Factors Affecting the Profitability of Banking Companies Listed in Indonesia Stock Exchange

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ABSTRACT

The purpose of this research is to obtain empirical evidence of the effect of capital adequacy ratio, non-performing loan, net interest margin and operational efficiency on bank profitability which is represented by return on assets in banking companies listed on the Indonesia Stock Exchange in 2017-2019. This study uses purposive sampling as a sampling technique and uses 28 banking companies as research samples. The financial statements of banking businesses listed on the Indonesia Stock Exchange were utilized to compile the data for this study. Data processing in this study uses the Smart Pls30 program. The results of the study of capital adequacy ratio, non-performing loan, net interest margin are not significant to bank profitability, while operational efficiency has a significant effect on bank profitability.

Keywords: Bank Profitability, Capital Adequacy Ratio, Non-Performing Loan, Net Interest Margin, Operational Efficiency

1. INTRODUCTION

Banking is a financial institution that has a very important influence on the economy in Indonesia, both microeconomically and macroeconomically, [14] because the bank functions to link funds owned by an economic unit that have excess funds or surplus units to be given to an economic unit that has surplus funds. is in shortage or in need of funds or a deficit unit [13]. A healthy, progressive, and dynamic banking system is a prerequisite for economic growth [7], according to Banking Law Number 10 of 1998. The ability of banks to generate profits or bank profits can be measured through profitability ratios [12]. ROA is a profitability ratio that measures a firm's capacity to produce profits from total assets employed, with the greater the profit generated, the higher the ROA, implying that the company is more successful in using assets to generate profit or profit [22]. The factors that affect banking profitability are empirically proven by [15] who examine internal and external determinants of banking profitability in commercial banking listed on the Pakistan Stock Exchange (PSX) from 2006-2015, where firms size, capital adequacy ratio, asset management, management quality, financial risk, annual Gross Domestic Product (GDP) growth, inflation rate, interest rate and exchange rate on bank profitability in this case return on assets (ROA) and return on equity (ROE), resulting in government policies, in this case external determinants have a significant effect on bank profitability, while internal bank determinants have no significant effect on bank profitability. Furthermore, [17] examines the impact of the capital adequacy ratio, net interest margin, and non-performing loans on the

profitability of three banks listed on the Indonesia Stock Exchange (IDX) from 2012 to 2016, concluding that the capital adequacy ratio has no significant impact on bank profitability, while net interest margin has a positive impact on bank profitability growth, and non-performing loans have a negative impact on bank profitability. In her study of the effect of capital adequacy ratio, non-performing loan, loan to deposit ratio, and operational efficiency on the profitability of banks listed on the Indonesia Stock Exchange (IDX) from 2011 to 2013, [6] found that operational efficiency has an impact on banking profitability, whereas capital adequacy ratio, non-performing loan, and loan to deposit ratio have no impact (ROE). [8] in their research on bank specific and macroeconomic determinants of commercial bank profitability: empirical evidence from Nigeria in 2010-2015, concluded that capital adequacy ratio, liquidity, operational efficiency and gross domestic product have a significant positive effect. on bank profitability (ROA and ROE). This study was adapted and developed from research conducted by [15], which discussed internal and external determinants of banking profitability in commercial banks listed on the Pakistan Stock Exchange (PSX) from 2006 to 2015, and was then supplemented by research conducted by [19], which discussed the determinants of profitability of commercial banks listed on the Indonesia Stock Exchange, and research conducted by [17], which discussed the determinants of profitability of commercial banks listed on the Indonesia Stock Exchange. The dependent variable used in this study is return on assets, while the independent variables used in this study are capital adequacy ratio, non-performing loan, net interest margin, and operational

efficiency. B. Formulation of the problem, namely: a. Does the capital adequacy ratio affect bank profitability? b. Does non-performing loan affect bank profitability? c. Does net interest margin affect bank profitability? d. Does operational efficiency affect bank profitability? C. Specific Objectives. The goal of this research is to gather data on the impact of capital adequacy ratios, non-performing loans, net interest margins, and operational efficiency on bank profitability.

2. THEORETICAL REVIEW

Signaling Theory (Signaling Theory) According to [4] signaling theory is a sign of the actions taken by the company to provide a clue to investors so that investors can find out the management's view of the company's prospects in the future by managing the company's financial performance. the good one. The above statement is supported by an explanation of the signaling theory according to Spence (1973) which states that the signal is an attempt by the information provider to provide an accurate picture of the existing problems to outsiders, so that outsiders are willing to invest even in the presence of uncertainty. Investors will invest in companies that have good profitability, this is supported by the statement of Spence (1973) in [16], companies that have a high level of profitability will send information to external parties, this information can have an impact on prices. company shares [1] in [16].

2.1. The Relationship between Variables

1. The Capital Adequacy Ratio's Impact on Bank Profitability The signaling hypothesis is used to explain how the capital adequacy ratio (CAR) affects bank profitability. Investors will have a high degree of trust in a bank based on the information they get, which includes financial statements. CAR has a considerable positive influence on bank profitability (ROA), according to [23] research, but CAR has no effect on bank profitability (ROA) according to Dewi's (2014) research (ROE). CAR has a considerable influence on ROA but has no effect on banking ROE, according to study by [15].

2. Non-performing loans have a negative impact on a bank's profitability. Non-performing loans (NPLs) will have an impact on bank profitability, according to signaling theory. The credit risk held by the bank is reflected in the NPL value; the lower the NPL value, the lower the credit risk borne by the bank. According to [17], nonperforming loans have a detrimental impact on bank profitability (ROA).

3. Net Interest Margin's Impact on Bank Profitability Net interest margin (NIM) will affect bank profitability, according to signaling theory. A high NIM value sends a positive signal to investors and outsiders, potentially boosting investor confidence and bank reputation. According to [17], NIM has a good influence on

boosting bank profitability (ROA), which is backed up by [18] research, which reveals that NIM has a beneficial effect on bank profitability (ROA and ROE).

Operational Efficiency's Impact on Bank Profitability Operational efficiency has an impact on banking profitability, according to signaling theory, and operational efficiency is one of the data points included in financial reports. BOPO has a considerable negative influence on bank profitability (ROA), according to [23]. This is in accordance with study done by [18], who determined that BOPO has a negative effect on bank profitability (ROA and ROE).

2.2. Thinking Framework and Hypotheses

1. Bank Profitability and the Capital Adequacy Ratio The capital adequacy ratio (CAR) is a capital adequacy ratio that may be used to account for the risk of future losses that banks may experience. The greater the bank's capacity to handle the risk of any hazardous credit/productive assets, the higher the capital adequacy ratio. If the capital adequacy ratio is high, the bank will be able to finance operational activities and contribute significantly to profitability. Increasing the capital adequacy ratio can enhance customer security, which can lead to a rise in consumer trust in the bank, which can lead to a boost in bank profitability. The hypothesis for this study is as follows, based on the aforementioned description: H1: The capital adequacy ratio affects return on assets in a major favorable way (ROA).

2. Non-Performing Loans' Impact on Bank Profitability Non-performing loans (NPLs) are one of the primary indicators used to evaluate the performance of bank activities. A bank's role as an intermediate institution or liaison between those with extra cash and others who require funds is one of its many tasks. The ratio of non-performing loans (NPL) is set at 5% by Bank Indonesia (BI) through a Bank Indonesia Regulation (PBI). The hypothesis for this study is as follows, based on the aforementioned description: H2: Nonperforming loans have a large negative impact on asset return (ROA).

3. Net Interest Margin's Impact on Bank Profitability 19 The net interest margin (NIM) is a measure that is used to assess a bank's capacity to manage productive assets in order to create profits. Interest revenue is subtracted from interest cost to arrive at net interest income. The larger the net interest margin, the more effective the bank is in converting earning assets into credit and indicating that interest revenue on earning assets is appropriately handled by the bank, indicating that the bank is in excellent shape. Based on the description above, the hypothesis formulated in this study is as follows: H3: Net interest margin has a significant positive effect on return on assets (ROA).

4. Operational Efficiency's Impact on Bank Profitability The ratio of operating expenditures to operating

income is known as operational efficiency (BOPO). The greater the value of the BOPO, the less efficient the bank's activities are. BOPO can assess the bank's capacity to control its operating costs. The bank's management and efficiency suffer as the operational burden grows. The hypothesis for this study is as follows, based on the description: H4: Operating efficiency has a strong negative impact on asset return (ROA).

3. RESEARCH METHODS

3.1. Types of Research

Explanatory research using a quantitative approach will be done, with the goal of analyzing and explaining why or how the phenomena being examined happens. The Indonesia Stock Exchange (IDX) and the Indonesia Capital Market Directory provided secondary data for this study (ICMD). In this work, SmartPLS was employed to conduct hypothesis testing (Partial Least Square).

3.2. Population, Sample and Sampling Technique

The study's participants utilize banking organizations that are listed on the Indonesia Stock Exchange (IDX) or may be found at http://idx.co.id. Purposive sampling is the sampling approach used in this study.

3.3. Data Collection Technique

In this study, the researcher uses the Documentation technique, namely by collecting, recording, and reviewing secondary data in the form of financial statements of banking companies listed on the Indonesia Stock Exchange (IDX) in 2017-2019.

3.4. Operational Definition and Measurement of Variables

The operational definition of this study consists of the dependent variable and the independent variable, the dependent variable is Return On Assets (ROA) while for this independent variable is Financial Performance as measured by the capital adequacy ratio, non-performing loan, net interest margin, liquidity, operational efficiency

1. Dependent Variable
    a. *Return on Asset (ROA)*
    $$Return\ on\ Asset = \frac{Net\ income\ after\ tax}{Total\ Assets}\ x\ 100$$

2. Independent Variable
    a. *Capital Adequacy Ratio (CAR)*
    $$Capital\ Adequacy\ Ratio = \frac{Regulatory\ capital}{Risk-weighted\ assets}$$

b. *Non-Performing Loan (NPL)*
$$Non\text{-}Performing\ Loan = \frac{Total\ non-performing\ loan}{Total\ credit\ disbursed}$$
c. *Net Interest Margin (NIM)*
$$Net\ Interest\ Margin = \frac{Net\ interest\ income}{Average\ earnings\ of\ asset}$$
d. *Operational Efficiency*
$$Operational\ Efficiency = \frac{Operational\ Expense}{Operational\ Income}\ x\ 100$$

3.5. Data Analysis Method

This data analysis method uses statistical tools with the help of SmartPLS (Partial Leas Square).
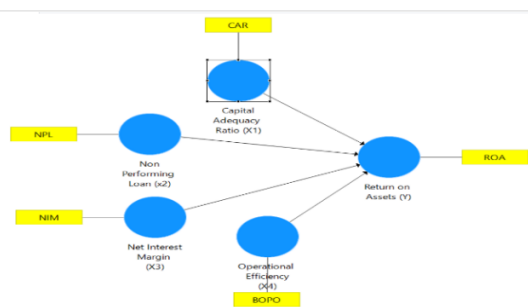

Figure 1 Pre-Designed Path Chart

3.6. Partial Least Square (PLS)

PLS can be used for structural modeling with reflective and formative construct indicators. The reflective construct requires testing the validity and reliability of the construct, while the formative construct is measured only by looking at the significance value of the weight. In this study, the main method developed by Wold (1982) in the book [11] is using the PLS algorithm or a series of regressions. This Regression series contains 2 main tests, namely:
1. Outer Model (indicator test)
    - Construct & reliability validity
    - Discriminant validity
    - Etc.
2. Inner Model (hypothesis testing between variables)
    - Path coefficient/direct effect
    - Indirect effect
    - Etc.

3.7. Measurement Model Evaluation (Outer Model)

Measurement of Outer Model by looking at convergent validity in SEM-PLS is the degree to which the results of measuring a concept show a positive correlation with the results of measuring other concepts which theoretically must be positively correlated, [3]. Outer measurement This model has two inherent criteria and is used as a condition of

convergent validity for reflective constructs, namely (1) loading must be > 0.70 or above 0.70 and (2) a significant p value is p < 0.05 or below 0, 05, with these conditions the measurement of the construct studied is considered to have met the requirements of convergent validity.

3.8. Measurement Model Evaluation (Inner Model)

Evaluation of the measurement model (inner model) is used to analyze the relationship between constructs (between latent variables) namely exogenous (free) and endogenous (bound) variables and the relationship between them. Inner Model measurements include model fit, path coefficient, R2 (R-Square), F2 (F-Square), Direct Effects, Indirect Effects and Total Effects. Before determining the relevance of the path coefficient and R2, the model fit test must be completed. This model fit test is used to see if a model is a good fit for the data. There are three measurement indices in this model fit test: average path coefficient (APC), average R-Squared (ARS), and average variance factor (AVIF), with APC and ARS criterion approved if the p-value is less than 0.05 and AVIF is less than 5.

3.9. Hypothesis Testing

Hypothesis testing is a technique for determining the direction of a link between exogenous (independent) and endogenous (dependent) variables (dependent variable). This test is carried out by looking at the route analysis of the created model. The SmartPLS 3.0 tool can test many complicated structural models at the same time, allowing you to evaluate the route analysis findings in a single regression study. Path coefficients and the degree of significance are used to determine the correlation between constructs, which is then compared to the study hypothesis. The degree of significance can be used to determine whether or not a hypothesis is accepted statistically. Typically, 10 percent, 5%, and 1% are used to assess the degree of importance. In this investigation, the criterion of significance was set at 10%.

4. RESULT AND DISCUSSION

4.1. Description of Research Subject

In this study, the subject used by the researcher is a banking company that has been listed on the Indonesia Stock Exchange in 2017-2019. The data used in this study were obtained through the official website of the Indonesia Stock Exchange (www.idx.co.id) and through websites owned by related companies. The sampling technique used in this study is a purposive sampling technique, the sampling process is carried out on banking companies listed on the Indonesia Stock Exchange in 2017-2019 and there are 84 data that meet the criteria and which can be used for further data processing in research. with details of each 28 data from 2017 to 2019.

4.2. Description of Research Object

The research objects used in this study consist of one dependent variable, namely return on assets and four independent variables, namely capital adequacy ratio, non-performing loan, net interest margin, liquidity, operational efficiency. Information regarding the above variables is obtained from the company's financial statements obtained from the official website of the Indonesia Stock Exchange (www.idx.co.id), and the official website of the company concerned. Collection process. Data processing in this study was carried out with the SmartPLS 3.0 program.

Table 1 Descriptive Statistic

	Mean	Median	Min	Max	Standard Deviation	Excess Kurtosis	Skewness
ROA	0.239	0.084	0.003	4	0.739	18.84	4.456
CAR	2.596	0.916	0.453	32.84	6.638	13.545	3.865
NPL	88.805	0.124	0.003	7,446.00	807.557	84	9.165
NIM	0.272	0.217	0.089	4	0.415	79.463	8.801
BOPO	22.707	3.631	2.418	98.98	34.777	-0.186	1.313

Source: The Results of Data Processing by SmartPLS 3.0

4.3. Analysis of the Measurement Model (Outer Model)

The first stage in applying the current SmartPLS 3.0 is to analyze two criteria in the use of data analysis methodologies, namely evaluating the outer model through Construct Realibility and Validity and Discriminant Validity.

4.4. Discriminant Validity

Discriminant Validity ensures that each notion of a latent variable/construct is distinct from that of other latent variables. The Heretroit-Monotrait Ratio (HTMT) value is the most current measurement. A concept has strong discriminant validity if the HTMT score is less than 0.90. [5]. The following picture shows the results of the discriminant variability test:

Table 2 Discriminant Validity Analysis Results

	Heterotrait-Monotrait Ratio (HTMT)				
	Capital Adequacy Ratio	Net Interest Margin	Non Performing Loan	Operational Efficiency (X4)	Return on Assets (Y)
Capital Adequacy _Ratio (X1)					
Net Interest Margin _(X3)	0.041				
Non Performing _Loan (x2)	0.019	0.002			
Operational _Efficiency (X4)_	0.112	0.089	0.063		
Return on _Assets (Y)_	0.062	0.016	0.013	0.133	

Source: The Results of Data Processing by SmartPLS 3.0

From all the values above, it produces a value less than 0.90 and it can be said that all constructs have good discriminant validity.

4.5. Structural Model Analysis (Inner Model)

The next step is to do a structural model analysis. This analysis aims to see how the relationship between variables. Changes in the value of R-Square can be used to see how the influence of the relationship between variables.

4.6. R Square (R^2)

The R Square (R^2) value is a measure of how much variation in the value of the affected variable (endogenous) can be explained by the variable influencing it (exogenous). This is helpful in determining if the model is excellent or terrible. The R Square value includes numerous requirements; for example, 0.75 is considered considerable (strong), 0.50 is considered moderate (moderate), and 0.25 is considered weak [9]. The R-Square analysis yielded the following findings.

Table 3 R Square Analysis Results

R Square

	R Square	R Square Adjusted
Return on _Assets (Y)_	0.020	-0.029

Source: The Results of Data Processing by SmartPLS 3.0

The R Square value is 0.20, and the R Square Adjusted value is 0.29, according to the study in Figure 4.4. With a R Square Adjusted value of 0.29, the variables X1, X2, X3, and X4 have a 29 percent potential to explain Y. This number indicates that the model is somewhat poor.

4.7. Hypothesis Test

In testing this hypothesis, the researcher takes the direct effect analysis method where this analysis is useful for testing the hypothesis of the direct effect of a variable that affects (exogenous) on the variable that is influenced (endogenous). This direct effect analysis has several criteria, among others, first if the path coefficient value is positive then the influence between variables goes in the same direction, second if the path coefficient value is negative then the influence between variables goes in the opposite direction, third if the path coefficient value is negative, the influence between variables goes in the opposite direction. P Values < 0.05 then the influence between variables is significant, and fourth if the P Values > 0.05 then the influence between variables is not significant. Below is the result of direct effect analysis.

Table 4 Direct Effect Analysis Results

Path Coefficients

Mean, STDEV, T-Values, P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Capital Adequacy _Ratio (X1) -> Return on _Asset	-0.048	-0.043	0.040	1.210	**0.227**
Net Interest Margin _(X3) -> Return on _Assets (Y	0.003	0.093	0.174	0.017	**0.986**
Non Performing _Loan (x2) -> Return on _Assets	-0.022	0.064	0.268	0.082	**0.935**
Operational _Efficiency (X4)_ -> Return on _Asset	-0.128	-0.101	0.049	2.635	**0.009**

Source: The Results of Data Processing by SmartPLS 3.0

4.8. The Effect of Capital Adequacy Ratio on Bank Profitability

The first hypothesis in this study is testing the effect of the variable capital adequacy ratio (CAR) on return on assets (ROA). The capital adequacy ratio (CAR) measures a bank's capacity to provide cash to mitigate the risk of loss. Capital adequacy ratio (CAR) is one of the most important ratios because with the ability to become a CAR condition at the ideal safe limit (at least 8%), a bank also plays a role in protecting customer funds and maintaining overall financial system stability. CAR in banking can show the ability of banks to be better in dealing with the risk of loss. Based on the summary of table 4.5 regarding the results of hypothesis testing of the CAR variable on ROA above, it shows P Values of 0.227 with an original Sample (O) value of -0.048. Because P Values > 0.05, this indicates that the capital adequacy ratio (CAR) variable has no influence on the return on asset (ROA) variable. The test results are also consistent with [17] findings that the capital adequacy ratio (CAR) has no positive and significant effect on return on assets (ROA), but they differ from [10] findings that the capital adequacy ratio (CAR) has a positive and significant effect on return on assets (ROA) (ROA). Based on the findings of this study, it can be stated that a bank's capital adequacy ratio (CAR) is not necessarily a reference or benchmark for bank management's performance in creating substantial profits. Even though the bank has a high capital adequacy ratio (CAR), if the bank cannot use and optimize its capital effectively and efficiently to generate profits, the capital adequacy ratio (CAR) will not have a significant effect on bank profitability.

4.9. The Effect of Non-Performing Loans on Bank Profitability

The study's second hypothesis is to see how the non-performing loan (NPL) variable affects return on assets (ROA) and return on equity (ROE) (ROE). Non-performing loan (NPL) refers to the amount of non-performing loans that a bank has and is one of the indicators used to evaluate a bank's performance. Non-performing loan (NPL) describes the existence of a problem in a bank, so the greater the NPL owned by a bank, the worse the bank's

performance will be. The findings of hypothesis testing for the NPL variable on ROA are summarized in table 4.5, with P values of 0.935 and Original Sample (O) of -0.022. Because P Values > 0.05, this indicates that the non-performing loan (NPL) variable has no significant influence on the return on asset (ROA) variable. These findings are similar to those of [19] and [21], who showed that non-performing loans (NPLs) did not have a substantial negative impact on return on assets (ROA), although the outcomes were different. [20] discovered that non-performing loans (NPLs) had a substantial negative impact on return on assets in their study (ROA). Based on the results of this study, it can be concluded that a large non-performing loan (NPL) level in a banking period does not directly have an impact on the decline in banking profits in that period. This is because the effect of non-performing loans (NPL) on bank profitability is closely related to the level of congestion of the financing provided by a bank to customers. Because financing is the primary source of income for banks, a high number of non-performing loans (NPLs) can cause a bank's working capital turnover to be disrupted. When a bank has a large quantity of non-performing loan funding, it will always strive to analyze its performance first before giving credit to customers, so that the value or level of the bank's non-performing loan (NPL) reduces.

4.10. The Effect of Net Interest Margin on Bank Profitability

The effect of the variable net interest margin (NIM) on return on assets (ROA) and return on equity (ROE) is the third hypothesis in this study (ROE). The difference between the interest revenue produced by a bank and the interest paid to the lender is known as the net interest margin (NIM). Net interest margin (NIM) is a term used to describe a bank's capacity to manage its productive assets (assets employed in business activities) in order to achieve the highest potential net interest income. The difference between interest revenue and interest cost can be used to calculate net interest income. The higher the Net Interest Margin (NIM) of a bank, the higher the net interest income received from the bank's productive assets, and the lower the risk of a bank being insolvent. The P Values of 0.986 with the Original Sample (O) of 0.003 are shown in the summary of table 4.5 regarding the results of hypothesis testing on the NIM variable on ROA above. Because P Values > 0.05, this indicates that the net interest margin (NIM) variable has no influence on the return on asset (ROA) variable. These findings are consistent with [18] research, which indicated that the net interest margin (NIM) had no substantial beneficial impact on return on assets (ROA). However, these findings contradict [19] and [21], who showed that net interest margin (NIM) has a positive and substantial influence on return on assets (ROA). From the research it can be concluded that the greater or higher the net interest income (NIM) owned by banks, it does not necessarily provide a high level of profitability because banks are not necessarily able to effectively channel their loans and generate interest income from loans.

4.11. The Effect of Operational Efficiency on Bank Profitability

The study's fourth hypothesis is to see how operational efficiency (BOPO) factors affect return on assets (ROA) and return on equity (ROE). BOPO is a metric that measures a bank's efficiency in carrying out its day-to-day operations. The lower a bank's degree of operational efficiency, the more efficient it is in its day-to-day operations. Because the P Values are less than 0.05, this indicates that the operational efficiency (BOPO) variable has a substantial impact on the return on assets (ROA) variable. These findings are consistent with [19] and [21] research, which found that operational efficiency (BOPO) has a negative and significant effect on return on assets (ROA), but they differ from [2] research, which found that operational efficiency (BOPO) had no negative and significant effect on return on assets (ROA). According to the findings of this study, the higher the ratio of operating costs to operational income (BOPO), the worse the bank's profitability. Banks with a high ratio of operating costs to operating income (BOPO) demonstrate that their banking activities are not yet efficient and successful in generating revenue. If a bank's operating costs to operating income (BOPO) ratio is large or high, it indicates that the bank's efficiency is low, and the bank's profit will suffer as a result. This was owing to the bank's earnings being utilized to cover losses incurred as a result of the bank's high operating costs. If banks can carry out their operational activities more efficiently and effectively, namely by reducing the ratio of operating costs to operating income (BOPO), the overall banking profit will increase. The more efficient and effective the performance of banking operations, the higher the profitability of the banking sector.

5. CONCLUSION, LIMITATIONS AND SUGGESTIONS

5.1. Conclusion

The following are the conclusions drawn from the study's findings based on the outcomes of data processing and testing: The capital adequacy ratio (CAR) is a measure of how well a company's non-performing loans, net interest margin, and operational efficiency all have a substantial impact on return on assets (ROA).

5.2. Limitations

Only four independent factors were employed in this study to explain the dependent variables: capital adequacy ratio, non-performing loan, net interest margin, and operational efficiency. The research data only examined for three years, namely from 2017-2019. The subject of this research can be expanded and is not only limited to one type of company.

5.3. Suggestions

Using more independent variables in order to provide clearer, more complete and better financial information for the future, a longer period of time so that the information and data obtained can provide maximum results and a wider range of research subjects outside from banking companies.

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