دار المراجعة الشرعية

SHARIYAH
REVIEW BUREAU

# HEDGING PROFIT RATE RISK

## Navigating the rough seas with Sharia compliant strategies

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SHARIA ADVISOR LICENSED BY
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# 1. Importance of Risk Management

Risk management is the process of understanding, analysing and addressing potential risks to ensure objectives are achieved. It is the methodology used to mitigate adverse consequences that result from threats and uncertainties. Put simply, this means developing a strategy to avoid losing money when unexpected events occur. Mitigation of risks begins by first correctly identifying the risks, why they arise and what damage they can cause[1].

Risk response strategies can be classified into four "T" categories:

1. **Tolerate** - This strategy involves accepting the risk and its effect. In some cases, the risk is well understood and provides opportunities to create value. In other cases, the risk must be taken because other risk response strategies are unavailable or too costly.

2. **Treat** - This strategy involves taking action to reduce the risk and its effect.

3. **Transfer** - This strategy involves moving the risk and its effect to a third party.

4. **Terminate** - This strategy involves avoiding the risk and its effect by ceasing an activity.

Risk management provides a wide range of benefits to a company which should enhance the company's ability to create value. Benefits include:

- supporting strategic and business planning.
- incorporating risk considerations in all business decisions to ensure that the company's risk profile is aligned with its risk tolerance.
- limiting the amount of risk a company takes, preventing excessive risk taking and potential related losses, and lowering the likelihood of bankruptcy.
- bringing greater discipline to the company's operations, which leads to more effective business processes, better controls, and a more efficient allocation of capital.
- recognising responsibility and accountability.
- improving performance assessment and making sure that the compensation system is consistent with the company's risk tolerance; and
- assisting with the early detection of unlawful and fraudulent activities, thus complementing compliance procedures and audit testing[2].

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1 PureFinancial (n.d.), What is Risk Management. Available online: https://purefinancial.com/learning-center/blog/why-risk-management-is-important/
2 CFA Institute (n.d.). Chapter 18: Risk Management. CFA

# 2. Risks in Financial Institutions

Financial institutions face several forms of risk. The following five are some of the most common:

**1. Market risk** - McKinsey defines market risk as the risk of losses in the bank's trading book due to changes in equity prices, interest rates, credit spreads, foreign-exchange rates, commodity prices, and other indicators whose values are set in a public market. Bank for International Settlements (BIS) defines market risk as the risk of losses in on- or off-balance sheet positions that arise from movement in market prices.

**2. Credit risk** – Credit risk is the risk that arises from the possibility of non-payment of loans by the borrowers. Although credit risk is largely defined as the risk of not receiving payments, banks also include the risk of delayed payments within this category.

**3. Liquidity risk** - Liquidity risk is the risk that the bank will not be able to meet its obligations if the depositors come in to withdraw their money. This risk is inherent in the fractional reserve banking system. Therefore, in this system, only a percentage of the deposits received are held back as reserves, the rest are used to create loans.

**4. Operational risk** - Operational risk occurs as the result of failed business processes in the bank's day to day activities. Examples of operational risk would include payments credited to the wrong account or executing an incorrect order while dealing in the markets. None of the departments in a bank are immune from operational risks.

**5. Solvency risk** - This relates to the risk of having insufficient capital to cover losses generated by all types of risks, and is thus effectively the risk of default of the bank. From a regulatory viewpoint, the issue of adequate capital is critically important for the stability of the banking system. To address solvency risk, it is necessary to define the level of capital which is appropriate for given levels of overall risk[3].

From the above, market risk involves interest rate and foreign exchange risks. Market risk can be better understood by dividing it into 4 types depending on the potential cause of the risk:

- Interest rate risk
  Potential losses due to fluctuations in interest rate.

- Equity risk
  Potential losses due to fluctuations in stock price.

- Currency risk
  Potential losses due to international currency exchange rates (closely associated with settlement risk).

- Commodity risk
  Potential losses due to fluctuations in prices of agricultural industrial and energy commodities like wheat, copper and natural gas respectively.

Interest rate risk can be defined as the exposure of a conventional bank's financial condition to adverse movements in interest rates. The changes in interest rates can affect a conventional bank's earnings by affecting its net interest income and the level of other interest-sensitive income and operating expenses. It also affects the underlying value of the bank's assets, liabilities, and off-balance-sheet instruments because the present value of future cash flows and in some cases, the cash flows themselves change due to interest rate fluctuations.

As such, conventional banks must have an effective risk management process that maintains interest rate risk within prudent levels for the safety and soundness of their institutions[4].

3 Medici (2016), 8 Risks in the Banking Industry Faced by every bank. Available from: https://medium.com/@gomedici/8-risks-in-the-banking-industry-faced-by-every-bank-fb3177297426
4 BIS (2016). Interest rate risk in the banking book. Basel Committee on Banking Supervision.

# 3. Risks for Islamic banks

The foundation of Islamic banking lies in participation strategies and not in simple financial intermediation. The range of risks may be considered greater in Islamic banking due to their participation as a partner ,investor, buyer and seller ,as compared to the status of lender in conventional banking .While they share major risks such as credit ,market ,operational ,concentration and liquidity risks ,Islamic banking also faces equity investment risk ,margin risk ,displaced commercial risk, rate of return risk and Shariah non-compliance risk[5].

Islamic banks use similar techniques as conventional banks in managing credit risk mitigation of the financing proposals, through techniques such as asset collateral, monitoring of project or asset activity and the diversification of credit exposure through various industry and sectorial limits. The management of market risk, and operational risk, is also similar in the two systems. While these major risk categories are dealt with in similar ways, there are unique risks to Islamic banking.

These unique risks are as follows:

**Margin risk**

The Shariah system avoids interest-bearing transactions but works on Islamic financial instruments such as Murabahah contracts, which operate based on a mark-up. Murabahah is a deferred payment contract in which the customer buys an asset at a cost-plus profit margin. Adverse changes in the benchmark rate can create risk for Islamic banks and can lead to opportunity losses, due to a lower mark-up and vice-versa.

**Equity investment risk**

Equity investment risk arises because of a potential decrease in the fair value of the equity position held by the firm. A bank's equity participation can range from direct investment in projects, or joint venture businesses, to indirect Shariah compliant investment, such as stocks.

**Displaced commercial risk**

A third risk is displaced commercial risk, which arises when owners are forced to pay returns to depositors even if the underlying assets don't earn profits. This risk is managed by building reserves during good times and utilizing them in bad times[6].

**Shariah non-compliance risk**

Finally, and perhaps most importantly, Shariah non-compliance is a major risk that can have a severe impact on both the earnings of an institution and the confidence of customers, depositors and shareholders. It can occur due to misinterpretation and incorrect implementation of approved transactions and procedures.

Islamic banking involves active risk management from initiation to settlement of a transaction and in managing returns to both depositors and shareholders of the institution. It is often less risky, in terms of complexity compared to conventional banking, due to its prohibition on the usage of derivatives except for hedging purposes, but a wider range of risks require more active management than conventional banking.

5 Abdullah, M.Q. (2015). Risk Management in Islamic Banking. Gulf News Article. Available from: https://gulfnews.com/business/banking/risk-management-in-islamic-banking-1.1457133

6 Qadeer Abdullah, M. (2015). Risk Management in Islamic Banking. Gulf News

# 4. Rate of Return Risks in Islamic Financial Institutions

Similar to conventional banks, Islamic banks also face financial risks but with variations due to specific requirements to comply with Shariah principles. With regard to the interest rate risk, Islamic banks could also be exposed to the same risk, known as the rate

of return risk as suggested by the Islamic Financial Services Board (IFSB). This is also known as the profit rate risk.

Profit rate risk or rate of return risk is the risk that the IFI will incur a financial loss as a result of a mismatch in the profit rate on the IFI's assets and unrestricted investment accounts. The rate of return risk arises because of unexpected changes in the market rate of return, which adversely affect the IFIs earnings. In a conventional financial institution, returns are fixed; both the firm and fund providers know in advance what their returns will be. The rate of return risk stems from uncertainty in the returns earned by Islamic banks on their assets. This uncertainty can cause a divergence from the expectations that investment account holders have on the liabilities side. The larger the divergence, the bigger is the rate of return risk[7].

In IFIs, returns are uncertain and investors share both profits and losses with the institution.

If the IFIs fail to respond to the market rate increase, that failure may lead to liquidity risk (because customers may withdraw funds too rapidly). If it responds to the market pressure, it creates displaced commercial risk.

IFIs may be under market pressure to pay a return that exceeds the rate that has been earned on assets financed by investors or fund providers when the return on assets is under-performing as compared with competitors' rates. Islamic banks may decide to waive their rights to part or entire (*Mudarib*) share of profits in order to satisfy and retain their fund providers and dissuade them from withdrawing their funds[8]. The IFI must smooth out what may otherwise be a bumpy road for depositors and investors. IFIs typically deal with this risk in the following ways:

- It gives up a portion of its own profit and/or waives its fee from an investment, project, or asset so it can funnel that money into customer returns.
- It creates a fund called a profit equalization reserve by setting aside a percentage of previous years' profits to use when investment returns dip too low.
- It creates another fund called an investment risk reserve (again, funded by a portion of previous years' profits) that allows the firm to recover investment losses in a given year.

Furthermore, in the context of IFIs overall balance sheet exposures, the Islamic banks are exposed to a "squeeze" resulting from holding fixed-return assets such as Murabahah that are financed by investment accounts, the holders of which expect a rate of return in line with the benchmark rates. An increase in the benchmark rates may result in investors or fund providers having expectations of a higher rate of return[9].

Changes in the conventional interest rates put pressure on the Islamic deposit rates as interest rate differentials could lead to easy arbitrage opportunity. Consequently, the Islamic banks are exposed to the interest rate movements similar to their conventional counterparts since the rate of return in the Islamic bank is sensitive to the changes in the interest rate.

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7 Zainol, Z. and Kassim, S. (2010). An Analysis of Islamic Banks' Exposure to Rate of Return Risk. Journal of Economic Cooperation and Development 31 (1).
8 CBB Rulebook. Definition and Profiles of Rate of Return Risk. Bahrain
9 Zainol,Z. & Kassim, S. (2010). An Analysis of Islamic Banks' Exposure to Rate of Return Risk. Journal of Economic Cooperation and Development 31(1).

# 5. Conventional Methods of Mitigating Interest Rate Risk

Interest rate risk arises when businesses do not know[10]:

**(i)** how much interest they might have to pay on borrowings, either already made or planned, or

**(ii)** how much interest they might earn on deposits, either already made or planned.

There is, of course, always a risk that if a business had committed itself to variable rate borrowings when interest rates were low, a rise in interest rates might not be sustainable by the business and then liquidation becomes a possibility.

The primary aim of interest rate risk management (and indeed foreign currency risk management) is not to guarantee a business the best possible outcome, such as the lowest interest rate it would ever have to pay. The primary aim is to limit the uncertainty for the business so that it can plan with greater confidence.

Interest rate risk is managed through traditional and exotic approaches using wide variety of derivatives as follows:

**Traditional and basic approaches**

**1.** Smoothing and Matching

When taking out a loan or depositing money, businesses will often have a choice of variable or fixed rates of interest. Variable rates are sometimes known as floating rates and they are usually set with reference to a benchmark such as LIBOR, the London Interbank Offered Rate. For example, variable rate might be set at LIBOR +3%.

If fixed rates are available, then there is no risk from interest rate increases: a $2m loan at a fixed interest rate of 5% per year will cost $100,000 per year.

In smoothing, the loans or deposits are simply divided so that some are fixed rate and some are variable rate.

In matching, this approach requires a business to have both assets and liabilities with the same kind of interest rate. The closer the two amounts the better.

**2.** Asset and liability management

This relates to the periods or durations for which loans (liabilities) and deposits (assets) last. The issues raised are not confined to variable rate arrangements because a company can face difficulties where amounts subject to fixed interest rates mature at different times.

**3.** Forward rate agreements (FRA)

These arrangements effectively allow a business to borrow or deposit funds as though it had agreed a rate which will apply for a certain period. The period could, for example start in three months' time and last for nine months after that. The loans or deposits can be with one financial institution and the FRA can be with an entirely different one, but the net outcome should provide the business with a target, fixed rate of interest.

10 Garrett, K. (n.d.). Hedging techniques for interest rate risk. Available from: https://www.accaglobal.com/uk/en/student/exam-support-resources/fundamentals-exams-study-resources/f9/technical-articles/hedging.html

### Interest rate derivatives[11]

The following types of derivatives are used to hedge interest rate risks in conventional products:

**(i) Interest rate futures**
**(ii) Interest rate options**
**(iii) Interest rate caps, floors and collars**
**(iv) Interest rate swaps**

#### 1. Interest rate futures

Futures contracts are of fixed sizes and for given durations. They give their owners the right to earn interest at a given rate, or the obligation to pay interest at a given rate.

- *Selling* a future creates the obligation to *borrow* money and the obligation to *pay interest*
- *Buying* a future creates the obligation to *deposit* money and the right to *receive interest.*

For example, a particular futures contract allows borrowers and lenders to pay or receive interest at 5%, which is the current market rate of interest available. Now imagine that the market rate of interest rises to 6%. The 5% futures contract has become less attractive to buy because depositors can earn 6% at the market rate but only 5% under the futures contract. The price of the futures contract must fall. Similarly, borrowers will now have to pay 6% but if they sell the future contract they have to pay at only 5%, so the market will have many sellers and this reduces the selling price until a buyer-seller equilibrium price is reached.

- A rise in interest rates reduces futures prices.
- A fall in interest rates increases futures prices.

#### 2. Interest rate options

Interest rate options allow businesses to protect themselves against adverse interest rate movements while allowing them to benefit from favourable movements. They are also known as interest rate guarantees. Options are like insurance policies:

1. You pay a premium to take out the protection. This is non-returnable whether or not you make use of the protection.
2. If interest rates move in an unfavourable direction you can call on the insurance.
3. If interest rates move favourably you ignore the insurance.

Options are taken on interest rate futures contracts and they give the holder the right, but not the obligation, either to buy the futures or sell the futures at an agreed price at an agreed date.

11 Garrett, K. (n.d.). Hedging techniques for interest rate risk. Available from: https://www.accaglobal.com/uk/en/student/exam-support-resources/fundamentals-exams-study-resources/f9/technical-articles/hedging.html

**Put option**

When using options, the borrower takes out an option to sell futures contracts at today's price (or another agreed price). Let's say that price is 95. An option to sell is known as a put option,

If interest rates rise, the futures contract price will fall, let's say to 93. Therefore, the borrower will buy at 93 and will then choose to exercise the option by exercising their right to sell at 95. The gain on the options is used to offset the extra interest that has to be paid.

If interest rates fall the futures contract price will rise, let's say to 97. Clearly, the borrower would not buy at 97 and then exercise the option to sell at 95, so the option is allowed to lapse and the business will simply benefit from the lower interest rate.

**Call option**

When using options, the investor takes out an option to buy futures contracts at today's price (or another agreed price). Let's say that price is 95. An option to buy is known as a call option.

If interest rates fall the futures contract price will rise, let's say to 97. The investor would therefore sell at 97 and then exercise the option to buy at 95. The gain on the options is used to offset the lower interest that has been earned.

If interest rates rise the futures contract price will fall, let's say to 93. Clearly, the investor would not sell futures at 93 and exercise the option by insisting on their right to buy at 95. The option is allowed to lapse and the investor enjoys extra income form the higher interest rate.

Options therefore give borrowers and lenders a way of guaranteeing minimum income or maximum costs whilst leaving the door open to the possibility of higher income or lower costs.

**3. Interest rate caps, floors and collars**

A cap involves using interest rate options to set a maximum interest rate for borrowers. If the actual interest rate is lower, the option is allowed to lapse.

A floor involves using interest rate options to set a minimum interest rate for investors. If the actual interest rate is higher the investor will let the option lapse.

A collar involves using interest rate options to confine the interest paid or earned within a pre-determined range. A borrower would buy a cap and sell a floor, thereby offsetting the cost of buying a cap against the premium received by selling a floor. A depositor would buy a floor and sell a cap.

**4. Interest rate swaps**

Interest rate swaps allow companies to exchange interest payments on an agreed notional amount for an agreed period of time. Swaps may be used to hedge against adverse interest rate movements or to achieve a desired balance between fixed and variable rate debt.

Interest rate swaps allow both counterparties to benefit from the interest payment exchange by obtaining better borrowing rates than they are offered by a bank.

Interest rate swaps are arranged by a financial intermediary such as a bank, so the counterparties may never meet. However, the obligation to meet the original interest payments remains with the original borrower if a counterparty defaults, but this counterparty risk is reduced or eliminated if a financial intermediary arranges the swap.

The most common type of swap involves exchanging fixed interest payments for variable interest payments on the same notional amount. This is known as a plain vanilla swap.

Interest rate swaps allow companies to hedge over a longer period of time than other interest rate derivatives, but do not allow companies to benefit from favourable movements in interest rates.

# 6.Shariah Review of Conventional Methods

Interest rate risks arise from dealing in interest. Interest is categorically prohibited. Unequal payments in homogenous currencies is tantamount to *Riba al-Fadhl. Riba al-Fadhl (known as Riba due to surplus and excess)* originates when a *Riba* (interest) item is exchanged for the same item in an unequal amount.

The exchange of cash payments at different periods results in another type of *Riba* known as *Riba al-Nasi'ah*. This refers to the deferral in an exchange of two *Riba* items.

The Prophet Muhammad (peace be upon him) said:

*"(When) gold is exchanged in lieu of gold, silver is exchanged for silver, wheat is exchanged for wheat, barley is exchanged for barley, dates are exchanged for dates and salt is exchanged for salt; it must be exchanged in equal measure and settled immediately; and if the counter exchanges differ, sell (whichever quantity) as you wish as long as settlement is immediate."*

*[Sahih Muslim]*

*Riba* is categorically prohibited in the Qur'an. The Qur'an says,

"O you who believe! Remain conscious of Allah,
and give up all outstanding gains from usury, if you are [truly] believers;
for if you do it not, then know that you are at war with Allah and His Messenger. But if you repent, then you shall be entitled to [the return of] your principal. You will do no wrong, and neither will you be wronged."

*[Qur'an 2: 278-279]*

The Prophet Muhammad (peace be upon him) said:

*"Cursed is the one who takes interest, and the one who pays it, the one who records it, and the two who (accept to be the) witnesses for signing it."*

*[Sahih Muslim]*

The interest derivatives also violate several Shariah principles. An interest rate future is a futures contract with an underlying instrument that pays interest. The contract is an agreement between the buyer and seller for the future delivery of any interest-bearing asset. The interest rate futures contract allows the buyer and seller to lock in the price of the interest-bearing asset for a future date. Such contracts are Shariah non-compliant as they involve *Riba*. Further, they violate the Shariah principle of debt trading. Both counter-exchanges are debts which will be fully settled in the future.

Interest rate options are also non-compliant as they are a form of *bay' al-Gharar* (uncertain sales). The exercising of the option is unknown and uncertain which is part of an exchange-based contract. Since there is uncertainty in the outcome of the subject matter, this is a prohibitive form of *Gharar*.

Abu Hurairah (May Allah be pleased with him) narrated: "The Messenger of Allah (peace be upon him) prohibited sales of 'whatever a pebble thrown by the seller hits,' and sales in which there is *Gharar*." [Sahih Muslim]

Another reason for the prohibition of options is the non-compliance of the subject matter of sale with Shariah. An option represents the power, the right to choose. When you own an option, you can choose whether to buy an asset or not, or (with different type of options) whether to sell an asset or not. When you own an option, you have the right to buy or sell, but not the obligation.

According to several Shariah scholars, an option is a 'promise' which in itself permissible and "normally binding on the promisor". However, the fact that an option transaction requires payment of a fee on the promise invalidates this type of derivative under Shariah[12]. These scholars opine that this ruling applies to all types of options, whether they be calls or puts, because options are rights, not physical assets, and therefore cannot be bought or sold. The 'right to buy' is a commitment, pledge and promise to transact. Let alone being lawful commodities, promises are not even assets. Promises are merely an expression of imposing a task on one's personal liability. Mufti Taqi Uthmani states that a premium is paid without any transfer of property, benefits or rights. Hence, when there is no counter-exchange being transferred, a premium is unwarranted. Therefore, the premiums paid for options fall under *Rishwa* (bribe) and are prohibited. *Rishwa* refers to taking consideration for something which does not warrant a premium or consideration[13].

In respect to options, the OIC Islamic Fiqh Academy states that:

"Option contracts as currently applied in the world financial markets are a new type of contracts which do not come under any one of the Shariah nominated contracts. Since the object of the contract is neither a sum of money nor a utility or a financial right which may be waived, then the contract is not permissible in Shariah.[14]"

**The AAOIFI Shariah Standards state:**

5/2 Options

5/2/1 A contract by means of which a right is bestowed -but not an obligation- for the purchase or sale of an identified item (like shares, commodities, currencies, indexes or debts) at a determined price and for a determined period. There is no obligation in this contract except on the person selling this right.

5/2/2 Options indicated above are not permitted neither with respect to their formation nor trading.

Interest rate swaps involve *Riba* and the sale of debts. The exchange of a debt for a debt also known as *Bay' al Dayn bil Dayn* or *Bay' al-Kali bil Kali*. The AAOIFI Shariah Standard No.10 on Salam states:

"Again, any delay in payment of the capital and dispersal of the parties renders the transaction a sale of debt for debt which is prohibited, and the scholars agreed on its prohibition. Ibn Rushd said: "As for sale of debt for debt, Muslim scholars are unanimous regarding its prohibition."

**The AAOIFI Shariah Standard states:**

5/3/1 Swaps are agreements between two parties for the temporary exchange of determined financial assets, material assets or interest rates. In some cases the sale of a commodity or deferred currency takes place without the transaction resulting in any exchange of the commodity, while in other cases there may be an option, in return for a counter-value, that gives the owner the right to execute or not to execute the contract.

5/3/2 Swaps are not permitted in the forms in which they are practised in commodity exchanges.

12 Uthmani, M.T. (2014), Fiqh al-Buyu, Karachi: Maktaba Ma'arif al-Qur'an
13 Uthmani, M.T. (2014), Fiqh al-Buyu, Karachi: Maktaba Ma'arif al-Qur'an
14 OIC Islamic Fiqh Academy, "Resolution and Recommendations of the Council of the Islamic Fiqh Academy 1985-2000"

# 7. Shariah Compliant Alternative for Hedging Profit Rate of Risk

The International Islamic Financial Market (IIFM) and International Swaps and Derivatives Association, Inc. (ISDA) developed standardised documentation for the Profit Rate Swaps designed to be used with the ISDA/ IIFM *Tahawwut* Master Agreement.

*Mubadaltul Arbaah* (profit rate swap) can be defined as an agreement to exchange profit rates between a *Mu'addal Ribh Thabit* (fixed rate) party and a *Mu'addal Ribh Mutaghayyer* (floating rate) party, or vice versa, implemented through the execution of a series of underlying Shariah compliant contracts[15].

Mubadaltul Arbaah (profit rate swap) agreement is a mechanism structured to allow bilateral exchange of profit streams using two parallel and back-to-back Islamic marked-up sale transactions (*Murabahah*) or a series of single Islamic marked-up sale transactions (*Murabahah*). In this transaction, a series of *Murabahah* sale and purchases are conducted, allowing parties to swap or exchange profit rates from fixed to floating rate or vice versa. *Mubadaltul Arbaah* transaction was introduced to assist in the management of profit rate risks, thus enhancing cash flows. For Shariah compliance purposes, the Shariah scholars place the following conditions for the Islamic profit rate swap:

**1.** Transactions should be entered into only for the purpose of hedging actual risks of the relevant party.

**2.** Transactions should not be entered into for purposes of speculation, i.e. actual settlements of assets and payments must take place. No cash settlements without concluding actual transaction on deliverable assets.

**3.** The asset must be lawful in Islam (i.e., Halal).

**4.** No interest (whether called interest or an alternative name but which represents interest) is to be chargeable under a transaction.

Three types of *Mubadaltul Arbaah* (profit rate swap) structures are in practice in the market as follows:

- **Two sale structure**
- **Single sale structure**
- **Pure Murabahah structure**

### 1. Two Sale Structure (*Wa'd*-based transaction)

The two sale structure is based on two sales with *Wa'd* (undertakings) comprising of:

(a) Fixed Profit Rate
(b) Floating Profit Rate

The fixed profit rate scenarios is as follows:

1. Bank A has a fixed rate investment profile from its purchase of a Shariah compliant assets maturing in three years and paying semi-annually.

2. Bank A wishes to swap the above-mentioned fixed rate payment profile with a floating payment profile. Bank A (in this case) may decide to enter into an Islamic profit rate swap) with a counterparty Bank B.

3. Bank A receives a cash flow from its investment above, every six months on a fixed rate profit margin.

4. On day one Bank A gives a Wa'd under which it promises to enter into commodity Murabahah purchase agreements with Bank B if Bank B exercises the Wa'd.

5. Bank B sells a Shariah compliant asset to Bank A on a Murabahah basis at a selling price that comprises both principal and profit margin to be paid upon subsequent transaction floating rate portion. Thus, the first leg of the transaction is concluded. This is repeated every 6 months until maturity.

15 IIFM. Mubadatalatul Arbaah (profit rate swap) documentation. IIFM.

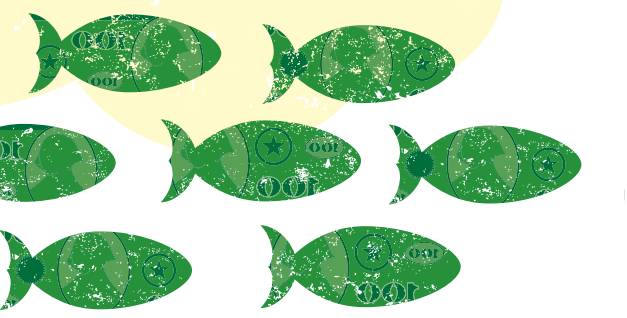
The floating rate scenario is as follows:

1. On day one Bank B gives a *Wa'd* to Bank A under which Bank B promises to purchase a Shariah compliant commodity from Bank A. Bank A will sell a Shariah complaint asset to Bank B at a selling price of notional principal, plus a mark-up based on the prevailing profit rate agreed spread plus current benchmark. Thus, the reverse commodity Murabaha is executed by the two parties (reverse commodity *Murabahah* as seen from Bank B's point of view).

2. Payment of selling price by both Bank A and Bank B is netted-off. The principle of *Muqassah* (set-off) is utilised in this respect.

3. The net difference is profit, and is paid to the swap counterparty as initially agreed between both counterparties in the ISDA/ IIFM *Tahawwut* Master Agreement.

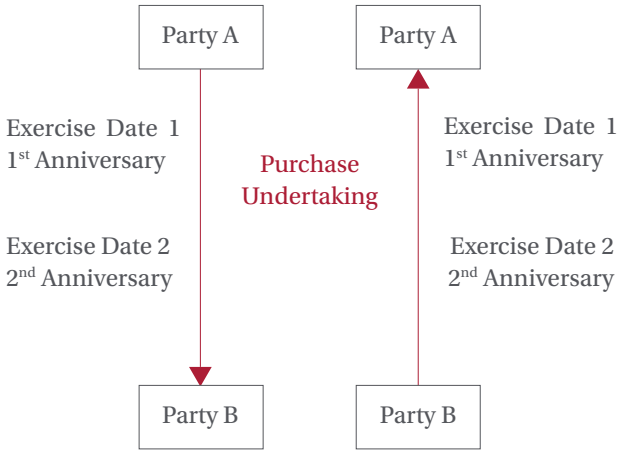
4. Floating profit rate is repeated every six months until maturity.



**Transaction Structure**

In the above example, Party A and Party B enter into a 3-year Islamic fixed/floating profit rate swap where Party A pays a fixed rate and Party B pays a floating rate. The transaction structure is as follows:

**Day One - Purchase Undertakings**




On day one[16], Party A grants a purchase undertaking exercisable on three Exercise Dates. The first Exercise Date falls immediately, the second on the first anniversary, and the third on the second anniversary.

- Party B also grants a purchase undertaking exercisable on the same three dates as Party A's purchase undertaking.

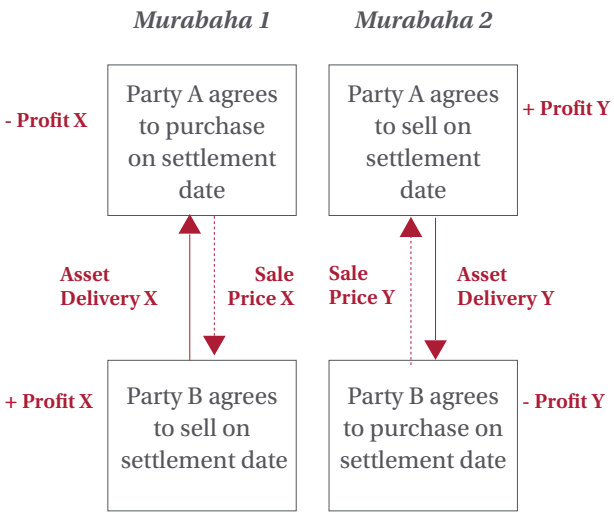
- The First Anniversary will be defined as an Exercise Date.

- On the date specified in the confirmation as the rate fixing date of the floating rate amount for the first calculation period (i.e. the period from day one to the first anniversary) the floating rate will be determined by reference to LIBOR on that rate fixing date.

16 Fixed Rate Leg. First Murabahah entered into on Day 1, with spot asset delivery and purchase price payment of cost-plus profit on first anniversary. Second Murabahah entered into on first anniversary with spot asset delivery and purchase price payment of cost-plus profit on second anniversary. Third Murabahah entered into on second anniversary with spot asset delivery and purchase price payment of cost-plus profit on third anniversary.
Floating Rate Leg. First Murabahah entered into on Day 1, with spot asset delivery and purchase price payment of cost-plus profit on first anniversary. Second Murabahah entered into on first anniversary with spot asset delivery and purchase price payment of cost-plus profit on second anniversary. Third Murabahah entered into on second anniversary with spot asset delivery and purchase price payment of cost-plus profit on third anniversary

- Immediately after the undertakings have been granted, each purchase undertaking is exercisable and each is exercised, as a result of which two Murabaha agreements will be entered into as follows:

## Two Murabaha agreements (Illustration)



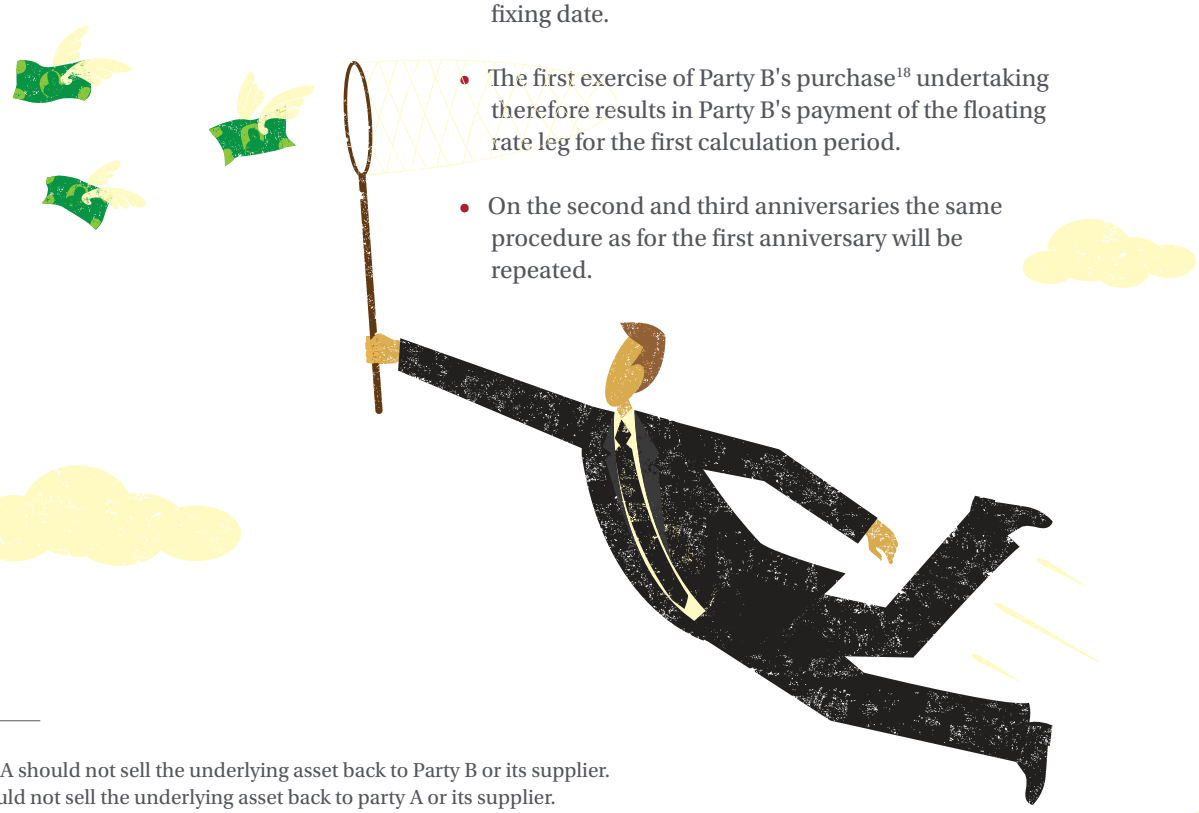

### Explanation of the two Murabahah sales

*Murabahah 1*

- On the settlement date, Party A purchases the asset (Asset X) for Sale Price X
- Sale Price X = Cost of asset plus Profit, where Profit equals the fixed rate amount
- Settlement date is upon entry into the *Murabahah*[17] deferred payment date is the first anniversary.
- The first exercise of Party A's purchase undertaking therefore results in Party A's payment of the fixed rate leg for the first calculation period i.e., the period from entry into the purchase undertaking to the first anniversary.

*Murabahah 2*

- On the settlement date, Party B purchases the asset (Asset Y) for Sale Price Y Sale Price Y = Cost of asset plus Profit, where Profit equals the floating rate amount for the first calculation period
- On the rate fixing date on or immediately prior to the start of the first calculation period, the floating rate amount for the first calculation period, i.e. the period from the start date to the first anniversary, can be determined using a market benchmark on the rate fixing date.
- The first exercise of Party B's purchase[18] undertaking therefore results in Party B's payment of the floating rate leg for the first calculation period.
- On the second and third anniversaries the same procedure as for the first anniversary will be repeated.



17 In all cases, Party A should not sell the underlying asset back to Party B or its supplier.
18 Note: Party B should not sell the underlying asset back to party A or its supplier.

## 2.Single sale structure

As an alternative, in order to reduce the administration and cost associated with two cash flows and two asset flows between the parties, they may wish to modify and simplify the two-sale structure as follows:

1. On day one, two purchase undertakings (Wa'd) are granted: one by each of Party A and Party B and under each of which Party A or, as the case may be, Party B undertakes to purchase a Shariah compliant asset from the other if certain conditions are satisfied and the other party exercises the purchase undertaking. It is the inclusion of these conditions which distinguishes the "single sale" structure from the "two sales" structure (in the two sales structure there are no such conditions which must be satisfied in order for the undertaking to be exercisable).

2. As with the two-sale structure, each purchase undertaking will be exercisable on a series of Exercise Dates by way of an exercise notice specifying the Sale Price and the Settlement Date. The Exercise Dates under Party A's purchase undertaking will match those under Party B's purchase undertaking;

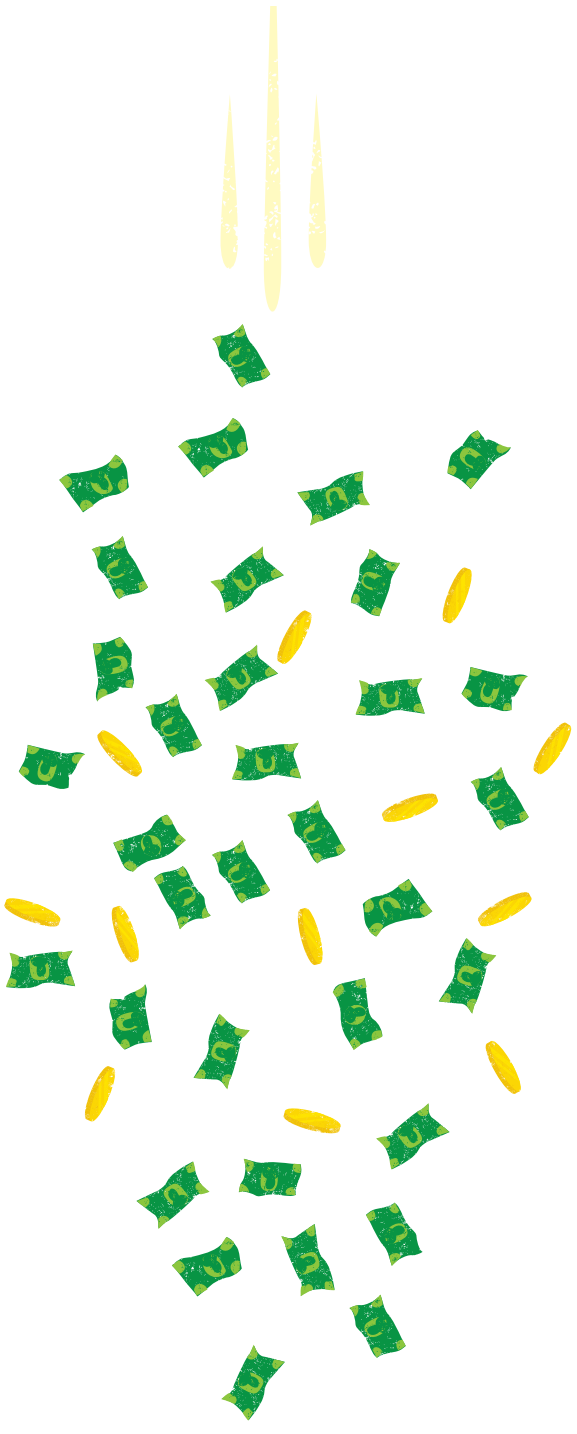
3. On an Exercise Date, it will be determined whether the fixed rate amount for the relevant calculation period is greater than or less than the floating rate amount for that calculation period;

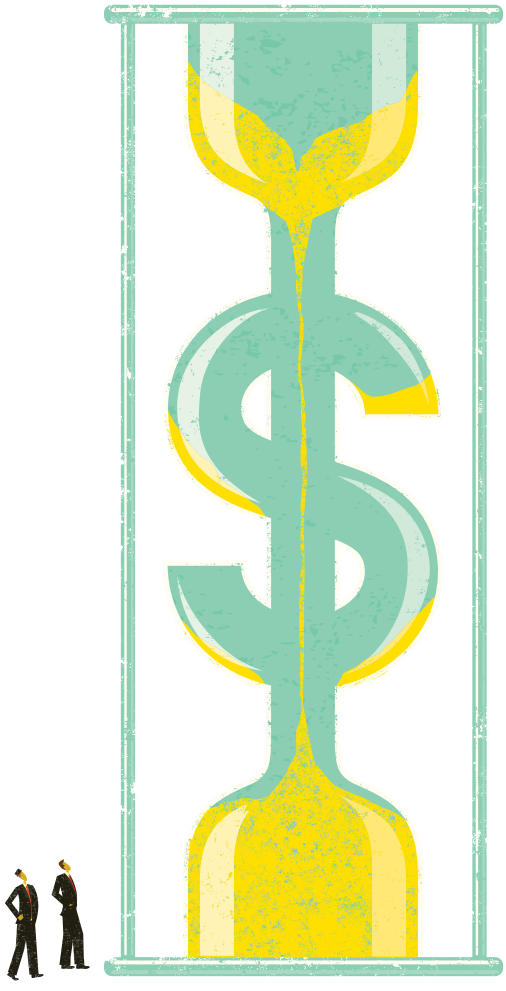
4. The condition of exercise of the fixed rate amount payer's purchase undertaking on an Exercise Date will provide that such purchase undertaking will only be exercisable if the fixed rate amount is greater than the floating rate amount. The condition of exercise of the floating rate amount payer's purchase undertaking on an Exercise Date will provide that such purchase undertaking will only be exercisable if the floating rate amount is greater than the fixed rate amount. As a result, on any Exercise Date, only one purchase undertaking will be exercisable;

5. The Sale Price payable in respect of the Murabahah arising upon exercise of the relevant purchase undertaking will be Cost plus Profit, where Profit equals the amount by which the fixed rate amount (of the fixed leg) for the calculation period exceeds the floating rate amount (of the floating rate leg) for the same period or, as the case may be, the floating rate amount exceeds the fixed rate amount; and

6. Only one Murabahah agreement will be entered into and the assets deliverable and the Sale Price payable under it will be deliverable/payable on the Settlement Date.

The single sale structure therefore achieves an outcome where there is only one asset flow and one cash flow, and the Profit element comprised in the cash flow is the net amount which is the difference between the fixed rate amount and the floating rate amount payable on the relevant settlement date.





### Single Sale Transaction Structure

- Party A and Party B enter into a 3-year fixed/floating profit rate swap where Party A pays the fixed rate and Party B pays the floating rate.
- On day one, Party A grants a *Wa'd* (purchase undertaking) to Party B with three Exercise Dates. The first Exercise Date is immediately following grant of the *Wa'd*, the second on the second anniversary and the third on the third anniversary.
- Party B also grants a purchase undertaking to Party A, with the same exercise dates as those of Party A.
- Party A's purchase undertaking is only exercisable if in respect of the relevant calculation period the fixed rate exceeds the floating rate. Party B's purchase undertaking is only exercisable if in respect of the relevant calculation period the floating rate exceeds the fixed rate.
- The exercise of Party B's purchase undertaking will result in the following *Murabahah* being entered into:

**Murabaha**

Party A agrees to sell Immediately following entry into the Murabaha

Party B agrees to pay the purchase price on the deferred payment date

Asset Y (deliverable immediately)

Party B agrees to purchase for immediate delivery

Sale Price Y = Cost plus Profit, where Profit equals the amount by which the floating rate exceeds the fixed rate

Party A's undertaking is not exercisable as floating rate exceeded the fixed rate.

If in the first calculation period the floating rate exceeds the fixed rate, then this will result in Party A exercising Party B's purchase undertaking on the first Exercise Date (Party A's purchase undertaking will not be exercisable on that date, as the conditions for exercise have not been satisfied).

### 3. Pure *Murabahah* Structure

As an alternative, the parties could seek to achieve the same profit rate swap by either agreeing to enter into dual *Murabahah* or into a single *Murabahah* in relation to each calculation period.

The structures are the same as the two *Wa'd* structures except that on day 1 instead of A and B granting *Wa'd* to each other, they simply agree either:

- to enter into dual *Murabahah* for each calculation period, in each case the dual *Murabaha* only being entered into once the floating rate is known: so the transaction would be:
  - Party A purchases under a *Murabahah* to pay fixed rate
  - Party B purchases under a *Murabahah* to pay floating rate; or
- to enter into a single *Murabahah* for each calculation period so that
  - if fixed exceeds floating, Party A purchases from Party B the price being cost plus the amount by which fixed exceeds floating rate; or
  - if floating rate exceeds fixed rate, Party B purchases from Party A, the price being cost plus the amount by which floating exceeds fixed rate.

# 8. Conclusion

Risk management is the process of understanding, analysing and addressing potential risks to ensure objectives are achieved. Financial institutions face several forms of risk. The most common are market risk, credit risk, liquidity risk, operational risk and solvency risk. Islamic banks face similar risks including margin risk, equity investment risk, displaced commercial risk and Shariah non-compliance risk. Islamic banks also face profit rate risks. Profit rate risk or rate of return risk is the risk that the Islamic bank will incur a financial loss as a result of a mismatch in the profit rate on the IFI's assets and unrestricted investment accounts. Although Islamic banks use profit equalisation reserves, investment risk reserves and other mechanisms, it is not always sufficient to mitigate the risks. As such Islamic banks may enter into hedging mechanisms such as Islamic profit rate swaps approved by their Sharia Boards. These swaps are structured in several ways. The International Islamic Financial Market (IIFM) and International Swaps and Derivatives Association, Inc. (ISDA) developed standardised documentation for the Profit Rate Swaps designed to be used with the ISDA/ IIFM *Tahawwut* Master Agreement. These structures include a two sale structure, a single sale structure and a pure *Murabahah* and can be deployed for hedging profit rate risks under strict supervision of Sharia Boards.

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Disclaimer

This is a preliminary Shariah research and is by no means a definitive conclusion or fatwa on the aforementioned subject. This paper was written to develop knowledge and research on this complex subject from a Shariah perspective. We hope that this paper will prompt and engage global Islamic finance bodies, Shariah scholars and Muslim economists to analyze, comment and build upon the arguments expressed.

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