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How The Information Of Digital Bank Performance Affects The Firm Value Of Their Affiliated Parent Companies In Asia

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ABSTRACT

This study aims to examine whether the information of digital banks performance adds value or negatively impacts the value of their parent companies in Asia, and to determine whether this impact differs depending on the sector of the parent company. The population of this study consists of digital banks and their parent companies in Asia during the 2021–2023 period. Using purposive sampling, a sample of 19 digital banks and their parent companies was selected. The findings reveal that the information of digital banks performance negatively impacts the value of their parent companies. An increase in ROE in digital banks reduces Tobin's Q and stock returns of the parent companies due to high perceived risks and the substantial investment required to support the growth of digital banks. High NPL and LDR negatively affect the firm value of the parent companies, reflecting investor concerns regarding risk management and the efficiency of digital banks. In addition, parent companies in the financial sector tend to experience a more positive impact on stock returns compared to those in the non-financial sector. Therefore, based on the research findings, parent companies should adopt a more cautious and strategic approach when investing in digital banks. While digital banks offer growth potential, their high initial operational costs, credit risk (NPL), and pressure on financial ratios such as LDR can negatively affect the value of their parent companies.

INTRODUCTION

In Asia, digital banking trend is largely driven by established companies or large consortia (Bick et al., 2021). The success of WeChat Pay and Alipay in 2018 in building an integrated payment ecosystem in China reinforced the belief that digital banks could revolutionize the

banking industry (Ku, 2024). This has encouraged major technology companies such as Ant Financial, Tencent, JD.com, and OneConnect Financial Technology to establish digital banks (Ku, 2024). This trend is also reflected in data from Deloitte (2020), which shows that applicants for digital bank licenses in Asia come from various sectors, including financial institutions, technology companies (fintech, e-commerce, digital payments), telecommunications companies, and even offline companies with large ecosystems, such as property developers and trading firms.

On the other hand, traditional banks have also adapted by developing advanced technology-based business models to remain competitive and enhance customer experience (Dasho et al., 2016; PwC, 2023). Strategies include forming partnerships with fintech companies and launching digital banks (Deloitte, 2020; PwC, 2023). For example, traditional banks such as Bank of China and Standard Chartered Bank have collaborated with technology companies to launch their own digital banking services (Ku, 2024).

In the context of parent companies, establishing subsidiaries such as digital banks serves as a strategy to achieve synergy through product line diversification, entry into new markets, or increased revenue (Chen, 2024). Subsidiaries often act as innovation hubs to test new organizational structures or products that could enhance the competitiveness of the parent company (Chen, 2024). This approach is undertaken by parent companies to meet shareholder expectations for continuous growth in their investments, including revenue, profits, and stock prices (Rothaermel, 2024).

However, establishing and operating digital banks is not without risks. The high costs of building, running, and maintaining digital banks can become a financial burden for parent companies, especially when they need to undergo technological transformations to replace expensive and complex legacy systems (Phan et al., 2020; Rapid, 2023). A 2020 study by Boston Consulting Group also revealed that, despite their significant potential, digital banks face substantial challenges in achieving profitability. Among the top 10 digital banks globally, only five were profitable. In South Korea, only one out of three digital banks, Kakao Bank, reported profits. Meanwhile, in China, out of 16 digital banks, only four, including WeBank, which is often used as a benchmark for other digital banks, managed to generate profits (Choi et al., 2020).

This challenge highlights the strategic dilemma faced by parent companies in balancing the long-term profit potential from investing in digital banks with the accompanying financial risks. This dilemma is closely related to the company's investment decisions, which are a key determinant of firm value (Likitwongkajon & Vithessonthi, 2020).

Therefore, this study is conducted to analyze how information related to the performance of digital banks affects the value of their parent companies. This interest arises from the importance of understanding whether the strategies implemented by parent companies in adopting digital banks are indeed profitable by adding value to the parent company, or if they have the opposite effect. Furthermore, this study aims to identify whether differences exist in the impact of digital bank performance information on the value of parent companies based on the type of parent sector. Previously, most studies focused on the impact of digital innovation on the performance of traditional banks or conducted comparative analysis between digital and conventional banks. However, studies that specifically analyze the impact of digital bank performance on the value of their parent companies are still very limited.

LITERATURE REVIEW

Firm value depends on its investment decisions, specifically how it allocates funds to profitable projects (Qureshi, 2007). Good investment decisions will increase the company's revenue and profits, which ultimately enhances the firm's value in the eyes of investors and the market (Qureshi, 2007).

Investment decisions, such as acquiring or establishing subsidiaries, can be evaluated by measuring the subsidiary's performance in relation to the parent company's value (Sukesti et al., 2021; Zhou & Wong, 2021). A subsidiary's performance, whether positive or negative, can influence the stock price movements of the parent company, reflecting how investors assess the potential benefits or risks of the decision (Slovin & Sushka, 1998). This indicates that stock prices can reflect market expectations about the financial impact of the parent company's decisions, with these assessments ultimately reflected in the firm's value (Nikmah & Hung, 2024; Slovin & Sushka, 1998).

This connection aligns with the concept of market discipline, where the relationship between a company's performance and market discipline is influenced by industry risk norms, which are the standards or risk thresholds deemed acceptable within a particular sector (Alessandri & Khan, 2006). When a company deviates from these norms (for example, taking much greater risks than the industry average), it tends to experience a decline in market performance, such as falling stock prices or a loss of investor confidence (Alessandri & Khan, 2006). When a company performs well, it reflects good financial health, which not only attracts more investment but also ensures that management acts in the best interest of shareholders (Ruhomaun et al., 2019).

A study conducted by Muller (2011) found that the stock prices of both parent and subsidiary companies react to the financial reports released. Furthermore, research by Aufaristama (2023) indicates a positive correlation between the stock prices of the two entities, suggesting that if the financial performance of one entity is positive, the stock price of the other entity tends to rise as well, and vice versa. This reflects that investors view the financial performance of both the parent and subsidiary companies as interconnected (Aufaristama, 2023). Thus, the market considers both as part of a single economic entity, where the performance of one can influence the perception and valuation of the other.

H_1: Information related to the performance of digital banks has a significant impact on the value of their parent company.

Parent companies in the financial sector, especially in banking, benefit from their extensive knowledge of the financial services industry, banking products, and related risks, which provides them with a significant advantage in managing digital banks (Deloitte, 2020). Conversely, parent companies from non-financial sectors often lack familiarity with banking risks and may perceive regulatory requirements as a challenge (Deloitte, 2020). However, parent companies in sectors such as technology and telecommunications have strengths in technological capabilities, access to large customer bases, and strong digital networks (Deloitte, 2020). These advantages enable them to develop and offer more efficient and integrated digital services. Therefore, both parent companies from the banking and non-banking sectors have their own advantages and challenges in managing digital banks, which may lead to differences in the impact based on the parent sector type.

H_2: The impact of information related to digital bank performance on the value of their parent company differs between the financial sector and other sectors.

It should be emphasized that this study does not aim to evaluate the performance of digital banks in relation to the performance of their parent companies. Instead, this study seeks to analyze whether information regarding the subsidiary's condition, in this case, the performance of digital banks, affects the value of the parent company in the eyes of investors (market reaction). Therefore, aspects such as the percentage of ownership or total assets of the digital bank are not considered in this study.

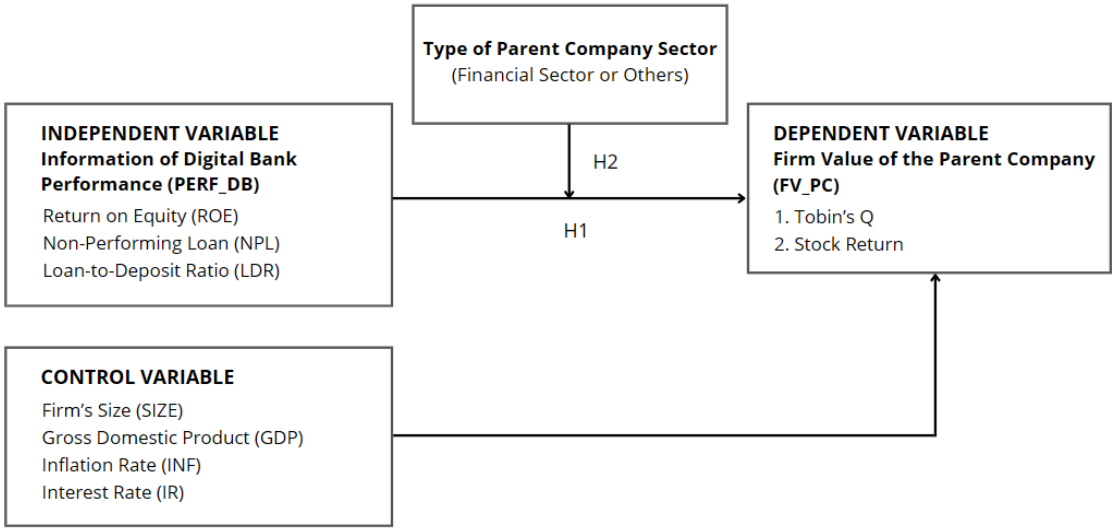
METHODS

This study utilizes data from digital banks operating across Asia, primarily obtained from the annual and financial reports available on each bank's official website. Key financial metrics

such as Return on Equity (ROE), Non-Performing Loans (NPL), and Loan to Deposit Ratio (LDR) were extracted from these reports. Data for Tobin's Q for the parent companies was sourced from S&P Capital IQ, while stock price information was retrieved from Yahoo Finance.

Additionally, macroeconomic data was accessed through the Refinitiv Eikon database, providing a comprehensive foundation for analysis.

Figure 1. Conceptual Framework



Source: Processed by the Author (2024)

The definition of digital bank tends to vary, with many claims of being a digital bank that may not necessarily be accurate. Therefore, a specific reference is used to determine which entities qualify as digital banks for the sample. The reference used is the World's Top 100 Digital Banks Ranking 2023 by TABInsights (2024), a global research and consulting subsidiary of TAB Global. This reference aligns with the digital banks discussed in the McKinsey article by Bick et al. (2021), ensuring consistency and making it a relevant source for the research sample.

Then, given that many digital banks are relatively new, the author limited the sample to those that are able to provide financial data from 2021 to 2023. Additionally, the parent companies of these digital banks were required to be publicly listed on stock exchanges, as Tobin's Q and stock prices, key measures of firm value, rely on data from publicly traded companies. Therefore, after confirming the availability of essential data, the final sample consists of 19 digital banks and their corresponding 19 parent companies.

In this study, the dependent variable is firm value, measured by Tobin's Q and stock return. Tobin's Q is a comprehensive performance metric that evaluates the overall impact of management decisions (An et al., 2025). Due to its effectiveness, Tobin's Q is widely used in accounting, economics, and finance to measure firm value (Wong et al., 2021). Firm value also refers to investors' perceptions of financial performance, as reflected in stock prices (Nikmah & Hung, 2024). Therefore, this study also utilizes the stock prices of parent companies to assess firm value, which is proxied through stock performance. Stock prices are used to calculate annual returns, representing the rate of return or profit earned by investors for the period 2021–2023. Annual returns are calculated by subtracting the adjusted initial stock price from the adjusted final stock price, dividing the result by the adjusted initial stock price, and multiplying by 100 percent.

The independent variable for this study is information related to the performance of digital banks. This performance can be assessed through profitability and risk indicators. In this study, profitability is measured using Return on Equity (ROE), while risk is evaluated using indicators such as Non-Performing Loans (NPL) and Loan to Deposit Ratio (LDR) (Boďa & Zimkova, 2021; Le

& Ngo, 2020; Saif-Alyousfi, 2022). Return on Equity (ROE) is used as it is the main popular indicator of bank performance (Saif-Alyousfi, 2022). ROE measures a company's profitability and efficiency in generating profits. A higher ROE indicates better management of revenue generation and growth through equity financing, reflecting strong performance in these areas (Fernando, 2024). NPL, which represents the ratio of non-performing loans to total gross loans, serves as a proxy for credit risk (Le & Ngo, 2020). Some studies suggest that a higher exposure to credit risk is associated with lower profitability (Dietrich & Wanzenried, 2014). However, other research indicates that banks holding riskier assets may require higher profits to offset the increased likelihood of default (Figlewski et al., 2012). Loan-to-deposit ratio (LDR) is a key structural indicator used to assess potential liquidity and funding risks in banks (Boďa & Zimkova, 2021). An LDR between 80% and 90% is typically regarded as optimal, striking a balance that supports profitability while maintaining sufficient liquidity to meet obligations (Murphy, 2024).

In order to prevent interference with the research findings, this study incorporates several control variables. One important factor is firm size, which can influence firm value (An et al., 2025). Firms with large size benefit from economies of scale, which make them more efficient than smaller firms (Isayas, 2022). These advantages include better access to credit, information, and larger operational capacity (Nikmah & Hung, 2024). In contrast, small firms often struggle to compete in highly competitive markets due to limited resources and power (Hailegebreal, 2016). However, large firms may face challenges due to their organizational complexity, which can negatively affect productivity (Nikmah & Hung, 2024).

Various macroeconomic factors such as GDP growth rate, inflation, and real interest rates can affect the value of the parent company. Research indicates that factors like inflation and GDP can have a substantial impact on banking, firm diversification and profitability (Gafrej & Boujelbéne, 2022). Significant fluctuations in GDP, whether positive or negative, often lead to noticeable effects on the stock market (Isayas, 2022). When the economy is doing well, there is an increase in the demand for loans, this higher loan demand contributes to increased profitability for banks during these expansionary periods (Saif-Alyousfi, 2022). Meanwhile, a challenging economic environment generally results in reduced corporate profits, which subsequently leads to a decrease in stock prices (Isayas, 2022). The inflation rate reflects the rise in overall price levels of goods and services in an economy, signifying a reduction in currency purchasing power (Singh & Sharma, 2016). Meanwhile, the interest rate refers to the borrowing cost imposed by banks, indicating their income from loans (Al-Homaidi et al., 2018).

This study applied multiple linear regression models to evaluate the hypotheses. Hypothesis 1 specifically examines whether information related to the performance of digital banks has a significant influence on the value of their parent companies and is represented by the following equation:

1. The mathematics model of firm value measured by Tobin's Q:

$$\text{Tobin's } Q_{i,t} = \beta_0 + \beta_1 ROE\_DB_{i,t} + \beta_2 NPL\_DB_{i,t} + \beta_3 LDR\_DB_{i,t} + \Sigma\beta_4 Control_{i,t} + \varepsilon_{i,t}$$

2. The mathematics model of firm value proxied through stock performance:

$$Return_{i,t} = \beta_0 + \beta_1 ROE\_DB_{i,t} + \beta_2 NPL\_DB_{i,t} + \beta_3 LDR\_DB_{i,t} + \Sigma\beta_4 Control_{i,t} + \varepsilon_{i,t}$$

Where, ROE_DB represents Return on Equity (ROE), NPL_DB represents Non-Performing Loans (NPL), and LDR_DB represents Loan-to-Deposit Ratio (LDR) of digital bank i in period t. Control includes various control variables, such as size of the parent company, GDP growth rate, inflation rate, and real interest rate of country i in period t.

In the second stage, the differences in the impact of digital bank performance on the value of parent companies based on the type of parent sector (Hypothesis 2), is tested using the following equation:

$$\text{Tobin's } Q_{i,t} = \beta_0 + \beta_1 ROE\_DB_{i,t} + \beta_2 NPL\_DB_{i,t} + \beta_3 LDR\_DB_{i,t} + \Sigma\beta_4 Control_{i,t} + \beta_5 SECT_i + \epsilon_{i,t}$$

$$Return_{i,t} = \beta_0 + \beta_1 ROE\_DB_{i,t} + \beta_2 NPL\_DB_{i,t} + \beta_3 LDR\_DB_{i,t} + \Sigma\beta_4 Control_{i,t} + \beta_5 SECT_i + \epsilon_{i,t}$$

where, SECT represents the dummy variable for the parent company sector. The dummy variable is coded as 1 if the parent company belongs to the banking and financial sector, and 0 if it belongs to any other sector.

RESULTS

Table 1 presents the descriptive statistics of the variables used to analyze the impact of digital bank performance on the value of their parent companies. These variables include firm value, measured by Tobin's Q and stock returns, as well as digital bank financial performance indicators such as Return on Equity (ROE), Non-Performing Loan (NPL), and Loan to Deposit Ratio (LDR). Additionally, control variables such as company size (SIZE), GDP growth, inflation rate (INF), and interest rate (IR) are also included.

Table 1. Descriptive Statistics

Variable	Obs	Mean	Std. dev	Min	Max
Tobin's Q	57	1.115491	1.963932	0.026	13.15
Return	57	-0.0255298	0.0587947	-0.1108	0.2484
ROE_DB	57	-0.1293632	0.2788794	-0.7656	0.2564
NPL_DB	57	0.0142018	0.0149826	0.0002	0.0608
LDR_DB	57	0.5875877	0.3911929	0	1.7327
SIZE	57	24.79193	1.867271	18.84	27.44
SECT	57	0.3684211	0.4866643	0	1
GDP	57	10.00705	1.084607	7.719	11.39
INF	57	2.482018	1.529967	-0.233	6.699
IR	57	2.534737	2.280551	-0.955	7.282

Source: Processed Data Using STATA (2024)

Based on the descriptive statistics presented in Table 1, Tobin's Q, used as an indicator of the parent company's value, has an average value above 1 (1.115). This indicates that most parent companies are valued higher by the market compared to their book value. On the other hand, the average stock return of -0.025 suggests that the majority of parent companies experienced a decline in stock performance during the study period.

The digital bank performance, measured through ROE, NPL, and LDR, shows varied results. The average ROE of -0.129 reflects that most digital banks in the sample have not yet achieved optimal profitability. In contrast, the low average NPL rate of 1.4% indicates good credit risk management. The LDR, with an average of 58.8%, suggests that most digital banks tend to adopt a conservative approach in utilizing deposit funds for financing.

Furthermore, the descriptive results show significant variation in the macroeconomic conditions across the countries in the sample. The average GDP of 10.01 reflects a relatively strong economy, although there are significant differences between countries. The average inflation rate of 2.48% indicates a moderate economic condition, but the presence of deflation (-

0.233%) and high inflation (6.699%) highlights the diverse economic challenges. The average interest rate of 2.53% reflects a generally accommodative monetary policy, though there is substantial variation in interest rates, ranging from negative (-0.955%) to high (7.282%). These variations indicate heterogeneity that may affect the performance of digital banks and the value of their parent companies.

This study employs four research models: Model 1 tests Hypothesis 1 regarding the impact of digital bank performance on the value of its parent company using Tobin's Q as the dependent variable. Model 2 also tests Hypothesis 1, with the dependent variable being the parent company's stock return. Model 3 examines Hypothesis 2, which investigates whether there is a difference in the impact of digital bank performance on the value of parent companies based on the sector type, using Tobin's Q. Finally, Model 4 tests Hypothesis 2 using the parent company's stock return as the dependent variable. Several tests were conducted to determine the most appropriate model among Pooled Least Squares (Pooled OLS), Fixed Effect Model (FEM), and Random Effect Model (REM) based on the available data.

Table 2. Model Specification Tests

		Model 1	Model 2	Model 3	Model 4
		Tobin's Q	Stock Return	Tobin's Q (Parent's Sector)	Stock Return (Parent's Sector)
Chow Test	Prob > F	0.0000	0.7181	0.0000	0.7181
Hausman Test	Prob > chi2	0.0534	0.3512	0.0568	0.3935
Lagrange Multiplier Test	Prob > chibar2	0.0013	1.0000	0.0016	1.0000

Source: Processed Data Using STATA (2024)

Based on the results in Table 2, the estimation model used is as follows:

Table 3. Chosen Estimation Model

	Chosen Model
Model 1 Tobin's Q	Random Effect
Model 2 Stock Return	Pooled Least Square
Model 3 Tobin's Q (Parent's Sector)	Random Effect
Model 3 Stock Return (Parent's Sector)	Pooled Least Square

Source: Processed Data Using STATA (2024)

Subsequently, classical assumption tests were conducted to ensure that the regression model produces efficient, unbiased, and accurate estimates, allowing conclusions or predictions to be based on these assumptions. Initially, several variables were found to exhibit multicollinearity issues. To address this, the variables underwent orthogonalization using the Gram-Schmidt procedure. According to Saville and Wood (2012), this method reduces shared variance partially and ensures that the variables are uncorrelated with one another. The results

of the Gram-Schmidt procedure are presented in Table 4. Therefore, based on Table 4, all VIF values are below 10, indicating no more multicollinearity issues.

Furthermore, heteroskedasticity and autocorrelation tests were conducted. As shown in Table 5, heteroskedasticity and autocorrelation issues were identified in Model 1 and 3. These issues were then resolved using robust standard errors.

Table 4. Multicollinearity Test

Model 1			Model 2			Model 3			Model 4		
Tobin's Q			Stock Return			Tobin's Q (Parent's Sector)			Stock Return (Parent's Sector)		
Variable	**VIF**	**1/VIF**	**Variable**	**VIF**	**1/VIF**	**Variable**	**VIF**	**1/VIF**	**Variable**	**VIF**	**1/VIF**
INF	3.76	0.2658	LDR	5.25	0.1903	LDR	3.80	0.2633	LDR	5.89	0.1699
LDR	3.2	0.3123	INF	4.62	0.2164	INF	3.79	0.2638	INF	4.64	0.2153
NPL	3.1	0.3221	NPL	3.47	0.2880	ROE	3.61	0.2770	ROE	3.62	0.2763
ROE	2.6	0.3851	IR	2.81	0.3562	NPL	3.13	0.3197	NPL	3.50	0.2858
IR	2.47	0.4041	ROE	2.61	0.3833	SECT	2.54	0.3938	IR	2.81	0.3555
SIZE	1.6	0.6258	SIZE	1.68	0.5967	IR	2.48	0.4030	SECT	2.54	0.3937
GDP	1.57	0.6374	GDP	1.67	0.5983	GDP	1.73	0.5780	GDP	1.83	0.5470
						SIZE	1.65	0.6050	SIZE	1.73	0.5785
Mean VIF	2.62		Mean VIF	3.97		Mean VIF	2.84		Mean VIF	4.03	

Source: Processed Data Using STATA (2024)

Table 5. Heteroscedasticity & Autocorrelation Test

		Model 1	Model 2	Model 3	Model 4
		Tobin's Q	Stock Return	Tobin's Q (Parent's Sector)	Stock Return (Parent's Sector)
Heteroscedasticity Test	Prob > chi2	0.0000	0.6449	0.0000	0.3646
Autocorrelation Test	Prob > F	0.0002	0.1549	0.0002	0.1549

Source: Processed Data Using STATA (2024)

Table 6 presents the regression results for Hypothesis 1, which examines the impact of information related to the performance of digital banks on the value of their parent companies. Based on the results in Table 6, Model 1 reports an R^2 value of 0.5289, while Model 2 reports an R^2 value of 0.1594. Thus, the variables ROE, NPL, LDR, SIZE, GDP, INF, and IR explain 52.89% of the variation in Tobin's Q and 15.94% of the variation in stock returns.

Table 6 indicates that ROE has a significant negative effect on both Tobin's Q and stock returns (-2.647876, p = 0.044; -0.0824194, p = 0.047). NPL exhibits a significant negative effect on stock returns (-1.222987, p = 0.083). LDR demonstrates a significant negative effect on Tobin's Q (-3.236508, p = 0.008). Firm size has a significant negative impact on Tobin's Q (-2.163960, p = 0.000). GDP has a significant negative impact on Tobin's Q (-1.081041, p = 0.003). Inflation also has a significant negative impact (-0.228026, p = 0.054). Interest rates, on the other hand, are not significant in relation to Tobin's Q. However, they exhibit a significant negative impact on stock returns (-0.0076328, p = 0.048).

Table 6. Regression Results for Hypothesis 1

	Random Effect		Pooled *OLS*	
	Model 1		**Model 2**	
	Tobin's Q		Stock Return	
	Coefficient	**P-Value**	**Coefficient**	**P-Value**
ROE	-2.647876	0.044**	-0.0824194	0.047**
NPL	6.780644	0.384	-1.222987	0.083*
LDR	-3.236508	0.008***	-0.0059601	0.811
SIZE	-2.163960	0.000***	0.0031753	0.535
GDP	-1.081041	0.003***	-0.0061813	0.564
INF	-0.228026	0.054*	-0.0039742	0.484
IR	-0.1803635	0.135	-0.0076328	0.048**
cons	3.601528	0.001***	-0.0029766	0.985
R-squared	0.5289		0.1594	

Note: *** indicates significance at the 0.01 level, ** at the 0.05 level, and * at the 0.1 level.
Source: Processed Data Using STATA (2024)

Table 7 presents the regression results for Hypothesis 2, which examines the differences in the impact of digital bank performance on the value of parent companies between those in the financial sector and those in other sectors. Based on the results in Table 7, Model 3 has an R-squared value of 0.5288, while Model 4 has an R-squared value of 0.2102. This indicates that the variables ROE, NPL, LDR, SIZE, GDP, INF, IR, and SECT can explain 52.88% of the variation in Tobin's Q based on the parent sector, while 21.02% of the variation in stock returns is explained by the model.

Table 7. Regression Results for Hypothesis 2

	Random Effect		Pooled OLS	
	Model 3		**Model 4**	
	Sector_Tobin's Q		Sector_Stock Return	
	Coefficient	**P-Value**	**Coefficient**	**P-Value**
ROE	-2.847652	0.046**	-0.0392079	0.404
NPL	7.352947	0.357	-1.327418	0.057*
LDR	-3.244554	0.010***	-0.0208007	0.423
SIZE	-2.202735	0.000***	0.0055255	0.577
GDP	-1.101977	0.002***	-0.0005302	0.958
INF	-0.224778	0.056*	-0.0032792	0.557
IR	-0.1813953	0.138	-0.0073635	0.052*
SECT	-0.2150996	0.735	0.0344597	0.086*
cons	3.6460850	0.001***	0.0145800	0.534
R-squared	0.5288		0.2102	

Note: *** indicates significance at the 0.01 level, ** at the 0.05 level, and * at the 0.1 level.
Source: Processed Data Using STATA (2024)

The parent sector (financial or non-financial) does not significantly affect the value of the parent company, as measured by Tobin's Q. However, the parent sector does have a significant impact on the parent company's stock returns, though this effect is only detected at the 10% significance level (0.0344597, p = 0.086).

Table 8. Regression Results for Hypothesis 2 (Additional Test)

	Random Effect		Pooled OLS	
	Model 5		**Model 6**	
	Tobin's Q		Stock Return	
	(Interaction between SECT and ROE, NPL, & LDR of Digital Bank)			
	Coefficient	**P-Value**	**Coefficient**	**P-Value**
ROE	-3.682697	0.066*	-0.03476	0.536
NPL	-4.069378	0.667	-1.383881	0.126
LDR	-1.932534	0.054*	-0.0325442	0.349
SIZE	-2.341298	0.001***	0.0023011	0.834
GDP	-1.085622	0.002***	-0.0038015	0.713
INF	-0.2154781	0.060*	-0.0041064	0.485
IR	-0.1923258	0.135	-0.0069789	0.075*
ROE*SECT	0.3572892	0.875	-0.0437519	0.616
NPL*SECT	23.2545800	0.078*	0.1264249	0.927
LDR*SECT	-1.5957250	0.124	0.0252367	0.374
cons	3.1296930	0.000***	0.0252049	0.337
R-squared	0.5569		0.1930	

Note: *** indicates significance at the 0.01 level, ** at the 0.05 level, and * at the 0.1 level.
Source: Processed Data Using STATA (2024)

An additional test was conducted to examine the interaction between the sector (SECT) and the information of digital bank performance (ROE, NPL, LDR). To note, the variables in both models have undergone orthogonalization using the Gram-Schmidt procedure to address multicollinearity issues. Additionally, the results in the table above have already been adjusted using robust standard errors to address heteroskedasticity and autocorrelation issues present in Model 5.

The interaction between ROE, NPL, LDR, and the parent sector does not show a strong or consistent impact on Tobin's Q or stock returns. However, the interaction between NPL and SECT demonstrates a somewhat significant impact on Tobin's Q (23.2545800, p = 0.078).

DISCUSSION

The Impact of Digital Banks' Performance Information on the Firm Value of Their Parent Companies

Table 6 indicates that ROE has a significant negative effect on both Tobin's Q and stock returns (-2.647876, p = 0.044; -0.0824194, p = 0.047). This suggests that an increase in the profitability (ROE) of digital banks reduces the value of the parent companies. The inverse relationship, where an increase in ROE leads to a decrease in Tobin's Q and stock returns, may occur because the market perceives digital banks as higher-risk entities due to the substantial investment costs required for long-term growth (Nair, 2024). Therefore, even though the profitability of digital banks increases, this is often accompanied by high investment expenses, ultimately exerting downward pressure on the parent company's value in the eyes of the market (Nair, 2024).

NPL exhibits a significant negative effect on stock returns (-1.222987, p = 0.083). This indicates that a high NPL ratio tends to decrease the stock returns of parent companies, reflecting the operational risks faced. This finding aligns with prior research by Demir and Danisman (2021), which demonstrated that banks with lower NPL ratios have higher stock prices and exhibit better performance. Similarly, it supports the study by Wiadnyani and Artini (2023),

which found that a significant negative effect of non-performing loans (NPL) on firm value suggests that an increase in non-performing loans reduces firm value. Conversely, a decrease in non-performing loans or maintaining a low NPL level increases firm value. A low NPL ratio is considered positive information by investors when making investment decisions (Wiadnyani & Artini, 2023). Companies that effectively manage non-performing loans can enhance their value, boost customer confidence, and attract potential investors (Wiadnyani & Artini, 2023).

LDR demonstrates a significant negative effect on Tobin's Q (-3.236508, p = 0.008). This implies that a high liquidity ratio (LDR) in digital banks may lower the value of their parent companies. A higher LDR ratio indicates that most of the bank's funds are allocated to lending, which can reduce income due to the potential risk of loan defaults (Wiadnyani & Artini, 2023). This situation may lead investors to perceive the bank as insufficiently liquid or incapable of managing its funds effectively, thereby diminishing investor confidence and reducing firm value (Wiadnyani & Artini, 2023).

Firm size has a significant negative impact on Tobin's Q (-2.163960, p = 0.000). This suggests that as the scale of the parent company increases, its market value, as measured by Tobin's Q, tends to decrease. This finding contradicts Hirdinis (2019), who found that larger company size is often seen as an indicator of growth and stability, boosting investor confidence and attracting investments, which ultimately enhances firm value. Moreover, according to Isayas (2022), larger firms benefit from economies of scale, making them more efficient compared to smaller companies. However, research by Nikmah and Hung (2024) identified a significant negative relationship between firm size and firm value. This negative relationship is attributed to the challenges large companies face due to organizational complexity, which can reduce efficiency and productivity (Nikmah & Hung, 2024).

GDP has a significant negative impact on Tobin's Q (-1.081041, p = 0.003). According to Isayas (2022), this occurs because during poor economic conditions, the demand for loans decreases, therefore potentially reducing the profitability of banks and companies. Inflation also has a significant negative impact (-0.228026, p = 0.054), as high inflation rates can lower purchasing power and market performance, thereby affecting firm value (Singh & Sharma, 2016). Interest rates, on the other hand, are not significant in relation to Tobin's Q. However, they exhibit a significant negative impact on stock returns (-0.0076328, p = 0.048), likely due to high interest rates reducing the appeal of stocks, prompting investors to shift to lower-risk assets (Al-Homaidi et al., 2018).

The Impact of Digital Bank Performance Information on the Value of Their Parent Company Differs Between the Financial Sector and Other Sectors

The parent company's sector, whether financial or non-financial, has no significant effect on its value as reflected by Tobin's Q. This suggests that the parent sector does not play a major role in shaping market perception of the overall value of the parent company. However, the parent company's sector does exhibit a statistically significant effect on its stock returns, although this relationship is observed only at the 10% significance level (0.0344597, p = 0.086). The positive coefficient indicates that the financial sector, compared to other sectors, tends to have a positive impact on the parent company's stock returns, although the effect is relatively small. This may be attributed to market perceptions that parent companies in the financial sector are more stable and better equipped to manage the risks associated with digital banking. Deloitte (2020) highlights that traditional banks in the financial sector have advantages in terms of expertise, well-established systems, and regulatory experience, making them more capable of handling the complexities of digital banking. This, in turn, can enhance investor confidence and preference for their stocks.

The Interaction Between the Sector (SECT) and the Information of Digital Bank Performance (ROE, NPL, LDR)

The interaction between ROE, NPL, LDR, and the parent sector does not exhibit a strong or consistent effect on either Tobin's Q or stock returns. Nonetheless, the interaction between NPL and the parent sector (SECT) reveals a moderately significant influence on Tobin's Q (23.2545800, p = 0.078). This is because the financial and non-financial sectors may have different impacts on the parent company's value, depending on how well they manage credit risk. In the financial sector, Tobin's Q might be more positively influenced by NPL levels because the market perceives banks in this sector as better at managing credit risk (Hughes & Mester, 2014). In contrast, the non-financial sector may view NPL as a more negative factor, as they are less accustomed to handling credit-related issues, meaning the impact of NPL on the parent company's value is likely less positive than in the financial sector.

CONCLUSION

This study evaluates the impact of digital bank performance on the value of their parent companies, measured by Tobin's Q and stock returns. It also explores sector-based differences in impact. The findings indicate that digital bank performance negatively affects the parent company's value. Specifically, higher profitability (ROE) reduces Tobin's Q and stock returns, likely due to increased risk perception and significant investment requirements for growth. Additionally, high Non-Performing Loans (NPL) and Loan-to-Deposit Ratio (LDR) negatively influence the parent company's value, reflecting concerns over risk management and efficiency. Macroeconomic factors such as GDP, inflation, and parent company size also have a significant negative impact on value.

The study also reveals that although the parent sector (financial vs. non-financial) does not significantly affect the market value of the company (Tobin's Q), parent companies in the financial sector tend to experience more positive stock returns. This is likely due to the market's perception of their stability and better risk management capabilities.

This study suggests that parent companies should take a cautious, strategic approach when investing in digital banks. While these banks offer growth potential, high initial costs, credit risk, and financial pressures may negatively affect the parent company's value.

SUGGESTION

This study faced challenges with data availability, as many digital banks are newly launched, meaning their operational periods are not long enough to be included in the research sample. Additionally, the definition of a digital bank varies, with some entities claiming to be digital banks, though these claims may not be accurate. As a result, a specific reference was used to determine eligible entities. Another limitation is the lack of prior research on digital banks. Topics related to the financial performance of digital banks, their impact on the value of parent companies, and their relationship with investor perceptions are still relatively underexplored in the academic literature. This limitation made it difficult to find relevant studies for comparison or as references for this research.

Therefore, further research is recommended to expand the data scope, incorporate additional variables, and utilize a longer time period to obtain a more comprehensive understanding. A deeper study on investor perceptions of the risks and opportunities of digital banks could also be conducted to understand other factors of digital banks that influence the value of the parent company.

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