“Tracing the asymmetry of religiosity-based loyalty of Islamic bank depositors”

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TRACING THE ASYMMETRY OF RELIGIOSITY-BASED LOYALTY OF ISLAMIC BANK DEPOSITORS

Abstract

Religiosity is one of many essential aspects that stands as the motivation of people's behaviour. Its importance expands to the field of banking, especially Islamic banks that take Islamic teaching as their backbone. This study aimed to seek religiosity motivation among Islamic bank depositors by exploring the possible asymmetric effect of interest rates on the type of deposits. By using the NARDL approach, this study investigates the relationship between the conventional deposit interest rate on the type of depositors and deposit maturity by using monthly data from April 2015 until March 2020 of Indonesia's Islamic banks. The results show that government deposit in Islamic bank is not affected by the raise of interest rate. In addition, all deposits that showed the possibility of asymmetry effect indicated that the increase of interest rate (LIR+) has a positive coefficient. In general, Indonesian Islamic bank depositors' are religiously loyal and not attracted to the fluctuation of interest rates. The result also found that short-run asymmetric dynamics show convergent to long-run asymmetry after an average of 15 months. As for the policy implications, stakeholders must ease the regulation of Islamic banks such as the conversion of conventional banks to Islamic banks, since it is proven that customers are mainly religiously driven.

Keywords religiosity, interest rate, Islamic deposit, NARDL, Indonesia

JEL Classification A13, G21, G40, O53

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INTRODUCTION

Religion is a belief system with sacred values that a person adheres to. It has a strong influence on the way of thinking, point of view, emotions and psychology of an individual. Therefore, many studies have asserted the urgency of the religiosity aspect to be included in studies related to consumer behaviour (Wilkes et al., 1986; Bailey & Sood, 1993).

In the context of Islamic banking, religiosity is the main keyword in the establishment of various Islamic banks today. Islamic banking is a response to the massive use of interest as a financial instrument which in Islam is deemed as usury (*riba*). The idea of Islamic Banking, which was termed by Iqbal and Molyneux (2016) as just "wishful thinking", does not longer act as a niche market, but becomes an essential entity in the financial and banking ecosystem. The establishment of Islamic banks in their subsequent developments had spread to almost all continents (Alharbi, 2015; Karbhari et al., 2004). Under the sharia framework, financial and banking products emerge. One of the main aspects is the prohibition of interest rates, which then becomes the main character that differentiates between Islamic and conventional banks (Iqbal & Mirakhor, 2007).

There are contradicting studies when we come to the effect of religiosity towards Islamic banks' depositors' loyalty. Among the studies that confirm the religious aspect as a factor affecting Islamic banking con-

sumers are Shome et al. (2018), Kaabachi and Obeid (2016), and Akhtar et al. (2016) who examined the practice in various different countries. In contrast to the researchers above, others find that religiosity is not the main factor influencing customer behaviour. Among these studies are Souiden and Rani (2017), Dawami (2020) and Afifah and Kurniawati (2021) who investigated the practices of Pakistan, Malaysia and Indonesia, respectively. As for the additional note, all these researchers use survey techniques and questionnaires to obtain data where bias could occur because respondents may choose whatever number or value they feel is the most logical for the first time compared to weighing the results of their choices first (MacKenzie & Podsakoff 2012).

The relationship between the number of third-party funds and interest rates has been studied by other researchers. We can see the research from Haron and Ahmad (2000), Khan et al. (2008), Kasri and Kassim (2009), Abduh (2015), and Aysan et al. (2018), who stated that the level of third-party funds influenced by various factors, one of which is conventional bank interest rates. While all of these studies assert that Islamic banking deposit is affected by interest rate, they all assume a linear relationship. At any point in time, they assume a symmetrical result whether during the raising condition of interest rate or its decline. On the other hand, it is possible that customers who shift their deposit from Islamic to conventional banking due to the rise in interest rate would rather stay in that bank instead of going back after the decline of the interest rate. In other words, the shift is asymmetric.

This hypothesis is based on the fact that loyalty not only emanates from religion but also from other factors including image, trust, customer satisfaction, service quality, and many others (see for example, Khan & Fasih, 2014; Kaura et al., 2015). As for the current technological era, convenience in using digital banking becomes one of the most determining factors (Alam et al., 2022). In addition, some studies show that conventional banks are better at delivering those factors that eventually generated loyal customers on their behalf (Riaz et al., 2014; Kamarudin & Kassim, 2020).

With the possibility of an asymmetric shift of depositors and the inconclusiveness of previous studies' results, this paper will investigate further Islamic banks' customer loyalty using quantitative data. Depositors' funds with their 4 types of maturities (1,3,6 and 12 months) will be used as the proxy to calculate the religiosity motivation among Islamic banks' customers against an interest rate.

1. LITERATURE REVIEW

It is commonly known that interest rates are one of the main factors influencing depositor behavior as stated in McKinnon-Shaw's theory (McKinnon, 1973; Shaw, 1973) and proved later by many researchers such as Boadi et al. (2015) and Gunasekara and Kumari (2018). Based on this same logic, the state carries out its monetary operations, either by raising interest rates to reduce the money supply or by lowering them to increase the money supply. This is because in classical economic literature, the interest rate is a factor of saving which means that when the interest rate is high, more money is saved, and vice-versa.

In a country that operates a dual banking system, a consumer will find two choices of commercial banks, either conventional or Islamic banks. For a Muslim, his behavior of choosing any bank can be explained by two different theories. The first is a conventional theory related to utility maximization, while the second is the teachings of Isla, which imposes certain restrictions on how to behave for all of its believers, including the choice and decision of saving.

The first theory has long been discussed and improvised so that it has led to corrections and even the emergence of new theories that contradict its precursor. Starting from the theory of the life-cycle hypothesis (Modigliani & Brumberg, 1954) by Friedman, which emphasizes the assumption that humans understand their lifetime patterns of income and expenditure. It was continued by another theory developed by the same person (Friedman, 1957) to become a permanent-income hypothesis with an emphasis on the assumption

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that someone knows their permanent income for the entire life, which makes them save on a portion of the income that is assumed to be non-permanent. Both of these theories lasted for a long time to become the main reference until other theories emerged, such as the precautionary saving model (Kimball, 1990), which assumes that a person is "prudent" and "impatient" due to ignorance of the future. Other theories continue to develop, including buffer-stock saving (Carroll, 1997), the hyperbolic consumption model (Angeletos et al., 1997), and continued with empirical studies related to these theories.

The whole theory above is the manifestation of utility maximization, which was developed by embodying the aspects of psychology and sociology (Xiao et al., 2011). In practice, banks generally respond to utility maximization-based behavior by creating a certain reward for any deposits placed by customers. Haron and Ahmad (2000) conclude from the practical attitude of conventional banks, which is for those who give up their money in a bank, must get an equal reward. Therefore, a rational Muslim who acts based on utility maximization will choose the bank with the highest compensation regardless of other factors.

The second theory states that the behavior of Muslims is guided based on religious instructions. In this case, the teachings of Islam clearly state that usury is prohibited. Although recently there have been disagreements regarding the interpretation of usury into bank interest, most still agree that the current practice of interest carried out by conventional banks is usury. Devout Muslims will keep all their deeds within the corridor of Islam, including avoiding *riba* in the form of bank interest. The Islamic mindset also leads to the search for rewards (gifts), which are not only transitory but eternal. The reward here means the blessing (*barakah*) of life and happiness in the hereafter. Therefore, the orientation of any Muslims in their transactions is not always measurable in the world, rather it includes unquantifiable things that will be obtained after death. In other words, getting rewarded by depositing money in conventional banks indeed gives them reward, but it contradicts their orientation of seeking the blessing in their life and hereafter.

Therefore, a Muslim who lives in the dual banking system has the option to act based on utility maximization or hereafter orientation. Both will have different implications in choosing the financial products offered by the banking system. If there is a transfer of deposits from Islamic banks to conventional banks, when there is an increase in interest rates at conventional banks, it means that Islamic bank customers prioritize rationality and utility maximization rather than religiosity value, and vice versa.

Literature suggests that loyalty can be seen from two different approaches one of which is the behavioral approach. This approach posits that a customer will be regarded as royal when that person continuously and systematically uses a product or service in a specific period of time. Product repurchase is one of the indicators of such loyalty. In the context of the banking industry, the length of the relationship is usually taken for the measurement of loyalty (Bakar et al., 2017). This is evident because the products offered by any banks have less variation compared to products in other industries. While the loyalty of industries that have several types of product with wide range of variance is measured by the way customers use their list of products, the case is different for the banking industry.

However, in every industry, emotional attachment plays an important role in developing loyalty. The way people choose a product is not solely based on rationality. Another aspect that brings together the emotional aspect will affect the way people behave. Thus, we see how marketers offer their product with an emphasis on developing bond between them and the customers (Thomson et al., 2005). While recognizing the importance of emotional attachment to form loyalty towards Islamic banks, Fusva et al. (2020) and Kusuma et al., (2021) investigated several factors that affect such loyalty, including service quality, image, value, and customer satisfaction. These factors have a different effect on both conventional and Islamic banks. Unfortunately, some researches documented that conventional banks do better in delivering those factors (see Riaz et al., 2014; Kamarudin & Kassim, 2020).

In the case of this study, a shift of deposit from Islamic banks to its counterpart during the increase of interest rate means the rationality of its

customer as mentioned at previous part of theory. In addition, if the customer sticks on conventional bank while the interest rate goes down under the equivalent rate of return of Islamic bank, this means that during the first shifting, depositors feel emotional attachment with a conventional bank, and other loyalty factors impact Islamic bank customers.

Most of banks follow a general classification of the deposit. The first is demand deposit, which is mostly known as a current account and designed to cater the need of convenience daily transaction. The second is saving account, which accommodates the need of people who want to earn income from saving while preparing the unprecedented occurrence that takes their portion of money. The third is fixed deposits where people put their money for investment purpose instead of leaving their surplus money idle. Thus, typical depositors expect good return as reward for their investment (Khan et al., 2008).

As for depositors, there are commonly three classifications. The first type of depositors is government. As they are a non-business entity who received funding from the country, they put their money in banks to ease their transactions and not to target any specific return. The second type is a business entity, this category generates income from products or services they make so that any saving and investment decision will follow the basic logic of corporate governance, which is optimization of idle fund. Thus, putting money in a bank itself is considered part of the business. The third is retail depositors who open up a bank account under their own name. It is also important to note that most of SMEs do not have a bank account under the company's name. Thus, retail depositors are actually a mixture between sole depositors who run no business and thus who run a business entity but do not have a bank account under the company's name.

In the context of this study, the first and second type of deposit is not under the interest of the study as people who open up both types of deposits has a little concern for the reward. On the contrary, the fixed deposit, which functions mainly as the venue of investment, is at our most concern. In addition to that, for the first type of depositors, this study hypothesizes that the government will not be affected by any fluctuation of the interest rate. However, a business entity will be affected, and as for the retail depositors, it is hypothesized to get affected to a lesser extent.

2. METHODOLOGY

There are several methodologies that can be used to understand the loyalty and religiosity level of Islamic bank depositors, both qualitative and quantitative approaches. As mentioned earlier, this study attempts to capture the real effect of the interest rate on depositors' behavior rather than revealing how people behave based on the questions provided by researchers. Thus, a quantitative approach will be applied for this study.

It is commonly known that applying OLS requires the variable to be not autocorrelated, while at the same time, it has to maintain constant variance. This property of OLS is not easy to be obtained unless the variable is differentiated on time or I(0). This technique is costly because we lose long-term information from the variable, making long-term estimation impossible.

To avoid such a problem, this study employs a technique under the ARDL umbrella that helps us to observe the long-term relationship irrespective whether the variables in interest are I(0) or I(1). However, this study not only focuses on the linear relationship between variables, but tries to seek the possible asymmetry within it that cannot be discovered using a standard co-integration approach (Schorderet, 2003; Shin et al., 2014). Thus, this study uses the improvised version of ARDL, which is the NARDL, to observe the possible "hidden co-integration" (Granger & Yoon, 2002). This technique, which is developed by Shin et al. (2014), has several advantages, which has been explained by Yeap and Lean (2017). These advantages can be utilized in this study to simultaneously estimate both long-run and short-run effect while focusing on its asymmetric effect.

The estimation using an NARDL technique will follow the steps suggested by Shin et al. (2014). First, all the independent variables are decomposed into partial sum processes. Equation (1) shows the effect, both positive and negative, within the variable.

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$$x_i = x_0 + x_i + x_i^-. \quad (1)$$

As for the next step, the ARDL equation is used but enhanced with the decomposed effect in modelling the short and long-run effect under similar co-integration and error correction, as can be seen in Equation (2).

$$\Delta y_t = \alpha + \beta_{yi} y_{t-1} + \beta_x^+ X_{t-1}^+ + \beta_x^- X_{t-1}^- + \\ + \sum_{i=1}^{p} \varphi_i \Delta y_{t-1} + \sum_{i=0}^{q} (\rho_i^+ \Delta X_{t-1}^+ + \rho_{t-1}^- X_{t-1}^-) + \varepsilon_t. \quad (2)$$

The General-to-Specific Procedure is done in the next process to arrive at the final specification model. Lastly, the long-run co-integration will be tested using the bound testing of Pesaran et al. (2001) instead of Narayan (2005), since the latter is more appropriate to be used for a small sample.

The data used in this study is obtained from Bank Indonesia and Financial Service Authority. The variables used here are the fixed deposit interest rate and the amount of deposit with the reason explained in the theory part of this study. The data are monthly, with the range from April 2015 to March 2020. Both classifications of the deposit amount are taken. The first is deposit amount classified by its depositors where its three types can be found: government (GOV), which is any government sector, private (PRIV), who runs a business and puts the money in the name of the company, and lastly retail or those individuals (IND), who store money to a bank on their name. The second classification is the amount of deposit by its maturity where we can find four types of it: 1 month (DEP_1), 3 months (DEP_3), 6 months (DEP_6), and 12 months (DEP_12) of maturity. In addition, 4 types of deposit rate maturity are taken for both classifications above: 1 month (IR_1), 3 months (IR_3), 6 months (IR_6), and 12 months (IR_12) of maturity. All of the deposit amounts are presented in billion Rupiah.

3. RESULT AND DISCUSSION

3.1. Preliminary result

As a standard procedure of any quantitative research, descriptive statistics are first displayed to show data distribution. Table 1 shows all the descriptive data. As one can see, the deposit amount of all types of depositors and all types of deposit maturity exhibit a fairly high deviation from its mean. This adds more curiosity to how this huge amount of money moves in and out. Another fact that can be read from the table is that most deposit is held by an individual account, and in the context of the deposit, it is stored in a 1-month maturity timed deposit.

Before proceeding to the NARDL test, it must be ensured that all variables are stationary at the maximum first difference or I(1). This is because even though ARDL can take care of both stationarities at level or first difference, it cannot precisely estimate the variable with I(2) (Nkoro & Uko, 2016). To do so, the general unit root test is conducted with the result shown in Table 2. The results come surprisingly, while all types of depositors and all types of timed deposit variables are significant after the first difference, IR variables are mostly insignificant based on the ADF test. However, since PP and KPSS test shows otherwise, we are confident to proceed with the NARDL procedure.

Table 1. Descriptive statistics

Variable	Mean	Median	Max	Min	Std. dev
GOV	60,321.80	64,271.50	94,434.00	33,262.00	18,167.33
PRIV	27,269.42	26,572.00	35,331.00	21,448.00	3,437.91
IND	140,036.60	138,808.50	193,132.00	95,558.00	29,591.86
DEP_1	121,356.28	125,182.96	147,413.87	88,725.43	18,913.95
DEP_3	30,769.09	31,221.38	49,889.73	15,624.22	8,335.37
DEP_6	10,038.27	10,365.88	16,917.43	4,719.01	3,087.28
DEP_12	8,832.75	8,216.45	17,054.19	4,686.34	3,399.63
IR_1	6.59	6.46	7.96	5.64	0.61
IR_3	6.85	6.70	8.59	5.79	0.70
IR_6	7.30	7.10	8.99	6.12	0.76
IR_12	7.29	7.09	8.90	6.24	0.76

Table 2. Unit root test

Variables	At level			At first difference		
	ADF	PP	KPSS	ADF	PP	KPSS
GOV	–3.1142	–4.1012*	0.12053	–6.1893*	–13.0848*	0.17373*
PRIV	–1.9831	–2.4239	0.096404	–5.3207*	–10.1488*	0.10900*
INDP	–2.9478	–2.5708	0.11639	–5.2535*	–9.7203*	0.13029*
IR_1	–2.1195	–1.6694	–1.6694	–2.9749*	–3.4849*	0.14879*
IR_3	–2.2119	–1.7024	0.13577	–2.8366	–4.0231*	0.22238*
IR_6	–2.3923	–1.5344	0.13426	–2.3353	–3.3448*	0.17967*
IR_12	–1.8607	–1.1223	0.14059	–2.7397	–5.0259*	0.23891*
DEP_1	–.46797	–1.5417	0.13400	–3.7497*	–9.2507*	0.27334*
DEP_3	–2.0225	–5.7973*	0.11149	–11.8227*	–18.0014*	0.20450*
DEP_6	–2.1027	–3.9790*	0.10856	–6.7551*	–12.3884*	0.12190*
DEP_12	–3.4522	–2.9486	0.13920	–6.5141*	–14.3316*	0.16422*

Note: * denotes stationarity at 5% or above; 95% Critical value of ADF, PP and KPSS test at level form is –3.4935, –3.4862 and 0.16398, respectively; 95% Critical value of ADF, PP and KPSS test at first difference form is –2.9167, –2.9118 and 0.38141, respectively.

The last preliminary procedure is to check the existence of cointegration among variables observed with the result shown in Table 3. As already mentioned, we run the data of GOV, PRIV and INDP each on all interest rates. Using the bound testing approach, cointegration in some variables is found, while no co-integration in others. The statistic test used is both t_{BDM} and $F_{PSS,}$ where we can rely on any result of it. To pass the test, the statistic must be higher than its upper bound. Statistic between upper and lower bound means inconclusiveness of cointegration, while statistic under lower bound means no cointegration.

Cointegration for estimation with the significant result for both t_{BDM} and F_{PSS} is accepted. Cointegration with only one significance of either statistic test is also accepted. However, the null hypothesis of no cointegration for estimation with the inconclusive result for both t_{BDM} and F_{PSS} cannot be rejected. Here, PRIV with the deposit interest rate maturity of 1 month and six months cannot reject the null hypothesis. The same goes for DEP_1 with a deposit rate maturity of one month. Therefore, these three estimations will be excluded in all subsequence regression.

3.2. NARDL result

Unlike the ARDL, which presents the results directly after the cointegration test, NARDL requires one more test, which itself is part of the main result. Apart from the cointegration test done in Table 3, NARDL needs to verify whether the asymmetric relationship that was hypothesized at the beginning of the research is true. Wald test is carried out to check whether the statistic rejects the null hypothesis or not. The result is shown in Table 4, where W_{LR} and W_{SR} denote the Wald test for the long-run asymmetry and Wald test for the short-run asymmetry, respectively.

Table 3. Bound test for asymmetric cointegration

Variables	IR_1		IR_3		IR_6		IR_12	
	t_{BDM}	F_{PSS}	t_{BDM}	F_{PSS}	t_{BDM}	F_{PSS}	t_{BDM}	F_{PSS}
GOV	–3.3628*	3.7732±	–4.1123***	5.8732**	–4.5434***	7.1478***	–4.4824***	6.6999***
PRIV	–3.0856±	4.0596±	–3.6081**	4.9956**	–3.1362±	3.7794±	–3.9682**	5.4587**
INDP	–5.2191***	9.3594***	–3.7250**	5.1869**	–3.9838**	5.2907**	–3.5949**	4.4288*
DEP_1	–2.4642	7.0926***	–	–	–	–	–	–
DEP_3	–	–	–3.9762**	5.3338**	–	–	–	–
DEP_6	–	–	–	–	–2.6745±	2.5006		
DEP_12	–	–	–	–	–	–	–5.7565***	14.7423***

Note: ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. ± indicates the inconclusiveness of the statistic test. The upper bound and lower bound of both t_{BDM} and F_{PSS} are taken from Pesaran et al. (2001).

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Table 4. Wald test of long-run and short-run asymmetry

Variables	IR_1		IR_3		IR_6		IR_12	
	W_{LR}	W_{SR}	W_{LR}	W_{SR}	W_{LR}	W_{SR}	W_{LR}	W_{SR}
GOV	31.02***	.3796	21.27***	6.11**	34.67***	8.11***	19.54***	8.001***
	(0.000)	(0.541)	(0.000)	(0.017)	(0.000)	(0.007)	(0.000)	(0.007)
PRIV	–	–	12.39***	8.458***			25.51***	7.22**
	–	–	(0.001)	(0.006)			(0.000)	(0.010)
INDP	892.8***	14.29***	253.6***	3.888*	393.3***	.05813	260.7***	3.882*
	(0.000)	(0.000)	(0.000)	(0.055)	(0.000)	(0.810)	(0.000)	(0.055)
DEP_1	.236	.03352	–	–	–	–	–	–
	(0.630)	(0.856)	–	–	–	–	–	–
DEP_3	–	–	33.76***	2.224	–	–	–	–
	–	–	(0.000)	(0.143)	–	–	–	–
DEP_6	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–
DEP_12	–	–	–	–	–	–	14.15***	19.03***
	–	–	–	–	–	–	(0.001)	(0.000)

Note: ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. P-value is shown in parentheses under each result.

It can be seen that almost all estimations have long-run asymmetry, except only one, which is the IR_1 on DEP_1. Further explanation of this long-run relationship will be elaborated on later. Unlike the long-run asymmetry, many of those estimations indicate no short-run asymmetry. Those estimations are IR_1 on GOV and DEP_1, IR_3 on DEP_3, as well as IR_6 on INDP. Even though this study finds no evidence of asymmetric relationships in the short run, there are still other researchers who find short-run linear relationships. Kasri and Kassim (2009), Ergeç and Arslan (2013), and Cevik and Charap (2015) asserted that the amount of deposits in Islamic banks is influenced by the movement of interest rate.

The result from the NARDL test can be seen in Table 5. In general, several estimations were found that show no significant statistical evidence to reject the null hypothesis that in the long run, increased interest rate changes will influence depositors' behavior. This result can be found on GOV with all types of interest rate maturity as well as both 3-month and 12-month Islamic timed-deposit. This could be since Islamic banks generally try to mimic closely conventional banks during the increase of interest rate while adapting slower during the decrease of interest rate (Sukmana & Ibrahim, 2017).

The most compelling part is that all of the rest estimations show a positive relationship for both long-run increase and decrease of IR. Here, the results are in a different direction from the findings of previous researchers who find that in a linear relationship, the sign of the coefficient is negative. In other words, previous research documented that an increase in interest rate leads to a decrease in the deposit Islamic banks, which indicates the profit-driven motivation among depositors (see Haron & Ahmad, 2000; Khan et al., 2008; Kasri & Kassim, 2009; Abduh, 2015; Aysan et al., 2018). The NARDL result suggests that despite the raising and decline of the interest rate, people keep moving in their money to an Islamic bank. Taking it from a different perspective, people do not take into account the interest rate in their saving or investment activities with Islamic banks.

The finding indicates that religious motivation prevails among people of Indonesia rather than profit-driven under the utility maximization perspective. However, further explanation is needed to justify such a surprising finding. Mushtaq and Siddiqui (2017) revealed that, based on their investigation of panel ARDL for both Islamic and non-Islamic countries, the interest rate of Islamic countries is statistically not significant for the long and short run on deposits of banks in that country. On the contrary, it has a significant and positive impact on non-Islamic countries. Going to the local research, there are also several recent investigations on the same topic that documented the insignificant influence of interest rates on Islamic banks' savings and deposits. Al Arif and Hanifah

Table 5. NARDL long-run asymmetry result

Variables	Asymmetry effect	IR_1	IR_3	IR_6	IR_12
GOV	L_{IR}^{+}	–173.608	5202.210	1333.709	8637.212
	L_{IR}^{-}	18189.005***	14186.998***	15136.201***	17652.006***
PRIV	L_{IR}^{+}	–	4814.070**	–	5432.590***
	L_{IR}^{-}	–	–288.967	–	911.371
INDP	L_{IR}^{+}	17252.096***	23874.193***	18710.347***	27715.943***
	L_{IR}^{-}	20655.401***	20236.693***	19359.702***	22092.739***
DEP_1	L_{IR}^{+}	–	–	–	–
	L_{IR}^{-}	–	–	–	–
DEP_3	L_{IR}^{+}	–	4246.061	–	–
	L_{IR}^{-}	–	5638.491***	–	–
DEP_6	L_{IR}^{+}	–	–	–	–
	L_{IR}^{-}	–	–	–	–
DEP_12	L_{IR}^{+}	–	–	–	1081.633
	L_{IR}^{-}	–	–	–	1898.777***

Note: ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

(2017), Juniarty et al. (2017), as well as the most recent study by Sulistyawati et al. (2020), concluded that interest rate is an insignificant factor in determining the movement of deposits in Islamic banks. Although all of the mentioned studies take a different perspective to come into the finding, it can still be inferred that Islamic bank customers are not profit-driven. Based on the fact that customers are religiously driven in loyalty, it should encourage stakeholders to ease the regulation of Islamic banks, including the regulation of the conversion of any conventional bank into an Islamic bank whether it is public or private.

Based on the same result of Table 5, one can observe that Islamic bank customers are loyal to some of the Islamic bank's saving and investment services. This can be seen based on the difference between the L_{IR}^{+} and L_{IR}^{-} coefficient, particularly for retail depositors who use 3-month and 12-month maturity deposit products. This is because they use the conventional product less during the increase of interest rate and more during its decrease. However, loyalty cannot be observed in the rest of the products as the L_{IR}^{+} are mostly insignificant.

Further explanation of the dynamic of short-run asymmetry can be seen in Figure 1. This figure is presented based on the result of the Wald test in Table 4. On average, the dynamics last for 15 months before it comes to its long-run asymmetry equilibrium. This dynamic gives Islamic banks an idea of the types of policies they need to take. In particular, when there is a big difference such as at IR_1 on GOV, IR_3 on PRIV, IR_12 on IND and IR_12 on DEP_12, Islamic banks need to make a sufficient amount of reserve money to deal with the displaced commercial risk effect. In addition, a positive short run of IR has a negative impact on deposit such as in all IR on GOV, IR_1 on IND, as well as IR_12 on DEP_12.

CONCLUSION AND LIMITATIONS

The results of this study show that not all estimates have asymmetry co-integration. The study also found that in the asymmetry results, some estimates did not show long or short-run asymmetry. Even so, Islamic bank practitioners still have to pay attention to the results of other studies that state that in a linear relationship, the interest rate influences both long and short-run deposits. For the short-run dynamic that is found to last for an average of 15 months, practitioners must be prepared for the shift of deposits so that it is necessary to prepare risk mitigation against short-term displaced commercial risk for some deposit products.

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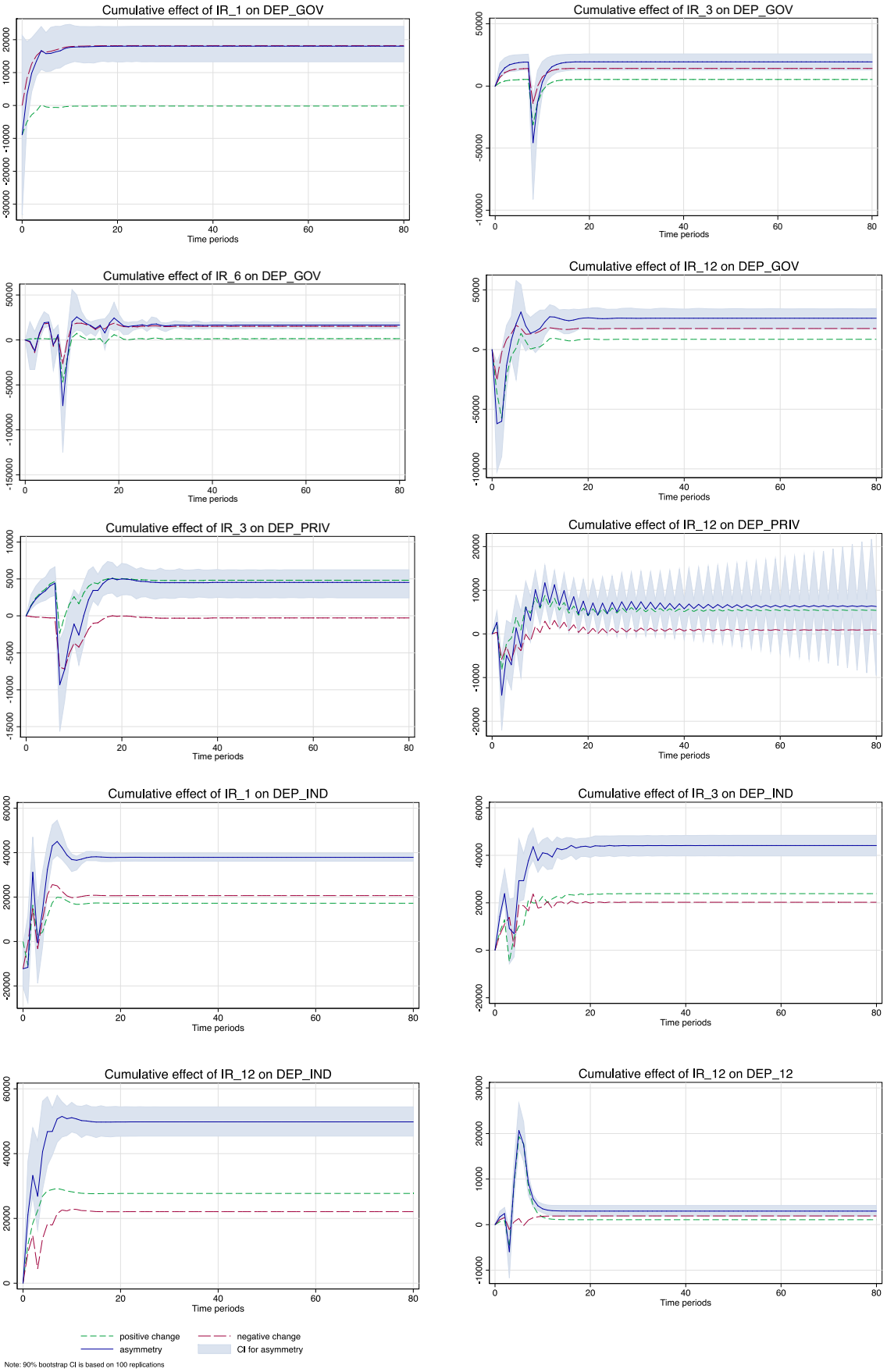

Figure 1. Dynamic multipliers of all significant estimations

As for the results of long-run asymmetry, this study produced surprising results. First, no L_{IR}^{+} was found for all maturity of GOV deposits. This shows that GOV does not respond to any change of interest rates and is loyal to an Islamic bank. Another interpretation is that due to the fact that the deposit rate is more adaptive to the increase of interest rate, but responds slower when the interest falls, GOV can still make gains from it. Another more surprising result is that all significant estimates indicate that the L_{IR}^{+} relationship is positive. Based on some existing literature, this shows the high religiosity of Islamic bank depositors. In a simple sentence, this research that scrutinized separated effect of increase and decrease of interest rate found that Islamic bank depositors' are not profit driven, instead they are religious driven customers.

This paper provides imperative information to designing a policy for the development of the Islamic financial industry in Indonesia. Although the study inferred that customers of Islamic banks in Indonesia are religious driven, the government must remember that the market share of Indonesian Islamic banks remains small throughout the years. A little intervention from the government is required to drive the market behavior. In the Islamic banking industry, the government needs to streamline the notion of the prohibition of riba in conventional banking practices. Not only relaying on the fatwa issued by the National Shariah Board of Indonesian Council of Ulama (DSN-MUI), the government needs to take a step involving the Muslim organization of the nation such as Muhammadiyah and Nahdatul Ulama. Knowing that both organizations have a huge potential in shaping society's perception, it is a vital aspect that remains untapped by the government. Other than the mentioned above, a solid regulation for Islamic banks is needed to support their flexibility movement in competing counterparts.

The religious aspects of Islamic banks are not only shown by determining halal and haram, it can be shown in various ways. Islamic bank depositors are rarely known about the impact they make when they put their money into Islamic banks. Indonesian Islamic banks have to start educating their depositors on the impact of their money when they deal with Islamic banks. This can be further illustrated by informing them the shariah screenings and ethical values embedded in the Islamic banking system.

This study has some limitations. First, it is acknowledged that the Islamic deposit rate has its own influence on the movement of Islamic bank deposits. However, the moderating effect of that variable cannot be incorporated in the current NARDL framework. Therefore, it is suggested that further research should analyze how the Islamic deposit rate can moderate the effect of the interest rate. In addition, a linear ARDL approach on segregated type of deposits might come with different results, which is important for all stakeholders. Therefore, further studies are also proposed to consider the linear dependence of the variables

AUTHOR CONTRIBUTIONS

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Writing – reviewing & editing: Aminudin Ma'ruf.

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