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GOOD CORPORATE GOVERNANCE RATING AND BANK PROFITABILITY IN INDONESIA: EVIDENCE FROM PANEL DATA

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ABSTRACT

This study aims to examine the effectiveness of good corporate governance (GCG) using a case of public banks in Indonesia. The study uses three measures of profitability: the return on assets (ROA), return on equity (ROE), and net interest margin (NIM). Panel data methods are used that combine both micro- and macroeconomic variables. All the models confirm that a good corporate governance rating is positive and significant for pooled regression, fixed-effect (FE) regression, and random-effect (RE) regression. For the ROA equation, the best model is fixed effects; for the ROE equation, the best model is pooled regression; and for the net interest margin (NIM) equation, the fixed-effect model is the most eligible. It shows that GCG is the most widely significant determinant of bank profitability. Unfortunately, none of the macroeconomic variables are significant. A bank that focuses on micro business lending owns a higher interest margin (NIM). It can be concluded that GCG and the combination of better credit risk management and the right business strategy improve banks' profitability.

Keywords: GCG rating; Bank profitability; ROA; ROE NIM

1. INTRODUCTION

The Asian economic crisis occurred in early 1998, and it became the starting point for the importance of good governance both in the private and in the public sector. Johnson, Boone, Breach, and Friedman (2000) unveiled the source of the extensive depreciation and stock market declines during the Asian crisis as the weakness of legal institutions in corporate governance. Baek, Kang, and Park (2004) examined the importance of corporate governance measures in determining firm value during a crisis. They found that firms with larger equity ownership by foreign investors experience a smaller reduction in their share value during a crisis than a local company group (chaebol). Beside economic reasons, this is related to the corporate governance practice at those firms. Further, Cullen (1998) concluded that good governance means more than just transparency and accountability issues. Good governance in Indonesia should have more meaning, especially regarding political participation. The anti-criticism political regime generated pent-up structural reform that covered the economic policy, financial market reform, and corporate and governance establishments. In relation to weak governance, the Asian Development Bank (ADB) stated that

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the Asian crisis in 1997 was a result of poor governance among firms in the countries that were hit worst by the crisis, such as Indonesia, Malaysia, Korea, and Thailand.

After that massive economic crisis, good corporate governance became a pivotal topic as part of a program to prevent economic crises. Then it became the priority of the national agenda for economic policies. Afterwards, the *Code of good corporate governance* (GCG) was introduced, and then an institution with the main responsibility of campaigning and assisting in the implementation of GCG was established. This institution was established in 2000 and is known as the National Committee on Corporate Governance. According to the Forum for Corporate Governance in Indonesia FCGI (2001), corporate governance improves performance through better decision making, operational efficiency, external financing, investor confidence, and shareholder value. Since that time, according to Bereskin, Kim and Oh (2015), Asian companies especially in Korea relied on external debts that is dependent on credit ratings. Pressure to have better rating, these firms increased their good corporate governance practice. From the business perspective, good corporate governance (GCG) help to improve banks' performance, as better oversight such as strict rules and reporting. It also directs manager to invest the resources on productive activities, reduces corruption, the incidence of tunneling, asset stripping, related-party transactions, and other ways of diverting firm assets or cash flows from shareholders.

The problem of applying GCG in Indonesia is related to the environment in which the banks are operating. According to Mongid and Tahir (2011), corruption is a problem in most of ASEAN banking, and it is the most persistent here. Recently, Murharsito, Fauziah, Kristijadi, and Iramani (2017) studied corruption and bank performance at the provincial level. Bougatef (2015) revealed the impact of corruption on the soundness of Islamic banks. Love (2010) confirmed it is complex. As GCG is imposed from outside and has not yet been adopted internally, the question is whether it has an impact on performance. The Basel Committee on Banking Supervision (BCBS) also concluded that GCG weaknesses at banks played a significant role in undermining the financial system's resiliency and should be called to attention by improving the corporate governance of banks. Further, referring to Santoso (2017), Chief of Indonesia Financial Authority (OJK), concerned over the practice of GCG among firms in Indonesia and it is a barrier for investment climate here.

This paper aims to contribute to the existing literature on the impact of GCG on bank performance using the case of Indonesia. Mayur and Saravanan (2017) examined the performance implications of board size, board composition, and the frequency of board meetings for the performance of banks. A curvilinear relationship was found between the board size and the performance of banks. Utama and Utama (2014) concluded a positive contribution of GCG to firm value. In contrast, Pratiwi and Nugraha (2016) and Umanto et al. (2016) concluded that there is no significant impact. Ghosh (2018) studied the implications of governance reform in the MENA region and found that it is positive for performance but not all disclosure aspects are significant. The study also confirmed the positive contribution to Islamic banks' stability. Bauer, Frijns, Otten and Tourani-Rad (2008). Aebi, Sabato and Schmid (2012) and Iramani et al. (2018) confirmed that GCG values contribute positively to performance. Apart from other variables, GCG is positive and significant on performances.

This paper examines the role of corporate governance in the banking sector of one of emerging economies, where the culture of governance is limited. Various studies have questioned the

implementation of GCG in emerging markets. Gibson (2003) confirmed that the effect of corporate governance mechanisms on the corporate performance in emerging markets is problematic. It was concluded by La Porta, Lopez-de-Silanes, Shleifer, and Vishny (2000) that, in countries where the legal system does not make a good job of protecting shareholders' rights, GCG can operate as it should. This paper is to extend the empirical studies on governance and performance using banks from Indonesia.

2. LITERATURE REVIEW

Banking failure is costly in term of bail out, economic growth and social cost. The BCBS (2010) responded to the massive bank failure during the global financial crisis by introducing new corporate governance practices into the banking industry, as the governance problem is the main source of failure. The Indonesia Committee on Corporate Governance expects that the introduction and implementation of Good Corporate Governance (GCG) will benefit the industry. Unfortunately, GCG cannot be taken for granted formally. Beltratti and Stulz (2012) and Essen, Engelen, and Carney (2013) found the irony of GCG during the banking crisis. They confirmed that banks with shareholder-friendlier boards performed worse during the crisis. Before the crisis, the banks were favored by the market in 2006, but they performed worse during the crisis.

There are two groups of results from the empirical literature on the impact of GCG on bank performance. The first shows a positive contribution of corporate governance to bank performance, as suggested by Caprio et al. (2007), Cornett et al. (2009), Hanazaki and Horiuchi (2003), Hanifa and Hudaib (2006), Jiraporn and Chintrakarn (2009), Laeven and Levine (2009), and Macey and O'Hara (2003). Further, Diamond and Rajan (2009), Mang'Unyi (2011) and Georgantopoulos and Filos (2017) concluded that a lack of corporate governance quality may reduce the willingness of the management to take appropriate actions, such as better control and efficiency, to increase the value of the firm. In Indonesia, Haryati and Kristijadi (2014), Iramani et al. (2018), and Nur'ainy et al. (2013) produced similar results. Peni and Vähämaa (2012). Orazalin, Mahmood and Jung Lee (2016) concluded that there is a positive impact of corporate governance on bank performance before and after the financial crisis. In contrast, Berger, Imbierowicz and Rauch (2016) only ownership governance is matter.

The second group denies the contribution of good corporate governance to bank performance. The empirical results show no significant relationship between good corporate governance measures and banks' performance, as suggested by Busta (2007), Ramano et al. (2012), Al-Hawary (2011), and Zulkafli and Samad (2007). According to Beltratti and Stulz (2012), better corporate governance, in reality, cannot improve performance by exceeding the market value benefits. This means that good corporate governance does not help companies to select profitable projects. Pratiwi and Nugraha (2016) and Umanto et al. (2016) also concluded that there is no contribution.

Studies on the impact of GCG in Indonesia's setting are relatively scarce compared with other economies. Recently, Utama and Utama (2014) investigated the impact of corporate governance (CG) practice on related-party transactions (RPTs) and firm value. Previously, Utama, Utama, and Amin (2016) studied whether GCG inlisted firms, including banking firms from Indonesia, has an impact on credit ratings. Credit ratings are issued by PEFINDO, a local rating company. They found that, in general, corporate governance principles have a positive impact on firm credit

ratings. Bastomi, Salim, and Aisjah (2017) provide similar conclusion on the positive role of Corporate Governance and Risk Management on Banking Financial Performance in Indonesia. Similarly, Mayur and Saravanan (2017) using Indian banking market study the impact of good governance practice on performance. Comprehensive performance measures are used such as return on assets (ROA), Tobin's Q, non-performing asset ratio (NPA ratio) and the net write-off ratio (NWO ratio). They conclude board size and composition and frequency of meetings are positive to performance.

Umanto et al. (2016) studied the significant role of GCG in regional banks. Further, Sutopo, Trinugroho, and Damayanti (2017) found that being politically connected is good for performance. In contrast, Nur'ainy et al. (2013) concluded that the implementation of GCG in Indonesia's listed firms using economic value added (EVA)is positive. The study also revealed that GCG affects performance indirectly through the firm size. Chou and Buchdadi (2016) examined the executive's compensation and firm performance in the banking industry in Indonesia. The findings showed that performance on pay and pay on performance effects are valid in Indonesia.

Darmadi (2013) examined the practice of GCG based on disclosure of some GCG dimensions in the annual report of Islamic banks. The study found that disclosure of the board members and risk management framework is very strong. In contrast, disclosure of internal control, renumeration, and board committees are minimal. Haryati and Kristijadi (2014) investigated the positive impact of the implementation of GCG on the profit performance of listed banks. Putra and Simanungkalit (2015) provided a similar result indicating that GCG is beneficial for listed banks especially to the cost of debt. Adam, *et al.* (2015) found that GCG in listed companies can lower the cost of debt (COD). In the case of Malaysia, Haniffa and Hudaib (2006) produced a similar result showing that GCG is positive in the performance of Malaysian listed companies. They defined performance as the ROA and market Tobin-Q. Recently, Pillai and Al-Markawi (2018), using cases from GCC, confirmed that governance variables such as government shareholdings, audit practice, number of board member, corporate social responsibility and leverage significantly increase the firm performance.

The implementation of GCG varies among countries. De Haan and Vlahu (2016) conducted a survey on this topic and found that there are regularities in the literature on corporate governance, such as a positive impact on the number of independent board members and performance. However, the governance mechanism depend on the environmental conditions in which the firm is operating. For example, in the UK, Okike and Turton (2009) supported the positive contribution of GCG to bank performance. In contrast, for ASEAN banking, an unfriendly governance environment, such as corruption, has a positive impact on performance due to the capability of banking firms to exploit the environment (Mongid &Tahir, 2011). A better governance is not always beneficial. Better governance practice fails to enhance performance, as the cost exceeds the benefit in terms of firm value (Beltratti & Stulz, 2012; Pathan, 2009). Further, Erkens, Hung, and Matos (2012) found that better board independence and institutional ownership produce lower stock returns. Ajili and Bouri (2018) used MENA banks to assess the impact of quality governance on Islamic banks' performance in the MENA and found that it is not significant for improving performance.

Size can indicate economies of scale and scope. Halkos and Salamouris (2004) provided evidence that banks with larger assets are more profitable. Further, Kosmidou (2008) studied the

determinants of performance (the return on average assets, ROAA). They also found that the cost-to-income ratio (CIR) is negative and the equity to total assets (ETA) ratio is positive and both are significant for the ROAA. Further, banks' size and the growth of GDP are positive and significant for their performance. In contrast, inflation is negative and significant for banks' performance. A study by Delis and Papanikolaou (2009) produced a similar result indicating that the bank size, industry concentration, and investment environment have a positive impact on banks' efficiency. A positive relationship between size and bank profit efficiency was also suggested by Bikker (2004), Iramani, *et.al* (2018) and Mongid and Muazaroh (2017).

3. METHODOLOGY

The definition of GCG according to Central Bank Regulation (PBI) number 8/4/PBI/2006 is bank governance that applies the principles of transparency, accountability, responsibility, independency, and fairness. The Indonesian Financial Service Authority (OJK) applies a GCG rating based on eleven GCG indicators such as the role of commissioners, role and responsibilities of directors, committees, handling the conflict of interest, compliances, role of auditors, risk management functions, transaction with related parties, transparency and strategic plans. According to Circular Letter of Bank Indonesia No. 15/15/DPNP/2013, regarding these 11 aspects, every bank performs a self-assessment to rate its governance practice, in which the best score is 1 and the worst is 5. In general, the assessment of GCG in bank is different from corporate sector as suggested by Becht, Bolton and Röell (2011).

3.1. Variables

To measure the performance, this study applies three measures. They are the return on assets (ROA), return on equity (ROE), and net interest margin (NIM). The prediction is NPL, LDR, GCGI, CAR, ETA, size, business strategy (micro), and economic variables such as economic growth, inflation rate, and exchange rate. The definition and the sources of the variables are presented in Table 1.

Table 1: Variables, Definitions, and Sources of Data

No.	Variable	Definition	Sources
1	ROA	Profit before tax/assets	Internal bank/financial report
2	ROE	Profit after tax/equity	Internal bank/financial report
3	NIM	Interest income–interest expenses/productive assets	Internal bank/financial report
Dependent variables			
1	NPL	Problem loans/total loans	Internal bank/financial report
2	LDR	Loans/total deposits	Internal bank/financial report
3	GCGI	GCG rating–extrapolated	GCG report
4	CAR	Equity capital/risk-weighted assets	Internal bank/financial report
5	ETA	Equity capital/total assets	Internal bank/financial report
6	LASSET	Logarithm of assets	Internal bank/financial report
7	DMICRO	1 for micro business lending	Internal bank/financial report

8	ECGRW	Economic growth (annual)	Indonesia Statistics Office
9	INFL	Inflation rate (consumer prices –annually)	Indonesia Statistics Office
10	LKURS	Exchange rate USD-IDR 1	Indonesia Statistics Office

3.2. Model

The model for profitability (Y) is

$$Y_{it} = \alpha_0 + \beta_1 NPL_{it} + \beta_2 LDR_{it} + \beta_3 GCG_{it} + \beta_4 CAR_{it} + \beta_5 ETA_{it} + \beta_6 LASSET_{it} + \beta_7 MICRO_{it} + \beta_8 ECGRW_{it} + \beta_9 INFL_{it} + \beta_{10} LKURS_{it} + \varepsilon_{it} \qquad (1)$$

As my estimation uses panel data, the error consists of the error and firm-specific information as
$$\varepsilon_{it} = v_i + \varepsilon_{it} \qquad (2)$$

$$Y_{it} = \alpha_0 + \beta_1 NPL_{it} + \beta_2 LDR_{it} + \beta_3 GCG_{it} + \beta_4 CAR_{it} + \beta_5 ETA_{it} + \beta_6 LASSET_{it} + \beta_7 DMICRO_{it} + \beta_8 ECGRW_{it} + \beta_9 INFL_{it} + \beta_{10} LKURS_{it} + v_i + \varepsilon_{it} \qquad (3)$$

In this case, Y is the ROA, ROE, and NIM, which represent bank profit indicators. The paper apply these profit measures to determine whether the impact of good governance on performance is consistent when different measures are used. Combining both of specific variables and macroeconomic variables had been done recently for Indonesian's banks by Mongid and Muazaroh (2017). Macroeconomic variables are very important for bank's performance as the banking business is very sensitive to macroeconomic downturn. Himmelberg, Hubbard, and Palia (1999) proposed the use of fixed effects to remove unobserved firm-level heterogeneity. In this paper, the model selection follows the BP- test and Hausman test to decide the appropriate model.

3.3. Variables

3.3.1. Dependent Variables

1. ROA. This is the most important ratio in the firm profitability measure. A higher ratio is better and represents the ability of the management to employ resources to generate profit.
2. ROE. This is used to indicate the company profit from the shareholders' perspective and is calculated after tax.
3. NIM. This variable represents the ability of a bank to earn a margin and its ability to minimize the deposit rate and maximize the loan rate. It also represents the business strategy of the bank.

3.3.2. Independent Variables

1. NPL. The most important source of bank-specific risk is credit risk. The credit risk is most significant, as there is poor enforcement of creditor rights, a weak legal environment, and insufficient information on borrowers' risk, such as credit bureaus not being fully applied. At the macroeconomic level, weak economic growth adds to risk, as it promotes the deterioration of credit quality and increases the probability of loan defaults (NPLs). An NPL is negative for profitability, as it indicates a risk event.
2. LDR. The most used as intermediation measure. LDR measure forward-looking credit risk using the loans to deposit ratio (LDR). The LDR provides a forward-looking measure

of banks' exposure to default and asset quality deterioration. Given the portfolio of outstanding loans to total deposits (LDR), based on standard expected returns, the paper expects a positive association between profits and LDR.

3. CAR. Capital is crucial for bank profitability, although the presence of capital requirements (CAR) may produce different results due to costs and abnormal expected profit and risk taking. Banks with a higher CAR may engage in less risk taking, as they benefit from a lower cost of funding due to a lower probability of failure. In the presence of asymmetric information, a well-capitalized bank could provide a signal to the market that a better-than-average performance should be expected (Athanasoglou et al., 2005; Mongid and Muazaroh, 2017). Well-capitalized banks are less risky, and this means that investors can expect lower profits. Hence, there is a negative association between capital (CAR) and profits. In contrast, if regulatory capital (CAR) represents a binding restriction on banks, The paper would expect a positive relationship between profit and CAR. Athanasoglou et al. (2005) found a positive and significant effect of capital on bank profitability.

4. ETA. The equity to total assets ratio provides a real picture of the bank's capital position, as it only considers equity and total assets. It is a relatively strong measurement ratio, in comparison with the CAR, as no managerial policy can influence it. Mongid and Muazaroh (2017) and Iramani, *et.al* (2018) found positive causation in both directions between capital and profitability.

5. LASSET. Size signals specific bank risk. Larger banks have a greater market share in the domestic market and operate in a non-competitive environment, lending rates may remain high, and there is lower interest on deposits; consequently, larger banks may enjoy higher profits. Further, the modern intermediation theory predicts efficiency gains related to bank size due to economies of scale and scope.

6. CGC. In contrast to other measures of GCG, the paper only apply the GCG rating, as it is the best indicator of bank GCG practice. GCG is positive for bank profitability, as a higher rating means better decision-making processes, surveillance, and disclosure. Iramani, *et.al* (2018) and Himaj (2014)

7. DMICRO. This is a dummy variable to indicate the banking business strategy, taking the value one for a micro-finance bank and zero for a non-microfinance bank. Ghalib (2017)

8. ECGRW. Economic growth represents the ability of the economy to increase its real income and the improvement of income and welfare.

9. INFL. The inflation rate indicates the inability of the economy to stabilize the price level. A high inflation rate will reduce the purchasing power.

10. LKURS. The exchange rate represents the ability of the economy to maintain its international economic position against the partner country. Appreciation in the exchange rate refers to a stronger position and depreciation occurs in the opposite situation.

4. RESULTS AND DISCUSSION

Table 2 presents a description of the variables used in this study. Of the three variables, the ROE is the highest and most varied. This is understandable, as the ROE is influenced by a bank's leverage. The higher the leverage is, the higher the ROE will be. The mean of the ROA is 1.39 with a minimum of 7.64 and a maximum of 5.37. Interestingly, the variability within the data from five years of observation is higher than among the samples, meaning that there is a substantial

change over time. The ROE as a consequence follows the ROA. However, the NIM shows a different picture. The mean is 5.03, meaning that the average bank enjoys a 5% interest margin. It is relatively high compared with the mean of other markets, which is around 3%. An interesting feature of the NIM is that the variability within a period of observation is higher. This means that there is a tendency to decrease over time. A careful investigation shows that the average NIM in 2010 was 5.52%, which then decreased to only 4.4% in 2015.

Table 2: Data Description (as Percentages)

Variable	Mean	Std Dev.	Min.	Max.
ROA	1.39	1.41	-7.64	5.37
ROE	10.19	17.22	-142.48	59.03
NIM	5.03	1.96	.24	11.3
NPL	1.70	1.59	0	8.9
LDR	83.28	14.88	40.22	140.72
CAR	16.52	4.49	9.41	45.75
GCGI	4.25	.62	2	5
ETA	11.79	3.57	6.01	25.14
LASSET	17.05	1.49	14.26	20.18
DMICRO	.09	.28	0	1
ECGRW	5.64	.54	4.88	6.22
INFL	5.60	.89	3.98	6.41
LKURS	9.29	.16	9.10	9.53

For credit quality, our empirical indicate that the NPL is 1.7,which is far below the 5% regulation limit. In general, there is now a change of 1.13% in the variability of the NPL among the sample and the period (between the sample and within the sample). For the LDR, the mean is 83.28 and the maximum 140.60. On average, it is within the regulatory limits, but some banks are far beyond the limit. The variability among samples is higher than that from year to year. Capital strength is measured by the CAR and ETA. For the CAR, on average, it is twice as large as the minimum required (16.52). There is no bank that is below the required level (8%). In terms of the ETA, the result is almost the same as the CAR. Overall it is 11.79, and the variance is similar at around 2.5%.

GCG, as the main theme in this study, shows significant improvement. The mean is 4.25, with a minimum of 2 and a maximum of 5. Please note that the figure was transformed from 1 (the best) into 5 (the best) to make the interpretation much simpler. There is a tendency for the GCG rating to decrease over time. Whereas in 2010 the average of GCG was 4.5, in 2015 it was only 4, indicating that strict regulatory enforcement will reduce the GCG rating if there is fraud in the bank. Regarding the size of the firm (LASSET), the mean is 17.05 with a standard deviation of 1.49. The minimum size is 14.25 and the maximum 20.18. A small variation appears between samples and within the time period. The size of the bank always increases as a result of expansion and inflation.

For the macroeconomic variables, the mean for economic growth (ECGRW) is 5.64, with a minimum of 4.88 and a maximum of 6.22. The inflation rate (INFL) is the main problem in Indonesia, as it is always above average in the region. The minimum is 3.98, and the maximum is 6.41. The inflation rate tends to increase from year to year. The exchange rate is another volatile

feature of the Indonesian economy. In general, the exchange rate between USD and IDR is 11,025, the best rate being 8,991 and the lowest being 13,795 for a dollar.

Table 3: Correlations

	ROA	ROE	NIM	NPL	LDR	CAR	GCG2	ETA	LASSET	MICRO	ECGRW	INFL	LKURS
ROA	1												
ROE	0.89	1											
NIM	0.35	0.17	1										
NPL	-0.45	-0.29	-0.24	1									
LDR	0,02	-0.06	0.24	-0.05	1								
CAR	0.03	-0.06	0,16	-0.11	-0.13	1							
GCG2	0.43	0.37	0.33	-0.35	0.13	0.07	1						
ETA	0.17	-0.03	0.3	-0.14	0.15	0.76	0.13	1					
LASSET	0.21	0.13	0.02	-0.23	0.15	-0.24	0.38	-0.09	1				
MICRO	0.09	0.03	0.42	-0.03	-0.06	0.05	0.04	0.15	0.21	1			
ECGRW	0.11	0.1	0.27	-0.08	-0.16	-0.12	0.26	-0.21	-0.19	0	1		
INFL	-0.13	-0.14	-0.21	0.05	0.12	0.09	-0.19	0.15	0.13	0	-0.75	1	
LKURS	-0.11	-0.12	-0.25	0.05	0.19	0.12	-0.27	0.21	0.19	0	-0.96	0.781	1

	ROA	ROE	NIM	NPL	LDR	CAR	GCGI	ETA	LASSET	DMICRO	ECGRW	INFL	LKURS

Table 3 presents the correlation matrix of the variables used in the estimation. The high correlation between ROA, ROE, and NIM is reasonable, as they measure similar concepts and it is taken for granted that these ratios are profitability measurements. The highest correlation among the predictors with the ROA is GCG. The rationale behind this is that a highly profitable bank is a well-managed bank. GCG can provide information on whether the bank is a well-managed bank. For the ROE, GCG and ETA are the variables that have a high correlation. In short, ETA is a reversed value of the leverage. For the NIM, the highest correlation is with DMICRO, which represents a microfinance bank that serves the mass market, with a small lending volume and a high interest rate. Among the independent variables, the correlations between the inflation rate (INFL), the economic growth (ECGRW), and the exchange rate (LKURS) are the main concern. The test with the variance inflation factor (VIF) shows that the LKURS has 17.45 VIF. However, eliminating this variable does not have a significant impact. The researcher thus decided to use this variable in the modeling.

Table 4: The Determinants of Profitability Model

Variable	Return on Assets (ROA)			Return on Equity (ROE)			Net Interest Margin (NIM)		
	Pooled	Fixed Effect	Random Effect	Pooled	Fixed Effect	Random Effect	Pooled	Fixed Effect	Random Effect
NPL	-0.29***	-0.37***	-0.32***	-2.29*	-2.64*	-2.30*	-0.16	-0.12	-0.14
LDR	-0.01	-0.01	-0.01	-0.17	-0.24	-0.17	0.03***	0.02	0.03**
CAR	-0.08*	0.01	-0.05	-0.72	0.26	-0.70	-0.02	0.09	0.09
GCGI	0.70**	1.31***	0.97***	10.63***	18.45***	11.02***	0.66*	0.30	0.45
ETA	0.12*	-0.05	0.05	0.14	-1.31	0.09	0.12	-0.17**	-0.07
LASSET	-0.01	0.17	-0.06	-1.19	4.62	-1.25	-0.22	-2.35***	-0.25
MICRO	0.15	0.41	0.26	1.33	1.79	1.30	2.93***	1.00	2.54***
ECGRW	0.13	-0.01	0.01	-5.87	-4.67	-5.90	1.11	0.54	0.98
INFL	-0.21	-0.23	-0.23	-2.87	-2.99	-2.91	-0.04	-0.29	-0.07
LKURS	1.16	1.58	1.40	-0.08	7.15	0.60	0.72	4.40	0.83
Const	-10.43	-18.69	-12.06	63.36	-135.14	56.92	-10.77	0.82	-8.88
N	132	132	132	132	132	132	132	132	132
Aic	434	368	.	111	108	.	488	355	.
Bic	465	399	.	1.14	111	.	520	387	.
Chi-2/ Wald	5.84	5.57	57.08	3.31	3.66	66.47	10.96	8.23	66.47
R-Squared	0.33			0.22			0.43		
Within		36	34		27	24		48	32
Between		25	31		22	25		1	49
Overall		26	30		16	22		1	41
Rho		48	23		42	2		94	39

As previously mentioned, in this study, the bank profitability is defined as consisting of three categories of measurement. The ROA is used to measure the ability of the managers to use all the

resources to generate income and manage costs. The ROE is a measure of a bank's profit from the shareholders' perspective. The NIM is to evaluate the capacity of the management in managing and predicting the economic condition, especially the interest rate or market risk and monetary policy.

From the **Breusch–Pagan test** (BP test) for ROA model, the result finds the chi-squared is 11.6 and significant at the 1% level. It means that the pooled regression is not consistent for this model. The result implies that the possible models are panel data with fixed or random effects. Using the Hausman test, it is found that the chi-squared is 28.82 and significant at the 1% level. This means that the fixed effect is consistent. In this analysis, the paper applies the fixed-effect regression model for the ROA. However, investigating the coefficients of the regression, in general, the results are consistent. The best choice for the ROA is the panel model with fixed effects. For the ROE, BP test (the Breusch–Pagan test) is not significant as the Chi-squared 3.31 with p-value is 65%. The result implied the panel data is rejected. As result, the pooled regression is eligible for the ROE. Further Hausman test is Chi-squared is 11 and significant at 25.55% implied the best model is pooled regression. For the NIM, BP test results 14.39 and significant at 1% and Hausman test is 60.91 and significant 1%. It means the fixed-effect model is appropriate for the NIM. These three models are the best for further analysis.

The NPL is negative in all the models, confirming the importance of the credit risk in the banking industry. The ability to manage non-performing loans at the lowest level is a necessary condition for a profitable lending business. In Indonesia, the maximum NPL is 5%. A bank that has an NPL ratio of more than 55 will automatically enter special supervision, and the management is required to implement an action plan to reduce it. The coefficient of the NPL in the fixed-effect model is the biggest, -0.37. This means that, with a 1% increase in the NPL, the bank will experience a 0.37% decrease in its ROA. Assuming that the average ROA is 1.4%, then 5% in the NPL will wipe out all the profit.

The results for GCG, as an indicator of how a bank is managed, are all positive and significant. The fixed model has the highest coefficient, 1.32, indicating the importance of the way in which a bank is managed. Successful banks always have a high GCG rating. Other variables, such as the LDR and CAR, the size of the bank, and the business model (microfinance), are not significant. This result underlines the regulators' principle that capital is not a substitute for good management. Referring to GCG as an indicator of good management, the findings support the principle, in line with De Haan and Vlahu (2016), that GCG is positive for banks' performance. For the business model (micro credit focus), it is consistent to Ghalib (2017).

Interestingly, not all the macroeconomic indicators are significant. This means that bank profitability is not related to the economic conditions. It may also be concluded that, in normal economic conditions, economic variables do not give a shock to the banking sector. This is understandable, because, as intermediaries, in normal conditions, banks are always able to pass the risk and the cost on to their borrowers or depositors. The negative sign of inflation implies that reducing and maintaining the inflation rate at a very low level is conducive to banking business. Economic growth is negative, meaning that higher economic growth may, in the short run, reduce profits as banks try to expand their operation, requiring higher expenses. The inconsistent signs indicate that economic growth can produce different impacts on bank performance and that

different banks may respond differently to the development of the macro-economy, especially economic growth.

The exchange rate volatility is positive but not significant. Further, looking at the inflation rate (INFL), an interesting finding is that it is negative towards profitability. This means that higher inflation is not conducive to banking business. Although it is not significant, it is apparent that these constituent signs indicate the negative impact of inflation.

The ROE is estimated using pooled regression, as the BP test result for the chi-squared is 0 and significant at the 94% level. However, the pure pooled OLS results in heteroscedasticity. In the modeling, the heteroscedasticity was managed to be eliminated by applying the vice error. This technique is the best available to manage heteroscedasticity. The ROE is special in the banking profitability measure, as it derives from the ROA multiplied by leverage. This means that the ratio depends not only on profit but also on leverage. Highly leveraged banks will increase their ROE when in profit but can be devastated when losses occur. Interestingly, the NPL is negative and significant at the 10% level in all the models. This means that the ability to maintain credit risk at the minimum level is very important for the ROE. The coefficients of the ROE are all negative in these models.

GCG is significant in all the models, supporting the importance of the management side on bank profitability. The coefficient is 10.63 for the pooled-regression model, 18.45 for the fixed-effect model, and 11.02 for the random-effect model. This finding is in line with the international and regulatory perspectives. The Basel Committee on Banking Supervision (BCBS) (2015), as the main global regulatory body in the banking world, stresses that effective corporate governance is critical to the proper functioning of the banking sector and the economy as a whole. Banks as intermediaries perform a crucial role in the economy to drive economic growth. Governance weaknesses at banks that play a significant role in the financial system can result in the transmission of problems across the banking sector and the economy as a whole. This means that good governance is critical in the banking industry. The finding is in agreement with the previous study on the positive role of GCG in bank performance presented by de Haan and Vlahu (2016).

The size of the business (LASSET) produces inconsistent coefficient signs. This is inconsistent with Halkos and Salamouris (2004) and Kosmidou (2008), who inferred that banks with larger assets are more profitable. Mostly, the results are negative for the ROE, except for the fixed-effect model. Economic growth is negative in all the ROE equations, indicating mixed responses among bank managers. The exchange rate variable also produces inconsistent signs, indicating different responses regarding exchange rate risk.

Further, other banking variables, such as the LDR, CAR, ETA, and size, produce mixed results and are not all significant. This indicates that good management is superior to these variables. The economic variables are not all significant. Economic growth and inflation are negative, and the exchange rate (Lkurs) is positive.

For the NIM equation, this study applies the fixed-effect model, as it is the most appropriate. The BP test produces a chi-squared of 25.3, which is significant at the 1% level, meaning that pooled regression is not appropriate. Using the Haussmann test, it is found that the fixed-effect model is the correct one, because the chi-squared is 28.82 and significant at the 1% level. It can be noted that the NIM is very important for most banks in Indonesia, as it can be the only substantial source

of income. This can be the case for a small bank, in which loan origination or lending is the only profitable business.

The LDR is positive and significant in the pooled and random-effect models. GCG is significant at the 10% level in the pooled-regression model. The ETA is significant at the 5% level in the fixed model. The asset size is negative and significant at the 1% level, meaning that big banks are taking a smaller margin than smaller banks. This is understandable, as big banks can generate income not only from lending but also from other business activities, such as remittance, exports and imports, and other fee-based activities.

The interest margin is also related to the business model. Banks that have a business model in microfinance lending have a high NIM, because they serve a mass market with small loans but high margins. The dummy micro business (DMICRO) is significant at the 1% level in the pooled-regression and random-effect models. Unfortunately, in the fixed-effect model, the micro-lending business is not significant but still positive. In general, the business model that focuses on microfinance banking is positive for the NIM.

Again, consistently across all the models, the macroeconomic variables are not all significant, underlining the ability of the banking industry to manage macroeconomic risk. It is also supported by the fact that the period of the study is normal and lacks economic shocks.

5.   CONCLUSION AND IMPLICATION

This study aims to fill a gap in the financial literature by examining the effectiveness of GCG using the case of public banks in Indonesia. The main proposition in this study is that institutions that have better GCG show a better GCG rating and their management's decisions are more prudent and focus on shareholders' interest, meaningless excessive risk taking and an efficiency orientation.

Our results show that GCG is the most widely significant determinant of bank profit measured using the ROA. All the models produced a similar result that the GCG rating is positive and significant for pooled regression, fixed-effect (FE) regression, and random-effect (RE) regression. The highest coefficient is for the FE model, which reaches 1.31, meaning that the higher the GCG rating, the higher the ROA. For the ROE, the impact of GCG is, in line with the FE model, the highest.

In contrast, for the NIM, the GCG rating is less effective. The most important variable that is positive and significant is the business strategy (micro). This means that a bank that focuses on micro business lending reaches the NIM. This is understandable, as micro lending charges higher interest to compensate for the cost of the lending operation. Micro lending is characterized as a human-intensive production process of originating, maintaining, collecting, and supervising. Unfortunately, no economic variable is significant. This finding implies that improving the practice of GCG and combining it with better credit risk management and the right business strategy are the best way to improve banks' profitability as suggested by Strøm, D'Espallier, and Mersland (2014).

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