Determinants of Firm Value in the Banking Sector: Random Effects Model

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Maximum company value is the banking goal desired by shareholders. This study aims to identify the determinants of profitability and its implications for the value of banking companies in Indonesia. The study population was 42 banks listed on the Indonesia Stock Exchange during the period 2010-2015, while 27 banks were taken as research samples. The sampling technique was done by purposive sampling, and analysed by the random effects regression panel model. Empirical findings prove that NPL ratio factors affect firm value, while other factors namely; Company growth (FG), CAR, Loans (LDR), BOPO, DPK Growth (DG) and profitability partially do not affect the value of the company (Tobin's Q), but affect the value of the company (Tobin's Q) together.

Key words: *Banking, firm value, profitability, random effect model.*

Introduction

The development of the banking sector is very fast, and a high level of complexity can affect banking performance. The high complexity of the banking sector can increase the risks faced by banks operating in Indonesia. The problem of the banking sector in Indonesia itself is caused by among others by; monetary policy and poor quality of banking itself. This condition can be reflected in the weak internal conditions in the banking sector. Such as a decrease in interest rates, poor moral human resources, weak bank management, depreciation of the rupiah and the lack of strict supervision conducted by Bank Indonesia (BI). This condition has a negative impact on the Indonesian banking sector, including an increase in NPLs and a decrease in capital. Credit realisation fell sharply due to various shortcomings both in terms of needs and distribution, credit facilities that were approved but not used increased, the LDR ratio has decreased mainly related

to the risk of appreciation or depreciation of foreign currencies, especially for foreign banks and private foreign exchange banks. But banks are able to maintain good credit conditions where the NPL ratio can be maintained around 4%. With a good credit condition, the bank can fulfil its capital adequately. The CAR ratio of national banks is also quite high, giving banks the ability to increase credit. The relatively strong financial performance of the banking sector provides a large capacity for credit expansion and growth. Consumption and investment loans increased more than five times while working capital loans more than quadrupled. Indonesian banks can accommodate this credit growth because of the low burden of credit write-offs and high levels of capital (Sari & Endri, 2019).

The value of the company is very important to be considered by banking management because it can affect investors' perceptions of the company. Company value not only reflects how intrinsic value is at the moment but also reflects prospects and expectations of the company's ability to increase the value of its wealth in the future. Globalisation has created a business environment that causes the need for a review of the management system used by companies to be able to survive and prosper, so companies are required to always be able to increase the value of their companies. The banking industry in Indonesia with a share of 75.02% still holds the biggest role in the financial system, despite being in an economy that still often experiences ups and downs. Since the monetary crisis in 1997, the banking sector began to experience a crisis of public confidence in the banking industry. There are 16 national private commercial banks that have been liquidated and have their business licenses revoked by the government and 45 other banks that have problems. In 1999, as many as 38 banks were closed, in 2004 the Bali Commercial Bank and Aspac Bank were liquidated, in 2005 Global Bank was closed, in 2008 the Century Bank case and the closure of Bank Indover, and in 2009 there was a revocation of the IFI Bank's business license by the government.

There are many factors that can affect the value of a good company's internal and external factors. Internal factors are controllable meaning that they can be controlled by the company, such as company performance, decisions finance, capital structure, cost of equity, and other factors. While the external factors can be in the form of interest rates, fluctuations in the value of foreign exchange, and market conditions capital. Some of these variables have a relationship and influence on company value, but the results obtained up to now are still inconsistent. The research aims to only prove empirically the influence of banking performance factors on firm value.

Literature Review

The banking sector plays the role of an intermediary institution that obtains funds from parties who are excess funds and distributes in the form of credit to those who need it in an economy and can overcome the problems of moral hazard and adverse selection by supervising and selecting borrowers and depositors. In addition, the banking sector with economies of scale can

channel funds to needy parties efficiently and has direct implications for funding sources, industrial expansion, and supporting economic activities (Berger et al. 2003;). The banking sector can also overcome the problem of information asymmetry and risk of loss in the financial system. Asymmetric information can cause agency conflicts between debtor with the principal or creditor. In agency theory, it is stated that creditors submit management of funds to the debtor to be managed by the debtor and the debtor must secure the interests of creditors. Creditor (Bank) has an interest in controlling the debtor to use these funds in a careful manner and are able to increase prosperity together. This will work when they have the same interest as well. The debtor is the party who carries out the mandate of the bank to fulfil the interests of the bank or creditor. The problem is not always the interests and goals of the creditors being in line with the interests and objectives of the debtor. Debtors can do what they do to benefit themselves over the burdened creditor. The debtor can make a high-risk decision because the risk guarantor is creditor. Debtors can make morally hazard decisions against creditors or credit guarantor institutions. Debtors engage in high risk business, but banks don't get the information of the debtor business as a whole. If the debtor is bankrupt, then the bank bears it. In this context the creditors face agency conflict with the debtor, the debtor seeks transfer wealth from the bank through high risk business operations. High business risk is aligned with high returns (Keown et al. (2007).

Increasing company value is important for shareholders in maximising the wealth they have (Kim et al. 1993). The value of a company is basically measured by several aspects, namely the market price of a company's shares, because this reflects the investor's assessment of the total equity owned. The reason is because the value of the company can increase welfare for shareholders if the share price increases (Endri & Fathony, 2020). The higher the stock price increases, the more the shareholders' profits increase so this situation will be attractive to investors because motivating demand for shares causes the value of the company to increase (Endri et al. 2019). Meanwhile according to Keown et al. (2007) the value of a company is the market value of debt securities and corporate equity in circulation. The price a potential buyer must pay is defined as the market price of the company itself. The value of the company can be achieved maximally if shareholders submit management matters to those who are competent in their fields, such as managers and commissioners. Financial ratios are used by investors to find out the company's market value. This ratio can provide an indication for management regarding investor assessments about the company's past performance and future prospects. There are several ratios to measure the company's market value, one of which is Tobin's Q.

Companies that experience rapid development can enjoy profits and a positive corporate image. Fast growth does not mean an increase in uncontrolled costs, so managing growth, companies must have operational control with an emphasis on cost control. The company's rapid growth can reflect the magnitude of funding requirements if the company expands its business, thus forcing the company to reduce profitability. Serrasqueiro (2009) concluded that company

growth as measured by sales growth has a positive effect on profitability as measured by the ratio of operating income to total assets. The company's growth can be shown by the growth of assets owned by the company. Assets indicate their use for company operational activities. The greater the growth of assets is expected the greater operational results produced by the company. An increase in assets followed by an increase in operating results will further increase investor confidence in the company.

The proxy of the capital ratio to measure the health of banks is the Capital Adequacy Ratio (CAR). Total CAR is measured from the ratio of own capital to Risk Weighted Assets (RWA). Capital is a very important factor for the development and progress of banks while maintaining public confidence. Every asset creation, besides having the potential to generate profits is also a potential risk. Therefore, capital must also be used to protect against the risk of loss of assets and investments in assets, especially those arising from third party funds or the public. The increasing role of assets as a profit earner must be accompanied by consideration of risks that may arise to protect the interests of fund owners. If the bank operates, capital is one of the most important factors for developing and accommodating the risk of loss. Capital valuation is intended to assess the bank's capital adequacy in securing position risk exposures and anticipating future risk exposures.

Non-performing loans (NPLs) are also internal factors that are used to see their effects on company value. Problems originating from problem loans indeed make banks cautious in giving credit to debtors. Non-performing loans (NPLs) is a percentage of total non-performing loans with the criteria of substandard, doubtful, and loss of the total loans issued by banks. According to Dendawijaya (2009), the risk of non-performing loans is a risk that arises as a result of not being able to fulfil the obligations of credit customers to pay loan instalments or credit interest at the time agreed between the bank and the credit customers (debtors). Bank Provisions Indonesia is that banks must protect NPL below 5%. Research conducted by Repi (2016) states that NPL has no effect significant to company value, whereas in Hidayat's research (2014) give the result that NPL is influential not significant to negative company value.

Loan to Deposit Ratio (LDR) is used to measure how much the bank's ability to pay all public funds and their own capital by relying on loans that have been distributed to the public. In other words, the bank can fulfil its short-term obligations, such as paying back the disbursement of its depositor's funds at the time of collection and can fulfil the loan request that has been submitted (Endri, 2018). The calculation to get the LDR ratio is determined based on the percentage ratio of total loans granted with total deposits according to SE Bank Indonesia No. 3/30 / DPNP December 14, 2001. According to Bank Indonesia's recommendation, a safe LDR is in the range of 78% -100%. If the bank has an LDR rate of more than 100%, the bank must add a 0.2% reserve requirement for each 1% LDR increase. LDR can be used as a benchmark

for the performance of intermediary institutions, namely institutions that connect excess funds (surplus unit funds) with those who need funds (unit deficit funds).

Operating Expense Ratio (OER) is measured quantitatively using the efficiency ratio. Through this ratio is measured whether bank management has used all factors of production effectively and efficiently. Bank operational efficiency performance is measured using the ratio of operating costs compared to bank operating income (OER). OER ratio is the ratio between total bank operating costs and total operating income. OER ratio is used to measure the level of operational efficiency and the ability of banks to perform their functions as financial intermediaries. Considering that the main activities of banks act as intermediaries, i.e. collecting and distributing third party funds, operational costs and bank revenues are dominated by interest costs and interest yields. Any increase in operating costs will result in a reduction in profit before tax which will ultimately reduce the profit or profitability (ROA) of the bank concerned (Nuriyah et al., 2018).

Methodology

Research data was obtained from annual banking reports with the following items: Corporate Growth (FG), CAR, NPL, LDR, OER, Deposit Growth (DG), and ROA. Of 42 banks listed on the IDX, this study put 27 banks that met the criteria as a sample. This study examines the effect of FG, CAR, NPL, LDR, OER, DG, and ROA which are determinants of company value as measured by Tobin's Q. This study uses panel data regression methods because the data used is the merging of data between time series and cross sections. The panel equation regression estimation model is formulated as follows:

$$FM_{i,t} = \beta_0 + \beta_1 FG_{i,t} + \beta_2\, CAR_{i,t} + \beta_3\, NPL_{i,t} + \beta_4\, LDR_{i,t} + \beta_5\, OER_{i,t} + \beta_6\, DG_{i,t} + \beta_7 ROA_{i,t} + e_{i,t}$$

Information:
FM   = Firm Value
FG   = Firm Growth
CAR = Capital Adequacy Ratio
NPL   = Non-Performing Loan
LDR = Loan Deposit Ratio
OER = Operating Expense Ratio
DG   = Deposit Growth
ROA = Return on Assets
$\beta_1,\ldots\beta_7$ = Slope
$e_{i,t}$ = component error

Results and Discussion

Descriptive Statistic

Table 1: Descriptive Statistics

	FV	ROA	FG	CAR	NPL	LDR	OER	DG
Mean	1.055222	0.018006	0.219138	0.184801	0.026146	0.812702	0.624872	0.212434
Median	1.028050	0.015634	0.183296	0.161913	0.016082	0.842035	0.668923	0.163570
Maximum	1.498723	0.128350	2.839.744	1.273.415	0.906844	1.170.771	1.484.062	3.593.093
Minimum	0.041237	-0.106500	-0.339934	0.089015	9.54E-09	0.277063	-3.165.170	-0.345108
Std. Dev	0.208719	0.005083	0.152546	0.085402	0.064521	0.027386	0.224432	0.204770

Referring to table 1 shows that Operating Expense Ratio (OER) has the highest standard deviation of 0.224432, while the smallest is owned by the Profitability (ROA) variable of 0.005083. Standard deviation is a measure to see the spread of data and show fluctuating numbers. The Company dependent value variable (FV) has an average value of 1.055222 which indicates that the value ratio of banking companies is 105%. The maximum firm value (FV) is 1.498723 and the minimum is 0.041237. The profitability ratio (ROA) has an average value of 0.018006 with a maximum figure of 0.128350. company growth factor (FG) has an average value of 0.219138. which shows that more than 20% of banking growth in Indonesia over the past 5 years. The maximum growth value of the company is 2,839,744 and the minimum number is - 0.339934. CAR ratio has an average value of 0.184801 or it means that CAR has more than 18% determinant of company value in the banking industry. The NPL ratio has an average value of 0.026146, which means that the NPL has almost 3% of loans granted in the banking industry. The LDR ratio has an average value of 0.812702 which shows that the banking industry has provided more than 80% of loans from deposits, a maximum number of 1,170,771 and a minimum value of 0,277063. The operational cost ratio (OER) has an average value of 0.624872, this shows that more than 60% of operational costs are paid for by operating income, a maximum amount of 1,484,062 and a minimum figure of -3,165,175. The deposit growth factor (DG) has an average value of 0.212434, indicating that bank deposits have grown 21% in a row over the past 5 years, the maximum amount of 3,593,093 and the minimum figure - 0.345108.

Based on a paired model selection test, the panel data regression method was chosen to estimate the research model in the Random Effects model. The estimation results of the random effects model are shown in table 2.

Table 2: Estimated random effects regression model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.3860	0.1413	9.8081	0.0000
ROA	0.0753	0.2294	0.3281	0.7432
FG	0.0380	0.0679	0.5602	0.5759
CAR	0.1583	0.1956	0.8092	0.4200
NPL	-0.4138	0.1899	-2.1800	0.0311
LDR	-0.0655	0.0527	-1.2425	0.2159
OER	-0.0364	0.200	-0.1815	0.8559
DG	1.4739	0.8606	1.7127	0.0878

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R-squared	0.106448	Mean dependent var	0.466778
Adjusted R-squared	0.065832	S.D. dependent var	0.164979
S.E. of regression	0.159456	Sum squared resid	3.915650
F-statistic	2.620840	Durbin-Watson stat	1.742666
Prob(F-statistic)	0.013858		

Firm Value (FM) = [C_i + 1,385980] + 0,075268 ROA + 0,038048 FG + 0,158300 CAR − 0,413841 NPL - 0,065455 LDR - 0,036387 OER + 1,473858 DG

Note; C_i = Firm Random Effect Constanta, firm–i,

i = 1,.....28

T-Test

Partial test results using t-test, can be concluded as follows:
1. Profitability (ROA) with a coefficient of 0.075268 and prob. value of 0.7432 is greater than α = 5%, which means that the ROA ratio does not affect the value of the firm (FV) of the banking sector.
2. Company Growth (FG) with a coefficient of 0.038048 and prob. 0.5761 value is greater than α = 5% which states that the Company Growth Factor (FG) does not affect the company value (FV) of the banking sector.

3. Capital Adequacy Ratio (CAR) with a coefficient of 0.158300 and prob. value of 0.4197 is greater than α = 5% which indicates that the Capital Adequacy Ratio (CAR) factor does not affect the value of the firm (FV) of the banking sector.

4. Non-Performing Loans (NPLs) with coefficients - 0.413841 and proba. value of 0.0308 is smaller than α = 5% which states that the NPL has a negative effect on the value of the banking sector (FV).

5. Loan Deposit Ratio (LDR) with coefficient - 0.065455 and prob. value 0.2160 is greater than α = 5% which indicates that the Loan Deposit Ratio (LDR) factor does not affect the value of the firm (FV) of the banking sector.

6. Operating Expense Ratio (OER) with coefficient - 0.036387 and prob. value of 0.8562 is greater than α = 5% which states that the Operating Expense Ratio (OER) factor does not affect the value of the firm (FV) of the banking sector.

7. Deposit Growth (DG) with a coefficient of 1.473858 and a prob. value of 0.0888 greater than α = 5%, which indicates that the Deposit Growth factor (DG) does not affect the value of the banking sector (FV) of the banking sector.

F-Test

The F-Test is intended to prove empirically by determining whether all factors used in the research model can explain changes in firm value. The results of the F-test calculation show that the probability of the F-statistic or the value of Prob (F-statistic) 0.013858 is smaller than α = 0.05 which means that all independent variables consisting of; ROA, FG, CAR NPL, LDR, OER, and DG together can affect changes in the value of the firm (FV).

Goodness of Fit (R^2) Test

To measure the role of determinants of fluctuations in changes in corporate value in the banking sector, a goodness of fit test is used through the coefficient of determination. Statistical test results show that the coefficient of determination R2 = 0.106448, which can be interpreted that the determinants consist of; ROA, FG, CAR NPL, LDR, OER, and DG factors together can contribute to explain the ups and downs of changes in the value of the banking sector companies by 10.64%. while 89.36% is explained by other factors not considered in the research model.

Discussion

Empirical evidence from the results of the study states that the ROA variable has no significant positive impact on the value of Firm Value (FV) on banking companies. The result arises because profitability fluctuates rapidly, and interest spreads are still wide. This condition makes investors uncertain about the performance of the banking industry. Based on empirical findings that the FG factor is proven to have no significant positive impact on the value of firm (FV) on

banking companies. The result arises because the banking sector only focuses on how to expand branches, systems and services, this condition makes investors assess the expansion carried out by banks in Indonesia is no longer efficient. The results also showed that the CAR ratio did not have a significant impact on the value of banking companies. These results indicate that banks are still focused on the minimum requirements of 8% imposed by BI. Based on empirical findings, research shows the factor NPL seems to have a significant negative impact on firm value (FV), this implies that effective and prudent management is maintained by banks in Indonesia by using and controlling funds in the right direction that minimizes non-performing loans. This condition produced a positive response for investors on the IDX.

Research findings related to the LDR ratio states that LDR does not have a significant impact on the value of banking companies. This result shows that bank loans do not accommodate real expansion, the government must improve the stabilisation policy in fiscal, monetary and exchange rate to restore the condition of the banking sector, especially when facing a stock market decline. Associated with the OER ratio shows that OER is proven to have no significant negative impact on the firm value (FV) in the banking sector. This implies that operational costs in the banking industry are still high. It is important for regulators and policy makers to create an environment that increases efficiency and stability in the banking system. Furthermore, policy makers must investigate policies that encourage banks to operate efficiently for the purpose of making effective capital allocation decisions. Associated with the DG factor shows that DG has no influence on the Corporate Value (FV) of the banking sector.

Conclusion

Based on research findings show some empirical evidence; First, the NPL ratio has an influence on firm value. Second, partially, the factors of ROA, FG, CAR, LDR, OER, and DG have no effect on firm value. Third, simultaneously, all independent variables; ROA, FG, CAR, NPL, LDR, OER, and DG have an influence on company value of 10.64% while 79.36 is determined by other factors not tested in the study. The implications of the results of the study are input for company management to improve company performance to increase company value and for investors to consider in investment decisions in the banking sector.

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