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The Implementation of Sustainable Finance: A Case Study in Bank Performance

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ABSTRACT

The idea of sustainability was risen according to climate change since the beginning of industrialization in the 18th century. As consequence, the effect will be physical disasters that lead to disadvantages for businesses. The role of banking as an intermediary makes it an agent of trust. Thus, the proper business conduct of its practice is an obligation. Attempts for green finance can be seen by the SRI KEHATI index which has the 25 most favorable issuers that mostly apply ESG criteria. This study conducts an analysis of KBMI 4 banks and then analyze the relation of ESG score compared to the financial performance, i.e NPM, ROA, and ROE from the 2017 to 2021 periods. The result shows that there is a correlation between the performance indicated by the ESG score to the financial performance of each issuer. The results showed that ESG and NPM, ROA, and ROE do not have significant relation. It was because there was no direct correlation between the ESG and the independent variables. Both, ESG and independent variables are indicators of a company's performance. Needs further study to connect those two to find how strong the scoring is affecting a company's performance, especially in the profitability ratio.

Keywords: Banking, ESG, Green Finance, NPM, ROA, ROE, Sustainability.

INTRODUCTION

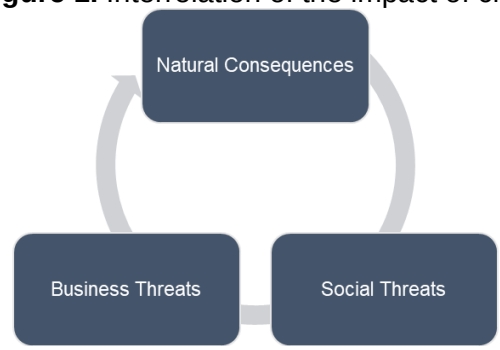
Climate change had become an issue since its occurrence in the past decades. As stated by Sanjaya, Furinto, Hamsal, and Kartono (2022) that climate change is one of the environmental issues that is of main concern. Even though the effects at first were calm and negligible, recently those are obviously seen and harmed our surroundings. Taking the report from the National Oceanic and Atmospheric Administration states that the earth's temperature rises around 14◦C annually since 1880. Besides, according to economic history, the late 18th century was the era of the economy's thought of the classics, which means the rise of the first modern thought of economics with regard to its market mechanism. The liberalism of markets was suspected to be the anchor of the expansion of the business, especially industrialism throughout the geographical borders. The revolution of industry started in Great Britain in the late 17th century, then other countries on Europe's mainland followed afterward such as Belgium and Switzerland also several sections of Germany and France. Industrialization expanded time over time and was suggested to reach its peak around 1880 in Europe. In that period, the number of manufacturers was the signal of the developed country and it was good for the economy. The expanding manufacturers were suspected as the main reason the earth was about to be warmer. It was due to the effect on the nature of the existence of industrialization. As European Commission had divided the effect of climate change into several categories: natural consequences, social threats, and business threats. The detailed subject of each category can be summarized in the table below.

Table 1. Classification of climate change effect

Natural Consequences	Social Threats	Business Threats
High temperatures	Health	Infrastructure and buildings
Drought and wildfires		Energy
Availability of freshwater		
Floods	Vulnerable population	Agriculture of forestry
Sea-level rise and coastal areas		
Biodiversity	Employment	Insurance
Soils		
Inland water	Education	Tourism
Marine environment		Cross-cutting issues for business

Source: European Commission (data is processed)

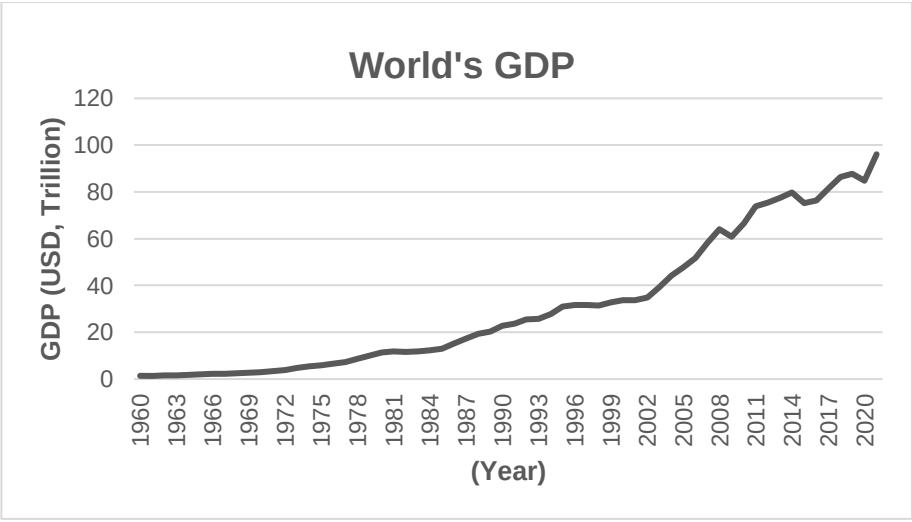
Figure 1. Interrelation of the impact of climate change



From the data above we can notice that the impact of climate change is interrelated. It is a devil's circle. When we have natural disadvantages, it will imply to social aspect as so it does to the business area. If only we quantify the impact of global warming and are able to mitigate the risk properly, we will succeed to control all aspects.

The attack of the SARS Cov-2 virus has proven that the hedging we have is not resilient enough. Since its announcement in Wuhan in late 2019, the spread of the virus was rapid. As consequence, most of the countries in the world which have healthcare facilities less adaptive face a deterioration. The virus is proof of the effect of global warming has been occurring and devastating. The attack of Covid-19 is in accordance as mentioned by WHO through its Modul 8 in 2015 which discussed climate change and the increase of vector-borne diseases. The effect of the strike Covid-19 is very destructive.

Figure 2. Global GDP



Source: World Bank (data is processed)

To data from the World Bank from 1960 to 2021, there are several steep downturns in global GDP, they are in 2009 due to mortgage crises, in 2015 because of the monetary policy change in the US that caused huge capital outflow, and recently in 2020 due to Covid-19 outbreak. The decrease ss 3.31 USD trillion (5.16%), 4.53 USD trillion (5.68%), and 2.74 USD trillion (3.13%) in the years 2009, 2015, and 2020 respectively.

For its tremendous impact, ADB estimation predicted the loss in the SEA region's GDP of USD 163 billion for the short term and 253 USD billion for the long term with job losses of around 11.6 million to 18.4 million. The governments themselves play their role as

social welfare guardians, in terms of providing cash transfers, giving social and medical assistance, and food supplies. On another side, there is financial service especially banking that promotes lower interest during the virus outbreak to stimulate the business side to stay operate properly during the downturn of economics.

As the intermediary's institution, regardless of whether it is an obligation by the government to lower the interest, the way the bank channels its loan to society must be conducted prudently to avoid further deterioration in financial crises since banking has potential systemic risk.

Regarding the immense effect of climate change, thus as institutions that act as an agent of those who owns funds to those who need to be funded, it is time for banks to implement green financing. As has been negotiated in Paris Agreement and NGFS to apply green financing and contribute more to facilitate the improvement of environment and climate-risk management that exists in the financial sector and transfer mainstream funding to support the shift toward a sustainable economy.

In Indonesia, there is a green index in the financial markets namely the SRI KEHATI index. It contains the 25 most favorable issuers which imply ESG factors properly in their operation. Of the 25 issuers, there are 5 banks that have considerable capital. Of those five, four banks are state-owned companies. According to Indonesian Financial Services Authority has changed the bank classification to a Bank Group Based on Core Capital (KBMI) from Commercial Bank Business Activities (BUKU). Found that of four banks, there are three banks that are state-owned banks, they are PT Bank Rakyat Indonesia Tbk (BRI), PT Bank Mandiri (Persero) Tbk, and Bank Negara Indonesia (Persero) Tbk, and only one private bank that is PT Bank Central Asia Tbk.

According to previous studies about the implementation of green financing, there are many types of research that analyzed the relation of ESG ratings to financial performance. As stated by Kocmanova, Nemecek, and Docekalova (2012), investigated ESG becomes interesting for researchers, investors, analysts, but also for business managers Naumer and Yurtoglu (2020) researched the news and tonality of ESG and its impact on CDS; then Folger-Laronde, Pashang, Feor, and ElAlfy (2020) conducted research on the impact of ESG ratings on the financial performance of ETF during the Covid-19 period. Istianawati, Irwanto, and Najib (2015) researched the potential investment and the impact of the financial ratio to stock returns of the mining sector in the responsible investment index and sharia index on the Indonesia Exchange. Clarkson, Li, Richardson, and Vasvari (2008) conducted empirical research on environmental disclosure to environmental performance. While Schmidt (2020) analyzed the optimal ESG portfolios of the Dow Jones Index.

Due to the numerous types of research that analyzed the correlation between ESG ratings or scores the financial or company performance, this study aims to observe the impact of the ESG score on the financial performance in the aspect of profitability ratio. The financial performance proxies included NPM, ROA, and ROE.

LITERATURE REVIEW

In 2020, Folger-Laronde et al. (2020) conducted a study about the ESG ratings and their effect on ETF performance during the Covid-19 periods, they implied ANOVA and multivariate regression and found that a greater ESG rating does not safeguard the performance of ETFs during a noticeable market downturn. (Yurtoglu, 2020) studied how the spread of news about ESG practice affects the spread of CDS, the results show

ESG-related news has a significant on CDS spread and so does the tonality of the news relating to ESG. In addition, Capelle-Blancard, G., Crifo, P., Diaye, M. A., Scholtens, B., & Oueghlissi (2016) conducted a study of the relationship between ESG news and market response, it employed 33 thousand ESG news and targeted a hundred listed companies. The analysis showed that firms that face bad news tend to have a drop in the market by 0.01 %, while positive news does not have any significant effect on the market value; or the reputation of how firms manage risks, the culture, and the extent of how ESG factors are disclosures play a pivotal effect on the degree of its impact.

According to Clarkson et al. (2008) study 191 firms that contribute to GHGs emitters on their environmental performance to environmental transparency, the result was in accordance with the prediction that the environmental performance was impacted by the disclosure of environmental and social reports. In the same research as Clarkson et al. (2008) and Koroleva, Baggieri, and Nalwanga (2020) studied the importance of ESG factors, they breakdown each terminology of ESG, and found that ESG disclosure has a significant effect on a company's performance, the Governance aspects play a higher contribution on generate the better performance. Also, Benlemlih, Shaukat, Qiu, and Trojanowski (2018) conducted the same theme research as Koroleva, Baggieri, and Nalwanga (2020), but they analyzed the ESG components to three kinds of risks – total risk, systemic risk, and also an idiosyncratic risk, and found that negative significant connectivity between the ESG disclosure to company's total and idiosyncratic risks while it does not have a relationship to systemic risk. The breakdown of ESG factors shows that environmental and social aspects have a high contribution to lessening the occurrence of total and idiosyncratic risk due to the stakeholders that want to succeed in the firm. While Wang, Larsen, & Wang (2022) directed to reach the sustainable finance through SDG Finance taxonomy and hence can reduce the transaction cost.

With the same theme as Almeyda and Darmansya (2019) also studied the effect of disclosure of ESG on companies' performance, the results showed that ESG disclosure has positive significant effects on ROA and ROC while it does not have any significant matters on stock price and P/E. As a catalyst, the government hence has a significant role in promoting the inclusivity of sustainable finance. In accordance with that, a study was conducted by (Kuhn, 2020) about how the stakeholders in Germany encourage the implementation of sustainable finance. The research found that a wide range of initiatives is already implemented by the stakeholders in Germany, also global and national promotion is well resonated in Germany. Zeidan (2022) also analyzed the obstacle to the implementation of sustainable finance during the Covid-19 pandemic crisis. He wants to test the theory of the company's inertia that prohibit the organization to change. The research was particularly conducted at a wealth management company and the interview result showed less specialized funds, the pervasiveness of greenwashing, and the difficulties of quantifying the standardized ESG characteristics to be implemented evenly across the industries. In addition, Arif, Hasan, Alawi, and Naeem (2021) conducted an analysis of the dynamic relationship between conventional and green financial markets. The study result indicates the low intergroup connectivity in conventional investments, which is in contrast to green investments. Besides, financial stability is suggested as a strong factor that may shift investment behavior steadily into the green.

RESEARCH METHOD

This research is generally conducted on financial sector companies, especially state-owned banks that are consistently listed on the pro-environmental index, namely the SRI-KEHATI Index for the period 2017 to 2021. The companies that are highly consistent listed on the SRI-Kehati Index are PT. Bank Rakyat Indonesia (BBRI), PT. Bank Mandiri

(Persero) Tbk (BMRI), PT. Bank Negara Indonesia (Persero) Tbk (BBNI), and PT Bank Central Asia (Tbk). The study was conducted from January 2017 to December 2021.

The type of data used is panel data - which includes cross-section data and time-series data. This data is obtained from the annual financial statements of Indonesia's top three state-owned banks and a leading private bank of Indonesia for the period 2017 to 2021. Data on the financial statements of each bank are downloaded through official websites, yahoo finance, and other relevant literature such as MSCI's official website for ESG scores.

The determination of the sample in this study was carried out by purposive sampling, namely sampling using the considerations of the SRI KEHATI Index and also KBMI which requires a high capital amount that can be fulfilled by three state-owned banks. The model that will be exposed to analyze the data is as followed :
Model : $ESG_{i,t} = \beta_1 NPM_{i,t} + \beta_2 ROA_{i,t} + \beta_2 ROE_{i,t} + \varepsilon$

Where :
$ESG_{i,t}$: ESG score of bank i in period t
$NPM_{i,t}$: net profit margin of bank i in period t
$ROA_{i,t}$: return of asset of bank i in period t
$ROE_{i,t}$: return of equity of bank i in period t

RESULTS

From the regression analysis conducted by EViews 12, the model used a common effect. Before it was chosen, the model was tested by several tests. At first test by the Chow test, it was appointed to be a CEM. We did not have to test for Hausman Test to compare the random effect model and the fixed effect model. Then we used Lagrange Multiplier (LM) as a test to find out whether the right model uses random effects or common effects. This test was developed by Breusch Pagan. The Breusch Pagan method for the random effect significance test is based on the residual value of the OLS method. The result showed the value of probability was above the critical value. Thus, we used CEM as the final model.

Table 1. Result

Periods included: 5
Cross-sections included: 4
Total panel (balanced) observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.693323	0.076014	9.121034	0.0000
NPM	-0.568963	0.430275	-1.322323	0.2047
ROA	-5.828927	11.33597	-0.514197	0.6141
ROE	1.664978	1.959433	0.849724	0.4080

R-squared	0.183508	Mean dependent var	0.657800
Adjusted R-squared	0.030416	S.D. dependent var	0.085549
S.E. of regression	0.084238	Akaike info criterion	-1.933492
Sum squared resid	0.113536	Schwarz criterion	-1.734345
Log likelihood	23.33492	Hannan-Quinn criter.	-1.894616
F-statistic	1.198675	Durbin-Watson stat	1.406507
Prob(F-statistic)	0.341989		

Then the model needs to be tested by the classical assumptions. The panel data needed to be tested for its normality, autocorrelation, and multicollinearity. The benefit of using panel data for analysis is we do not need to test the normality and autocorrelation unless the observation is less than 30. However, our model took only 20 observations. So, it needed a quick check of classic requirements. There are no autocorrelation and multicollinearity, also the model was normally distributed. The model can represent 30.5% of the relation of ESG score to the independent variables NPM, ROA, and ROE. Though the result showed that both NPM, ROA, and ROE do not have a significant effect on the ESG score. So, the equation of the model is ESG = 0.69 – 0.57 NPM – 5.82 ROA + 1.66 ROE.

DISCUSSION

According to its history, state-owned banks have their own markets in functioning in their role as intermediaries' bodies. As an example, Bank Negara 1946, prioritizes the industrial sector meanwhile Bank Rakyat Indonesia prioritizes and assists the development of cooperatives, farmers, and fishermen. Besides, BCA tends to maximize the profit towards a wide range of businesses. Thus, regarding the concern of climate change, the various score of ESG both from yahoo finance towards sustainability reports and MSCI as a rating institution from years 2017 to 2021 are as follows

Table 3. ESG Title

Year	BBNI	BMRI	BBRI	BBCA
2017	A	BBB	A	BBB
2018	A	BBB	BBB	A
2019	A	BBB	A	A
2020	BBB	BBB	A	A
2021	A	BBB	BBB	AA

Source: MSCI (data is processed)

The title of the ESG score then was translated into seven steps as MSCI classification groups. For the lowest classification, namely laggards, there are two types of scores, they are CC and B. On average, there are three types of scores, those are BB, BBB, and A. For the leader, there are only two classes – AA and AAA. So, if the scores are divided evenly, it becomes as table below.

Table 4. ESG Score

Year	BBNI	BMRI	BBRI	BBCA
2017	0.715	0.572	0.715	0.572
2018	0.715	0.572	0.572	0.715
2019	0.715	0.572	0.715	0.715
2020	0.572	0.572	0.715	0.715
2021	0.715	0.572	0.572	0.858

Source: MSCI (data is processed)

As the table shows a timely score of those four largest banks that capitalized the most financial activities in Indonesia, the three state-owned banks have scores in the average class. Meanwhile, the private bank BCA recently become a leader in sustainability. If the

indices were ranked, both BCA and BNI have steady positions, yet Bank Mandiri is in the fourth position among the largest banks.

These various results can be caused by different strengths and emphasizing of the banks. MSCI itself divides its pillar into three aspects of the environmental, social, and governance aspects differently. The environment pillar considers climate change, the capital of the natural, waste management and pollution, and the opportunities of the environment. While the social pillar, weighs human capital, the liability of the product, the opposition of stakeholders, and social opportunities. Also, the governance pillar emphasizes two aspects, they are the governance itself and the behavior of the company.

MSCI also simplifies its key aspect of scoring into areas of corporate governance, financing the environmental impact, privacy and data security, corporate behavior, consumer financial protection, the capital of human development, and access to finance. Among the four banks, they have the same score on corporate governance, the result shows that those banks have not yet fully implemented the principles of good corporate governance. Thus, their results are laggard. The three state-owned banks also have a low score in the aspect of financing the environmental impact. However, they have a leading score in human capital development. It can be assumed that the government of Indonesia takes the issue seriously by investing more in human development to create adaptive human resources that will be agile to the volatility caused by climate change. Despite the fluctuating growth of sustainability implementation of the four banks, it can be said that most of them have already implemented the key points of sustainability aspects. On the report of MSCI, the two state-owned banks have at least three aspects in the leading score, yet BNI only has one aspect, but they do not fall below the average. This profitability ratio is used as a metric to assess a company's financial health. In addition, the profitability ratio is also useful for investors to measure and evaluate the company's performance in obtaining profit relative to revenue, balance sheet assets, operating costs, and shareholder equity over a certain period of time.

Profitability ratios show how well a company uses its assets to generate profits and shareholder value. A higher ratio or value is usually sought by most companies, as it usually indicates that the business is performing well by generating revenue, profit, and cash flow. Ratios are most useful when analyzed in comparison to similar companies or in comparison to previous periods. Especially in today’s issue of climate change, the capacity of the company to be able to generate profit while bringing sustainable values to be more inclusive to society can be seen as its resilience.

On the other hand, a business unit such as a company must succeed in its operation towards several indicators. Interpreting company performance can be seen through the financial report that consists of several accounting ratios, namely profitability ratio, liquidity ratio, financial efficiency ratio, shareholders ratio, and gearing ratio. The objective of the current study is to acknowledge the performance of those companies that emphasize more social and responsible investment, especially in banking which has the risk of operation, idiosyncratic, and systemic risk. If banking can implement prudent operation from its operation in channeling the funds, it can spread financial inclusion to society, especially state-owned banks that play a vital role to enhance financial services in Indonesia. Thus, the relation between ESG score and profitability ratio is employed in this study. The variables from profitability are NPM, ROA, and ROE. We will try to impose similar research that had been done by other researchers with the same interest who analyze and quantify the effect of the tonality of sustainability implementation on the profitability of banks as institutions that play a prominent role.

The result shows that there is no direct correlation between the performances indicated by the ESG score to the financial performance of each issuer. The results showed through the value of the probability that the relation among indicators is not significant. That both partially and simultaneously, NPM, ROA, and ROE do not have any relation to ESG Score, and vice versa. But if want to see the sign of the equation, both NPM and ROA have a negative relation with the ESG score. Meanwhile, the ROE has a positive sign. It can be used as a motivator for the community to be able to increase contributions on the equity side which are usually dominated by the stock market. So that the financing of green projects and the implementation of green transformation can be accelerated.

CONCLUSION

According to the results from the regression of panel data analysis, it can be concluded that the relation of all indicators or variables is not significant. The relation of ESG score to NPM and ROA is negative. Net profit margin or Net profit margin (NPM) is the ratio to measure a company's net profit and divide it into total revenue. It provides a final picture of how profitable a company is after all costs, including interest and taxes, has been taken into account. The reason for using net profit margin as a measure of profitability is that it takes everything into account. Besides, the role of assets, the greater the ROA that is achieved by a company means that the company is well-managed and operated because it indicates the wealth of a company. A higher ROA is a good signal for investors, but that number is less attractive compared to the ROE. Equity is capital available for distribution to shareholders. Equity value consists of the residual assets of an entity after deducting liabilities. Hence, from the liquidation perspective of the company, equity will be considered as a residual claim on the business assets available to shareholders after all liabilities are paid. Technically, equity consists of funds contributed by company owners and shareholders, reserves, and retained earnings after deducting dividend payments. Therefore, the only way to increase the amount of equity is by getting more funds from investors or by increasing the profit of the company. Based on the results, the relation between ESG score and ROE is positive. It can be used to spread out to society about confidence in being involved in green projects and financing. Though the result shows an insignificant effect, we believe that the long periods of observation taken will result in a more representative relation of the proxies. Thus, through this research, we hope there are more researchers that will be involved and conduct similar research, and by that more data can be acquired and complement each other. The same suggestion implies to the scoring institution in Indonesia as the SRI KEHATI index is more open to the research process and scoring process.

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DECLARATION OF CONFLICTING INTERESTS
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