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Spin-off and market share in the Indonesian Islamic banking industry: a difference in difference analysis

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Abstract. *According to The Act No. 21 of 2008 concerning Islamic Banking in Indonesia, the conventional banks are obligated to spun-off their Islamic business units after achieving a certain set of requirements. The spin-off requirements are: (i) reach 50% market share asset of its parents; or (ii) 15 years after the implementation of the Islamic Banking Act. This study emphasizes the impact of Islamic banks' spin-off on market share. The method used in this study is a difference in difference analysis. This technique is a quasi-experiment separate into two groups, such as the treatment groups (four spin-offs' banks) and control group (two full-fledged Islamic banks). This study used quarterly data from 2005 until 2016. The results show that, first, there is a difference in the Islamic banks' market share between pre- and post-spin-off. Second, there is a difference in the market share of spin-offs' banks between pre- and post-spin-off. Third, there are there external factors that can affect the Islamic banks' market share, i.e., inflation rate, interest rate, and economic growth rate. The paper is a useful source of information that may provide relevant guidelines in helping the future development of spin-off activity in Islamic banking industry. The finding could be helpful for policymakers to create a supporting strategy to accelerate the development of Islamic banking industry. This result also could be of use for Islamic banking industries in other countries.*

Keywords: Islamic bank; spin-off; market share; difference in difference analysis.

Please cite the article as follows: Al Arif, M.N.R. (2017), "Spin-off and market share in the Indonesian Islamic banking industry: a difference in difference analysis", *Management & Marketing. Challenges for the Knowledge Society*, Vol. 12, No. 4, pp. 540-550, DOI: 10.1515/mmcks-2017-0032.

Introduction

In 2008, the Indonesian government established The Act No. 21 of 2008 concerning Islamic Banking in Indonesia. This act is focused on regulating by Islamic banking industry in Indonesia. After the issuance of this Act, there was a significant increase in the number of Islamic banks. One of the crucial points in The Act No. 21 of 2008 was the requirements that the conventional banks should separate their Islamic business units after they fulfilled a set of criteria. The spin-off rules according to this act are: (1) the Islamic business unit has achieved 50% assets of its parent bank; or (2) has reached 15 years after this Act enacted or by the end of July 2023.

According to an interview with the former Governor Deputy of Bank of Indonesia (Subarjo Joyosumarto), there were several reasons why this policy was established. Firstly, it was intended to accelerate the growth of the Islamic banking industry, which is measured through market share. Secondly, to increase the independence of the subsidiary banks. Thirdly, to improve the spin-off bank's performance. Fourth, to enhance the adherence to Islamic principles in Islamic banks.

One of the indicators to measure the Islamic banking industry's growth is market share. The higher market share will signal the more significant impact of Islamic banking industry. The policymakers in Indonesia had set-up the objective of Islamic banking industry should achieve 5% market share in 2008. Unfortunately, this target was finally achieved at the end of 2016 (see Table 1).

Table 1. *The Islamic banking market share development*

Year	2009	2010	2011	2012	2013	2014	2015	2016
Market Share (%)	2.61	3.24	3.98	4.58	4.89	4.85	4.83	5.3

Source: Islamic banking statistics (Financial service authority).

The Islamic bank's market share in Indonesia is below that in other countries such as Malaysia and Singapore (Sari et al., 2013). The highest Islamic bank's market share in international is Iran with 100% because Iran fully converted the banking industry to Islamic banks. Iran is followed by Sudan (90%), Qatar (18.2%), Uni Arab Emirates (13.5%), Malaysia (12.9%), Bahrain (6.5%), and Singapore (6.5%) (Sari et al., 2013).

The topic of the spin-off in Islamic banking is crucial to discuss since it is unique and the condition mentioned in the act only found in the Indonesian Islamic banking industry. According to the structure-conduct-performance (SCP) hypothesis, one of the strategies to increase the growth of the Islamic banking industry is by adding more full-fledged Islamic banks. It will make the Islamic banking industry more competitive (structure). One of the ways to make the industry more competitive is through spin-off activities (conduct). This action is expected to increase the market share of Islamic banks.

This research is going to analyze the factors that determine the spin-off banks' market share, especially after the enactment of the Act No. 21 of 2008. The traditional structure-conduct-performance hypothesis states that the degree of market concentration positively relationship with the performance (Edwards et al., 2006). The contribution of this study is to test whether increasing the number of full-fledged Islamic banks (and decreasing the degree of market concentration) will affect market power (measured by market share). Spin-off policy will decrease the degree of market concentration. Besides that, the contribution of this study is trying to examine the effect of the spin-off to market share by using structure conduct performance hypothesis. The result of this study is expected to be a consideration for the policymaker. Thus, policy-makers can develop an appropriate policy to accelerating the growth of Islamic banking industry.

The development of Islamic banking in Indonesia

There are three pieces of legislation concerning Islamic banking industry in Indonesia. The first is The Act No. 7 of 1992 concerning the banking industry. In this act, Islamic banking is defined as the profit sharing bank. After the enactment of the Act No. 7 of 1992, the first Islamic bank in Indonesia, i.e. Bank of Muamalat Indonesia, was created. The presence of Islamic banks not followed by supporting regulations. This was evident from the slow growth of Islamic banks. Besides that, the number of Islamic banks did not increase.

In mid-1997, Indonesia experienced an economic crisis. However, this financial crisis proves that Islamic banks can survive. Based on this fact, a new banking law was issued: The Act No. 10 of 1998. Based on the Act no. 10 of 1998, the banking system in Indonesia officially embraced the dual banking system. The banking system in Indonesia accommodates the conventional banking system and the Islamic banking system. In this Law, the Islamic banks are defined as banks that operate according to sharia principles. The Islamic banking industry in Indonesia had two models, such as First, Full-fledge Islamic Bank; Second, the Islamic business unit from the conventional bank. After the enactment of the Act No. 10 of 1998 the development of Islamic banks industry became very rapid. The data shows that there are three full-fledged Islamic banks and 26 Islamic business unit.

The Act No. 10 of 1998 was regarded as inadequate in accelerating the growth of Islamic banks. In 2008, the Act No. 21 of 2008 concerning Islamic Banking published. One of the objectives of this Act is to accelerate the Islamic banking industry growth in Indonesia. One of the crucial points in The Act no. 21 of 2008 was the regulation of the Islamic business unit spin-off if they fulfilled the criteria. The spin-off criteria according to this act are when: (1) the Islamic business unit has reached the 50% assets of its parent bank; or; (2) has reached 15 years after this Act is enacted or by the end of July 2023. There are three approaches to the establishment of full-fledged Islamic banks after the law enacted. First, parents' banks spun-off its Islamic business unit into full-fledged Islamic banks. Second, parents' banks acquire another bank, then converted into a full-fledged Islamic bank. Parents bank also spun-off its Islamic business unit and merged with the switched banks. Third, conventional banks acquire another bank, then converted into a full-fledged Islamic bank. The first and second approach is doing by conventional banks that have Islamic business units. The spin-off banks from the first approach are Bank of BNI Sharia and Bank of BJB Sharia. The spin-off banks from the second approach are Bank of BRI Sharia, Bank of Sharia Bukopin, and Bank of BTPN Sharia.

After the law established, several Islamic business units spun-off although they still had not fulfilled the criteria based on the act. This rule resulted in the increasing number of full-fledged Islamic banks. Before, there were only three full-fledged Islamic banks and 26 Islamic business units, but now there are 12 full-fledged Islamic banks and 22 Islamic business units (see Table 2).

Table 2. *The number of Islamic Banks in Indonesia*

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Islamic Banks										
Full-fledge Islamic Banks	3	5	6	11	11	11	11	12	12	12
Islamic Business Unit	26	26	25	23	24	24	23	22	22	22
Islamic Rural Banks	114	131	138	150	154	158	163	163	163	163

Source: Islamic banking statistics (Financial service authority).

Theoretical model

The Indonesian Islamic banking industry provides an attractive setting for studying the effects of spin-off on performance. This study uses the Structure Conduct Performance hypothesis to examine the spin-off's policy in Islamic banking industry. The SCP theory based on the following proposition: when a few firms have a significant percentage of market shares, this fosters cooperation among enterprises in the industry. Samad (2008) said that there is a definite correlation between the degree of market share concentration and the company's performance. There are some empirical studies in the banking market that provide support for SCP hypothesis. Homma et al. (2014) and Chan et al. (2015) found that the higher market concentration decreases the efficiency rate in industry banking. Bhatti and Hussain (2010) suggest that market concentration determines the performance (measured by profitability) in Pakistani commercial banks. Bhatti and Hussain (2010) also conclude that there is a negative relationship between competition and profitability.

The spin-off policy is one of the strategies pursued by regulators to accelerate the growth and performance of Islamic banks. One indicator of performance is market share. This study will examine does the market share changes registered by banks operating in markets affected by spin-off can be compared with those banks that not affected by spin-off. This experiment will allow us to draw inferences concerning the impact of the spin-off on market share.

Few studies had discussed Islamic bank's spin-off in Indonesia. Nasuha (2012) and Al Arif (2014) found that there are performance differences between pre and post spin-off. Some of the studies also found that spin-off had a positive impact on profitability (Ramdani, 2015; Hamid, 2015). The different result shows by Al Arif (2015a), (2015b), and (2015c). Al Arif (2015a) found that the spin-off policy doesn't have an impact on financing in spin-off's banks. Al Arif (2015b) concluded that there is no impact of spin-off policy on asset of spin-off's banks. Al Arif (2015c) found that there is a declining efficiency after spin-off plan. Sarifudin and Faturohman (2017) said that the average efficiency of some spin-off's banks (such as BRI Sharia, BNI Sharia, and BJB Sharia) has improved after conducting spin-off.

The spin-off policy will increase the number of Islamic banks. An increase in the number of Islamic banks will trigger the fierce competition. The competitive market will reduce the marginal cost to the industry will operate more efficiently, and the performance of the Islamic banks will be an increase. Besides that, the competitive market will increase the market share in spin-off's banks. The theoretical framework of this research can see in Figure 1.

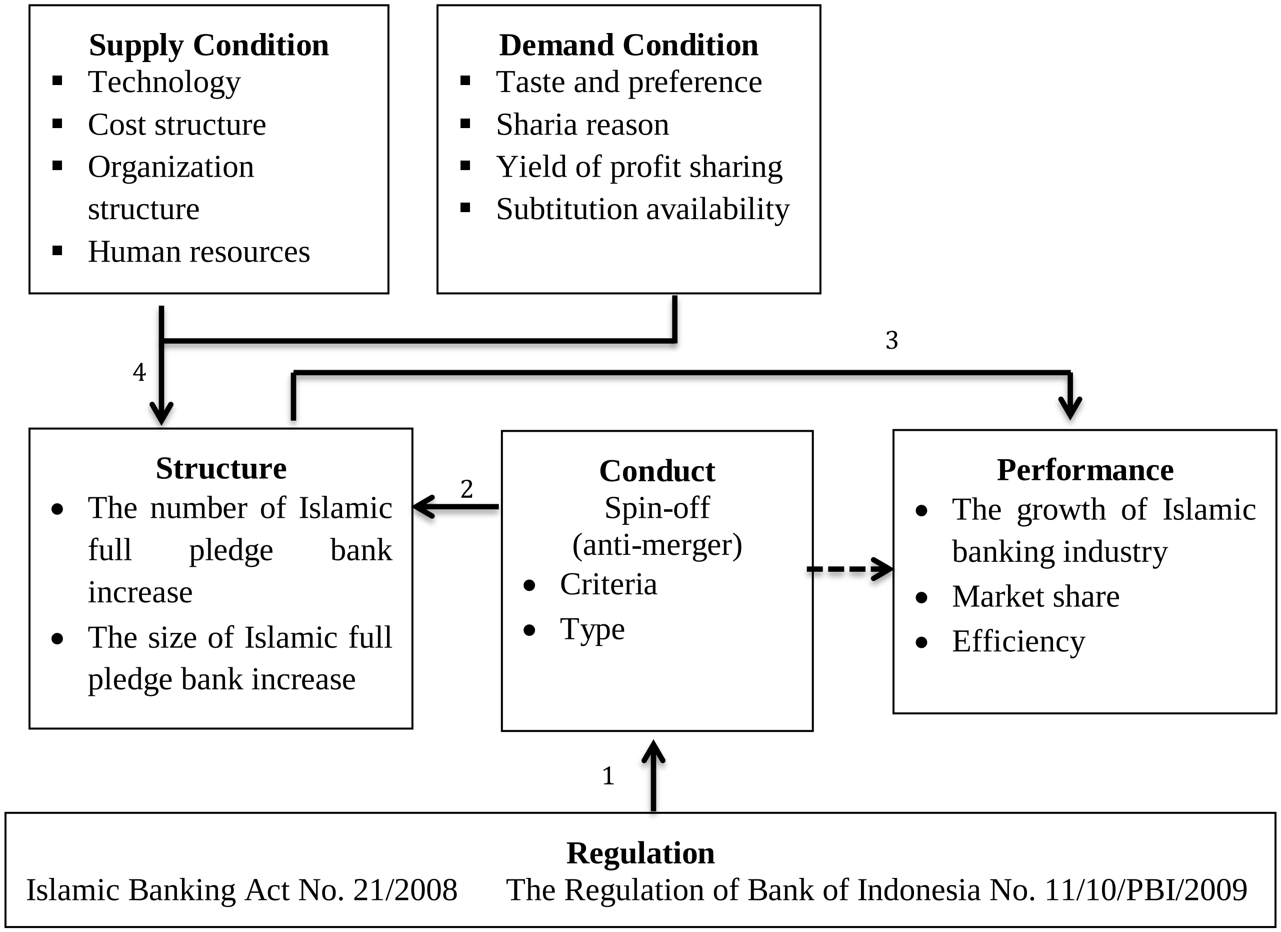


Figure 1. **The theoretical framework of Islamic Bank spin-off's**
Source: Al Arif et al. (2017).

Method

This study used the difference in difference analysis to analyze whether this spin-off policy had an impact on the performance of spin-off banks. This technique is applied when the data arise from a natural experiment; some exogenous events have occurred – often a change in government policy– (Woolridge, 2009).

The data used are quarterly banking data from 2005 to 2016. The sample used consisted of four spin-off banks: Bank of BNI Sharia, Bank of BRI Sharia, Bank of Bukopin Sharia, and Bank of BJB Sharia, as treatment objects. Besides that, we added two banks, Bank of Sharia Mandiri and Bank of Mega Sharia, as control objects. The reasons why we used only these four banks as treatment object are: (1) they had operated for quite long, more than five years, as Islamic business units, (2) they had already done the spin-off for more than five years, and (3) availability of data. Besides that, the reasons why only two banks used as control objects are: (1) these two banks are a subsidiary of conventional banks and (2) these two banks had been full-fledged Islamic banks since they established. The difference-in-difference framework of this research shown in Table 3.

Table 3. *Difference-in-difference framew*ork

	Before Spin-off	After Spin-off	After-Before
Control Banks	α	$\alpha + \beta_1$	β_1
Treatment Banks	$\alpha + \beta_2$	$\alpha + \beta_1 + \beta_2 + \beta_3$	$\beta_1 + \beta_3$
Control-Treatment	β_2	$\beta_2 + \beta_3$	β_3

Source: Author's own research.

To analyze the influence of spin-off policy on market share in the Indonesian Islamic banking industry, the difference in difference analysis used. This method used when the observed outcome consists of two groups and two time periods. One group will be a treatment group, and the other will be a control group. The mathematical equation proposed in this research is:

$$MS\_Asset_{it} = \alpha + \beta_1 D\_spinoff_{it} + \beta_2 D\_treatment_{it} + \beta_3 D\_S*D\_T_{it} + \beta_4 Ln\_Deposit_{it} + \beta_5 Eff_{it} + \beta_6 Inf_t + \beta_7 Int_t + \beta_8 Grwth_t + \varepsilon_{it} \text{.....(1)}$$

Where: MS_asset is the Islamic banks market share of asset; $D\_spinoff_{it}$ is dummy variable for spin-off period, then zero is before spin-off period and one is after spin-off period. If $D\_treatment_{it}$ is dummy variable for treatment, then zero is before treatment and one is after treatment. $D\_S*D\_T_{it}$ is an interaction variable. $Deposit_{it}$ is Islamic banks deposit funds. Eff_{it} is operational efficiency ratio. Inf_t is inflation rate. Int_t is net interest margin from conventional banks. $Grwth_t$ is economic growth of Indonesia.

Result and discussion

We start out analysis of spin-off effect to market share by looking at its spin-off period. As we can from Table 4, spin-off dummy variable is negatively and statistically significantly affect the market share. It means there is a difference in market share between pre and post spin-off period. The negative sign indicates that there is a declining in market share at sample banks. As we see in Figure 2, there is a market share increasing in some sample banks, but there is also a market share declining in some sample banks. The most significant market share decline faced by Bank of Sharia Mandiri (hereafter BSM), which in this study became a control bank. BSM is the largest full-fledged Islamic bank in Indonesia. BSM in 2005 has a market share of 39.62% and currently only around 22.11%. Whereas, another full-fledged Islamic bank that also became the control banks, i.e., Bank of Mega Sharia (hereafter BMS) decreased the market share. If before the spin-off period (in 2008) has a market share of about 7%, currently only has a market share below 2%.

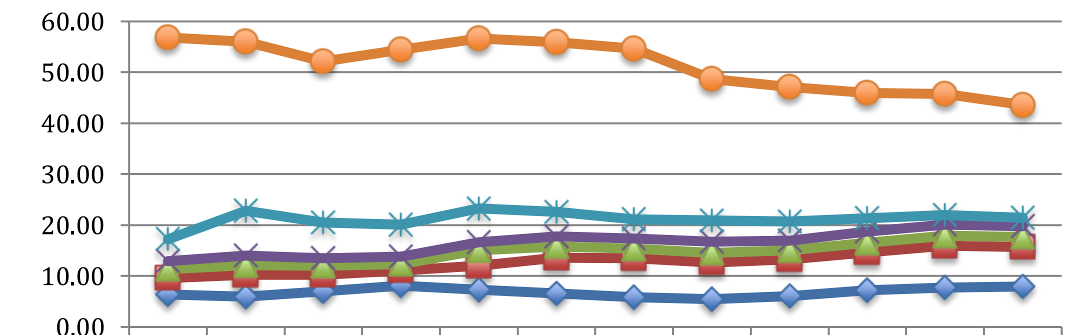
Table 4. *Spin-off effect on market share*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	64.25211	6.877845	9.341896	0.0000
D_SPINOFF=1 AND D_TREATMENT=0	-6.883556	1.345636	-5.115468	0.0000
D_SPINOFF=1 AND D_TREATMENT=1	-12.82047	1.282739	-9.994608	0.0000
LN_Dep	6.151109	0.287367	21.40504	0.0000
EFF	0.005076	0.018015	0.281770	0.7783
INF	33.91983	13.21690	2.566398	0.0108
INT	4.408937	0.958415	4.600239	0.0000

GROWTH	0.702554	0.203265	3.456349	0.0006
R-squared	0.679339	F-statistic		84.74215
Adjusted R-squared	0.671322	Prob(F-statistic)		0.000000

Source: Author's own research.

Table 4 also reports that there is a difference in market between pre and post spin-off in spin-offs' banks. The negative sign means that there is a market share declining at spin-offs' banks between pre and post spin-off. The market share increases were felt by Bank of BRI Sharia (hereafter BRIS), whereas before spin-off only had a market share below 5%. Currently, after the spin-off, BRIS had a market share about 8%. Other spin-offs' banks such as Bank of BNI Sharia (hereafter BNIS), Bank of Jabar Banten Sharia (hereafter BJBS), and Bank of Sharia Bukopin (hereafter BSB) have a fluctuating market share. However, there is no significant increase compared to before spin-off activities.



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
BSM	39.62	33.25	31.58	34.44	33.34	33.31	33.46	27.81	26.40	24.58	23.75	22.11
BMS	4.30	8.78	7.01	6.25	6.63	4.76	3.83	4.19	3.77	2.59	1.88	1.72
BJBS	1.57	1.83	1.52	1.50	1.59	1.98	1.96	2.19	1.94	2.24	2.17	2.09
BSB	1.75	1.92	1.75	1.22	2.99	2.25	1.88	1.85	1.79	1.90	1.97	1.97
BRIS	3.18	4.26	3.26	2.96	4.81	7.03	7.70	7.22	7.18	7.47	8.18	7.77
BNIS	6.41	5.98	6.97	8.11	7.26	6.56	5.82	5.46	6.07	7.16	7.77	7.94

Figure 2. **Market share of sample banks**

Source: Author's own research.

We also find that the control variables such inflation rate, interest rate, and growth rate had an impact on Islamic banks' market share. However, the other control variable (operational efficiency ratio) did not affect Islamic banks' market share. The positive sign in inflation rate proves that Islamic banks are more robust than conventional banks. The reason is that Islamic banks apply the profit-sharing principle in its banking operations. The positive sign of interest shows also prove that the Islamic banks are more attractive than conventional banks. The rate of economic growth also shows a positive relationship with market share. This result indicates that the better the economy, it will be increased customer confidence in Islamic banks. Furthermore, this will be able to increase the Islamic banks market share.

The market share declining also faced by the first Islamic bank in Indonesia, i.e., Bank of Muamalat Indonesia (hereafter BMI). Table 5 shows the BMI market share declining. If in 2011 BMI has a market share of 22.33% then at presents BMI only has a market share of 15.65%. In general, one of the causes of the market share declining due to the increase the number of full-fledged Islamic banks. If before 2008, the Islamic banking industry only has three full-fledged banks and 26 Islamic business units. Currently, there are 12 full-fledged Islamic banks and 22 Islamic business units. This data shows that there are new entrants into the Islamic banking industry.

Table 5. *The full-fledge Islamic Banks non-sample*

Period	BMI	BPS	BCAS	BVS	MS	BTPNS
2011	22.33	0.70	0.84	0.44	1.16	0.18
2012	23.01	1.10	0.82	0.48	1.06	0.48
2013	22.58	1.67	0.84	0.55	0.95	0.79
2014	23.42	2.28	1.10	0.53	0.90	1.39
2015	19.37	2.41	1.47	0.47	0.59	1.75
2016	15.65	2.46	1.40	0.46	0.38	2.05

Note: BMI (Bank of Muamalat Indonesia), BPS (Bank of Panin Sharia), BCAS (Bank of BCA Sharia), BVS (Bank of Victoria Sharia), MS (Maybank Sharia), BTPNS (Bank of BTPN Sharia)

These results indicate that the spin-off policy that occurs in the Indonesian Islamic banking industry is contrary to the traditional structure conduct performance hypothesis. According to the traditional structure conduct performance theory, it suggested decreasing the number of firms. The decline in the number of companies will increase market power. The opposite occurs in the Indonesian Islamic banking industry; the regulatory spur the growth in the number of full-fledged Islamic banks. Table 6 shows the declining in concentration ratio (CR) either by using CR 2, CR 4, or CR 8. Although the market leader (such as Bank of Sharia Mandiri and Bank of Muamalat Indonesia) still dominated the market shares in the Indonesian Islamic banking industry.

Cupian and Abduh (2017) found that Islamic banking industry in Indonesia operated in a higher degree of market power which leads to a less competitive market. The market power for leading firms in Indonesia Islamic banking industry has reduced, especially after the spin-off policy. Wibowo (2017) also shows that banking competition tends to be a monopolistic competition in ASEAN countries, especially in Indonesia. Wahid (2017) said that the Islamic banks' penetration could increase the level of competition within the conventional banking sector.

Mohammed et al. (2015) conclude several important issues: firstly, banking firms in Malaysian dual banking system need to have some level of market concentration. In the meantime, the banking companies also need to operate in the competitive environment to gain higher profit. Secondly, an increasing number of banks may intensify the level of competition in the banking industry. Thirdly, both market concentration and competitive environment are essential to promote stability in the banking sector.

Table 6. *Concentration ratio in Islamic banking industry*

	Year		
	2013	**2014**	**2015**
CR2	**0.47825**	**0.46378**	**0.43981**
CR4	**0.60767**	**0.60660**	**0.59194**
CR8	**0.69720**	**0.69445**	**0.67638**

Source: Yuhanah (2016).

This study shows that the spin-off policy should evaluate. This policy further weakens the Islamic banking industry. The banking sector in Indonesia still dominated by conventional banking. At the end of 2016, the market share of Islamic banking only reaches 5 percent. Besides that, only two banks (such as BSM and BMI) that had to achieve the asset above IDR 50 trillion (or approximately US$ 3.8 billion). On the other hand, 22 conventional banks have assets above 50 trillion.

The result of this study is also in line with the research conducted by Al Arif (2015c); Haribowo (2017). Al Arif (2015c) said that the spin-off policy had a negatively and significantly effect on efficiency in Islamic banks. Haribowo (2017) also noted that the spin-off plan should evaluate. Because the policy can have a harmful effect on Islamic business unit that owned by regional development bank. According to an in-depth interview with Achyar Ilyas (former Deputy of Governor of Bank of Indonesia), one factor to consider when the spin-off is the asset size of Islamic business unit. This statement in line with Lindholm-Dahlstrand (2000) that also said that firms' size is one substantial factor to spin-off companies. The firm size will be the crucial determinant of the selected target market.

Miftah and Wibowo (2017) suggested merger as one of the strategies for industrial acceleration. The merger will be able to strengthen capital and banking soundness. Merger and Acquisition are part of restructuring company strategic which have the same primary goal with the ultimate goal company that provides value-added for investor or shareholder. The decision to a merger and the acquisition influenced by the belief that to the synergy between companies will be better than a running company with the same business separately. We can say that spin-off is contra-merger if we related this with industrial organization literature. According to the Indonesian Banking Architecture, a merger is one of the strategies to strengthen the bank's capital. The spin-off policy that imposed by the policy-maker is contradictive with the strategy in the Indonesian Banking Architecture. Prager and Hannan (1998) prove that the horizontal mergers led to increased market power. Antoniadis et al. (2014) said that mergers and acquisitions had been an essential strategy for the Greek banking sector.

Rashid et al. (2017) found that Islamic banks have performed better as compared to conventional banks and contributed more efficiently to the stability of the financial sector. Further, the result also suggested that the financial soundness enhanced by creating healthy competition in the banking industry. Majid et al. (2014) proved that the Islamic banks have a better asset management quality compared to their conventional counterparts. Ahmed et al. (2017) said that policymakers and top management of Islamic banks should focus on their mission statements and stakeholders' perception of the objectives of their organization. The Islamic banks must be able to prove that they had applied the profit-sharing principle (interest-free) in its banking operations. Chong and Liu (2009) found that in practice some of the Islamic banks' transactions are similar to conventional banks.

Conclusions and policy implications

In this paper, we attempted to examine whether the spin-off affected the market share. In theory, the spin-off decision will increase the market share of spun-off banks. In practice, however, we found that there is a negative relationship between spin-off and market share. There is a significant declining in two largest Islamic banks in Indonesia after the spin-off period. Besides that, some of the spun-off banks show no significant increase compared to before spin-off activities. According to traditional structure conduct performance hypothesis, it suggested decreasing the number of firms. This action was chosen to increase the market power of companies. The different activity showed in the Indonesian Islamic banking industry, which increases the number of banks. The more Islamic banks in the industry will decrease the market power. The spin-off is only one strategy that can be chosen to accelerate the Islamic banks' growth and performance. Some studies had shown that the spin-off policy should evaluate.

There are several suggestions according to the result of this study. First, the regulator should create supporting strategies to accelerate the growth of Islamic banking industry. The regulator should make a fair competition between Islamic banks and conventional banks. Islamic banks should receive special treatment in some given periods. Second, the parents' banks should support its subsidiary although they had become full-fledged Islamic banks. Third, the Islamic banks should create more attractive products for the customer. Besides that, the Islamic banks also must increase the service to its clients.

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