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Islamic Currency Swap: Can Be The Best Way to Hedge Indonesia Hajj Fund?

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Abstract: The operational costs of Hajj in foreign currencies will always face the risk of changes in exchange rates. Hajj operational costs will continue to grow in line with the increasing number of pilgrims. But at present, the government (BPKH) does not have a currency hedging policy to reduce the risk of fluctuating currency values. Hajj operational costs are saved in rupiah, dollar and riyal currencies. As a result, deposits of pilgrims will continue to be overshadowed by the reduction in value due to the depreciation of the rupiah against the dollar and riyals. Hedging policy is a necessity in the management of Hajj funds. This study will use an Islamic currency swap simulation analysis. According to the MUI DSN No 96 in 2015, a swap is a contract that starts a spot transaction followed by a forward agreement by setting a forward exchange rate. Then it is settled by spot transactions using the agreed forward exchange rate. The results of the study show that the dollar and riyal in 2018 are in a state of high volatility, so hedging is needed to reduce cash outflows. Based on analysis, Islamic currency swap can be the best hedging to the operational costs of Hajj in USD is with tenors 30 days, 180 days, 360 days. while the operational costs of Hajj are in Saudi Arabia Riyal currency, efficient in overnight tenors, 30 days, 90 days and 180 days.

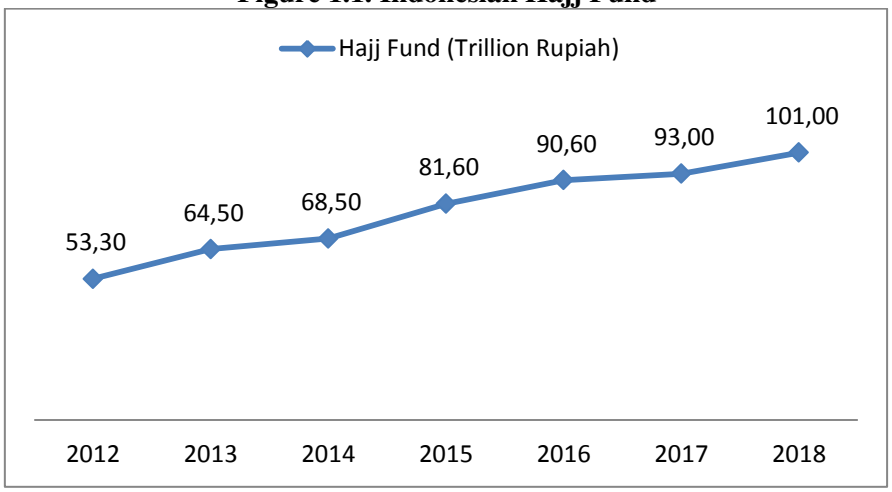
Keywords: Hajj Fund, Islamic Currency Swap, Efficiency

Introduction

Starting in January 2018, BPKH has begun managing the Hajj fund of IDR 105 trillion in March 2018 (Republika, 2018). BPKH is obliged to manage these funds which must be in accordance to government principles and sharia principles.In 2012 the Indonesian pilgrimage fund which was still managed directly by the Ministry of Religion was Rp53,3 trillion continues to experience an upward trend touching the Rp110 trillion rupiah as of October 2018, increasing. This shows that public interest in Indonesian Muslims increases each year. Along with the increasing interest in the pilgrimage, the operational funds of the Hajj fund will be even greater.

Based on the Hajj report from the Ministry of Religion of the Republic of Indonesia, the Hajj operation will use the USD, SAR (Saudi Arabia Riyal) and Rupiah currencies. In accordance with Bank Indonesia regulations since 2016, domestic hajj operations must use Rupiah. This is a monetary strategic step to increase demand for the domestic currency, thereby reducing the pressure of the USD against rupiah (Kementerian Agama, 2016).

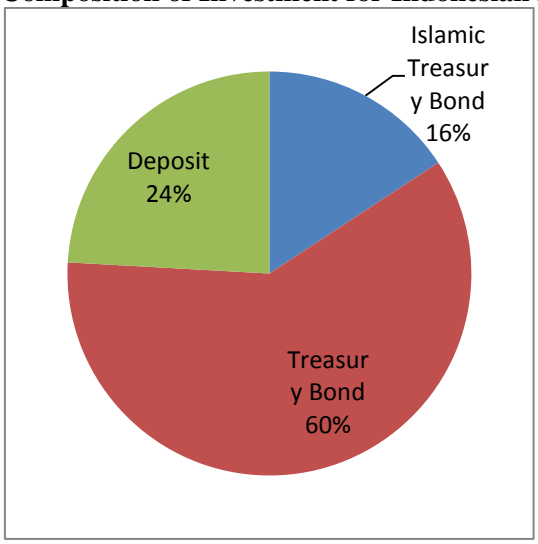
Figure 1.1. Indonesian Hajj Fund



Source: Ministry of Religion of the Republic of Indonesia

During 2012 to 2018, Indonesian pilgrim funds were in an average position of Rp78,92 trillion. Never affected by global and domestic economic conditions, Hajj funds continued to grow an average of 12,78% per year.

Figure 1.2. Composition of Investment for Indonesian Hajj Funds



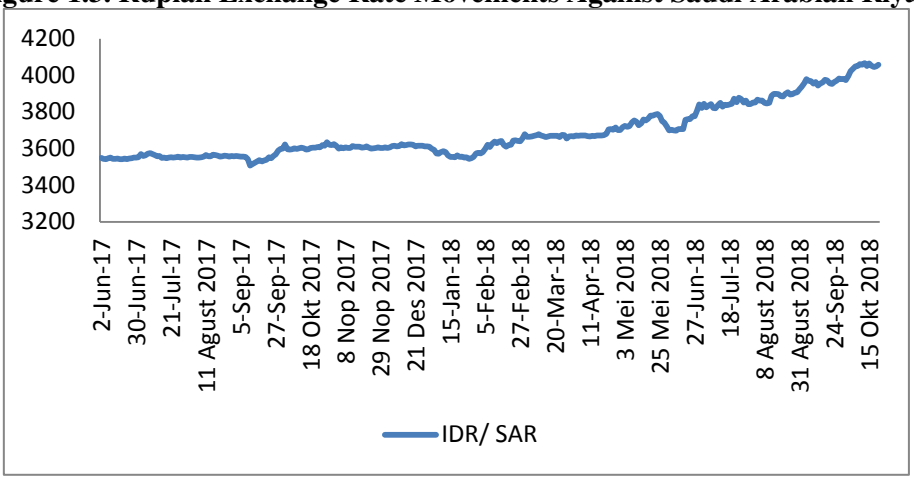
Source: Ministry of Religion of the Republic of Indonesia

BPKH continues to optimize investment in the Hajj fund in sectors with low risk and provides competitive returns. Therefore, BPKH must choose a profitable investment instrument so that investment returns can be optimized to reduce the operational costs of Indonesian Hajj. From Rp110 trillion in Hajj funds as of October 2018, the largest funds are invested in the form of Government Bonds (SUN) or government bonds with a zero-risk nature of bonds amounting to 60% of the total Hajj funds or Rp66 trillion. While the rest is invested 24% or Rp26,4 trillion deposits and 16% or Rp17,6 trillion in the form of SBSN or Government Bonds.(BPKH, 2018). When viewed from the composition of investment, it appears that the investment of hajj funds is very avoiding high risk to avoid losses that will reduce investment returns or even reduce the principal of the hajj fund if someone places funds in investing with Hajj funds with worse returns. Risk management must consider historical data and future projections.

The operational costs of Indonesian Hajj are allocated from deposits of pilgrims and some from the APBN. The initial deposit of pilgrims will be invested to avoid shrinking due to inflation. Then the repayment fees will be accumulated as the endowment of the people. Operational costs that do not originate from the state budget are costs for lodging in Mecca, hotel bookings and payments in Medina, hotel bookings and payments in Jeddah, transportation costs, consumption costs while abroad, hajj, document and other dormitory fees. The Hajj is a service that is performed in Mecca, meaning that Indonesian pilgrims will use foreign currency when performing the Hajj as an operational cost. The agreement has been made with various parties such as airlines, land transportation, lodging and others (Laporan Dana Haji 2016).

If payment uses the spot rate, the payment due will be exposed to the risk of exchange rate fluctuations. If rupiah depreciates, payment of operational costs in the form of short-term payments will increase. If global market conditions are in high volatility, the BPKH asks for Islamic hedging to guard against risk so that the exchange rate difference is not so great. Following is the development of rupiah exchange rate against the Saudi Arabian Riyal (BPKH, 2018).

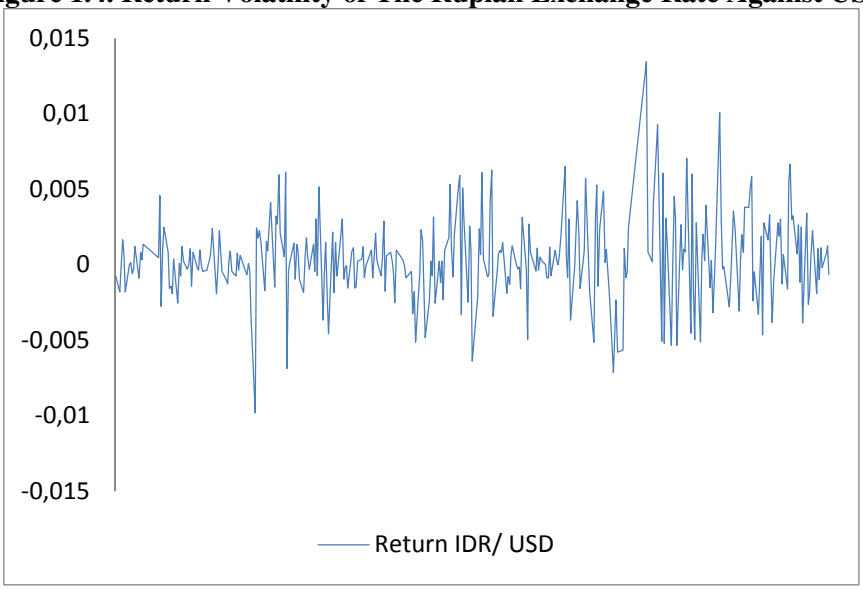
Figure 1.3. Rupiah Exchange Rate Movements Against Saudi Arabian Riyals



Source: www.bi.go.id

Based on the figure above, rupiah exchange rate against SAR has experienced a depreciation trend until 31 October 2018. Rupiah has lost its value of 12,34% or depreciated by Rp448 for the period January 2, 2018 to October 31, 2018. This shows that the demand for the Riyal is higher because the number of pilgrimages and Umrah increases. In this condition, it is very dangerous if the Hajj funds managed by the BPKH are not fenced off with Islamic Hedging policies. Seeing the development of rupiah exchange rate against the riyal which is experiencing a weakening trend, the volatility of rupiah exchange rate against the riyal is approaching the end of 2018. The highest volatility occurs in July and August where Muslims from all over the world carry out the Hajj.

Figure 1.4. Return Volatility of The Rupiah Exchange Rate Against USD

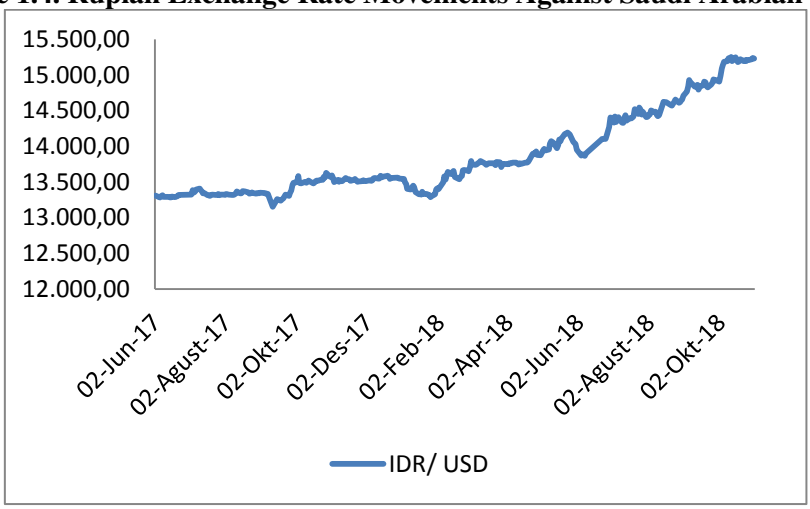


Source: www.bi.go.id

Based on the graph above, the volatility of rupiah against the dollar is included in the medium category period 2 June 2017 to 8 February 2018, then along with the weakening of almost all emerging market currencies against the dollar, rupiah exchange rate against Riyalpun also weakened. High volatility in the period March 21 to the end of October 2018 is in line with the high volatility of the global economic situation. Therefore, the volatility of rupiah exchange rate against the Saudi Riyal will greatly affect the value of liabilities in the form of the Saudi Arabian Riyal.

During the period of November 10, 2017 to November 30, rupiah lost a value of 5,78%. The average rupiah exchange rate against the dollar moves at the level of Rp13.679.04. From the graph, rupiah starts to fall on June 10, 2018 but is still at the level of Rp13.600 per dollar and starting from Rp14.090 per dollar on June 21, 2018. The weakening of rupiah continues to increase through its psychological level on October 3, 2018 at Rp15.088 per US dollar and replace Rp5.253 on October 11, 2018. Then on November 5, the strengthening trend began at the level of Rp14.972 per dollar is at the level of Rp14,339 on 30 November 2018.

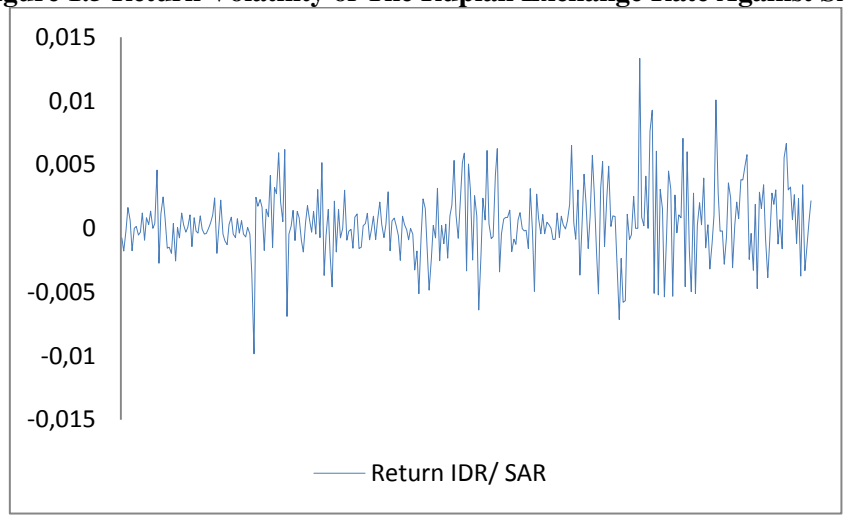
Figure 1.4. Rupiah Exchange Rate Movements Against Saudi Arabian Riyals



Source: www.bi.go.id

The trigger factor for the weakening of rupiah against the US dollar is the improvement in US macroeconomic data, such as the decline in unemployment and rising interest rates of the Fed rates, causing capital outflows from emerging markets to the United States capital market in the form of portfolio investment. This causes the demand to have a dollar increase and cause emerging market currencies including rupiah to weaken. Vulnerable rupiah with external factors exacerbated by the conditions of Indonesia's macroeconomic fundamentals. Hajj has obligations in the form of foreign currencies, especially the USD and Riyal currencies of Saudi Arabia, will increase in liabilities and adjustments to exchange rates that are very significant, then exacerbated without effective hedging policies(BPKH, 2018).

Figure 1.5 Return Volatility of The Rupiah Exchange Rate Against SAR



Source: www.bi.go.id

It can be seen that rupiah returns experience moderate volatility during the period 10 November 2017 to 10 June 2018. During that period the average return on rupiah exchange rate against the USD is 0,00029602. This period is considered a stable level for the movement of rupiah exchange rate against the USD. The average return during this period also decrease of 0,00015782, this was due to the increasing number of negative returns on rupiah exchange rate

against the dollar. However, the graph of return volatility during the period 11 June 2018 to 30 November 2018 shows a significant increase in volatility.

Table 1.1. Indonesia Hajj Operational Fund Period 30 November 2016 to 31 May 2017

Tanggal	IDR	USD	SAR
30-Nov-16	372.386.244.761,00	233.057,44	2.278.541,00
31-Dec-16	183.857.953.530,00	233.070,78	2.279.030,66
31-Jan-17	185.061.644.892,60	233.098,71	2.278.508,00
31-Mar-17	185.665.525.587,36	233.110,72	2.278.512,00
30-Apr-17	195.187.205.596,55	232.983,90	2.278.242,25
31-May-17	191.306.039.031,68	233.008,00	2.644.789,90

Source: Ministry of Religion of the Republic of Indonesia

Based on the table above, it can be seen that the composition of the operational costs of Hajj is dominated by rupiah currency used for domestic operational costs. since May 31, 2017, funds in rupiah-denominated demand deposits have declined, from Rp372.386.244.761 fell to Rp191.306.039.031. This is because before the pilgrimage the funds have been used for *manasik* and settlement and payment due at home. Unlike the giro in the form of USD and SAR, the amount has not changed significantly.

USD checking account has dropped from $ 233.057 to $ 233.008 from November 2016 to May 31, 2017, this is due to Bank Indonesia regulations that use USD for the operational needs of the Hajj. However, this fixed amount will always be overshadowed by exchange rate risk. The balance of the Hajj operational funds in the form of the Saudi Arabian Riyal (SAR) increased from SR 2.278.242 to SR 2.644.789, this was due to the increasing quota of Indonesian pilgrims, so the Ministry of Religion of the Republic of Indonesia allocated more funds in the Riyal currency. Depreciation of rupiah against the dollar and riyal will cause greater cash outflows.

If there is no hedging policy, the operating costs of the pilgrimage will continue to change along with changes in exchange rates. If the market is in extreme conditions, then all variable costs of the Hajj fund will increase. The government must not underestimate this condition. Until now the government does not do any hedging including natural hedging. This is because the government does not want to appear to be too dependent on foreign currencies. This concept is called currency psychology.(Oberlechner, 2004)

Literature Review

Risk is the possibility that the consequences of an event can result in an adverse outcome. More specifically, in finance, risk refers to the possible loss of cash inflows and asset values. One way to reduce the impact of risk is through Islamic Hedging(Tarantino & Cernauskas, 2009). Hedging is defined as a transaction that compensates for an exposure to financial price fluctuations in another contract or business risk, or is a position in a hedging instrument that is formed to reduce risk caused by exposure to a risk factor. Hedging is the same as reducing stakeholders exposure to risk(Siregar, 2015).

Hedging and minimizing risk are in line with sharia. Using hedging instruments not only provides the benefits of risk avoidance, but also economic benefits, namely ensuring certainty and guaranteeing the future. For example, a forward contract does not guarantee profit, but guarantees the buyer gets the seller and seller to get the buyer with a price and quantity determined previously. If the manufacturer or farmer wants to use a forward contract, then the contract will guarantee the sale of his commodity by locking the price and quantity of the commodity. By doing this, the contract can plan for the future. Thus, hedging is a very necessary and essential instrument.(Zenios, 2006)

The most important thing to consider is not "whether it is necessary or not need to guard" but "how to do hedging". According to Suwailem (2006), in Islam, if the method involves activities such as gambling, then this method will be considered illegitimate, even if to do hedging. Valid hedging without gambling or speculation is the subject of Islamic hedging instruments. That is, Islamic derivatives are developed in Islamic finance to fence off risks without elements of speculation (Islamic Development Bank, 2001). In conventional finance, hedging involves taking a balancing position in a derivative that aims to manage the gains and losses relating to the underlying asset. Hedging seeks to eliminate volatility related to the price of an asset by taking balancing positions that are in opposition to the position currently held by consumers. Derivatives are financial instruments whose value depends on the value of other fundamental variables, such as grain, palm oil, currency, or index. In conventional finance, there are four basic derivative instruments, namely forward contracts, futures contracts, option contracts, and swap contracts (Hull, 2015).

1) A forward contract is the oldest derivative instrument, and a forward contract is also the simplest form. In forward contracts, two parties seek to settle a transaction on an upcoming date, but at a price determined at the beginning of the transaction. The disadvantage of a forward contract is that one party that holds a forward contract must find another party that has a need that is completely at odds with itself. In addition, forward contracts are negotiated using the forward rate, so that one party will suffer a loss. Therefore, a futures contract appears to complete the forward contract.(Murphy, 2008)
2) Futures contracts are forward contracts that are standardized regarding the size of the contract, the duration of maturity, product quality, place of delivery, and so on. Futures contracts are traded on exchanges that mediate transactions carried out by all buyers and sellers.
3) An option contract is a contract that gives the holder the right, but does not impose an obligation, to buy (or sell) the underlying asset at maturity with a predetermined implementation price. payment of a premium is required to obtain rights on an option contract, payment of a premium is required. There are two basic types of options, namely call option and put option.
4) On the other hand, a swap contract is a contractual agreement between two parties that approve payments during a period, based on a hypothetical value (notional amount) of the underlying asset. there are several types of financial swaps commonly used in conventional financial systems, such as interest rate swaps, currency swaps, commodity swaps and equity swaps.(Steiner, 2010)

Islamic Cross Currency Swap

The structure of a foreign exchange swap contract is based on the concept of *wa'd*. This arrangement consists of *bai 'sharf* at the beginning of the transaction, followed by the promise (*wa'dan*) delivered by the consumer to seek currency exchange in a future date with today's exchange rate. On this coming date, another bai sharf takes place at the exchange rate that was promised on the previous date.(Ahmed & Hunt, 2013)

The bilateral promise in the study of fiqh is known as *muwa'adah*. *Muwa'adah* is different from *wa'd* because *muwa'adah* is reciprocal between two parties and is interrelated with each other. Even *muwa'adah* which binds both parties is very similar in nature to a *'aqd*. However, the use of *muwa'adah* in Islamic forward contracts is prohibited by AAOIFI. (Ahmad & Ahmad, 2014)

The concept of *wa'd* in the Islamic forward agreement that has been implemented by several countries including Indonesia still raises a debate about *wa'd* which only involves one party in making an agreement. The problem of the *wa'd* concept is in the unilateral concept that

causes one the party that promised there must be someone who suffered a loss. Therefore, the implementation of the *wa'd* concept in an Islamic forward agreement should involve both parties to promise without mutual agreement, such a concept is called *wa'daan*.(Mohamad, Othman, Roslin, & Lehner, 2014)

Islamic Forward Agreement on Islamic banks has been simulated by Arsyi, (2016). Simulation on USD financing products in Islamic banks. The results of this study indicate that Islamic banks will benefit from the Islamic Forward Agreement. However Arsyi added that the sharia hedging strategy must be carried out in the condition that the rupiah depreciates against foreign currencies, especially the USD.

Research Method

Spot contract is completed within two days. The exchange rate prevailing in the spot contract is called the spot (exchange) rate which applies to one to two days delivery or usually the delivery is done two days later (T + 2). Submission will usually be done on workday. Foreign exchange banks or foreign exchange dealers (money changers) who make spot transactions with the community or their customers, do not get profits in the form of commissions or fees for foreign exchange transactions. Rather it obtains a spread which is the difference between the selling rate and the buying rate stated in the quotation (Llp, 2016).

$$Spread = \frac{(selling\ rate - buying\ ratei)}{seliing\ rate} \times 100\%$$

Forward Exchange Rate

In forward contracts, buying and selling foreign currencies uses a forward rate. The forward rate is the exchange rate set at the beginning of the agreement, and applies in the future usually between two and twenty-four hours up to twelve months. Forward transactions are usually carried out within 30 days, 90 days and 180 days even though in practice it can be negotiated depending on the agreement by the party making the agreement (Danielsson, 2015).

Forward Premium (Discount)

In the forward market, if the forward rate is higher than the spot rate, it will be transacted at a premium or called forward premium. If the spot rate is higher than the forward rate, it will be transacted at a discount or called a forward discount (Clauss, 2010).

$$\text{forward premium} = \frac{(\text{forward rate} - \text{spot rate})}{\text{spot rate}} \times \frac{360}{\text{N}} \times 100\%$$

$$forward\ discount = \frac{(\text{spot rate} - \text{forward rate})}{\text{forward rate}} \times \frac{360}{\text{N}} \times 100$$

Forward Rate Agreement

Forward rate agreement is a hedging instrument that is not recorded in financial statements to be completed in the future (Khan, 2005). This will have an impact on the agreement to pay for or accept the differences that occur in the future of the agreement in the future, both the interest rate difference and the exchange rate prevailing at the time of settlement. the difference in the forward contract rate and spot rate is calculated by the following formula:

$$\text{Forward Outright} = \frac{\left(1 + Murabahah\ Rate\ USD\ \left(\frac{days}{\text{year}}\right)\right)}{\left(1 + Murabahah\ Rate\ Domestic\left(\frac{days}{year}\right)\right)}$$

Based on the MUI DSN fatwa No 96/ 2015, swap value is determined as follows (Nugroho, 2015):

$$Islamic\ swap\ value = Islamic\ Forward\ Agreement + Spot\ value$$

Technical Strategy For Selecting A Hedging Contract Model

Exchange rate exposures that show the effect caused by fluctuations in the foreign exchange rates of the company's import and export transactions can be categorized as follows(Jorion, 2007):

1) Transaction exposure, namely the risk of the effect of exchange rate fluctuations on future cash transactions.
2) Economic / operating exposure, which is the effect of fluctuations in foreign exchange rates on the present value of a company's future cash flow.
3) Accounting exposure, namely the risk of the effect of exchange rate fluctuations on the company's consolidated financial statement.

There are several possible effects of changes in exchange rate on the company (Saragih & Nugroho, 2014):

1) Changes in exchange rates will greatly affect the company's earnings, but the costs incurred are relatively unaffected.
2) The company's income is not affected by changes in exchange rates, but the costs incurred are greatly affected.
3) Changes in exchange rates affect the company's costs and revenues.

A forward contract is a sale and purchase agreement of a foreign currency that will be transacted by two parties at a certain price that will be settled and delivered in the future. Forward contracts help investors or business people manage risk well, especially in the currency market. The price level and settlement date in the forward contract are bound. Business people will benefit by using a forward contract, in their interest (Sawyer, 2015):

1) The company can reduce the cost (efficiency) of each transaction related to international trade.
2) The company can protect profit margins for goods and services exported abroad.
3) The company can lock the exchange rate during the forward agreement period, so it is not affected by exchange rate fluctuations. However, so that the hedging contract policy provides benefits, it is necessary to examine the feasibility of hedging with forward contracts.

Dynamic Simulation of Islamic Forward Agreement and Islamic Currency Swap

When the government and Islamic Banks conduct Islamic hedging, the first step to do is to agree on the forward exchange rate that will be used for payment at maturity. The following simulations use a maturity period of overnight, 30 days, 90 days, 180 days, 360 days. Here's the calculation:

Table 4.1. Calculation Forward Rate for IDR to USD

Date	Indonia Rate	Murabahah USD Rate	Tenor	Forward Point	Forward Rate
31-May-17	0,04279	0,0247	overnight	0,667900139	13321,67
31-May-17	0,04279	0,0246	30 days	20,11248983	13341,11
31-May-17	0,04279	0,0307	90 days	40,2627225	13361,26
31-May-17	0,04279	0,0251	180 days	117,824245	13438,82
31-May-17	0,04279	0,0411	360 days	21,286958	13342,29

Table 4.2. Calculation Forward Rate for IDR to SAR

Tanggal	Indonia Rate	SAIBOR	Tenor	Forward Point	Kurs Forward
31-May-17	0,04279	0,02177	overnight	0,22479	3551,225
31-May-17	0,04279	0,02954	30 days	6,74394	3557,744
31-May-17	0,04279	0,02342	90 days	20,23182	3571,232
31-May-17	0,04279	0,02545	180 days	40,46364	3591,464
31-May-17	0,04279	0,02545	360 days	80,92729	3631,927

Calculation of forward rates using Indonia and murabahah rates USD. The selection of the indonia rate is due to the Indonia rate being the benchmark interest rate released by Bank Indonesia to reflect the overall benchmark interest rate. The USD Murabahah rate is published by the Islamic Interbank Benchmark Rate as a new benchmark in the international Islamic derivatives market. So that the forward exchange rate calculation for Islamic hedges uses murabahah rates. The hedging simulation was carried out from May 31, 2017, the date rupiah began to weaken to touch the number Rp1.300 per USD. After that date rupiah continues to weaken to touch the figure of Rp15.000 in September 2018. The simulation is carried out using a maturity period of 30 days. The resulting forward point is 0,6679 which means that the forward rate will be more expensive at 0,6679 than the spot rate. Therefore, the forward rate will look slightly more expensive than the spot rate. In this phase, the government should not conclude earlier if the weakening exchange rate has to hedge. The government must consider the forward point and the projected maturity rate.

The forward rate will be multiplied by the hajj operational costs which is expressed as forward values, while the spot rate will also be multiplied by the operational costs of Hajj in the form of USD which is expressed as spot values. The accumulation of these two contracts is an Islamic swap contract based on the 2015 MUI DSN fatwa number 2015. According to the MUI DSN fatwa, Islamic Swap is an agreement between the bank and related parties to exchange foreign currencies starting with a series of spot transactions followed by forward agreement that will be completed at maturity with a spot transaction. The following is a comparison of spot value, forward value and swap value using the exchange rate on May 31, 2017.

Islamic hedging of hajj operating costs in USD is simulated by specifying a spot transaction of 25% notional amount and forward transaction of 75% notional amount:

Table 4.3. Simulation Islamic Currency Swap (IDR/ USD)

Periods	Notional Amount (USD)	Spot value	Forward Value	Swap Value
overnight	233.008,00	775.974.892,00	2.328.041.395,56	3.104.016.287,56
30 days	233.008,00	775.974.892,00	2.331.439.454,27	3.107.414.346,27
90 days	233.008,00	775.974.892,00	2.334.960.828,33	3.110.935.720,33
180 days	233.008,00	775.974.892,00	2.348.515.169,76	3.124.490.061,76
360 days	233.008,00	775.974.892,00	2.331.644.699,63	3.107.619.591,63

Islamic hedging of hajj operating costs in SAR is simulated by specifying a spot transaction of 25% notional amount and forward transaction of 75% notional amount:

Table 4.4. Simulation Islamic Currency Swap (IDR/ SAR)

Periods	Notional Amount(SAR)	Spot value	Forward Value	Swap Value
overnight	7.644.789,90	6.786.662.233	20.350.354.265,90	27.137.016.499,63
30 days	7.644.789,90	6.786.662.233	20.363.942.879,95	27.150.605.113,67
90 days	7.644.789,90	6.786.662.233	20.411.589.033,00	27.198.251.266,73
180 days	7.644.789,90	6.786.662.233	20.658.133.507,28	27.444.795.741,00
360 days	7.644.789,90	6.786.662.233	21.328.505.133,61	28.115.167.367,33

This study uses a simulation of 75% forward of the total overall operational costs of Hajj and 25% is settled by spot transactions. swap value for overnight transactions is equal to. 27.137.016.499,63 Saudi Arabian riyals (SAR). It's different from the maturity of 30 days to the maturity of 360 days. The value of the Hajj operational costs in the swap value is greater in line with the greater difference between the Indonia rate and the murabahah rate of USD. Therefore, the government needs to adjust hedging with the operational needs of the pilgrimage. The Islamic hedge will be considered efficient if the swap value with a forward value is 75% lower than the operational cost due. The following is the determination of the Islamic currency swap efficiency for the operational costs of conducting the Hajj in May 2017.

Table 4.5. Efficiency of Islamic Hedging Policies for Hajj Fund (USD)

	Hajj operational costs (Forward 75%)	Hajj operational costs (settlement)	efficiency
Overnight	3.104.016.287,56	3.101.569.488	Not efficient
30 days	3.107.414.346,27	3.125.569.312	efficient
90 days	3.110.935.720,33	3.110.889.808	Not efficient
180 days	3.124.490.061,76	3.148.870.112	efficient
360 days	3.107.619.591,63	3.250.694.608	efficient

Swap value using the overnight murabahah rate is lower than the operational cost due on June 1, 2017. Therefore, overnigh transactions are considered inefficient. Same is the case with 90 day swap transactions. For swap transactions of 30 days, 180 days, 360 days, Islamic currency swaps are considered efficient because the swap value for operational costs of Hajj is lower than the operational costs due using the maturing spot rates, this indicates that both

conventional and sharia hedging policies are calculating policies taking into account the initial transaction spot rate, the agreed forward exchange rate and transaction value at maturity. Hedge policy is not designed directly in the condition that rupiah exchange rate depreciates, but must be considered when rupiah appreciates and rupiah depreciates in the future.

The same is true when doing hedging policies for the currency of the Saudi Arabian Riyal (SAR). Every year the use of Saudi Arabian riyals increases as the quota of Indonesian Hajj pilgrims increases from 2017 to 2018. BPKH and the vice-president of the Republic of Indonesia add funds to invest in the Hajj fund in the form of Saudi Arabian riyals. This policy is carried out for natural hedging. Operational costs in the form of the Saudi Arabian Riyal in 2018 were received by around 7,4 million riyals. If hedging is not carried out, the value of the agreement for the maturity of Hajj is increasing. The following is a simulation of hedging policies for Saudi Arabian riyals.

Table 4.5. Efficiency of Islamic Hedging Policies for Hajj Fund (SAR)

Periods	Hajj operational costs (Forward 75%)	Hajj operational costs (settlement)	efficiency
Overnight	27.137.016.499.63	27.148.367.468,59	efficient
30 days	27.150.605.113.67	27.198.204.945,67	efficient
90 days	27.198.251.266.73	27.301.316.967,21	efficient
180 days	27.444.795.741.00	27.455.984.999,51	efficient
360 days	28.115.167.367.33	27.765.321.064,13	Not efficient

Swap overnight values until the swap value with maturity is 180 days lower than the swap value due. This shows that the swap value is an efficient policy to protect the value of rupiah against Saudi Arabian riyals. Meanwhile, for swap values with maturity of 360 days is an inefficient hedging policy.

Based on the simulation in this study, rupiah hedging against the US Dollar is more efficient when carried out with a maturity of 30 days, 180 days and 360 days, this is different from the more efficient Saudi Arabian riyal hedging policy with short-term hedging policies, efficient with overnight, 30 days, 90 days, and 180 days. Therefore, based on the simulation, the government should convert more rupiah into Saudi Arabian currency to do a natural hedge. If not possible, based on POJK No 7 in 2016 on government structured products, it can propose to the OJK and one of the sharia partner banks to make Islamic hedge products specifically for Hajj funds by considering the current exchange rate, forward exchange rate and future exchange rates. at present there are only two Islamic banks that have just implemented an Islamic forward agreement and a currency swap. Bank Syariah Mandiri have obtained permission from OJK to conduct Islamic forward agreements and Maybank Syariah Indonesia to conduct currency swaps.

Conclusion

Based on an analysis of the efficiency of Islamic hedging policies, the operational costs of Hajj are in USD, efficient at 30 days, 180 days, 360 days. while the operational costs of Hajj are in Saudi Arabia Riyal currency, efficient in overnight tenors, 30 days, 90 days and 180 days. Hedging policy is an art of risk management by considering historical data and future projections. The Indonesian government through the Ministry of Religion of the Republic of Indonesia and the BPKH cannot assess in plain view about sharia hedging policies. Depreciation is not an absolute requirement for hedging policies, both conventional and sharia. Hajj fund managers must analyze in detail about the possibilities that will occur, both foreign exchange losses and foreign exchange gains. Therefore, the Indonesian Hajj fund managers

need to conduct a deeper study of sharia hedging so that the collected hajj funds used for investment and operations can be protected from the risk of fluctuations in rupiah exchange rate against the US Dollar and rupiah exchange rate against the Riyal Saudi Arabia.

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