

ISLAMIC PROFIT-RATE HEDGING AND THE PROBLEM OF ECONOMIC REPLICATION FROM CONVENTIONAL SWAPS TO MUBĀDALAT AL-ARBĀḤ

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ABSTRACT

Islamic profit-rate hedges can reproduce conventional swap cash flows through promises and commodity sales, raising the question of when replication becomes formal circumvention. This article develops a doctrinal and functional comparison of scholarship, regulatory standards and public transaction documentation. It organises existing concerns into an Economic Replication Test with six conditional thresholds and two diagnostic inquiries. Each assessment separates the governing rule, required facts, available evidence and consequences of a defect. Two hypothetical implementations produce identical hedge payoffs but different contractual findings; further variations distinguish missing evidence, documentary defects and overhedging. Sensitivity analysis examines the effects of transaction costs, benchmark mismatch and funding delays. Lifecycle analysis separates completed debts, replacement valuation, close-out sales and breach remedies. The protocol shows how doctrinal requirements can be checked against transaction evidence and how contractual rights arise during performance and termination. It helps Shari'ah boards and treasury functions identify unresolved issues without treating payoff similarity as a ruling. The conclusions depend on the legal and Shari'ah positions adopted and the facts assumed in each case. The examples show how the protocol distinguishes the hypothetical arrangements; they do not provide empirical validation or approval of a live transaction.

Keywords: Islamic profit-rate hedging; economic replication; wa'd; ḥiyal; tawarruq

INTRODUCTION

Benchmark exposure remains a commercial problem in Islamic finance because permissible contracts do not eliminate changes in market funding conditions. A customer may face variable future ijārah rentals or uncertainty about the price of future financing. A bank may hold fixed receivables while funding costs and competitive return expectations change. These are distinct exposures: a murābaḥah price is agreed at formation, and rescheduling cannot increase its remaining debt (Bank Negara Malaysia [BNM], 2013, paras. 14.1–14.2, 14.13). The underlying contract determines which payments may vary.

Fixed-price financing, maturity matching and natural offsets between receipts and payments can reduce exposure, but may leave residual risk or transfer it to another party. A separate hedge seeks greater predictability while preserving the underlying financing. Islamic financial engineering has long explored permissible contractual building blocks for this purpose (Iqbal, 1999). Commercial need nevertheless cannot establish the permissibility of a particular mechanism (Mohd Razif et al., 2012).

Reported Islamic profit-rate swap trading volumes indicate the scale of market use. BNM's 2025 League Table reports Islamic profit-rate swap (IPRS) trading volume of RM4.2 billion against RM3.9 billion in 2024 (BNM, n.d., p. 22), not outstanding notional or risk eliminated. Djelassi and Boukhatem (2026, p. 867) analyse quarterly aggregate Saudi banking data for 2008Q1–2020Q2. Positive Saudi Arabian Interbank Offered Rate (SAIBOR) shocks reduce Islamic deposits; financing responds less

initially, with later transmission through deposits and reserves (pp. 870–874). They do not evaluate individual hedges. These findings suggest a distinction between changes in payment costs and changes in available funding: a rate hedge does not itself replace withdrawn deposits.

A conventional fixed-for-floating swap provides the basis for comparison. Periodic payments apply fixed and floating rates to a notional amount, ordinarily without exchanging that principal (Hull, 2022, ch. 7). Paying fixed and receiving floating can stabilise a floating-cost customer's combined payments. An Islamic hedging structure must show how permissible transactions create the corresponding rights to payment.

The research question is when replication constitutes legitimate hedging or formal circumvention. Economic equivalence means similar outcomes; replication means deliberately reproducing a payoff or risk profile. Formal circumvention uses contractual forms to evade a prohibition by disabling their consequences or combining operative acts to defeat the selected rule. Payoff similarity alone cannot decide the question.

Sakti et al. (2016) document juristic disagreement, Ahmad et al. (2022) propose operational safeguards, and ElSheimy (2026) proposes a hedge model. Relative to these contributions, this paper combines decision rules, evidence classifications and entitlement mapping across execution and termination. The paper builds on existing form-and-substance frameworks and distinguishes established doctrinal rules from the proposed method of applying them. Section 2 reviews the literature; Section 3 explains the method; Section 4 develops and applies the protocol; Section 5 addresses implications, limitations and conclusions.

LITERATURE REVIEW

Legal Devices And Contractual Purposes

The classical antecedent is *hiyal*, or legal devices, including both legitimate exits from hardship and attempts to defeat a rule through outward compliance. Sadique (2008, pp. 160–178) shows why a division between permissive and restrictive schools is misleading. The disputed category concerns a permissible means directed towards an unlawful end; jurists differ over intention, outward expression and connected transactions.

Ḥanafī positions include restrictions on devices that destroy rights and disagreements between Abū Yūsuf and al-Shaybānī about action before an obligation arises (Sadique, 2008, pp. 173–175). The Shāfi'ī discussion distinguishes outward validity from the sin of pursuing a prohibited purpose (pp. 175–177). Mālikī and Ḥanbalī approaches give prominence to *sadd al-dharā'i'*, restricting otherwise permissible means that lead to prohibited ends, while also recognizing legitimate devices (pp. 161, 169–173). Ibn al-Qayyim distinguishes an apparently valid sale from knowingly approving a prearranged monetary exchange disguised by commodities (p. 176), while recognizing acceptable devices (pp. 163, 172–173). Sadique reports a potentially stricter position in Ibn Taymiyyah and a possible divergence between them (p. 163). The account here relies on Sadique's comparative study rather than an independent review of the original Arabic editions.

Article 3 of the Majalla states *al-'ibrah fi al-'uqūd li-l-maqāṣid wa-l-ma'ānī lā li-l-alfāẓ wa-l-mabānī*: assessment attends to contractual purposes and meanings rather than labels (Majalla, n.d., art. 3). Sale, ownership, delivery and defect remedies must be assessed within the whole arrangement. A hedging intention cannot cure an absent asset; predictable cash flows do not establish an unlawful end. Drawing on a study by the International Shari'ah Research Academy for Islamic Finance (ISRA), Syed and Omar (2017, p. 385) evaluate devices through objectives, motivation, permissible means, benefit and concessionary rules. A temporary concession must return to the original ruling when relevant circumstances change (pp. 387–388). Smolo and Musa (2020, pp. 2175–2179) examine absent seller

liabilities and similar default outcomes behind different financing labels. These antecedents inform the present inquiry into a hedge's records and entitlements.

Replication And Existing Assessment Frameworks

El-Gamal's (2006, pp. 11–12, 20–21) critique of Shari'ah arbitrage questions the costs and welfare effects of reproducing conventional functions through juristic forms. Contractual compliance under a particular authority does not answer this institutional criticism about distribution, intermediation or debt dependence. The protocol assesses contractual support; it does not settle the broader welfare question. Jobst and Solé (2012, p. 13) connect derivative design to ownership, contractual certainty, permissible assets and commercial risk management, and already address Tahawwut Master Agreement (TMA) termination (pp. 26–28). Hamour et al. (2019, p. 129) expressly recognise that identical returns can have different Shari'ah character. Their substance-gap account, drawing on Abozaid, examines disabled contractual rules, problematic combinations and misapplication (p. 129), extending from development through execution to effects (p. 134). Distinguishing legal character from payoff similarity and examining the transaction lifecycle are therefore established approaches.

M. F. Abdullah and Ab Rahman (2015, pp. 312–313, 320–322) study three Malaysian banks and defend wa'dān through differentiated conditions and effects. Their distinction between promises, ownership transfer, price liability and breach compensation provides a basis for examining a hedge's contractual rights and obligations. Their two-leg rental swap (pp. 316–318) does not establish every single-sale implementation. Sakti et al. (2016, pp. 175, 183–185), interviewing five scholars from Malaysian and Singaporean institutions, report disagreement over paired promises, promise remuneration and derivative returns. Both studies motivate examination of performance and remedies.

Ahmad et al. (2022, pp. 400–401) combine literature analysis with six purposively selected expert interviews on Malaysian IPRS. Respondents defend permissible intermediary remuneration and regulated commodity safeguards (pp. 402, 404), but differ on dual agency and discuss resale to the original supplier (pp. 405–406). The authors propose independent agency, support for customer trading, and—where bank agency remains necessary—appointment of the resale agent after commodity receipt (pp. 407, 409). The assessment developed here builds on these proposals; they neither verify individual transactions nor impose universal prohibitions on dual agency.

Table 1: Earlier approaches and the present contribution

Earlier work	Established contribution	Use in this paper
El-Gamal 2006	Shari'ah arbitrage and the costs of reproducing conventional functions	Separate operative contractual compliance from wider institutional criticism
Jobst and Solé 2012	Operative derivative principles and discussion of IPRS and termination	Connect existing principles to explicit evidence statuses and worked cases
M. F. Abdullah and Ab Rahman 2015	Promise versus ownership, price debt and breach remedy	Record supporting facts and uncertainty across performance and termination
Syed and Omar 2017	Five criteria for assessing ḥiyāl, drawing on ISRA parameters	Translate broad evaluative concerns into IPRS documentation questions
Hamour et al. 2019	Equal cash flows with different legal character; lifecycle substance gaps	Separate governing rules, factual evidence and diagnostic findings
Ahmad et al. 2022	IPRS expert interviews and proposed safeguards for agency and resale	Link safeguards to records, decision consequences and lifecycle claims

Earlier work	Established contribution	Use in this paper
ElSheimy 2026	A proposed murābahah–wakālah hedge model	Apply a common assessment discipline to existing and proposed designs

Table 1. Source-specific contributions are discussed in Sections 2.1–2.3. The final column shows how this paper applies the earlier contributions.

Recent Evidence And Competing Interpretations

Studies of related products help clarify the difference between normative objections and evidence of transaction execution. Asni (2022, pp. 100–101) interviews six officers from six Malaysian banks about tawarruq personal financing. His Table 5 classifies potential concerns and allegations of non-compliance (p. 107), including criticism of practices he reports BNM permits (pp. 110–112). These are author-assessed categories, not measured frequencies of confirmed breaches. Syahmi et al. (2022, pp. 292–296), interviewing nine experts about deposits, report reliance on regulatory rules and committee approval alongside delivery rights and sequencing controls. Neither study audits IPRS execution.

Ishak et al. (2025, Methodology and Table 1) interview eight Shari‘ah committee members who held university academic posts. Their findings recognize liquidity benefits and concentration, reputation and innovation concerns. Their Discussion favours diversification of products and commodity platforms while resisting prohibition based on speculative harm. This paper draws on that distinction to assess individual transactions separately from the policy question of overreliance on one product.

Alternatives require equivalent scrutiny. Kok et al. (2014, pp. 247–255) model a wa‘d–murābahah option with state-dependent benefits and leave its Shari‘ah compliance unverified (p. 242). Its promise fee raises the issue discussed by Sakti et al. (2016, p. 183). ElSheimy (2026) proposes a murābahah–wakālah hedge; evaluating its investment risk, return undertakings and exit entitlement remains necessary. An innovative label or risk-sharing objective cannot substitute for analyzing the contractual means.

Recent Saudi disclosures add implementation evidence beyond ElSheimy’s proposed model. Al Rajhi Bank (2025, notes 3(d)(iii), 7(g)) reports profit-rate swaps for fixed-rate and floating-rate exposures and identifies prepayment, discounting and counterparty credit as potential sources of ineffectiveness. The Saudi Investment Bank’s (2025) resolution 144/133 records committee approval of a particular Secured Overnight Financing Rate (SOFR)-linked package including the TMA of the International Swaps and Derivatives Association (ISDA) and International Islamic Financial Market (IIFM) and a hedging guarantee. These disclosures establish reported use and a transaction-specific approval, not independently verified execution or Gulf Cooperation Council (GCC)-wide consensus. The assessment must therefore consider economic matching, approval under the relevant authority and evidence of actual performance separately.

Normative Standards And Comparative Substance

Bawana et al. (2025, p. 138) call for harmonized Shari‘ah standards to support Islamic banking integration in ASEAN. The differing treatment of tawarruq shows why harmonization is difficult. IIFA Resolution 179 permits individually conducted tawarruq but prohibits structured and inverse tawarruq on its analysis of coordinated cash-for-debt exchange (International Islamic Fiqh Academy [IIFA], 2009). BNM instead regulates tawarruq implementation. It requires an existing, identifiable, deliverable asset owned by the seller, possession before resale, separately executed sales and the purchaser’s delivery rights. Agency, including dual agency, is permitted within conditions (BNM, 2018, paras. 13.1, 13.8–13.11, 15.2–15.5, 17.1–17.3). Neither rapid execution nor agency alone proves a defect under that framework.

AAOIFI Standard 18 recognizes constructive possession through qualifying documents that identify goods and enable dealing in them (Accounting and Auditing Organization for Islamic Financial

Institutions [AAOIFI], 2017, SS18, §§3/3, 3/5). Standard 30 regulates ownership, delivery and resale arrangements within its definition of *tawarruq*, including restrictions on resale agency (SS30, §§2, 4/1–4/10). Its applicability requires identifying the deferred-purchase and liquidity-resale sequence; every commodity settlement should not automatically be labelled *tawarruq*. Standard 49 distinguishes promise from contract, restricts bilateral enforceability and addresses circumvention through paired promises (SS49, §§3/4–3/8, 4/2–4/4, 6). Mutual exclusivity alone therefore cannot establish AAOIFI compliance. The analysis refers to the 2017 edition; citing these standards does not imply AAOIFI approval of the illustration.

A limited comparison with US tax law clarifies the counterfactual. Where relevant, section 7701(o) examines meaningful economic change apart from tax effects and a substantial non-tax purpose; a transaction may comprise connected steps (26 U.S.C. §7701(o); Internal Revenue Service, 2014). The analogy concerns examining the consequences of connected acts. The tax test is not a Shari‘ah rule, and an Islamic hedge need not produce cash flows different from every conventional comparator.

METHODOLOGY

The study uses doctrinal analysis and functional comparison. Sources were purposively included for direct relevance to promises, sale and possession, *hiyal*, profit-rate hedging or lifecycle claims. Academic studies present competing arguments and reported findings; institutional texts identify rules; public transaction materials describe mechanics. Full-text articles were examined for their methods, analysis and recommendations, and cited passages were checked against the published pages or named sections. Selection favours direct contract evidence over general regional banking studies; the Saudi materials broaden coverage without constituting a GCC survey. This is an interpretive synthesis, not a systematic review or transaction audit.

The supplementary web search covered Emerald Insight, IMF eLibrary, INCEIF’s journal archive and the official websites of BNM, IIFA, AAOIFI and ISDA/IIFM. The terms used were “Islamic profit rate swap” with “*tawarruq*”; “*wa’dan*” with “*muwa’adah*”; “*hiyal*” with “form” and “substance”; and “Islamic derivatives” with “termination” and “close-out”. Publications available up to 13 October 2026 were considered, regardless of year. The cited literature spans 1990–2026. Earlier juristic views are discussed through the cited scholarship and translations.

Analysis maps exposure, promises, contracts, payments and termination. Each inquiry records the governing authority, required facts, supporting evidence and consequence of failure or uncertainty. For each claimed payment, the analysis identifies the act that creates the right to receive it. Public documentation cannot prove asset existence or actual execution.

Applicable law and regulation operate alongside the declared Shari‘ah methodology. IIFA’s resolutions provide an influential comparative position, without overriding BNM’s Malaysian requirements. Conflicting rulings remain separate: combining permissive elements of conflicting rulings would conceal disagreement. Academic criticism likewise differs from regulatory breach.

The baseline uses Clifford Chance’s (2012) single-sale description and the 2010 ISDA/IIFM memorandum, supplemented by hypothetical facts. The study does not examine the 2024 operative templates, the parties’ elected schedules or records of live transactions. The cases demonstrate conditional classifications, not independent expert validation. Numerical inputs are assumed, not observed.

FINDINGS AND DISCUSSION

Promises And Transaction Architecture

Wa'd, Muwā'adah And Wa'dān

Wa'd is a unilateral undertaking to perform an identified future act. It differs from a subsequent sale transferring ownership and creating a price debt. N. I. Abdullah (2010, pp. 85–88) distinguishes moral obligation from judicial enforceability and explains the relevance of conditions and reliance. Muwā'adah concerns reciprocal promises; wa'dān denotes two undertakings asserted to remain independent through their conditions, subjects or effects (M. F. Abdullah & Ab Rahman, 2015, pp. 311–312, 320–322). Unilateral does not necessarily mean revocable, and two documents do not establish independence.

IIFA Resolution 157 rejects mutual promises used to evade ribā but recognizes binding mutual promises in a specified context of general need. Subsequent offer and acceptance remain necessary; the promises themselves transfer neither ownership nor a sale-price debt. Its treatment of breach distinguishes actual damage from opportunity cost (IIFA, 2006). BNM expressly recognizes binding muwā'adah with the same subject matter and conditions, applying its wa'd requirements (BNM, 2017, paras. 15.1–15.3). It would therefore be inaccurate to describe bilateral promises as categorically prohibited in Malaysia.

Table 2: Promise terminology and the required inquiry

Form	Basic description	Bindingness and transaction question
Wa'd	One party promises an identified future act	Which conditions make it binding, who may invoke it, and what performance or loss remedy follows? The subsequent sale still requires its own formation.
Muwā'adah	Reciprocal promises relating to the same subject matter	BNM recognizes a binding form under its policy. Other authorities restrict enforceability. Identify the applicable position and whether the arrangement itself creates a contract.
Wa'dān	Two promises whose independence is asserted through distinct conditions, subjects or effects	Map both promises across all outcomes. Separate documents or mutually exclusive triggers do not alone resolve the combined legal effect or a circumvention objection.

Table 2. Definitions follow N. I. Abdullah (2010, pp. 85–88) and M. F. Abdullah and Ab Rahman (2015, pp. 311–313, 322); BNM's position follows its 2017 policy, paras. 15.1–15.3. The transaction questions are this paper's synthesis.

M. F. Abdullah and Ab Rahman (2015, p. 322) distinguish promises from ownership transfer and price liability, and breach compensation from contract price. Applying those distinctions, this protocol separates the undertaking, subsequent sale and non-performance remedy. A promise alone creates no accrued sale-price debt. Mapping triggers across rate outcomes remains necessary; mutual exclusivity does not by itself settle permissibility.

Single-Sale Mechanics

The historical single-sale description uses conditional purchase undertakings. The comparison of fixed and floating amounts determines which undertaking is exercisable; following exercise, the relevant sale price comprises commodity cost plus the positive differential. The notional is used to calculate profit and need not equal commodity cost. Payment set-off does not dispense with delivery obligations (Clifford Chance, 2012, pp. 2–8).

Figure 1 specifies a hypothetical implementation. Client A manages floating-cost exposure and Bank B is its counterparty. When the floating rate R exceeds the fixed rate K , B's purchase undertaking is activated. A acquires the commodity from Broker 1, then sells it to B after the required notice and separate offer and acceptance. B may retain it or independently sell to Broker 2. The example assumes these external trades; the template alone does not establish that they occur.

Figure 1: Hypothetical single-sale implementation

Hypothetical single-sale settlement

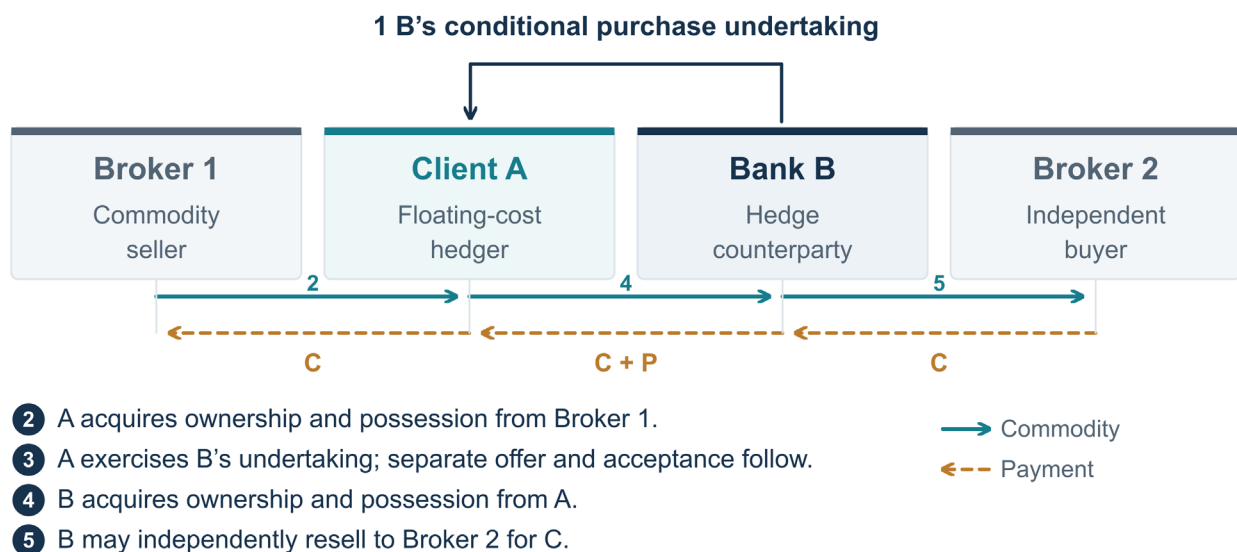
$R > K$

NOTIONAL N
USD1 billion

COMMODITY COST C
USD10 million

DIFFERENTIAL P
USD3.125 million

$$R = 6\% \cdot K = 4.75\% \cdot \alpha = 90/360 \cdot P = N(R - K)\alpha$$



Source: Author's hypothetical implementation informed by Clifford Chance (2012). Steps 2, 4 and 5 are the successive asset transfers; step 3 is exercise of the undertaking before the sale. Solid commodity-chain arrows denote asset transfers and dashed arrows payments; the separately labelled upper arrow denotes the conditional purchase undertaking. C is commodity cost, P the hedge differential and N the distinct notional. Client and bank roles reverse when R is below K ; at equality there is no positive differential. The diagram is not a reproduction of the 2024 terms.

The sale price must be agreed when concluded (BNM, 2013, para. 14.1; 2018, para. 14.1). This illustration therefore places the commodity sale after rate observation and calculation. Actual drafting must coordinate observation, notice, sale and payment dates, especially with compounded overnight benchmarks. A later reset cannot simply reprice an existing fixed sale-price debt.

Ownership Possession And Contractual Risk

Qabḍ need not require physical handling by every party. IIFA Resolution 53 recognizes constructive possession where the asset is placed at the possessor's disposal (IIFA, 1990); Kamali (1996, pp. 206–210) also records juristic differences concerning possession and commercial practice. Electronic records and short holding periods are not self-evident defects.

Records must establish asset identity, prior acquisition, effective control and disposal and delivery rights. An agent may carry out the required acquisition and sale steps, subject to the same ownership and delivery requirements. A sale need not impose partnership-style risk or retain avoidable benchmark volatility. Relevant risks concern ownership, delivery, defects, agency and credit; no arbitrary minimum holding period proves substance. Institutional permission and evidence of compliant execution remain distinct.

The Economic Replication Test

Decision Rules

Tests 1–5 and 8 are conditional thresholds for classifying an arrangement as genuine, contractually supported hedging under the declared framework. Any established failure of an applicable threshold prevents a favourable overall classification. Its legal consequence remains specific: an excessive hedge need not invalidate every completed sale, whereas a nonexistent asset defeats the asserted spot sale of that asset.

Each threshold is supported, failed or indeterminate. Support requires evidence of the relevant facts; hypothetical support extends only to stated assumptions. Failure requires an identified defect. Records unavailable to the assessor leave possession indeterminate. A proven failure to create or retain mandatory records can separately establish documentary non-compliance (BNM, 2018, paras. 15.3, 27.10, 28.1). Juristic disagreement is reported alongside this evidential status rather than treated as missing facts.

Tests 6 and 7 are diagnostics. Test 6 examines the rights, risks and remedies contributed by asset and contract steps. Test 7 compares the payoff with the conventional comparator. Neither constitutes an independent prohibition or compensates for a failed threshold. There is no aggregate score by which strong hedging purpose offsets a fictional commodity.

Table 3: Inquiries, decision roles and minimum evidence

Inquiry	Role	Evidence and decision focus
1 Underlying exposure	Threshold	Identify the existing or qualifying anticipated exposure, its contractual source and the hedging purpose. Without a qualifying exposure, the arrangement cannot be classified as a hedge.
2 Hedge nexus	Threshold	Reconcile notional, maturity, resets and amortization; document mismatch and continuing review when exposure changes.
3 Contractual independence	Threshold	Map promises, triggers, sales and agency. Assess each act and the combination's purpose and obligations under the selected rules.
4 Ownership and qabd	Threshold	Verify asset existence, identification, acquisition, control and disposal rights against transaction records, not contractual recitals.
5 Risk allocation	Threshold	Identify ownership, delivery, defect and agency liabilities. Apply only holding-period or volatility requirements supported by the governing rules.
6 Counterfactual substance	Diagnostic	Hold the formula constant and remove asset steps. Identify which rights, risks and remedies disappear or survive.
7 Economic replication	Diagnostic	Compare cash flows, costs, timing, basis and termination. Similarity neither establishes nor cures threshold failures.
8 Termination and lifecycle	Threshold	Separate completed debts, promised acts, valuation, compensation and collateral; verify each entitlement under the selected documents and rules.

Table 3 presents the author's proposed protocol. The exposure inquiry draws on BNM (2024), the contract and possession inquiries on the authorities discussed in Section 4.1, and the lifecycle inquiry on Section 4.5. The assignment of decision roles and the diagnostic inquiries are the author's proposals.

Exposure And Continuing Correspondence

Test 1 specifies the exposure and its contractual source. Existing liabilities and anticipated transactions require different evidence. Under BNM's 2024 anticipatory-hedging ruling, a hedge may address a qualifying anticipated exposure, subject to the ruling's conditions (BNM, 2024). The worked case uses existing exposure.

Test 2 examines notional, maturity, resets, amortization and subsequent changes. Prepayment can leave an originally proportionate hedge excessive. A continuing process must identify and address that mismatch. The excess portion fails Test 2; this does not automatically invalidate completed sales. For temporary concessions, this protocol requires continuing review, applying Syed and Omar's (2017, pp. 387–388) requirement to restore the original ruling when circumstances change.

Contractual Operation And The Counterfactual

Tests 3–5 examine both the acts creating entitlement and the permissibility of their combination and purpose under the selected rules. Contractual independence requires each act to have its prescribed conditions and consequences; it does not require unrelated purposes or separate master agreements. A sale entered to fulfil a promise may remain operative. The defect arises when the system asserts a sale-price or profit debt despite the sale not occurring. A distinct permissible breach-compensation claim requires its own basis, measure and evidence.

Test 6 removes the asset steps while holding the target formula constant. Which delivery claims, defect remedies, ownership risks and price entitlements disappear? Removing the asset steps can leave the payoff unchanged while eliminating the legal rights and liabilities that support it. Test 6 examines those rights and liabilities. Conversely, real sale consequences do not settle objections to prohibited combinations or organized tawarruq under another authority. Test 7 separately identifies whether replication remains exact after costs, mismatches and termination.

Application And Boundary Cases

Case A With Operative Contracts

Client A has an existing USD1 billion benchmark-linked ijārah exposure. Each rental is lawfully fixed before its period and future rentals reset under agreed terms. Underlying ijārah compliance is stipulated. The annual financing rate is $R + 1.25\%$, the fixed hedge rate K is 4.75% , and the quarter is $90/360$. Remaining tenor is five years with matched notionals and reset conventions; prepayment triggers review and resizing. Bank B has a documented corresponding floating-income exposure. The example assumes that R is observed before the rental period and that the commodity sale takes place at quarter end. Overnight-rate products may use different observation and settlement conventions.

At $R = 6\%$, the positive hedge differential is $P = N(R - K) \times 0.25 = \text{USD}3.125$ million. Of the separately identified undertakings, only B's promise is triggered at this rate. For this conditional illustration, their acceptability is stipulated under BNM's 2017 promise framework; BNM's 2018 tawarruq rules apply where the relevant sequence falls within their scope. This does not establish AAOIFI compliance or resolve IIFA's organized-tawarruq objection.

A acquires an existing eligible lot from Broker 1 for $C = \text{USD}10$ million. Lot identification, acquisition time, disposal authority and ownership liabilities are recorded before A exercises B's undertaking. Separate offer and acceptance establish a sale at disclosed cost plus profit, $C + P = \text{USD}13.125$ million. B acquires ownership, possession and delivery rights. Its price obligation arises from that sale. For the cash-flow comparison, B independently resells to Broker 2 for C ; it could instead retain or take delivery. No return to A or prearranged return to Broker 1 is assumed, and any agency preserves the stipulated sequence and rights.

With same-day payment, resale at cost and no fees, A pays C and receives $C + P$, netting P. B's net outgoing amount is P. C is an illustrative value, independent of any template requirement or market quotation. Because C is independent of N, the example does not answer the criticism that large exposures may be hedged through comparatively small asset transfers.

At early termination, assume a USD1 million replacement index in A's favour. A owns and possesses another eligible asset costing D. A exercises B's purchase undertaking, and the parties then conclude a separate *musāwamah* sale to B at $D + \text{USD1 million}$. B receives the asset and disposal rights. B also owes A USD500,000 from an earlier completed sale. Gross obligations initially total $D + \text{USD1.5 million}$. Immediately after the close-out sale, B pays D directly to A as partial settlement of that sale-price debt; USD1.5 million remains payable. No opposing A-to-B debt or set-off is assumed. The example assumes that these close-out acts are permitted under the declared framework and have been performed. On those assumptions, Test 8 is supported; a live transaction would require a separate assessment.

Case B With Defective Sale Facts

Case B preserves the exposure, notional and USD3.125 million payoff, but the stated commodity does not exist. Neither party acquires ownership, possession or disposal rights. Recorded confirmations accompany an obligation to pay the differential regardless of purchase, acceptance or delivery. Future replacement value is also booked directly as a debt without the close-out sale asserted as its basis.

In this hypothetical case, the defects defeat the claimed sale structure despite the genuine exposure and matching payoff. The example makes no allegation about market conduct, and its finding is confined to the stated arrangement. Determining the legal character of any remaining payment obligation requires its precise terms.

Table 4: Application with an identical simplified hedge payoff

Inquiry	Case A Operative facts stipulated	Case B Defective facts stipulated
1 Exposure	Supported by assumed existing exposure	Same assumed exposure
2 Hedge nexus	Supported by matching and continuing review	Same matching assumptions
3 Contractual independence	Conditionally supported by the assumed permissibility of the promises and their combination, and by the performed sales	Failed: payment arises without the asserted sale
4 Ownership and qabḍ	Supported by assumed lot and control records	Failed: no commodity exists or transfers
5 Risk allocation	Supported by stipulated sale and agency liabilities	Failed: no asserted asset liabilities arise
6 Counterfactual	Removal defeats the sale entitlement and related rights	Recorded steps create none of the asserted sale rights
7 Replication	High by construction: USD 3.125m receipt	Identical: USD 3.125m recorded receipt
8 Lifecycle	Conditional support only for the specified close-out acts, assuming they have been carried out	Failed: future value booked as debt without asserted close-out sale

Inquiry	Case A Operative facts stipulated	Case B Defective facts stipulated
Overall finding	Conditionally supported in the declared framework; other authorities require separate assessment	Claimed sale-based architecture fails despite the same payoff

Table 4 shows how the declared rules apply to the assumed facts. Its findings are limited to these hypothetical cases; actual transactions and other institutional standards require separate assessment.

Missing Evidence And Excessive Hedging

Two further variations examine missing possession evidence and excess hedging. First, retain Case A's documentation but withhold the records establishing possession before resale. Possession under Test 4 becomes indeterminate. Evidence of the sequence could support it; proof of sale before required possession establishes failure. Proven non-creation or non-retention of mandatory records is a separate compliance defect, not proof that possession never occurred. Separately changing the governing position on organized tawarruq changes the normative assessment, not the evidence status.

Secondly, suppose A partially repays its financing before a new quarter, reducing exposure to USD700 million, while leaving the hedge at USD1 billion without another qualifying exposure. All asset and sale facts remain as in Case A. Test 2 fails for the excess USD300 million. At $R = 6\%$, the excess hedge receipt is USD0.9375 million per quarter. The unresized hedge leaves net cost of USD9.5625 million on the remaining financing; resizing produces USD10.5 million, or 6% annually. The apparently lower cost in this state reflects an additional directional position that reverses when R falls below K . It is not greater hedge effectiveness, nor does it retroactively void completed sales.

The variations show how the protocol treats defects, missing evidence and mismatched exposure. Independent review of anonymized transaction files is needed to determine whether different assessors apply it consistently.

Economic Comparison And Sensitivities

Matched Benchmark Baseline

Let N be the financing and hedge reference amount, R the matched annual benchmark, s the financing spread, K the fixed hedge rate and α the accrual fraction. Financing cost is $N(R + s)\alpha$ and the pay-fixed, receive-floating hedge adjustment is $N(K - R)\alpha$. Their sum is $N(K + s)\alpha$. The matched benchmark terms cancel algebraically. This result does not determine Shari'ah permissibility.

For $N = \text{USD1 billion}$, $s = 1.25\%$, $K = 4.75\%$ and $\alpha = 0.25$, the effective annual rate is 6%. At $R = 6\%$, financing cost is USD18.125 million, hedge receipt USD3.125 million and net quarterly cost USD15 million. The calculation covers one quarter; it does not value the hedge over its five-year term.

Table 5: Matched benchmark baseline

Benchmark R	Financing rate	Hedge adjustment	Effective rate
2.00%	3.25%	+2.75%	6.00%
4.00%	5.25%	+0.75%	6.00%
6.00%	7.25%	-1.25%	6.00%
8.00%	9.25%	-3.25%	6.00%

Table 5. Author's calculations. All rates are annualized; negative hedge adjustments are receipts. The equal net rates assume matched terms and no transaction costs or other frictions.

Costs, Basis Risk And Timing

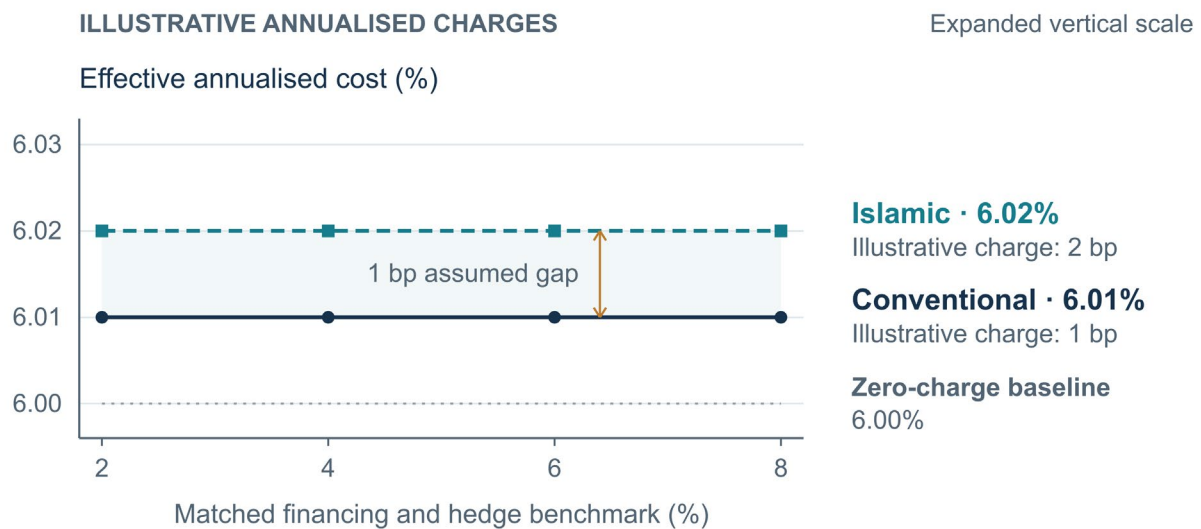
With financing benchmark R_u , hedge benchmark R_h and annualized charges c , the effective rate becomes $K + s + (R_u - R_h) + c$. Here c equals period cash costs divided by $N\alpha$. A USD25,000 quarterly conventional charge is one annual basis point on this notional; an assumed USD50,000 Islamic transaction charge is two. The assumed charges show how transaction costs affect the effective rate; they are not estimates of usual charges or evidence that Islamic hedges are systematically more expensive. A hedge benchmark 0.10 percentage points below the financing benchmark adds USD250,000 quarterly in either architecture.

Table 6: Hypothetical costs and basis mismatch

Scenario	Hedge receipt	Charge	Net cost	Annual rate
Conventional matched	3.125	0.025	15.025	6.01%
Islamic matched	3.125	0.050	15.050	6.02%
Conventional 10bp mismatch	2.875	0.025	15.275	6.11%
Islamic 10bp mismatch	2.875	0.050	15.300	6.12%

Table 6. The calculations use assumed charges and benchmark rates rather than market quotations. Financing benchmark is 6%; mismatch uses a 5.90% hedge benchmark. Monetary values are USD millions. Islamic charges aggregate assumed commodity and agency costs.

Figure 2: Effective costs with illustrative charges



Expanded axis: 1 bp = 0.01 percentage points. Charges are hypothetical.

Source: Author's calculations. The lines show effective costs with matched benchmarks and the assumed charges in Table 6. Both would coincide at 6% with zero charges. The narrow vertical scale makes the assumed cost difference visible. The charges used in the calculation are hypothetical and do not determine Shari'ah permissibility.

Settlement timing can require temporary funding of the commodity purchase. Funding $C =$ USD10 million for two days at an assumed annual economic cost of 5% on a 360-day basis adds USD2,777.78. This calculation illustrates the economic cost of temporary funding; it does not prescribe interest-bearing financing. Actual permissible funding terms and settlement sequence determine the charge. Resale below C adds a commodity loss, while a failed sale may alter the entitlement itself. Costs and basis risk describe economic differences; they cannot establish or cure contractual validity.

*Termination And Lifecycle Integrity
Debts, Valuation And Further Performance*

The 2010 ISDA/IIFM memorandum distinguishes fully delivered transactions from Designated Future Transactions and transactions not fully delivered. Completed sales can generate payment debts that are accelerated and aggregated. Close-out for these uncompleted transactions involves replacement valuation, a Relevant Index and a conditional wa‘d leading to musāwamah. The memorandum explains section 2(e) undertakings and section 6 close-out (ISDA & IIFM, 2010, paras. 3.2, 3.6, pp. 3–7).

Replacement valuation and creation of a present debt are different events. In Case A, USD500,000 is already owed under a completed sale; the USD1 million replacement index is used to price a further close-out sale. The additional sale creates a debt of D + USD1 million. B’s subsequent payment of D to A leaves USD1.5 million across the two debts. This is the remaining legal balance, not an acquisition/resale cash-flow total; third-party trades do not discharge B’s debt to A. There is no set-off without an opposing obligation. A failed sale does not automatically create its price debt; any permissible compensation requires a separately established basis and measure. Valuing replacement economics is not itself a claim to unearned sale profit.

The price payable under a completed close-out sale must also be distinguished from damages for failure to complete the promised sale. Permission to price a sale by reference to replacement value does not automatically authorize that amount as breach compensation. BNM’s actual-loss treatment can encompass reliably estimated direct costs, including specified risk-mitigation losses following derivative default (BNM, 2017, paras. 18.9–18.11, n. 9). It should not be reduced to invoiced expenses alone. The cause of action, measure of compensation and supporting evidence must be identified.

Set-Off, Collateral And Benchmark Changes

Payment set-off presupposes identified obligations; it cannot supply missing title. The 2017 Islamic Credit Support Deed shows why collateral arrangements need separate review. Its public explanation describes a security interest in cash rather than title transfer and calculates variation margin from net exposure. It does not itself provide investment returns on posted cash; those require a separate agreement. Template approval also does not cover every party amendment (Clifford Chance, 2017, pp. 1–2). Security, permitted use and return arrangements therefore require distinct review.

Benchmark transition can also affect when the rate is fixed and the sale is concluded. Clifford Chance (2020, pp. 4–5) describes a separate benchmark murābahah concluded at period end once its rate is known. This connects rate observation to sale formation, without repricing an existing debt. ISDA and IIFM’s (2021) fallback initiative permits bilateral incorporation of replacement-rate provisions; its announcement distinguishes approval of the amendment agreement from the definitions booklet’s informational role. Neither source identifies the terms agreed in an individual 2024 transaction. A changed rate, observation period or spread can also create basis mismatch. Test 8 should therefore be reapplied after amendment, default or prepayment to distinguish completed debts, further contractual acts and permitted compensation.

CONCLUSION AND IMPLICATIONS

Practical Implications

Shari‘ah boards can record the rulings they accept, the facts assumed and the evidence still required. Product approval requires examination of commodity records, agency mandates, notices and termination scenarios, including whether concessionary justifications persist. Treasury and operations should reconcile exposure, notional, benchmarks, sales and settlements. Failed acquisitions, invalid notices, repayment and delayed possession require exception handling. Exposure monitoring remains necessary even where every sale is real. For BNM and other regulators, the protocol offers a way to examine implementation without presenting a local position as universal consensus. For AAOIFI and IIFM, it

identifies where standards and documentation could specify evidence of performance and consequences of failed steps. These are proposed applications, not claims of institutional adoption. Transaction-level findings should also be complemented by review of commodity-platform concentration and feasible alternatives, as Ishak et al. (2025, Discussion) suggest.

Limitations And Future Research

Selection is purposive, classical doctrine is examined through the cited scholarship, and some studies concern adjacent products. GCC implementation evidence relies on Saudi institutional disclosures rather than peer-reviewed studies of executed IPRS transactions, limiting independent corroboration and regional generalization. The peer-reviewed Saudi banking study concerns aggregate exposure, while ElSheimy proposes a model. No live transaction or complete 2024 package is audited. Because the comparison excludes credit, capital, tax, accounting and collateral costs, it cannot rank actual products. Future research should compare scholars', lawyers' and treasury practitioners' assessments of identical anonymized files, report disagreement, and refine the protocol through interviews or Delphi consultation. Cross-currency swaps and foreign-exchange (FX) forwards introduce further exchange and settlement requirements.

Conclusion

The decisive inquiry is how a hedge creates and enforces its entitlements. Matching cash flows neither prove circumvention nor cure a defective contractual mechanism. The protocol turns these doctrinal concerns into questions about applicable rules, transaction facts, supporting evidence and the consequences of failure or insufficient evidence during performance or termination. The worked examples distinguish failed sales, missing evidence and excessive hedging. The sensitivity calculations show how transaction costs and benchmark mismatches change the result of the frictionless comparison. The protocol can help boards and treasury functions assess a transaction against the stated rules and the evidence available. The worked examples and calculations do not establish universal permissibility or empirical reliability. Before wider applicability can be claimed, the protocol must be tested against actual transaction records and independent expert judgements. Further work can then examine cross-currency swaps and FX forwards.

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