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CAMEL Method: Bank Health Levels for Financial Performance of Banking in Indonesia Stock Exchange Period 2006 to 2015

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Abstract
The Banking, one of the corporate sector in Indonesia, has an important role in promoting the economy system. The effect of it leds to banking companies to keep their financial performance especially for companies that listed on Bursa Efek Indonesia (Indonesian Stock Exchange) through optimalisation on it's firm value. At the end, it will affect to the soundness of banking company. In this study, CAMEL Method (Capital, Asset, Management, Earning, and Liquidity) is used to measure the value of bank. It consists of Capital Adequacy Ratio (CAR), Non Performing Loan (NPL), Operating Expenses Operating Income (BOPO), Return on Assets (ROA), and Loan to Deposit Ratio (LDR). While, the ratio Price to Book value (PBV) is employed to analyze the financial performance of the company's value. In this study, the methodology used in this study is the analysis of data panel using the Fixed Effect. The results of the CAMEL methods research stated that there is influence of the bank to the Company's performance as measured through the Price to Book Value (PBV). Results of regression estimation of panel data also showed that the Operating Expenses Operating Income (BOPO) and Return on Assets (ROA) affects positive and significant to Price to Book Value (PBV), while the Loan to Deposit Ratio (LDR) has a significant and negative effect on the Price to Book Value (PBV).
Keywords : Price to Book Value, CAMEL, CAR, NPL, BOPO, ROA, LDR

I. INTRODUCTION

Capital Market activity determines the economy in Indonesia. The role or function of the capital market consists of two functions. The first function, the capital market activity on business funding is to offer some funds to some companies where funds are obtained from public funds. The second function, as a means of investment for the community. (Martalena dan Malinda, 2011:3).

Investors need accurate and valid information in making investment decisions. One of the investment parameters is the annual corporate financial statements. Companies listed on the Indonesia Stock Exchange (Bursa Effek Indonesia/BEI) each year must report financial performance to the public. The financial statements are an important source of information for internal company and external party (public).

Banking as a pool of funds from economic units that are over-funded (surplus funds) and then make channeling to economic units that have a financial deficit. Banking offerings in the form of credit. This channeling function indicates that banks have a major role in the economic system of a country.

Chanelling system conducted by banking requires an element of trust from the community. In order for Banking to have a level of public confidence, the banking should focus on the level of financial health.

Djabid (2009) explains that the purpose of the company is to increase the corporate value (banking) that is related to increasing the wealth of owners or shareholders.

Cheng and Christiawan (2011) explain about financial performance. Thought Cheng and Christiawan (2011) about financial performance is a report of financial decisions reported by the management for the purpose of effectiveness and efficiency of the financial field. The parameters of the corporate to explain the financial performance appear on the corporate's ability to earn a profit. The better the corporate has the ability to earn a profit, then the corporate gets a positive prospect in the future.

Banking as a mediation institution between the excess funds and the party lack of funds or require funds. In order for banks to control all activities well then it takes some measure of control. Most banks are more focused on controlling bank health. According to Sinaga (2011), referring to the source of Bank Indonesia Regulation Number 6/10 / PBI / 2004 and Circular Letter Number 6/23 / DPNP / 2004 regarding the health rating of commercial banks, explained that there are several measures that can explain the health of a Bank, namely Capital , Asset quality, Management, Earning and Liquidity called CAMEL.

In the period of 2006 to 2015, based on information on the banking listed on the Exchange Effek Indonesia experienced a significant growth rate, but on the other hand the interest rate of bank credit has decreased. The phenomenon of increase and decrease in these two different conditions it is necessary to conduct in-depth

research to determine the level of banking health by using CAMEL method.

II. LITERATURE REVIEW

1.1 Signal Theory

Brigham and Houston (2010: 198) describe the theory of signals. Signal is an increase in dividend above normal, which investors consider companies to earn a good income in the future (Brigham and Houston 2010: 198). On the other hand, a decline in under-normal dividend causes investors to expect future losses. Signal theory has not been able to explain exactly for the condition of the corporate in the future. The nature of signal theory still requires other analysis such as non-fundamental analysis.

1.2 Corporate value

Corporate value is able to explain to investors about positive or negative perceptions. In general, high stock prices show good corporate value. The stock price determines the level of investment. Expenditures for investment contribute to a positive indication for future corporate growth, so that the increase in stock price becomes an indicator for the value of the company. The high stock price creates a rise in firm value (Brealey et al, 2007).

1.3 Price to Book Value (PBV)

Price to Book Value (PBV) becomes the variable that investors consider to determine which shares to buy (Brigham and Houston, 2006: 112). For good performing banks, PBV ratios are indicated. If the PBV ratio yields a number above the number one, means the market value of the stock is greater than the book value of the company

PBV Formula:

$$\frac{\text{Market Price per share}}{\text{Book value per share}} \text{ X } 100\%$$

1.4 CAMEL for Banking

Kasmir (2006) also explained that the assessment method to determine the soundness of banks can be done by CAMEL method. This method aims to know and explain about banks that can be categorized healthy, healthy enough, less healthy or unhealthy. Determining the health rating of banks in Indonesia has been determined by Bank Indonesia based on Circular Letter No.6 / 23 / DPNP dated May 31, 2004 consisting of:

1.4.1 Capital Assessment

CAR (Capital Adequacy Ratio) is a bank performance ratio that measures the level of capital adequacy to support assets that contain a risk, for example the risk in lending (Dendawijaya, 2009). The recommended size to meet the CAR is 8% (source: BIS, Bank for International Setlement). CAR is used to control capital in a bank.

CAR Formula:

= (Bank Capital: Risk-weighted assets) X 100%

1.4.2 Asset Assessment

NPL (Non Performing Loan) according to Mahmoeddin (2010) is a measurement for non-performing loans in a bank, which explains loans that have difficulty repayment as a result of intentional factors and / or external factors that can not be controlled by the debtor. Based on health rating criteria, the determination of NPL ratio determined by Bank Indonesia is maximum is 5%. If it exceeds the 5% provision, the bank shall be designated as a bank under intensive supervision by Bank Indonesia as the regulator of all banks in Indonesia. NPL are used to determine the quality of a bank's assets.

NPL Formula:

= (Total problem loans: Total loans given) X 100%

1.4.3 Management Assessment

Operational Cost of Operating Income, in Indonesia abbreviated BOPO explains the ratio of the ratio between the operational costs of a bank and the operating income of a bank. The size of BOPO is easier in explaining about the efficiency level of a bank's operational activities associated with bank performance. BOPO ratio criteria determined by Bank Indonesia as the banking regulator in Indonesia is the ratio of BOPO ≤ 93,25 (Bank Indonesia Circular Letter No.30 / 2 / UPPB). If the ratio value BOPO ≤ 93,25, then the bank in the healthy category. BOPO an abbreviation used by banks in Indonesia to determine the effectiveness of management at a bank.

BOPO Formula:

= (Operational cost: Operating income) X 100%

1.4.4 Earning Assessment.

Kasmir (2012) describes the ratio of Return On Assets (ROA) is a ratio that shows the level of return of the amount of assets owned by a bank that operationalized. In addition, ROA describes the level of the bank's

ability to profit and explain about the effectiveness of asset management of a bank in the purpose of earning profit. The value of ROA close to one hundred percent is a good percentage value.

ROA Formula:

= (Earning after tax: Total Asset) X 100%

1.4.5 Liquidity Assessment

The size of bank liquidity can be measured by LDR (Loan to Deposit Ratio). Pandia (2012) describes the LDR ratio can be calculated from the composition of the loan amount compared to the amount of public funds collected. The LDR ratio can explain the bank's activity in using depositors' money to lend to customers. The proportion of money spent on loans / credits is regulated by Bank Indonesia.

Bank Indonesia sets the lower limit of LDR by 78% and the upper limit of 92% or in the range of 78% to 92% (PBI Number 15/15 / PBI / 2013). If outside the specified LDR range, then the bank has great potential on credit problems.

LDR Formula:

= (Total credits granted: Total third party funds) X 100%

1.5 Financial Health Bank

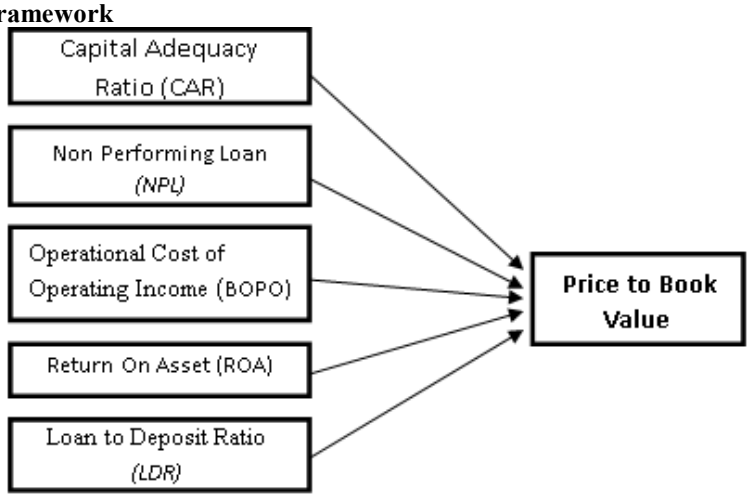
Bank soundness in Indonesia is regulated by Bank Indonesia. Bank Indonesia issued Circular Letter of Bank Indonesia Number: 6/23 / DPNP Dated May 31, 2004 which regulates the qualitative level of bank soundness and several aspects that affect bank performance. Assessment of bank soundness can be evaluated from aspect of rentability, liquidity, capital, asset quality and sensitivity to market risk. Alternatively, the assessment of bank soundness is done quantitatively and qualitatively after considering the judgment element based on conditions in the banking industry and national economic condition.

The health condition of a bank can be known by CAMEL analysis (Capital, Asset, Management, Earning, Liquidity). This is in accordance with Bank Indonesia Circular Letter No.6 / 23 / DPNP dated May 31, 2004.

III. RESEARCH CONCEPT FRAMEWORK

The financial performance of banks can be analyzed from the financial condition of banks in certain periods for fund raising activities and fund disbursements. This study examines bank soundness using CAMEL method which consists of Capital Adequacy Ratio (CAR), Non Performing Loan (NPL) ratio, Operational Income Operating Cost (BOPO), Return On Assets (ROA), and Loan to Deposit Ratio (LDR). CAMEL ratio to determine the status of the bank under study whether in the healthy category, healthy enough, less healthy or unhealthy. Thereafter, CAMEL analysis results are combined with Price to Book Value (PBV) for stakeholder or investor or regulatory decisions for investment decisions. Details for CAMEL and Price to Book Value relation as in Figure 1.

Figure 1. Conceptual framework



Based on Figure 1, the hypothesis formulation is Capital Adequacy Ratio (CAR), Non Performing Loan (NPL), Operational Income Operating Cost (BOPO), Return On Assets (ROA), Loan to Deposit Ratio (LDR) PBV) for banking in Indonesia Stock Exchange.

IV. RESEARCH METHODS

This study uses secondary data ie banking financial data. Determined ten banks that have the largest amount of assets in 2015 then conducted backward analysis until 2006. Considering the CAMEL and PBV methods then the method of determining the sample of this study is purposive. Secondary data were obtained from data base

authorities from 2006 to 2015 in the Indonesia Stock Exchange (IDX), Bank Indonesia (BI) and the Indonesian Capital Market Directory (ICMD).

The analysis of influence between variables using multiple linear regression techniques, namely the analysis of the effect of Capital Adequacy Ratio (CAR), Non Performing Loan (NPL), Operational Income Operating Cost (ROA), Return On Assets (ROA), and Loan to Deposit Ratio (LDR) to Price to Book Value Ratio (PBV). Data processing assisted by Eviews 8.0 program. There are two kinds of data panel that is balance and unbalance. The balance panel data describes the cross-sectional unit data that has the same amount of time series observations, while the unbalance panel data is not the same. There are three data panel regression approaches: pooling least square, fixex approach and random effect approach. First, Pooling least square is a model of merging between cross section and time series data. Pooling least square approach is the simplest model approach. Second, the Fixed effect approach is a panel model that has a mutually changing intercept for each unit of analysis and time. This panel model data for each cross section unit is fixed in time serie. The third is a random effect approach that is a panel regression model approach through inter-time approach and between individuals who are accommodated through error. The error in this approach is divided into individual component errors, time component errors, and combined error.

V. RESULTS AND DISCUSSION

Panel data regression in this research using three model that is Pooled Least Square, fixed effect, and random effect. Each selected model has its advantages and disadvantages. The result of fixed effect model as in Table 1.

Table 1. PBV regression results with fixed effect model

Dependent Variable: PBV
Method: Panel Least
Squares Date: 11/08/16
Time: 18:52 Sample: 2006
2015
Periods included: 10
Cross-sections included: 10
Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CAR	-0.022779	0.024813	-0.918026	0.3612
NPL	0.058143	0.076222	0.762817	0.4477
BOPO	0.023872	0.011287	2.115027	0.0374
ROA	0.583359	0.152804	3.817706	0.0003
LDR	-0.031324	0.008285	-3.780954	0.0003
C	1.683007	1.187890	1.416804	0.1602

Effects Specification

Cross-section fixed (dummy variables)

R-*squared*	0.725426	Mean dependent var	2.092400
Adjusted R-*squared*	0.680202	S.D. dependent var	1.102161
S.E. of regression	0.623279	Akaike info criterion	2.029836
Sum *squared* resid	33.02053	Schwarz criterion	2.420612
Log likelihood	-86.49182	Hannan-Quinn criter.	2.187990
F-statistic	16.04076	Durbin-Watson stat	1.516852
Prob(F-statistic)	0.000000		

The regression equation model of fixed effect panel data model that explains the effect of CAR, NPL, BOPO, ROA, and LDR on PBV is as follows:

Y = 1.683007 – 0.022779CAR + 0.058143NPL + 0.023872BOPO + 0.583359ROA - 0.031324LDR

The CAR and LDR coefficients show a negative relationship to PBV, whereas for NPL, BOPO, and ROA show a positive relationship to PBV. The value of this statistical coefficient indicates that the fixed effect model is able to explain the behavior of the ten banks studied. The value of R-squared (0.725426) means that CAR, NPL, BOPO, ROA, and LDR variables are able to explain the variation of PBV of 72.54% and the rest of 27.46% is explained by other un-researched variables. Value of 72.54%> of the cut of value (50%), this comparison indicates that CAR, NPL, BOPO, ROA, and LDR have a good accuracy level to predict and explain the PBV conditions of the ten banks studied.

Table 2. Chi-square value

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

TestSummary	Chi-Sq. Statistic	Chi-Sq.d.f.	Prob.
Cross-sectionrandom	2.831515	5	0.7259

The Chow statistic value of 8,5103 is greater than the Ftable value of 5.9874. In Table 2 it is shown that Chi-square value is bigger than Chi-Square table that is 62.24> 12.59. This comparison shows the alternative hypothesis accepted and the null hypothesis is rejected. This comparison analysis shows different approaches of fixed effect and random effect model. The results show that the alternative hypothesis is accepted that there is a

difference from the two observed data conditions. Comparison of fixed effect and random effect model in Table 3.

Table 3. Comparison of fixed effects and random effects model

Model	*Fixed Effect*	*Random effects*
R-*Squared*	0.725426	0.243931
Adjust R-*Squared*	0.680202	0.203715
Prob (F-statistic)	0.000000	0.000065

Testing of panel data estimation according to Hausman test suggested using Fixed Effect model. The model used in this research is Fixed Effect Model which explains the difference of individual characteristic and time. The difference is apparent at the value of the intercept and the resulting constants, in which the value of the intercept and constants has a difference. The equation model results as follows.

Table 4. Test results F

F-statistic	16.04076	Durbin-Watson stat	1.516852
Prob(F-statistic)	0.000000		

Based on Table 4, the comparison of the Fstatistic value (16.040) with the P value (0.0000) and the resulting P value (0.000) is smaller than 0.05. This comparison shows that CAR, NPL, BOPO, ROA, and LDR have a significant simultaneous effect on PBV. So the formulated research hypothesis is tested. This study found that any changes that occur in CAR, NPL, BOPO, ROA, and LDR simultaneously affect the PBV or share value of each banking.

Table 5. Determination coefficient test (R^2)

R-*squared*	0.725426	Mean dependent var	2.092400
Adjusted R-*squared*	0.680202	S.D. dependent var	1.102161
S.E. of regression	0.623279	Sum *squared* resid	33.02053

Table 5 shows the value of R-squared (0.725) which can be interpreted that CAR, NPL, BOPO, ROA and LDR variables are able to explain Price to Book Value (PBV) of 72.54%. The remaining 27.46% is explained by other independent variables that are not tested on modeling. The R-squared value (0.725) explains that CAR, NPL, BOPO, ROA and LDR have a strong contribution to influence PBV. The equation model produced by the study has a good level of accuracy. Partial test is then done, partial test result is presented in Table 6.

Table 6. Test results t

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CAR	-0.022779	0.024813	-0.918026	0.3612
NPL	0.058143	0.076222	0.762817	0.4477
BOPO	0.023872	0.011287	2.115027	0.0374
ROA	0.583359	0.152804	3.817706	0.0003
LDR	-0.031324	0.008285	-3.780954	0.0003
C	1.683007	1.187890	1.416804	0.1602

Table 6 shows the results of t test testing the individual effects between CAR, NPL, BOPO, LDR and PBV. Description of explanation one by one explained as follows:

a. Capital Adequacy Ratio (CAR)

Capital Adequacy Ratio (CAR) has no effect on Price to Book Value (PBV) shown by P value (0,3612)> (0,05). CAR that is too high causes the Risk Weighted Assets (RWA) to decrease. If there is a credit increase, it will increase the total of RWA, this condition causes a decrease in the CAR value. The ideal CAR level creates public confidence in the owners of bank funds. The more banks acquire the funds from the community, creating an adequate amount of bank funds to carry out operational activities such as lending, and other operational activities that impact on bank income. CAR has no effect on PBV due to low market value, ie inefficient bank activity for promotional activities offering products to prospective customers. This inefficiency affects the decrease in PBV.

b. Non Performing Loan (NPL)

Non Performing Loan (NPL) has no effect on Price to Book Value (PBV) shown by P value (0,447) > 0,05. This comparison explains that any increase in NPL ratio has no positive or negative impact on firm value. Investors have an assumption that the higher the NPL will lower the PBV, but the fact shows that the ten banks studied in the period 2006 to 2015 experienced different things that NPL increase PBV. The results of this study are not different from the research conducted by Srihayat (2015) who found also that the NPL has no significant effect on PBV. Ten banks studied for the period of 206 to 2015, most banks have problems in

lending. In that period can be expressed as a period of bad credit. In this situation, the Indonesian government through Bank Indonesia institution has given the policy of continuous loan interest rate until 2018. However, banks in this period of study did not yet have a good non-income operational strategy in lending.

c. Operational Cost of Operating Income (BOPO)

Operational Cost of Operating Income (BOPO) has a significant positive effect on Price to Book Value (PBV) shown by P value (0.037) <0.05, this means Operational Income of Operating Cost (BOPO) has a positive effect on increasing Price to Book Value (PBV). Positive value of BOPO ratio explains the bank under study has a good level of efficiency in carrying out operational activities. These findings are contrary to the theory. BOPO can increase influenced by existing bank fees, resulting in demand and supply prices in the market. Investors pay less attention to the fundamental aspect by considering that the reputation of the company is still considered good by the issue emitten. It appears from the profit side obtained by the bank, or brand company. An efficient company that is a company that can increase market price by considering the efficiency in operational cost to keep PBV.

d. *Return On Asset* (ROA)

The t test shows that ROA has P value (0.00) <0.05 then it can be explained that Return On Assets (ROA) have a significant positive effect on Price to Book Value (PBV). The positive ROA indicates that the higher the bank asset return (ROA), the higher the profit or gain obtained by the bank. High profits resulted in an increase in the Bank's share price. In research conducted by Carningsih (2012) showed different things bring ROA impact on impairment of company value. The research findings Carningsih (2012) studied in different situations with this research.

e. Loan to Deposit Ratio (LDR)

Loan to Deposit Ratio (LDR) has a significant negative effect on Price to Book Value (PBV) indicated by the level of P (0,000) <0,05, meaning that Loan to Deposit Ratio (LDR) negatively affects Price to Book Value (PBV). These findings indicate that the higher the LDR ratio, the ten studied banks show less illiquid, this is because the available third party funds are used to finance large amounts of credit. Large loans with low levels of control lead to risks such as problem loans. Income from interest on bank loans will decrease and affect the liquidity of banks. In this period the ten banks studied behaved that income from bank interest was used to repay short-term debt. Banks not only analyze from the credit side, there are several factors that can support bank income such as fee based income based on customer transactions.

High LDR ratios are followed by a high distribution of credit amounts even though the disbursed credit will add bank profits. But the likelihood of bad debts is high, this risks the profit earned. If there is a problem loan then the stock price of the bank and the value of the company will decrease. The LDR is also influenced by the expansion of the monetary authority that can trigger an increasingly large debt. The results of this study were supported by Srihayati (2015) who found that LDR had a negative and significant effect on firm value in different periods with this research.

VI. CONCLUSION

Ten banks studied in the period 2006 to 2015 obtained some research findings include (1) CAR does not affect the PBV with the factor is the level of public trust to the bank is still considered less. In the study period, most people's behavior placed funds in other sectors. The cause of this is the policy of declining interest rates in Indonesia which continues to decline until the year 2018. This situation is not profitable in the banking sector. (2) NPL have no impact on PBV. This is because most banks have problems in lending. People who use Bank credit mostly have problems in the business sector. The macroeconomic situation is causing nonperforming loans. Entrepreneurs are interested in offering banks with low interest rates, but do not consider the economic conditions in aggregate. (3) BOPO has a positive impact on PBV. Operating costs for obtaining an effective bank income have been done by ten banks under study to maintain the PBV. (4) ROA has an impact on increasing PBV. The higher rate of return on bank assets has an impact on bank profits and bank value. (5) LDR has a negative impact on PBV, in the period of the study showed that the ten banks under study experienced a situation of low liquidity, thus impacting the decrease of PBV.

REFERENCES

Bank Indonesia. (2013). Peraturan Bank Indonesia No.15/15/PBI/2013 Ttentang Giro Wajib Minimum Bank Umum Dalam Rupiah dan Valuta Asing Bagi Bank Umum Konvensional. Diambil pada tanggal 31 Oktober 2015, http://www.bi.go.id/id/peraturan/moneter/Pages/PBI_151513.aspx

Brigham and Houston. (2010). Dasar-dasar Manajemen Keuangan Buku 1 (Edisi 11). Jakarta: Salemba Empat.

Carningsih. (2012). Pengaruh *Good Corporate Governance* Terhadap Hubungan Antara Kinerja Keuangan Dengan Nilai Perusahaan (Studi Kasus Pada Perusahaan Property Dan Real Estate Yang Terdaftar Di Bursa Efek Indonesia). Universitas Gunadarma.

Cheng, M., and Christiawan, Y. J. (2011). Pengaruh pengungkapan corporate social responsibility terhadap

abnormal return. *Jurnal Akuntansi dan Keuangan*,131, pp. 24-36.

Dendawijaya, Lukman,. (2009). *Manajemen Perbankan*. Edisi Kedua. Jakarta : Ghalia Indonesia

Djabid. 2009. Kebijakan dan Struktur Kepemilikan Terhadap Kebijakan Utang :Sebuah Perspektif *Agency Cost*. Jurnal Keuangan dan Perbankan. 13 (12), pp. 249 –259.

Kasmir.(2010). *Analisis Laporan Keuangan*. Edisi Ketiga. Jakarta: Rajawali Pers

. (2012). *Analisis Laporan Keuangan*. Edisi Keenam. Jakarta: PT. Raja GrafindoPersada

Mahmoeddin, As. (2010). Melacak Kredit Bermasalah. Cetakan Pertama. Jakarta : Pustaka Sinar Harapan

Martalena, and Malinda.(2011). Pengantar Pasar Modal. Edisi Pertama. Yogyakarta : Andi. Mayogi,

Sinaga, Dianto.K.P. (2011). "Pengaruh Tingkat Kesehatan Bank Berdasarkan Metode CAMEL terhadap Return Saham Pada Industri Perbankan di *Indonesia Stock Exchange* (IDX)", Thesis, Program Magister Akuntansi, Universitas Bina Nusantara.Jakarta Barat.

Srihayati.(2015). Pengaruh Kinerja Keuangan Perbankan Terhadap Nilai Perusahaan Dengan Metode Tobin's Q Pada Perusahaan Perbankan Yang Listing Di Kompas 100.*Prosiding Penelitian Sivitas Akademika (Sosial dan Humaniora)*. Universitas Islam Bandung.