



FIRM VALUE IN IDX: EFFECT OF GREEN BANKING DISCLOSURE, EARNING QUALITY AND INTELLECTUAL CAPITAL

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Abstract

This research aims to empirically test the influence of green banking, profit quality and intellectual capital on banking firm value as proxied by Price to Book Value (PBV) in banks listed on the Indonesia Stock Exchange during the 2018-2022 period. The data in this research was accessed on the official website www.idx.co.id. The sample used in this research was 42 companies. The data analysis method in this research uses the panel data regression analysis method with the Stata 17 application tool. The research results found that green banking has a negative and significant effect on firm value. This is because investors have not responded well to green banking, besides that the costs for implementing green banking are quite large so companies have not been able to optimize it. Meanwhile, the quality of profits and intellectual capital have no effect on firm value. This is because the quality of profits and intellectual capital has not been responded well by investors. Firm value can explain the firm's future prospects and can be used to assess it as a whole. Investors can make decisions about investing by looking at the firm's share price and the amount of assets produced by the firm.

Keywords: *Green Banking, Profit Quality, Intellectual Capital and Firm Value*

1. Introduction

Companies in the financial sector are a fundamental field among the other 9 fields. In 2022, the banking industry will be included in the list of 10 issuers with market capitalization. This proves that the banking industry is a large industry in the country and shares are in great demand by investors (Handoyo et al., 2023). According to Bareksa.com in 2017, shares owned by the financial sector provided the highest profits compared to all sectors on the Indonesian Stock Exchange (BEI), especially the banking sector. At the beginning of 2017, the financial sector stock index rose around 31.45%. Apart from that, the increase in the banking sector stock index also exceeded a number of other sector stock indexes, such as the mining industry rose by around 14.36%, basic industry rose by around 19.52%, and the consumption sector rose by around 13.78%.

The number of investors in Indonesia increases every year. The Indonesian Central Securities Depository (KSEI), stated that in 2022 the number of investors in Indonesia will increase by 21.38%. In August, the number of investors reached 9.54 million investors. This number continues to increase compared to the previous year, namely as of December 31 2021 the number of investors in Indonesia reached 7.78 million. In line with this news, of course this is good news for companies registered on the Indonesia Stock Exchange, because the amount of capital will increase along with the increase in the number of investors (Galyani & Henny, 2022).

Investors will always be interested in companies that are making progress. One way to keep the industry moving forward is to increase the firm value as reflected in the share price, where the price per share will represent the level of return obtained by investors (Octavianus et al., 2023). Therefore, the increase in share prices is proportional to the increase in the rate of return obtained by investors. Apart from that, increasing share prices also increases firm value. Firm value can also change the way investors think about certain industries. Several previous studies that measured firm value using Price to Book Value (PBV) and Tobin's Q include research conducted by (Heriyah, 2021) and research by Sribunruang and Suthi (2021).

Price to Book Value (PBV) is a ratio used to compare the share price with its current value and the book value per share. Price to Book Value (PBV) is also often used to measure how far a firm is able to create value for a firm relative to the amount of equity invested. The higher the Price to Book Value (PBV), the more the market will trust the firm's prospects (Pattimura et al., 2023). There are several factors that influence firm value, including green banking, earnings quality and intellectual capital. Sensitivity to the importance of running a business while maintaining environmental sustainability in the future and applied through green banking (Bose et al., 2021). Green banking in the banking sector is defined as environmental responsibility by implementing good strategies for sustainable economic development (Zhang et al., 2022). Green banking policies can be implemented in banking

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internally and motivate customers to adopt these policies. One policy that can be implemented is environmentally friendly services to customers (Khairunnessa et al., 2021) . The results of research conducted by Romli and Zaputra, (2022) show that green banking has a negative effect on firm value. This is different from the results shown by Hastuti and Kusumadewi, (2023) who stated that green banking has a positive effect on firm value. The results of a study conducted by Simanungkalit and Mayangsari, (2020) found that green banking has no influence on firm value. The same results were also mentioned by Pratiwi et al. (2023) that green banking has no effect on firm value. Meanwhile, the results of research conducted by Hastuti & Kusumadewi, (2023); Winarto et al. (2021) stated that green banking has an effect on firm value.

Another factor that can influence firm value is the quality of earnings. Earnings quality is a depiction of a firm's profit ability to measure or present information regarding the firm's failures and successes in achieving business goals (Dang et al., 2020) . Quality firm profits are those that show the firm's actual financial performance. Prospective investors and other investors and stakeholders must carefully analyze the financial reports presented. In Tanggo and Taqwa's research, (2020) stated that earnings quality does not have a significant effect on firm value. This is different from research conducted by Wairisal and Hariyati, (2021) which states that earnings quality has a positive effect on firm value. Anggreini et al. (2022) found that earnings quality has a negative effect on firm value. The same research results were also stated by Murwaningsari and Ardi, (2018) that earnings quality has a negative effect on firm value. Dang et al. (2020) and Syahzuni and Sari, (2022) state that earnings quality has a positive effect on firm value.

The final factor that influences firm value is intellectual capital. Intellectual capital (IC) is an intangible asset that can produce a competitive advantage in a firm and this is capital that has characteristics that are the hallmark of a firm, making it difficult for other companies to follow. Intellectual capital is capital that comes from the abilities and knowledge possessed by groups within the firm. This capital has three main components, including organizational capital, consumer capital and human capital (Ni et al., 2021; Salvi et al., 2020) . According to Husaini et al. (2022) who studied intellectual capital stated that intellectual capital influences firm value. Other research conducted by Siregar and Safitri, (2019) states that intellectual capital has no effect on firm value. The same results were also mentioned by Tirmizi and Siahaan, (2022) and Hallauw and Widyawati, (2021) who studied intellectual capital, concluding that there is no influence between intellectual capital and firm value. In contrast to the results of research conducted by Agustiningsih and Septiani, (2022); Putri et al (2019) also studied intellectual capital which stated that intellectual capital had a positive and significant effect on firm value.

2. Research methods

This research was conducted on banking companies listed on the Indonesia Stock Exchange with 47 banks. The data in this research was accessed via official website www.idx.co.id. The data collection technique in this research was carried out using a purposive sampling technique so that 42 companies were obtained.

2.1 Operational Definition of Variables

Firm value or in other words the firm's market value is the share price that investors are willing to buy if the shares are sold. Firm value is also meaningful as a perception between investors and potential investors related to the share price of a firm (Aydoğmuş et al., 2022) . The formula for calculating firm value is:

$$Price\ to\ Book\ Value = \frac{Current\ share\ price}{Book\ value\ per\ share}$$

Green banking is a concept regarding the activities of a financial institution that prioritizes environmental sustainability in its operational practices (Bose et al., 2021) . The formula for calculating green banking is:

$$Green\ Banking = \frac{Total\ banks\ in\ GB\ implementation}{Green\ Coin\ Indicator} \times 100\%$$

Earnings quality is a depiction of earnings in financial reports in their actual condition. Investors, potential investors and other parties will see and analyze the report (Dang et al., 2020) . The formula for calculating earnings quality is:

$$Earnings\ quality = \frac{Operating\ Cash\ Flow}{Net\ Income}$$



Intellectual capital or often known as intellectual capital is an intangible aspect that can create healthy competition in companies and this capital is capital that has characteristics, so it is not easy for other companies to imitate (Nguyen & Doan, 2020) . The formula for calculating intellectual capital is:

$$VAIC^{TM} = VACA + VAHU + STVA$$

2.2 Data Analysis Methods

This research uses the panel data regression analysis method to test the influence of the independent variables, namely green banking, earnings quality and intellectual capital on the dependent variable, namely firm value. Data processing in this research uses Stata 17. The research model is as follows:

$$PBVit = \alpha + \beta_1GBit + \beta_2Klit + \beta_3ICit + \beta_4SZit\epsilon \dots \dots \dots (1)$$

Information:

- PBVit : Firm Value i period t
- GBit : Green banking i period t
- Klit : Quality of Earnings i period t
- ICit : Intellectual Capital i period t
- α : Constant
- β : Regression Coefficient

Results and Discussion

3.1 Classic Assumption Test

3.1.1 Normality Test

The normality test on data is used to evaluate whether in the regression model the independent variables and dependent variables have a chance that might occur or not, the correct regression model is to have normal or close to normal distribution values. The assessment criteria in the normality system are if the data test results have a level (Sig) > 5% or 0.05 then it can be concluded that the data is normally distributed, whereas if the significance (Sig) of the data is <5% or 0.05 then it can be concluded that the data is not has a normal distribution . The results of the normality test in this research can be seen as follows:

Table 1 Normality Test

Variable	Obs	W	V	Z	Prob >z
FirmValue (PBV)	210	0.89034	17,070	6,544	0.00000

Source: Stata 17 Output (Researcher Processed Data), 2024

The research results in the table above show a probability value of 0.0000 < 0.05, it can be concluded that the data is not normally distributed. This is because the data in this study uses cross section panel data which has high fluctuation values every year so that the assumption of normality can be ignored.

3.1.2 Multicollinearity Test

The multicollinearity test is a test used to find out whether the regression model in the research has a correlation or relationship between the independent variables. A good regression model in research is that there is no correlation between the independent variables (Ghozali, 2011). One way to describe the symptoms of multicollinearity is to analyze the relationship matrix of independent variables. The multicollinearity test in this research uses the Variance Inflation Factor (VIF) method with the criterion that if VIF > 10, it can be concluded that symptoms of multicollinearity occurred in the research conducted (Cheng et al., 2022). The following are the results of the multicollinearity test, namely:

Table 2 Heteroscedasticity Test

Variabel	VIF	1/VIF
GB	1.08	0.928887
IC	1.08	0.929898
SZ	1.04	0.959582
KL	1.03	0.970488
Mean VIF	1.06	

Source: Stata 17 Output (Researcher Processed Data), 2024

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Based on Table 2, it can be seen that all the independent variables, namely green banking, profit quality and intellectual capital, as well as the control variable in the form of firm size, have a Vif value < 10, so it can be concluded that the regression model in the research does not have symptoms of multicollinearity.

3.1.3 Heteroscedasticity Test

The heteroscedasticity test is a test carried out in research which aims to test whether a regression model in research has differences in residual variance from one observation to another. If the residual variance from one observation to another remains constant, then heteroscedasticity occurs. The method used to see whether heteroscedasticity is present or not is the Glejser test. According to Ghozali, (2016) a good research regression model is one where there are no symptoms of heteroscedasticity. According to Gujarati and Porter, (2012) if the significance value of all independent variables in the Glejser test is greater than 0.05 then it can be concluded that heteroscedasticity does not occur. Likewise, if the Glejser test result is smaller than 0.05, it can be concluded that symptoms of heteroscedasticity have occurred. The results of the Glejser test in this research can be seen in the following table:

Table 3 Heteroscedasticity Test

	Value (PBV)		
	Coefficient	t-Statistics	Prob
GB	-0.1139	-2.35	0.020
KL	0.0010	0.85	0.394
IC	0.0002	0.13	0.898
SZ	-0.0393	-1.76	0.079
_cons	2.6825	4.87	0,000

Source: Stata 17 Output (Researcher Processed Data), 2024

Based on the table above, it can be seen that all the independent variables in the research tested using the Glejser test produced a value of more than 0.05. So it can be concluded that the data used in this research is free from symptoms of heteroscedasticity.

3.1.4 Autocorrelation Test

The autocorrelation test is a test used to test whether in the linear regression model there is a correlation between confounding errors in the current period and errors in the previous period. If a relationship occurs, it can be said to be an autocorrelation problem. Autocorrelation exists because consecutive observations throughout the period are related to each other. This problem arises because the residuals are not independent from one observation to another (Ghozali, 2016). The following is a table of autocorrelation test results:

Table 4 Autocorrelation Test

Unstandardized Residuals FirmValue (PBV)	
Test Value	-0.237
Cases<= TestValue	105
Cases>Test Value	105
Total Cases	210
Number of Runs	51
Z	-7.61
Prob > z	0,000

Source: Stata 17 Output (Researcher Processed Data), 2024

Based on the table of autocorrelation test results using the Run-test, it can be seen that the Asymp. Sig. (2-tailed) is 0.000. It can be concluded that the data used in this research have symptoms of autocorrelation.



3.2 Model Selection Techniques

To get a good panel data regression analysis model, model selection techniques are needed. The selection of panel data regression analysis models consists of 3 models, namely the Common Effect Model (CEM), Fixed Effect Model (FEM) and Random Effect Model (REM). To get the best model results in a study, the Chow Test and Hausman Test can be carried out. Next, one of the three models will be selected for panel data regression.

3.2.1 Chow Test

The Chow Test or Chow Test is a test carried out to determine the best model between the Common Effect Model (CEM) and the Fixed Effect Model (FEM). The basis for making Chow test decisions is to look at probability. When the significance value or significance value is (probability < 0.05), it can be concluded that a good model in panel data regression is FEM. If the significance value (probability > 0.05), then it can be concluded that a good regression model is CEM (Gujarati & Porter, 2012). The results of the Chow test in this study are as follows:

Table 5 Chow test

Variable	Prob
FirmValue (PBV)	0.0036

Source: Stata 17 Output (Researcher Processed Data), 2024

Based on the table above, it can be seen that the value for the PBV probability variable Chi-square line is 0.0036. This value is smaller than the standard tolerance value, namely 0.05. So it can be concluded that the correct model selection for the PBV variable is the Fixed Effect Model (FEM).

3.2.2 Hausman Test

The Hausman Test or Hausman Test is a test carried out in research to determine the best model between the Fixed Effect Model (FEM) and the Random Effect Model (REM). According to Gujarati and Porter (2012) the main basis for decision making in the Hausman test is to look at the probability value. If the significance value (probability < 0.05), then the best model is CEM. However, if the significance (probability > 0.05), then it can be concluded that the best model is REM. The Hausman test results in this research are as follows:

Table 6 Hausman Test

Variable	Prob
Value (PBV)	0.0883

Source: Stata 17 Output (Researcher Processed Data), 2024

Based on Table 4.8 above, it can be seen that the probability value for the PBV variable is 0.0883, which is greater than the value of 0.05. It can be concluded that the best model is the Random Effect Model (REM) so that data estimation in hypothesis testing in this study uses panel data regression with Random Effect Model (REM).

3.2.3 Panel Data Regression Estimation

Based on the model selection that has been carried out, the best model in this research is the Random Effect Model (REM), which is as follows:

Table 7 Panel Data Regression Estimates

Variable	Value (PBV)		
	Coefficient	T-statistic	Prob
GB	-0.1894	-2.99	0.003
KL	0.0003	0.37	0.712
LC	-0.0003	-0.23	0.820
SZ	-1.0430	-27.23	0,000
_cons	32.06	36.34	0,000
F Statistics	0,000		
R²	0.829		

Source: Stata 17 Output (Researcher Processed Data), 2024

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Information: Firm Value (PBV), Green Banking (GB), Earnings Quality (KL), Intellectual Capital (IC) and Size (SZ) as control variables.

3.3 Hypothesis Testing

Hypothesis testing in this research was carried out using the t test. The results of the t test are used to partially explain the influence of the independent variable and the dependent variable. The criteria for decision making using the t test is to look at the t table value and look at the probability value. The error rate used in this research is 5%.

3.3.1 The Effect of Green Banking (GB) on Firm Value (PBV)

Based on Table 7, Panel Data Regression Estimation Results using the Random Effect Model (REM). For the green banking variable, the firm value proxied by PBV has a calculated t value of -2.99 with a probability value of 0.003. The green banking value is statistically significant at 5%. So it can be concluded that green banking has a negative and insignificant effect on firm value as proxied by PBV in the banking sector listed on the Indonesia Stock Exchange for the 2018-2022 period. This shows that H-1 in this research is rejected. This is in line with research conducted by Khan et al, (2021) which states that green banking has a negative effect on firm value as proxied by PBV. This means that the implementation of green banking has not been able to increase the value of a firm. Investors and stakeholders have not responded positively regarding the implementation of green banking. It is possible that many banks, including those that have gone public, have not fully disclosed green banking practices, as has been observed in India and Indonesia by Rajput et al, (2020) and Karyani and Obrien, (2020) respectively. Banks in Indonesia appear to experience a stronger negative impact from the implementation of green banking when compared to banks in foreign countries. Therefore, companies need to consider the implementation of green banking in making financial decisions.

3.3.2 The Effect of Earnings Quality (EQ) on Firm Value (PBV)

Based on Table 7 Panel Data Regression Estimation Results using the Random Effect Model (REM), it can be seen that earnings quality has a t-count of 0.37 with a probability value of 0.712. The earnings quality value is not statistically significant at 5%. So it can be concluded that earnings quality has a positive and insignificant influence on firm value as proxied by PBV in banking sector companies listed on the Indonesia Stock Exchange for the 2018-2022 period. This shows that H-2 in this study was rejected. This is in line with research conducted by Apridasari et al, (2018); Renaldi and Handayani, (2022) state that earnings quality has a positive influence on firm value. This means that the better the quality of earnings, the greater the firm value. The quality of profits in a firm's financial statements will greatly influence the value of the firm, especially for companies that have issued shares on the capital market. The quality of earnings can have a positive impact on the firm, thereby increasing the reflected value of the firm

3.3.3 The Influence of Intellectual Capital (IC) on Firm Value (PBV)

Based on Table 7 Panel Data Regression Estimation Results using the Random Effect Model (REM), it can be seen that intellectual capital has a tcount of -0.23 with a probability value of 0.820. The value of intellectual capital is not statistically significant at 5%. So it can be concluded that intellectual capital has a negative and insignificant effect on firm value as proxied by PBV in banking companies listed on the Indonesia Stock Exchange for the 2018-2022 period. This shows that H-3 in this study was rejected. This is in line with research conducted by Maryanti and Lim, (2023); Azhari, (2019) stated that intellectual capital has a negative influence on firm value. This means that high intellectual capital cannot always increase firm value. This can be caused by investors only looking at one of the three intellectual capital indicators for consideration. This can happen because banking operational activities, especially in Indonesia, are still dominated by physical assets and financial assets in order to improve banking performance and increase market value.



4. Conclusion

1. Green Banking (GB) has a negative and significant effect on firm value (PBV) in banking companies listed on the Indonesian Stock Exchange for the 2018-2022 period.
2. Earnings Quality (EQ) has a positive and insignificant effect on firm value (PBV) in banking companies listed on the Indonesian Stock Exchange for the 2018-2022 period.
3. Intellectual Capital (IC) has a negative and insignificant effect on firm value (PBV) in banking companies listed on the Indonesian stock exchange for the 2018-2022 period.

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