pays** to SB: Rp: $.1 m.x14.000)= Rp. 14,0 b.;
[2)] IM/EXIM **received** from SB: $.1 m., worth of: ($.1x13.500) recorded= Rp. 13,5 b.;
[3)] IM/EXIM records **Loss** from the exchange=14,0 b-13,5 b= Rp. 0.5 b. * Potential Loss (due to the assumption of the exchange rate difference between $ rate of the Asset purchased > the market rate is ignored because the purpose of purchasing $ is for riil import transactions, not foreign exchange speculation.

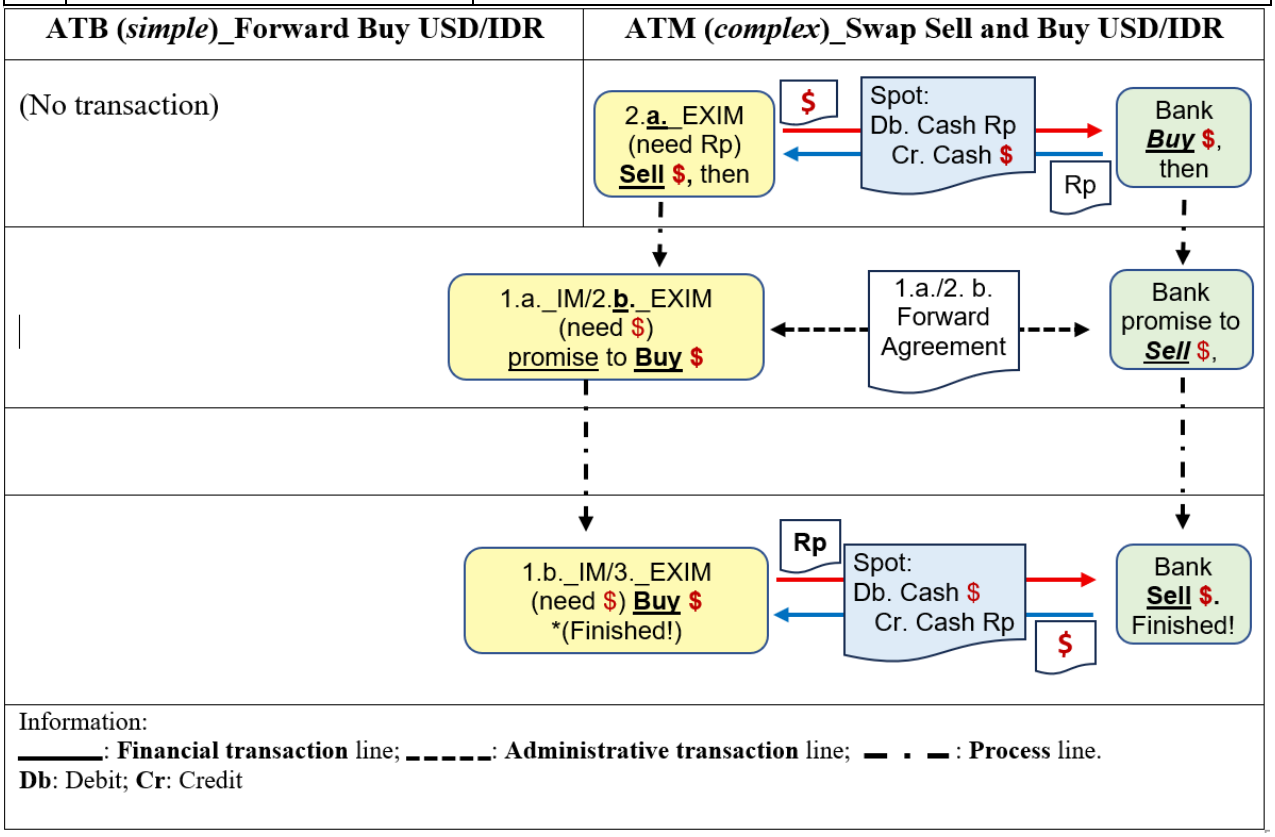


Figure 2. Flowchart of the Accounting Journal for ATB and ATM Mechanisms (Customer Side)
(Source: Processed by the Authors)

The testing of the ATB and ATM mechanisms reveals several structural and operational characteristics. At the initial transaction stage (T0), the treatment differs depending on the mechanism and the hedging needs involved. Under the ATM mechanism, a spot transaction

already occurs at T0, involving the exchange of USD for IDR between the exporter–importer (EXIM) and the Sharia Bank (SB) to satisfy the EXIM party's immediate liquidity requirements in IDR. In contrast, during the forward agreement stage, neither the ATB nor the ATM mechanism requires the execution of a spot transaction. At the maturity of the forward agreement (T0 + 40), both mechanisms culminate in a spot transaction (*ijāb–qabūl*), whereby the EXIM party and the Sharia Bank exchange USD for IDR in accordance with the terms specified in the initial agreement. Each party subsequently records the transaction in its respective accounting system. From an operational perspective, the ATB mechanism involves two activities, consisting of one administrative and one financial activity, while the ATM mechanism entails three activities, comprising one administrative and two financial activities. In practice, both mechanisms typically involve only a single counterparty.

The findings demonstrate that the ATB and ATM hedging mechanisms implemented through the foreign exchange market are effective instruments for managing exchange rate risk. In the ATM mechanism, hedging effectiveness is achieved both at the initial stage, through the spot transaction, and at maturity, while in the ATB mechanism, effectiveness is realized primarily at the settlement stage. In both cases, the essential Sharia objective is fulfilled through final settlement in the form of mutual currency delivery (*qabḍ*) at maturity. Furthermore, these mechanisms are applicable in circumstances where hedging participants, such as importers or exporters, do not possess full liquidity at the time the initial agreement is concluded. Despite this limitation, participants remain able to hedge their exposure, with liquidity needs effectively managed until the maturity of the forward agreement. This characteristic highlights the role of the ATB and ATM mechanisms in addressing temporary liquidity or budgeting constraints.

In terms of transaction risk, the results indicate that neither the ATB nor the ATM mechanism gives rise to financing or credit risk for the contracting parties, as all exchanges of different assets are executed on a cash (spot) basis. The primary risk inherent in non-automated foreign exchange transactions is pre-settlement risk (PSR). From the customer's perspective, this risk is minimal, as the counterparty is a banking institution subject to strict supervision by the Financial Services Authority (OJK) and Bank Indonesia (BI), along with applicable consumer protection regulations. Settlement risk is similarly limited for the same reasons. Overall, the risk level associated with the ATB and ATM mechanisms remains relatively low and manageable, given that each party engages with only one counterparty. These characteristics align with the foreign exchange market's demand for fast, cost-efficient processes and controlled risk exposure (Majka, 2024), indicating that the financial objectives of Sharia can be effectively realized through these mechanisms.

Content and Critical Analysis of ʿAqd al-Tahawwuth fī Sūq al-Silʿah Mechanism 1 (ATFSS-1) and Mechanism 2 (ATFSS-2)

Content analysis of the General Provisions, point 8, of the Islamic Hedging Fatwa indicates that ATFSS (*hedging transactions through the Sharia Commodity Exchange*) are structured as hedging arrangements consisting of a series of transactions. These include: (1) commodity buying and selling (*silʿah*) denominated in Indonesian rupiah (IDR); (2) subsequent commodity buying and selling (*silʿah*) denominated in foreign currency; and (3) final settlement through currency delivery at maturity (DSN–MUI Fatwa No. 96, 2015). Further analysis is conducted

through application testing using PSAK 401, PSAK 402, and PSAK 411. The results of this analysis are presented in Table 2.

Table 2. Analysis of ATFSS-Mechanism-1 or Mechanism-2 Using PSAKs

* (Abbreviations list: **AP**= Account Payables; **AR**= Account Receivables; **CC**= Commodity Consumers; **CP**= Commercial Participants**; CTP**= Commodity Trader Participants; **IFI**= Islamic Financial Institution**; OD=** Ownership Documents (Approved Commodity Ownership Letter [ACOL]); **IDR**= ***delivered***-currency; dan **$**= USD= ***received-***currency; **SCX**= Syariah Commodity Exchange).

	I		**II**	
No	**Fatwa No: 96/2015**		**Analysis Using PSAK Syariah from CC*) side** (in Rp billion)	
	ATFSS-1 ***(1)***	***ATFSS-2*** ***(2)***	**Accounting of *ATFSS*-1** **(3)**	**Accounting of *ATFSS*-2** **(4)**
	Objective*: *The final transaction *settlement must be in the form of* ***handover of currency*** *at maturity*			
I	**Transaction-I:**			
1.	(p.9_b.1) **CC, *who has foreign currency* *($) *obligations*,** place orders for ***Sil'ah*** and promise (*wa'd*) to purchase *the sil'ah* in cash, *installments*, or *deferred* to **CP** in ***delivered*** currency_*(**IDR**);		At T0 (start date): There is *wa'd* agreement from CC to CP. No accounting journal because no contract/transaction yet whatsoever. The commitment is recorded in an Administration Account (PSAK-401, 2025; PSAK-411, 2024).	
2.	(p.9_b.1) Based on the order as referred to in number 1) above, **CP** purchases *sil'ah* **in cash** from CTPs in ***delivered*** currency_*(**IDR**);		It is CP's activity. No recording/journal whatsoever at CC side.	
3.	(p.9_b.3) **CP** receives *ownership documents* (**OD**) issued by SCX as proof of purchase of the commodity;		It is CP's activity. No recording/journal whatsoever at CC side.	
4.	(p.9_b.4) **CC** purchases *sil'ah* from **CP** with a *murabahah* sale-purchase agreement in ***delivered*** currency_*(**IDR**), where payments are made in *cash,* **or** ***installments, or deferred*** according to agreement, and followed by the handover of OD;		*(Assuming only ***cash*** or ***deferred*** payment), it is recorded as follows (PSAK-401, 2025; PSAK-402, 2024): **CC–Cash-(1)I.4.a** Journal / **Account** / Debit / Credit J-1 / ~~*Sil'ah-1*~~ / Rp. / J-2 / ~~Cash-IDR~~ / / Rp. **CC–*Deferred*-(2)I.4.b** Journal / **Account** / Debit / Credit J-1 / ~~Sil'ah-1~~ / Rp. / J-2 / AP-IDR-***CP*** / / Rp. Note: If **CC** buys *sil'ah-1* from **CP** in **deferred** payment, it means that ***CP provides IDR financing to CC***.	
5.	(p.9_b.5) **CC** sells *sil'ah* in ***cash*** to **CTP** in ***delivered*** currency_*(**IDR**);		**CC** record as (PSAK-401, 2025; PSAK-402, 2024): **CC–Cash-(1)/(2).I.5** Journal / **Account** / Debit / Credit J-3 / Cash-IDR / Rp. / J-4 / ~~*Sil'ah-1*~~ / / Rp.	
			Analysis "**CC-Cash-I**": 1) *Sil'ah*-1 netted off by J-1.-Db. versus J-4.-Cr.;	Analysis "**CC-*Deferred*-I**": 1) *Sil'ah*-1 netted off by J-1.-Db. versus J-4.-Cr.;

		2) Cash/Bank Account-Rp netted off by J-3 versus J-2; All **CC-Cash-I** transactions are netted off. *So that* ***it is finished***, there is no continuation to next stage.	2) Then **the final position** in the CC's Balance Sheet, temporarily, is: ~~J-3. Db. Cash/Bank IDR~~ Rp. ~~J-2 Cr. AP IDR CP~~ Rp. So, the transaction status is **not yet complete**, it needs *to go to next stage (*Transaction-**II).**
II	**Transaction-II:**		
	***ATFSS-1* (1)** / ***ATFSS-2* (2)**	**Accounting of *ATFSS*-1 from CC side**	**Accounting of *ATFSS*-2 from CC side**
1.	(p.9_b.1) **CC** (IFI/ Customer) gives authority (*wakalah aqad*) to **CP** to purchases *sil'ah*-2 **in cash** in the ***delivered*** currency_*(**IDR**) / in ***received*** currency_*(**$**)	No accounting journal.	
		The commitment is recorded in an Administration Account as in **IDR.**	The commitment is recorded in an Administration Account as in **USD**.
2.	(p.9_b.2) Based on the above *wakalah aqad*, **CP**, representing CC, purchases *sil'ah in* ***cash*** from **CTP** in … ***delivered*** currency_*(**IDR**) / in ***received*** currency_*(**$**)	It is not a **CC** activity.	
		No accounting journal.	No accounting journal.
3.	(p.9_b.3) **CC** receives OD in the form of a ACOL issued by **SCX** as proof of purchase of the commodity.	(After pay **in cash** in **IDR** to **CP**), **CC** records: **CC–Cash-(1)II.3** Journal / **Account** / Debit / Credit J-5 / *Sil'ah-2* IDR / Rp. / J-6 / Cash-IDR / / Rp.	(After pay **in cash** in **USD** to **CP**), **CC** records: **CC–Cash-(2)II.3.** Journal / **Account** / Debit / Credit J-5 / ~~*Sil'ah-2* $~~ / Rp. / J-6 / ~~Cash-$~~ / / Rp.
4.	(p.10_b.4) **CP** purchases *sil'ah* from **CC** with a *murabaha*h sale-purchase agreement in ***received*** currency_*(**$**), with payment made in ***cash, installments, or deferred*** according to agreement, and followed by the OD handover;	**CC** records the sale transaction to **CP** in **cash or deferred in USD** as IDR: **CC–Cash-(1)/(2).II.4.** Journal / **Account** / Debit / Credit J-7 / Cash-$ / Rp. / J-8 / *Sil'ah-2* -$ / / Rp. **CC– *Deferred*-(1)/(2).II.4.** Journal / **Account** / Debit / Credit J-7 / ~~AR-$-CP~~ / Rp. / J-8 / ~~*Sil'ah-2* $~~ / / Rp. Note: If **CP** buys *sil'ah-4* from **CC** in **deferred payment**, it means that ***CC provides USD financing to CP***, and the transaction is still ongoing.	
5.	(p.10_b.5) **CP** sells *sil'ah* **in cash** to **CTP** in: ***delivered*** currency_*(**IDR**) / ***received*** currency_*(**$**)	**CP**'s activity, no recording from **CC** side.	
6.	(p.10_b.) **CC** receives ***received*** currency_*(**$**) from **CP** to fulfill its obligations to other parties and hands over ***delivered*** currency_*(**IDR**) to **CP**.	If transaction I.4. and II.4: a) **in cash**, the transaction has been ***settled*** and *sil'ah* has been *netted off*, no more journal; b) in ***deferred***, the transaction has not been settled even though the *sil'ah-2* has been *netted off*, then	If transaction I.4. and II.4. a) **in cash**, the transaction has been ***settled*** and *sil'ah* has been *netted off*, no more journal. b) in ***deferred***, the transaction has not been settled even though the *sil'ah-2* has been *netted off*, then continued to accounting process 6. as follows:

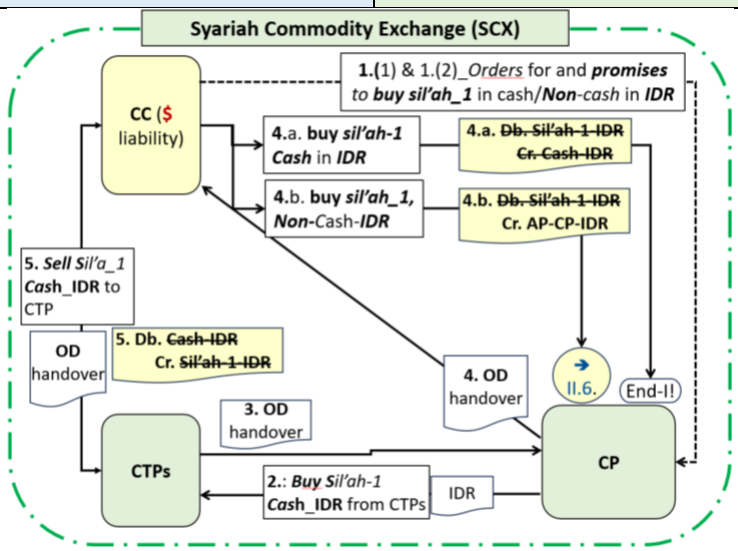
		continued to accounting process 6. as follows: **CC–*Deferred*-(1).II.6** Journal / Account / Debit / Credit J-9 ~~*AP* IDR-CP~~ Rp. — J-10 Cash-IDR — Rp. J-11 Cash-~~$~~ Rp. — J-12 ~~AR-$ CP~~ — Rp.	**CC– *Deferred*-(2).II.6** Journal / Account / Debit / Credit J-9 ~~*AP* IDR-CP~~ Rp. — J-10 ~~Cash-IDR~~ — Rp. J-11 ~~Cash-$~~ Rp. — J-12 ~~AR-$ CP~~ — Rp.
		*(jo. (juncto))	

(Source: Processed by the Authors)

To facilitate understanding, the analysis proceeds under the following assumptions. First, the analysis is conducted exclusively from the perspective of the Commodity Consumer. Second, all transactions under Mechanism 1 and Mechanism 2 commence with the presence of a Commodity Consumer who has foreign currency obligations, as stipulated in the Hedging Fatwa. Accordingly, the currency received is United States dollars (USD), while the currency delivered at the end of the transaction is the counter-currency, Indonesian rupiah (IDR). Finally, all terms employed in the analysis are translated from those stated in the Hedging Fatwa and abbreviated for ease of presentation. Explanations of these abbreviations are provided at the beginning of Table 2 to assist readers in interpreting Table 2 and Figure 2 (DSN–MUI Fatwa No. 96, 2015).

TRANSACTION_I

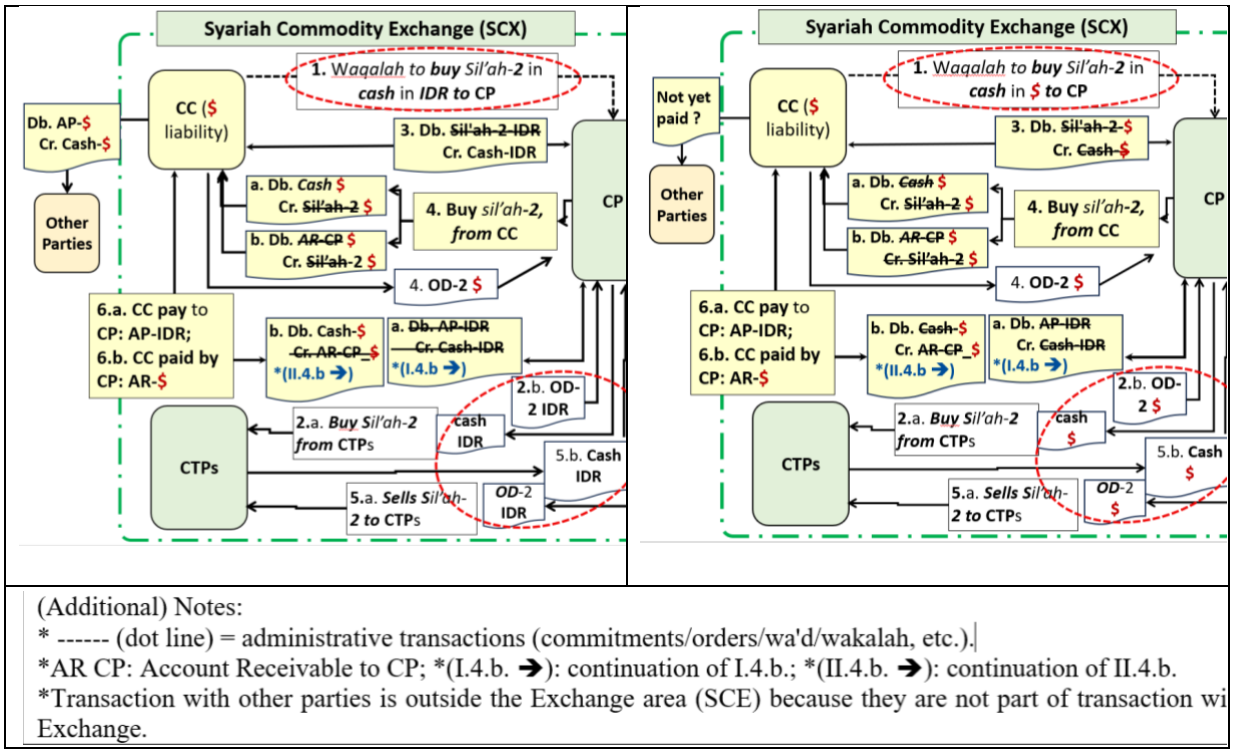
ATFSS-1	**ATFSS-*2***



(Additional) Notes:
"AP-CP": Account Payable to Commercial Participants;
"➔II.6.": (Connector) Continue to Transaction II poin 6.

TRANSACTION_II

ATFSS-*1*	**ATFSS-*2***



(Additional) Notes:
* ------ (dot line) = administrative transactions (commitments/orders/wa'd/wakalah, etc.).
*AR CP: Account Receivable to CP; *(I.4.b. ➔): continuation of I.4.b.; *(II.4.b. ➔): continuation of II.4.b.
*Transaction with other parties is outside the Exchange area (SCE) because they are not part of transaction wi
Exchange.

Figure 3. Flow of Transaction and Accounting Journal (The CC Side) – Mechanism 1 & 2
(Source: Processed by the Authors)

The testing of ATFSS–Mechanism 1 and Mechanism 2 using PSAK 411, PSAK 401, and PSAK 402 from the Commodity Consumer (CC) perspective yields several key findings. First, the accounting records for ATFSS-1 indicate that transactions may be conducted in either cash or non-cash form. At settlement, the *silʿah-2–IDR* account is exchanged with the *silʿah-2–USD* account, and the IDR cash account is exchanged with the USD cash account (recorded in IDR value). Second, under ATFSS-2, transaction journaling shows that, regardless of whether settlement occurs in cash or non-cash form, the *silʿah-2–USD debit* account is netted against the *silʿah-2–USD credit* account, and the USD cash debit account is netted against the USD cash credit account (also recorded in IDR value) at settlement.

Additional findings further clarify the structure and implications of both mechanisms. At the outset of Transaction I, Activity 1, both mechanisms originate from the same scenario, namely the CC's need for USD to fulfill obligations to a third party. During Transaction I, the sequence of activities is identical for ATFSS-1 and ATFSS-2; consequently, journaling outcomes and administrative records at this stage are also identical. Differences emerge in Transaction II, particularly in Activity II.1, where the *wakālah* contract under ATFSS-1 uses the delivered currency (IDR), while ATFSS-2 uses the received currency (USD). This initial divergence leads to different accounting treatments in subsequent activities, especially in Activity II.3 and Activity II.5. In Activity II.5, ATFSS-1 again employs the delivered currency (IDR), whereas ATFSS-2 uses the received currency (USD). These distinctions are reflected in Table 2 and Figure 3, where differing treatments are highlighted. In Transaction I.4, the CC purchases *silʿah-1* (IDR) from the Commodity Provider (CP) under a *murābaḥah* contract, with payment possible in cash or non-cash form, including deferred payment or installments. Similarly, in Transaction II.4, the CP purchases *silʿah-2* (USD) from the CC under a *murābaḥah* contract, also with cash or non-cash payment options. Overall, an ATFSS-based hedging transaction consists of no fewer than nine and up to eleven activities and involves at least three

counterparties—namely the CP, Commodity Trading Participants (CTPs), and the Sharia Commodity Exchange (SCE)—with additional parties required to avoid the characteristics of organized *tawarruq*.

The results indicate that ATFSS–Mechanism 1 is generally reliable in achieving the final transaction objective stipulated in the Sharia Hedging Fatwa, whether settlement occurs in cash or non-cash form, subject to certain qualifications discussed further below. The primary objective is the completion of settlement through a full exchange of currencies (*qabḍ*) at maturity. In contrast, ATFSS–Mechanism 2 does not reliably result in a currency exchange at the end of the transaction. Instead, settlement occurs through netting (*muqāṣṣah*), demonstrating that ATFSS-2 fails to meet the final transaction objective of the Sharia Hedging Fatwa. As discussed in the literature, settlement through netting is permitted only under specific circumstances—namely transaction extension, acceleration, or cancellation—and under clearly defined conditions (DSN-MUI Fatwa No. 96, 2015; PBI No. 16, 2014; BI Regulation No. 6, 2024).

The divergent outcomes between ATFSS-1 and ATFSS-2, despite both mechanisms originating from the same initial condition—that the CC requires USD to meet third-party obligations—can be attributed to different design choices in Activities II.1, II.3, and II.5. These structural variations materially affect the accounting treatment and ultimate settlement outcome. Beyond these, several substantive concerns arise in the implementation of the ATFSS mechanisms. At the initial stage (Transaction I.4), the CC must purchase *silʿah-1* (IDR) from the CP, thereby introducing liquidity or financing constraints for the CC, even though the underlying assumption is that the CC already faces payment obligations to other parties. Transaction risk is also more pronounced under the ATFSS mechanisms than under the ATB or ATM mechanisms. In Transaction II.4, if the CP purchases *silʿah-2* (USD) from the CC on a non-cash basis, particularly through installment payments, the CC is exposed to additional financing and operational risks. Conversely, if settlement occurs in cash, liquidity pressure shifts to the CP. Financing risk in this context is substantially greater than pre-settlement risk because it relates to the full transaction value rather than price volatility alone. Risk exposure is further amplified by the involvement of multiple non-bank counterparties or entities operating below the banking level.

Financing considerations also significantly undermine the effectiveness of the ATFSS mechanisms. Financing processes—from application to disbursement—are typically lengthy, document-intensive, and time-consuming. When embedded within exchange rate hedging transactions, which demand speed, cost efficiency, and low risk (C. T. Bauer College of Business, 2024; Majka, 2024), these financing requirements introduce additional costs and frictions that may materially diminish, or even negate, the benefits of hedging. Consequently, although ATFSS–Mechanism 1 demonstrates reliability in facilitating currency exchange at settlement, its overall effectiveness in delivering economic benefits remains limited. In this sense, the realization of *maqāṣid al-sharīʿah* in Sharia hedging activities under ATFSS–Mechanism 1 appears constrained.

Based on the assessment and discussion of the Hedging Fatwa presented above, the first objective of this study has been achieved. The subsequent section examines the applicability of

the Hedging Fatwa through analysis of its alignment with related fatwas, financial regulations, technical guidelines, and prevailing practices in the foreign exchange market.

Alignment Testing of the Hedging Fatwa Against Other Provisions and Market Practices

This section presents an advanced content and critical analysis focusing on the alignment testing of the Hedging Fatwa with relevant guidelines, regulations, and prevailing market practices. The analysis examines the extent to which the Hedging Fatwa aligns with these external provisions and assesses its potential implications for business actors, with particular attention to its reliability and applicability in practice. The results of the alignment analysis are summarized in Table 3.

Table 3. Alignment Analysis Between the Normative Hedging Fatwa, Relevant Regulations, and Market Practices

Dimension	Analysis of		
	Hedging Fatwa (No. 96, 2015)	**Relevant Other References, Market Practices**	**Implications**
Contents of provisions	The ATB/ATM mechanisms straight forward to currency exchange (referring to Al-Sharf-Fatwa, 2002). Meanwhile, the ATFSS mechanism, hedging through commodity trading, also contains provisions for transaction financing schemes (p. 9-11).	Other hedging transaction guidelines/ regulations are only intended to protect against exchange-rate risk, do not contain a financing scheme, because currency exchange must be settled in cash (PBI No. 18, 2016, pp. 5-6; SE BI No. 18, 2016; PBI No. 6, 2024, p. 44).	1) ATFSS contains two provisions, regarding: 1) hedging against exchange rate risk; and 2) payment/financing scheme. This raises critical issues and problems across multiple dimensions, as discussed in the following analysis. 2) Low alignment between the content of the ATFSS scheme and other Guide-lines/Regulations. This may also violate the prohibition on providing credit/ financing for the settlement of Forex transactions against IDR of the BI Regulation.
Coverage of Consumers	No detailed regulations in ATB/ATM scheme. Meanwhile, in the ATFSS mechanism, the regulati-ons *only cover consumers with foreign currency obligations* against the rupiah (p. 9-10).	Guidelines and provisions are general for those who need foreign currency against rupiah or vice versa (*Al-Sharf*-Fatwa, 2002, PBI No. 18, 2016, pp. 5-6; SE BI No. 18, 2016; PBI No. 6, 2024, p. 44)	Transaction arrangements using the ATB/ATM scheme are general, can cover consumers who need Forex or vice versa. Meanwhile, the ATFSS does not provide guidance for those who need IDR against foreign currency. Therefore, the applicability of the ATFSS is limited.
Contract of Hedging.	In the ATB/ATM mechanism, there are no detailed regulations regarding the contracts used (apparently referring to the *al-Sharf*-Fatwa). However, the ATFSS mechanism regulates the use of *Murabahah* contract (pp. 9-11) (referring to the Commodity Trading-Fatwa).	The ***murabahah contract*** *is used in the context of* ***Islamic financing***, which is based on buying-selling, *not purely trading*, and the *seller must confirm the asset's purchase price* and the agreed-upon margin. Meanwhile, every Forex transaction is a pure buying and selling process, separate from the financing transaction (Fatwa No: 04/2000-*Murabahah*; Indonesia Law No. 21, 2008; OJK, 2023; PBI No. 23/2021;	1) The ATB/ATM creates flexibility for users to hedge by referring to the *al-Sharf*-Fatwa that are in line with various other references and market practices. Meanwhile, determining the use of *Murabahah* contracts in ATFSS mechanism creates unalignment with other existing references. 2) The exchange rate of each currency fluctuates according to the 24-hour price movements in the Forex market. Therefore, it is impossible for a seller to be certain of the

Dimension	Analysis of		
	Hedging Fatwa (No. 96, 2015)	**Relevant Other References, Market Practices**	**Implications**
		Ascarya, 2006; Shofawati, A., 2014; Moosa, R. 2023; Mikou, S. et al., 2024).	purchase price of the currency they are selling. 3) Hedging activities through ATFSS become more complex, not in line with market practices and business needs.
Issues & Risk of Hedging transaction	There are two other critical aspects of Hedging activities in the ATFSS mechanism: 1) Using several commodity buying-selling transactions between different parties; 2) *Allows non-cash payments* in the trading.	1) Currency exchange must be done in cash (*Al-Sharf*-Fatwa, 2002; Hedging-Fatwa, 2015, p.3 [Hadith of the Prophet]; PBI No. 16, 2014, p. 46; No. 6, 2024, p. 46; and Market Practice). 2) The only common risks are PSR and SR (HKMA, 2017; Wybieralski, P., 2023; and Market Practice).	1) Hedging activities through real commo-dities trading *rise to liquidity/financing issues* that are not in line with benefits expected from a hedging activity. 2) Disharmony with various other references and market practices can cause confusion, creating Sharia non-compliance issues for users. 3) The *non-cash* buying- selling transactions *creates loan/financing risks*, an additional type of risk that should not exist in derivative transactions.
Efficiency of transaction.	ATB & ATM requires only 2-3 steps, involving one counterparty. While ATFSS requires a total of minimum 8 activities, with involving 4 counter-parties (p.8-11).	Forex transactions require low cost and a fast/short process, because prices can change in a very short time (C.T. Bauer College of Business, 2024; Majka, M., 2024; and Market Practice)	The efficiency of ATFSS mechanism is very low, not in line with achieving the *maqashid sharia*, especially preventing waste (*mafsadah*) in financial transactions (Forex).

As summarized in Table 3, the DSN–MUI Hedging Fatwa establishes clear normative boundaries but demonstrates limited integration and alignment with technical accounting requirements, implementation and supervisory frameworks, and prevailing market practices. Inconsistencies are evident not only among different provisions within the Hedging Fatwa itself, but also between the Hedging Fatwa, other related fatwas, relevant guidelines and regulations, and actual market practices. These misalignments generate operational inconsistencies, particularly with respect to fair value recognition, hedge effectiveness assessment, and reporting obligations required under PSAK and financial regulatory frameworks. As a result, these gaps may create confusion among users and contribute to ongoing debates regarding potential Sharia non-compliance and the overall benefits of hedging activities.

Based on the assessment and discussion presented above, the second objective of this study—namely, to examine the applicability of the Hedging Fatwa through analysis of its alignment with related fatwas, financial regulations, guidelines, and foreign exchange market transaction practices—has been achieved.

Discussion

The findings reveal important distinctions between hedging mechanisms conducted directly through the foreign exchange market and those structured through commodity-based arrangements. These distinctions are not merely technical in nature but also reflect broader

tensions between normative Sharia formulations, accounting treatment, and practical financial market operations.

The ATB and ATM mechanisms demonstrate relatively strong operational reliability because the final settlement process involves actual currency exchange (*qabd*) at maturity. From an accounting perspective, PSAK 411 provides a coherent framework for recognizing these transactions. Since the *wa'd* stage remains a non-binding commitment, accounting recognition is postponed until settlement occurs. This structure helps maintain consistency between Sharia legal principles and accounting substance.

Another important aspect concerns liquidity flexibility. In practice, hedging participants may require exchange-rate protection before obtaining full liquidity for future obligations. The ATB and ATM mechanisms accommodate this practical need without immediately creating financing obligations. This feature is particularly relevant in foreign exchange markets where hedging activities are intended primarily for risk mitigation rather than funding generation.

The ATM mechanism also reflects characteristics similar to conventional swap arrangements while maintaining Sharia-based operational modifications. The existence of an initial spot transaction enables immediate liquidity support while preserving the requirement that final settlement must occur through actual currency exchange. Operationally, this arrangement remains relatively simple because it involves limited counterparties and fewer transaction stages.

From a risk perspective, the ATB and ATM mechanisms primarily expose parties to pre-settlement risk (PSR) and settlement risk (SR), which are common in foreign exchange transactions. However, these risks remain relatively manageable because counterparties are generally regulated financial institutions supervised by Bank Indonesia and the Financial Services Authority (OJK). The limited number of counterparties also reduces operational complexity and monitoring burdens. In contrast, the ATFSS mechanisms raise more complex operational and conceptual issues. Although ATFSS-Mechanism-1 technically succeeds in generating final currency exchange, the mechanism simultaneously introduces financing structures into activities originally intended for exchange-rate hedging. This creates tension between the purpose of hedging and the operational consequences of the transaction structure itself.

The financing issue becomes particularly important because the customer initially enters the hedging arrangement precisely due to liquidity constraints or future payment obligations. However, the ATFSS structure requires the customer to participate in *murabahah* commodity purchases at the beginning of the transaction process. As a result, the mechanism may unintentionally create additional liquidity pressure rather than merely mitigating exchange-rate risk. Deferred payment arrangements within *murabahah* transactions further increase the level of financing risk. Unlike conventional foreign exchange hedging, where risks mainly arise from exchange-rate volatility and settlement timing, ATFSS structures potentially generate credit risk, financing default risk, and operational risk. These additional risks originate not from currency fluctuations themselves, but from the financing relationships embedded within the commodity transaction chain.

The operational complexity of ATFSS mechanisms also appears inconsistent with the practical nature of foreign exchange markets. Foreign exchange transactions operate within highly dynamic environments where exchange rates fluctuate continuously throughout global trading hours. Market participants generally require hedging mechanisms that are fast, efficient, low-cost, and operationally simple. The involvement of multiple counterparties and numerous transaction stages within ATFSS mechanisms may therefore reduce practical efficiency and increase transaction costs.

The findings concerning ATFSS-Mechanism-2 are particularly significant. The accounting analysis demonstrates that the mechanism effectively ends with netting arrangements rather than actual currency exchange. This outcome raises substantive questions regarding compliance with the stated objective of the Hedging Fatwa, namely the realization of full currency delivery (*qabd*) at settlement. The absence of detailed discussion regarding *tawarruq* limitations within the Hedging Fatwa also creates potential interpretive challenges. Commodity-based structures involving repetitive sale and repurchase transactions may approach organized *tawarruq* arrangements if not carefully regulated. Since organized *tawarruq* remains controversial among contemporary scholars, the absence of detailed safeguards may create uncertainty for practitioners and regulators.

Another important issue concerns harmonization between the Hedging Fatwa and related regulatory frameworks. PSAK Syariah, Bank Indonesia regulations, DSN-MUI fatwas, and market practices do not always operate with identical conceptual assumptions. For example, accounting standards focus on recognition, measurement, and reporting substance, while regulatory provisions emphasize settlement integrity and financial system stability. Meanwhile, market participants prioritize operational efficiency and liquidity management. The interaction among these dimensions may produce implementation gaps when the fatwa does not sufficiently integrate operational and accounting considerations.

These findings indicate that the reliability of Islamic hedging mechanisms cannot be assessed solely from normative legal permissibility. Operational effectiveness, accounting coherence, market compatibility, transaction efficiency, and risk structure also influence whether a hedging mechanism fulfills broader objectives of *maqāṣid al-sharī'ah* in financial transactions.

CONCLUSION

This study examines the operational reliability and practical applicability of DSN-MUI Fatwa No. 96/DSN-MUI/IV/2015 concerning Sharia Hedging Transactions (al-Tahawwuth al-Islāmī) through the perspective of Sharia accounting standards, related regulations, and foreign exchange market practices. The findings indicate that the hedging mechanisms conducted directly through the foreign exchange market, namely *Aqd al-Tahawwuth al-Basith* (ATB) and *Aqd al-Tahawwuth al-Murakkab* (ATM), demonstrate relatively strong operational reliability. These mechanisms are capable of producing actual currency exchange (*qabd*), maintaining relatively low transaction costs and manageable risks, and accommodating temporary liquidity constraints faced by market participants. Their operational structure also aligns more closely with the practical characteristics of the foreign exchange market, which emphasizes speed, efficiency, and controlled exposure to risk. In contrast, the *Aqd al-Tahawwuth fi Suq al-Sil'ah*

(ATFSS) mechanisms reveal several operational limitations. Although ATFSS-1 remains capable of producing reciprocal currency delivery, the incorporation of commodity-based financing structures substantially reduces transactional efficiency and weakens the economic benefits expected from hedging activities. Meanwhile, ATFSS-2 does not fully achieve the principal objective of the Hedging Fatwa because the final settlement effectively results in a netting position rather than an actual exchange of currencies. The analysis also identifies inconsistencies between certain provisions of the Hedging Fatwa, related accounting standards, financial regulations, and prevailing market practices, particularly regarding settlement structures, financing elements, and operational implementation.

The study further demonstrates that Sharia accounting standards can function not merely as reporting instruments, but also as operational analytical tools for evaluating whether Islamic financial transactions materially fulfill the objectives of Sharia (*maqāṣid al-sharīʿah*). This perspective contributes to the broader discourse on Islamic financial governance, especially within dual banking systems where legal, accounting, regulatory, and market dimensions interact simultaneously. From a practical perspective, the findings may assist business practitioners and Islamic financial institutions in improving their understanding of Sharia hedging structures and related accounting treatments. The study also highlights the importance of stronger coordination among Sharia authorities, accounting standard setters, financial regulators, and market participants in developing more integrated and operationally coherent hedging frameworks. In particular, the findings suggest the need to revisit and further develop the Hedging Fatwa after nearly a decade of implementation. Several alternative structures proposed in international Islamic finance practices, such as the *Single Binding Wa'ad* and *Two Unilateral & Independent Wa'ad*-based Islamic FX Forward structures introduced by the International Islamic Financial Market, may offer more practical and flexible solutions because they avoid unnecessary financing arrangements and remain closer to actual foreign exchange market practices. Such approaches may provide a more proportional balance between Sharia compliance, operational efficiency, and risk management needs in volatile currency markets.

This study remains subject to several limitations. The analysis focuses primarily on the content, operational structure, implementation issues, and potential implications of the Hedging Fatwa rather than conducting a deeper examination of broader *fiqh* debates, legal philosophies, or the motivations underlying the fatwa formulation process. The study also concentrates mainly on accounting treatment, regulatory alignment, and market implementation aspects within the Indonesian context. Further research may expand the discussion through comparative studies involving other jurisdictions, empirical investigations into institutional hedging practices, or deeper exploration of contemporary Islamic legal reasoning concerning derivative transactions and currency risk management. Future studies may also examine the effectiveness of alternative Islamic hedging structures in practice, particularly those designed to reduce transactional complexity while maintaining compliance with Sharia principles and modern financial governance standards.

REFERENCES

AAOIFI. (2017). *Shari'ah standards*. Accounting and Auditing Organization for Islamic Financial Institutions.

Alfidyah, M. (2025). Pengaruh penerapan standar akuntansi keuangan terhadap kualitas laporan keuangan pada perusahaan publik di Indonesia. *Jurnal Akuntansi dan Sistem Informasi, 1*(1), 1–7. http://pustakajurnal.web.id/index.php/jasi

Al-Natoor, B., & Shawqi, S. (2020, June 17). *Islamic derivatives increasingly necessary, but constraints remain*. Fitch Ratings. https://www.fitchratings.com/research/islamic-finance/islamic-derivatives-increasingly-necessary-constraints-remain-17-06-2020

Alvi, I. A. (2019). *ISDA–IIFM Islamic hedging standards* (Seminar presentation). International Islamic Financial Market & Bank Indonesia. https://isef.co.id/wp-content/uploads/2019/11/ISEF_2019_ISDA-IIFM-Hedging-Standards-Ijlal-A-Alvi-IIFM.pdf

Ascarya. (2006). *Akad dan produk bank syariah: Konsep dan praktik di beberapa negara*. Bank Indonesia.

Awaludin, & Febrian, A. (2020). Kedudukan fatwa DSN-MUI dalam transaksi keuangan pada lembaga keuangan syariah di Indonesia. *Al-Hurriyah: Jurnal Hukum Islam, 5*(2), 196–209. https://doi.org/10.30983/alhurriyah.v5i2.3366

Bacha, O. I. (1999). Derivative instruments and Islamic finance: Some thoughts for a reconsideration. *International Journal of Islamic Financial Services, 1*(1). https://www.researchgate.net/publication/23786773

Bakhtawar, B., Latif, F., Murschetz, P. C., & Kamal, A. (2023). Content niching of AM/FM vs. digital-only audio media in Pakistan. *International Journal on Media Management, 24*(4), 251–274. https://doi.org/10.1080/14241277.2023.2183501

BI. (2008). *Peraturan Bank Indonesia Nomor 10/38/PBI/2008 tentang transaksi derivatif*. Bank Indonesia.

BI. (2014). *Peraturan Bank Indonesia Nomor 16/16/PBI/2014 tentang transaksi valuta asing terhadap rupiah antara bank dan pihak domestik*. Bank Indonesia.

BI. (2016). *Peraturan Bank Indonesia Nomor 18/2/PBI/2016 tentang transaksi lindung nilai berdasarkan prinsip syariah*. Bank Indonesia.

BI. (2024a). *Peraturan Anggota Dewan Gubernur Nomor 11 Tahun 2024*. Bank Indonesia.

BI. (2024b). *Peraturan Bank Indonesia Nomor 6/2024 tentang pasar uang dan pasar valuta asing*. Bank Indonesia.

BIS-ACC. (2022). *Foreign exchange markets in Asia-Pacific*. Bank for International Settlements, Asian Consultative Council

BSI (2025). *Transfer valas*. Bank Syariah Indonesia. https://www.bankbsi.co.id

C. T. Bauer College of Business. (2024). *Foreign exchange markets* (Teaching materials). University of Houston.

Cantú, C., & Chui, M. (2020). Financial market development and financial stability. *BIS Papers, 113*, 19–38. https://www.bis.org/publ/bppdf/bispap113_b_rh.pdf

DSN-MUI. (2002). *Fatwa No. 28/DSN-MUI/III/2002 tentang akad jual beli mata uang (al-sharf)*. Dewan Syariah Nasional–Majelis Ulama Indonesia

DSN-MUI. (2011). *Fatwa No. 82/DSN-MUI/VIII/2011 tentang perdagangan komoditi berdasarkan prinsip syariah*. Dewan Syariah Nasional–Majelis Ulama Indonesia

DSN-MUI. (2015). *Fatwa No. 96/DSN-MUI/IV/2015 tentang transaksi lindung nilai syariah*. Dewan Syariah Nasional–Majelis Ulama Indonesia

DSN-MUI. (2017). *Fatwa No. 110/DSN-MUI/IX/2017 tentang akad jual beli*. Dewan Syariah Nasional–Majelis Ulama Indonesia

FSB. (2021). *Peer review of Indonesia*. Financial Stability Board. https://www.fsb.org/uploads/P260221.pdf

Hasyim, S. (2019). Fatwas and democracy: Majelis Ulama Indonesia and rising conservatism. *TRaNS*, Advance online publication. https://doi.org/10.1017/trn.2019.13

Hidayati, T., Hidayatullah, M. S., Komarudin, P., & Atika, A. (2023). Digitalization of Islamic finance: Epistemological study of DSN-MUI fatwa. *Al-Ahkam, 33*(2), 255–278. https://doi.org/10.21580/ahkam.2023.33.2.17324

HKMA. (2017). *Supervisory policy manual: Counterparty credit risk management (CR-G-13)*. Hong Kong Monetary Authority.

IAI. (2020). *Akuntansi keuangan syariah*. Ikatan Akuntan Indonesia

IAI. (2023). *SAK syariah for academics: Islamic hedging*. Ikatan Akuntan Indonesia.

IAI. (2024a). *PSAK 402: Akuntansi murabahah*. Ikatan Akuntan Indonesia.

IAI. (2024b). *PSAK 411: Akuntansi wa'd*. Ikatan Akuntan Indonesia.

IAI. (2025). *PSAK 401: Penyajian laporan keuangan syariah*. Ikatan Akuntan Indonesia.

IFSA. (2013). *Islamic Financial Services Act 2013 (Act 759)*. Government of Malaysia

IFSB. (2024). *Islamic financial services industry stability report*. Islamic Financial Services Board.

Intrac. (2017). *Qualitative comparative analysis (QCA)*. Intrac for Civil Society.

Juma, M. A. A. M. S. (2018). The operational framework of Islamic derivatives. *International Journal of Economics, Business and Management Research, 2*(2), 213–223.

Komarudin, P., & Hidayatullah, M. S. (2021). Analisis qiyas transaksi tawarruq. *Nukhbatul 'Ulum, 7*(1), 59–79. https://doi.org/10.36701/nukhbah.v7i1.317

Lubis, N. R., Balqis, T., & Nurlaila. (2023). Peran PSAK syariah dalam meningkatkan kualitas penyajian laporan keuangan. *Masharif al-Syariah, 8*(2), 1145–1154.

Majka, M. (2024). *Understanding hedging: Strategies, benefits, and risks*. ResearchGate. https://www.researchgate.net/publication/383786278

Mihalescu, M. (2019). *Content analysis: A digital method*. ResearchGate. https://www.researchgate.net/publication/333756046_Content_analysis

Mikou, S., et al. (2024). Liquidity risk management in Islamic banks. *European Journal of Management and Business Studies, 29*, 56–73. https://doi.org/10.32038/mbrq.2024.29.04

Mogashoa, T. (2014). Understanding critical discourse analysis. *International Journal of Humanities Social Sciences and Education, 1*(7), 104–113. https://www.arcjournals.org/article/9921

Moosa, R. (2023). An overview of Islamic accounting: The murabaha contract. *Journal of Risk and Financial Management, 16*(7), 335. https://doi.org/10.3390/jrfm16070335

Muhtadi, Rodoni, A., & Amelia, E. (2023). Implementasi penggunaan lindung nilai (hedging) syariah untuk menghadapi ketidakpastian di Indonesia. *Jurnal Niara, 16*(1), 46–55. https://doi.org/10.31849/niara.v16i1.13932

Nafis, M. C. (2023). *Kedudukan MUI dalam perundang-undangan*. Paper presented at *Workshop Pra-Ijtima' Sanawi (Annual Meeting) DPS VIII*, 7 September 2023.

OCBC Bank. (2023). *Pasar valuta asing: Fungsi, pelaku, jenis, dan contohnya*. https://www.ocbc.id/id/article/2022/12/28/pasar-valuta-asing-adalah

OJK. (2023). *Pedoman produk pembiayaan murabahah perbankan syariah*. https://ojk.go.id/id/kanal/syariah/berita-dan-kegiatan/publikasi/Pages/Pedoman-Produk-Pembiayaan-Murabahah.aspx

Oranga, J., & Matere, A. (2023). Qualitative research: Essence, types, and advantages. *Open Access Library Journal, 10*, e11001. https://doi.org/10.4236/oalib.1111001

Purba, I. E., Simaremare, R., Harefa, H. J., Siburian, S., & Aruan, H. M. G. P. (2025). Standar akuntansi keuangan di Indonesia. *Economics and Digital Business Review, 6*(2), 1636–1643. https://doi.org/10.37531/ecotal.v6i2.2725

Salahuddin, M. (2017). *Konsep maqashid syariah dalam fatwa ekonomi DSN-MUI*. LP2M UIN Mataram.

Sari, N., Ibrahim, A., Muzammil, M., & Muksal, M. (2024). Managing financing risk of Islamic banking products in Indonesia: A value at risk approach. *Jurnal Ilmiah Islam Futura, 24*(1), 213–240. https://doi.org/10.22373/jiif.v24i1.17693

Shabri, H. (2022). Eksplorasi transaksi derivatif dalam keuangan Islam. *Al-Bank: Journal of Islamic Banking and Finance, 2*(2), 129–138. http://ojs.iainbatusangkar.ac.id/ojs/index.php/Albank

Shenton, K. A. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information, 22*, 63–75. https://doi.org/10.3233/EFI-2004-22201

Shofawati, A. (2014). Murabahah financing in Islamic banking: Case study in Indonesia. In *Proceedings of the 5th Asia-Pacific Business Research Conference* (pp. xx–xx). Kuala Lumpur, Malaysia. https://www.isfin.net/sites/isfin.com/files/murabahah_financing_in_islamic_banking-case_study in_indonesia.pdf

Siregar, R. Y., & Ronaldo, R. R. (2023). *Indonesia's exchange rate: Fundamental value & path* (Economic Bulletin, Issue 34). IFG Progress Financial Group. https://ifgprogress.id/wp-content/uploads/2023/09/Economic-Bulletin-Issue-34-Indonesias-Equilibrium-Exchange-Rate-Discovering-Rupiahs-Fundamental-Value.pdf

Wybieralski, P. (2023). Pre-settlement risk limits in OTC derivatives markets. *Annales Universitatis Mariae Curie-Skłodowska, Sectio H, 57*(1), 219–235.

XE.com. (2025). *US dollar to Indonesian rupiah exchange rate chart*. https://www.xe.com/currencycharts/?from=USD&to=IDR&view=10Y

Yin, R. K. (2016). *Qualitative research from start to finish* (2nd ed.). Guilford Press.

Zahan, M., & Kenett, R. S. (2012). Hedging instruments in conventional and Islamic finance. *Electronic Journal of Applied Statistical Analysis, 3*(1), 59–74.