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DOES SWITCHING COST AFFECT DUAL RURAL BANKS MARKET POWER?

Moh. Najikhul Fajri*¹

Rudi Purwono²

^{1,2}Department of Economics, Airlangga University, Surabaya, Indonesia

ABTRACT

This study aims to review effect of switching costs on rural bank market power. This study is using dynamic panel regression of the Generalize Method of Momments (GMM). This paper used panels of 1266 Rural bank and 113 Sharia Rural bank during 2013-2019. To further analyze this study using Lerner Index as proxies of market power, Bertrand Competitions models as proxies of switching costs and banking indicators covering bank size, equity, non-interest income, and the burden of allowance for productive assets (Lost Loans Provision). The results show that switching costs have a significant positive effect on conventional rural bank and negatively affect sharia rural banks market power. This condition is caused by various reasons, namely the limited choice of rural banks so that consumers survive the switching costs charged. Meanwhile, in sharia rural bank transparency is clearly seen on the side of mudharobah and musyarakah which makes it

unable to increase financing margins freely.

Keywords: switching cost, market power, rural bank, sharia rural bank

JEL : G21; D40; D43

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Introduction

Market power is an important indicator in determining industrial performance and the welfare of society (Krattenmaker et al., 1987; Nicholson & Snyder, 2008; Pindyck & Rubinfeld, 2014). Theoretically market power refers to the market's ability to influence prices (Kadang, et al., 2018). Meanwhile, market power is determined from how high the power of competition and how strong the influence of price (Lipczynski et al., 2016). At a higher level of competition, the market power is considered weak and vice versa. This indicates that the higher the market power it is called a monopoly (Devine et al., 2018).

Market power is inseparable in the banking industry both locally and nationally (Mulyaningsih et al., 2016). Market power in banking often occur due to the presence of product agglomerations. Direct product agglomeration can create high banking performance. Banking performance is the ultimate goal where the bank has already reached certain conditions (Islam et al., 2020). These conditions are what make the strength of the market an impetus for banks to always survive and dominate the market.

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*Correspondence: Moh. Najikhul Fajri

E-mail: moh.najikhul.fajri-2021@feb.unair. ac.id Like any company, banks are constantly pursuing high profits in the near future (Meslier et al., 2014). High profits indicate that the banking performance is in good shape. To achieve this momments, banks penetrate various things in the market. Includes regulate highs and lows market performance directly without intervention (Yeyati & Micco, 2007). On other hand, banks do not take too much risk on their previous interest rate settings. In other words, high interest rates will be charged to consumers as a consequence (Chaudron, 2018).

Interest rates act as a promoter to increase market power. Interest rate connectivity reflects market prices in rural banks (D'Auria et al., 1999). Banks have the capacity to regulate raising and lowering interest rates, often referred to as banking power. However, banks are not always able to intervene in interest rates as market leaders. Because it will be considered as a determining indicator of market power if the difference between loan interest rates and deposits is relatively high (Chaudron, 2018).

Bank market power is not only drive at loan interest rates but also determined by the size of bank consumers (Craig & Dinger, 2013; Ibrahim et al., 2019). The number of banks does not reflect market power, but any consumers who are too focused (centralized) on one company are considered to be the drivers of market power (Kasman & Kasman, 2015). This centrality is caused by easy access and services provided by banks within a certain period and vice versa. Thus, when banks will make changes in access and services, it is certain that market power also change.

This change in access and services that is increasingly developing has led to the emergence of the process of charging consumers (Egarius & Weill, 2016). This encumbrance certainly causes asymmetric information between the bank and the customer. Loading process is often referred to as switching costs (Ornelas et al., 2022). This diversionary cost is actually a legislative process and the establishment of a new system that is intended to lead to a degree of efficiency (Vesala, 2007). This process is sometimes fully borne by the bank, but not much of it also has to be borne by consumers. If the bank carries out excessive charges, the customer feels disadvantaged. This condition causes customers to exodus to other banks (Miah et al., 2020).

Diversion costs are one important indicator in the success of banking profitability (Brunetti et al., 2020). If the transfer fee is unstoppable and must be charged to the other party, then it is possible that the market is getting weaker because of the loss of market power. Rural bank as one type of banking are strongly suspected of charging transfer fees to the public. This transitional form is seen in the system changes carried out on a large scale as a result of the equalization process with other banks (Ornelas et al., 2022).

In dualistic banking conditions, it is possible that other parties who also feel benefited because of the readiness of the system and the integrity of a pattern (Egarius & Weill, 2016). Banks that apply larger diversion fees must accept high consequences while other banks benefit in the form of increased market share (Brunetti et al., 2016).

In previous studies, the topic of the relationship between switching costs and market power was not widely discussed. Most switching costs are attributed to aspects of consumer loyalty (Rafiq et al., 2020; Utari & Indrawati, 2019). Meanwhile, from the aspect of market power, its discussion focuse on competition-stability (Beck et al., 2013; Clark et al., 2018; Cubillas & Suárez, 2013; Ibrahim et al., 2019; Liu & Wilson, 2013). On the other hand, from the subject aspect, most studies examine commercial banks and government. This condition causes the novelty of research related to switching costs to be increasingly apparent. On this

basis, this study is intended to examine, review, and analyze the relationship and influence of switching costs on market power of rural banks in Indonesia.

This research contributes to reviewing the potential of switching cost rural banks which will certainly hinder market growth. Meanwhile, market power is used as a means of reviewing the structure and behavior of banks over a period. The increasingly massive development of the banking industry requires strong retention and evaluation so that losses can be minimized and provide good benefits for all parties. This research is expected to be an integral part of the analysis of banking structure, behavior, and performance to achieve better and more sustainable bank stability.

Literature Review

Switching costs are inspired as a phenomenon that occurs due to system changes (service movements) borne by consumers. In any industry switching costs often ensnare consumers when moving to competitors' products assuming product homogeneity (Klemperer, 1995). Switching costs are not only associated with economics costs but also include search costs, customer discounts, learning journey costs, transaction costs, cognitive effort and emotional costs (Burnham et al., 2003). Switching costs play an important role in the paradigm of the information existence of an institution / company. This increase in information asymmetrics on switching costs can directly create additional benefits for funders. This increase is common in banking in general (Sharpe, 1997).

Some previous literature has mentioned that switching costs are prone to occur in very homogeneous banking products such as deposits and loans. Products that have almost no heterogeneity are sometimes common targets of their competitors (Ho, 2015). This condition makes consumers have a thick barrier to moving from one bank to another (Cruickshank, 2000). Not only that, switching costs also threaten credit card consumers who must be directly bound by applicable rules so that there is no possibility for them to move to lower interest rates (Stango, 2002). A fairly high profit is found when reviewing the aspects of the size of the asset, where the lender will get higher benefits than the borrower (Sharpe, 1990). Apart from that, banks also strive for loans as early as possible and even ensure that consumers will believe in the advantages of its services. This condition is often associated with protective behavior to dissuade consumers from leaving the banking industry (Greenbaum et al., 1989). Not only that, but strong protection also forces consumers to pay with high interest rates. Another reason is that consumers who fail to disclose their ability to repay credit are also trapped in the same bank (old bank) (Rajan, 1992).

Switching costs is develop increasingly widespread, creating several studies that detect determinants and switching behavior in banking in Singapore (Gerrard & Cunningham, 2004), Indonesia (Rama, 2017), Malaysia (Hashim et al., 2010), Taiwan (Chiu et al., 2005), and the United States (Chakravarty et al., 2004). Some of these studies have generally discussed the causes of switching costs, including the phenomenon of dual Islamic and conventional banking. However, the topic of discussion is allegedly still not generalizing the various types of banks. In dual Islamic and conventional banking, Baele et al. (2014) have stated that switching costs cause conventional bank consumers to switch to Islamic banks and or vice versa. Meanwhile, Azmat et al. (2020) added that the shift in consumers was mostly due to the behavior of increasing lending rates. This condition caused a decrease in loyalty from the consumer side (De Matos et al., 2009) and encouraged the creation of competition between banks (Miah et al., 2020). The existence of switching costs turns out to be increasingly affecting market power. In its development, Switching cost has a significant positive effect on market power (Egarius & Weill, 2016; Rizkiah et al., 2021). This condition shows that the higher the switching cost, it is certain that the price charged to consumers will increase. Reinforced by the argument that when consumers are locked down and feel that there is no choice, banks can directly set interest rates freely (Barone et al., 2011; Ioannidou & Ongena, 2010). Finally, if the old consumers still take precedence over the new ones then the price increase will be easier to detect and affect the amount of loans disbursed (Klemperer, 1995).

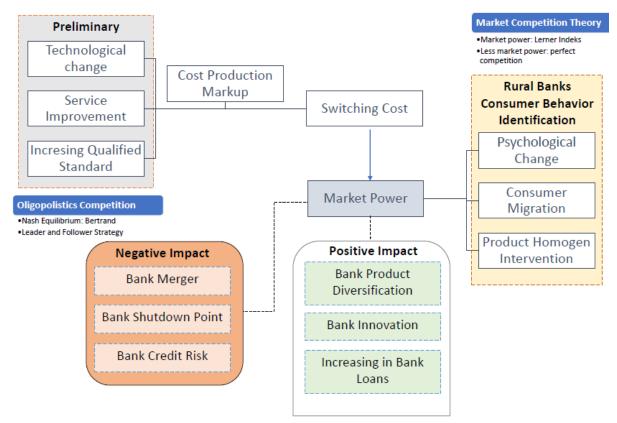


Figure 1: Switching Cost and Market Power Conceptual Freamwork Analysis

Data and Research Methods

Switching Cost: Bertrand Freamwork

Based on previous literature reviews, the bertrand equation is one of the basis for determining the transfer costs of each company (Klemperer, 1987). Meanwhile, Shy (2002) states that this equation should be a solution to *the nash* balance in the oligopolistic market. After reviewing various aspects and adaptations of Egarius & Weill (2016), Miah et al. (2020), and Rizkiah et al. (2021) then switching cost score can be formulated as flow:

$$SC_{it} = P_{it} - \frac{P_{it}N_{it}}{N_{it} + N_{lt}}$$
(1)

Switching costs are determined by price (P) and market share(N). Where the price is calculated using the ratio of total revenue to total assets. Meanwhile, the market share is calculated using a comparison of the number of bank assets-i with the number of bank assets in one district/city area. N_{it} is the smallest market share in a single period in the municipality/ city.

Switching cost and market power relationship

Lerner Index

The Lerner index is a measure of competitive power at the enterprise level. The lerner index considers the process of price markup (P-MC) on the prevailing market. The lerner index was first developed by Lerner (1934) as a dependent variable in his research. The lerner index has a range of numbers of 0-1, where 0 is perfect competition and 1 is a monopoly. The lerner index is a type of measurement of market power from a structural aspect. The lerner index is unlike the concentration ratio, HHI, and H-statistics because the calculations are much more individualized (Islam et al., 2020). The measurement process is as follows:

$$L_{ii} = \frac{P_{ii} - MC_{ii}}{P_{ii}}; P_{ii} \neq 0$$
⁽²⁾

Where L is the lerner index, P and MC is the price and marginal cost of a bank (i) over a certain period (t). Meanwhile, MC was determined using TC derivatives consequently taking into account previous studies (Berger et al., 2009; Olivero et al., 2011). The process of determining the MC is as follows:

$$\ln TC_{ii} = \gamma_{0} + \gamma_{1} \ln Q_{ii} + \frac{\gamma_{2}}{2} (\ln Q_{ii})^{2} + \sum_{i=1}^{3} \delta_{iji} \ln W_{iji} + \sum_{i=1}^{3} \delta_{iji} \ln W_{iji}$$

$$\times \ln W_{iki} + \sum_{i=1}^{3} \gamma_{iji} \ln W_{iji} \times \ln Q_{ii} + \tau_{1} Trend + \frac{\tau_{2}}{2} Trend^{2} + \tau_{3} Trend$$

$$\times \ln Q_{ii} + \sum_{i=1}^{3} \theta_{1} Trend \times \ln W_{iji}$$
(3)

Where is the cost of banking production, is the output measured through total assets, (j= 1,2,3) is the input price, and the trend is the time that can affect technical changes in the cost functionTCQ_{wjj} (Ariss, 2010; Ibrahim et al., 2019; Islam et al., 2020; Kasman & Kasman, 2015). Meanwhile, the three inputs in question include labor, funds, and physical capital. MC is measured using the coefficients estimated from the TC acidification above as follows:

$$MC_{it} = [\alpha_1 + \alpha_2 \ln Q_{it} + \sum_{i=1}^{3} \gamma_{ijt} \ln W_{ijt} + \tau_3 Trend]$$
(4)

Empirical Models

Based on the research review of the problem and the literature review, the limitation of the model adjusts the symmetry of market prices and the homogeneity of input costs. The empirical model of the influence of *switching costs* on *market power* is as follows:

$$Lerner_{it} = \alpha_0 + \alpha_1 SC_{it-1} + Bank_{it} + T_i + \varepsilon_{it}$$
(5)

Where *Lerner* is the lerner index, *SC* is the *switching cost*, and *Bank* is the vector of the banking indicator. While T and ε is the trend and *error term*.

Based on the equation above, the next expansion is carried out to review the connectivity aspects of banks that find an overflow of market share, namely BPRS. As for the expansion of such models, they are as follows:

$$Lerner_{it} = \beta_0 + \beta_1 SC_{it-1} + \delta_1 IB_{it} \times SC_{it-1} + Bank_{it} + T_i + \nu_{it}$$
(6)

The model above has the same function, except that it is distinguished by the adjustment of the interaction between Sharia BPR and switching costs. In this condition, switching costs are expected to have a significant positive effect on the power market. Meanwhile, conventional RURAL BANKS (β_1 =1- δ_1) are affixed using the difference between the dummy coefficients of sharia BPR. The empirical model above, analyzed using GMM static and dynamic panel regression by involving the classical assumption of panel regression in the form of endogeneity and heteroskedasticity. Static panel regression serves as a review of the indiscretions of a GMM model (Arellano, 2002). This GMM testing process is carried out because the model will be free from endogeneity problems. This endogeneity problem becomes its own consensual in estimation u_{it} and v_{it} in the model of regression equations (Arellano & Bover, 1995; Arrelano & Bond, 1991).

Sample data and collection

This study used *bankscope* data from Otoritas Jasa Keuangan as many as 1.266 rural banks and 113 rural banks during 2013-2019. This data should have used 96% of the entire population of people's credit banks and Islamic people's financing banks. Meanwhile, other banks did not pass the *screening* test because many reports were still blank. Based on specific information, it shows that Denpasar, Bali and Sidoarjo, East Java are the largest distribution bases for BPR and BPRS. The use of 2013-2019 is based on changes in microprudential supervision methods that previously adopted by Bank Indonesia to become a financial services authority through UU No. 21 of 2011. This review is the basis for analyzing the behavior of rural banks and rural banks while being supervised by the OJK. In 2013, banking supervision has begun to undergo a paradigm and its regulatory methods have been updated to such an extent. Meanwhile, the study ended in 2019 because the preliminary focused on efforts and reviews before the uncertainty of the pandemic. Thus, the temporal objects is used by continuing to fixed in this period in the absence of intervention in the estimation results.

Indicators used in analyzing the effect of switching costs on market power include banking size, capitalization, income structure, banking risk, and inefficiency. The size of the banking is measured using the logarithm of the number of banking assets. This is done to review the capacity of the institution in achieving an efficiency scale and its efforts to achieve market power. The size of banking has a positive effect on market power (Fadloli & Chalid, 2017). Meanwhile, capitalization is measured through the ratio of equity to the number of assets. Capitalization is projected to have a significant positive effect on market power (Egarius & Weill, 2016; Nagore & Villarroya, 2005). This increase in equity is expected to strengthen the financial position at a time when the bank will lead to banking. The income structure is measured through the ratio of non-interest income to income. The structure of income has a positive effect on market power. The reason behind this thick market power is due to the transitiveness of banks mostly carrying out non-deposit and loan activities (Nagore & Villarroya, 2005). Meanwhile, other reasons indicate a negative relationship, namelyvertical integration in banking is less than wholesale goods/services (Carletti & Hartmann, 2002; Hartmann et al., 2003). Banking risk (LLP) is measured using a comparison of the allowance burden of write-off of productive assets against disbursed loans. LLP negatively affects market power (Vo & Duong, 2017). This negative influence is caused by the increased risk that banks will have an impact on the existence of banks that have earlier integration (De Guevara et al., 2005). Meanwhile, inefficiency is measured using a comparison of non-interest expenses with income. Inefficiency negatively affects market power. The higher the charge of non-interest costs, the more it has implications for a decrease in profitability which can immediately reduce market power (Rakshit & Bardhan, 2019).

Finding and Discussion

Preliminary Analysis and result

Descriptive Statistics and Correlation

The following are descriptive statistics analyzed in this paper. Based on the results of statistical descriptions, the lerner index shows that most banks are monopolistic. Switching costs show relatively low results. The size of the bank, the equity ratio, the non-interest income ratio, and the ratio of the allowance expense of product assets represent a relatively small value.

Variable	Obs	Mean	Std. Dev.	Min	Max
lerner	9461	.232	.171	0	1
SC	9497	.048	.025	0	.597
banksize	9506	17.121	1.246	11.08	22.55
eqa	9499	17.516	16.997	.21	99.88
div	9335	9.987	9.657	0	98.7
llp	9126	.058	2.648	0	252.464

Table	1:	Descriptive	Statistics
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Source: Author's estimation

Meanwhile, based on the results of the correlation calculation coefficient shows that all variables do not have a correlation serial relationship. It is indicated by a coefficient value of less than 0.8. On the other hand, most of these variables have a relatively small to moderate relationship.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) lerner	1.000					
(2) sc	0.009	1.000				
(3) banksize	-0.010	-0.320	1.000			
(4) eqa	0.042	0.105	-0.503	1.000		
(5) div	0.015	0.200	-0.256	0.282	1.000	
(6) llp	0.007	0.136	-0.021	0.051	0.018	1.000

Table 2: Correlation Coefficient

Result

Based on the results of the regression equation estimate (1), switching costs and banking size have a significant positive effect on the BPR/S lerner index. The ratio of equity, non-interest income, and the ratio of allowance expenses for productive assets did not have a significant effect on the BPR/S lener index. Meanwhile, in the regression equation (2) switching costs have a significant positive effect on the BPR lerner index. On the other hand, the regression equation (3) switching cost has a significant negative effect on the BPRS lerner index. Interestingly, in the regression equation (3) the size of the banking and equity ratio have a significant positive effect on the BPRS lerner index. In addition, LLP has a significant negative effect on the BPRS lerner index.

The regression equations (1), (2), and (3) show that the model has been declared free from the serial problem of correlation (Arrelano & Bond, 1991) and is valid by identification

(Sargan, 1958). This is evidenced by the p-value of AR(1) and Sargan which is more than the degree of significance. Thus the regression equation is technically valid and can be interpreted further.

	(1)	(2)	(3)
	Lerner _{it}	LernerBPR _{it}	LernerBPRS _{it}
Lerner _{it-1}	0.2849***		
	(0.048)		
LernerBPR _{it}		0.2654***	
		(0.044)	
LernerBPRS _{it}			0.069
			(0.0717)
SC _{it}	0.3504**	0.4161***	-1.252**
	(0.167)	(0.008)	(0.55)
Size _{it}	0.0158**	0.0103	0.175***
	(0.008)	(0.0003)	(0.0258)
EQA _{it}	0.0001	0.0001	0.0013*
	(0.0003)	(0.0003)	(0.0007)
Div _{it}	0.0002	0.0003	0.0004
	(0 .0003)	(0.0003)	(.0008)
LLP _{it}	-0.0001	-0.0002	-0.0164***
	(0.0002)	(0.0002)	(0.0039)
Cons	-0.131	-0.0390	-2.735
	(0.14)	(0.140)	(0.4518)
Instrumentals	21	21	21
Observations	6047	5671	376
P(AR(2))	0.5380	0.1366	0.9
P(Sargan)	0.1978	0.2237	0.2
P(Forest)	0.0000	0.0000	0.000

Table 3: GMM Panel Difference Regression Estimation Results

Standard errors are presented in parentheses, * p < 0.1, ** p < 0.05, *** p < 0.01.

Source: Author's estimation

Table 4: BPR/S Market power

Year	Market Power	Market Power BPRS
icai	BPR	Market Fower Brits
2013	0.23	0.22
2014	0.22	0.21
2015	0.22	0.21
2016	0.21	0.24
2017	0.22	0.38
2018	0.23	0.42
2019	0.22	0.29

Source: Author's estimation

Based on the estimation results of table 4, that BPR and BPRS have relatively weak market power. As the table suggests that its value is close to 0, meaning that banks are rela-

tively far from market power (Kasman & Kasman, 2015). Fluctuations in market power did not occur much during 2013-2019, this is indicated by stable values. Factual evidence that shows that the two are classified as monopolistic competition is the interest rate that is sandwiched between deposits and loans (OJK, 2021). On the other hand, BPR and BPRS players can enter and exit the market easily. During 2013-2019 there has been a decrease in the number of rural banks and rural banks by at least 8% per year (OJK, 2020).

Discussion

The estimation show that switching costs have a significant positive effect on market power. These results are consistent and support of Egarius & Weill (2016) and Rizkiah et al (2021) hypotesis. That increase in switching costs immediately encourages an increase in market power. Regression results showed that a 1% increase in switching costs increased the lerner index by 0.28 index. This indicates that the higher the switching cost, the more likely the bank is to enter the oligopoly structure. Switching costs in banks are shown through an increase in loan interest rates. When the loan interest rate is raised, rural banks can increase profitability. Increase in profitability has encouraged wider banking expansion, this performance is anchored by various other indicators in the banking industry.

Switching costs in banking actually accommodate and maintain consumers (Ornelas et al., 2022). But most switching costs transitively only favor the producers. Producers get abundant profits while consumers are harmed by the burden of switching. This transitional burden immediately decreases the level of consumer welfare within a certain period. Thiscondition can certainly create various speculations, such as the transfer of consumers to other banks. However, some arguments show that consumers already feel that there is no other product choice , it will still survive even if there is excessive switching costs in banking (Barone et al., 2011; Ioannidou & Ongena, 2010).

The effect of positive switching costs on market power does not occur in Sharia BPR. Switching cost of Sharia BPR actually has a significant negative effect on market power. High load on conventional rural banks makes sharia rural bank accept market share run off. This can't be responded to by sharia rural bank markup pricing. Its caused by more transparent risk-taking of Islamic banks such as mudhorobah and musyarokah (Abedifar et al., 2013; Ibrahim et al., 2019). This condition due to Sharia BPR to be unable to arbitrarily increase and or reduce prices unilaterally. This indicates that information asymmetric do not occur much in sharia rural bank. Based on a report published by the OJK (2021) that the average sharia rural bank is at least competing with at least 7 conventional rural in regencies/cities throughout Indonesia. This indicates that consumer runoff from conventional to Sharia rural banks will not harm them within a certain period. Its coupled with the relatively homogeneous conventional and sharia rural bank products, this immediately makes consumers will not think long about using their products. On the other hand, when switching costs occur in conventional rural bank, consumers will not find welfare losses while using the product. However, It'snt many consumers persist in conventional rural bank due to easy access and high consumer confidence.

In addition to consumer protection and lockdown, it turns out that the size of the bank also has a significant positive effect on market power. This result corresponds to research conducted by Fadloli & Chalid (2017). Where in the condition of an efficient bank in terms of scale, the market power will be higher. Efficiency in terms of scale is often referred to in bandaged sizes. Based on the regression results, it shows that a 1% increase in the size of banks can increase market power by 0.0158 indices. This means that if the asset capacity is expanded, it is projected that rural banks will have higher market power. The power of market power becomes more dynamic when market power accompany its rise. Apart from that, it turns out that the size of Sharia BPR banking also has a significant positive effect on market power. This indicates that the high accumulation of assets makes the bank more confident in increasing profitability both normal and supernormal.

Based on the above information, market power have no connections and are not even affected by equity ratios, non-interest income, and credit risk. This happens because assets are much more important than the three. Some consequences indicate that the accumulation of third-party funds contributes to lending which immediately encourages an increase in loan interest rates. In the condition of switching costs of interest income is much more important than non-interest, this happens because banks want to optimize profitability in the long term. Meanwhile, credit risk is also not paid much attention to because with this switching cost, it is expected that there will be an increase in loans and financing from rural banks.

Robustness

Based on the GMM dynamic panel regression resiliency test, switching costs and banking measures have a significant positive effect on the lerner index. The remaining ratios of equity, non-interest income, and allowance expenses of productive assets have no significant effect. This testing process adapts to some of the findings of the past (Egarius & Weill, 2016).

Table 5: Rob	oustness Test Result
	(1)
Lorpor	0.38108***
Lerner _{it-1}	(0.0390)
	0.335**
SC _{it}	(0.1817)
Size _{it}	0.0171**
it.	(0.009)
EQA _{it}	0.0001
it.	(0.0003)
Div	0.0002
Div _{it}	(0 .0003)
LLP _{it}	-0.0001
	(0.0002)
Cons	-0.176
	(0.150)
Instrumentals	26
Observations	7505
P(AR(2))	0.2661
P(Sargan)	-
P(Forest)	0.0000

Standard errors are presented in parentheses, * p < 0.1, ** p < 0.05, *** p < 0.01.

Conclusion

Based on the results of estimates that switching costs have a significant positive effect on market power. Increase in market power is alleged to come from the large size of banks. Switching costs in rural banks occur due to several conditions, namely the desire to protect consumers in the long term. Meanwhile, most of the switching costs in rural banks favor producers. This partiality is seen in the relatively high interest rates. High interest rate forces consumers to have to sacrifice more costs and not a few of them move to other banks. However, some consumers are still staying in the market because there is no choice of other banks. In addition, the negative relationship between switching costs and market power occurs in Sharia rural bank. This negative relationship occurs because of the transparency of financing prices that are immediately known to consumers. On this basis, asymmetric information tends to be nil in sharia rural banks. This indicates that Sharia rural banks will not be able to markup financing margins directly. This transparency has made some of the market share of conventional rural banks move to sharia rural banks indirectly. Apart from that, the size of the bank is also a promoter in the success of market power and its efforts to increasing market share.

Suggestions that can be used in accommodating and preventing excessive switching costs can be done by various parties, for example by creating a more active and transparent reporting system through banking statistics, accommodating an API system that is easily utilized by various users or banks so that credit information can be targeted by consumers, the maximization process of monitoring interest rates on loans and deposits is more stringent, especially in protecting the occurrence of their increase, and initiating uniform analytical tools to evaluate credit in various rural banks. Apart from regulatory recommendations, banks should also offer a variety of comparison products and limit the cost of closing/opening new accounts.

This research delegates information that rural banks in Indonesia still do not have optimal market power. Rural bank market power is still in a position of monopolistic competition. Where the number of producers can still go in and out of the market and the possibility of getting normal profits is still high.

This research has various limitations in the interpretation and estimation process. First, the dualistic aspect of minimal competition between BPR and BPR Syariah. This indicates that the two may have different market shares. On the other hand, the impact of switching costs to inter-banks, for example, the move from conventional to Sharia rural banks is also difficult to detect due to fundamental differences. Second, the narrower switching cost measurement to the district/city level creates a slight bias, especially if some cells in the data bankscope are not found.

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References

- Abedifar, P., Molyneux, P., & Tarazi, A. (2013). Risk in islamic banking. *Review of Finance*, 17(6), 2035–2096. https://doi.org/10.1093/rof/rfs041
- Arrelano, M., & Bond, S. (1991). Some tests of specification for panel data:monte carlo evidence and an application to employment equations. *Review of Economic Studies*, 58(2), 277–297. https://doi.org/10.2307/2297968
- Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics*, *68*(1), 29–51.

- Arellano, M. (2002). Sargan's intrumental variables estimation and the generalized method of moments. *Journal of Business & Economic Statistics*, 20(4), 450–459.
- Ariss, R. T. (2010). Competitive conditions in Islamic and conventional banking: A global perspective. *Review of Financial Economics*, *19*(3), 101–108. https://doi.org/10.1016/j. rfe.2010.03.002
- Azmat, S., Azad, A. S. M. S., Bhatti, M. I., & Ghaffar, H. (2020). Islamic banking, costly religiosity, and competition. *Journal of Financial Research*, *43*(2), 263–303.
- Baele, L., Farooq, M., & Ongena, S. (2014). Of religion and redemption: Evidence from default on Islamic loans. *Journal of Banking & Finance*, 44, 141–159.
- Barone, G., Felici, R., & Pagnini, M. (2011). Switching costs in local credit markets. *International Journal of Industrial Organization*, 29(6), 694–704. https://doi.org/10.1016/J.IJIN-DORG.2011.03.004
- Beck, T., De Jonghe, O., & Schepens, G. (2013). Bank competition and stability: Cross-country heterogeneity. *Journal of Financial Intermediation*, 22(2), 218–244. https://doi.org/10.1016/J.JFI.2012.07.001
- Berger, A. N., Klapper, L. F., & Turk-Ariss, R. (2009). Bank Competition and Financial Stability. Journal of Financial Services Research, 35(2), 99–118. https://doi.org/10.1007/s10693-008-0050-7
- Brunetti, M., Ciciretti, R., & Djordjevic, L. (2016). The determinants of household's bank switching. *Journal of Financial Stability*, *26*, 175–189. https://doi.org/10.1016/J.JFS.2016.08.004
- Brunetti, M., Ciciretti, R., & Djordjevic, L. (2020). Till mortgage do us part: Mortgage switching costs and household's bank switching. *Journal of Banking & Finance*, *119*, 105904. https://doi.org/10.1016/J.JBANKFIN.2020.105904
- Burnham, T. A., Frels, J. K., & Mahajan, V. (2003). Consumer switching costs: A typology, antecedents, and consequences. *Journal of the Academy of marketing Science*, *31*(2), 109– 126.
- Carletti, E., & Hartmann, P. (2002). Competition and Stability : What ' S Special About Banking ? Bank, European Central.
- Chakravarty, S., Feinberg, R., & Rhee, E.-Y. (2004). Relationships and individuals' bank switching behavior. *Journal of Economic Psychology*, 25(4), 507–527.
- Chaudron, R. F. D. D. (2018). Bank's interest rate risk and profitability in a prolonged environment of low interest rates. *Journal of Banking and Finance*, *89*, 94–104. https://doi.org/10.1016/j.jbankfin.2018.01.007
- Chiu, H.-C., Hsieh, Y.-C., Li, Y.-C., & Lee, M. (2005). Relationship marketing and consumer switching behavior. *Journal of Business Research*, *58*(12), 1681–1689.
- Clark, E., Radić, N., & Sharipova, A. (2018). Bank competition and stability in the CIS markets. Journal of International Financial Markets, Institutions and Money, 54(2018), 190–203. https://doi.org/10.1016/j.intfin.2017.12.005
- Craig, B. R., & Dinger, V. (2013). Deposit market competition, wholesale funding, and bank risk. *Journal of Banking and Finance*, *37*(9), 3605–3622. https://doi.org/10.1016/j.jbank-

fin.2013.05.010

- Cruickshank, D. (2000). Competition in UK Banking: A Report to the Chancellor of the Exchequer. Stationery Office London.
- Cubillas, E., & Suárez, N. (2013). Bank market power after a banking crisis: Some international evidence. *The Spanish Review of Financial Economics*, *11*(1), 13–28. https://doi. org/10.1016/j.srfe.2013.04.001
- D'Auria, C., Foglia, A., & Reedtz, P. M. (1999). Bank interest rates and credit relationships in Italy. *Journal of Banking & Finance*, 23(7), 1067–1093.
- De Guevara, J. F., Maudos, J., & Pérez, F. (2005). Market power in European banking sectors. *Journal of Financial Services Research*, 27(2), 109–137.
- De Matos, C. A., Henrique, J. L., & De Rosa, F. (2009). The different roles of switching costs on the satisfaction-loyalty relationship. *International Journal of Bank Marketing*.
- Devine, P. J., Lee, N., Jones, R. M., & Tyson, W. J. (2018). An introduction to industrial economics. Routledge.
- Egarius, D., & Weill, L. (2016). Switching costs and market power in the banking industry: The case of cooperative banks. *Journal of International Financial Markets, Institutions and Money*, 42, 155–165. https://doi.org/10.1016/J.INTFIN.2016.03.007
- Fadloli, A., & Chalid, D. A. (2017). Competition Analysis of Banking Industry in Indonesia: Bank Size, Bank Type, and Efficiency Transfers BT - Proceedings of the International Conference on Business and Management Research (ICBMR 2017). 136–147. https://doi.org/https:// doi.org/10.2991/icbmr-17.2017.13
- Gerrard, P., & Cunningham, J. B. (2004). Consumer switching behavior in the Asian banking market. *Journal of Services Marketing*.
- Greenbaum, S. I., Kanatas, G., & Venezia, I. (1989). Equilibrium loan pricing under the bank-client relationship. *Journal of Banking & Finance*, *13*(2), 221–235.
- Hartmann, P., Maddaloni, A., & Manganelli, S. (2003). The Euro-area Financial System: Structure, Integration, and Policy Initiatives. *Oxford Review of Economic Policy*, 19(1), 180–213.
- Hashim, N. H., Kadir, S. A., & Latifah, S. (2010). The effect of corporate image, customer perceived value, relationship quality and switching intention among Islamic banking customers in Malaysia. *Business and Management Quarterly Review (BMQR)*, 1(4), 60–74.
- Ho, C. (2015). Switching cost and deposit demand in China. *International Economic Review*, 56(3), 723–749.
- Ibrahim, M. H., Salim, K., Abojeib, M., & Yeap, L. W. (2019). Structural changes, competition and bank stability in Malaysia's dual banking system. *Economic Systems*, 43(1), 111–129. https://doi.org/10.1016/j.ecosys.2018.09.001
- Ioannidou, V., & Ongena, S. (2010). "Time for a Change": Loan Conditions and Bank Behavior when Firms Switch Banks. *The Journal of Finance*, 65(5), 1847–1877. https://doi.org/ https://doi.org/10.1111/j.1540-6261.2010.01596.x

Islam, M. A., Ebenezer, O. O., Sobhani, F. A., & Shahriar, M. S. (2020). The effect of product

market competition on stability and capital ratio of banks in Southeast Asian countries. *Borsa Istanbul Review*, 20(3), 292–300. https://doi.org/10.1016/j.bir.2020.03.001

- Kadang, J., Djoko Mursinto, & Rudi Purwono. (2018). Factors Influencing Profit Efficiency of Banking in Indonesia. JDE (Journal of Developing Economies), 3(2), 56–64. https://doi. org/10.20473/jde.v3i2.9211
- Kasman, S., & Kasman, A. (2015). Bank competition, concentration and financial stability in the Turkish banking industry. *Economic Systems*, 39(3), 502–517. https://doi.org/10.1016/j. ecosys.2014.12.003
- Klemperer, P. (1987). The competitiveness of markets with switching costs. *The RAND Journal* of *Economics*, 138–150.
- Klemperer, P. (1995). Competition when consumers have switching costs: An overview with applications to industrial organization, macroeconomics, and international trade. *The review of economic studies*, *62*(4), 515–539.
- Krattenmaker, T. G., Lande, R. H., & Salop, S. C. (1987). Monopoly power and market power in antitrust law. *Geo. Lj*, *76*, 241.
- Lerner, A. P. (1934). The concept of monopoly and the measurement of monopoly power. *Review of Economic Studies*, 1(3), 157–175. https://doi.org/10.2307/2967480
- Lipczynski, J., Wilson, J., & Goddard, J. (2016). Industrial organization. In *Handbook* on the History of Economic Analysis (Vol. 3). Pearson Education. https://doi. org/10.4337/9781785365065.00027
- Liu, H., & Wilson, J. O. S. (2013). Competition and risk in Japanese banking. *The European Journal of Finance*, 19(1), 1–18.
- Meslier, C., Tacneng, R., & Tarazi, A. (2014). Is bank income diversification beneficial? Evidence from an emerging economy. *Int. Fin. Markets, Inst. and Money*, *31*, 97–126. https://doi.org/10.1016/j.intfin.2014.03.007
- Miah, M. D., Kabir, M. N., & Safiullah, M. (2020). Switching costs in Islamic banking: The impact on market power and financial stability. *Journal of Behavioral and Experimental Finance*, 28, 100409. https://doi.org/10.1016/j.jbef.2020.100409
- Mulyaningsih, T., Daly, A., & Miranti, R. (2016). Nexus of Competition and Stability: Case of Banking in Indonesia. *Buletin Ekonomi Moneter dan Perbankan*, *18*(3), 333–350. https://doi.org/10.21098/bemp.v18i3.555
- Nagore, A., & Villarroya, J. M. (2005). *Explaining Market Power Differences in Banking: A Cross-Country Study*. Instituto Valenciano de Investigaciones Económicas, SA (Ivie).
- Nicholson, W., & Snyder, C. (2008). *Microeconomic Theory Basic Principles and Extensions* (Jack (ed.); 11th ed.). Cengage Learning.
- OJK. (2020). Banking Financial Statements. Financial Services Authority.
- OJK. (2021). Data and Statistics. Financial Services Authority.
- Olivero, M. P., Li, Y., & Jeon, B. N. (2011). Competition in banking and the lending channel: Evidence from bank-level data in Asia and Latin America. *Journal of Banking & Finance*,

35(3), 560-571.

- Ornelas, J. R. H., da Silva, M. S., & Van Doornik, B. F. N. (2022). Informational switching costs, bank competition, and the cost of finance. *Journal of Banking & Finance*, *138*, 106408. https://doi.org/10.1016/J.JBANKFIN.2022.106408
- Pindyck, R. S., & Rubinfeld, D. L. (2014). *Microeconomics*. Pearson Education.
- Rafiq, M. Z., Jun, J. C., Ali, R., Majeed, M. K., & Mohsin, M. (2020). Impact of corporate image, switching cost and customer trust on customer satisfaction: Evidence from listed banking sector. SMART Journal of Business Management Studies, 16(1), 26–34.
- Rajan, R. G. (1992). Insiders and outsiders: The choice between informed and arm's-length debt. *The Journal of finance*, 47(4), 1367–1400.
- Rakshit, B., & Bardhan, S. (2019). Bank competition and its determinants: Evidence from Indian banking. *International Journal of the Economics of Business*, *26*(2), 283–313.
- Rama, A. (2017). AN EXPLORATION OF CUSTOMERS'SWITCHING BEHAVIOR IN ISLAMIC BANK-ING INDUSTRY. Journal of Islamic Monetary Economics and Finance, 2(2), 251–286.
- Rizkiah, S. K., Disli, M., Salim, K., & Razak, L. A. (2021). Switching costs and bank competition: Evidence from dual banking economies. *Journal of International Financial Markets, Institutions and Money*, 75, 101445. https://doi.org/10.1016/J.INTFIN.2021.101445
- Sargan, J. D. (1958). The Estimation of Economic Relationships using Instrumental Variables. *Econometrica*, 26(3), 393–415. https://doi.org/10.2307/1907619
- Sharpe, S. A. (1990). Asymmetric information, bank lending, and implicit contracts: A stylized model of customer relationships. *The journal of finance*, *45*(4), 1069–1087.
- Sharpe, S. A. (1997). The effect of consumer switching costs on prices: A theory and its application to the bank deposit market. *Review of Industrial Organization*, *12*(1), 79–94.
- Shy, O. (2002). A quick-and-easy method for estimating switching costs. *International journal* of industrial organization, 20(1), 71–87.
- Stango, V. (2002). Pricing with consumer switching costs: Evidence from the credit card market. *The Journal of Industrial Economics*, *50*(4), 475–492.
- Utari, W., & Indrawati, M. (2019). Analysis Of Quality Of Services, Relational Marketing And Handling Switching Cost As A Force Marketing To Improve Bank Customers's Loyalty In West Surabaya. *ICBLP 2019: Proceedings of the 1st International Conference on Business, Law And Pedagogy, ICBLP 2019, 13-15 February 2019, Sidoarjo, Indonesia,* 201.
- Vesala, T. (2007). Switching costs and relationship profits in bank lending. *Journal of Banking & Finance*, *31*(2), 477–493. https://doi.org/10.1016/J.JBANKFIN.2006.07.010
- Vo, X. V., & Duong, T. A. D. (2017). Factors Affecting the Market Power of Commercial Banks in Vietnam. VNU Journal of Science: Economics and Business, 33(1).
- Yeyati, E. L., & Micco, A. (2007). Concentration and foreign penetration in Latin American banking sectors: Impact on competition and risk. *Journal of Banking and Finance*, 31(6), 1633–1647. https://doi.org/10.1016/j.jbankfin.2006.11.003