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The Effect of Business Model on Financial Performance of Banking Companies in ASEAN and MENA

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Abstract

This research is expected to determine the influence of business models on financial performance as measured by market power. This research involves conventional banking in the ASEAN and MENA regions which have available data for the period 2010 to 2019 to avoid the influence of the Global Financial Crisis and the Covid 19 Pandemic. This research uses Panel Data analysis techniques, which is a combination of time series data and cross section data. In measuring banking competition, researchers use the Lerner Index. The Lerner Index is an indicator of the level of market power that holds a strong position in measuring banking competition, the higher the Lerner Index value, the greater the bank's power in controlling the market, resulting in lower levels of banking competition. The results of this research indicate that there is a positive influence between the Business Model and Market Power both in the ASEAN region and in the MENA region. This suggests that choosing the right business model can generate sustainable competitive advantages and higher financial performance for banks that adopt it.

Keywords | *business model, conventional banking, financial performance, lerner index, market power.*

INTRODUCTION

The global banking industry is currently experiencing very positive financial performance and can be said to be the best since 2007, thanks to an increase in net interest income (Bhattacharyya et al., 2023). Responding to technological advances and significant changes in government regulations, banks find it very important to increase their market power through a variety of different and not mutually exclusive approaches (Sudrajad and Hübner, 2019).

According to Bhattacharyya et al., (2023) in McKinsey's Global Banking Annual Review 2023, banks managed to achieve their best performance even in a situation of fluctuating interest rates and strict government regulations. Most central banks have raised their interest rates sharply since early 2022 in an effort to dampen the surge in inflation (The Economist Intelligence Unit Ltd, 2023). von Solms and Langerman (2021) in their research stated that banks are focusing on digital innovation and growth of banking balance sheets.

The current condition is that banks around the world continue to improve their business models in terms of revenue to adapt to the challenges of developing financial innovation in the banking sector (Al Tamimi et al., 2022). Theoretical and empirical studies show that the right choice of business model can produce sustainable competitive advantages and higher financial performance for banking companies that use it (Mărăcine et al., 2020; Zott and Amit, 2007).

Köhler (2014) found that when there is a change towards non-traditional activities, banks become more stable and profitable. Lee et al. (2014) applied the GMM methodology to a sample of countries in the Asia-Pacific region during the period between 1995 to 2009

and found that non-interest income increased the level of profitability and increased banking financial stability, as well as reducing bank risk. Overall, this pattern suggests that combining interest and non-interest income will increase bank stability (Al-Habashneh et al., 2023; Köhler, 2014).

Dietz et al., (2022) said that banking financial performance will reach its highest level in the last 14 years in 2022, with an expected return on equity (ROE) of between 11.5 and 12.5 percent (Figure 1). Global revenues grew by $345 billion. According to Bhattacharyya et al., (2023) financial performance growth was driven by a high increase in net margin due to an increase in interest rates after being too low for years at cyclical levels. Additionally, banks' ability to generate profits from their traditional lending and funding practices is reduced as net interest margins are pressured by persistently low interest rates (Bikker and Vervliet, 2018).

In the ASEAN and MENA regions there are two types of banks, conventional banks where these banks conduct business based on the interest principle (Sufian and Mohamad Noor, 2009). Meanwhile, Islamic banks carry out business based on the principle of profit sharing by eliminating conventional interest and speculation, but still referring to the principles of Islamic Sharia law (Mollah et al., 2016; Hassan and Aliyu, 2017). In conventional banks, the business model that is run places more emphasis on interest and the number of returns obtained so that it focuses on financial performance (Mergaerts and Vennet, 2015).

Sudrajat and Hübner (2019) in their research identified that banks that have low interest income and low levels of liquidity tend to utilize their market power to obtain funding sources from non-deposit short-term funding sources. Harmanu (2018) explains that in conducting their business activities, banks generate profits which are divided into two categories: interest income and non-interest income (fee-based income). Interest income is derived from the difference between lending interest rates and savings interest rates (spread-based) (Patel, 2018; Ramful, 2001). Meanwhile, non-interest income, or fee-based income, is income earned by the bank from service fees or services provided other than loans and deposits (Feldman & Schmidt, 1999). Additionally, fee-based income is divided into three components consisting of fees and commissions, derivative trading, and other non-interest income (Nguyen et al., 2012).

Currently, competition in the banking industry is getting tighter, banks cannot only rely on spread-based income but also make maximum efforts to increase fee-based income by utilizing technology and the internet which has also become more advanced in recent years (Altunbas et al., 2012; Demirgüç -Kunt & Huizinga, 2010; Köhler, 2014). Non-interest income is another option to increase bank profitability because it provides quite large income to total banking income in the ASEAN and MENA regions (Harmanu, 2018).

According to Wang et al., (2014), an important aspect in measuring banking performance is market power. Market power is a performance measure indicating the extent to which a company can raise prices above marginal costs (Church & Ware, 2000; Clark et al., 2017). When associated with market structure, companies in perfect competition markets have no market power, while companies in monopolistic markets have the greatest level of

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market power (Lubis, 2012; Wu et al., 2019). The level of competition in banking is more precisely measured by the actual behavior of banks (Claessens & Laeven, 2004). One indicator of the level of market power that can be used to measure banking competition is the Lerner Index (Lerner, 1934).

The research conducted focuses on conventional banking in the ASEAN and MENA regions. The main contributions examined in this research are limited to business models following previously existing industrial organization literature. This research is expected to determine the influence of business models on financial performance as measured by market power. This research involves conventional banking in the ASEAN and MENA regions which have available data for the period 2010 to 2019 to avoid the influence of the Global Financial Crisis and the Covid 19 Pandemic.

This research aims to determine the influence of business models on market power. This research will also provide benefits. First, for literature related to financial performance, to show the influence of business models on financial performance in the ASEAN and MENA regions. Apart from that, to be able to add to the findings of previous researchers and become a reference source for future researchers who will research similar topics. Second, become a reference source for company owners, especially in the banking industry, to increase knowledge and supervision of company management so that they can work optimally and in harmony with the interests and prosperity of the company's owners or shareholders. Third, as a reference source for the government and monetary authorities in making decisions or carrying out evaluations regarding policies related to business models and financial stability.

METHOD

This research is a quantitative study with a causality analysis approach. Creswell et al., (2007) briefly define quantitative research as a type of research that explains phenomena by collecting numerical data and then analyzing it using mathematical-based methods, especially statistics. The independent variable in this research is the Business Model, while the dependent variable is Market Power.

The source and type of data in this research is secondary data. The research data used consists of a combination of conventional banking time series data in ASEAN and MENA for the period 2010 to 2019 obtained from Bloomberg to avoid the global financial crisis and the Covid-19 pandemic. This research took a population of 10 banks that have the largest assets from each country in the ASEAN and MENA regions.

This research uses Panel Data analysis techniques, which is a combination of time series data and cross section data. Time series data is data that consists of one or more variables that will be observed in one observation unit within a certain period of time. Meanwhile, cross section data is observed data from several observation units at one point in time (Basuki & Prawoto, 2019).

There are three tests to select the Panel Data analysis techniques. First, the F-statistic test or Chow test is used to choose between the Common Effect method or the Fixed Effect

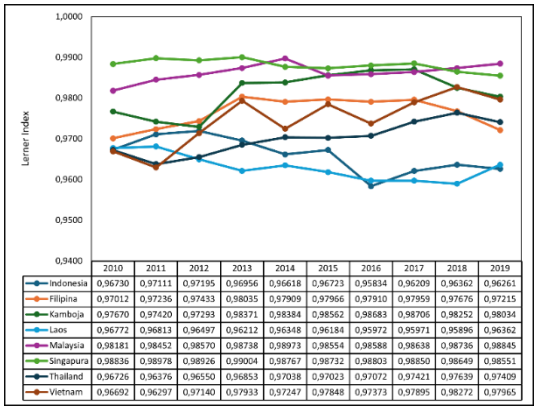
method. Second, the Hausman test is used to select between the Fixed Effect method or the Random Effect method. Third, the Lagrange Multiplier test.

RESULTS AND DISCUSSION

Results of the Calculation of Lerner Index

The Lerner Index is an indicator of the level of market power that holds a strong position in measuring banking competition (Amidu & Wolfe, 2013; Beck et al., 2013; Berger et al., 2009). The higher the Lerner Index value, the greater the bank's power in controlling the market, resulting in lower levels of banking competition.

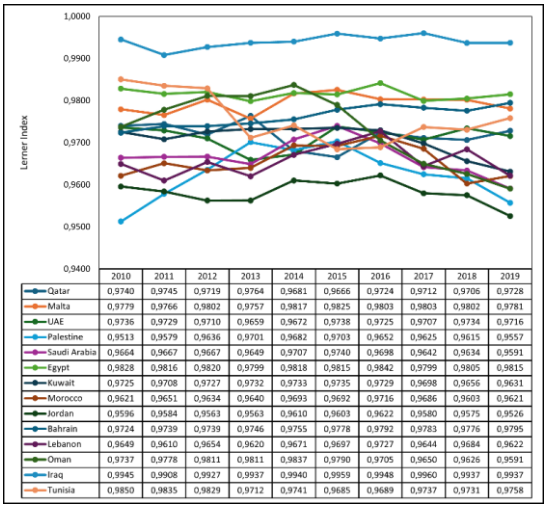
There are 8 countries in ASEAN as samples in this study: Indonesia, Malaysia, Philippines, Singapore, Thailand, Laos, Vietnam, and Cambodia. The descriptive results of the Lerner Index for banking in ASEAN countries during the period of 2010-2019 can be seen as shown in Figure 1.



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Indonesia	0,96730	0,97111	0,97195	0,96956	0,96618	0,96723	0,95834	0,96209	0,96362	0,96261
Filipina	0,97012	0,97236	0,97433	0,98035	0,97909	0,97966	0,97910	0,97959	0,97676	0,97215
Kamboja	0,97670	0,97420	0,97293	0,98371	0,98384	0,98562	0,98683	0,98706	0,98252	0,98034
Laos	0,96772	0,96813	0,96497	0,96212	0,96348	0,96184	0,95972	0,95971	0,95896	0,96362
Malaysia	0,98181	0,98452	0,98570	0,98738	0,98973	0,98554	0,98588	0,98638	0,98736	0,98845
Singapura	0,98836	0,98978	0,98926	0,99004	0,98767	0,98732	0,98803	0,98850	0,98649	0,98551
Thailand	0,96726	0,96376	0,96550	0,96853	0,97038	0,97023	0,97072	0,97421	0,97639	0,97409
Vietnam	0,96692	0,96297	0,97140	0,97933	0,97247	0,97848	0,97373	0,97895	0,98272	0,97965

Figure 1. Banking Lerner Index in ASEAN

Furthermore, in the MENA region, there are 14 countries sampled in this study, namely Qatar, Malta, UAE, Palestine, Saudi Arabia, Egypt, Kuwait, Morocco, Jordan, Bahrain, Lebanon, Oman, Iraq, and Tunisia. The descriptive results of the Lerner Index for banking in MENA countries during the period of 2010-2019 are presented in Figure 2.



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Qatar	0,9740	0,9745	0,9719	0,9764	0,9681	0,9666	0,9724	0,9712	0,9706	0,9728
Malta	0,9779	0,9766	0,9802	0,9757	0,9817	0,9825	0,9803	0,9803	0,9802	0,9781
UAE	0,9736	0,9729	0,9710	0,9659	0,9672	0,9738	0,9725	0,9707	0,9734	0,9716
Palestine	0,9513	0,9579	0,9636	0,9701	0,9682	0,9703	0,9652	0,9625	0,9615	0,9557
Saudi Arabia	0,9664	0,9667	0,9667	0,9649	0,9707	0,9740	0,9698	0,9642	0,9634	0,9591
Egypt	0,9828	0,9816	0,9820	0,9799	0,9818	0,9815	0,9842	0,9799	0,9805	0,9815
Kuwait	0,9725	0,9708	0,9727	0,9732	0,9733	0,9735	0,9729	0,9698	0,9656	0,9631
Morocco	0,9621	0,9651	0,9634	0,9640	0,9693	0,9692	0,9716	0,9686	0,9603	0,9621
Jordan	0,9596	0,9584	0,9563	0,9563	0,9610	0,9603	0,9622	0,9580	0,9575	0,9526
Bahrain	0,9724	0,9739	0,9739	0,9746	0,9755	0,9778	0,9792	0,9783	0,9776	0,9795
Lebanon	0,9649	0,9610	0,9654	0,9620	0,9671	0,9697	0,9727	0,9644	0,9684	0,9622
Oman	0,9737	0,9778	0,9811	0,9811	0,9837	0,9790	0,9705	0,9650	0,9626	0,9591
Iraq	0,9945	0,9908	0,9927	0,9937	0,9940	0,9959	0,9948	0,9960	0,9937	0,9937
Tunisia	0,9850	0,9835	0,9829	0,9712	0,9741	0,9685	0,9689	0,9737	0,9731	0,9758

Figure 2. Banking Lerner Index in MENA

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The sampled banking institutions in ASEAN and MENA for this study have Lerner Index values ranging between 0 and 1. According to Fu et al., (2014), if the Lerner Index value is between 0 and 1 (0<IL<1), it is categorized as a monopolistic competitive market. Therefore, it can be concluded that the sampled banking institutions for this study fall into the category of monopolistic banking markets, indicating competitive banking with relatively low levels of competition.

Descriptive Statistics of Research Variables

Dispersion measures the variability (spread) of data towards a central value using range, standard deviation, variance, and interquartile range (IQR). In this research, we look at standard deviation to measure the deviation of each data item from the expected value (Jogiyanto, 2014). Researchers carried out data processing simultaneously on conventional banking with 51 banks in ASEAN and 87 banks in MENA. The results of the descriptive test of the research variables can be seen in Table 1.

Table 1. Descriptive Statistics of Research Variables

Region	Variable	Mean	Median	Minimum	Maximum	Std. Deviation	Variance
ASEAN	NNIN	12483.42	8801.49	258.41	47433.48	11260.67	1.27E+08
	LI	0.9751	0.9772	0.93	1	0.01325	0
MENA	NNIN	4937.711	1833.75	102.52	31983.7	7194.683	51763469
	LI	0.9723	0.9737	0.93	1	0.01115	0

Notes: NNIN=Non Interest Income; LI=Lerner Index

Based on the results of descriptive statistics in Table 1, it is shown that the average non-interest income of banks in ASEAN countries, with a sample size of 370 banks is 12,483.42, higher than the average non-interest income of banks in MENA, with a sample size of 310, which is 4937.711. If we look at the financial performance variable measured by market power (Lerner Index), banks in ASEAN and MENA have values that are not significantly different, ranging from 0.97 to 0.98. These values indicate that the financial performance of banks in both ASEAN and MENA regions exhibits high market power and relatively low levels of competition.

The Panel Data Analysis Techniques

There are three tests to select the Panel Data analysis techniques. Based on the Chow Test which can be seen in Table 2, a Chi-Square probability of 0.0000 was obtained, this value is less than 0.05, indicating that the analysis model used is fixed effect.

Table 2. Chow Test

Region	Effect Test	Statistic	df	Prob
ASEAN	cross-section F	20.026	36.331	0.0000
	cross-section Chi-square	427.819	36	0.0000
MENA	cross-section F	16.999858	(30,277)	0.0000
	cross-section Chi-square	323.703647	30	0.0000

Furthermore, to determine the best model between the fixed effect model and the random effect model, we used the Hausman Test, as shown in Table 3. The Hausman Test resulting probability value exceeding 0.05, indicating that the appropriate model to be used is a random effect.

Table 3. Hausman Test

Region	Test Summary	Statistic	df	Prob
ASEAN	cross-section random	3.02689	2	0.2201
MENA	cross-section random	0.08570	2	0.9581

The Lagrange Multiplier test was carried out to find out the correct model between the Common Effect Model and the Random Effect Model. In the Lagrange Multiplier Test, it was found that the Chi-Square probability was 0.0000, this value is less than 0.05 so the analysis model in this study uses random effects.

Hypothesis Testing

In this research, several hypothesis tests were carried out to determine the influence of the banking business model on financial performance as measured by market strength. Hypothesis testing in this research was carried out through the T Test (Partial) and R^2 Coefficient of Determination Test. The T test aims to see how far the influence of each independent variable individually is in explaining the dependent variable. The hypothesis of the T test is:

H_0 : There is no influence between the Business Model variables on Market Power.

H1 : There is an influence between the Business Model variables on Market Power.

The significance of the relationship between each variable is determined by examining the probability value in the coefficient table. If the probability value is less than the specified significance level, which is 0.05, then H_0 is rejected (Ghozali, 2021). The results of the T test of the research variables can be seen in Table 4.

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Table 4. T Test (Partial)

Region	Variable	Std. Error	t-Statistic	Prob
ASEAN	C	0.002161	442.4853	0.0000
	NNIN	5.02E-08	8.119175	0.0000
MENA	C	0.001402	686.6311	0.0000
	NNIN	9.86E-08	5.768433	0.0000

Based on the Table 4 above, it can be observed that the probability value for the business model variables is <0.05. Therefore, it can be concluded that there is an influence between business model variables and individual financial stability on market power.

The coefficient of determination (R^2) indicates the extent to which independent variables are capable of explaining the dependent variable. The R^2 value has a limitation wherein there is a possibility of bias towards the number of independent variables in the model. Therefore, this study uses an adjusted coefficient of determination (Adjusted R^2). The coefficient of determination value in this study after correction can be seen in Table 5.

Table 5. R^2 Test

Region	R-squared	Adjusted R-squared
ASEAN	0.344095	0.340520
MENA	0.320609	0.316183

Based on Table 5 above, it can be seen that the Adjusted R^2 value is 0.344095. So it can be concluded that the contribution of all independent variables in explaining the dependent variable is 34.41% while the remaining 65.59% is explained by other variables outside the model.

Lerner Index Equation Model

After testing the suitability of the model using the Chow test, Hausman test, and Lagrange Multiplier test, the results showed that the appropriate model for this research was the Random Effect Model. The results of estimating the Lerner Index equation model using the Random Effect Model (REM) method can be seen in Table 6.

Table 6. Lerner Index Equation Model

Region	Variable	Coefficient	Std. Error	t-Statistic	Prob
ASEAN	C	0.956399	0.002161	442.4853	0.0000
	NNIN	4.07E-07	5.02E-08	8.119175	0.0000
MENA	C	0.962685	0.001402	686.6311	0.0000
	NNIN	5.69E-07	9.86E-08	5.768433	0.0000

Based on Table 6, the estimation of the Lerner Index equation model for ASEAN region is

$$LI_{it} = 0.9564 + 4.07\text{E}^{-07}\text{NNIN}_{1t} + \varepsilon_t$$

and for MENA region is

$$LI_{it} = 0.9627 + 5.69\text{E}^{-07}\text{NNIN}_{1t} + \varepsilon_t$$

With t related to the period/year to t.

Discussion of the Influence of Business Models on Financial Performance

The results of this research indicate that there is a positive influence between the Business Model and Market Power both in the ASEAN region and in the MENA region. This suggests that choosing the right business model can generate sustainable competitive advantages and higher financial performance for banks that adopt it (Mărăcine et al., 2020; Zott & Amit, 2007). The results of this research support several previous studies which also found a positive influence between business models on market power (Ben Khediri & Ben-Khedhiri, 2009; Sudrajad & Hübner, 2019; Chaffai & Coccorese, 2023).

Based on the test results of the influence of the business model using NNIN on market power in the ASEAN and MENA regions, it shows a positive NNIN coefficient on the Lerner Index. In line with research by Sudrajad and Hübner (2019) which shows that business models have a positive influence on market power, where non-interest income contributes to better bank performance. Derivative income and other non-interest income have a positive relationship with banking market power for all banking business models in the ASEAN and MENA regions.

In other research conducted by Nguyen et al., (2012) also shows that banks that have greater market power will be better off if these banks decide to diversify into non-traditional activities to increase income. Conventional banks in the ASEAN and MENA regions are currently continuing to improve their business models in terms of revenue to adapt to the challenges of developing financial innovation in the banking sector, in accordance with research by Al Tamimi et al., (2021).

CONCLUSION

This research aims to determine the influence of the business model run by banks on the financial performance of conventional banking in the ASEAN and MENA regions in the 2010-2019 period. The research results show that there is a positive influence between Business Models on Market Power both in the ASEAN and MENA region. This shows that choosing the right business model can generate sustainable competitive advantages and higher financial performance for banks that adopt it. The results of this research support previous empirical findings which show that there is a positive and significant influence between business models on market power. Apart from supporting previous research, this research also supports theories related to banking business models such as the banking industry organization theory.

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