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Disruption or Catalyst? Foreign Banks' Impact on Competition in Indonesia's Islamic-Conventional Banking Ecosystem

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Abstract

Research Originality: This study uniquely examines the impact of foreign bank penetration on bank competition within Indonesia's dual-banking system. By incorporating the moderating effect of Islamic banks, this research provides novel insights into the dynamics of bank competition in a multi-faceted financial ecosystem.

Research Objectives: This study investigates the impact of foreign banks on the level of competition in Indonesia's dual-banking system, encompassing both Islamic and conventional banks.

Research Methods: The study employs panel data analysis of Islamic and conventional banks in Indonesia from 2011 to 2021. Bank competition and foreign bank penetration are measured using the Lerner Index and various ratios of foreign banks, respectively.

Empirical Results: The findings reveal that an increase in the number of foreign banks enhances bank competition and reduces market power. However, increased foreign bank asset ownership is associated with reduced competition. While not statistically significant, Islamic banks tend supports increased competition in the banking sector.

Implications: To maintain a competitive balance, regulators should focus on controlling foreign asset ownership rather than merely the number of foreign banks. Furthermore, the role of Islamic banks in fostering competition warrants consideration in policy formulation.

Keywords:

foreign bank penetration; bank competition; Lerner index; foreign banks ratio; dual-banking system

How to Cite:

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INTRODUCTION

A bank must maintain its ability to adapt to the numerous changes that take place to ensure its survival. Multiple strategies might be employed to ensure a bank's long-term survival. The implementation of regulatory changes regarding the Liberalization of financial policies has prompted numerous nations, notably those in the developing world, to restructure their banking sectors (Wu et al., 2017). Globalization provides countries ample opportunities to expand their business, including establishing international banks in the country.

Despite extensive research on foreign bank penetration, this topic remains crucial and intriguing, particularly in emerging economies with dual-banking systems. The dynamic nature of global finance and the unique challenges posed by the coexistence of Islamic and conventional banking create a complex environment that demands ongoing investigation. Moreover, the impact of foreign banks on domestic banking competition continues to evolve, especially in the wake of financial crises and regulatory changes, making it a persistently relevant area of study.

The presence of international banks in a nation can enhance competition among banks and impact their overall performance. According to Chen and Zhu (2019), international banks can enhance a nation's economic expansion. The proportion of assets held by foreign banks in Indonesia rose from 10% in the 1990s to 35% in the 2000s. Furthermore, in 2010, over 50% of foreign banks were domestic banks that foreign banks had bought, and the number of de novo banks (foreign banks establishing branch offices in the host country) plummeted from 37 foreign banks in 1998 to a mere 19 foreign banks in 2010 (Mulyaningsih et al., 2015).

Studies related to the presence of foreign banks in a country are still being debated. The entry of foreign banks tends to trigger local banks to change their behavior, which has an impact on the performance of these banks. Several studies state that the penetration of foreign banks in a country can encourage competition, especially concerning banking efficiency and stability (Chen & Zhu, 2019; Wu et al., 2017; Yin, 2021). Another study found that the penetration of foreign banks increased competition between banks, especially after the 2008-2009 global recession (J. Chen & Zhu, 2019). On the contrary, the impact of foreign bank penetration tends to be a source of instability that can weaken monetary policies that are detrimental to a country. Wu et al. (2017) tested the impact of foreign bank penetration on domestic bank risk and found that domestic bank risk increased after foreign banks entered the host country's economy.

While previous studies have examined the impact of foreign banks on competition in various markets, this research distinguishes itself by focusing on Indonesia's dual-banking system. Unlike most existing literature, which often treats banking systems as homogeneous, our study explicitly considers the interplay between Islamic and conventional banks in the face of foreign bank penetration. This approach allows us to capture the nuanced competition dynamics in a multi-faceted financial ecosystem, providing insights particularly relevant to countries with similar banking structures.

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The dual-banking system owned by several countries is a challenge in itself. In the dual-banking system, Islamic banks face competition not only between Islamic banks but also with conventional banks. In addition, most Islamic banks are small and have fewer opportunities to diversify (due to their religious nature) (Alam et al., 2019; Khattak et al., 2021). Khattak et al. (2022) examine the impact of competition on banking stability in a dual-banking system and find that competition in the banking sector reduces stability. The results also find that competition harms Islamic banks.

In Indonesia, the ownership status of foreign banks is divided into three categories—first, foreign banks as branch offices/foreign banks. Second, foreign banks are also called subsidiaries, originating from joint ventures, mergers, and acquisitions with domestic banks (mixed banks). Third, foreign banks are represented as representative offices (Usman et al., 2018). Based on the Financial Services Authority (OJK) report in 2022, the number of foreign banks registered in Indonesia is 31 out of the number of private banks whose assets are owned by foreign parties (Nuralyza et al., 2022).

The impact of the presence of foreign banks in a country produces different interpretations. The results of a study by Yin (2021) found that foreign bank penetration increased bank competition in developed countries but reduced competition in developing countries. Other findings test the types of banks sensitive to foreign banks and find that the impact between banks varies according to the size of domestic banks' efficiency and business diversification (Wu et al., 2017). The contestable market theory states that a company is said to have zero profit because it sells products at the same price as the marginal cost, even though the company works in an environment with imperfect competition (Mulyaningsih et al., 2015; Parshakov et al., 2022).

The competition-stability theory states that the tighter the level of bank competition, the more stable the banking system will be and tends to reduce systemic risk (Rinaldi & Prasetyo, 2019; Rizvi et al., 2020). High bank competition can reduce market power and profit margins (Ellis, 2019; Fadli et al., 2021; Nuralyza et al., 2022; Rinaldi & Prasetyo, 2019). The competition-fragility theory argues that the level of competition is directly proportional to bank risk-taking, which causes banks to become more vulnerable to bankruptcy (Ali et al., 2020; Adhamovna, 2014, 2014; İskenderoğlu & Tomak, 2013; Nuralyza et al., 2022). In addition, a high level of competition leads to lower net margins and can erode a bank's primary source of profit due to excessive profit-seeking behavior (Wu et al., 2017). Another assumption states that banks with excessive levels of competition lead to low concentration in the banking system and reduce market power (Alam et al., 2019).

Two trends in the relationship between competition and concentration result in contradictory interpretations. If a market has a high concentration level, then the market competition level is low. Furthermore, the measurement of competition is divided into two approaches. First, the Structural Approach is based on the Structure-Conduct Performance (SCP) paradigm, where the more the market is concentrated, the more deceitful a bank's behavior will be. Second, the Non-Structural Approach, which is based on the "New

Empirical Industrial Organization" study, where if a bank is in a competitive market or an imperfect market (monopoly), there will be different reactions to demand and supply (Bikker et al., 2012; Maharani, 2018).

Competition is often associated with unhealthy banks. Another opinion states that a banking system with looser restriction policies tends to increase competition (Li, 2019). Fu et al. (2014) tested the effect of bank competition on the fragility of individual banks. They stated that a high concentration level encourages bank fragility, affecting banking stability. Another study investigated the impact of macroprudential policies on the level of competition and stability and found that the tightening of bank macroprudential policies generally increases bank competition and stability (González, 2022).

Meanwhile, financial instability reflects regulatory failure and weak market discipline, requiring a condition with high competition so that banks become strong (Schaeck & Cihák, 2014). On the other hand, the nature and scope of Islamic banks are different from those of the banking system in general due to Islamic banks' motivation to achieve the distribution of wealth according to Islamic principles and the need for additional risk-taking behavior. Although most Islamic banks are still small compared to conventional banks, many studies emphasize that large banks are more efficient, leading to a stable financial system. However, another study involving a dual-banking system found that market power also positively impacts the stability of Islamic banks (Alam et al., 2019). The impact of foreign bank penetration on bank competition is still controversial because most studies show increased competition, which will also increase foreign bank penetration (Chen & Zhu, 2019; Nuralyza et al., 2022; Yin, 2021).

This study aims to address two critical questions. First, does foreign bank penetration genuinely increase competition in dual-banking systems where conventional and Islamic banks coexist? Second, can Islamic banks weaken or strengthen the relationship between competition and foreign bank penetration, potentially yielding different results in countries implementing a dual-banking system? By examining these questions, our research contributes to the existing literature in several ways. First, it comprehensively analyzes foreign bank penetration in a dual-banking context, filling a gap in current understanding. Second, it explores the moderating role of Islamic banks in the competition-foreign bank relationship, offering new insights into the dynamics of mixed banking systems. Lastly, by focusing on Indonesia, a significant emerging economy with a well-established dual-banking system, this study offers valuable implications for policymakers and regulators in similar markets.

METHODS

This study will use unbalanced panel data to capture the behavior of each bank. The test will be conducted by testing a sample of commercial banks consisting of Islamic and conventional banks in Indonesia's 2011 – 2021 period. The determination of the period is due to the rise of Islamic banks and the increase in the number of foreign banks entering Indonesia. The choice of the study period, specifically ending in 2021, is

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deliberate and significant. This end date was selected due to a major structural change in the Indonesian banking sector after 2021. Specifically, several banks merged to form Bank Syariah Indonesia (BSI) the following year. This merger significantly altered the landscape of Islamic banking in Indonesia. Maintaining a balanced panel data set would have made it challenging if the study period were extended beyond 2021. The formation of BSI represented a consolidation of several Islamic banks, which would have reduced the number of individual Islamic banks in the sample and potentially skewed the analysis of competition dynamics. By ending the study in 2021, we ensure consistency in the number and structure of banks throughout the entire period, allowing for more robust and reliable panel data analysis.

This approach enables us to capture the competitive dynamics of the dual-banking system in Indonesia before this significant structural change, providing a clear picture of the pre-merger competitive landscape. This study uses data from the BankFocus database as a primary data source. The total number of conventional and Islamic banks in Indonesia is 125. However, only 109 banks have completed the data, consisting of 100 conventional and 9 Islamic banks. Macroeconomic variables, such as GDP growth, are obtained from the World Bank Data.

The testing method is panel data OLS regression. This test uses a lag-1 variable for all bank-level unit-specific variables to avoid the emergence of endogeneity problems. The estimation period, namely the year fixed effect, is also included in the regression model. Furthermore, the error term variable is clustered at the bank level (Yin, 2021).

The empirical model used in this study is based on previous (X. (Maggie) Fu et al., 2014; Yin, 2021). The following empirical model is used as follows:

$$Competition_{i,t} = \alpha + \beta foreign_{i,t} + \beta D\_IB_{i,t} + \beta BS_{i,t} + \beta ME_{t} + D\_year + \varepsilon_{i,t} \quad (1)$$

$$Competition_{i,t} = \alpha + \beta foreign_{i,t} * \beta D\_IB_{i,t} + \beta D\_IB_{i,t} + \beta BS_{i,t} + \beta ME_{t} + D\_year + \varepsilon_{i,t} \quad (2)$$

$Competition$ is a representation of the level of bank competition as measured using the Lerner Index, $foreign$ as a proxy for foreign bank penetration using foreign bank total assets, Islamic bank measurements are represented by dummy Islamic banks (D_IB), BS and ME are proxies of bank variables (Z -Score, CAR, ROA, Equity to total assets, bank size, loan) and macroeconomic variables (HHI, GDP growth), both of which act as control variables. This study uses the Lerner index, which can produce market power. Compared to other competition measurements, the Lerner index has advantages, such as the Panzar-Rosse Model and HHI, where the index does not measure long-term competitiveness (Alam et al., 2019).

RESULT AND DISCUSSION

This study presents descriptive statistics with the research sample period from 2011 to 2021. Table 1 shows that the average Lerner index (LERNER) is 0.57. This value is in the range of 0 and 1, where the Lerner index value is close to 1, indicating a tendency towards monopoly direction. Meanwhile, the FBA variable is the total ownership

of foreign bank assets, whereby foreign banks own 28% of bank assets in the host country. Furthermore, the number of established foreign banks is 39% of all banks in the host country. The average Z-SCORE is 24.70, which indicates the amount of bank risk. SIZE is the natural log of total assets worth 5.90, indicating all banks' total assets in the host country. ROA has an average of 4.9%, a proxy of the bank's profit on its assets. G-ASSET, representing the bank's rapid growth, has an average of 16.21%. EQA is the ratio of total equity to total assets, with an average value of 16.41%.

Table 1. The Descriptive Statistics

Variables	Obs	Min	Mean	Max
LERNER INDEX	207	-0.9902074	0.5763159	0.999543
FBA	1,188	0.2570631	0.2885384	0.315391
FBN	1,188	0.3855421	0.3951957	0.423076
Z-SCORE	1,188	-24.07466	24.706271	15909.79
SIZE	995	0	5.907135	6.902743
CAR	946	8.02	46.45488	17270
ROA	994	0.01	4.975	9.94
G-ASSET	907	-84.66402	16.21395	464.8229
EQA	992	-69.54	16.41666	98.88
LOAN	1,010	0	61.58496	83.66
GDP	1,188	0.01	0.06	0.11
HHI	1,189	0	30.0126	47.64786
D_IB	1,188	0	0.0833333	1
D_FOREIGN	1,188	0	0.3888889	1

Furthermore, LOAN, a proxy of bank activity (loans) to assets, has an average of 61.58%. In macroeconomic variables, GDP is worth 6%, the average per capita income. HHI has an average value of 30.01. The greater the HHI value, the more concentrated the market will be. D_IB is a dummy Islamic bank, and the number of Islamic banks in Indonesia is 8% compared to the number of conventional banks. D_FOREIGN means the presence of foreign banks compared to domestic banks, with an average value of 38%.

In Table 2, the correlation matrix between research variables is presented. The table provides preliminary information on the relationship between relevant variables in the context of the Indonesian banking industry. In addition to using the correlation results to strengthen the claim that the research model is suitable because there is no multicollinearity between the independent variables, the results of this correlation matrix analysis are also used to obtain an initial understanding of the relative relationship between the variables that are the focus of the research.

The analysis results show a significant positive correlation between market concentration (HHI) and competition (Lerner) in the banking industry. These results are consistent with the theory that the higher the level of market concentration, the lower

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the level of competition (X. M. Fu et al., 2015; Nyangu et al., 2022). The implication is that the dominance of large banks in the banking industry can reduce competition and prevent new competitors' entry.

Moreover, a feeble inverse relationship exists between the quantity of foreign banks (FBN) and the degree of competitiveness (Lerner). While the association lacks statistical significance, it suggests that additional foreign banks in the banking system lead to heightened competitiveness. Foreign banks' substantial presence can impact the market structure and foster competitiveness within the banking industry (Natsir et al., 2019; Yin, 2021). The relationship between foreign bank assets (FBA) and the level of competition. Although no significant correlation was found between the two, these results indicate no clear relationship between the size of foreign bank assets and the level of competition in the banking industry.

In addition, the impact of Islamic and foreign banks as dummy variables (D_IB and D_FOR) on the degree of competitiveness. Despite the lack of statistical significance, a weak negative association suggests that Islamic banks generally experience higher competition. Similarly, the modest inverse correlation between fictitious foreign banks and the degree of competitiveness suggests that foreign banks generally experience a more significant amount of rivalry. Islamic and international banks have the potential to enhance competition within the banking market.

Our analysis reveals three key findings: (1) An increase in the number of foreign banks enhances competition in the Indonesian banking sector; (2) However, increased foreign bank asset ownership is associated with reduced competition; and (3) While not statistically significant, the presence of Islamic banks tends to support increased competition in the sector. The test was carried out by conducting a panel regression analysis to examine the relationship between the impact of the entry of foreign banks on bank competition and several control variables included in the estimation model. First, the test examines the relationship between Foreign bank numbers (Table 4) and the Lerner Index. The results for all estimation models (Models 1, 2, 3, and 4) show that an increase in the number of foreign banks will reduce market power so that the level of bank competition in the host country is high. Foreign banks tend to increase competition between banks for efficiency, as evidenced by operational costs, which tend to be lower (Mulyaningsih et al., 2015). The increasing number of foreign banks also increases economic growth (Claessens & Neeltje van Horen, 2014; Claessens & Van Horen, 2014) due to the positive impact of the level of competition (Wu et al., 2017a, 2017b) and technological spillover (D. Chen, 2018).

The positive impact of foreign bank numbers on competition aligns with the contestable market theory. As more foreign banks enter the market, they bring new technologies, innovative products, and efficient practices, forcing domestic banks to improve their operations and pricing strategies. These factors increase competitive pressure and lead to a more dynamic and efficient banking environment. The positive relationship between the number of foreign banks and bank competition indicates that

when foreign banks start operating in a country, they tend to increase the number of competitors (Yin, 2021). Our finding on the positive relationship between foreign bank numbers and competition is consistent with Chen & Zhu (2019), who found that foreign bank penetration increased competition, especially after the 2008-2009 global recession. However, this contrasts with Yin (2021), who found that foreign bank penetration reduced competition in developing countries. This discrepancy might be attributed to the unique characteristics of Indonesia's dual-banking system.

Furthermore, the test is carried out by entering the Islamic bank variable as a moderating variable (FBN X D_IB). The results in models 3 and 4 (Table 3) show a negative but insignificant relationship. These results suggest that Islamic banks do not weaken or strengthen the relationship between the number of foreign banks and bank competition. This finding proves that Islamic banks and conventional banks react in the same way to the impact of the presence of foreign banks in the host country. Nevertheless, the moderation result indicates a negative trend in all models, while not statistically significant. It suggests that the emergence of Islamic banks in Indonesia still contributes to the competitiveness among banks. While the statistical significance may be lacking, the inclination of Islamic banks to promote greater competition offers intriguing observations into the workings of dual-banking systems. The rise in popularity of Islamic banks can be explained by their distinct product offers, which appeal to a particular set of customers and introduce a new kind of competition in the banking industry.

Although this interaction may not provide substantial outcomes, it is crucial to consider contextual elements and the dynamics of the banking business that could impact this interaction. Variations can impact the intricacy of this connection in terms of legal frameworks, target markets, corporate tactics, and the distinctive attributes of Islamic and conventional banks (Albaity et al., 2021). In the analysis of bank control variables (Table 3), the Z-Score shows a positive relationship with all models, but this relationship is not statistically significant. The magnitude of the bank's risk does not influence market power in this examination.

The correlation between CAR and market power yields a positive and statistically insignificant connection across all models. Banks typically aim to maintain their capital levels at a specific threshold to prevent crises and excessive loan expansion. The ASSET-G variable exerts a substantial adverse impact on market power. The bank's assets are proliferating, which suggests that it is expanding quickly in response to the increased competition in the host country. Increased competition incentivizes banks to operate with more efficiency (Schaeck & Cihák, 2014) and strive to enhance accessibility to financial services (Claessens & Neeltje van Horen, 2014). The return on assets (ROA) does not substantially impact market power, suggesting that a bank's capacity to make profits from its assets does not significantly influence its level of market power.

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Table 2. Correlation Matrix

	Lerner	FBA	FBN	Z-SCORE	SIZE	CAR	ROA	G-ASSET	EQA	LOAN	GDP	HHI	D_IB	D_FOR
Lerner	1													
FBA	0,44375	1												
FBN	-0.2027	-0.2698	1											
Z-SCORE	-0.0108	-0.1612	-0.2254	1										
SIZE	1,735417	0,79722	-0.0555	-0.0064	1									
CAR	0,866667	-0.2889	0.0048	-0.0538	-0.0003	1								
ROA	0,384722	0,8375	0,586806	-0.0056	-0.0076	0,883	1							
G-ASSET	0,616667	0,575	0,095833	0,3368056	-0.0385	0.0038	1,257639	1						
EQA	-0.0014	-0.0218	0,551389	0.0084	0.021	1,397	-0.1023	-0.013	1					
LOAN	0,246528	2,35	-0.0893	-0.0739	-0.0013	-0.3314	0,9	0,719444	-0.091	1				
GDP	-0.0842	2,33194	4,088889	-0.3231	0,2299	-0.235	1,284028	0,531944	0,23889	1,3319	1			
HHI	1,779861	-0.0697	-0.2532	4,7298611	0,5924	0.0032	0.0079	-0.0267	0,13333	-0.0068	-0.287	1		
D_IB	-0.0308	0	0	0,2756944	0,3715	-0.0299	-0.2276	-0.0651	0,69236	0,3736	0	0,08	1	
D_FOR	-0.0734	0	0	0.068	0,0757	0,394	-0.1684	-0.1067	0,65139	-0.0182	0	0,202	-0.1718	1

Table 2 demonstrates that the Herfindahl-Hirschman Index (HHI) has a consistently positive and statistically significant impact on market power across all tested models, serving as a control variable at the country level. These data suggest that a higher concentration level among banks in a country is associated with decreased competitiveness within the banking industry. The market will experience increased concentration due to the dominant presence of multiple large banks, reducing competitiveness (Yin, 2021). This discovery aligns with prior studies that have established a correlation between the degree of market concentration and competitiveness within the banking industry (Fadli et al., 2021; Phan et al., 2019). The findings emphasize the significance of monitoring market concentration levels to maintain fair competition in the banking sector (Albaity et al., 2021; Hoang et al., 2014).

Table 4 reports regression results with clustering bank level. The dependent variable is proxied by the lerner index. The Independent variable FBN denotes the ratio between the number of foreign banks on the number of all banks in the host country. Control variables on bank levels include Z-Score, SIZE, CAR, G-ASSET, LOAN, EQA, and ROA. At the same time, control variables on macroeconomic levels are GDP and HHI.

GDP has a positive but not significant effect on market power. Thus, in this test, the behavior of an aggressive business cycle does not significantly impact the magnitude of the influence of market power. D_IB, a proxy for Islamic banks, also has a negative and insignificant effect; the negative result indicates that the presence of Islamic banks can reduce market power and, conversely, can increase bank competition. This result supports that the implementation of a dual-banking system has a high level of competition between Islamic banks and conventional banks. Furthermore, there is a significant negative relationship between the presence of foreign banks (D_FOREIGN) and index liners. This finding indicates that foreign banks in the host country will impact decreasing market power and triggering increased competition.

Table 3. Foreign Bank Number and Bank Competition

Dependent variable: Lerner Index	(1)	(2)	(3)	(4)
FBN	-0.24859**	-0.25467**	-0.2353**	-0.23504**
	(-2.93)	(-2.97)	(-2.91)	(-2.91)
FBN x D_IB			-0.17134	-0.17135
			(-0.15)	(-0.15)
Z-SCORE		0.01015	0.01339	0.01339
		(0.36)	(0.51)	(0.51)
SIZE	-0.036847	-0.03624	-0.03693	-0.03693
	(-1.18)	(-1.15)	(-1.19)	(-1.19)
CAR	0.00003	0.00006	0.00012	0.00012
	(0.19)	(0.36)	(0.68)	(0.68)
G-ASSET	-0.00022*	-0.00023*	-0.000249**	-0.000249**
	(-2.57)	(-2.44)	(-2.64)	(-2.64)
LOAN			0.00016	0.00016
			(1.89)	()
EQA				0.0000
				(1.89)
ROA	0.00015	0.00014	0.00012	0.00012
	(0.94)	(0.93)	(0.77)	(0.77)
GDP	0.01411	0.01344	0.01348	0.01348
	(1.23)	(1.17)	(1.19)	(1.19)
HHI	0.00915***	0.00906***	0.00944***	0.00944***
	(3.75)	(3.75)	(3.75)	(3.75)
D_IB	-0.10961	-0.10050	0.08171	0.08171
	(-0.60)	(-0.54)	(0.06)	(0.06)
D_FOREIGN	-0.10305*	-0.100432	-0.10686*	-0.10686*
	(-2.02)	(-1.97)	(-2.16)	(-2.16)
D_YEAR	Yes	Yes	Yes	Yes
N	165	165	165	165
R-Sq	0.26	0.25	0.28	0.28
F	4.23	4.22	4.05	4.05

Table 5 reports regression results with clustering bank level. The dependent variable is proxied by the lerner index. The Independent variable FBN denotes the ratio between the number of foreign banks and the number of all banks in the host country. Control variables on bank levels include Z-Score, SIZE, CAR, G-ASSET, LOAN, EQA, and ROA. At the same time, control variables on macroeconomic levels are GDP and HHI.

Furthermore, in Table 4, this study examines the relationship between foreign bank penetration as a proxy for the number of foreign banks' asset ownership in the host country (FBA) to competition (i.e., Lerner Index). The results show a significant

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positive relationship in models 1 and 2. The higher the ownership of foreign bank assets is, the greater the level of market power. The interpretation of this positive coefficient is that the more significant the proportion of assets owned by foreign banks in the host country, the lower the level of competition in the banking industry. This rationalization is possible because foreign banks with more significant assets have advantages in resources and networks that can hinder competition from local banks. Their focus on specific market segments or more limited business activities can also influence the dynamics of competition in the banking industry.

Table 4. Foreign Bank Asset and Bank Competition

Dependent variable: Lerner Index	(1)	(2)	(3)	(4)
FBA	2.33576*	2.33806*	1.99068	1.97957
	(2.12)	(2.11)	(1.81)	(1.81)
FBA x D_IB			0.11565	0.11565
			(0.03)	(0.03)
Z-SCORE		-0.01014	0.00335	0.00335
		(-0.35)	(0.12)	(0.12)
SIZE	-0.02952	-0.03624	-0.03531	-0.03531
	(-1.00)	(-1.02)	(-1.16)	(-1.16)
CAR	-0.00003	-0.00000	0.00010	0.00010
	(-0.19)	(-0.02)	(0.55)	(0.55)
G-ASSET	-0.00020*	-0.00019*	-0.00026**	-0.00026**
	(-2.14)	(-2.00)	(-2.77)	(-2.77)
LOAN			0.00017*	0.00017*
			(2.03)	(2.03)
EQA	0.00005			
	(0.52)			
ROA	0.02257	0.02046	0.01373	0.01373
	(1.32)	(1.28)	(0.83)	(0.83)
GDP	-0.25574	-0.34222	0.03970	0.03970
	(-0.23)	(-0.30)	(0.03)	(0.03)
HHI	0.00929***	0.00920***	0.00977***	0.00977***
	(3.63)	(3.65)	(3.71)	(3.71)
D_IB			-2.37809	-2.37809
			(-0.03)	(-0.03)
D_FOREIGN			-0.10514	-0.10514
			(-1.95)	(-1.95)
Year Dummy	Yes	Yes	Yes	Yes
N	165	165	165	165
R-Sq	0.25	0.24	0.23	0.23
F	3.76	3.75	3.32	3.32

The results of this test provide a different answer from previous results, which used the number of foreign banks (FBN) as a proxy for foreign bank penetration. These results provide an argument that the increase in the number of foreign bank assets is not in line with the increase in the number of foreign banks operating in the host country. This issue is likely to occur because, since the 2000s, foreign banks have entered Indonesia more by acquiring existing local banks than by entering into joint ventures or opening new branch offices (Mulyaningsih et al., 2015). The negative relationship between foreign bank asset ownership and competition suggests that policymakers should focus on regulating the concentration of foreign bank assets rather than just the number of foreign banks. This finding implies that large foreign banks might use their financial strength to dominate specific market segments, potentially stifling competition.

This finding aligns with the research undertaken by Yin (2021), which indicates that the presence of foreign banks leads to a rise in the assets of foreign banks. However, it does not necessarily increase the number of banks in the host country. Most foreign banks enter the market through consolidation, which may diminish competition. Global banks may consider entering Indonesia by acquiring local banks due to their positive economic outlook and the potential for long-term business stability. Furthermore, numerous local banks have been acquired by foreign entities, which are of significant size (Mulyaningsih et al., 2015; Parshakov et al., 2022).

The results of the interaction of foreign banks with Islamic banks (FBA x D_IB) produce an insignificant relationship which leads to the implementation of a dual-banking system, neither weakening nor strengthening the penetration relationship of foreign banks with market conditions of a country nor in conditions of its level of competition. The relationship between the G-ASSET variable and the Lerner index also gives the same results as the previous table (Table 4). The coefficient value of the LOAN variable has a significant positive relationship to market power, where banks with more dominant lending activities tend to have greater market power (Yin, 2021). HHI has a significant positive relationship in all models in the macroeconomic control variables. A high level of bank concentration is consistent with an increase in market power in a country..

CONCLUSION

This study examines the relationship between foreign bank penetration and competition in the Indonesian banking sector, which operates under a dual-banking system. Our findings reveal that increasing foreign banks enhances competition and reduces market power in the banking industry. However, we also found that increased foreign bank asset ownership is associated with reduced competition. This dichotomy suggests that the mode of foreign bank entry plays a crucial role in shaping competitive dynamics. Additionally, while not statistically significant, our results indicate that the presence of Islamic banks tends to support increased competition in the sector, highlighting the unique role of Islamic banking in Indonesia's financial landscape.

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Given the evidence from these observed data, we suggest the following concrete policy suggestions: Introduce a hierarchical licensing framework for international banks, giving preference to newly established banks rather than acquiring existing ones. This strategy can facilitate the growth of international banks while mitigating the risk of excessive asset concentration. Implement restrictions on the amount of assets foreign banks can hold based on a specific percentage of the overall assets in the banking industry. This measure can mitigate market concentration by a few prominent international institutions. Implement measures to provide incentives for foreign banks to collaborate with domestic Islamic banks, facilitating the exchange of expertise and improving the competitiveness of the Islamic banking industry. Create a specialized regulatory sandbox exclusively for cutting-edge banking products and services to promote the introduction of new offers by both domestic and foreign banks, hence fostering competition. Establish a systematic evaluation procedure, such as a periodic review every 3-5 years, to analyze the influence of foreign banks on market competition. This regulation will enable prompt policy revisions as necessary. These specific regulations aim to utilize the advantages of foreign bank involvement while upholding a competitive and secure banking atmosphere that sustains Indonesia's distinct dual-banking system.

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