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THE STRENGTH OF COMPETITION AND MARKET EFFICIENCY IN DETERMINING THE PROFITS OF BANKS

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ABSTRACT

Paying attention to developments in market competition, banking efficiency, and profitability is very important because it will update industry information so that it can be utilized by the EWS (early warning system). Market competition is important in business, so this research is interesting for the public. This research aims to find out the impact of competition and efficiency provides positive synergy on banking profitability. The theoretical basis for problem-solving will use Industrial Organization Thinking, which focuses on the SCP-ESH theory (Abbas & Sheikh, 2023). The research object uses 12 samples of conventional banks in Indonesia, which are included in the top 10 categories of a set of banks during 2012–2021 (quarterly data). The analysis uses panel data regression and statistical analysis. From the research results, it was found that there is a positive synergy between market spread operational cost management efficiency and the intermediation function in banking profitability. However, company size has a negative impact on banking profitability. This research is relevant to the research of Gavurova et al. (2017), who found that the market structure of the banking industry in the European Union was still concentrated. However, market structure is negatively related to banking performance.

Keywords: market share, market competition, efficiency, profitability, big banks.

JEL : M21,G10,G21,G24,G31

⁶² Authors' individual contribution: Conceptualization — SS and CMFM; Methodology — SS and CMFM.; Validation — SS and CMFM.; Formal Analysis — SS and CMFM.; Investigation — SS and CMFM.; Resources — SS and CMFM.; Data Curation — SS and CMFM.; Writing — Original Draft — SS.; Writing — Review & Editing — SS and CMFM.; Visualization — SS.; Supervision — CMFM.; Project Administration — SS and CMFM.

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1. INTRODUCTION

Competition, efficiency, and profitability in the banking sector are important aspects that need more attention. Efficiency is the best alternative to maintain the existence of banks amidst intense competition (Begum et al., 2023; Keqa, 2021). Apart from that, efficiency can also produce more appropriate quality and prices of banking products so that banks will obtain sufficient profits to increase stability through bank capital adequacy. Therefore, Berger and Mester (1997) suggest looking at it from a micro and macro perspective.

Based on data for 2017-2021, there was significant asset growth in the Indonesian banking sectors. However, asset distribution remained concentrated. Indonesian FSA (Financial Services Authority) records show that the number of conventional banking assets from 2017 to 2021 increased significantly. In 2017, the total assets were only 7,099,564 billion Rupiahs. The total assets continued to grow until 2021, reaching 9,670,515 billion Rupiahs, an increase of 1,362 times. Asset growth per year (YoY) was always positive. Growth assets were 8.364% (average), with the largest of 10.134% (2021) and the smallest of 5.947% (2019). The market concentration rose, and the LI (lender index) decreased.

2017-2021, the market concentration index, as indicated by CR10 and CR4, increased. CR10 = 70.80% (average) and CR4 = 54.674% (average), meaning that the majority of all conventional banking assets in Indonesia (115-109 banks) were still concentrated in the large banks, where the 10 largest banks control around 70,800% of the national assets, and the 4 largest banks hold about 54.674% of the assets. Meanwhile, the LI indicator was 14.130% (average), which showed a decreasing trend—indicating that the banking sector's market power decreased due to increasingly tight market competition.

The increase in market concentration followed by increased competition has reduced the liquidity and profitability of 10 big banks in Indonesia. The banking liquidity indicator, as indicated by the LDR (loan to deposit ratio), fell from 88.130% to 83.670%, with the largest of 89.570% (2018), the smallest of 83.660% (2020), and the average of 86.734%. Furthermore, ROA (return on assets) decreased from 3.360% to 2.510%, with the largest of 3.360% (2017), the smallest of 1.840% (2020), and the average of 2.844 %.

Gaps in earlier research led to the conduct of this study. The connection between market structure and profitability in Indonesian commercial banks has been the subject of numerous research. Chaerani et al. (2019) discovered, for instance, that market share increases banking profitability. These results suggest that product diversification, not monopolistic power maximization, is the means by which banks attain profitability. The study carried out by Chaerani et al. (2019) has a shortcoming in that it only shows events over a brief period of time because it only used data for one year. By extending the research period to five (five) years, from 2017 to 2021, our study will close this gap and yield a total of 480 firm-year observations. It's thought that a more extensive observation.

Meanwhile, research by Ejoh and Sackey (2014) found a significant positive effect of market share on bank profitability. From this research, there are research gaps that need to be re-examined by researchers. This research is important considering the increasingly tight level of banking competition, so this research can be used as a basis for determining policies in global competition.

The research question in this study is: what about the big banks in Indonesia? Do competition, differentiation strategy, efficiency, and company size provide positive synergy to banking profitability? .

This article is organized as follows: Part 2 of this study covers the research on market efficiency and competition's influence on banking profitability, after the introduction in Part 1. The research approach is covered in Section 3. The research's findings are presented and discussed in Section 4. The conclusions on the effects of market efficiency and competition on the earnings of large banks are finally summarized in Section 5.

2. LITERATURE REVIEW

As an industry, the analysis of individual bank behaviour and the market structure in which banks operate are intimately intertwined. The study of microeconomic banking frequently focuses on examining bank rivalry and efficiency. This research can involve bank behaviour in price competition, such as decisions on deposit interest rates and credit interest rates, in addition to the non-price competition, such as differentiation of banking products and optimization of customer service. According to Phan et al. (2019), efficiency analysis is typically linked to revenue maximization, profit maximization, and cost minimization. Many academic works discuss the relationship between the efficiency of monetary policy and its transmission mechanisms at the macroeconomic empirical level. Unfortunately, not much research explicitly examines Indonesian banking practices at the industry level, both before and after the crisis. Bank actions, for example, those related to assessing credit output or deposit interest rates, are closely related to the type of market in which the bank functions (Sudrajat & Rosid, 2022).

There are three thoughts in analyzing the relationship between market structure and performance using the Structure Conduct Performance (SCP) paradigm (Khan & Hanif, 2019). First, the traditional hypothesis is based on the proposition which states that market concentration will encourage collusion between companies in an industry which will then increase profits. Second, the differentiation hypothesis, which is based on the proposition which states that the market share obtained is the result of product differentiation behavior carried out, and third, the efficiency hypothesis, which is based on the proposition which states that efficiency will increase market share and will ultimately increase market concentration as well. However This increase in market share and concentration is the result of efficient behavior so that ultimately it will increase profits.

Theoretically, the problem of the relationship between market structure and banking performance can be answered more precisely using SCP theory and its developments. According to Abbas & Sheikh (2023), the SCP school (structure, conduct, and performance) views the relationship between S, C, and P attributes as linear, while the RE (relative efficiency/ESH) school views the relationship between S, C, and P attributes, not linear but causal.

The RE School refutes the SCP-theory assumption, where efficiency is seen as a key factor that makes a company's margin (performance) high so that it has the potential to increase market share. Thus, S (market structure) only sometimes significantly affects Performance. This hypothesis is supported by Belkhaoui, S. at al. (2014) in ESH theory, which states that S (market structure) is the result of the role of the level of efficiency followed by P (Performance).

Another theory is QLH (Quiet Life Hypothesis), which Hicks first put forward; QLH analyzes how market concentration is related to the level of company efficiency. With greater market power, companies need to be more efficient in carrying out their business activities.

Stulz, (2019) argued that banks should ensure efficiency in all operations. Inefficient banks will likely exit the market because they no longer provide competitive prices, products, and service quality. Meanwhile, from a macro perspective, an efficient banking industry will lead to lower financial intermediary costs and higher financial system stability. With high efficiency, banks can allocate their financial resources more effectively for economic growth.

The increase in market concentration followed by increased competition has reduced the liquidity and profitability of 10 big banks in Indonesia. The banking liquidity indicator, as indicated by the LDR (loan to deposit ratio), fell from 88.130% to 83.670%, with the largest of 89.570% (2018), the smallest of 83.660% (2020), and the average of 86.734%. Furthermore, ROA (return on assets) decreased from 3.360% to 2.510%, with the largest of 3.360% (2017), the smallest of 1.840% (2020), and the average of 2.844%.

Competition, which aims to increase market share and generate excess profits, should promote banking efficiency and trigger innovation that yields more variety of products, lower prices, broader access to finance, and better service (Jumono et al., 2009). The competence inherent among the big banks in Indonesia should also bring a positive effect toward a more efficient market. Meanwhile, the results of the previous studies tell a different story. In short, profitability as an indicator of banking performance could result from collusion in an industry or a company's differentiation and efficiency strategy. The question is, what about the banking performance of big banks in Indonesia? Is it the impact of a collusive market or efficiency?

According to Simatele (2015) and Tan (2016a), the market structure of the banking industry was monopolistic, while Gavurova et al. (2017) found that the market structure of the banking industry in the European Union until 2013 was still concentrated. Still, the market structure was negatively related to banking performance. Specifically in Serbia, Bukvic (2020) and Duranovic & Filipovic (2021) found that the banking market in Serbia is an oligopoly.

As for the relationship between competition, efficiency, and profitability among Indonesian Banks, a study by Cristian et al. (2020) found that competition in the credit and deposit markets does not affect ROA and NIM. However, market competition for FBI products (fee-based income) has a negative effect on ROA and NIM. Meanwhile, Munawar (2017), from an IRF (impulse response function) analysis, found that an increasingly competitive banking industry encourages banking efficiency in Indonesia. Furthermore, Wideasari (2015) found that bank profitability is influenced by the intensity of competition in the banking market, but high competition intensity can reduce bank profitability and stability.

Concerning how operating efficiency influences banking profitability in Indonesia, Fithriyanto (2020) found that management effectiveness in managing operating costs synergies to strengthen ROA. In contrast, according to Cristian et al. (2020), operating efficiency does not affect the ROA and NIM of Indonesian banks. Research on the effect of intermediary efficiency on profitability conducted by Douglas et al. (2020) in Brazil showed that efficiency is associated with profitability, indicating a more significant impact on ROE than ROA. The previous study conducted in Latin

America (Georgios et al., 2009) found that efficiency, especially efficiency of scale, appears to be the main driving force for increasing profitability in most Latin American countries.

Concerning the influence of firm size on banking profitability, Acaravci and Calim (2013) found that large banks tend to have a high level of product diversification compared to small banks. In addition to higher diversification potential, economies of scale can also be found in large banks. Diversification reduces risk and economies of scale that lead to increased operational efficiency. Thus, firm size has a positive effect on profitability. However, according to Dietrich and Wanzenried (2009), an extensive bank can cause a negative relationship between size and profitability caused by agency costs, bureaucratic processes, and other factors. The research question in this study is: what about the big banks in Indonesia? Does competition, differentiation strategy, efficiency and firm size provide positive synergy to banking profitability.

1. Efficiency towards banking profitability

According to Navila & Sujianto (2022), companies that run efficiently produce super-expected profits. Meanwhile, according to the "efficiency hypothesis theory" (Lloyd et al., 1994), companies with a higher level of efficiency than their competitors can implement two strategies to maximize profits. First, they can maintain price levels and company size; second, they can lower prices and expand the size of the company. If they implement the second strategy, their efficiency and market share will increase, which in turn will stimulate the market penetration process. This efficiency hypothesis emphasizes operational technical efficiency, which can reduce AC (average costs) due to increased output. Several studies in America found that efficiency is the dominant variable in explaining profitability in American banks (Shanko et al., 2019).

2. Firm size on banking profitability

Research explaining the influence of company size on profitability conducted by Astutiningsih & Baskara (2019) shows that company size has a positive effect on profitability. Meanwhile, other research conducted by Asri & Suarjaya (2018) and Yusuf (2017) shows that partial company size does not have a significant effect on profitability.

According to Sahul Hamid (2021), larger banks will benefit from economies of scale and income diversification. However, a negative relationship can also occur if the bank experiences diseconomies of scale and inefficient management. Meanwhile, according to Shalit & Sankar (1977) and Khan & Hanif, (2019), company size also has important influences such as economic scale, access to capital markets, profitability, diversification, regulation, company balance sheet, research and development (R&D), and technological innovation.

3. Market share, and market concentration on banking profitability

According to Lubis et al. (2017), dominant firms are business actors with large market shares in the industry. They act as price setters due to their considerable market power. According to Kim (2018), banks with immense market power can take more liquidity risk, thereby reducing competition, which can result in the fragility of the financial system.

Meanwhile, Relative Market Power or RMP Theory entails that companies with large market shares with differentiated products can determine output prices and generate excess profits (super

regular profits). Therefore, Belkhaoui et al. (2014) confirmed that the larger the market share, the greater the funds from the public that banks can use to increase bank activities. It can eventually increase profits, for example, by increasing investment and lending. Furthermore, Ejoh and Sackey (2014) found a significant positive effect of market share on bank profitability.

4. Lerner Index on banking profitability

Research by Beck (2011) suggests that competition has a positive relationship with bank profitability because it can encourage financial inclusion, thereby expanding the bank's customer base, diversifying risks, and increasing bank profitability. While the results of other studies, Tan (2013) and Hope et al. (2013) found that banking competition significantly negatively affects profitability because profits from monopoly are reduced.

In the relationship between competition and profitability, Tan (2016b) concluded that market competitiveness is lower in concentrated markets where the total market share is concentrated in a few large banks. Furthermore, Whish and Bailey (2012) found that an increasingly competitive market can lead to smaller market power in the banking sector. Marquez (2002) also found that when competition becomes tighter, each bank will compete for customers, and sometimes banks reduce loan terms. As a result, NPLs increase, and banking efficiency levels decrease. Another effort to attract customers is usually by providing loans with low interest, which can reduce bank efficiency.

Hypothesis

- H1: Market efficiency, as proxied by Cost-income ratio (CIR), Scale Efficiency (SEFF), and Technical Efficiency (TEFF), has a positive impact on company profitability.
- H2: Firm Size (Ln TA) has a positive impact on profitability.
- H3: Strategy Differentiation as proxied by Market Share of Bank (MS), Market Concentration Ratio (CR) has a positive impact on company profitability.
- H4: Lerner Index (LI) has a positive impact on company profitability.

3. RESEARCH METHODOLOGY

3.1. Data and Sampling.

The sample in this study are conventional banks in Indonesia that have entered the Top 10 based on asset criteria. Using quarterly data for the 2012-2021 period. Data was taken from bank financial reports published on the Financial Services Authority's (OJK) website and from various sources needed to complete this research.

3.2. Regression Model analysis.

The regression model that will be used adapts the research of Jumono et al., (2018), as follows:

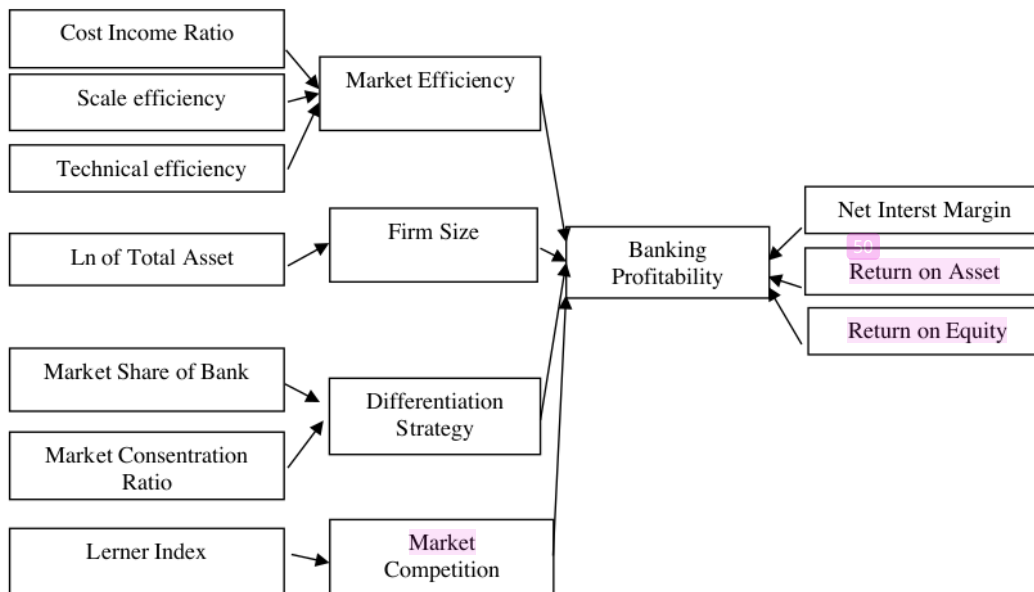
$$\pi_{i,t} = a_0 + a_1MS_{i,t} + a_2CR4_t + a_3MSCR_{i,t} + a_4LI_{i,t} + a_5CIR_{i,t} + a_6SEFF_{i,t} + a_7TEFF_{i,t} + a_8Size_{i,t} + e_{it}$$

where, $\pi_{i,t}$ is banking profitability, which is proxied by NIM (Net Interest Margin); ROA (Return on Assets); ROE (Return on Equity); Meanwhile $MS_{i,t}$ = Market Share of bank -i, in year t; CR = Market Concentration Ratio, in year t; $MSCR_{i,t}$ = multiplication between MS and CR bank -i, in year t; LI = Lerner Index; Size= Ln(Total Assets); SEFF =Scale Efficiency; and TEFF= Technical Efficiency;

3.3. Research Model

The research model in this study is presented as follows :

Image 2 : Research Model



Research variable

Banking Profitability as a Dependent variable proxied by NIM (Net Interest Margin); ROA (Return on Assets); ROE (Return on Equity):

Market Efficiency is the independent variable 1 with CIR (cost-to-income ratio), SEFF (scale efficiency), and TEFF (Technical efficiency).

Firm Size as Independent Variable 2 with proxy Ln of Total Assets

Differentiation strategy as independent variable 3 with MS proxy (Bank Market Share); CR (Market Concentration Ratio);

Market Competition as independent variable 4 with LI proxy (Lerner Index)

Table 1. Definition of Operating Variable, and Measurement

Variable	Proxies	Notation	Maesurement	Directions
Market Efficiency	Cost Income Ratio	CIR	Cost / Income Ratio (%)	+
	Scale Efficiency	SEFF	Output/Input, DEA approach	+
	Technical efficiency	TEFF	Output/Input,DEA approach	+
Firm Size	Size	Size	Ln of Total Assets bank-i	+
Strategy Differentiation	Market Share of bank	MS	Asset bank-i / Total Market Assets Industry (%)	+
	Market Concentration Ratio	CR	Total Assets Largest banks / Total Assets Industry (%)	+/-
Market Competition	Lerner Index	LI	(Price/unit asset-Marginal Cost)/ Price/unit asset (%)	+/-
Banking Profitability	Net Interest Margin	NIM	Net Interest Margin/Earning Assets (%)	
	Return on Asset	ROA	Operating Profit /Asset (%)	
	Return on Equity	ROE	Profit After Tax/Equities	

The analysis model chosen is a regression analysis model. This model is used because it can better interpret the relationship between the structure of the variables used as the basis for analysis. Basically, in this research, interpretation will lead to testing the hypothesis, which is proven. For this reason, four stages of interpretation of the regression results are carried out, namely:

- (1) As a test tool whether banks in Indonesia support the SCP hypothesis.
- (2) as a test tool whether banks in Indonesia support the differentiation hypothesis.
- (3) as a means of testing whether the bank under study supports the efficiency hypothesis, a regression is carried out without any restrictions on the MS and CRx variables which are regressed simultaneously. If profits are greater because they are the result of efficiency, then MS and CRx do not really affect profits, the CRx coefficient = 0 and the MS coefficient = 0, because the relationship between market share and profitability concentration is wrong.
- (4) To further demonstrate whether profits are the outcome of collaboration, the variable MS*CR

is employed. The traditional hypothesis is either accepted or rejected based on this variable's research findings. The MS*CR coefficient > 0 (positive) indicates that profit sharing will rise in proportion to market share to industry concentration if earnings are the product of cooperation. Additionally, the MS*CR coefficient <= 0 (zero/negative) indicates that there is no cooperation in the industry.

RESULT AND DISCUSSION

3.4.Result

The data processed is panel data, which is tested using the Housman Test. There are three models in panel data, namely pool less squares, fixed effect model, and random effect model. The Hausman test will provide the best panel data model results between the fixed effect model and the random effect model. From the Housman test, it was concluded that this model would be better using a fixed effect model. The BLUE test will be the next test which aims to detect whether there are multicollinearity, heteroscedasticity and autocorrelation problems in the model. From the BLUE test, the results show that there is no multicollinearity, heteroscedasticity and autocorrelation in this model.

Table 2 illustrates the effect of variables of banking market structure (MS, CR, MSCR, & LI), variables of efficiency (CIR, TEFF & SEFF), and firm size (LnTA) on banking profitability (NIM, ROA & ROE). Overall, the results of this study indicated that banking profitability was significantly influenced by market share (MS) in a positive direction, but the coefficients of the variables concentration ratio (CR) and Lerner index (LI) were not positive, but zero/negative.

Table 2. Result of Impact Competition and Efficiency on Banking Profitability

Variable	Banking profitability					
	NIM		ROA		ROE	
	Coeff Prob.	Coeff Prob.	Coeff Prob.	Coeff Prob.	Coeff Prob.	Coeff Prob.
MS	0.464*** 0.000	0.448*** 0.000	0.284*** 0.0000	0.258*** 0.0000	3.429*** 0.0000	3.170*** 0.0000
CR	-0.0034 0.216	-0.021 0.427	0.0112** 0.0301	0.011** 0.0497	-0.140*** 0.0086	-0.136*** 0.007
MSCR	-0.847*** 0.000	-0.81*** 0.001	-0.390*** 0.0000	-0.324*** 0.0000	-4.756*** 0.0000	-4.023*** 0.0000
LI	0.0231 0.956	-1.140 0.733	-0.468*** 0.0000	-0.479*** 0.0000	-3.028*** 0.0003	-3.556*** 0.0000
CIR	-0.033*** 0.000	-0.038*** 0.000	-0.074*** 0.0000	-0.074*** 0.0000	-0.3182*** 0.0000	-0.332*** 0.0000
SEFF	0.0009 0.773		0.0023*** 0.0000		0.0307*** 0.0000	
TEFF		0.006*** 0.006		0.0016*** 0.0001		0.0296*** 0.0000
Size (LnTA)	0.394* 0.051	0.334* 0.078	-0.456*** 0.0000	-0.501*** 0.0000	-3.970*** 0.0000	-4.781*** 0.0000
C	1.3940 0.6764	2.1912 0.4623	15.99*** 0.0000	16.976*** 0.0000	117.40*** 0.0000	134.39*** 0.0000
R ²	0.268	0.272	0.964	0.9633	0.887	0.884

Adjusted R ²	0.257	0.262	0.963	0.9627	0.885	0.882
Pr (Rn ² , F-Stat)	0.000	0.000	0.000	0.0000	0.000	0.000
Observation	480	480	480	480	480	480
Panel Model:	LS, Ro	LS, Ro	EGLS	EGLS	EGLS	EGLS
Informations: <i>LS,Ro</i> = Least Square Robust, <i>EGLS</i> = <i>EGLS</i> (Cross-section SUR); *, **, *** indicates significance at the 10%, 5% and 1% levels						

Variables of operating cost efficiency proxied by CIR (cost to income ratio) had a negative (significant) effect. Meanwhile, the banking intermediary-efficiency variables proxied by scale efficiency (SEFF) and technical efficiency (TEFF) have a positive (significant) effect on banking profitability. Firm size even had a significant negative effect on banking profitability.

The results of the statistical analysis above can be interpreted from an industrial economic perspective. Based on the result, Indonesia's big banks (top ten assets) have played an efficient intermediary function. Nevertheless, they just face disruptions from diseconomies of scale.

Banking efficiency in this study describes the behavior of bank management in implementing differentiation strategies, operating costs, and intermediation banking efficiency. Statistically, banking efficiency as a successful result of the differentiation strategies is shown by a positive coefficient on the MS (market-share) variable. As for the implementation of intermediation efficiency, it is indicated by a positive coefficient on the TEFF (technical efficiency) and SEFF (scale efficiency) variables. Meanwhile, the operating cost efficiency is indicated by the negative coefficient of variable CIR (cost-to-income ratio) in relation to NIM, ROA, and ROE (banking profitability).

3.5. Discussion

4.2.1 Impact Efficiency towards banking profitability.

The results of this study indicate that banking efficiency synergies to strengthen banking profitability. Efficiency comes from success in carrying out the differentiation strategy, intermediary function, and operating costs. Efficiency is resulted from the success in the differentiation strategies as explained in 4.1. Impact market share, and market concentration towards banking profitability.

The success of efficiency in managing operating costs strengthens banking profitability. The statistical evidence can be seen in the negative CIR coefficient, which shows that the lower the CIR, the more efficient the bank's operational financing. Thus, efficiency provides positive synergy to banking performance.

The banks managed to serve the banking intermediary function. The statistical evidence can be seen in the positive coefficients of TEFF and SEFF. This shows if the score-TEFF and score-SEFF increase, the efficiency of bank intermediation increases, thereby providing positive synergy in banking profitability as well.

The findings of the negative effect of CIR on banking profitability, which shows that profitability is affected by operating cost efficiency, support Tan et al., 2017(b), and Chamberlain et al., (2020)

who found that low CIR reflects an increase in profit margin. Meanwhile, a high CIR indicates that a bank is inefficient or has poor management quality.

The findings of the positive influence of technical efficiency (TEFF) and scale efficiency (SEFF) on banking profitability support the efficiency hypothesis as stated by Lloyd et al, 1994. The finding also supports the findings of Georgios et al., (2009), which indicated banking efficiency (especially scale efficiency) appears to be the main driving force for increasing profitability in most Latin American countries.

4.2.2 Impact of firm size on banking profitability.

The results of this study showed that the larger firm size actually results in decreased banking profitability. Statistically, this can be seen in the negative coefficient of the firm size variable (lnTA). This is an indication of “diseconomies of scale”, especially in terms of capacity. The size of the firm that has exceeded the optimal point of economies of scale can create diseconomies of scale. A continuously expanding size of the banks creates inefficiency, indicated by an increase in AC & MC (average cost and marginal cost) so that profits/unit assets decrease.

The results of this investigation corroborate the conclusions of Lestari (2021) and Lingerih Zerihun (2021), who demonstrated a negative and significant impact of bank size on ROA and ROE, respectively. The study's findings, however, go counter to those of Budhathoki et al. (2020), who demonstrated that banks can gain from a scale and scope economy by growing their assets and diversifying their product offerings. According to Mishra et al. (2021), Hutauruk et al. (2022), Takarini & Pratiwi (2022), Sahyouni & Wang (2018), and Ruslan et al. (2019), bank size has a beneficial impact on ROA. Budhathoki's research supports these findings.

4.2.3 Impact market share, and market concentration on banking profitability.

The success of the banking differentiation strategy which is indicated by market share that positively synergizes with banking profitability becomes the initial indication to accept the ESH (Efficiency Structure Hypothesis) concept. Furthermore, to convincingly accept the validity of the ESH more evidence is needed. This study result showed that banking performance is the result of market efficiency instead of market collusion. Thus, the MSCR coefficient should be further checked, whether it is positive or not. If the MSCR coefficient is positive, it means the market is collusive, but if it is not positive it means the market is working efficiently.

From the results of this research analysis, the MSCR coefficient was zero and negative, not positive. This result means that the market is efficient. This finding strengthens acceptance of the ESH concept, because banking profitability is the result of the role of an efficient market, not because of a collusive market. The market concentration formed by big banks in Indonesia is only an efficient collection of market shares, which reflects the success of the differentiation strategy. With such a strategy they naturally earn excess profit.

These results corroborate those of Chaerani et al. (2019), who discovered that market share positively impacts banking profitability. This indicates that a bank's capacity to diversify its product offerings—rather than maximizing monopoly power—is what drives banking profitability. Furthermore, market share and bank profitability have a strong positive correlation,

according Belkhaoui et al. (2014) and Ejoh and Sackey (2014). This bolsters the conclusions of Nisa et al. (2019) and Irawati (2017), who found no evidence of collusive behavior supporting the SCP hypothesis in Indonesia's national banking sector.

4.2.4 Impact Lerner Index on banking profitability

The results of this study showed that market concentration has no positive but negative effect on banking profitability. This negative effect shows that the market competition level and banking profitability move in the opposite directions. The sharper the market concentration decreases, the higher the market competition level, as indicated by a decreasing LI (lerner index). However, banking profitability tends to increase. Statistically, this can be seen in the negative coefficient of LI (Lerner index) on ROA and ROE.

This finding provide support for Zhao et al. (2022), Sahul Hamid & Ibrahim (2021), Căpraru et al., (2020) Ju & Tang, (2022), Li & Li (2022) and Apriadi et al., (2017). Competition strengthens financial performance and enhance service and technology facilities that in turn increases bank profitability. However, this result is in contrast with Khattak & Ali (2021), Rakshit (2022), and Rakshit & Bardhan (2022) that indicated higher competition results in lower profitability. Furthermore, Tan et al., (2017) found that in commercial banks in China, competition tends to reduce financial performance as measured by profitability.

5 CONCLUSION

This research analysis shows that the ESH concept is valid and can be applied to large banks in Indonesia. These findings support the validity of the ESH theory. First, there is a positive influence of market share on profitability. The larger market share compared to other banks is due to successful efficiency in creating synergistic differentiation strategies to strengthen profitability. Thus, market concentration is a collection of market shares from efficient market behavior, not collusion. This kind of market concentration can become an industrial market strength.

Second, decreasing market concentration can be interpreted as increasing competition, which leads to a decrease in banking profitability and vice versa. Statistically, this can be seen from the positive coefficient of the MS variable and the negative coefficient LI as indicators that show the positive influence of market share (MS) and the negative influence of the Lerner index (LI) on bank profitability.

This research is very useful for readers, especially in the banking industry, because it is proven that banking profitability is influenced by the efficiency of managing operational costs and the intermediation function. Statistically, this can be seen from the negative CIR and the positive coefficients of the TEFF and SEFF variables on banking profitability (NIM, ROA, and ROE). However, banking has been detected to experience diseconomies of scale, which can increase marginal costs (MC) and average costs (AC). As a result, profit/unit of assets decreases. Increasing company size hurts banking profitability.

The limitation of this research is that it only examines large banks and does not cover all banks in Indonesia.

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