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Green Banking and Performance: The Role of Foreign and Public Ownership

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ABSTRACT

This study aims at examining the effect of green banking practice on bank performance with foreign and public ownerships as moderating variables. Data were collected from 14 Indonesian banking or 98 bank-year observations. The sample banks were participated in the green banking pilot project and listed in *investasi hijau* (or green investment) index between 2012 and 2018. Using the ordinary least square (OLS) model, this study demonstrates that green banking practices have a negative impact on bank profitability, but a positive impact on bank value. Meanwhile, public ownership strengthens the negative effect of green banking practice on profitability. Foreign ownership weakens the positive impact of green banking practice on bank value. Thus, stakeholders can use green banking practices as a consideration in making financial decisions as it has influence for bank performance.

Perbankan Hijau dan Kinerja: Peran Kepemilikan Asing dan Kepemilikan Publik

ABSTRAK

Penelitian ini bertujuan untuk menguji pengaruh praktik perbankan hijau terhadap kinerja bank dan peran kepemilikan asing dan publik sebagai variabel moderasi. Data dikumpulkan dari laporan keuangan 14 bank di Indonesia atau 98 obsevasi. Sampel bank pada penelitian ini adalah bank yang berpartisiapsi di dalam proyek percontohan perbankan hijau dan indeks investasi hijau untuk periode 2012 s.d.2018. Dengan menggunakan metode ordinary least square (OLS), penelitian ini menemukan bahwa praktik perbankan hijau berpengaruh negatif terhadap profitabilitas bank, sebaliknya berpengaruh positif terhadap nilai bank. Kepemilikan publik memperkuat efek negatif praktik perbankan hijau terhadap profitabilitas. Sementara itu, kepemilikan asing melemahkan pengaruhf positif praktik perbankan hijau terhadap nilai perusahaan. Dengan demikian, para pemangku kepentingan dapat mempertimbangkan praktik perbankan hijau tersebut dalam pembuatan keputusan keuangan mereka karena faktor tersebut mempengaruhi kinerja bank.

1. Introduction

A continually decreasing environment quality has been substantially linked to today's economic and business activities. The impact of economic and business activities on climate change for example, has triggered a long lasting debate both in international and national scale particularly in developed countries. On an international scale, The World Economic Forum places the economy and environment as the world's main risks as reported in the 2013 report. These two factors are interrelated which is believed that environmental damage caused by unsustainable industrial governance has a negative impact on the global economy. Therefore, the banking industry must participate in improving the quality of the

environment that encourages green banking activities. Green banking combines four elements of life, namely nature, well-being, economy and society to then create a life that cares about ecosystems and the quality of human life. This is expected to be a long-term business strategy that is not only profit-oriented, but also towards empowering and preserving the environment in society (Zu, 2019).

In Indonesia, *Bank Indonesia*/ BI (the central bank of Indonesia) issued BI Regulation (PBI) No. 14/15/PBI/2012 concerning Assessment of Commercial Bank Asset Quality in 2012. It captured the obligations of national banks to consider environmental feasibility factors in evaluating a business prospect and its impact on the environment. Furthermore, *Otoritas Jasa Keuangan*/ OJK (or financial services authority) also issued regulation number 51/POJK.03/2017 regarding the implementation of sustainable finance for financial service institutions and public companies. As one of the financial services institutions, the banking industry is required to behave ethically in order to run an environmentally friendly business, so it is considered important to conduct social and environmental risk management.

Green banking practices are also a concern of academics. The environmentally conscious banking industry shows a higher profit because the community has realized the importance of preserving the environment so that it affects their decision to invest (Weber, 2016; Rahaman et al., 2018; Ratnasari, 2018). The results also show that green loan guidelines require banks to be more active in connection with the integration of environmental risks into the bank's credit risk assessment procedures. Environmental management can also be a tool for organizations to increase their competitiveness (Hart & Ahuja, 1995; Porter & Linde, 1995). Miles & Covin (2000) also states that environmental performance increases the reputation and goodwill of the organization and creates challenges and opportunities for business organizations (Thevanes & Arulrajah, 2016).

The concept of green banking has 2 (two) dimensions, namely lending and operating activities. Lending activities are undertaken by banks to businessmen taking into account the impact given to the environment (Ramila & Gurusamy, 2016). Although green banking regulations have been issued by both international and national institutions, in practice this has not been as satisfying as expected especially in developing countries (see Islam & Das, 2013, Handajani et al., 2019). Therefore, this study will re-analyze the effects of green banking on banking performance in Indonesia which is still very limited.

Thus, this study is expected to make several contributions. First, this study analyzes the development of green banking practices in Indonesia since 2012, the first green banking regulations were issued by BI, and investigates the impact of these practices on the bank's performance. We use the various measures of financial performance that allow capturing the response of different stakeholders to green banking. Second, the research samples are banks participated in the green banking pilot project which was formed in 2015.

Finally, this study includes foreign ownership and listed banks as moderation variables, to the best of the researchers' knowledge, which have not been captured much by previous researchers. While these two variables are important factors in influencing the company's strategy and objectives. Some of these contributions are expected to fill the research gaps that are beneficial to policy makers, practitioners and researchers. Kim et al (2018) stated that practitioners should consider ownership structure in examining the relationship between Corporate Social Responsibility (CSR) and firm value. However, Kim et al (2018), for example, cannot prove this effect. On the other hand, foreign bank ownership has a positive effect on Environmental, Social, and Corporate Governance

(ESG) investment (see Nyarku & Hinson, 2018; Doś, 2018). Using a sample of government companies listed on the Europe market, Danford (2017) found that ESG decreases corporate performance.

This paper continues as follows. Section 2 presents the theoretical foundations of this research and develops hypotheses. Section 3 explains the methodology and data. Section 4 presents the results and analysis. The last part provides some conclusions and recommendations for further studies.

2. Theoretical framework and hypotheses development

Green banking and its practices in the Indonesian banking

Practically, accounting is related to activities that involved two or more individuals in an accounting dynamic interaction context with the environment; viewed from social, cultural, politic, or economic aspectes of a society (Budiasih & Sukoharsono, 2012). Green banking is the biggest initiative that can be taken by banks as an effort to save the environment in the banking industry. Green banking is believed to stop the degradation of the environment and make the environment so that it can be livable (Aubhi, 2016).

Green banking refers to the implementation, support and creation of environmentally friendly practices and carbon footprint reduction in a bank's internal and external operations (Schultz, 2010). According to Islam & Das (2013) green banking is defined as a form of support for environmentally friendly practices involving 2 (two) approaches, namely: (1) green transformation that focuses on the internal activities of banks by adopting appropriate steps in utilizing renewable energy and other actions to minimize the amount of carbon produced by the bank; and (2) charging companies or customers responsible for the environment through weighting environmental risks before making financing decisions and supporting the growth of environmental-based initiatives and projects in the future.

In principle, the guidelines related to green banking in Indonesia were drafted in 2012 and adopted in 2014 explicitly in Bank Indonesia Regulation (PBI) No. 14/15/PBI/2012 concerning the assessment of the quality of commercial bank assets, particularly those relating to environmental aspects. This issuance is the first step to encourage the Indonesian banking industry to put more emphasis on environmental preservation by lending more to environmentally friendly customers and limiting lending to those who are not environmentally friendly.

Based on United Nations Environment Programme (UNEP) (Lako, 2014), three (3) steps are formulated to move towards sustainable banks three (3) steps are formulated to move towards sustainable banks. First, defense banking that banks follow the regulations set by the government regarding the environment. The second stage, preventive banking related to cost savings in bank activities such as the use of paper (internal side) and reducing investment risk due to environmental risks (external side). Third, offensive banking which is a new opportunity in market share, one of which is adopting sustainable practices while still providing benefits. Some banks have implemented green banking practice, however, its development is quite slow because of the possibility of inadequate and voluntary regulation.

The basic principle of green banking is as an effort to improve the bank risk management, particularly in relation to the environment and to increase an environmental-friendly financing portfolio. For example, financing for renewable energy, energy efficiency, organic agriculture, eco-tourism, environmental-friendly transportation, and various eco-label products. Thus, it can lead the level of bank awareness towards the risk of possible environmental problems in the project it finances which may have a negative impact on a decrease in bank credit quality and reputation. Bank Danamon, for example, as a national bank has the highest

score in lending and investment policies related to social and environmental issues. In addition, eight national banks are known as the pioneers of sustainable banking adoption due to having a high commitment in running Green Banking operations, namely Bank Mandiri, BRI, BCA, BNI, Muamalat Bank, Sharia BRI, BJB and Artha Graha International Bank.

Green banking practices and bank performance

Some previous research, although still limited, investigated the effect of green banking practices on financial performance or vice versa, the results of which are still ambiguous. Chen & Metcalf (1980); Nanda & Bihari (2012), Rajput et al. (2013), for example, shows that there is no effect of green banking practices on financial performance. In contrast, Hamilton (1995) states that compliance costs by providing environmental information/reporting that must be prepared so that it has a negative effect on company profitability.

Although the implementation level of green banking has not been satisfactory, green banking as a form of social responsibility can improve the bank's reputation in the eyes of investors through a positive image (Rosdwianti & Dzulkirom AR, 2016), decrease the cost of paper consuming so that the profitability increases (Dialysa, 2015), and mitigate environmental risks (Weber, 2016). Study of Simpson & Kohers (2002); Carnevale (2014); Uwuigbe et al (2018) prove that sustainability report has a positive effect on stock performance because it is an effort to maintain a good relationship between the company and its investors so that to continue to invest in the company. Moreover, it can drive an increase in income in the long run through an increase in the customer base and a growth in human capital as well as bank revenues over time.

This study is based on the theory of socially responsible investment (SRI) that can explain the relationship between green banking practices and banking performance. According to Revelli & Viviani (2015), SRI is motivated by the need to invest ethically. This theory can also explain that the practice of green banking focuses on investing in social responsibility as a means to improve sustainability performance that is profitable for policy makers and managers (Korzeb & Samaniego-Medina, 2019). Banks that practice green banking must be socially responsible by considering the impact of the desired project or saving the environment in the short and long term before approving a loan. This is the result of stakeholder demand, including investors that gone beyond factors such as return on investment and low risk. Thus, the first hypothesis statement is:

H_1: Green banking practices have a positive effect on bank performance.

Role of ownership structure (foreign and public) on the association between green banking practices and performance

Ownership structure is one of main factors that can influence the strategic aspects of the company (Porter, 1990), including green banking practices. Company goals are determined by the ownership structure, motivation of owners and creditors, corporate governance that forms the incentives or motivations of managers. Therefore, this study uses the ownership structure variables, namely public and foreign ownership, which is used as a moderating variable.

Based on research by Perkebunan Prakara (2016), foreign banks have higher scores than national banks in terms of social and environmental involvement (green banking). Furthermore, a study conducted by Khanna & Palepu (2000) proved a significant difference in performance between foreign and domestic companies. Companies that are monitored by foreign parties/investors have better performance because they have a better level of transparency and monitoring ability. They also have higher experience related to management techniques, corporate governance mechanisms and information technology (Turner & Arun, 2004), including the application of bank sustainability

(Oh & Chang, 2011). Thus, the practice of green banking has the potential to have a positive impact in the long run so that the market will react positively. Ownership structure is one of main factor thats can influence the strategic aspects of the company (Porter, 1990), including green banking practices. Company goals are determined by the ownership structure, motivation of owners and creditors, corporate governance that forms the incentives or motivations of managers. Therefore, this study uses the ownership structure variables, namely public and foreign ownership, which is used as a moderating variable.

Based on studies conducted by Nyarku and Hinson (2018); Porter (1990); Kuada & Hinson (2012); Doś (2018), it is unveiled that foreign banks have higher scores than national banks in terms of social and environmental issues (green banking). Furthermore, Khanna & Palepu (2000) found a significant difference in performance between foreign and domestic companies. Companies that are monitored by foreign parties/investors have better performance because they have a better level of transparency and monitoring ability. They also have higher experience related to management techniques, corporate governance mechanisms and information technology (Turner & Arun, 2004), including the application of bank sustainability (Oh & Chang, 2011). Thus, the practice of green banking has the potential to have a positive impact in the long run so that the market will react positively.

H_{2a}: Foreign ownership strengthens the positive effect of green banking practices on bank performance.

Banks listed on the stock exchange has incentives to disclose more transparent green banking practices as a consequence of the greater number of stakeholders. Thus, publicly owned companies is more depressed and become involved in environmental, social, and community activities (Hinson et al., 2010); Khan et al., 2012). The following hypothesis is:

H_{2b}: Public ownership strengthens the positive effect of green banking practices on bank performance.

3. Research method

The object of this research is the banking industry listed in the green investment index from 2012 to 2018. The election period from 2012 is intended to analyze the development of practices since the issuance of BI Regulation (PBI) No. 14/15/PBI/ 2012. Furthermore, this study will be divided into two sample groups, namely samples listed on the IDX (listed) and all samples that include both listed and non-listed (all samples). Empirical models and variable definitions are explained as follows:

The model for all samples (all samples)

$$ROA_{i,t} = \alpha_0 + \alpha_1 GBi,t + \alpha_2 FOREIGNi,t + \alpha_3 LISTEDi,t + \alpha_4 GB*FOREIGNi,t + \alpha_5 GB*LISTEDi,t + \alpha_6 lnSIZEi,t\text{-}1 + \alpha_7 CARi,t + \varepsilon it$$

The model for sample banks listed on the IDX (listed sample)

$$TOBIN_{i,t} = \beta_0 + \beta_1 GBi,t + \beta_2 FOREIGNi,t + \beta_3 GB*FOREIGNi,t + \beta_4 lnSIZEi,t\text{-}1 + \beta_5 CARi,t + \varepsilon it$$

Where ROA, is return on assets, and TOBIN is Tobin's Q, are the dependent variable. The data were obtained from the annual report. ROA is profitability ratios that measure a company's ability to generate profits from the use of all its resources or assets, while Tobin's Q or Q ratio defines the company value as a form of value combination between tangible and intangible assets. The value of Tobin's Q is considered high if Tobin's Q> 1 indicating that the value of the company is greater than the value of the listed

company assets. The formula used is: (Total Market Value + Total Equity Value)/Total Assets.

Green banking (GB) is an independent variable that is measured using content analysis techniques from annual reports, as a technique that is in line with the disclosure literature (see Khan et al., 2012; Meng, Zeng, Xie, & Qi, 2016). GB activity includes 16 indicators as carried out in the study of Shaumya & Arulrajah (2017), namely (1) environmental awareness training and education; (2) evaluation of environmental performance; (3) environment-based reward system; (4) paperless savings; (5) use of energy-saving equipment; (6) waste management/ recycling; (7) environmentally friendly banks; (8) green loans; (9) financing green projects; (10) green enterprise facilities; (11) environment-based credit evaluation; (12) green branch management; (13) environment-based policy (green policy); (14) environment-based partnership (green partnership); (15) environment-based strategic planning; and (16) green procurement.

These indicators are then measured using a dichotomous scale, a value of 1 (one) is given if there is green banking reporting indicators as mentioned above, and 0 (zero) if vice versa. The dichotomy scale is used to reduce the subjectivity of the study. Furthermore, the green banking practices of each bank are calculated using the following formula:

$$GB = \sum_{i=1}^{n} di$$

This study also includes two moderation variables to examine whether listed companies and foreign ownership strengthen/weaken the effect of GB on accounting and market-based financial performance. The LISTED and FOREIGN variables are measured on a dichotomous scale. Value 1 if the bank is listed on the IDX, and 0 if the bank is not listed on the IDX, while value 1 if the bank is owned by the majority of foreign investors (≥50%), and 0 if the other.

The next two control variables are used to control for company specific effects, namely firm size (SIZE) and capital adequacy ratio (CAR). According to OJK regulation No. 6/POJK.03/2016 that banks are categorized into 4 (four) BOOKS (commercial banks based on business activities) adjusted to their core capital. Therefore, firm size needs to be controlled so that the difference in bank capital can be minimized. While CAR is to accommodate the risk of losses faced by banks or to control the ability to manage all types of banking risk (Oliveira, Rodrigues, & Craig, 2011).

Robustness test

This study conducted a robustness test by replacing the independent variables (ROA and TOBIN) with return on equity (ROE) and price to book value (PBV). ROE is a profitability ratio that measures a company's ability to generate profits from a company's shareholder investment. While PBV is a comparison between market values with a book value of a stock that investors can find out directly how many times the market value of a stock is valued from its book value.

4. Results and discussion

Descriptive statistics results

The analysis of this study is based on bank-level data totaling 14 banks during 2012-2018 (as of December 31) with the final result of observations being 98 (firm years). The sample includes 10 banks listed on the Indonesia Stock Exchange (IDX) or around 72% and 5 banks owned by foreign companies (> 50%) or about 35%. Data related to the characteristics of each variable is shown in Table 1.

Table 1 Statistics summary of research variables

	Mean	Median	Maximum	Minimum	Std. dev.	Skewness	N
ROA	0.024	0.025	0.051	-0.049	0.016	-1.259	98
TOBIN	0.357	0.328	0.953	0.140	0.175	1.261	71
GB	0.498	0.500	1	0.125	0.225	0.165	98
FOREIGN	0.357	0	1	0	0.482	0.596	98
LISTED	0.724	1	1	0	0.449	-1.005	98
SIZE (in million IDR)	36,100	19,700	130,000	2,060	33,900	1.081	98
CAR	0.189	0.183	0.300	0.114	0.042	0.571	98

Notes: ROA is return on assets, TOBIN is tobin's Q, GB is green banking practice, FOREIGN is foreign ownership, LISTED is a bank listed on BEI, lnSIZE is the natural logarithm of total bank assets, and CAR is capital adequacy ratio.

Table 2 describes the GB index level which is grouped in 16 disclosure items, validity and reliability test results. The validity test uses a 5% significance level with r-table of 0.197 (98 observations), while the reliability test is carried out using Cronbach's alpha with the rule if the Cronbach's alpha value> 0.6 (Clark & Watson, 1995).

Table 2 Descriptive statistics, test of validity and reliability tests on item GB

No Item	Category	Mean	Yes	No	Validity Test (r-count)	
1	Environmental awareness training & education	0.316	31	67	0.532	Medium
2	Environmental performance;	0.173	17	81	0.538	Medium
3	Environment-based reward system;	0.214	21	77	0.442	Medium
4	Paperless	0.694	68	30	0.056	Very low
5	Energy saving	0.663	65	33	0.548	Medium
6	Waste management/ recycling	0.633	62	36	0.543	Medium
7	Environmental-friendly	0.684	67	31	0.655	High
8	Green loan	0.551	54	44	0.668	High
9	Green project	0.592	58	40	0.613	High
10	Green enterprise	0.184	18	80	0.629	High
11	Environment-based credit evaluation	0.296	29	69	0.642	High
12	Green branch	0.337	33	65	0.151	Very low
13	Green policy	0.980	96	2	0.079	Very low
14	Green partnership	0.449	44	54	0.649	High
15	Environment-based strategic planning	0.827	81	17	0.522	Medium
16	Green procurement	0.367	36	62	0.680	High
Total Varian item				:	3.160	
Total Varian				:	12.978	
Reliability (r11-*cronbach's alpha*)				:	0.807	Very high

Notes: * Valid (r-count > r table), Not valid (r-count < r table)
Source: Results of data analysis (2019)

The results of the validity test on 16 GB scale items show that 13 items are a pretty good/ valid and 3 items are not good (very low) namely item 4, 12, and 13. Furthermore, invalid items are excluded

because these are not good enough to construct exactly. While the reliability test results show that the Cronbach's alpha coefficient is 0.807 (> 0.6) or the reliability value of the GB index is very high. Figure 1 further explains the GB practices of 14 banks in Indonesia since the issuance of PBI No. 14/15/ PBI/2012. Although this regulation has not been mandatory (voluntary) for banks, around 30% of banks have implemented all 16 GB practice items. This practice continues to increase from year to year so that by 2018 it has reached 70% and the average practice of green banking for 7 years around 0.498 or 50% (see Table 1).

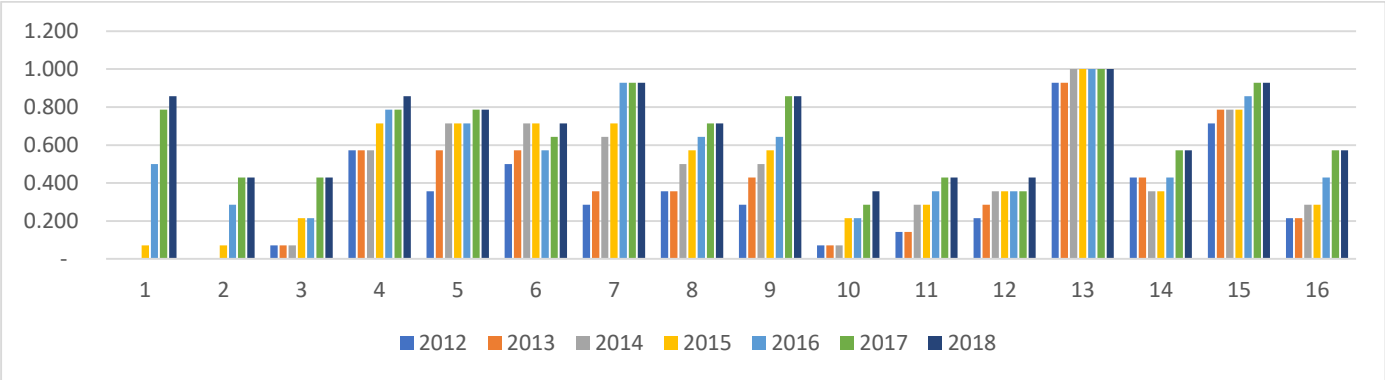

Figure 1 Green banking practices in Indonesia (2012-2018)
Source: Results of data analysis (2019)

Notes:
(1) environmental awareness training and education; (2) evaluation of environmental performance; (3) environment-based reward system; (4) paperless savings; (5) use of energy saving equipment; (6) waste management / recycling; (7) environmentally friendly banks; (8) green loans; (9) financing green projects; (10) green enterprise facilities; (11) environment-based credit evaluation; (12) green branch management; (13) environment-based policy (green policy); (14) environment-based partnership (green partnership); (15) environment-based strategic planning; and (16) green procurement.

The practice of environment-based policies (green policy) or the 13th item is a practice that was mostly carried out from 2012 with an average of 98%. Whereas evaluation of environmental performance (item 2) is the lowest practiced or only around 17% (not tabulated). This second item was also only implemented in 2015 including item 1 (environmental awareness training and education).

Table 3 Variable correlation matrix

Correlation	ROA	TOBIN	GB1	FOREIGN	LNSIZE	CAR
ROA	1					
TOBIN	0.528***	1				
GB1	0.194	0.309***	1			
FOREIGN	-0.1268	-0.034	-0.319***	1		
LNSIZE	0.544***	0.623***	0.159	-0.059	1	
CAR	0.141	0.444***	0.580***	0.0118	0.203*	1

Notes:
Standard errors *, **, *** indicate significance at 10%, 5% and 1% respectively
Source: Results of data analysis (2019).

Table 3 reports the correlation matrix between variables which shows that the green bond (GB) variable has a positive correlation with TOBIN.

The table also explains that all correlation coefficients between endogenous variables do not

indicate the possibility of serious problems related to multicollinearity in the estimated model.

Regression results

Table 4 and 5 present the differences in the results of panel data regression with the estimation of the least squares method or called Ordinary Least Square (OLS). Diagnostic tests of all model specifications are consistent and good as indicated by the value of adjusted R2 is quite high and the level of significance of F-statistical value. The results presented in this table also confirm that the GB factor plays a role in influencing the level of market-based performance (TOBIN).

Table 4 shows that the coefficient value of the GB variable is a significant negative (at the level of 1%) for all models, which means GB has a negative effect on ROA. This negative effect is greater after being moderated by the LISTED variable. Otherwise, Table 5 show that GB has a positive and significant (at the level 1%) effect on TOBIN for all model. Furthermore, there is no effect of foreign ownership (FOREIGN) on the association between GB practices and bank performance (ROA and TOBIN).

Table 4 Regression result of GB model in Indonesian Banking (ROA as the proxy for performance)

Independent variables	Prediction	ROA (all sample)					
GB	+	-0.014	***	-0.020	***	-0.042	***
FOREIGN	+/-			-0.006	***	-0.013	***
LISTED	+/-			-0.002		-0.014	**
GB*FOREIGN	+					0.013	
GB*LISTED	+					0.022	**
LnSIZE	+	0.008	***	0.008	***	0.007	***
CAR	+	0.107	***	0.129	***	0.099	***
R-squared		0.666		0.733		0.692	
Adjusted R-squared		0.655		0.718		0.668	
F-statistic		62.598	***	50.492	***	28.896	***
N		98		98		98	

Notes:
Standard errors *, **, *** indicate significance at 10%, 5% and 1% respectively
Source: Results of data analysis (2019)

Table 5 Regression result of green banking model in Indonesian Banking (Tobin's Q as the proxy for performance)

Independent variables	Prediction	Tobin's Q (listed sample)					
GB	+	0.090	***	0.101	***	0.088	***
FOREIGN	+/-			0.022		-0.068	
GB*FOREIGN	+					0.241	
LnSIZE	+	0.064	***	0.064	***	0.065	***
CAR	+	1.011	***	0.974	***	0.860	***
R-squared		0.703		0.705		0,713	
Adjusted R-squared		0.690		0.688		0.690	
F-statistic		53.009	***	39.576	***	32.297	***
N		71		71		71	

Notes:
Standard errors *, **, *** indicate significance at 10%, 5% and 1% respectively
Source: Results of data analysis (2019)

This study suggests that the implementation of GB practices requires several costs for example, compliance costs so that it will reduce profitability. This finding is consistent with the study of

Hamilton (1995) that companies choosing the pollution control and environmental disclosure tend to be less profitable. In addition, because the focus of green banking is related to environmental-friendly retailers such as green cards, green car loans, green mortgages (Mitic & Rakic, 2017).

That is, banks provide credit interest rates that are low enough so that can result in disruption of bank revenue and profitability. Hamilton (1995) also states that listed companies tend to suffer greater losses because public companies have greater economic potential in the capital market than private companies. As a result, they are required to make reporting more comprehensive, while the costs incurred may be greater than the benefits.

Thus, the more information disclosed and the increase in investment related to environmental facilities does not necessarily increase the attractiveness of the company (Hackston & Milne, 1996). The increase in these facilities actually has a more negative impact on profitability. The results of this study contradict the findings of Nanda & Bihari (2012) which proves that there is no relationship between the adoption of green banking and bank profitability in India due to the lack of bank initiative in implementing green banking practices. In addition, study of Dialysa (2015) that proves the decrease of paper consuming increases the corporate profitability.

Table 5 shows that GB have a positive effect on stock performance (TOBIN) and consistent with the results shown in Table 4 that FOREIGN does not affect the association between GB and TOBIN. In accordance with SRI's theory that disclosure of financial statements and social responsibility by management is important. Stakeholders need to evaluate and know the extent to which a company carries out its role in accordance with the wishes of the stakeholders. Furthermore, this disclosure as a signal to communicate the company's future performance to investors. Consistent with the finding of Klassen & Mclaughlin (1996) that all forms of company information relating to the environment will affect the value of the company. Furthermore, investors in the stock market realize the importance of environmental pollution and will take a stand against industries that do not comply with pollution norms (Gupta, 2003; Goldar & Banga, 2007). Thus, financial institutions must help develop the right instruments to meet the needs of industry to control environmental impacts. For example, banks do not participate in financing projects that are expected to have detrimental impacts on ecosystems or environmental damage.
While the impact of control variables (bank size and CAR) on all types of financial performance is positive and significant.

This imply that the greater the assets the bank have, the more benefits gained from scale economies through access to credit facilities to lend and invest in capital projects to realize profitability (Regehr & Sengupta, 2016). Large banks also have market power and access to the capital market so the greater their effect on corporate stakeholders (Velnampy, 2013). The study also suggests that the higher CAR of banks shows the ability to bear the risk of any risky productive credit/ assets so as to protect depositors and increase public confidence (Mili et al., 2017). The result of the robustness test subsequently shows consistent with the main tests as shown in Tables 6 and 7. So it can be concluded that there is stability and reliability of the main variables used.

Table 6 Result of robustness test (ROE as the proxy for performance variable)

Independent variables	Prediction	ROE (all sample)					
GB	+	-0.114	***	-0.117	***	-0.229	***
FOREIGN	-			-0.043	***	-0.077	***
LISTED	-			-0.075	***	-0.119	***
GB*FOREIGN	+					0.068	
GB*LISTED	+					0.105	**

Independent variables	Prediction	ROE (all sample)					
LnSIZE	+	0.029	***	0.044	***	0.041	***
CAR	+	0.005		0.056		0.005	
R-squared		0.404		0.543		0.531	
Adjusted R-squared		0.385		0.518		0.494	
F-statistic		21.283	***	21.855	***	14.558	***
N		98		98		98	

Notes:
Standard errors *, **, *** indicate significance at 10%, 5% and 1% respectively
Source: Results of data analysis (2019)

Table 7 Result of robustness test (PBV as a performance variable)

Independent variables	Prediction	PBV (listed sample)					
GB	+	1.017	***	0.757	***	0.719	***
FOREIGN	-			-0.290	***	-0.444	*
GB*FOREIGN	+					0.406	
LnSIZE	+	0.539	***	0.531	***	0.534	***
CAR	+	-3.313		-1.107		-1.577	
R-squared		0.704		0.705		0,705	
Adjusted R-squared		0.691		0.687		0.683	
F-statistic		53.204	***	39.416	***	31.191	***
N		71		71		71	

Notes:
Standard errors *, **, *** indicate significance at 10%, 5% and 1% respectively
Source: Results of data analysis (2019)

This study also conducted an endogeneity test to examine the possibility of an endogeneity problem in the regression equation. This test is carried out when one or more explanatory variables in one or more equations are explained by other variables in the same equation or in other equations. The endogeneity problems in this study is tested through simultaneous problem testing and Two Stage Least Square (TSLS) testing. Test results show that green banking practice variables affect bank performance and there is no reverse association, ie bank performance affects green banking practices (these results are not tabulated). In other words, the equation estimated using OLS is unbiased.

5. Conclusions

The study investigates the extent and manner of green banking practices in those included in the green banking pilot project and the green investment index in Indonesia during 2012-2018. The findings reveal that green banking practice has been adopted by the most bank since BI established the rules of sustainability in 2012, although it is still voluntary, and shows an increase in green banking activities every year. This practice has a negative impact on bank profitability and this effect is stronger in the listed banks. This confirms that the more pressure to disclose green banking practices, the greater the loss that must be borne by the bank. Whereas, there is a positive effect of green banking practice on bank value because it is expected to provide long-term benefits for stakeholders.

This study offers possible implications for the literature on green banking practices, especially in developing country contexts. This finding is further evidence of the important role of capital markets that can play a role in environmental management, especially in Indonesia where environmental monitoring and enforcement are weak. In other words, in this context, the emphasis is on improving environmental quality. Then the government is expected to create other incentives for them to participate in voluntary environmental programs.

There are several limitations in this study and the possibility of further study is needed. First, the current research is based on a green banking pilot project and green investment sample so that the sample size is very limited. Second, this paper refers to green banking guidelines from the Shaumya & Arulrajah, (2017). Future studies need to use other proxies such as the study of Bose et al (2017) which developed the Green Banking Disclosure Index (GBDI). Finally, the current study only uses quantitative research designs. Therefore, future research can consider collecting deeper data from respondents.

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