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INDONESIAN CAPITAL MARKET REVIEW

Towards A Sustainable Islamic Banking System: Re-embedding Murabaha Mode of Financing

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This study is an attempt at solving the chronic problems of banking murabaha, notably the ribawi benchmark rate problem. To this end, the first stage of this study examines whether the recent solution for banking murabaha, namely Islamic Interbank Benchmark Rate (IIBR), is a sustainable solution to solve the problem, particularly in Indonesia. Using data covering the 1210-day period from November 14th, 2011 (the first date emergence of IIBR) to July 1st, 2016, the Johansen cointegration test between IIBR and JIBOR (Jakarta Interbank Offered Rate) is performed to prove that notion. The results suggest that IIBR has long-run equilibrium relationship with the Indonesian ribawi benchmark rate. IIBR hence does not fulfil the sustainability feature as a long-run solution for Islamic finance. The second stage of this study proposes the so-called universal Islamic banking system as a solution to remedy the problem. The proposed model is not only theoretically appealing but also practically possible to be implemented.

Keywords: Islamic Banking; Banking Murabaha; Islamic Interbank Benchmark Rate; Cointegration; Universal Banking System

JEL classification: G21; C24

Introduction

To date, banking *murabaha* has become the most utilised Islamic product employed by Islamic Banks (IBs) over the world. The practice is however different from that of the classic one. Accounting and Auditing Organisation for Islamic Financial Institution (AAOIFI) (2007: 134) defines banking *murabaha* as

“a sale in which two parties or more negotiate and promise each other to execute an agreement according to which the orderer [client] asks the purchaser [IB] to purchase an asset of which the latter will

take legal possession. The orderer [client] promises the purchaser [IB] to purchase the asset from him and give the ordered a profit thereon. The two parties would conclude a sale after the possession of the ordered to the asset. However, the purchase order may or may not be obliged to conclude the sale.”

The main difference between the two is located in the way banking *murabaha* priced in the *financial* market instead of the *real* market. It is the case that almost all IBs utilise interest based (*i.e.* *ribawi*) benchmark rate such as LIBOR (or JIBOR for the local case of Indonesia) to determine their profit mark-up in order to

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provide more competitive rate with its conventional counterpart (Khan, 2010). Some scholars tolerate the application of *ribawi* benchmark rate in banking *murabaha* pricing for the following reasons. First, Islamic finance institutions are inevitably in need with the common reference to integrate with international capital market (Azmat et al., 2015). Second, mainstream banks involved in the business need a pricing mechanism equivalent to that in conventional one. Finally, it is utilised for the sake of making Islamic banks more competitive (Iqbal, 1999: 47). Those arguments received *Shari'ah* support from Usmani (2002) who advances an analogy to justify the practice from a religious perspective.

Having said that, Usmani also opposes the employment of *ribawi* benchmark rate for the long-term Islamic finance development. That is, the practice should only be done in the early development stage of Islamic finance. In the long-term, Islamic finance must depart from the practice; employ unique pricing method based on its fundamental values. Accordingly, many scholars encourage development of Islamic benchmarks as the surrogate. Haque & Mirakhor (1998) propose a macro-level index model and Iqbal (1999) adapts a micro-level strategy to construct the benchmark by extending Mirakhor (1996) using the Tobin's q approach. Among others, however, the most employed one is the Islamic Interbank Benchmark Rate (IIBR) launched by Thomson Reuters in cooperation with AAOIFI (Reuters, 2011).

Even though the solution of IIBR might seem practically appealing, the study pertaining to what extent the solution is effective to fulfil the aim as replacement of *ribawi* benchmark rate needs to be done. If the IIBR, eventually, still fails to do its role, the next plausible question is what is the more appropriate solution for this matter? This paper, therefore, tries to fulfil those gaps in the scope of Indonesia. In the first stage, this paper aims at examining whether IIBR is the appropriate solution to cope the problem arise in the *ribawi* benchmark rate of *murabaha* contract in Indonesia. In the second stage, this paper proposes the more sustainable way to overcome the benchmark rate

problem of *murabaha* contract in Indonesian IBs. The solution is supposed to accommodate the uniqueness of Islamic finance in which not only the *Shari'ah* form but also its substance, including embeddedness to the real sector of economy, is incorporated.

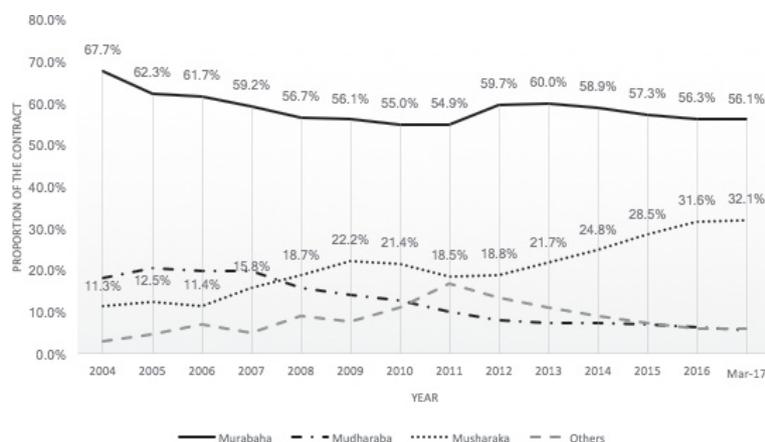
In doing so, this paper firstly examines the long-run cointegration relationship between IIBR and *ribawi* benchmark rate JIBOR (Jakarta Interbank Offered Rate). The gist of this test is to prove whether IIBR move independently apart from the conventional benchmark JIBOR or otherwise. Secondly, if the so-called Islamic benchmark rate and *ribawi* benchmarks rate are cointegrated, the IIBR is not sustainably coping the problem arise from the employment of *ribawi* benchmark rate for *murabaha* contract. This paper proposes the so-called Universal Islamic banking (UIB) system as the architecture Islamic banking, particularly in Indonesia as the sustainable solution.

Literature Review

The so called "banking murabaha"

In the 1970s, Islamic banking firstly emerged with the concept of Mohammad Uzair's "two-tier *mudharaba*" as its institutional model (Vogel & Hayes, 1998). The model is supposed to be greatly relying on the equity based (profit-loss sharing) financing with embedded growth and stability arguments in the assets and liabilities sides, respectively (Ahmed, 2011). However, that ideal model did not work in practice due to various complicated problems such as unsupported countries' legal and law, higher risk, uncertainty of return, higher monitoring cost, and lack of knowledge (Ahmed, 2011; Vogel & Hayes, 1998). Some adjustments, thus, were considered to make Islamic banking more true-to-life and competitive to its conventional counterpart. Those endeavours then yielded the concept of "*Murabaha* to the Purchase Ordered" (commonly called as Banking *murabaha*) which was proposed by 1987 IDB prize laureate, Dr. Sami Hamoud in 1976 (Kahf, 2013). That concept became a token to the beginning of the one-tier *mudharaba* or *murabaha* syn-

Figure 1. Financing Composition of Islamic Banking in Indonesia between 2004 and March 2017



Source: Indonesian Islamic Banking Statistics, OJK (2004, 2010, and March 2017)

drome era in Islamic banking, which mainly dependent with the banking *murabaha* contract.

In Indonesia, the first Islamic bank (IB) was established in 1992 following the concept of one-tier *mudharaba* as mentioned earlier. This can be viewed from the growth of financing composition of *murabaha* product in the Indonesian IB as shown by Figure 1. The figure shows that *murabaha* has been the main product for IB in Indonesia since the beginning of its emergence. Although attempts to diversify the financing activities into other form of contracts such as *musharaka* has been appearing, *murabaha* contract was still accounted for more than half of financing composition of IB by March 2017, *i.e.* 56.1 per cent.

In practice, some divergences take place in the way IBs operate the *murabaha* contract. For instance, the most highlighted one is the case that almost all IBs utilise *ribawi* benchmark rate such as LIBOR, in the international context, and JIBOR, in the Indonesian context, to determine their profit mark-up in order to provide more competitive rate with its conventional counterpart. Moreover, although theoretically IBs are supposed to own the goods' ownership before it is transferred to the client, practically IBs only own the goods in the very short time. Furthermore, even though the transfer of ownership is supposed to be done when the goods are transferred to the buyer, IBs retain the ownership until the full payment is received so that they always secure their position (Khan, 2010).

Provided the current practice of *murabaha*

banking, some scholars viciously make some critics. Kuran (2004: 10), for instance, comments that “[f]rom an economic standpoint, of course, an infinitesimal ownership period makes *murabaha* equivalent to an interest-based loan: the bank bears no risk, and the client pays for the time-value of money. There remains merely a semantic difference, which is that the client’s payment is called a ‘service charge’ or ‘mark-up’ in one case and ‘interest’ in the other.” He further asserts that the fallacy also appears in the way IBs give no penalty for late payment, since it is prohibited; instead, they incorporate the penalty charge in the advance payment, in which they charge higher advance payment and offer rebate for payment on time. Thus, Kuran sizes up that the “[banking] *murabaha* differs only cosmetically from the interest-based financing practices of the merchant banks and trading firms of the West” (Kuran, 2004: 10).

In particular, with regard to those issues mentioned by Kuran, scholars put extensively high concern in the way IBs use *ribawi* benchmark rate in determining mark-up for *murabaha* contract. On the one hand, some scholars and practitioners, of course, show their tolerances to accept the application as reflected in the following evasions. Firstly, Islamic finance institutions are inevitably in need with the common reference to integrate with international capital markets. Secondly, as western bank also involved into the business, they need equivalent rate of return to the conventional one. Finally, *ribawi* benchmark rate is utilised for the sake of

competition to attracting the clients (see Iqbal, 1999: 47).

On the other hand, many scholars argue the opposite, that the *ribawi* benchmark is unfavourable in terms of the *Shari'ah* form and substance. Iqbal (1999) asserts that the practice is completely unacceptable since the benchmark rate does not represent the real rate of return from the real economy, while the attachment with real economy is the main feature of Islamic finance. On the same side, El-Gamal (2007) affirms that the practice is not an appropriate pace for development of Islamic finance irrespective of many scholars who stand on the approval of using conventional benchmark rate to determine banking *murabaha* profit. He rebuts the justification of *ribawi* benchmark rate through following prepositions.

First, according to El-Gamal, the analogy mentioned by Usmani (2002) is fallacious. Usmani maintains that given A is a seller of liquor, which is definitely prohibited in Islam, and B is a seller of soft drink, which is permissible. If, say, B desires to get the same profit as A. B then may charge his customer with the same rate of profit with A. If it is the case, it does not necessarily lead the trade of B becomes forbidden as that of A. The analogy is incorrect since the object of sale in IBs do not practically differ from that of conventional banks as how liquor and soft drink do. In terms of mortgage, for instance, the input of both entities are the same, such as cost of funds; credit risk; and collateral property risk, and the output is also the same, which is a debt on the customer equal to the price of the property plus the additional banks cost of funds.

Second, this practice locates Islamic banking in the position which is fully dependent with the conventional one for its existence, nature of the product, and rate of return. It thus may lead to the sceptical view of customers toward IBs products, whether or not the product fully complies to the *Shari'ah* in terms of form and substance. If the conventional product is extensively prohibited by Islam, why then IBs benchmark to the conventional interest rate?

Finally, the benchmarking rate practice does not reflect the asset-based nature of Islamic fi-

nance. As El-Gamal also points out that "Islamic model... should do more than merely camouflage a conventional mortgage loan through sales, leases, and the like. It should provide the customer with appropriate tools for determining whether or not the purchase of a particular property at a particular price and financing that purchase at a particular interest rate constitute a good investment or financial decision" (El-Gamal, 2006: 76).

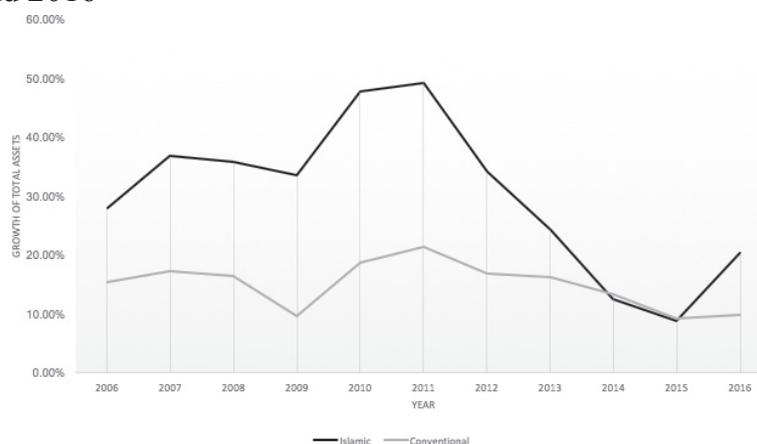
According to the above discussions, it is well-earned if the practice of banking *murabaha* is judged as a 'dishonesty and deception being practice in the name of Islam' in the notion of Saleem (2005), 'rent-seeking *Shari'ah* arbitrage' in that of El-Gamal (2007), 'jurisprudential schizophrenia' in that of Hamoudi (2007), 'legal hypocrisy' and 'thinly veiled of [interest-based debt]' in that of Holden (2007), simply 'disguised interest' in that of Khan (2010), and containing 'vapours of *riba*' in the terminology of Ebrahim and Shaikh (2016).

Symptoms of reputational risks in Indonesian IBs

Needless to say, as the main mode of financing of Islamic finance so far, IBs imply some very unique risks apart from its conventional counterparts. In this regard, IBs obviously need to consider the embedded fiduciary risk of their business. Majority of the customers chose IBs as their mode of financing since they offer *Shari'ah* based transaction in which their businesses are at least free from *riba* and excessive *gharar*, which are definitely prohibited by *Shari'ah* (El-Gamal, 2006). Negligence of incorporating this obligatory feature in the *murabaha* product of IBs as mentioned earlier may lead to reputational risk which may eventually end with long-run development problem of Islamic finance (Ahmed, 2014). Thus, if IBs failed to maintain their customers' trusts, they will be inevitably abandoned.

The symptoms of this currently can be observed from the Indonesian IBs performance. Enjoying the extensive growth of the total assets and financing over the years until 2011, the baby industry now has been facing the sluggish

Figure 2. Growth of Aggregate Total Assets Islamic and Conventional Banks Financing 2006 and 2016



Source: Indonesian Islamic Banking Statistics, OJK (2010 and March 2017) and Indonesian Banking Statistics, OJK (2010 and March 2017)

growth since afterwards. Figure 2 clearly shows how does this fact take place. IBs has been savouring extensive growth of total assets between 2006 and 2011 in which the growth has been accounted for 38.40 per cent in average, compared to its conventional counterpart which has been experiencing only 16.44 per cent average total assets growth in the same period. Accordingly, many people then were confident that this industry will have even better performance in the future. However, the hegemony was stopped after 2011 when the growth of IBs total assets has been decreasing overtime. The nethermost position was happening in 2014 and 2015 in which the growth of IBs were even lower than its conventional counterparts. Those discussions eventually put the sustainability of Islamic banking under very big questions.

Therefore, some innovations are inevitably needed in order to cope the problem of benchmark pricing in the *murabaha* contract through which the reputational risk can be avoided and the sustainability can be promoted.

The so-called Islamic benchmark rate

It is worth to note that scholars who permit the benchmark rate pricing for *murabaha*, such as Usmani (2002), also acknowledge the risk of employing the same in the long-term development of Islamic finance. Usmani (2002: 49) maintains that “[i]t is, however true that Islamic banks and financial institutions should get rid

of this practice as soon as possible, because, firstly, it takes the rate of interest as an ideal for halal business which is not desirable, and secondly because it does not advance the basic philosophy of Islamic economy having no impact on the system distribution.”

Some attempts have been done to develop the so-called Islamic benchmark rate. Haque and Mirakhor (1998) propose economy-wide index model in order to address the absence of Islamic benchmark rate. They argue that the rate of return to financial assets should be determined by the rate of return of real sector of economy. In doing so, rate of return on the so-called ‘national participation paper’ must be constructed from the both international stock market index and domestic market performance indicators. Unlike Haque & Mirakhor who harness the macro-level approach, Iqbal (1999) utilises micro-level approach to construct the benchmark through extending the work of Mirakhor (1996) based on the Tobin’s q theory of investment. His idea is, since the cost of capital in the Islamic finance cannot be reflected with interest rate as in the conventional one, it can be deputised by rate of return of other investment with the comparable risk. Thus, cost of capital is supposed to be a function of firm’s Tobin’s q ratio which is a ratio of market to replacement value of capital.

Furthermore, the more practically appealing way of dealing with this problem came from Thomson Reuters in co-operation with AAOIFI

which in 2011 launched the Islamic Interbank Benchmark Rate (IIBR) (Reuters, 2011). IIBR is a daily basis rate reflected the average of, at least, 18 international contributor panel IBs' cost of funding. The average is calculated after excluding 25 per cent of top and bottom quartiles of the distribution. The rate is arguably independent from the LIBOR, and even JIBOR, since it is constructed based on the profit rate of the IBs instead of interest rate, even though the calculation methodology of them is very similar. Furthermore, since the rate is always updated every day, it addresses the low frequency problem of rate calculation based on the real economic indicators as, for instance, suggested by Haque and Mirakhor and Iqbal.

However, as the pricing method is still conducted in the financial sector of the economy, it is inevitable to suspect the possibility of similar movement between IIBR as the Islamic benchmark index and JIBOR as the *ribawi* one as proven in the international context by Jatmiko et al. (2017). This definitely can nullify the independent argument of the Islamic benchmark rate. We discuss this in the next section of this study.

Research Methods

Johansen cointegration test is utilised in order to examine the long-run relationship between IIBR and *ribawi* benchmark rate JIBOR. Johansen technique is chosen due to its advantages compared to other techniques such as the Engle-Granger 2-step method and the Engle-Yoo 3-step method. As clearly mentioned by Brooks (2008), since Johansen is utilised on the framework of Vector Auto Regression (VAR) technique, it strips the problem of simultaneous equation bias which may appear in the other techniques. In addition, unlike the others, Johansen test also allows this study to perform hypothesis test of the cointegrating relationship. However, it is worth to note that, Johansen test is very much affected by the lag length chosen as it is conducted on the VAR's framework. Thus, the attempt to select the lag length opti-

mality is crucial in this matter (Brooks, 2008).

To perform Johansen cointegration test, first, this study ensures that the variables used are I(1) through performing Augmented Dickey-Fuller (ADF) and Philips Perron (PP) unit root tests. Second, after ensuring the variable are I(1), this paper utilises the lag length optimal test to choose the right lag length for the model using the Schwarz Information Criterion (SC). Finally, this paper performs Johansen hypothesis testing after observing the right deterministic trend assumption of the test via graphic analysis¹. The test is done by calculating the rank of long-run coefficient matrix via its eigenvalues. Then the hypothesis is evaluated by using trace and Max-Eigenvalue as following.

$$\lambda_{trace}(r) = -T \sum_{i=r+1}^g \ln(1 - \hat{\lambda}_i) \quad (1)$$

and

$$\lambda_{max}(r, r+1) = -T \ln(1 - \hat{\lambda}_{r+1}) \quad (2)$$

where T is the number of observations (series), r is the number of cointegrating vectors under the null hypothesis and $\hat{\lambda}_i$ is the estimated value for the i the ordered eigenvalue from the long-run coefficient matrix.

The difference between the two test is; λ_{trace} is a joint test which has a null hypothesis that the number of cointegrating vectors is less than or equal to r against an unspecified or general alternative which is more than r itself. On the other hand, the λ_{max} is a separate test where the the number of cointegrating vectors is r against an $r+1$ alternative hypothesis. The hypothesis for λ_{max} then as the following.

$$H_0: r = 0 \text{ Vs. } H_1: 0 < r \leq g$$

$$H_0: r = 1 \text{ Vs. } H_1: 1 < r \leq g$$

$$H_0: r = g - 1 \text{ Vs. } H_1: r < r \leq g$$

If one does not reject the first hypothesis testing, thus it means there is no cointegrating vectors on the model. In contrast, if one rejects

¹ Due to limitation of space, the graphical analysis is not presented in the paper yet available upon request.

Table 1. Unit Root Test

Maturities	IIBR		JIBOR	
	LEVEL	DIFF	LEVEL	DIFF
ON	-2.31	-11.15***	-1.43	-17.39***
1-WEEK	-2.41	-11.51***	-1.53	-18.80***
1-MONTH	-2.38	-9.91***	-0.94	-25.00***
3-MONTH	-1.45	-12.01***	-0.88	-18.34***
6-MONTH	-1.41	-11.07***	-0.81	-28.40***
1-YEAR	-1.45	-10.48***	-0.78	-28.26***

The numbers represent the t-statistics for the series in the level and first-difference. ***,** and * represent significance at 1%, 5% and 10%, respectively.

Table 2. Optimum Lag Length Test

Maturities	Opt. Lags	IIBR - JIBOR	
		Intercept	Det. Trend
ON	4	YES	Lin. with Trend
1-WEEK	7	YES	Lin. No Trend
1-MONTH	3	YES	Lin. No Trend
3-MONTH	3	YES	Lin. No Trend
6-MONTH	2	YES	Lin. No Trend
1-YEAR	2	YES	Lin. No Trend

Opt. stands for optimum while Detd. stands for deterministic

the first hypothesis testing means there is at least one cointegrating vector in the model and then the test is supposed to be continued for the model that has more than two variables.

Results and Discussions

Re-examining the sustainability of IIBR

This section examines whether there is a long-run relationship (cointegration) between the so called Islamic benchmark rate IIBR and JIBOR. If IIBR can bring the ideal of its advocates, the rate is supposed to be independent and linked with the real sector. The Johansen cointegration test allows to verify this; the rate is arguably not independent if it has long-run equilibrium with the *ribawi* benchmark rates JIBOR.

Data and unit root test

The data used in this paper is obtained from datastream and covers the period from November 14th, 2011 (the first date emergence of IIBR) to July 1st, 2016. However due to an issue pertaining to structural break of the data this paper only examines the period between April 16th, 2012 and May 5th, 2016. Furthermore, this paper utilises all available maturities, i.e.

overnight (ON), one-week, one-month, three-month, six-month and one-year.

Table 1 shows the unit root test of every series using Augmented Dickey-Fuller (ADF) method and Schwarz Information Criterion (SC) for the selection of maximum lags. The table depicts that both series (IIBR and JIBOR) across all maturities are I(1) at the level. It is shown by the fact that all the series have no unit root [1(0)] at the first difference level. Thus all the data are eligible to be utilised in the Johansen cointegration test.

Optimum lag length

This paper uses Schwarz Information Criterion (SC) to choose the most optimum lag for every model as shown in the Table 2. The optimum lag lengths vary across the maturities from the lowest 2nd (second) to the highest 7th (sixth) lag. The same table also summarize the deterministic trend assumption for the model. Based on its deterministic trend assumption, the Johansen test can be divided into five different types of assumption regarding to the kind of trend, namely none; linear; and quadratic, the present of intercept and the present of trend. This study uses the graphic analysis in order to determine the assumption and yields that almost all of the IIBR – JIBOR models are following

quadratic trend, while those of the IIBR – JIBOR models are following the linear without trend assumption.

Cointegration between the series

The Johansen cointegration test is then utilised for IIBR and JIBOR as shown in Table 3. It is worth to note that, this paper negates the Friday observation due to holiday in the Middle East market on that day so that the mis-match bias can be reduced. However, the un-reported result with the Friday observation shows no significant differences with the presented result.

Table 3 implies that the cointegration relationship exists between the IIBR and *ribawi* global benchmark, LIBOR. It is shown by all the Trace and Max-Eigen value of the model significantly reject the first null-hypothesis at 1 per cent for every maturity: overnight; 1-month; 3-month; 6-month; or 1-year, with exception to the 1-week maturity. This result, thus, shows that that IIBR does not significantly address the problem of *ribawi* benchmark rate. It further implies that the IIBR is, at least in the long-run, not independent from JIBOR. In consequence, this dilutes the main end of the Islamic benchmark rate proposal, which is de-linking the Islamic banking pricing to the conventional one.

This study is aware of the contra result coming from previous study, Azmad & Ahsan (2014) [presented in the Islamic Banking & Finance 2014 Programme, Lancaster University, UK], which report no long-run relationship between the IIBR and LIBOR. However, it in no way vitiates this study's results because of the following arguments. First, this study has accommodated all the features Azmad & Ahsan have in their study, including taking into account the structural break and the exclusion of Friday observation due to holiday in Middle East. Secondly, this study even utilises (i) more samples and carries out (ii) more maturities, in which the Azmad & Ahsan's utilise only the sample covers mid of November 2011 to end of April 2013 and exclude the two- and three-month maturities observations. Finally, unlike Azmad & Ahsan's methodology, this study's conforms with Brooks (2008: 350-355) in terms of testing

the observation at the level, which is I(1), instead of performing it at first difference as done by Azmad & Ahsan's. Furthermore, the Azmad & Ahsan's results have been also corrected by Jatmiko et al. (2017) who document long-run relationship between IIBR and LIBOR.

Moreover, the argument to avoid the use of so-called independent Islamic benchmark rate also comes from the international finance perspective. This is because the implication of the previous plea is the appearance of arbitrage opportunity between 'Islamic' benchmark rate and *ribawi* benchmark rate. Jatmiko et al. (2017) maintain that in almost all occasions IIBR gives higher return than LIBOR, provided that the two are all redenominated in the dollar currency. In consequence, rational investors then may take advantage through short selling, long (borrow) in the LIBOR and short (lend) in the IIBR. However, in the long-run, the arbitrage advantage will disappear and the rate of the two will be converge into equilibrium. In other words, in the long-run the difference between two will be not significantly different with zero. From this very argument, it is safe to say that the *murabaha* contract to be fully *Shari'ah*-based which attached with real sector, has to be detached from the financial market pricing since it is supposed to be a (credit) sale-based contract rather than mere synthetic loan-based contract.

Furthermore, say, as if the cointegration is found neither in the IIBR – JIBOR relationship, the IIBR rate still may be eligible for the global rate utilisation only, since the rate is very much redenominated in terms of dollar financing, which may not appropriate to be applied for domestic market of Indonesian IBs in which the transactions are done in the Indonesian Rupiah. Nevertheless, say that the rate can be utilized as the global Islamic banking rate. It is, in fact, not that global since the contributor banks of IIBR are coming merely from certain big banks in the GCC country. It may reflect the realities of liquidity in that region but may not be the case for the other Islamic banking markets such as that in Indonesia.

Finally, say, the rate is a valid instrument to be utilized in the USD based and global-wide

Table 3. Johansen Cointegration Test for IIBR – JIBOR

Hypothesis	Overnight		1-week		1-month	
	Trace	Max-Eigen	Trace	Max-Eigen	Trace	Max-Eigen
H0: r=0	0.04*** (35.06)	0.04 *** (35.56)	0.01 (13.73)	0.01 (12.53)	0.02 *** (21.02)	0.02 *** (19.27)
H0: r=1	0.00 (1.50)	0.00 (1.50)	0.00 (1.20)	0.00 (1.20)	0.00 (1.75)	0.00 (1.75)
Hypothesis	3-month		6-month		1-year	
	Trace	Max-Eigen	Trace	Max-Eigen	Trace	Max-Eigen
H0: r=0	0.02*** (16.89)	0.02 *** (15.24)	0.02 *** (22.45)	0.02 *** (22.31)	0.02 *** (18.85)	0.02 *** (16.77)
H0: r=1	0.00 (1.65)	0.00 (1.65)	0.00 (2.14)	0.00 (2.14)	0.00 (2.08)	0.00 (2.08)

The numbers in the parantheses portray the critical value of Trace or Max-Eigen statistics. ***,** and * represent significance at 1%, 5% and 10%, respectively

financing in GCC countries. In fact, the utilization of the rate in that original region, which is GCC, are very limited after almost five years of its existence. Ali (2013) documents that even the primary GCC banks, including those which become contributors of the IIBR, are lack of confidence to harness the rate as a benchmark for their USD based financing.

In summary, IIBR is not an effective solution to cope the problem of *ribawi* benchmarking rate of *murabaha* banking, particularly in Indonesia. Therefore, this study proposes the more Universal solution for this matter as will be presented in the following sections.

The so-called Universal Islamic banking system: a proposal

In the second stage, this paper proposes the so-called a Universal Islamic banking system as a general solution for the problem of IBs in Indonesia, particularly pertaining to the *murabaha* banking activities. The model is called Universal since it is derived from the root of the problem of *murabaha* banking itself instead of only regarding the surface of the problems. This also ensures the consideration of long-run development of Islamic finance in which, although the form of *Shari'ah* important to be fulfilled, focuses on the fulfilment of the substance of the *Shari'ah* in the model.

Before going through the model, this section re-locates the root problem of the *murabaha* banking as particular. This study argues that the main problem of Islamic banking comes from its departure from the equity based model to

the one-tier *mudharaba* model. The departure implies the negligence of the growth argument in the asset side of the IB in which supposedly IB may create more growth to the economy through its investment to the particular business through the *mudaraba* or *musharaka* mode of financing. Through this, the so-called clients of the bank are not burdened with the fixed predetermined interest rate which may restrict their business growth. The growth can also be achieved through the way IBs may not strictly require the fixed collateral so that the financing may reach broader outreach. However, indeed one must also aware that this basic model implies higher risk in terms of involvement in the real business as well as the less physical collateral having by banks.

The mode of financing then shifts to the banking *murabaha* in which the practice has many differences with the so-called classic *murabaha*. Banking *murabaha* is supposed to be sale-based transaction in which the real sell and purchase mechanism is conducted by seller (bank) and buyer (client). In addition, the pricing of the goods being sold is supposed to be following the market mechanism. However, the practice diverges from the definition of the mode of financing. Instead, practically bank has no ownership and directly shifts its risk of the good into the client. The problem then becomes even severe when the pricing model of the bank is following the *ribawi* benchmark rate. Those practices further imply detachment of IBs from the real sector of the economy, and thus lead IBs to be very much in conformity with their conventional counterparts. In the end, they

leave nothing in the market but the confusion of the clients.

Since the uniqueness of IBs are gone, the business model shares the same problem with the conventional one or even worse. Beyond the loss of growth argument and present of fragility (instability) problem, the Islamic model suffers from the business inefficiency such as the present of double taxation, higher transportation cost, bigger carrying and warehouse cost and also many excuses of not doing the regulatory framework such as BASEL or national Acts. Thus, it is plausible to consider the saying of Ahmed (2004) that as if the difference between Islamic and conventional banking is only about interest-free or not, probably it would be more efficient to let the conventional counterparts provide Islamic service instead of build a new institution which offers the similar product.

According to above discussions, this study then argues that the issue of *murabaha* pricing is not able to be solved by using only interest-free benchmark such as IIBR. Since the root problem actually comes from, as mentioned, the business model of Islamic banking per se which shifts away from the equity based model, and thus detached from the real sector. As “the mode of production [i.e. IB] is employed purely in the financial sector of economy” (Ebrahim and Shaikh, 2016: 190), the endeavour to create new benchmark will yield trivial impact since it mere creates inefficient financial markets and invites the smart money to expropriate the arbitrage opportunity. In the long run, the arbitrageurs will remedy the inefficiency and send back the financial markets into efficient condition in which the different between *ribawi* and *ribawi*-free benchmark rate will be not dissimilar with zero (see Granger, 1986).

The gist of the model

Therefore, this study argues the best solution is to ‘re-embedding’ back the mode of production to the real sector through reviving the concept of equity based model. Through which the *murabaha* pricing may be priced based on the market mechanism in which the price is reflected by both supply and demand

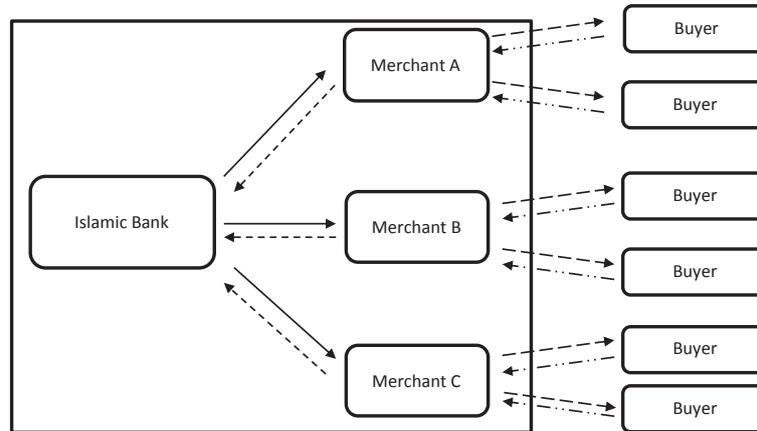
mechanism in the real sector. One way to do this is to create the Universal Islamic bank-based financial system as proposed by Jatmiko et al. (2017). The gist of the system is that the IB owns the share of a merchant (trader) either using *mudharaba* (non-voting rights) or *musharaka* (voting rights) mode of financing. While the merchant then trades its goods on the credit *murabaha* basis to the customers in the real sector of the economy and prices it according to the both price elasticity of demand and that of supply mechanism, instead of benchmark rate. In this regard, IB takes the main role as the buyers’ credit risk evaluators, using the input information from the merchant, and receivables collectors (see Figure 3).

Advantages of the model

The proposed model has some important advantages. First, the model can rightly accommodate the equity based nature of Islamic finance which may revive the growth argument of Islamic banking. In this model, bank is not the direct entity to perform sale-based *murabaha* mode of financing rather, it owns the equity of the merchants which have credit *murabaha* trading as their main business. The investment of bank to the merchants can be of two types, namely non-voting rights ownership using the *mudharaba* kind of contract or voting rights ownership utilising the *musharaka* kind of contract. It is true that the equity based financing model is prone to higher present of agency problems (Ebrahim and Sheikh, 2015). Accordingly, some innovations pertaining to the investment model of IBs must be considered to reduce the agency issues. For instance, one may consider the hybrid contract such as preferred participating *ijarah* which involves various combination of participatory component among capital appreciation, *ijarah* payments and income from operation as the substitution of classic *mudharaba* kind of transaction (see further Ebrahim et al., 2014).

Second, by using the model IBs can still utilise the *murabaha* contract through their merchants. It thus remedies some chronic issues of banking *murabaha* including the ownership

Figure 3. Universal Islamic Banking Model



This figure depicts the proposed Islamic banking architecture. The lines are described as the following.

- > The flow of share of the ownership
- - - -> The flow of goods at the spot
- ← - - - - The flow of profit and loss sharing
- ← ····· The flow of money at the deferred

Source: Jatmiko et al. (2017)

and benchmark pricing problem. The former is address in the sense that banks no longer need to own the traded goods by themselves, instead the goods are purchased, owned and sold by their merchants. The latter is solved since the pricing model is determined by the supply and demand mechanism. Banks may also evaluate the optimum pricing policy through incorporating the price elasticity both from the perspective of the buyers as well as their merchants. This solution thus implies re-embeddedness of IBs with the real sector of the economy.

Moreover, this model also considerably more efficient since it reduces the high cost of economy problem. For instance, the economy with the *murabaha* banking model needs the cost of acquiring a particular good as $TC_{mb} = PV(m_1 + m_2 + c)$, where PV stands for present value, m_1 , m_2 and c respectively represent margin for bank, supplier and price from the producer. In the economy with this Universal Islamic banking model, the cost of acquiring a particular good is only as $TC_{sb} = PV(m_3 + c)$, in which m_3 represents the margin charged by a merchant under consideration of an IB where $m_3 \leq m_1 + m_2$. This condition implies that the Universal model is more efficient than the *murabaha* banking model, $TC_{sb} \leq TC_{mb}$. The condition is held since the model implies shorter supply chain in which the IBs do not need to endure the transportation, inspection, carrying cost as well as the risk of the product since the

product is already in the warehouse of their merchant. Another way to observe the economic efficiency of the model is from the possibility to reduce the price of the product which in turn may increase the profit of the banks, assumed the product are price elastic. When the price is elastic thus the lower the price the higher the increase in the product sold is, thus the profitability of the banks may also be increasing.

Furthermore, integration of business between IB and merchant bears the easier way to assess the buyers' creditworthiness, as merchant is better evaluator and controller of its buyers' credit risk (Petersen & Rajan, 1997: 662), and collecting the credit, as Islamic banking have more established collection system and network to do so. Finally, as documented by Sen (1998), in the presence of imperfect financial market, in which the consumer borrowing rate is higher than the savings rate, the credit *murabaha* performed by merchant is more optimal than that performed by bank since it may grab more heterogeneous customers in respect to their intertemporal consumption preference. The customers who are currently have lower income than in the future will have higher marginal willingness to substitute future payment for current payment than customers who are currently have higher income than in the future. Sen further argues that the cost of borrowing offered by merchant is often lower than that offered by bank. This is also the case for this Uni-

versal Banking system. Jatmiko et al. (2017) mathematically proves that the *murabaha* price using UIB is lower and more stable than banks loan particularly in the period of crisis. Those facts, eventually maintain long-term relationship between seller and buyer as well as induce the replenishment of the demand of the goods even higher.

Finally, this Universal Islamic banking model guarantees the reduction of fiduciary risk which may lead to long term reputational risk of Islamic finance. This is because the model is in compliance with the *Shari'ah* in terms of the form as well as the substance. From the perspective of the form, this model is arguably *Shari'ah* compliance based on (the consensus of) all four school of thoughts since this model even accommodates the most restricted *mudharaba* definition of Shafi'i and Maliki who only permit the utilisation of *mudharaba* capital for financing of trading firm. The money granted from *mudharaba* contract is supposed to be used for acquiring the goods which in turn should be resold (see further Hasanuz-Zaman, 1990). In addition, the uniqueness of the model, in which the model substantially rooted in the real sector of the economy, also fulfils the substance of Islamic finance, namely that embeddedness of the financial sector and real sector (Iqbal, 1999).

Regulatory challenges

The main challenge for this appealing idea comes from countries which utilise so-called Arm's-Length (or specialised) banking system including Indonesia in which banks are precluded to have equity position in the firms they serve (Boyd et al., 1998). It is the case that the Indonesia banking law prohibits banks to conducting equity participation to the non-financial companies. This prohibition can be found in the Article 10, Act of The Republic Indonesia No. 7 of 1992 on Banking as Amended by Act Number 10 of 1998. The Act says the only exception of banks equity participation are in other banks or business operating financial services, such as leasing, venture capital, securities house, insurance and securities clearing house. While

the temporary equity participation may only be conducted by banks to settle problems of bad debt or financing based on *Shari'ah* Principles (see the same Act, Article 7).

Therefore, according to the current law the only possibility of doing *murabah* comes from the banking *murabaha* model in which IBs should become the seller of the goods. However, the paradox then exists since even though the Indonesian law literally defines *murabaha* contract as a sale-based transaction (see for example Bank Indonesia Regulation No. 9/19/PBI/2007), it substantially places banks as only financiers of the clients rather than sellers of the goods as shown by BI's Circular Letter (SE) No. 10/14/DPbS, March 17th 2008. In fact, neither conventional nor Islamic banks are permitted to have inventory or real tradable assets in their balance sheet. Furthermore, banks are even prohibited to possess the ownership title of the collateral purchased by banks and shall execute (sell) it at the latest of one-year period, according to elucidations to the Act of the Republic of Indonesia Number 7 of 1992 Concerning Banking, Article 12A, paragraph 1 and 2. This law implies no difference between Indonesian *murabaha* banking of IBs and interest based financing of conventional banks.

The above discussions then point out that neither the Universal model of IBs nor the 'true' *murabaha* banking model are accommodated by current Indonesian law. In other words, the adjustment of the law is inevitable in order to accommodate *Shari'ah*-compliance mode of financing in Indonesia. It is worth to note that, even the law makers are supporting to the clear definition of the difference between conventional and Islamic banking. It is at least represented by the Act of the Republic of Indonesia Number 7 of 1992 Concerning Banking, Article 12A letter c which says that Islamic Banks are not legitimate to conducting conventional activities and vice versa. Therefore, it is plausible if the adjustment of the law is proposed, and thus the proposed adjustment is the one which can accommodate the Universal IBs' operation in Indonesia given the limitation of *murabaha* banking as discussed earlier in this study.

Universal banking of Germany and main banking of Japan: the benchmarks

While Universal Islamic banking system is not compatible with Arm's-Length banking system, the proposed model will be best fit with the so-called Universal Banking of Germany as well as Main Banking of Japan. In the Universal Banking of Germany, for instance, the banks are permitted to have the equity position along with the loans, have voting rights and even place their representative in the board of director of the firms they serve (see Macey and Miller, 1995; Boyd et al., 1998). While in the Main Banking of Japan, although the post WWII regulation does not permit Japanese banks to have equity position in the non-bank firms more than 5 per cent just akin to that in US, the development has more resembled Germany which enables the banks to establish subsidiaries which have share in other companies and establish the *keiretsu* system, in which companies are related by mutual shareholding to each other and to a lead bank (Benston, 1994), hence allow them to become large and be active in corporate governance (Roe, 1993; Aoki et al., 1994).

One of the typical arguments supporting Arm's-Length banking system which separate bank into commercial and investment bank is the failure of well-known bank in 1930s the Great Depression. At that time, the failure of over 9,000 banks were believed driven by their involvement in securities activities which is the main feature of universal and main banking system (Benston, 1994). In addition, the advocates argue that since universal banks tend to be large, they become too big to fail and imply higher risk for the entire country's payment system. However, there is no clear empirical evidences showing those statements are observable in the reality (Benston, 1994).

Through this section this study locates that the implementation of Universal Islamic banking system by all means is possible as the model shares the feature of bank involvement in the equity investment through either cash control (*mudharaba*) or both cash and voting controls (*musharaka*) with the universal banking of Germany as well as main banking of Japan. The

extensive literatures are in debate of whether the involvement of banks into the securities activity leads to increase of systematic risk in the financial system. This study argues that the term involvement in the securities activity in the Universal Islamic banking is in a way different with that in universal banking. Universal Islamic banking ensures the involvement in the real sector of the economy instead of only trading in the stock market for the sake of liquidity management of the banks. Thus, it is very much possible to observe the involvement of the IBs into the non-listed trading companies in the Universal Islamic banking system. Therefore, by definition the equity investment activities in this model is not merely synonymous with gambling as noted by the founding father of Federal Reserve system, Senator Glass (see Benston, 1994).

Conclusions

This study aims at examining the sustainability of the Islamic Interbank Benchmark Rate (IIBR) application as the solution for banking *murabaha* pricing and proposing the more sustainable solution which emerges from the root of the problems of IBs' practices, particularly in Indonesia. In doing so, first, this study utilises the Johansen cointegration test in order to examine the long-run equilibrium relationship between *ribawi* benchmark rates, namely JIBOR, and Islamic benchmark rate, IIBR. The findings show that JIBOR and IIBR are significantly cointegrated over majority of the maturities, namely overnight, 1-month, 3-month, 6-month and also 1-year. Thus, the study concludes that the utilisation of IIBR is not sustainably cope the problem presents in the banking *murabaha* since it fails to differentiate itself with the conventional benchmarks as well as fails to re-embedding back the mode of financing with the real sector of the economy, and hence allows Islamic finance as a whole suffers the reputational risk.

Second, this study proposes the so called Universal Islamic banking system as the more sustainable solution for dealing with chronic problems of banking *murabaha*, particularly

ribawi benchmark rate pricing practice. In this model, IB owns the share of a merchant (trader) either using *mudharaba* (non-voting rights) or *musharaka* (voting rights) mode of financing. While the merchant then trades its goods on the credit *murabaha* basis to the customers in the real sector of the economy and prices it according to the both price elasticity of demand and that of supply mechanism, instead of benchmark rate. This model allows Islamic banking to accommodate its very nature of equity based investment model in the practice. By using this model, *murabaha* contract is utilised by the merchants instead of banks, thus remedies some chronic issues of banking *murabaha* including the ownership and benchmark pricing problems. The model, furthermore, also promotes the more efficient economic practice, in which it reduces the high cost economy and promotes the synergy between banks and merchants in doing their business and long-term sustainability relationship between sellers (banks and merchant) and buyers (clients). Finally, and most importantly, this Universal Islamic banking model guarantees the reduction of long term reputational risk of Islamic finance as the model complies with the *Shari'ah* form and substance.

However, this model to be implemented certainly requires the support particularly from the Indonesian banking law. Unfortunately, the current law does not support this model since banks equity participation are prohibited except that in other banks or business operating financial services, such as leasing, venture

capital, securities house, insurance and securities clearing house. The paradox comes from the fact that actually neither conventional nor *Shari'ah* banks are permitted to have inventory or real tradable assets in their balance sheet. This condition implies negligence to IBs' ownership for the assets traded in *murabaha* contract, and thus makes IBs have no distinction to the conventional counterparts. Therefore, by all means the adjustment of law is needed in order to establish the true *Shari'ah*-based mode of financing, whether to accommodate the former unsupported law or the latter one. Accordingly, it is safe to say that the proposed adjustment must accommodate the former one so that Universal Islamic banking system can be operated in Indonesia, given the limitation of *murabaha* banking.

Finally, this model is practically sensible. The fact that this model is best fit with the universal banking of Germany and main banking of Japan supports this argument. Those banking system, notably the universal banking, permit the involvement of bank into securities activities, one of them is trading the stock of non-financial firms. The Universal Islamic banking model does not share the feature of trading the stock for liquidity management only, which sometimes can nearly similar with gambling; however, it does the feature of the real acquisition in which bank truly invest their money in the trading firms either with the cash rights only (*mudharaba*) or cash and voting rights (*musharaka*).

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References

- AAOIFI. (2007). *Accounting, Auditing and Governance Standards for Islamic Financial Institutions*. Manama: Accounting and Auditing Organization for Islamic Financial Institutions.
- Ahmed, H. (2004). Frontiers of Islamic Banking: A Synthesis of Social Role and Micro finance. *European Journal of Management and Public Policy*, 3(1). http://ierc.sbu.ac.ir/File/Article/Frontiers%20of%20Islamic%20Banking%20A%20Synthesis%20of%20Social%20Role%20and%20Micro%20finance_93309.pdf
- Ahmed, H. (2011). *Product Development in Is-*

- Islamic Bank*. Edinburgh: Edinburgh University Press Ltd.
- Ahmed, H. (2014). Islamic Banking and Shari'ah Compliance: A Product Development Perspective. *Journal of Islamic Finance*, 3(2), 15-29. <http://journals.iium.edu.my/iiibf-journal/index.php/jif/article/view/45>
- Ali, S. M. (2013). Issues and Challenges for developing an Islamic Inter-bank Benchmark in Pakistan. *9th International Conference on Islamic Economics and Finance*. Istanbul: 9th International Conference on Islamic Economics and Finance.
- Aoki, M., Patrick, H., & Sheard, P. (1994). The Japanese Main Bank System: An Introductory Overview. In M. Aoki, & H. Patrick, *The Japanese Main Bank System* (pp. 3-50). Oxford: Oxford University Press. doi:10.1093/0198288999.003.0001
- Azmad, A. S., & Ahsan, A. (2014). IIBR-LIBOR Relationship and the Nature and Determinants of "Islamic Premium". *Islamic Banking & Finance 2014 Conference Programme*. Lancaster: Lancaster University. http://www.kafo.or.kr/board_common/file_download.asp?Board_Key=124&File_Key=152&flag=2
- Benston, G. J. (1994). Universal Banking. *The Journal of Economic Perspectives*, 8(3), 121-143. doi: 10.1257/jep.8.3.121
- Boyd, J. H., Chang, C., & Smith, B. D. (1998). Moral Hazard under Commercial and Universal Banking. *Journal of Money, Credit and Banking*, 30(3), 426-468. doi: 10.2307/2601249
- Brooks, C. (2008). *Introductory Econometrics for Finance*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9780511841644>
- Ebrahim, M. S., & Sheikh, M. (2015). The Mudaraba Facility: Evolution, Status and Contemporary Revival. *Arab Law Quarterly*, 29, 246-260. doi: 10.1163/15730255-12341305
- Ebrahim, M. S., & Sheikh, M. (2016). Debt Instruments in Islamic Finance: A Critique. *Arab Law Quarterly*, 30, 185-198. doi: 10.1163/15730255-12341317
- Ebrahim, M. S., Salleh, M. O., & Sheikh, M. (2014). Rationalizing Hybrid Financial Instruments from an Usuli Perspective. *Arab Law Quarterly*, 28, 295-306. doi: 10.1163/15730255-12341284
- El-Gamal, M. A. (2006). *Islamic Finance. Law, Economics, and Practice*. New York: Cambridge University Press.
- El-Gamal, M. A. (2007). Mutuality as an Antidote to Rent-Seeking Shariah Arbitrage in Islamic Finance. *Thunderbird International Business Review*, 49(2), 187-202. doi: 10.1002/tie.20139
- Granger, C. W. (1986). Developments in the Study of Cointegrated Economic Variables. *Oxford Bulletin of Economics and Statistics*, 48(3), 213-228. doi: 10.1111/j.1468-0084.1986.mp48003002.x
- Hamoudi, H. A. (2007). Jurisprudential Schizophrenia: On Form and Function in Islamic Finance. *Chicago Journal of International Law*, 7(2), 605-622. Available at SSRN: <https://ssrn.com/abstract=1019082>
- Haque, N. U., & Mirakhor, A. (1998). The Design of Instruments for Government Finance in an Islamic Economy. *Working Paper of International Monetary Fund*. <https://www.imf.org/external/pubs/ft/wp/wp9854.pdf>
- Holden, K. (2007). Islamic Finance: "Legal Hypocrisy" Moot Point, Problematic Future Bigger Concern. *Boston University International Law Journal*, 25, 341-368. <http://journals.iium.edu.my/iiibf-journal/index.php/jif/article/view/45>
- Iqbal, Z. (1999). The Benchmark Issue in the Islamic Financial System. *American Journal of Islamic Social Sciences*, 16(2), 45-53. https://www.researchgate.net/publication/265022153_The_Benchmark_Issue_in_the_Islamic_Financial_System
- Iqbal, Z., & Mirakhor, A. (2007). *An Introduction to Islamic Finance*. Singapore: John Wiley & Sons (Asia) Pte Ltd.
- Jatmiko, W., Assouli, D., Ebrahim, M. S., & Wojakowski, R. M. (2017). Reconstructing the Murabaha Facility Within a Truly Islamic Financial Architecture. *Durham University Business School Working Paper*. http://cim.kfupm.edu.sa/ibf2017/papers/5_13.pdf
- Kahf, M. (2013). *Islamic Finance Contracts*. Washington: CreateSpace Independent Pub-

- lishing Platform.
- Khan, F. (2010). How 'Islamic' is Islamic Banking. *Journal of Economic Behavior & Organization*, 76, 805-820. <https://doi.org/10.1016/j.jebo.2010.09.015>
- Kuran, T. (2004). *Islam and Mommon: The Economic Predicaments of Islamism*. New Jersey: Princeton University Press.
- Macey, J. R., & Miller, G. P. (1995). Corporate Governance and Commercial Banking: A Comparative Examination of Germany, Japan, and the United States. *Stanford Law Review*, 48(1), 73-112. http://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=2446&context=fss_papers
- Mirakhor, A. (1996). Cost of Capital and Investment in a Non-Interest Economy. *Islamic Economic Studies*, 35-47. http://ierc.sbu.ac.ir/File/Article/COST%20OF%20CAPITAL%20AND%20INVESTMENT%20IN%20A%20NON-INTEREST%20ECONOMY_92971.pdf
- OJK. (2004). *Indonesian Islamic Banking Statistics*. Jakarta: Otoritas Jasa Keuangan. <http://www.ojk.go.id/id/kanal/syariah/data-dan-statistik/statistik-perbankan-syariah/Pages/statistik-perbankan-syariah-desember-2004-2.aspx>
- OJK. (2010). *Indonesian Banking Statistics*. Jakarta: Otoritas Jasa Keuangan. <http://www.ojk.go.id/id/kanal/perbankan/data-dan-statistik/statistik-perbankan-indonesia/Pages/statistik-perbankan-indonesia-desember-2010.aspx>
- OJK. (2010). *Indonesian Islamic Banking Statistics*. Jakarta: Otoritas Jasa Keuangan. <http://www.ojk.go.id/id/kanal/syariah/data-dan-statistik/statistik-perbankan-syariah/Pages/statistik-perbankan-syariah-desember-2010.aspx>
- OJK. (March 2017). *Indonesian Islamic Banking Statistics*. Otoritas Jasa Keuangan. Jakarta: Otoritas Jasa Keuangan. <http://www.ojk.go.id/id/kanal/syariah/data-dan-statistik/statistik-perbankan-syariah/Pages/Statistik-Perbankan-Syariah---Maret-2017.aspx>
- OJK. (March 2017). *Indonesian Banking Statistics*. Jakarta: Otoritas Jasa Keuangan. <http://www.ojk.go.id/id/kanal/perbankan/data-dan-statistik/statistik-perbankan-indonesia/Pages/Statistik-Perbankan-Indonesia--Maret-2017.aspx>
- Petersen, M. A., & Rajan, R. G. (1997). Trade Credit: Theories and Evidence. *The Review of Financial Studies*, 10(3), 661-691. <https://doi.org/10.1093/rfs/10.3.661>
- Reuters, T. (2011). *Islamic Interbank Benchmark Rate: Pulse of Islamic Capital Markets*. <http://thomsonreuters.com/content/dam/openweb/documents/pdf/tr-com-financial/fact-sheet/iibr.pdf>
- Roe, M. J. (1993). Some Differences in Corporate Structure in Germany, Japan, and the United State. *The Yale Law Journal*, 102(8), 1927-2003. <http://www.jstor.org/stable/i232727>
- Saleem, M. (2005). *Islamic Banking: A \$300 Billion Deception*. United Stated of America: Xlibris Corporation.
- Sen, A. (1998). Seller Financing of Consumer Durables. *Journal of Economics & Management Strategy*, 7(3), 435-460. doi: 10.1111/j.1430-9134.1998.00435.x
- Usmani, M. T. (2002). *An Introduction to Islamic Finance*. The Hangu: Kluwer Law International.
- Vogel, F. E., & Hayes, S. L. (1998). *Islamic Law and Finance*. The Hague: The Hague: Kluwer Law International.