WP/20/01

Is spin-off policy an effective way to strengthen the role of Islamic banks?Evidence from Indonesia

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Indonesia adopts a dual banking system in which conventional and Islamic banks are in place, however most of Islamic banks are still operating Islamic windows within their conventional entity. To strengthen the role of Islamic banking in the intermediation system, the government issued the Islamic Banking Law. No.21/2008 to encourage Islamic windows of conventional banks to have a legal entity separately with their conventional parents. As some Islamic windows have done this spin-off activity, it enables us to employ difference-in-difference approach to disentangle the effect of spin-off on performance, efficiency and risk of Islamic banks. Our study covers all Islamic commercial banks (including Islamic windows of conventional banks) in Indonesia over the 2008-2019 period. We find that performance and efficiency of full-fledged Islamic banks are significantly lower than those of Islamic windows of conventional banks. Moreover, our result shows that financing risk increases after the spin-off. The inferior performance of full-fledged Islamic banks is still found after four years ofthe spin-off. Moreover, we also find that converting strategy results in better outcomes, particularly for profitability and efficiency, compared to pure spin-off strategy.

JEL Code: G21, G28.
Keywords: Spin-off, Islamic Banks, consolidation, competition, performance, risk, Indonesia.

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This paper is part of the 2020 research project funded by Otoritas Jasa Keuangan (OJK). The authors thank the participants at OJK Research Seminar in August 15, 2020 for their valuable comments and suggestions. The findings and interpretations expressed in this paper are entirely those of the authors. and do not represent the views of OJK. All remaining errors and omissions rest with the authors.

1. Introduction

Over the last three decades, there has been a long debate on the issue of competition and consolidation in the banking industry not only in the academics but also in the policy makers. On the one hand, the pro-competition contends that the more competitive the industry, the more efficient the intermediation function (e.g. Trinugroho et al., 2014). On the other hand, some studies argue that banking consolidation, which could lead to increase market power of banks, is an effective way to achieve financial stability. For instance, Schaeck and Cihák (2014) suggest that bank size may increase stability through efficient distribution. Moreover, banks with larger size can have lower production costs. Likewise, Yusgiantoro et al. (2019) find that the greater the market power of a bank, the lower the risk and the more stable the financial system.

This competition vs. consolidation perspective could be an appropriate way to explain the current issue in the Indonesian banking which is the spin-off policy for Islamic windows of conventional banks. In order to support the development of Islamic banking, the Indonesian government issued the Law Number 21/2008 concerning Sharia (Islamic) Banking[1]. It mandates that in 2023, the Islamic windows of conventional banks (UUS) are required to be converted to independent business entities/ full-fledged Islamic Banks (BUS). This policy is generally called as "spin-off policy". However, it is required that a BUS must have an equity of IDR500 billion[2] and should be increased to IDR1 trillion no later than 10 years after the BUS permit has issued by the banking regulator. If an Islamic window of a conventional bank is not ready to be separated from its conventional parent, the business license may be revoked.

The underlying reason behind this policy is that to strengthen the role of Islamic banking in the financial intermediation and development, Islamic financial institutions should have a greater flexibility in their operations. Therefore, full-fledged system may enable them to grow faster. It is, subsequently, expected to enlarge the market share of Islamic banks which is currently stuck at around 6%. Siswantoro (2014) contends that spin-off of Islamic windows of conventional banks could bring several opportunities such as increasing financial performance, expansion,

[1] It is usually called as "Indonesia Sharia Banking Law"
[2] Assuming an exchange rate of IDR16,000/USD1, it is about USD31.25 million.

rearrangement of financial structure and having independent management. Moreover, customers may be happier as an independent entity, full-fledged Islamic banks are perceived more ensured in the purity of sharia-compliant products and services.

However, the sceptical argue that although the capital would be increased following the spin-off, the newly separated BUS may not be able to reach economies of scale which subsequently create difficulties for them to compete with conventional banks. This is in line with the view of Garbois et al. (2012) mentioning that size is one of the main challenges for the Islamic banking industry which is so-called “too small to have economies of scale". According to Prasetyo et al. (2019), spin-off has several disadvantages, including the potential loss of joint revenues and disruption in the business/operations during and following the spinoff. Moreover, the parent may also lose the benefits of diversification.

This present study is therefore dedicated to clearly understand the net impact of spin-off policy by empirically investigating the implication of spin-off on performance, risk and efficiency of BUS. Despite the law has been enacted more than 10 years ago, only a small number of UUS have been converted to BUS which indicates the lack of enthusiasm of the industry. Therefore, a comprehensive study is strongly needed to empirically evaluate the impact of the spin-off on the performance and risk of BUS. With regards to this particular issue, to the best of our knowledge, there is no strong paper that specifically address the effect of changing from Islamic windows to full-fledged Islamic banks. Most literature in Islamic banking directly compare Islamic banks and conventional banks (Beck et al., 2013; Aysan, Disli, Duygun, & Ozturk, 2017; Kocaata, 2017).

This study empirically evaluates the impact of spin-off policy on performance, risk and efficiency employing difference-in-differences (DiD) panel data estimation strategy. Wooldridge's (2009) explains that this approach is applied when data comes from natural experiments such as change in government policy. The difference-in-difference analysis requires a group that have not yet implemented spin-off (control group) which must have the same characteristics as the treated group. However, due to the relatively small sample, propensity score matching (Schepens, 2016) could not be employed here.

We find evidence that performance and efficiency decline following the spin-off. Moreover, newly separated full-fledged Islamic banks are riskier. Our deeper analysis reveals that converting strategy results in better outcomes compared to pure spin-off strategy, particularly in profitability

and efficiency. There is also evidence that the inferior performance of full-fledged Islamic banks is still found after four years of the spin-off.

The rest of this paper is structured as follows. Section 2 provide related literature. In Section 3, we present the institutional setting. Data, variables, and empirical strategy are provided in Section 4. In Section 5, we report the empirical results and robustness checks. Section 6 concludes key findings and provides policy implications.

2. Related Literature

2.1. Islamic Banking: Performance and Risk

Islamic banking is based on Sharia-derived key principles particularly *riba* prohibitionand profit-loss sharing/ equity-based financing (Abedifar, Molyneux, & Tarazi, 2013). Islamic banks are also expected to provide an alternative medium for financial transactions (Hassan and Aliyu, 2018). Islamic banking was firstly growing in the Muslim-majority countries; however, it has now also been spreading in some Muslim-minority countries[3]. Even, in the UK, the government has recently championed the Islamic banking sector to underline London's position as the global center for Islamic investment (Riaz, Burton, & Monk, 2017). Weill (2011), therefore, argues that Islamic banks should have more dependable clients than conventional banks due to the religious beliefs. However, his empirical study does not show that Islamic banks have greater market power than conventional banks. Another common feature of Islamic banks is that they are typically better capitalized (e.g. (Ariss, 2010; Beck, Demirgüç-Kunt, & Merrouche, 2013).

Abedifar et al. (2015) summarize that there are three types of Islamic banks that exist in the world; 1) Islamic banks operate in countries with substantial and active government support, 2) Islamic banks operate in the private sector competing with conventional banks, 3) Islamic banking practiced by conventional commercial banks (via Islamic windows).

Many studies have then empirically examined the outcomes differences between conventional and Islamic banks. The first issue is related to the performance difference, mostly reflected by profitability or efficiency, between these two types of banks. The earlier studies tend to have inconclusive findings in this particular issue (e.g. Yudistira, 2004 – Islamic banks have less inefficiency; Mohamad et al., 2008 and Olson & Zoubi, 2008 – no significant difference; Johnes

[3] Islamic banks account for 80% of the global sharia compliant industry which is around USD 1.6 trillion in assets (Abedifar et al., 2015).

et al., 2009 and Srairi, 2010 – Islamic banks are less efficient). Recent studies highlight that the different results on this matter may come from the different angle of studies. For instance, a comprehensive study of Beck et al. (2013) concludes that Islamic banks are less efficient, however, they have better asset quality and better intermediation ratio. More recently, Rizvi et al. (2019) find evidence that loan growth and deposit growth of Islamic banks in Indonesia are significantly higher than conventional banks.

With regards to the risk of Islamic banks, there are two competing views (Abedifar et al., 2015). On the one hand, Islamic banking is characterized by the religious beliefs of clients which may lead to greater loyalty and lower loan default. Moreover, it may also lower deposit withdrawal risk. On the other hand, some argue that the complexity of the loan contract in the Islamic banking, along with the moral hazard incentive caused by the Profit and Loss Sharing (PLS) contract, may increase the risk.

Some empirical studies have been done to investigate whether there is a significant difference in risk between Islamic and conventional banks. Čihák and Hesse (2010) and Abedifar et al. (2013) conclude that Islamic banks with smaller size have lower default risk than their conventional counterparts. However, for larger Islamic banks, their default risk is higher than conventional banks. Some other studies find no significant difference in insolvency risk between these two (e.g. Beck et al., 2013). Yanikkaya et al. (2018) find that profitability of Islamic banks is more dynamics than that of conventional banks which is more stable. It means that Islamic banks are riskier than conventional banks in term of persistency of profit.

2.2. Banking Structure: Competition versus Consolidation

Literature on banking market structure is dominated by two perspectives. The competition-fragility view postulates that the more competitive the market, the lower the bank market power which eventually will lead to higher risk taking (Berger, Klapper, & Turk-Ariss, 2009). On the other side, the competition-stability perspective argues that the larger the market power, the higher the risk taking of banks due to the incentives to aggressively channel high margin loans.

Banking market structure is therefore important for policy makers particularly on designing the competitiveness level of the industry. Hence, regulator should let the industry to be more competitive or consolidated, through merger and acquisitions, in order to have few banks with greater market power.

Several empirical studies have been done to address the issue of banking competitiveness versus banking consolidation. Majid and Sufian (2006) show that Malaysian banking is less competitive which result in higher market power of existing banks and creating a monopolistic industry. Shin and Kim (2013) reveal that the policy of the government in Korea to consolidate some banks have implied in lowering overall banking competitiveness. Likewise, Trinugroho et al. (2018) provide evidence that Islamic rural banks in Indonesia located in less competitive regions set a higher margin.

However, on the other side, some studies provide evidence on the benefits of banking consolidation. Chu (2015) concludes that banking efficiency is improved following the merger and acquisitions[4]. Similarly, Yusgiantoro et al. (2019) explain that banking consolidation may increase the market power of existing banks, however, the greater the market power is then translated into lower bank risk and more stable financial system. Specific on Islamic banks, Ibrahim and Rizvi (2017) document that by increasing the size, mostly through merger, initially it would make Islamic banks less stable. However, after passing a certain size threshold, it will increase the stability of the Islamic banks.

3. Overview of Islamic Banking in Indonesia

As explained earlier, we are motivated to study the implication of spin-off policy on the performance and risk of Islamic banks. Indonesia, the fourth most populated country and the largest Muslim population, has a dual banking system. The Indonesia banking law number 7/1992 is the basis of the dual banking system where conventional and sharia banks can provide banking services side by side.

According to this law, it is also mentioned that Islamic banking institutions can be Islamic commercial banks (BUS), Islamic rural banks (BPRS), and conventional commercial banks having Islamic windows (UUS)[5]. Recently, the Islamic banking industry consists of 14 BUS, 20 UUS (owned by conventional commercial banks) and 164 BPRS. Specifically, BUS and UUS have total assets of IDR499.98 trillion (Otoritas Jasa Keuangan, 2019). Although there is a relatively large

[4] However, Behr and Heid (2011) criticize the previous studies on the impact of bank merger and acquisition on efficiency that might have a sample selection bias.

[5] There is also a form of Islamic microfinance in Indonesia which is *Baitul Maal Wat Tamwil* (BMT). However, the government categorizes BMT as a cooperative which implies that the supervisory of BMT is not with the IFSA (OJK) but with the Ministry of Cooperatives and Small and Medium Enterprises.

number of Islamic banks, the current market share of such type of banking is only 6.01% of the overall banking industry. According to Rizvi et al. (2019), Islamic banks in Indonesia have significant contribution to the overall banking system particularly through increasing lending and deposits.

As explained earlier, the Sharia banking law mandates that Islamic windows of conventional banks (UUS) should be converted into full-fledged Islamic banks (BUS) with the minimum capital of IDR500 billion. According to the previous study of the OJK[6], ideally, the minimum capital for BUS is around IDR800 billion – IDR1.2 trillion. Moreover, the study also reveals that there are only 4 (of 20) UUSs are considered eligible to be converted to BUS (DPPS-OJK, 2018).

4. Research Method

4.1. Data

Our research focuses on how the spin-off policy could possibly impact on performance, risk and efficiency of Islamic banking windows. We use quarterly data over the 2008 to 2019 gathered from the quarterly financial reports of Indonesia Banking statistics provided by the Indonesia Financial Services Authority (OJK). Our data enables us to differentiate full-fledged Islamic banks and Islamic window of conventional banks. Our final sample is 33 Islamic banks consisting of 13 full-fledged Islamic banks[7] and 20 Islamic bank windows.

We consider several proxies to gauge the impact of spin off policy on Islamic banks. We measure performance with return on asset, credit growth and deposit growth. Non-performing financing is considered to measure bank risk, while cost to income is employed to proxy efficiency. Lastly, financing to deposit ratio is the measure of intermediation capability.

4.2. Empirical strategy

We create two different groups to compare consistently the impact of spin off policy on Islamic banks' performance, efficiency and risk. Treated group is full-fledged Islamic banks that implement the spin-off policy from Islamic banking windows. On the other hand, control group is Islamic banks windows that have not implement the spin off policy for several reasons. Our setting enables us to use difference-in-differences to estimates the following specification:

[6] Research conducted by the Directorate of Regulatory and Licencing of Islamic Banking (*Direktorat Pengaturan dan Perizinan Perbankan Syariah*/ DPPS) - OJK in 2018.
[7] We exclude Bank Muamalat because it is full-fledged of Islamic bank since it was established.

$$Y_{i,t} = \alpha + +\beta_1 Spinoff + \beta_2 Post_t + \beta_3 Post_t * Spinoff + \beta_4 BankFundamental_{i,t} + \beta_5 Control_t + \varepsilon_{i,t}$$

Where $Y_{i,t}$ is our dependent variables consisting of ROA, financing growth, deposit growth, cost to income ratio, non-performing financing ratio, and financing to deposit ratio, according to the studies of Tan (2015), Ghani et al. (2016), Trinugroho et al. (2017) and Yanikkaya et al. (2018). $Spinoff_i$ is a dummy that equals one for Islamic banks that have implemented spin off policy and become full-fledged Islamic banks, and zero otherwise. $Post_t$ is a dummy variable that equals to one in the time after banks implemented the spin-off policy. $BankFundamental_{i,t}$ and $Control_t$ are sets of control variable of bank fundamental and macroeconomic variables respectively that could affect the dependent variables. $Post_t * Spinoff_i$ is the variable of interest. This variable indicates the direct impact of spin off policy on the dependent variables. The control variables are bank size which is measured by the natural logarithm of total asset; bank age; consumer price index as and quarterly GDP growth. The descriptive statistics of variables is reported in table 1.

We then investigate the effect of Islamic bank's size on the relationship between spin-off policy and Islamic bank performance, risk and efficiency. We create the dummy variable *big* that represents Islamic banks that have asset higher than the median value of sample. The following is the estimation model

$$Y_{i,t} = \alpha + +\beta_1 Spinoff_i + \beta_2 Post_t + \beta_3 Post_t * Spinoff_i + \beta_4 Post_t * Spinoff * big + \beta_5 BankFundamental_{i,t} + \beta_6 Control_t + \varepsilon_{i,t}$$

For a deeper investigation, we test the different impact of different strategy in the spin off process. Practically, spin off could be carried out by the following approaches: 1) creating full new Islamic banks, 2) taking over an existed conventional bank then convert the bank to full-fledged Islamic banks.

Finally, we also test the effect of the spin-off policy with lead of dependent variables to take a look the impact of the policy for several time ahead.

5. Results

5.1. Treated and Control Groups

We select all Islamic banks both full-fledged Islamic bank and banks with Islamic windows that have available data from each quarter between 2008 and 2019. This corresponds to the period after the enactment of Indonesia Sharia Banking Law in 2008. From this date, Islamic windows of conventional banks could be separated from their conventional parents and be full-fledged Islamic banks if they pass several requirements.

We use difference-in-differences (DID) method to estimate the impact of spin-off policy. The DID requires a treated group and a control group. The treated banks are full-fledged Islamic banks both from converting and pure spin-off strategy. The control group is Islamic windows of conventional banks (UUS in Indonesia term). Treatment effect is the date when banks start/convert their operation according to sharia (full-fledged Islamic bank). The list of treated and control banks are provided in the appendix 1.

5.2. Descriptive Statistics of Variables and Correlation Matrix

Table 1 presents the descriptive statistics for all variables, while table 2 reports the correlation matrix between variables. The average return on assets is 2.39%, while the average financing growth and deposit growth is 8% and 9.7%, respectively. Cost to income ratio has average of 76.82%, while the average intermediation capability (financing to deposit ratio) is 121.6%. 39.6% of observations are belong to treated groups. Lastly, the average bank age is 9.1 year. We also provide the statistics of variables for treated and control banks (table 2). On average, return on assets, financing growth, and deposit growth of treated groups are lower than control groups. Moreover, the average cost to income ratio and non-performing financing of treated banks are higher than the control banks.

Table 3 exhibits the correlation matrix of variables. The dummy variable for treated banks (spinoff) is negatively correlated with return on asset, deposit growth, financing growth, and financing to deposit ratio. On the other hand, this variable is positively correlated with the non-performing financings and cost to income ratio.

Table 1. Descriptive Statistics of Variables – full sample

	Definition	Obs	Mean	Std. Dev.	Min	Max
ROA	Return on asset	1463	2.389	2.116	-0.730	7.060
NPF	Non-performing financing to total financing ratio	1148	0.029	0.0371047	0.0000102	0.1475
financinggrowth	The growth rate of financing	1449	0.080	0.109	-0.055	0.390
depgrowth	The growth rate of deposit	1471	0.097	0.165	-0.137	0.535
CIR	Cost to income ratio	1529	76.822	21.789	34.600	121.540
FDR	Financing deposit ratio	1450	1.216	0.525	0.686	2.742
spinoff	A dummy variable for treated banks. 1 for full-fledge Islamic bank from spinoff.	1577	0.396	0.489	0	1
post	A dummy variable for treatment effect. 1 for time after Islamic banks decide to spin-off from parent banks	1577	0.301	0.459	0	1
lnta	Natural logarithm of total asset	1476	14.477	1.753	9.493	18.537
age	Bank's age. We calculate age from the operation of Islamic bank window	835	9.102	5.757	0.000	24.000
CPI	Costumer price index	1584	4.603	2.000	2.650	11.960
gdp	Gdp growth rate quarterly	1584	5.401	0.600	4.140	6.810

Table 2. Descriptive Statistics of Variables – treated and control banks

	Treated Banks = Full fledge Islamic Banks					Control banks = Banks with Islamic windows				
Variable	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
ROA	563	1.640	1.902	-0.730	7.060	900	2.858	2.109	-0.730	7.060
NPF	406	0.0304	0.0296	0.0000102	0.1474	742	0.0282	0.0406	0.0000102	0.1474
financinggrowth	545	0.070	0.098	-0.055	0.390	904	0.086	0.114	-0.055	0.390
depgrowth	562	0.086	0.149	-0.137	0.535	909	0.103	0.175	-0.137	0.535
CIR	601	85.723	18.364	34.600	121.540	928	71.058	21.901	34.600	121.540
FDR	556	1.053	0.439	0.686	2.742	894	1.318	0.548	0.686	2.742
spinoff	624	1.000	0.000	1.000	1.000	953	0.000	0.000	0.000	0.000
post	624	0.761	0.427	0.000	1.000	953	0.000	0.000	0.000	0.000
lnta	595	15.300	1.770	9.720	18.537	881	13.922	1.507	9.493	17.566
age	246	9.646	5.096	0.000	20.000	589	8.874	6.001	0.000	24
CPI	624	4.603	2.001	2.650	11.960	953	4.573	1.967	2.650	11.960
gdp	624	5.401	0.600	4.140	6.810	953	5.402	0.597	4.140	6.810

Table 3. Correlation Matrix

	ROA	NPF	financinggrowth	depgrowth	CIR	FDR	post	spinoff	lnta	age	CPI	gdp
ROA	1											
NPF	-0.3643	1										
financinggrowth	0.0149	-0.1544	1									
depgrowth	0.0373	-0.1246	0.3013	1								
CIR	-0.6978	0.3454	-0.0288	-0.0504	1							
FDR	0.2372	-0.1888	0.2438	0.0312	-0.3827	1						
post	-0.2092	0.5185	-0.1457	-0.1301	0.3346	-0.3014	1					
spinoff	-0.2092	0.5185	-0.1457	-0.1301	0.3346	-0.3014	1	1				
lnta	-0.2239	0.4147	-0.2377	-0.1917	0.2669	-0.4778	0.4812	0.4812	1			
age	-0.1268	0.3202	-0.1746	-0.137	0.1178	-0.4015	0.1415	0.1415	0.6682	1		
CPI	-0.0213	-0.0896	0.2033	0.0754	-0.1009	0.2898	-0.0687	-0.0687	-0.3767	-0.2863	1	
gdp	0.0298	-0.1024	0.263	0.1217	-0.0647	0.0816	-0.0846	-0.0846	-0.2981	-0.2244	0.1647	1

5.3. Empirical Results

We analyze the impact of spin-off policy on performance, efficiency and risk of Islamic banks in Indonesia by employing difference-in-difference method. Table 3 presents the results of baseline regression. Our variable of interest is the interaction between the dummy variable of treated banks and the dummy variable of treatment effect (post*spinoff). The dependent variables are bank performance which is measured by return on asset, deposit growth and financing growth; bank efficiency which is measured by cost to income ratio and bank risk which is proxied by the logarithm natural of non-performing financings.

As presented in table 4, we find negative and significant impact of spin-off policy on return on assets. Similarly, the coefficients of the interaction variable on deposit growth and financing growth are negative and significant. These results imply that performance of full-fledged Islamic banks is lower than Islamic windows of conventional banks. When we change the dependent variable to cost to income ratio which is the measure of bank efficiency, we find positive and significant coefficient of the interaction variable. It indicates that the efficiency of full-fledged Islamic banks is lower than that of Islamic windows of conventional banks. Turn to the non-performing financings which is the proxy of bank risk, we find that the interaction variable has positive and significant coefficient which also indicates that full-fledged Islamic banks are riskier than Islamic windows of conventional banks. Financing to deposit ratio of full-fledged Islamic banks, as the measure of intermediation capability, is also found to be lower than that of Islamic windows of conventional banks.

As some Islamic banks are separated from their conventional parents before the Law no. 28/2008, we also conduct a regression by excluding Islamic banks that have been separated before the Law was enacted. As shown in table 5, with regards to our main variables, we still find similar coefficients when the dependent variables are non-performing financings, cost to income ratio and financing to deposit ratio. However, the coefficients of the interaction variable become insignificant when return on asset, financing growth and deposit growth are set as the dependent variables.

Then, we go deeper by disentangling the way spin-off is conducted. As explained earlier, there two spin-off strategies which are pure spin-off and converting strategy. Table 5 and 6 exhibit the regression results for pure spin-off and converting, respectively. For the pure spin-off policy, our

results show that the coefficient of interaction variables are negative and significant when the dependent variable is return on assets. The coefficients are significant negative for financing growth and significant positive for non-performing financings and cost to income ratio. These results indicate that pure spin-off strategy results in lower profitability, financing growth and efficiency than the control group. Moreover, financing risk is also significantly higher than the control group. As presented in table 7, the converting strategy shows better outcomes in which profitability, efficiency and intermediation capability is significantly higher. Moreover, deposit growth is also found to be lower for full-fledged Islamic banks resulted from converting strategy.

We also investigate the effect of size on spin-off policy. We find that size does matter to support Islamic windows of conventional banks to do spin-off. We find that big full-fledge Islamic banks in our triple interaction has positive and significant effect on return on asset and cost to income ration. However, we find that big full-fledge Islamic banks have positive and significant effect on non-performing financing. Therefore, big full-fledge Islamic banks have higher profitability and better efficiency but higher risk than the small banks of full-fledge Islamic banks.

Some may argue that the poor performance of newly separated full-fledged Islamic banks is caused by the fixed-asset investment that they have to spend right after the separation. Therefore, we go deeper by testing the impact of spin-off on performance, efficiency and risk until the fourth year since the establishment of full-fledged Islamic banks. In general, as exhibited in table 8-13, we find that performance of full-fledged Islamic banks is still found to be lower than that of Islamic windows of conventional banks. Similarly, the higher financing risk of full-fledged Islamicbanks does not change until the four years after the spin-off. Likewise, higher cost inefficiency is found to be persistent from the first until fourth year following the spin-off.

Overall, our findings reveal the inferior performance and higher risk of full-fledged Islamic banks compared to Islamic windows of conventional banks. Perhaps, relatively small size of full-fledged Islamic banks hampers them to expand to larger market. It also leads to a higher average cost compared to conventional banks. Moreover, the higher financing risk of those banks may come from the complexity of the loan contract in the Islamic banking (Abedifar et al., 2015).

5.4. Robustness Checks

We perform a robustness check to ensure that our results are consistent by conducted incremental regression approach instead of directly include all variables in the empirical model. As presented in the appendix 2 (table A1-A6), with regards to our variables of interest, the results remain the same with baseline regression.

6. Conclusion and Policy Implications

We empirically investigate the effect of spin-off policy, separation of Islamic windows of conventional banks from their conventional parents to full-fledged Islamic banks, on the subsequent performance, efficiency and risk. We use the data of Islamic commercial banks in Indonesia over the 2008-2019 period. Our results reveal that performance and efficiency of full-fledged Islamic banks are lower than Islamic windows of conventional banks. It is also foundthat the latter are less risky. Moreover, the inferior performance of separated full-fledged Islamic banks is still found after four years of the spin-off. In addition, we find that converting strategy results in better outcomes compared to pure spin-off strategy.

These findings bring several policy implications. We find strong evidence that the spin-off policy, more specifically purely spin-off, does not lead to better performance even after four years. Therefore, the regulators should seek complementary policies to mitigate the negative effect of spin-off policy, otherwise postponing the mandatory to spin-off may be considered. Consolidation among newly separated full-fledged Islamic banks may help them to achieve economies of scale enabling them to be more competitive.

Table 4. Baseline regression results

	(1) ROA	(2) NPF	(3) financinggrowth	(4) depgrowth	(5) CIR	(6) FDR	(7) ROA	(8) NPF	(9) financinggrowth	(10) depgrowth	(11) CIR	(12) FDR
post	0.237	0.00481	0.0205	-0.121**	-6.853	0.106						
	(0.48)	(0.97)	(0.81)	(-2.39)	(-1.51)	(1.09)						
spinoff	-1.371***	0.0254***	-0.0408*	0.0920*	24.24***	-0.289***						
	(-2.91)	(5.83)	(-1.66)	(1.83)	(5.51)	(-3.02)						
Post*spinoff							-1.060***	0.0287***	-0.0182**	-0.0291**	16.11***	-0.167***
							(-5.54)	(6.55)	(-2.02)	(-2.28)	(10.34)	(-5.97)
lnta	-0.154**	0.000129	-0.00566	-0.00843*	0.0823	-0.0858***	-0.159**	0.000740	-0.00631*	-0.00992**	0.0730	-0.0861***
	(-2.38)	(0.11)	(-1.59)	(-1.78)	(0.13)	(-6.08)	(-2.41)	(0.64)	(-1.78)	(-2.09)	(0.11)	(-6.00)
age	-0.0127	0.00123***	-0.00178**	-0.00315**	0.0727	-0.0112***	-0.00827	0.00117***	-0.00174**	-0.00335***	0.00211	-0.0103***
	(-0.87)	(3.98)	(-2.07)	(-2.48)	(0.51)	(-3.70)	(-0.57)	(3.81)	(-2.03)	(-2.64)	(0.02)	(-3.52)
CPI	-0.129***	0.000119	0.0111***	0.00839**	-0.458	0.0399***	-0.156***	0.000986**	0.0102***	0.00844**	0.0817	0.0335***
	(-2.64)	(0.25)	(4.18)	(1.99)	(-0.98)	(3.48)	(-3.28)	(2.03)	(3.96)	(1.99)	(0.17)	(2.96)
gdp	-0.00718	-0.000274	0.0370***	0.0272**	-0.757	-0.0487	-0.0335	-0.000396	0.0374***	0.0286**	-0.614	-0.0512
	(-0.05)	(-0.24)	(4.93)	(2.33)	(-0.51)	(-1.58)	(-0.22)	(-0.32)	(5.01)	(2.47)	(-0.40)	(-1.65)
_cons	5.803***	-0.00104	-0.0667	0.0691	75.73***	2.697***	6.021***	-0.0113	-0.0568	0.0876	74.83***	2.716***
	(4.39)	(-0.06)	(-1.06)	(0.72)	(6.17)	(9.35)	(4.48)	(-0.66)	(-0.89)	(0.92)	(5.85)	(9.30)
N	788	679	792	799	832	833	788	679	792	799	832	833
N_g	33	33	33	33	33	33	33	33	33	33	33	33
r2	0.0875	0.299	0.172	0.108	0.140	0.281	0.0722	0.281	0.169	0.0997	0.0910	0.266

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 5. Regression with exclusion of Islamic banks that have been separated before the Islamic banking Law No. 28/ 2008

	(1) ROA	(2) NPF	(3) financinggrowth	(4) depgrowth	(5) CIR	(6) FDR	(7) ROA	(8) NPF	(9) financinggrowth	(10) depgrowth	(11) CIR	(12) FDR
post	1.009*	0.0148*	0.0532**	-0.0890*	-7.409	0.244**						
	(1.67)	(1.87)	(2.00)	(-1.70)	(-1.48)	(2.45)						
spinoff	-1.376***	0.0239***	-0.0492**	0.0874*	24.21***	-0.326***						
	(-2.93)	(5.67)	(-1.97)	(1.74)	(5.37)	(-3.39)						
Post*spinoff							-0.317	0.0376***	0.00581	-0.00136	16.00***	-0.0704**
							(-0.82)	(4.79)	(0.49)	(-0.08)	(6.96)	(-2.25)
lnta	-0.119	0.000784	-0.00313	-0.00764	0.879	-0.0803***	-0.128*	0.00150	-0.00422	-0.00922*	0.976	-0.0821***
	(-1.61)	(0.78)	(-0.77)	(-1.38)	(1.20)	(-4.81)	(-1.71)	(1.52)	(-1.04)	(-1.67)	(1.27)	(-4.83)
age	-0.0328*	0.00114***	-0.00235**	-0.00364***	0.0827	-0.0166***	-0.0268	0.00105***	-0.00227**	-0.00388***	-0.0203	-0.0152***
	(-1.92)	(4.18)	(-2.57)	(-2.67)	(0.54)	(-4.90)	(-1.57)	(3.92)	(-2.49)	(-2.86)	(-0.13)	(-4.67)
CPI	-0.132**	0.000510	0.0136***	0.00906*	-0.197	0.0524***	-0.164***	0.00146***	0.0122***	0.00908*	0.475	0.0434***
	(-2.42)	(1.14)	(4.43)	(1.75)	(-0.35)	(3.87)	(-3.10)	(3.13)	(4.12)	(1.75)	(0.85)	(3.25)
gdp	-0.141	-0.0000842	0.0437***	0.0336**	0.876	-0.0602	-0.171	-0.000189	0.0443***	0.0351**	1.056	-0.0637*
	(-0.83)	(-0.06)	(5.11)	(2.44)	(0.50)	(-1.63)	(-0.99)	(-0.14)	(5.19)	(2.58)	(0.58)	(-1.70)
_cons	6.224***	-0.0121	-0.144*	0.0252	54.56***	2.674***	6.522***	-0.0241	-0.127*	0.0444	51.66***	2.725***
	(4.22)	(-0.80)	(-1.90)	(0.21)	(3.66)	(7.45)	(4.36)	(-1.59)	(-1.67)	(0.37)	(3.33)	(7.49)
N	672	585	653	661	691	692	672	585	653	661	691	692
N_g	29	29	29	29	29	29	29	29	29	29	29	29
r2	0.0414	0.274	0.178	0.0960	0.0970	0.245	0.0244	0.256	0.174	0.0883	0.0435	0.225

t statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 6. Pure spin-off strategy

	(1) ROA	(2) NPF	(3) financinggrowth	(4) CIR	(5) FDR	(6) ROA	(7) NPF	(8) financinggrowth	(9) CIR	(10) FDR
post	-2.201***	0.0372***	0.0460	21.40***	-0.201					
	(-3.69)	(3.48)	(1.61)	(3.27)	(-1.31)					
spinoff_pure	-0.215	0.0226***	-0.0487*	3.968	0.214					
	(-0.37)	(5.74)	(-1.95)	(0.63)	(1.41)					
Post*spinoff_pure						-2.410***	0.0590***	-0.00120	25.24***	0.00546
						(-16.50)	(5.53)	(-0.08)	(13.43)	(0.15)
lnta	-0.370***	0.00270***	-0.00360	2.918***	-0.103***	-0.375***	0.00339***	-0.00470	3.011***	-0.0981***
	(-4.89)	(3.17)	(-0.87)	(3.86)	(-5.83)	(-5.06)	(3.92)	(-1.14)	(3.98)	(-5.53)
age	0.0281*	0.000495**	-0.00218**	-0.233	-0.0178***	0.0285*	0.000410**	-0.00209**	-0.240	-0.0182***
	(1.74)	(2.40)	(-2.25)	(-1.52)	(-4.93)	(1.77)	(1.98)	(-2.17)	(-1.57)	(-5.03)
CPI	-0.164***	0.000565	0.0135***	0.314	0.0351**	-0.170***	0.00147***	0.0121***	0.436	0.0417***
	(-2.89)	(1.33)	(4.40)	(0.52)	(2.50)	(-3.28)	(3.33)	(4.09)	(0.81)	(3.02)
gdp	0.0782	-0.00173	0.0443***	-0.203	-0.0662*	0.0792	-0.00185	0.0448***	-0.242	-0.0676*
	(0.45)	(-1.16)	(5.13)	(-0.11)	(-1.80)	(0.46)	(-1.20)	(5.22)	(-0.13)	(-1.83)
_cons	8.157***	-0.0243*	-0.141*	32.44**	3.118***	8.244***	-0.0357**	-0.124	30.97**	3.030***
	(5.24)	(-1.70)	(-1.86)	(2.10)	(8.64)	(5.37)	(-2.45)	(-1.63)	(2.01)	(8.39)
N	627	563	632	644	645	627	563	632	644	645
N_g	22	22	22	22	22	22	22	22	22	22
r2	0.124	0.373	0.179	0.103	0.268	0.124	0.358	0.175	0.102	0.265

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 7. Converting strategy

	(1) ROA	(4) depgrowth	(5) CIR	(6) FDR
post	-1.354***	-0.00639	5.751*	-0.00821
	(-5.79)	(-0.33)	(1.91)	(-0.16)
spinoff_convert	-1.951***	0.0902*	36.80***	-0.668***
	(-2.90)	(1.78)	(7.26)	(-10.34)
postXspinoff_convert	2.869***	-0.129**	-28.14***	0.410***
	(4.28)	(-2.46)	(-5.32)	(6.47)
lnta	-0.249***	-0.00890	1.623**	-0.0966***
	(-3.32)	(-1.63)	(2.19)	(-5.82)
age_w	0.0180	-0.00363***	-0.0741	-0.0164***
	(1.14)	(-2.63)	(-0.50)	(-4.91)
CPI	-0.175***	0.00766*	0.423	0.0215*
	(-3.40)	(1.76)	(0.85)	(1.83)
gdp	0.0784	0.0237*	-1.269	-0.0539*
	(0.50)	(1.96)	(-0.83)	(-1.81)
_cons	6.601***	0.102	54.35***	3.004***
	(4.52)	(0.95)	(3.90)	(9.47)
N	734	761	776	776
N_g	31	31	31	31
r2	0.0722	0.109	0.140	0.323

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 8. Triple interactions

	(1) ROA	(2) NPF	(3) financinggrowth	(4) depgrowth	(5) CIR	(6) FDR	(7) ROA	(8) NPF	(9) financinggrowth	(10) depgrowth	(11) CIR	(12) FDR
post	0.237	0.00481	0.0205	-0.121**	-6.853	0.106						
	(0.48)	(0.97)	(0.81)	(-2.39)	(-1.51)	(1.09)						
spinoff	-1.371***	0.0254***	-0.0408*	0.0920*	24.24***	-0.289***						
	(-2.91)	(5.83)	(-1.66)	(1.83)	(5.51)	(-3.02)						
postXspinoff							-2.994***	0.00528***	0.0967	0.0243	44.25***	-0.258
							(-9.88)	(4.56)	(1.12)	(0.35)	(13.00)	(-0.98)
postXspinoffXbig							2.006***	0.0239***	-0.119	-0.0546	-29.15***	0.0946
							(5.91)	(5.49)	(-1.37)	(-0.79)	(-8.16)	(0.36)
lnta	-0.154**	0.000129	-0.00566	-0.00843*	0.0823	-0.0858***	-0.166**	0.000650	-0.00573	-0.00977**	0.195	-0.0865***
	(-2.38)	(0.11)	(-1.59)	(-1.78)	(0.13)	(-6.08)	(-2.51)	(0.56)	(-1.64)	(-2.05)	(0.29)	(-6.00)
age	-0.0127	0.00123***	-0.00178**	-0.00315**	0.0727	-0.0112***	-0.00913	0.00118***	-0.00170**	-0.00332***	0.0131	-0.0103***
	(-0.87)	(3.98)	(-2.07)	(-2.48)	(0.51)	(-3.70)	(-0.62)	(3.82)	(-1.99)	(-2.62)	(0.09)	(-3.53)
CPI	-0.129***	0.000119	0.0111***	0.00839**	-0.458	0.0399***	-0.149***	0.000961*	0.00985***	0.00838**	0.00476	0.0337***
	(-2.64)	(0.25)	(4.18)	(1.99)	(-0.98)	(3.48)	(-3.12)	(1.96)	(3.76)	(1.97)	(0.01)	(2.97)
gdp	-0.00718	-0.000274	0.0370***	0.0272**	-0.757	-0.0487	-0.0482	-0.000228	0.0383***	0.0291**	-0.386	-0.0519*
	(-0.05)	(-0.24)	(4.93)	(2.33)	(-0.51)	(-1.58)	(-0.32)	(-0.18)	(5.15)	(2.50)	(-0.25)	(-1.66)
_cons	5.803***	-0.00104	-0.0667	0.0691	75.73***	2.697***	6.171***	-0.0110	-0.0687	0.0827	72.16***	2.725***
	(4.39)	(-0.06)	(-1.06)	(0.72)	(6.17)	(9.35)	(4.58)	(-0.64)	(-1.08)	(0.86)	(5.64)	(9.29)
N	788	679	792	799	832	833	788	679	792	799	832	833
N_g	33	33	33	33	33	33	33	33	33	33	33	33
r2	0.0875	0.299	0.172	0.108	0.140	0.281	0.0768	0.283	0.177	0.100	0.100	0.266

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 9. Lead variable of ROA

	(1) ROA_t1	(2) ROA_t2	(3) ROA_t3	(4) ROA_t4	(5) ROA_t1	(6) ROA_t2	(7) ROA_t3	(8) ROA_t4
post	0.238	0.0148	-0.685	-1.213**				
	(0.51)	(0.03)	(-1.43)	(-2.42)				
spinoff	-1.265***	-1.022**	-0.289	0.214				
	(-2.87)	(-2.43)	(-0.64)	(0.47)				
Post*spinoff					-0.947***	-0.933***	-0.951***	-1.020***
					(-4.59)	(-4.22)	(-4.14)	(-4.33)
lnta	-0.208***	-0.260***	-0.330***	-0.349***	-0.214***	-0.264***	-0.332***	-0.347***
	(-3.26)	(-3.77)	(-4.72)	(-5.05)	(-3.26)	(-3.80)	(-4.78)	(-5.02)
age	-0.0110	-0.00924	0.0122	0.0242	-0.00628	-0.00513	0.0135	0.0231
	(-0.72)	(-0.59)	(0.79)	(1.52)	(-0.42)	(-0.34)	(0.88)	(1.43)
CPI	-0.130**	-0.171***	-0.161***	-0.0853	-0.158***	-0.196***	-0.169***	-0.0803
	(-2.50)	(-3.70)	(-3.13)	(-1.59)	(-3.11)	(-4.28)	(-3.40)	(-1.56)
gdp	0.0379	-0.0342	-0.184	-0.291**	0.0310	-0.0426	-0.187	-0.290**
	(0.27)	(-0.24)	(-1.32)	(-2.08)	(0.21)	(-0.29)	(-1.33)	(-2.08)
_cons	6.318***	7.588***	9.136***	9.454***	6.436***	7.699***	9.173***	9.430***
	(5.07)	(5.77)	(6.84)	(7.20)	(4.96)	(5.68)	(6.88)	(7.19)
N	728	663	596	531	728	663	596	531
N_g								
r2	0.0948	0.114	0.125	0.144	0.0797	0.103	0.124	0.143

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 10. Lead variable of NPF

	(1) NPFt1	(2) NPFt2	(3) NPFt3	(4) NPFt4	(5) NPFt1	(6) NPFt2	(7) NPFt3	(8) NPFt4
post	0.0170***	0.0254***	0.0208***	0.0212***				
	(4.01)	(7.27)	(4.43)	(4.34)				
spinoff	0.0100***	0.00358**	0.00935***	0.0117***				
	(3.07)	(2.06)	(2.94)	(4.52)				
Post*spinoff					0.0264***	0.0288***	0.0296***	0.0321***
					(7.55)	(7.67)	(7.18)	(6.91)
lnta	0.00202**	0.00248***	0.00252***	0.00205**	0.00225***	0.00253***	0.00263***	0.00212**
	(2.33)	(2.78)	(2.76)	(2.06)	(2.62)	(2.89)	(2.92)	(2.15)
age	0.000871***	0.000720***	0.000615**	0.000656**	0.000847***	0.000711***	0.000588**	0.000621**
	(3.70)	(2.97)	(2.42)	(2.28)	(3.62)	(2.95)	(2.33)	(2.18)
CPI	0.00178***	0.00150***	0.00102***	0.000647*	0.00209***	0.00156***	0.00113***	0.000724*
	(4.21)	(3.55)	(3.01)	(1.65)	(4.87)	(3.77)	(3.38)	(1.67)
gdp	-0.000150	0.000642	0.000187	0.00284**	-0.000121	0.000662	0.000275	0.00304**
	(-0.14)	(0.57)	(0.14)	(2.26)	(-0.11)	(0.59)	(0.21)	(2.36)
_cons	-0.0311**	-0.0389***	-0.0335**	-0.0396***	-0.0354***	-0.0399***	-0.0353**	-0.0411***
	(-2.33)	(-2.92)	(-2.28)	(-2.94)	(-2.61)	(-3.02)	(-2.43)	(-3.00)
N	644	600	547	494	644	600	547	494
N_g								
r2	0.355	0.379	0.375	0.377	0.352	0.378	0.371	0.369

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 11. Lead variable of Financing growth

	(1) financinggrowth_t1	(2) financinggrowth_t2	(3) financinggrowth_t3	(4) financinggrowth_t4	(5) financinggrowth_t1	(6) financinggrowth_t2	(7) financinggrowth_t3	(8) financinggrowth_t4
post	-0.00916	-0.0255	-0.0327**	-0.0401***				
	(-0.33)	(-1.17)	(-2.02)	(-3.21)				
spinoff	0.000348	0.0218	0.0247	0.0195				
	(0.01)	(1.02)	(1.55)	(1.54)				
Post*spinoff					-0.00883	-0.00588	-0.0109	-0.0233***
					(-1.12)	(-0.72)	(-1.39)	(-3.07)
lnta	-0.0116***	-0.0134***	-0.0101***	-0.00627**	-0.0115***	-0.0127***	-0.00931***	-0.00564**
	(-3.24)	(-4.06)	(-3.30)	(-2.18)	(-3.34)	(-3.85)	(-3.04)	(-2.00)
age_w	-0.000000423	0.00123	0.000613	0.000588	-0.00000105	0.00116	0.000496	0.000480
	(-0.00)	(1.48)	(0.76)	(0.77)	(-0.00)	(1.40)	(0.62)	(0.63)
CPI	0.00259	0.00431*	0.00574**	0.0128***	0.00260	0.00483**	0.00628***	0.0132***
	(1.27)	(1.78)	(2.30)	(4.96)	(1.35)	(1.96)	(2.63)	(5.28)
gdp	0.0214***	0.0188***	-0.0113*	-0.00534	0.0214***	0.0187***	-0.0112*	-0.00508
	(2.86)	(2.65)	(-1.90)	(-1.09)	(2.84)	(2.65)	(-1.89)	(-1.03)
_cons	0.106	0.119*	0.229***	0.103*	0.106	0.109*	0.217***	0.0930*
	(1.49)	(1.86)	(4.10)	(1.85)	(1.55)	(1.69)	(3.90)	(1.71)
N	738	670	602	534	738	670	602	534
N_g								
r2	0.0972	0.0985	0.0808	0.173	0.0972	0.0967	0.0774	0.169

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 12. Lead variable of deposit growth

	(1) depgrowth_t1	(2) depgrowth_t2	(3) depgrowth_t3	(4) depgrowth_t4	(5) depgrowth_t1	(6) depgrowth_t2	(7) depgrowth_t3	(8) depgrowth_t4
post	-0.0998***	-0.117***	-0.110***	-0.0601***				
	(-2.62)	(-4.25)	(-4.27)	(-2.65)				
spinoff	0.0776**	0.103***	0.0979***	0.0452**				
	(2.04)	(3.68)	(3.86)	(2.00)				
Post*spinoff					-0.0237*	-0.0200	-0.0202	-0.0196
					(-1.90)	(-1.64)	(-1.54)	(-1.40)
lnta	-0.0131***	-0.0145***	-0.0162***	-0.0148***	-0.0142***	-0.0146***	-0.0157***	-0.0145***
	(-2.82)	(-3.22)	(-3.33)	(-3.04)	(-3.01)	(-3.16)	(-3.12)	(-2.95)
age_w	0.000182	0.000705	0.000937	0.000753	-0.0000350	0.000300	0.000488	0.000514
	(0.15)	(0.56)	(0.72)	(0.57)	(-0.03)	(0.24)	(0.38)	(0.39)
CPI	0.00982***	0.00109	0.00556*	0.00742**	0.00982***	0.00274	0.00768**	0.00836**
	(2.67)	(0.34)	(1.65)	(1.97)	(2.74)	(0.87)	(2.26)	(2.24)
gdp	0.0290***	0.00673	-0.00572	0.00999	0.0299***	0.00647	-0.00509	0.0102
	(3.02)	(0.69)	(-0.59)	(1.05)	(3.07)	(0.65)	(-0.51)	(1.07)
_cons	0.0727	0.230***	0.292***	0.174*	0.0885	0.237***	0.283***	0.170*
	(0.88)	(2.70)	(3.21)	(1.86)	(1.08)	(2.66)	(3.00)	(1.81)
N	749	685	617	545	749	685	617	545
N_g								
r2	0.100	0.0723	0.0892	0.0745	0.0917	0.0486	0.0640	0.0681

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 13. Lead variable of CIR

	(1) CIR_t1	(2) CIR_t2	(3) CIR_t3	(4) CIR_t4	(5) CIR_t1	(6) CIR_t2	(7) CIR_t3	(8) CIR_t4
post	-9.771**	-10.67***	-6.609**	-3.336				
	(-2.37)	(-3.14)	(-2.15)	(-1.18)				
spinoff	25.25***	24.22***	17.94***	13.81***				
	(6.41)	(7.37)	(6.14)	(5.53)				
Post*spinoff					13.97***	11.87***	9.772***	9.037***
					(8.51)	(6.69)	(5.20)	(4.70)
lnta	0.834	1.522**	2.604***	3.064***	0.844	1.562**	2.698***	3.169***
	(1.28)	(2.13)	(3.41)	(4.28)	(1.19)	(2.09)	(3.52)	(4.38)
age	0.0371	0.122	-0.0900	-0.133	-0.0440	0.0289	-0.172	-0.206
	(0.25)	(0.75)	(-0.55)	(-0.81)	(-0.30)	(0.18)	(-1.10)	(-1.30)
CPI	-0.425	0.406	0.528	-0.308	0.100	0.913*	0.918*	-0.0198
	(-0.87)	(0.91)	(0.99)	(-0.60)	(0.19)	(1.84)	(1.70)	(-0.04)
gdp	-3.170**	-2.451*	-0.395	3.156**	-2.892*	-2.330	-0.279	3.209**
	(-2.27)	(-1.74)	(-0.29)	(2.52)	(-1.91)	(-1.58)	(-0.20)	(2.51)
_cons	78.66***	61.41***	37.18***	16.97	77.03***	60.36***	35.51**	15.65
	(6.77)	(4.75)	(2.65)	(1.33)	(5.97)	(4.28)	(2.47)	(1.21)
N	760	688	617	545	760	688	617	545
N_g								
r2	0.159	0.169	0.158	0.183	0.0981	0.105	0.116	0.152

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 14. Lead variable of FDR

	(1) FDR_t1	(2) FDR_t2	(3) FDR_t3	(4) FDR_t4	(5) FDR_t1	(6) FDR_t2	(7) FDR_t3	(8) FDR_t4
post	0.147*	0.219***	0.274***	0.235***				
	(1.75)	(3.84)	(5.89)	(5.51)				
spinoff	-0.325***	-0.359***	-0.378***	-0.311***				
	(-3.92)	(-6.66)	(-8.71)	(-8.16)				
Post*spinoff					-0.157***	-0.114***	-0.0712***	-0.0435*
					(-6.22)	(-4.65)	(-2.98)	(-1.87)
lnta	-0.0724***	-0.0744***	-0.0818***	-0.0787***	-0.0730***	-0.0756***	-0.0837***	-0.0811***
	(-5.45)	(-5.70)	(-6.51)	(-6.37)	(-5.35)	(-5.60)	(-6.38)	(-6.28)
age	-0.0111***	-0.0123***	-0.00982***	-0.00772***	-0.0100***	-0.0108***	-0.00809***	-0.00608***
	(-3.84)	(-4.60)	(-3.73)	(-3.18)	(-3.61)	(-4.25)	(-3.22)	(-2.60)
CPI	0.00269	-0.0133*	-0.00170	-0.00286	-0.00449	-0.0213**	-0.00991	-0.00935
	(0.29)	(-1.66)	(-0.18)	(-0.32)	(-0.48)	(-2.57)	(-1.04)	(-1.01)
gdp	0.0647**	0.0158	0.0267	-0.0277	0.0621**	0.0131	0.0242	-0.0289
	(2.37)	(0.63)	(1.10)	(-1.26)	(2.24)	(0.50)	(0.95)	(-1.26)
_cons	2.005***	2.336***	2.270***	2.472***	2.028***	2.366***	2.305***	2.501***
	(7.91)	(9.04)	(9.00)	(10.48)	(7.89)	(8.83)	(8.75)	(10.14)
N	761	689	617	545	761	689	617	545
N_g								
r2	0.252	0.264	0.284	0.265	0.227	0.223	0.231	0.216

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

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Appendix 1. Treated and Control Banks

Treated banks are the following:

1 Bank Syariah Mandiri (BSM)
2 Bank Mega Syariah
3 Bank Rakyat Indonesia Syariah (BRIS)
4 Bukopin Syariah
5 Panin Dubai Syariah
6 Victoria Syariah
7 BCA Syariah
8 BPD Jabar & Banten Syariah
9 Bank Negara Indonesia Syariah (BNIS)
10 Bank Net Indonesia Syariah
11 BTPN Syariah
12 BPD Aceh Syariah
13 BPD NTB Syariah

Control banks are the following:

1. Bank sinarmas
2. BTN
3. CIMB NIAGA
4. MAYBANK
5. Permata
6. OCBC
7. Danamon
8. BPD JATIM
9. BPD JATENG
10. BPD JAMBI
11. BPD SUMBAR
12. BPD SULSEL & SULBAR
13. BPD SUMSEL & BABEL
14. BPD DKI
15. BPD RIAU DAN KEPRI
16. BPD KALSEL
17. BPD KALBAR
18. BPD KALTIM
19. BPD DIY
20. BPD SUMUT

Appendix 2. Robustness Check Tables

Tabel A.1.

	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA
postXspinoff	-1.889***	-1.839***	-1.257***	-1.218***	-1.221***
	(-7.28)	(-5.89)	(-3.05)	(-2.95)	(-2.96)
lnta		-0.0575	-0.0907	-0.162	-0.138
		(-0.58)	(-0.67)	(-1.05)	(-1.01)
age			-0.00648	-0.0113	-0.00307
			(-0.28)	(-0.49)	(-0.14)
CPI				-0.174*	-0.185*
				(-1.90)	(-1.83)
gdp					0.500
					(0.72)
_cons	3.002***	3.831**	4.473**	6.297**	3.249
	(15.97)	(2.55)	(2.20)	(2.42)	(1.08)
N	1509	1453	823	823	823
N_g					
r2	0.0258	0.0269	0.00894	0.0107	0.0123

t statistics in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.2

	(1) LnNPF	(2) LnNPF	(3) LnNPF	(4) LnNPF	(5) LnNPF
postXspinoff	3.270***	1.192***	3.294***	3.245***	3.243***
	(17.48)	(6.52)	(14.24)	(13.71)	(13.62)
lnta		1.282***	0.908***	1.045***	1.061***
		(24.42)	(7.92)	(8.98)	(9.09)
age			0.122***	0.129***	0.130***
			(4.68)	(5.10)	(5.12)
CPI				0.414***	0.407***
				(7.85)	(7.62)
gdp					0.180
					(0.99)
_cons	8.185***	-9.964***	-6.555***	-10.37***	-11.53***
	(61.30)	(-12.89)	(-4.61)	(-6.69)	(-6.12)
N	1223	1169	728	728	728
N_g					
r2	0.156	0.398	0.505	0.532	0.533

t statistics in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

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Table A.3

	(1) fingrowth	(2) fingrowth	(3) fingrowth	(4) fingrowth	(5) fingrowth
postXspinoff	-1.327	0.520	2.503	2.708	2.619
	(-1.18)	(1.28)	(0.93)	(0.94)	(0.94)
lnta		-0.990	-3.006	-3.223	-3.126
		(-1.23)	(-1.04)	(-1.05)	(-1.05)
age			0.563	0.542	0.618
			(0.91)	(0.90)	(0.94)
CPI				-0.595	-0.699
				(-1.15)	(-1.16)
gdp					4.107
					(1.19)
_cons	1.451	15.25	39.26	45.14	21.50
	(1.29)	(1.24)	(1.07)	(1.09)	(0.98)
N	1501	1446	851	851	851
N_g					
r2	0.000470	0.00290	0.00808	0.00877	0.0123

t statistics in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.4

	(1) CIR	(2) CIR	(3) CIR	(4) CIR	(5) CIR
postXspinoff	18.94***	24.93***	21.71***	21.03***	20.99***
	(9.74)	(8.33)	(7.24)	(7.58)	(7.49)
lnta		-2.880***	-3.667**	-2.960**	-2.918**
		(-2.78)	(-2.56)	(-2.36)	(-2.37)
age			-0.0767	-0.0179	0.00690
			(-0.35)	(-0.08)	(0.03)
CPI				1.808	1.759
				(1.52)	(1.46)
gdp					1.414
					(0.55)
_cons	74.17***	113.9***	128.2***	109.6***	101.4***
	(64.49)	(7.62)	(6.36)	(6.26)	(5.64)
N	1577	1522	867	867	867
N_g					
r2	0.0548	0.0675	0.0514	0.0577	0.0581

t statistics in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.5

	(1) FDR	(2) FDR	(3) FDR	(4) FDR	(5) FDR
postXspinoff	21.39	38.94	79.06	82.33	82.67
	(1.57)	(1.61)	(1.62)	(1.63)	(1.63)
lnta		-8.431*	-20.81	-24.22	-24.59
		(-1.65)	(-1.63)	(-1.64)	(-1.64)
age			3.372	3.089	2.860
			(1.59)	(1.58)	(1.58)
CPI				-8.721	-8.273
				(-1.62)	(-1.61)
gdp					-12.95
					(-1.49)
_cons	1.458***	117.9*	261.4*	351.3*	426.3
	(37.97)	(1.67)	(1.65)	(1.65)	(1.64)
N	1498	1443	868	868	868
N_g					
r2	0.00335	0.00831	0.0182	0.0225	0.0235

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.6

	(1) depositgrowth	(2) depositgrowth	(3) depositgrowth	(4) depositgrowth	(5) depositgrowth
postXspinoff	-0.0859*	0.0384	-0.0248	-0.0208	-0.0228
	(-1.67)	(1.16)	(-0.75)	(-0.58)	(-0.65)
lnta		-0.0669*	-0.0669	-0.0711	-0.0688
		(-1.94)	(-1.59)	(-1.36)	(-1.36)
age			-0.0136**	-0.0140**	-0.0122**
			(-2.28)	(-2.01)	(-2.09)
CPI				-0.0116	-0.0141
				(-0.36)	(-0.42)
gdp					0.0961
					(1.22)
_cons	0.174***	1.107**	1.267*	1.382	0.828
	(3.83)	(2.11)	(1.81)	(1.39)	(1.34)
N	1498	1443	851	851	851
N_g					
r2	0.00107	0.00727	0.0128	0.0129	0.0141

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$