Dominant Factors of Banking Profitability That Implicate Firm Value

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Abstracts: This study is intended to examine the dominant factors that influence the profitability and stock returns of the banking sector when high interest rates occur. The object of this research is the banking sector companies on the Indonesia Stock Exchange with a population of 33 companies in the 2011-2016 period. Using certain criteria so that a sample of 10 companies is obtained. This study uses the variables BOPO, CAR, NPL, LDR, SBI, ROA, and Tobin's Q firm value. All the research variables are divided into two research models, namely the first model uses the endogenous variable ROA which functions as an intervening variable and the second model uses the endogenous variable Tobin's Q firm value. In the results of the first research model, the BOPO and NPL variables have a significant effect on ROA, while the CAR, LDR, SBI variables have no significant effect on ROA. All exogenous variables together using the F-test have a significant effect on the endogenous variable, ROA, at the Adjusted R Squared level of 0.421089. In the second research model results that the variables BOPO, CAR, NPL, and LDR have no significant effect on Tobin's Q firm value. By using the F-test, all exogenous variables together have a significant effect on the endogenous variable, Tobin's Q firm value, at the level of Adjusted R Squared 0.194291. Among the exogenous variables in this study, the dominant factor is the NPL variable in the first research model

Keywords: Operating Expenses to Operating Income (BOPO), Capital Adequacy Ratio (CAR), Non Performing Loans (NPLs), Loan to Deposit Ratio (LDR), Central Bank Reference Rate (SBI), Return On Assets (ROA) and Tobin's Q firm value.

1. INTRODUCTION

The company's efforts to be able to survive in the competition in a very tight globalization era, company management is required to improve its performance at various managerial levels for the sake of its business continuity. On that basis, various efforts are made by the company's management, such as planning, decision making, evaluation and various related matters that are needed so that they can be used as information and references to be carried out. Business continuity in a corporation is closely related to the company's ability to gain profits and it really depends on how the company applies the concept of strategy or short-term and long-term planning in accordance with their respective fields and objectives.

The company's ability to generate good profit trends is closely related not only to cost efficiency in various fields but also to the growth of capital originating from both liabilities and equity. This research makes scientific observations on banking corporate objects as very important partnerships in the business world in various sectors. The high growth of business corporations in various sectors will be closely related to the growth of banking corporations. The mechanism implemented by banking corporations is to collect funds from the public in various forms of savings, then from the funds that have been collected, the bank is channeled back in the form of providing credit to the business sector or corporations or other parties in need. The more developed people's lives and economic transactions of a country, it will also require an increase in the role of the banking sector through the development of its service products. (Hempel, 1994).

Bank finance is a description of the bank's financial condition in a certain period, both covering aspects of raising funds and channeling funds. Assessment of the performance of a bank can be done by performing an analysis of its financial statements. Related to the performance of banking corporations producing a better trend, the Government...
of the Republic of Indonesia issued a banking sector policy or deregulation of the banking sector in 1983 which was then known as the 1 June 1983 Policy Package. The essence of the 1 June 1983 Policy Package was exemption for banks to set interest rates, sources of funds, and credit with the aim of increasing banking efficiency. The existence of this banking policy package has greatly influenced banking patterns and strategies both in terms of assets and liabilities of the banking itself.

As a result of the policy of the government of the Republic of Indonesia, the banking industry must be more creative and innovative in developing and obtaining new sources of funds and therefore the conditions of competition between banks in an effort to attract funds from the public which will be kept in the form of current accounts, deposits or savings are getting tighter. Competition between banks is not only limited to efforts to collect funds from the public but also competition to channel the funds obtained back into the form of credit. The level of work efficiency of banking corporations in raising funds and channeling them in the form of credit can be measured by the ratio between costs to income or known as BOPO (Operating Expenses to Operating Income).

The results of the banking sector's efforts to collect funds from the public will be accumulated into capital and to what extent the proceeds are distributed in the form of bank credit under various names of credit schemes. The ratio between capital to distribution is known as the Capital Adequacy Ratio (CAR). Indonesia's Capital Adequacy Ratio changes very dynamically because they are closely related to risks. There is no guarantee that the CAR will be directly proportional to the level of profitability of a banking sector, given that credit distribution has different qualities or risks. This will be a consideration for capital market players as well as a problem for determining appreciation, which is reflected in the stock market price can have implications on Tobin's Q firm value.

Godlewski (2004) in Haneef, et.all (2012) uses ROA as a performance proxy, showing that bank profitability has a negative impact on the level of non-performing loans (NPL). Garcia-Marcos and Robels-Fernandez (2007) find that profit-maximizing policies are accompanied by a higher level of risk. The practice shows that provision is triggered by incidents of default on loans, a higher level of non-performing loans (NPL) is associated with a high level of provision (Hasan, Wall 2004). The higher the NPL level, the lower the level of credit quality and therefore the higher the level of risk that what will happen is the amount of loss on the loan that will be charged to income/profitability, Kingu Peter Stephen Kingu, Macha Salvio, Gwahula Raphael (2018)

In the corporate banking sector, there are measuring instruments/indicators or ratios that can be used to measure liquidity risk, one of which is the Loan to Deposits Ratio (LDR), which is the ratio between the total volume of credit extended by a bank and the total receipt of funds from various sources. The large volume of credit will potentially generate corporate profitability in the banking sector. A low LDR ratio may indicate that there are many funds that are idle and have not been channeled in the form of credit, but have a good level of liquidity quality. On the contrary, if what happens to the LDR ratio is high, it can mean that the distribution of funds in the form of optimal credit, however, the bank's corporate liquidity capacity is considered to be poor. The higher the LDR level, the more illiquid a bank is, meaning that the bank will find it difficult to fulfill its short-term obligations, such as sudden withdrawals by customers of their deposits. Conversely, if what happens is the lower the LDR level, the more liquid a bank is with the consequence that it is not optimal in obtaining profitability.

Between interest rates and profitability in the banking sector is closely related. When that occurs at high interest rates, the banking sector has the potential to generate higher income than before. With the difference between interest rates on savings and lending rates, that is the potential for profitability that will be obtained by the banking sector. Another thing that can also be found in an indirect way in which an increase in interest rates has the potential to increase the level of profitability in the banking sector is that increases tend to occur in environments where economic growth is strong, and bond yields increase. Under such conditions, demand from consumers and the business world for loans will increase so that the potential for profitability in the banking sector will increase.

Inside Rob Bauer, Nadja Guenster, Rogér Otten (2004), that good corporate governance will lead to higher common stock returns. This will generate and increase firm value in the European region. Furthermore, the
approach taken by Gompers et al. (2003), between Corporate Governance and Equity Price is ultimately positively correlated with firm value, but contrary to Gompers et al. (2003), where the resulting correlation is negative.

By Windarti M., Sri and Fuady, Misbach (2015), the results of his research on the existence of an exogenous variable CAR have a significant effect with a positive correlation to the endogenous variable Profitability, but the opposite is true of the research of Fiscal, Yunus & Lusiana, Lili (2014), Hakim Ningsukma & Rafsanjani Haqi (2016), Yusuf W Muhammad & Wahyuni Salamah (2017), which produces the effect of the exogenous variable CAR on the endogenous variable ROA profitability is not significant. in Windari & Fuady also researched the Financing Deposit Ratio (FDR) or LDR which resulted in a significant influence with a positive correlation to profitability, but on the contrary, it was different from the results carried out by Fiscal & Luciana with insignificant results. Sholihah Nikmatus, Sriyana Jaka (2014),

In addition to the above, at the time of the financial crisis, it was also affected by high interest rates, where the application of interest rates dominated all banking operational activities. To anticipate this, the central bank/Bank Indonesia raised the SBI rate sharply. Many private banks and state banks compete to raise interest rates (Pujiyono, 2004). A certain interest rate given by the bank to the public is the main attraction for the public to save their money in the bank. Meanwhile for the bank itself, the greater the public funds that can be collected will increase the ability of banks to finance the operations of their assets, most of which are in the form of lending to the public (Siamat, 2005). The conditions faced by the banking sector are like that, so the Non Performing Loan (NPL) factor will overshadow the results of banking performance.

2. LITERATURE REVIEW

Discussion of governance in the corporate sector (corporate governance) as well as in the public sector (public governance), began to receive great attention since the last two decades. The government's commitment to improve the implementation of governance by various public institutions and corporations has been carried out by forming the National Governance Policy Committee (KNKG). Until now, various policies and programs related to governance issues have been and will be implemented by the committee in an effort to increase the effectiveness of governance implementation in Indonesia. The existence of corporate governance (CG) has broad and critical implications for economic development and social welfare. First, providing incentives and performance appraisal measures in achieving business success. Second,

The significance of the role of CG for the stability and welfare of society is illustrated by the definition given by Cadbury (2002), Corporate governance is concerned with holding the balance between economic and social goals and between individual and communal goals. The governance framework is there to encourage the efficient use of resources and equally to require accountability for the stewardship of those resources. The aim is to align as nearly as possible the interests of individuals, corporations and society. Related to this, corporate governance relates to controlling the balance between economic and social goals including individual goals and shared goals. The Governance framework is to promote the efficient and equitable use of resources requiring accountability for managing these resources. The aim is to align as closely as possible the interests of individuals, companies and society. However, the alignment of different interests in the form of positive collaboration between the parties in question is not an easy problem to apply. This condition is compounded by the increasing complexity of business phenomena in the modern corporate era with a dynamic organizational environment. An understanding of the basic conceptions of governance, both for the corporate and public sectors, cannot be separated from an understanding of governance and its relation to organizations. especially organization from a sociological point of view and its role as a rational solution to various social problems. In this regard, the concept of governance will be discussed from the point of view of the structural - functionalism paradigm as the philosophical basis of CG.

In Agency Theory, Jensen and Mackling (1976), The main principle in this theory explains the existence of a working relationship between parties who give authority, namely investors (principals) and parties who receive authority, namely managers (agents). In understanding the concept of corporate governance, attention must be paid to the possibility of a conflict of interest between principals and agents. But if trust can be built from principals, then
agents can also be motivated to do their best for stakeholders to gain a good reputation in order to reach the market in the future. Agents should also have a network with external and internal stakeholders so that common interests can be fulfilled.

The Forum for Corporate Governance in Indonesia (FCGI, 2001) defines Corporate Governance as a set of rules governing the relationship between shareholders, management (managers) of the company, creditors, government, employees and other internal and external interest shareholders relating to rights and obligations, them, thereby creating added value for all interested parties (stakeholders). The added value in question is that corporate governance provides effective protection for investors in obtaining a return on their investment at a reasonable and high value. The definition of Corporate Governance according to the World Bank is rules, organizational standards in the economic field that regulate the behavior of company owners, directors and managers as well as the details and elaboration of their duties and authorities and responsibilities to investors (shareholders and creditors). The main objective of Corporate Governance is to create a system of checks and balances to prevent the misuse of company resources and continue to encourage company growth. The Organization for Economic Cooperation and Development (OECD), (1988), is one of the institutions that has the initiative to promote the concept of Corporate Governance and has issued a set of Corporate Governance principles that are universally developed. The principles set out aim to make the company's management (namely the directors) accountable to the owners (shareholders). Majeed et al, (2015),

In Bringham (2001), profitability is the end result of the policy process and management decisions on the source and use of funds in running the company's operations contained in the company's financial statements. The purpose of establishing a company is to obtain high profits. Consistent level of profitability, management will be able to produce a going concern in managing its business by obtaining a return commensurate with the risk (Prihadi, 2008).

In Saidi (2004) profitability is a company's ability to earn profits. Investors invest their capital by buying shares in a company in order to get a return. The higher the company's ability to earn profits, the greater the return that investors get, so that the effect on company value is better. Profitability is a factor that gives freedom and flexibility to management to carry out and disclose business plan programs and future company investment opportunities to shareholders (Heinze, 1976).

The relationship between corporate profitability and corporate social responsibility disclosure has become a postulate (basic assumption) to reflect the view that social reactions require managerial style. So that the higher the level of company profitability, the greater the disclosure of social information (Bowman & Haire, 1976 and Preston, 1978, Hackston & Milne, 1996). Disclosure of corporate social responsibility reflects an adaptive corporate management approach in dealing with a dynamic and multidimensional environment and the company's ability to listen to everything that is needed by the community (Cowan, et al., 1987 and Florence, et al., 2004).

Petronila and Mukhlasin (2003) profitability is a description of management performance in managing the company. Profitability measures can be of various kinds, such as: operating profit, net income, rate of return on investment/assets, and rate of return on owner's equity. Wahidahwati (2002) revealed that the profitability ratio shows the company's success in generating company profits. The greater the profit earned by the company, the greater the company's ability to pay dividends. Managers will not only get dividends, but will also gain greater power in determining company policy. Thus the greater the dividend (dividend payout) will save the cost of capital. On the other hand, managers (insiders) have increased power and can even increase their ownership due to receiving dividends as a result of high profits. So, profitability is an important consideration for investors in their investment decisions.

In Arumingtyas, Fida (2017), conducted research on the effect of financial ratios Capital Adequacy Ratio (CAR) on Banking sector performance (ROA) with insignificant results. Another result is a significant effect between BOPO on ROA with a negative correlation. The same results also occur in the effect of FDR (LDR) on ROA with significant results with a positive correlation, where the LDR (Loan to Deposits Ratio) is a ratio that measures a bank's ability
to meet short-term obligations (can be called liquidity) by dividing Total Credit to Total Third Party Funds (DPK). Banking liquidity needs to be managed to meet the needs when customers take their funds and distribute them in the form of loans (credit) to borrowers (debtors). If the LDR value is too high, meaning that banks do not have adequate liquidity to cover their obligations to customers (DPK). On the other hand, if the LDR value is too low, it means that the banking sector has adequate liquidity, but the income may be lower, because as is well known, the banking sector derives its income through channeled credit. LDR itself can be formulated = \frac{Total\ Loans}{Total\ Deposit}.

Unlike the results of Astohar’s research (2016), the effect of CAR on Profitability is significant with a positive correlation and FDR on Profitability has no significant effect. Another researcher, Windarti M, Sri. & Fuady Misbach (2015) with CAR results that have a significant effect with a positive correlation to Profitability. The other results are that BOPO has a significant effect with a negative correlation on Profitability and the effect of FDR on Profitability is significant with a positive correlation. BOPO (Operating Expenditure to Operating Income) is a ratio that describes the efficiency of a bank in carrying out its activities. Operational expenditure is interest expense given to customers while operating income is interest earned from customers. The smaller the BOPO value means the more efficient the banking is in operating, this can be formulated BOPO = \frac{Operating\ Expenses}{Operating\ Income}.

The effect of stock price movements is influenced by company performance (high profitability) to increase profitability must be able to increase company assets in this case increase cash flow because cash flow or cash is the most liquid current asset, so companies to increase current assets must be able to increase cash flow (cash flow) at this time and projecting it in the future.

The company value which is measured based on the Tobin’s Q ratio has the reason that choosing the Tobin’s Q ratio is more rational, considering that the elements of liability are also included as the basis for the calculation. As for the concept of Firm Value, there is some literature using calculations based on stock prices. First, Price to Book Value (PBV) uses a comparison between stock prices and book value of shares. Second, the Market to Book Ratio (MBR), which uses a comparison between the stock market price and the book value of the stock. Third, the Market to Book Assets Ratio is the market expectation of the value of investment opportunities and company growth, namely the ratio between the market value of assets and the book value of assets. Fourth, the Market Value of Equity, namely the market value of the company's equity according to the assessment of market participants. Fifth, Enterprise value (EV), which is the market capitalization value calculated before market capitalization value plus total liabilities plus minority interest and preferred stock minus total cash and cash equivalents. Sixth, the Price Earnings Ratio (PER) is the price that buyers are willing to pay if the company is sold. PER can be formulated as PER = \frac{Market\ Price}{Earnings\ per\ Share}.

In Tandelilin (2001), the PER approach is a more popular approach used among stock analysts and practitioners. The PER approach is also called the multiplier approach where investors will calculate how many times the value of earnings is reflected in the price of a stock. Seventh, Company Value can use Tobin's Q. Basically, Company Value can provide maximum shareholder prosperity if the company's stock price increases. The higher the stock price, the higher the prosperity for shareholders.

The company value ratio above was developed by Tobin (1969), which was first proposed for a balance approach in monetary theory. This ratio is a valuable concept because it represents the financial market’s current estimate of the return on each dollar of incremental investment. If Tobin’s Q is above 1 (one), this indicates that
investment in assets generates profits that provide a higher value than investment spending, this will encourage new investments. If the results of Tobin's Q are below 1 (one), investment in assets is not attractive. Thus Tobin's Q Firm Value is a more accurate measure of how effectively management utilizes the economic resources in its power. In addition to company value using Tobin's Q, basically there are others that have several measurement aspects, such as the company's stock market price, which reflects investors’ assessment of the overall equity owned, Wahyudi and Pawestri (2006).

The use of research variables with Tobin's Q Company Value considering this ratio is considered to be able to provide better information than the others, because it accommodates all elements of the company's debt and share capital or it can be said to use the calculation of all company assets. By including all company assets, the company does not only focus on equity shares but also bank creditors as a source of financing for the company's operations, Sukamulja (2004). Thus the greater the value of Tobin's Q indicates that the company has good growth prospects. By Kim, et.al. (1993) explained that theoretically Tobin's Marginal Q is related to the investment rate of a company, but direct measurement of Tobin's Marginal Q is not possible. For this reason, Tobin's Average Q is proposed as a proxy for Marginal Q. The use of Average Q in explaining investment has been endorsed by Tobin himself, and the use of Average Q has been widely used in valuation studies. Chung & Pruitt (1994) proposed a simple formula for Tobin's Q called the approximation Q = \[ \frac{MVE + PS + Debt}{TA} \]. Related to Profitability and Firm Value, Katper, NK, Shaikh, SS, Anand, V., & Ali, NI (2018), Firm Size has a significant positive effect on ROA, Firm Size also has a positive effect on Tobin's Q company value.

3. HYPOTHESIS

[1] There is a partial influence of BOPO on ROA in the banking sector on the Indonesia Stock Exchange
[2] There is a partial influence of CAR on ROA in the banking sector on the Indonesia Stock Exchange
[3] There is a partial influence of NPL on ROA in the banking sector on the Indonesia Stock Exchange
[4] There is a partial influence of LDR on ROA in the banking sector on the Indonesia Stock Exchange
[5] There is a partial influence of interest rates on ROA in the banking sector on the Indonesia Stock Exchange
[6] There is a partial effect of BOPO on Tobin's Q company value in the banking sector on the Indonesia Stock Exchange
[7] There is a partial effect of CAR on Tobin's Q company value in the banking sector on the Indonesia Stock Exchange
[8] There is a partial effect of NPL on Tobin's Q company value in the banking sector on the Indonesia Stock Exchange
[9] There is a partial effect of LDR on Tobin's Q company value in the banking sector on the Indonesia Stock Exchange
[10] There is a partial effect of interest rates on Tobin's Q company value in the banking sector on the Indonesia Stock Exchange
[11] There is a partial effect of ROA on Tobin's Q company value in the banking sector on the Indonesia Stock Exchange
4. RESEARCH METHODS

This type of research uses a quantitative approach which is each variable and between variables based on a quantitative measurement scale. The relationship in this study is a causal relationship consisting of exogenous variables (independent variable / independent variable, stimulus, predictor, antecedent). In addition to these variables, there are also endogenous variables where these variables are influenced by exogenous variables or in other words, exogenous variables affect or cause changes that arise in the endogenous variable (the dependent variable / dependent variable). Apart from the two variables mentioned above, there are also intervening variables which theoretically influence the relationship between exogenous variables and endogenous variables but cannot be observed or measured.

This study uses secondary data consisting of profitability (Return on Assets / ROA), Operating Expenses to Operating Income (BOPO), Capital Adequacy Ratio (CAR), Non Performing Loans (NPLs), Loan to Deposit Ratio (LDR), Interest Rates and company value (value of firm / Tobin's Q Ratio) where the data is sourced from the financial report data of banking companies listed on the Indonesia Stock Exchange as a population of 33 banking sector companies in the 2011-2016 period or for 6 years.

The selection of the research sample was based on a purposive sampling method with a sampling technique using certain criteria. Sampling was carried out using the judgment sampling method which is a type of purposive sampling in which the sample selection is based on an assessment of some of the characteristics of the population members adjusted for the purpose of the study (Kuncoro, 2003: 119). Researchers used the following sampling criteria:


[2] Banking sector companies that have complete financial reports and publish complete stock price data for the 6 year period 2011-2016

[3] Banking sector companies that have a profitability value, ROA > 2%

Based on the above criteria, the number of samples in this study were 10 banking sector companies from 33 banking sector companies with populations listed on the Indonesia Stock Exchange,

The operational variables used in this study:

Exogenous variables (X)
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[1] Operating Expense to Operating Revenues (BOPO) = \frac{Operating Expenses}{Operating Income} \times 100 \%

[2] CAR (Capital Adequacy Ratio) = \frac{Tier 1 Capital + Tier 2 Capital}{Risk weighted Assets} \times 100 \%

[3] NPL (Non Performing Loan) = \frac{Value or the number of loans}{Total Portfolio} \times 100 \%

[4] LDR (Loan to Deposit Ratio) = \frac{Total Loans}{Total Deposits} \times 100 \%

[5] Interest Rate = Reference Interest Rate from Bank Indonesia (BI Rate)

Endogenous variables (Y)

[6] ROA (Return On Assets) = \frac{Earnings after Tax (EAT)}{Total Assets} \times 100 \%

Endogenous variables (Z)

[7] Tobin’s Q Ratio (TQR) = \frac{MVE + PS + Debt}{TA} \times 100 \%

Where:

- MVE (Market Value) = The Company’s Stock Market Price is multiplied with the Number of Outstanding Shares
- PS (Preferred Stock) = Preferred Stock Liquidation Value
- Debt = Debt Book Value
- TA = Book Value of Assets

5. RESEARCH RESULTS

A. Descriptive Statistics

Statistical data descriptions consist of mean, median, maximum, minimum, standard deviation, skewness, kurtosis and Jarque-Berra statistics as well as p-values as shown in table 1. Mean, median, maximum and minimum values for each variable used in this study have different numbers, but the highest score of the four indicators occurs in the Loan to Deposit Ratio (LDR) variable.

The standard deviation as a measure for measuring the dispersion or spread of data shows fluctuating numbers. The largest standard deviation value is found in the BOPO variable, which is 14.17643, which means that the BOPO variable has a higher level of risk compared to other variables. While the NPL variable has the lowest risk level, which is equal to 0.956673. Skewness is a measure of the asymmetry in the distribution of statistical data
around the mean. The skewness of a symmetric distribution (normal distribution) is zero. Positive results on skewness indicate that the data distribution has a long right tail and negative skewness has a long-left tail. The BOPO and SBI variables have negative values, while the CAR, NPL, LDR, ROA and company value variables have positive values. Kurtosis measures the height of a distribution. The kurtosis of a normally distributed data is 3. If the kurtosis exceeds 3, then the data distribution is said to be leptokurtic to normal. If the kurtosis is less than 3, the data distribution is flat (platykurtic) compared to normally distributed data. For the BOPO, CAR and LDR variables have a kurtosis value of more than 3, while the NPL, SBI and ROA variables have a kurtosis value of less than 3.

The Jarque Bera test (JB) is a goodness of fit test for normality which measures whether the skewness and kurtosis of the sample conform to the normal distribution. This test is based on the fact that the skewness and kurtosis values of the normal distribution are equal to zero. Therefore, the absolute value of this parameter can be a measure of the deviation of the distribution from normal. In its application, the Jarque Bera (JB) value will be compared with the Table Chi-Square value in degrees of freedom, df. 4. Probability indicates the possibility that the value of JB exceeds (in absolute value) the observed value under the null hypothesis.

Descriptive statistical results of all variables, BOPO, CAR, NPL, LDR, SBI, ROA and Tobin’s Q company value with a 6-year time series (2011-2016 period) and a cross section of 10 companies can be seen in table 1

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<th>Table 1. Descriptive Statistics</th>
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<td>Sum Sq. Dev.</td>
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<td>Observations</td>
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<td>Cross sections</td>
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B. Model Suitability Testing in Research Model I, Return on Assets as an Endogenous Variable

Structural Equation Of Research Model I

\[
ROAi_t = \alpha + C1 \text{BOPO}_{i,t} + C2 \text{CAR}_{i,t} + C3 \text{NPL}_{i,t} + C4 \text{LDR}_{i,t} + C5 \text{SBI}_{i,t} + \varepsilon_{i,t};
\]

\[i = 1, 2, \ldots, N ; t = 1,2,\ldots,T\]

where:

- ROA: Return on Assets
- BOPO: Operating expenses to operating income
- CAR: Capital Adequacy Ratio
- NPL: Non-Performing Loan
- LDR: Loan to Deposit Ratio
- SBI: BI Rate
The Chow test above will reject the null hypothesis and accept the alternative hypothesis. The results of the paired test will establish a better Fixed Effect Model to be used to estimate the panel data regression method.

The Hausman test above produces a Chi-Square probability value of $0.0776 > \alpha = 0.05 \ (5\%)$, so it will accept the null hypothesis and reject the alternative hypothesis, so the Random Effect Model is better for use in estimating the panel data regression method.

Based on the results of the LM-test Breusch-Pagan (BP) calculation of 18.07005 bigger than the chi-squares table with $\alpha = 0.05$, and df = 3, which is equal to 4.321, or the probability value of the LM-test Breusch- Pagan 0.0000 is smaller than $\alpha = 0.05$, so it will reject the null hypothesis and accept the alternative hypothesis that the Random Effect model is better than the Common Effect model for estimating the determinants of profitability in this research model.

C. Determinants of ROA Profitability in Research Model I

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<th>Tabel 2. Chow Test</th>
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<td>Cross-section random</td>
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<th>Table 4. Lagrange Multiplier (LM-Test) Breusch-Pagan</th>
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<td>Test Hypothesis</td>
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<th>Tabel 5. Random Effect Model</th>
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</tr>
<tr>
<td>LDR</td>
</tr>
<tr>
<td>SBI</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>Effects Specification</td>
</tr>
</tbody>
</table>
Cross-section random | 0.546000 | 0.5707
Idiosyncratic random | 0.472656 | 0.4293
R-squared | 0.470150 | Mean dependent var | 1.096370
Adjusted R-squared | 0.421089 | S.D. dependent var | 0.654360
S.E. of regression | 0.497877 | Sum squared residue | 13.38562
F-statistics | 9.583112 | Durbin-Watson stat | 0.810741
Prob(F-statistic) | 0.000001

D. Research Results Model I

[1] The results of the t-test show that the variable Operating Expenses to Operating Income (BOPO) has a significant effect on Return on Assets (ROA) with a negative correlation. This can be seen at the t-statistic probability level of 0.0000 < α = 0.05. Thus, the results of the hypothesis test reject the null hypothesis and accept the alternative hypothesis.

[2] Based on the results of the t-test, the Capital Adequacy Ratio (CAR) variable has no significant effect on Return on Assets (ROA). This can be seen at the t-statistic probability level of 0.3783 > α = 0.05. Thus, the results of the hypothesis test accept the null hypothesis and reject the alternative hypothesis.

[3] The results of the t-test of the Variable Non-Performing Loan (NPL) show a significant effect with a negative correlation to the Return on Assets (ROA). This can be seen at the probability level of the t-statistic 0.0001 < α = 0.05. This exogenous variable looks the most dominant among other variables which can be seen from the regression coefficient, 0.409093. Thus the results of the hypothesis test reject the null hypothesis and accept the alternative hypothesis.

[4] Testing the Loan to Deposit Ratio (LDR) variable can be seen in the results of the t-test, that the LDR variable has no significant effect on Return on Assets (ROA). This can be seen in the probability value of the t-statistic 0.1644 > α = 0.05. Thus, the results of the hypothesis test accept the null hypothesis and reject the alternative hypothesis.

[5] Tests on the Bank Indonesia/BI Rate (SBI) interest rate variable can be seen in the results of the t-test, that the SBI variable has no significant effect on Return on Assets (ROA). This can be seen in the probability value of the t-statistic 0.4863 > α = 0.05. Thus the results of the hypothesis test accept the null hypothesis and reject the alternative hypothesis.

E. Model Suitability Testing in Research Model II,

Tobin’Q Firm Value as Endogenous Variables

Structural Equation of Research Model II

\[ TQ_{it} = \alpha + C1\ BOPO_{it} + C2\ CAR_{it} + C3\ NPL_{it} + C4\ LDR_{it} + C5\ SBI_{it} + C6\ ROA_{it} + \epsilon_{it}; \]

\[ i = 1,2,\ldots, N ; t = 1,2,\ldots,T \]
where:

- **TQ**: Tobin's Q Company Values
- **BOPO**: Operating expenses to operating income
- **CAR**: Capital Adequacy Ratio
- **NPL**: Non-Performing Loan
- **LDR**: Loan to Deposit Ratio
- **SBI**: BI Rate
- **ROA**: Return on Assets

### Tabel 6. Chow Test

<table>
<thead>
<tr>
<th>Effects Test</th>
<th>Statistic</th>
<th>d.f.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section F</td>
<td>56.631674</td>
<td>(9,44)</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

The Chow test in testing the suitability of the research model II above will reject the null hypothesis and accept the alternative hypothesis. The paired test results will determine the Fixed Effect Model is better to be used to estimate the regression method of panel data in the research model II.

### Tabel 7. Hausman Test:

<table>
<thead>
<tr>
<th>Test Summary</th>
<th>Chi-Sq. Statistic</th>
<th>Chi-Sq. d.f.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section random</td>
<td>2.180193</td>
<td>6</td>
<td>0.9024</td>
</tr>
</tbody>
</table>

The Hausman test above produces chi-Square probability value of $0.9024 > \alpha = 0.05$ (5%), it will accept the null hypothesis and reject the alternative hypothesis, so that the Random Effect Model is better to be used to estimate the panel data regression method in research model II.

### Tabel 8. Lagrange Multiplier (LM-Test) Breusch-Pagan

<table>
<thead>
<tr>
<th>Test Hypothesis</th>
<th>Cross-section</th>
<th>Time</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breusch-Pagan</td>
<td>81.60305</td>
<td>2.961757</td>
<td>84.56481</td>
</tr>
<tr>
<td>(0.0000)</td>
<td>(0.0853)</td>
<td>(0.0000)</td>
<td></td>
</tr>
<tr>
<td>Honda</td>
<td>9.033441</td>
<td>-1.720976</td>
<td>5.170694</td>
</tr>
<tr>
<td>(0.0000)</td>
<td>--</td>
<td>(0.0000)</td>
<td></td>
</tr>
<tr>
<td>King-Wu</td>
<td>9.033441</td>
<td>-1.720976</td>
<td>4.018663</td>
</tr>
<tr>
<td>(0.0000)</td>
<td>--</td>
<td>(0.0000)</td>
<td></td>
</tr>
<tr>
<td>Standardized Honda</td>
<td>11.86981</td>
<td>-1.343798</td>
<td>3.868005</td>
</tr>
<tr>
<td>(0.0000)</td>
<td>--</td>
<td>(0.0001)</td>
<td></td>
</tr>
<tr>
<td>Standardized King-Wu</td>
<td>11.86981</td>
<td>-1.343798</td>
<td>2.509045</td>
</tr>
<tr>
<td>(0.0000)</td>
<td>--</td>
<td>(0.0061)</td>
<td></td>
</tr>
<tr>
<td>Gourieroux, et al.*</td>
<td>--</td>
<td>--</td>
<td>81.60305</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(&lt; 0.01)</td>
</tr>
</tbody>
</table>

*Mixed chi-square asymptotic critical values:

- 1%  = 7.289
- 5%  = 4.321
- 10% = 2.952

The results of the LM-test Breusch-Pagan (BP) calculation of 84.56481 are greater than the chi-squares table with $\alpha = 0.05$ of 4.321, or the probability value of the LM-test Breusch-Pagan (0.0000) is smaller than $\alpha = 0.05$ so that it can be concluded that it will reject the null hypothesis and accept the alternative hypothesis so that the Random Effect Model is better for use in estimating the panel data regression method in research model II than the Common Effect Model.
F. Implications for Firm Value, Tobin’s Q in Research Model II

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOPO</td>
<td>0.004150</td>
<td>0.014697</td>
<td>0.282395</td>
<td>0.7787</td>
</tr>
<tr>
<td>CAR</td>
<td>0.001421</td>
<td>0.001359</td>
<td>1.045936</td>
<td>0.3003</td>
</tr>
<tr>
<td>NPL</td>
<td>-0.004264</td>
<td>0.006221</td>
<td>-0.685409</td>
<td>0.4961</td>
</tr>
<tr>
<td>LDR</td>
<td>0.000271</td>
<td>0.000504</td>
<td>0.537512</td>
<td>0.5932</td>
</tr>
<tr>
<td>SBI</td>
<td>-0.009873</td>
<td>0.004015</td>
<td>-2.459300</td>
<td>0.0172</td>
</tr>
<tr>
<td>ROA</td>
<td>0.015449</td>
<td>0.006778</td>
<td>2.279325</td>
<td>0.0267</td>
</tr>
<tr>
<td>C</td>
<td>2.474980</td>
<td>0.085364</td>
<td>28.99311</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Random Effects (Cross)

| BBRI–C    | -0.005377   | MBMN–C     | -0.003777   |
| BBNI–C    | -0.007767   | MAYA–C     | 0.032853    |
| BMRI–C    | 0.007061    | BBMD–C     | 0.053553    |
| BBCA–C    | 0.045383    | BJBR–C     | -0.034148   |
| BTPN–C    | -0.068638   | SDRA–C     | -0.019144   |

Effects Specification

<table>
<thead>
<tr>
<th>Weighted Statistics</th>
<th>S.D.</th>
<th>Rho</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-squared</td>
<td>0.276227</td>
<td>Mean dependent var</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.194291</td>
<td>S.D. dependent var</td>
</tr>
<tr>
<td>S.E of regression</td>
<td>0.023740</td>
<td>Sum squared resid</td>
</tr>
<tr>
<td>F-statistic</td>
<td>3.371233</td>
<td>Durbin-Watson stat</td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.006874</td>
<td></td>
</tr>
</tbody>
</table>

Unweighted Statistics

| Sum squared resid   | 0.107323 | Durbin-Watson stat | 0.347403 |

G. Research Results Model II

[6] The results of the t-test showed that the variable operating expenses to operating income (BOPO) has no significant effect on the value of the company Tobin’s Q. This can be seen at the level of probability t-statistic 0.7787 > α = 0.05, so that the results of the hypothesis test accept the null hypothesis and reject the alternative hypothesis.

[7] Based on the results of t-test, variable Capital Adequacy Ratio (CAR) does not significantly affect the value of the company Tobin’s Q. This can be seen at the level of probability t-statistic 0.3003 > α = 0.05, so that the results of the hypothesis test accept the null hypothesis and reject the alternative hypothesis.

[8] Variable Non-Performing Loan (NPL) seen from the results of the t-test shows no significant effect on Tobin’s Q Firm Value. This can be seen at the probability level of the t-statistic 0.4961 > α = 0.05. so that the results of the hypothesis test accept the null hypothesis and reject the alternative hypothesis.

[9] Testing the Loan to Deposit Ratio (LDR) variable can be seen in the results of the t-test, that the LDR variable has no significant effect on Tobin’s Q Firm Value, which can be seen in the probability value of the t-statistic 0.5932 > α = 0.05, so the results of the hypothesis test accept the null hypothesis and reject the alternative hypothesis.

[10] Tests on the variable interest rate Bank Indonesia/BI Rate (SBI) can be seen in the results of the t-test, that the SBI variable has a significant effect on Tobin’s Q Firm Value with a negative correlation. This can be seen in the probability value of the t-statistic, 0.0172 < α = 0.05, so the results of the hypothesis test reject the null hypothesis and accept the alternative hypothesis.

[11] The results of the t-test show that the variable Return on Assets (ROA) has a significant effect on Tobin’s Q Firm Value with a positive correlation. This variable functions as an intervening agent to mediate Tobin’s Q Firm Value. This can be seen at the probability level of the F-statistic, 0.006874 < α = 0.05, so the results of the hypothesis test reject the null hypothesis and accept the alternative hypothesis.
CONCLUSION

[1] The influence of BOPO efficiency levels can explain significantly the profitability of ROA. The more inefficient a banking institution is, the lower its level of profitability will be.

[2] The high level of NPL can significantly explain the decline in profitability

[3] The rise and fall of interest rates can significantly affect company value

[4] Profitability as an intervening variable can significantly mediate company value.

[5] The research variable with the most dominant level of sensitivity is NPL.

REFERENCES


[120]. Pedoman akuntansi perbankan indonesia (PAPI, 2008).


[154]. Umi Rusliwati (2013) Information Technology-Based Knowledge Management and Organizational Learning Context, Asmoro Mediatama, South Tangerang.


[166]. Yoandhika Nabela (2012) The effect of institutional ownership, dividend policy and profitability on debt policy in property and real estate companies on the Indonesia Stock Exchange, Journal of Management, Volume 01, Number 01, September 2012, Faculty of Economics,
Padang State University.


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