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The Causality between Corporate Governance Practice and Bank Performance:
Empirical Evidence from Indonesia

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Abstract: The aim of this study is to examine the existence of causality between corporate governance practice and performance of commercial banks in Indonesia. We also investigate the influence of age, capital adequacy, and type of commercial banks on bank performance and examine the influence of the bank size, foreign ownership, and listing status on corporate governance practice. The result shows that corporate governance practice, bank size and capital adequacy ratio have positive influences on bank performance in Indonesia. However, bank performance does not influence corporate governance practice. This study also finds that regional banks have better performance than private banks. The results of the study support the Central Bank's efforts to enhance CG practices in the banking sector, to strenghten banks' capital base and its policy to encourage banks to merge to become larger.

Abstrak: Tujuan dari penelitian ini adalah menguji hubungan timbal-balik antara praktik tata kelola dan kinerja bank umum di Indonesia. Pengujian dilakukan dengan melihat pengaruh dari umur, indikator kecukupan modal, tipe bank terhadap kinerja bank dan selanjutnya dilihat pula pengaruh dari ukuran bank, kepemilikan asing, dan status terdaftar di bursa terhadap praktik tata kelola bank tersebut. Hasil penelitian menunjukkan bahwa praktik tata kelola, ukuran bank, dan rasio kecukupan modal memiliki pengaruh positif terhadap kinerja bank di Indonesia. Tetapi, kinerja bank tidak memiliki pengaruh terhadap praktik tata kelolanya. Studi juga menemukan bahwa bank pemerintah daerah memiliki kinerja lebih baik dibandingkan bank swasta nasional. Hasil penelitian ini mendukung usaha Bank Indonesia dalam meningkatkan praktik tata kelola di dalam sektor perbankan, untuk memperkuat modal dasar bank dan kebijakan Bank Indonesia dalam mendorong bank untuk melakukan merger dan menjadi semakin besar..

Keywords: bank performance; corporate governance; ownership structure

JEL classification: G21, G30, G34

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Introduction

Good corporate governance (henceforth, GCG) practice within a company plays an important role in directing and managing the company. GCG is needed because of the existence of agency problems caused by the separation of ownership of resources and managing those resources (Jensen and Meckling 1976). Agency problems or conflicts of interest between principals and agents are defined as various conducts of agents (e.g., managers) that are not in accordance with the interests of principals (e.g., shareholders). GCG is one mechanism to minimize the conflict of interest between agents and principals.

Weak corporate governance (CG) practice is believed to be one of major contributors to the Asian financial crisis that finally led to the banking crisis (Asian Development Bank 2000). Therefore, it is intriguing to investigate the influence of corporate governance practice on bank performance. Unfortunately, the extant researches mostly investigate the influence of CG practices on firm performance (Gompers et al. 2003; Brown and Caylor 2006) but empirical studies that examine the influence of corporate governance practice on bank performance as a regulated industry are rare. One example of these studies is Andres and Vallelado (2008) who investigate the influence of board size as a proxy for corporate governance on bank performance. The result shows that board size has a positive effect on bank performance. This result is also supported by Adams and Mehran (2003) who find that the banking sector has a larger board size compared to the manufacturing sector and finally led to increased bank performance.

Previous studies also investigate the possibility of endogeneity between corporate governance and firm performance or firm value (Black et al. 2006; Silveira et al. 2007; Bhagat and Bolton 2008; Sung Suk 2008). These studies show that GCG has a positive influence on firm performance and firm performance also induces the firm to adopt a better corporate governance (Black et al. 2006; Silveira et al. 2007; Bhagat and Bolton 2008). Meanwhile, Sung Suk (2008) fails to find the causality between corporate governance and firm performance. He finds that firm value has a positive influence on CG practices but not the other way around. However, these previous studies focus on the causality between CG practices and firm performance, not bank performance. Hence, it warrants further investigation to examine the causality between corporate governance and bank performance.

The banking sector has a prominent role in economic development so the banking sector is highly regulated by the government (Andres and Vallelado 2008). Adams and Mehran (2003) state that the practices of corporate governance in the banking sector differ from other sectors because of their characteristics as a regulated industry. In Indonesia, the regulator in the banking sector is the central bank, i.e. Bank Indonesia and is supported by the government in managing economic and financial stability of the nation. Bank Indonesia Decree No. 8/4/PBI/2006 requires the banking sector to report their corporate governance practices in the form of a self-assessment working paper GCG. This form comprises a composite score that combines all of the assessment on CG in a bank. Self-assessment reporting on corporate governance practices has the purpose of increasing the transparency in the banking sector. This self-assessment is expected to meet the objective of the regulator to improve the performance of the banking sector through the

improvement and implementation of GCG.

Furthermore, some previous studies show that bank performances are also affected by age of a bank, capital adequacy ratio, and type of commercial bank. The age of a bank positively affects the bank performance due to age having a positive correlation with experience (i.e. learning curve) which finally leads to higher performance (DeYoung and Hasan 1998; DeYoung et al. 1999). A capital adequacy ratio set by the regulator is required to meet minimum capital requirements so the bank's management will manage their assets properly and this will increase the bank performance (Unite and Sullivan 2003; Naceur and Kandil 2009). The type of commercial bank also influences bank performance. For example, in Indonesia, regional banks (Bank Pembangunan Daerah) are supported by local government funding. Hence, high support of government funding results in increased funds availability for lending at relatively low rates compared to those of private banks. Therefore, high capacity to provide credit and the support by government cause the bank to have a close relationship with a particular community and improve their performance. This condition is similarly applicable to foreign banks and joint venture banks (Havrylchyk 2006).

CG practices are also determined by bank size, foreign ownership, and listing status at the stock exchange. Bank size has a positive impact on CG practices (Demsetz 1983; Levine 2004; Black et al. 2006). Large banks have less asymmetric information so they tend to implement GCG. Meanwhile, the existence of foreign parties in the bank ownership structure will have a positive impact on bank governance. The reason is that the foreign party will provide a source of capital and transfer knowledge to improve the bank governance (Bonin 2005; Williams and Nguyen 2005). Banks that are listed in capital markets tend to have better CG practices because they are closely monitored by investors who demand that the banks increase their transparency and disclosure through good corporate governance practice (Akhigbe and Martin 2008).

Based on the above explanation, the purpose of this study is to investigate the causality between CG practices and bank performance (i.e. bank profitability) in Indonesia. We also investigate whether: 1) the CG practices are also determined by bank age, capital adequacy ratio, and type of bank (state-owned banks, regional banks, and private banks , foreign-owned banks; 2) bank performance is also affected by foreign-owned banks, listing status, and bank size. We contribute to the extant research by providing more in-depth knowledge about the causality between CG practices and performance in the banking sector as a regulated industry. The previous studies generally focus on the causality between CG practices and firm performance. The intriguing issue that warrants further study is the banking sector as a regulated industry having a stringent regulation related to CG practices than other industries. The differences of commercial banks regulation according to Bank Indonesia Decree No. 8/4/PBI/2006 compared to other public listed companies among others are: 1) the proportion of independent commissioners to total board of commissioners is 50 percent while for other listed companies based on Indonesian Stock Exchange Directors Decree No. Kep-308/BEJ/07-2004 is 30%; 2) Capital Market Supervisory Boards Decree No. Kep-29/PM/2004 requires public listed companies to have an audit committee while Bank Indonesia requires commercial banks to have not only an audit committee but a risk man-

agement committee and remuneration and nomination committee as well. Therefore, the uniqueness of bank characteristics may affect their performance differently than other public listed companies.

The remainder of the paper is organized as follows. Section 2 reviews the literature and hypotheses development. Section 3 describes data and methodology. Section 4 describes the empirical results and section 5 concludes the paper.

Literature Review and Hypotheses Development

The empirical researches find that CG practiced have a positive impact on bank performance (Gompers et al. 2003, Brown and Caylor 2006; Andres and Vallelado 2008, Bhagat and Bolton 2008). Choe and Lee (2003) show that banking sector board governance-related reforms are strongly and positively related to market-based measures of corporate performance (i.e., cumulative abnormal return). This finding supports Roseinstein and Wyatt (1990) who find that better CG practices (i.e., strengthening of executive stock compensation and other compensation, effective audit committee) has a positive relationship with stock market reaction (i.e., cumulative abnormal return).

In Indonesia, Bank Indonesia regulation No. 8/14/PBI/2006 on CG in the banking sector aims to improve banks' performance, to protect the interests of stakeholders, to improve the compliance with regulations and business ethics applicable in the banking industry. Likewise in the manufacturing sector, the corporate governance in the banking sector is a mechanism to manage a variety of stakeholders' interests so the conflict of interest among them can be mitigated. Based on the above argument, we posit the hypothesis as follows.

$H_{1.1}$: *Corporate governance practice has a positive influence on bank performance.*

DeYoung and Hasan (1998) find that bank performances are positively affected by bank age. DeYoung et al. (1999) assert that the bank begins its operations as a financial intermediary firm entering the market and competition on a certain scale. A newly established bank has certain characteristics and its own-way of managing the operation compared to an older bank. As it is reaching its maturity stage, a bank has more experience in managing and deciding appropriate policies to cope with the rapid changes in the industry. Therefore, based on this argument, the hypothesis can be posed as follows:

$H_{1.2}$: *Bank performance is positively affected by its age.*

The compliance with a capital adequacy ratio (henceforth, CAR) requirement in commercial banks aims to improve the operational functions, security functions and bank regulation (Siamat 2004). An adequate CAR accompanied by effective and efficient bank management and lending activities are expected to improve the performance of a bank. Naceur and Kandil (2009) find that the role of regulators in setting the minimum level of CAR will increase the bank performance. This empirical finding is also corroborated by Supriyatna et al. (2007) who argue that CAR may reduce the deterioration of bank performance and can be used to classify the bank performance as good or bad. CAR also reflects the compliance level of a bank with the regulation and represents their protection of public interest. Hence, we state the following hypothesis as follows.

$H_{1.3:}$ *The capital adequacy ratio has a positive influence on bank performance.*

The existence of different types of commercial banks affects the level of bank performance. Commercial banks have a variety of financial support, reputation, and lending activities (Siamat 2004). The type of banks that have higher funding support, reputation, and lending activities should result in a better bank performance. Havrylchyk (2006) states that the existence of different types of banks affect the individual bank performances. In Indonesia, the types of banks are state-owned banks, private banks (i.e., Syari'ah banks, foreign exchange banks and non-foreign exchange banks), regional banks, and joint venture banks (mixed).

The aforementioned studies show that state-owned banks perform more efficiently than foreign banks (Chang et al. 1998; De Young and Nolle 1996; and Micco et al. 2007). This finding is also supported by Bhattacharrya et al. (1997) who state that state-owned Indian commercial banks perform more efficiently than foreign and private banks. The argumentations are: 1) Foreign banks have a lack of understanding about the domestic market and local clients of the host country therefore this condition inhibits the foreign banks from achieving higher performance (De Young and Nolle 1996); 2) Because state-owned banks have the government as the majority shareholder, they have a higher credibility in providing bank stability and the safety of deposits and consequently attract a large amounts of deposits at a relatively low cost (Altunbas et al. 2001). Hence, we conclude that state-owned banks have a high financial support from the government as well as its lower risk image by the public compared to private banks. These circumstances yield a higher effectiveness in managing operational of state-owned banks compared to private banks. Thus, the state-owned banks have a higher bank performance than that of other banks. Likewise, the argumentation is also applied to regional banks that obtain financial support from the local government and are perceived to have lower risk than private banks. We assert the following hypothesis.

$H_{1.4}$.: *State-owned banks have a higher bank performance than that of private banks.*

$H_{1.5}$.: *Regional banks have a higher bank performance than private banks.*

Empirical studies find that foreign ownership increases bank return (Goldberg et al. 2000; Dahlquist and Robertsson 2001; Yudaeva et al. 2003; Choi and Hasan 2005; Havrylchyk 2006 in Kim and Rasiah 2010). They argue that foreign-owned banks are more efficient (Havrylchyk 2003) and more productive (Yudaeva et. al. 2003) than domestic-owned banks. But, Choi and Hasan (2005) emphasize that the positive impact of foreign ownership on a bank's returns depends on their ownership level. Further, Dahlquist and Robertsson (2001) show that bank returns and risk are positively affected by the existence of foreign director on board, not determined by the number of outside board of directors. The foreign-owned banks are usually supported by their holding company abroad. Hence, their management and lending activities are more effective and efficient than domestic-owned banks. Therefore, foreign-owned banks have a better performance than other banks.

In Indonesia, banks with foreign ownership are divided into three groups, namely those that operate: 1) as a branch office (referred to as foreign banks; 2) as a subsidiary, either through joint ventures with domestic or local bank (called as mixed banks), or through mergers and acquisitions with domestic banks (divestment program), and; 3) as a representative office. The main differ-

ence between foreign banks and joint venture banks are their legal form. Foreign banks still have a legal form in accordance with their headquarters abroad and constitute as a significant part of the headquarters. As a consequence, the financial policy of foreign banks mostly depend on their headquarters, and the loans are generally provided to large firms. Whereas, joint venture banks (mixed banks) have a domestic legal form and legally constitute a separate entity from their headquarters, their legal form is one of limited corporation (Hadad et al. 2011). Further, the compliance of joint venture banks (mixed banks) to government regulation are expected to be higher than domestic banks because joint venture banks are constituently bound to government regulation. In other words, the foreign investment in Indonesia through joint venture banks (mixed banks) is closely supervised and this close supervision increases their performance. So, we state the following hypothesis.

$H_{1.6}$: *Foreign-owned banks have a higher bank performance than other banks.*

Previous researches investigate the endogeneity between CG and a firm's value in manufacturing industry (Bhagat and Black 2002; Black et al. 2006). Using ordinary least square (OLS) regression, Bhagat and Black (2003) report that board independence increases a firm's performance but on the other hand, a deterioration in that performance causes the firm to increase the independence of their boards of directors. But, after controlling this endoneity effect, this simultaneous equation is weakened and is not significant. Further, Black et al. (2006) find the endogeneity effect between CG and a firm's value. They show that an increase of 10 points in the corporate governance index predicts a 18 percent increase in Tobin's q and a 43 percent increase in market/book ratio, and vice versa. They give two explanations regarding this causality relationship: 1) signalling, i.e. firms employ a GCG to signal their quality; 2) reverse causality, i.e., higher firm value causes firms to adopt better governance rules.

Bhagat and Jefferis (2002), Bolton and Bhagat (2008), Cornett et al. (2009) show the endogeneity relationship between CG and bank performance. Cornet et al. (2009) find that stronger board in the banking industry can be achieved by higher bank performance and CEO pay-based on firm performance as well, vice versa. The above argument leads us to the following hypothesis:

$H_{2.1}$: *Bank performance has a positive influence on CG.*

Previous researches show that foreign-owned banks are positively related to CG practices (De Angelo and De Angelo 1985; Zingales 1994; and Douma, George, and Kabir 2003). They argue that banks with high foreign ownership employ better corporate governance practices because of their larger ownership, higher investment and long-term commitment.

A government regulation, No. 29 of 1999 related to share purchase of commercial banks, entitles foreigners to own commercial banks' with a share of up to 99 percent. The presence of a foreign party is expected to provide a source of capital and knowledge transfer and ultimately the bank's practices and management will be improved (Bonin 2005; Williams and Nguyen 2005). Therefore, foreign ownership provides an improvement in corporate governance practices in the banking sector. Based on these arguments, then the hypothesis can be formulated as follows:

$H_{2.2}$: *Foreign-owned banks have a better GCG practices than other banks.*

Listed banks at the Indonesia Stock Exchange have to comply with CG regulations set by the Capital Market Supervisory Body (i.e., Bapepam-LK) and the central bank (i.e., Bank Indonesia). Hence, listed banks face a higher requirement in terms of GCG practices compared to non-listed banks. Akhigbe and Martin (2008) state that investors in capital markets give a higher value to banks with GCG practices because they have better transparency and disclosure.

Hadad et al. (2003) documented that listed commercial banks comprised only 17 percent of all banks (24 out of 141) as of December 2002. Further, listed banks tend to have a higher performance, even though the correlation between listing status and bank performance is weak. This led us to hypothesize as follow.

$H_{2.3}$: *Listed banks have better CG practices than non-listed banks.*

A previous strand of literature employs size of bank as a control variable (Demsetz 1983; Levine 2004; Kanchel 2007). They argue that the extent of asymmetric information between insider and outside investors will be higher for a larger bank. A bank with larger size is characterized by higher complexity and information discrepancies. Therefore, GCG is required to increase bank's transparency and disclosure. Thus, we hypothesize as follow.

$H_{2.4}$: *Bank size has a positive impact on CG.*

Methodology

Sample

We obtain a sample of all commercial banks operating in 2008 from Bank Indonesia.[1] Based on Table 1 provided below, listed commercial banks at Bank Indonesia in 2008 amounted to 123. However, 25 of these commercial banks did not report their CG self-assessment rating. Therefore, the sample of commercial banks that can be used is 98. Further, we checked for outliers and yielded 90 observations after eliminating 9 outliers. An outlier is often operationally defined as a value that is at least 3 standard deviations above or below the mean.[2]

Financial reporting data (e.g., ROA, ROE), the age of a bank, capital adequacy ratio, the types of banks, bank size, and ownership structure of commercial banks were gathered from Bank Indonesia and Infobank magazine. We collected the score of CG practices of banks based on self-assessment on GCG implementation according to Bank Indonesia rule No. 8/14/PBI/2006 and published by Infobank magazine. The detailed aspects of CG practices being appraised are provided in Appendix. The following is Bank Indonesia rule No. 8/14/PBI/2006, Article 65 that requires banks' self-assesment on GCG:

1) Bank must perform a self-assesment on Good Corporate Governance implementation which covers items stipulated in Article 2 Paragraph (2) at least 1 (one) time each year.

[1] The period of study is year 2008 because Bank Indonesia regulation no. 8/14/PBI/2006 on GCG for commercial bank was revised to Bank Indonesia regulation no. 8/14/PBI/2006 and circular letter no. 9/12/DPNP issued on May 30 2007 is effective on beginning of 2008.

[2] http://dss.princeton.edu/online_help/analysis/regression_intro.htm

Table 1. **Summary of Sample Selection Procedure**

Data	N
Commercial Banks listed on Central Bank at 31 December 2008	123
Commercial Bank do not fully report the self-assessment of CG practice	**(25)**
Commercial banks with outliers	**(9)**
Total Observations	90

2) The result of self assesment on Good Corporate Governance implementation as refererred to in paragraph (1) is an integrated part of Good Corporate Governance implementation report.
3) The procedure for assesment as referred to in paragraph (1) shall be regulated in a Bank Indonesia Circular Letter.

Further, Article 75 stipulates that if a bank submits a significantly inaccurate and or incomplete report shall be imposed with administrative sanction in the form of a payment obligation of Rp250,000,000 (two hudred fifty million rupiahs) and administrative sanctions such as lowering the bank's health rating in the form of decreasing the level of management factor in bank's health appraisal, freezing of certain business activities, etc. The Central Bank also reviews the results of self-assessment and may require modification of the results if necessary. Because the threat of sanctions and the existence of inspection by the Central Bank, we believe that the self-assesment of CG practices in bank report to be relatively accurate and reliable.

Definition of Variables

According to Manlagnit (2011), the bank performance can be appraised by cost efficiency and profitability. He mentions that the stochastic cost frontier analysis (Aigner et al. 1977, and Meusen and van der Broeck 1977) and ratio of total costs to total assets of banks (Cost/TA) can deployed as proxies of cost efficient while return on assets (ROA), return on equity, and ratio of net interest income to average interest earnings assets (NII) can be used as proxies of profitability. Further, he states that bank cost inefficiency levels usually have a positive correlation with the cost ratio and, by contrast, has a negative correlation with profitability measures. Further, Coleman et al. (2006) and Akhigbe and McNulty (2011) employs ROA as a control for differences in cost or profit efficiency. He corroborates that more efficient banks are to be more focussed on cost control. Lin and Zhang (2009) also use return on assets (ROA) as measurement of bank performance (i.e. profitability). But according to Rhoades (1998) in Lin and Zhang (2009), ROA is biased upward for banks that earn significant profits from off-balance sheet operations such as derivative securities, as these activities generate revenue and expenses but not recorded as assets.

Therefore, Lin and Zhang (2009) deploy return on equity (ROE) as an alternative measure of profitability.

We use two proxies of bank profitability, i.e., *Return on Assets (ROA*) and *Return on Equity (ROE)*. ROA reflects the deployment of bank assets to yield its income (Adams

and Mehran 2003; Siamat 2004; Andres and Vallelado 2008; Chritopher 2009). ROA equals after tax net income (profits) divided by average total assets of bank (Saunders and Cornett 2005 in Christopher 2009, Lin and Zhang 2009). But, we have to be cautious with this measurement because bank performance can be increased by cutting expenses, such as advertising and R&D so the bank's profitability will be higher in the short-term but with a sacrifice in their long-term profitability. Further, total assets as a denominator are very sensitive to the accounting methods used by the banks.

This study also uses ROE as a proxy of bank performance relevant to shareholder's investment (Siamat 2004; Berger, et al. 2005; Kim and Rasiah 2010). ROE is a net income available to common stockholders divided by common equity (Brigham and Ehrhardst 2005). But, Christopher (2009) mentions that banks may employ high leverage to increase their ROE. Based on a composite index of a bank's CG provided by Bank Indonesia, the rating has a range value between 1-5. According to Bank Indonesia Regulation No. 8/14/PBI/2006 and Bank Indonesia Circular Letter No. 9/12/DPNP issued on May 30 2007, the categories of CG practices based on the bank's CG are shown in Table 2.

Table 2. **The Categories of Bank's CG Practices of Based on Output of Composite Index**

Composite Index	Category
Composite index < 1.5	**very good**
1.5 ≤ Composite index < 2.5	**Good**
2.5 ≤ Composite index< 3.5	**fair**
3.5 ≤ Composite index< 4.5	**Poor**
4.5 ≤ Composite Index< 5	**very poor**

Source: Bank Indonesia Circular Letter No. 9/12/DPNP

The lower value of the composite index indicates that the practice of corporate governance is better. Therefore, in order to avoid misinterpretation from the above stated hypotheses, we modify the output of the composite index as follows: Five – the composite index. The score of 5 (five) implies a maximum value of corporate governance practice that can be obtained.

Age of bank is measured by logarithm of age of bank since its establishment. *Capital Adequacy Ratio (CAR)* is a measurement of bank capacity in fulfilling its obligation and also a proxy of credit risk and operational risk. This is stated as a percentage of the risk from bank's capital.[3] *The size of bank* is calculated by logarithm of total assets. We use categorical variables for *type of banks* and assign private banks as the basis of comparison.

Empirical Models

To address the simultaneous relationship between CG and bank performance, we employ two-stage least square estimator (2SLS) regressions. Thus, the empirical models consist of two models: *the first* model is to investigate the effect of CG practice, age of bank, CAR, and types of bank on bank performance, while *the second model* is to investigate the influence of bank performance, bank size, foreign ownership and listing status on CG practice. Each model consists of two regressions because we use two proxies of bank performance. The empirical models are provided below.

[3] http://en.wikipedia.org/wiki/Capital_adequacy_ratio.

$$ROA_{1t} = \beta_{10} + \beta_{12}(CICG_{2t}) + \delta_{11}(AGE_{1t}) + \delta_{12}(CAR_{2t}) + \delta_{13}(SOE_{3t}) + \delta_{14}(REGIONAL_{4t}) + \delta_{15}(JOINT_{5t}) + \varepsilon_i \quad \text{.....(1)}$$

or

$$ROE_{1t} = \beta_{10} + \beta_{12}(CICG_{2t}) + \delta_{11}(AGE_{1t}) + \delta_{12}(CAR_{2t}) + \delta_{13}(SOE_{3t}) + \delta_{14}(REGIONAL_{4t}) + \delta_{15}(JOINT_{5t}) + \varepsilon_i \quad \text{.....(1b)}$$

$$CICG_{2t} = \beta_{20} + \beta_{21}(ROA_{1t}) + \delta_{26}(SIZE_{6t}) + \delta_{27}(FOREIGN_{7t}) + \delta_{28}(LISTED_{8t}) + \varepsilon_i \quad \text{.....(2a)}$$

or

$$CICG_{2t} = \beta_{20} + \beta_{21}(ROE_{1t}) + \delta_{26}(SIZE_{6t}) + \delta_{27}(FOREIGN_{7t}) + \delta_{28}(LISTED_{8t}) + \varepsilon_i \quad \text{.....(2a)}$$

where

β_n, δ_n: constants and coefficients of regressions

ε: error Term

ROA: Return on Assets

ROE: Return on Equity

CICG: Composite index of corporate governance

AGE: Logarithm of age of bank since its established

CAR: Capital adequacy ratio

SOE: Dummy variable, takes the value of one if state-owned bank and zero otherwise.

REGIONAL: Dummy variable, take the value of one if regional bank and zero otherwise.

FOB: Dummy variable, takes the value of one if foreign-owned bank and zero otherwise.

SIZE: Logarithm of bank's total assets

FOREIGN: Dummy variable, takes the value of one if there is an existence of foreign ownership and zero otherwise.

LISTED: Dummy variable, takes the value of one if the bank is listed at the Indonesia Stock Exchange and zero otherwise.

Results

Descriptive Statistics

The descriptive statistics for data is provided in Table 3, shows that the average value of ROA is 2.5109 percent with minimum value and maximum value consecutively are -1.63 percent and 7.11. While, the average value of ROE is 15.8062 percent with a minimum value and maximum value consecutively -4.02 percent and 46.85 percent. This result shows that the average bank performance in managing its assets and return to shareholders is relatively good. The average of CICG is 1.8868 (5-3.1132 = 1.8868). CICG of 1.8868 indicates that the average CG practices in the banking sector are in a good category. The minimum value of CICG is 3.15 (5-1.85 = 3.15) or in fair category and maximum value is 1.00 (5-4 = 1) or in very good category.

Table 3. **Descriptive Statistics**

	Range	Minimum	Maximum	Mean	Std. Deviation
ROA	8.74	-1.63	7.11	2.51	1.61
ROE	50.87	-4.02	46.85	15.81	11.32
CICG	2.15	1.85	4.00	3.11	0.52
AGE	3.12	1.61	4.73	3.38	0.59
CAR	58.31	10.34	68.65	25.40	14.33
SIZE	7.81	25.70	33.51	29.28	1.77
SOE	1.00	0.00	1.00	0.06	0.23
REGIONAL	1.00	0.00	1.00	0.27	0.44
FOB	1.00	0.00	1.00	0.19	0.39
FOREIGN	1.00	0.00	1.00	0.38	0.49
LISTED	1.00	0.00	1.00	0.27	0.44

The average of CAR in Table 3 is 25.39 percent with a minimum value and maximum value consecutively are 10.34 percent and 68.65 percent. Based on Bank Indonesia Regulation No. 9/13/PBI/2007, the minimum CAR is 8 percent. Therefore, the CAR held by commercial banks in Indonesia already meets the requirements of the regulator. This condition also reflects that commercial banks are quite conservative in their capital structure policy.

Banks in Indonesia consist of 5.6 percent state-owned banks (i.e. 5 banks out of 90 total banks), 26.7 percent regional banks (i.e., 24 banks out of 90 total banks), and 18.90 percent joint venture banks (i.e., 17 banks out of 90 total banks). The rest of the banks in Indonesia are private banks , that is 44 or almost 50%). In addition, the average foreign ownership in banks' ownership structure is 37.8 percent or 34 banks with foreign ownership. Finally, the percentage of commercial banks that are listed at the Indonesia Stock Exchange is 26.67 percent or 24 commercial banks.

Univariate Test of Performance Across Types of Banks

As shown in Table 4, the results of a t-test for mean difference of bank performance show that: 1) the averages of regional banks' performances (i.e., ROA is 3.68% and ROE is 27.80%) are significantly higher than those of the other-banks (i.e., ROA is 2.084% and ROE is 11.444%). These results corroborate the $H_{1.5}$ hypothesis; 2) the average of foreign-owned banks' performance proxied by ROA is significantly higher than that of the other-banks (3.21% vs 2.35%), however it is not significantly different from other banks if performance is measured by ROE. Thus, the result with regard to the $H_{1.6}$ is mixed; 3) the averages of state-owned banks' performances (i.e., based on ROA and ROE) are not significantly different from those of the other banks. Therefore, the $H_{1.4}$ is not substantiated;

Table 4. **T-test for Mean Difference of Bank Performance Based on Ownership Structure**

Category	Group Statistics	N	Mean of*ROA	Mean of*ROE
SOE	1	5	2.544 (0.481)	18.338 (0.305)
	0	85	2.509 (0.476)	15.657 (0.318)
Regional	1	24	3.686 (0.000)***	27.803 (0.000)***
	0	66	2.084 (0.000)***	11.444 (0.000)***
FOB	1	17	3.211 (0.023)**	12.902 (0.122)
	0	73	2.348 (0.043)**	16.483 (0.040)**
Private	1	44	1.596 (0.000)***	10.097 (0.000)**
	0	46	3.386 (0.000)***	21.267 (0.000)***

Note: the p-values are shown in parentheses whereas the coefficient estimates are on the first row
***Significant at 0.01(1-tailed); **Significant at 0.05(1-tailed); *Significant at 0.10(1-tailed)

Table 5. **T-test for Mean Difference of Foreign Ownership and Listed Status on Practice of Corporate Governance**

Category	Group Statistics	N	Mean of CICG
Foreign	1	34	3.201 (0.108)
	0	56	3.060 (0.114)
Listed	1	24	3.331 (0.008)***
	0	66	3.034 (0.009)***

***Significant at 0.01(1-tailed); **Significant at 0.05(1-tailed); *Significant at 0.10(1-tailed)

4) Private banks have a lower performance (i.e., average ROA is 1.596% and ROE is 10.097%) than that of other-banks (i.e., ROA is 3.386% and ROE is 21.267%).

Table 5 shows that the average of foreign-owned banks' CICIG is not significantly different from that of the other banks while the average of listed banks' CICG on Indonesian Stock Exchange (i.e., CICG is 3.331) is significantly higher than that of the other banks (i.e.,CICG is 3.034).

Correlation Analysis

The bivariate analysis in Table 6 shows the highest correlation is between and regional banks and ROA (r = 0.444) and between regional banks and ROE (r = 0.642). In addition, the bivariate analysis in Table 7 shows the highest correlation is between size and CICG (r = 0.424). This should not be a concern until it exceeds 0.8. The table also indicates that apparently there is no serious multicollinearity among the independent variables.

As presented in Table 6, regional banks have a significant positive correlation with ROA and ROE (both significant at 99% confidence level) while foreign-owned banks have a significant positive correlation with ROA (significant at 95% confidence level) and CAR has a significant positive correlation with ROE (significant at 99% confidence level). Further, from Table 7, it can be observed that the size and listing status is significantly correlated with the CICG at 99 percent confidence level with the predicted sign. The bivariate analysis is intriguing because the results provide a basis for interpret-

Table 6. **Pearson Correlation Analysis for Model 1**[a]

		ROA	NKCG	lnAGE	CAR	SOE	REGIONAL
ROA	Pearson Correlation	1					
	Sig. (1-tailed)						
ROE	Pearson Correlation	0.648 **					
	Sig. (1-tailed)	0					
CICG	Pearson Correlation	0.039	1				
	Sig. (1-tailed)	0.358					
AGE	Pearson Correlation	0.159	0.128	1			
	Sig. (1-tailed)	0.067	0.114				
CAR	Pearson Correlation	0.096	-0.167	-0.332 **	1		
	Sig. (1-tailed)	0.184	0.058	0.001			
SOE	Pearson Correlation	0.005	0.144	0.088	-0.1	1	
	Sig. (1-tailed)	0.481	0.088	0.204	0.174		
REGIONAL	Pearson Correlation	0.444 **	-0.062	0.431 **	-0.144	-0.146	1
	Sig. (1-tailed)	0	0.281	0	0.088	0.084	
FOB	Pearson Correlation	0.211 *	-0.005	-0.237 *	0.145	-0.117	-0.291 **
	Sig. (1-tailed)	0.023	0.479	0.012	0.086	0.136	0.003

**. Correlation is significant at the 0.01 level (1-tailed).

*. Correlation is significant at the 0.05 level (1-tailed).

[a] The untabulated results for ROE indicate regional banks have a positve correlation with ROE (sig. at 5% level) while none of other variables have a correlation with ROE.

Table 7. **Pearson Analysis for Model 2[b]**

		CICG	ROA	ROE	lnSIZE	FOROWN
CICG	Pearson Correlation	1				
	Sig. (1-tailed)					
ROA	Pearson Correlation	0.039	1			
	Sig. (1-tailed)	0.358				
ROE	Pearson Correlation	0.125	0.648 **	1		
	Sig. (1-tailed)	0.12	0			
SIZE	Pearson Correlation	0.424 **	0.126	0.402 **	1	
	Sig. (1-tailed)	0	0.118	0		
FOREIGN	Pearson Correlation	0.132	-0.042	-0.252 **	0.292 **	1
	Sig. (1-tailed)	0.108	0.347	0.008	0.003	
LISTED	Pearson Correlation	0.253 **	-0.217 *	0.012	0.485 **	0.204 *
	Sig. (1-tailed)	0.008	0.02	0.457	0	0.027

**. Correlation is significant at the 0.01 level (1-tailed).

*. Correlation is significant at the 0.05 level (1-tailed).

[b] The untabulated results for ROE show that none of variables have a correlation with ROE.

ing the results of two-stage least squares (2-SLS) in investigating of the endogeneity between CG practices and bank's performance.

Two-Stage Least Squares (2SLS) Regressions Results

Table 8 and 9 present regression results of the 2SLS regressions. Both tables show that the CG practices in the banking sector positively influence the level of bank performance as measured by ROA and ROE, supporting hypothesis $H_{1.1}$. On the other hand, the level of bank performance does not have a positive impact on CG practice. Therefore, this study corroborates the previous studies that find the positive impact of CG practices on bank performance (Adam and Mehran 2003; Gompers et al 2003; Brown and Caylor 2006; Andres and Vallelado 2008; Bhagat and Bolton 2008) but fails to support the endogeneity relationship between CG and bank performance as documented by Bhagat and Jefferis (2002), Bolton and Bhagat (2008), Cornett et al. (2009). Thus, hypothesis 2.1 ($H_{2.1}$) is not substantiated.

The absence of a causality relationship between corporate governance and bank performance may be due to the bank industry being regulated. As we know, CG practices of banks are regulated by Bank Indonesia rule No. 8/14/PBI/2006 so banks with good corporate governance practices will achieve higher bank profitability, not vice versa.

An age of bank does not have a positive effect on bank performance, so hypothesis $H_{1.2}$ is not supported. Thus, this study does not corroborate the argumentation that age of bank yields higher experiences that are needed to increase bank performance (Mamoghli and Dhoibi 2009).

The CAR has a positive effect on as measured by ROA (Return on Assets), so the hypothesis $H_{1.3}$ is substantiated. The results are consistent with previous research conducted by Nanceur and Kandil (2009). The existence of the bank's capital is an important instrument to preserve the liquidity of the bank (Siamat 2004). However, we fail to find the positive effect of CAR on ROE.

Table 8. **The Causality Output Statistics of ROA and CICG**

	ROA			CICG		
	Hypothesis	**Coefficient**	**p-value**	**Hypothesis**	**Coefficient**	**p-value**
ROA				+	-0.017	0.385
CICG	+	1.102	0.061 *			
AGE	+	-0.029	0.4625			
CAR	+	0.022	0.029 **			
SOE	+	0.767	0.134			
REGIONAL	+	2.256	0.000 ***			
FOB	+	1.537	0.000 ***			
SIZE				+	0.120	0.001 ***
FOREIGN				+	0.002	0.495
LISTED				+	0.050	0.373
Intercept		-2.318	0.158	-0.384	0.355	
Adjusted R Square		0.305		0.144		
F-Statistics		7.506	0.000 ***		4.746	0.002 ***

*significant at 10 percent level; **significant at 5 percent level; ***significant at 1 percent level

Table 9. **The Causality Output Statistics of ROE and CICG**

	ROE			CICG		
	Hypothesis	**Coefficient**	**p-value**	**Hypothesis**	**Coefficient**	**p-value**
ROE				+	-0.004	0.313
CICG	+	12.464	0.006 ***			
AGE	+	1.802	0.199			
CAR	+	-0.119	0.069			
SOE	+	2.934	0.270			
REGIONAL	+	16.801	0.000 ***			
FOB	+	3.504	0.11			
SIZE				+	0.132	0.004 ***
FOREIGN				+	-0.034	0.403
LISTED				+	0.050	0.361
Intercept		-31.363	0.026 **		-0.693	0.294
Adjusted R Square		0.426			0.146	
F-Statistik		12.019	0.000 ***		4.802	0.002 ***

* significant at 10 percent level; **significant at 5 percent level; ***significant at 1 percent level

We find that regional banks have a better performance (in both performance measures) than private banks. Therefore, we conclude that hypotheses $H_{1.5}$ is supported. As mentioned above, regional banks have full funding support from local governments where they operate. A greater financial support, as well as a good image perceived by the public provides easier access to increase lending activities and bank performance (Altunba et al. 2001).

Meanwhile, being foreign-owned has a positive influence on bank performance proxied by ROA only. This finding supports the argumentation that foreign-owned banks are more efficient (Havrylchyk 2003) and more productive (Yudaeva et al. 2003) than domestic-owned banks when using ROA as the profitability measurement. This finding is also corroborated by Demirguc- Kunt and Huzinga (2000), Bonin et al. (2005), and Micco et al. (2007). Micco et al. (2007) that show that the average foreign bank located in developing country has a ROA that is 0.37 percent points higher than that of a comparable private bank. Therefore, foreign banks located in developing countries tend to be more profitable than private banks. ROE may have drawbacks as a performance measurement so we fail to find the influence of foreign ownership on bank profitability. Berger et al. (2005) provide two main reasons of less appealing of ROE as bank performance measurement, i.e.:

1) ROE does not control for the bank's output which may be very difficult to change, at least in the short run other than by a large governance change. Thus, one bank may significantly more profitable than another due to scale or output mix, rather than quality of its management.
2) ROE is not adjusted for changes over time in the distribution of bank profitability or variability of bank profits.

Further, foreign banks may have a lack of understanding about the domestic market and local clients in the host country therefore this condition inhibits the foreign banks from achieving higher performance (De Young and Nolle 1996).

Furthermore, we find that CG practices are positively affected by size of bank, or only hypothesis $H_{2.2}$ is supported. This finding supports the previous studies that find a positive relationship between bank size and corporate governance practice (Black et al 2006; Sung Suk 2008). Levine (2004) argues that a larger size needs a higher GCG to reduce asymmetric information between insider and outsider investors.

The implications of the findings are as follows. Since we find that CG practices enhance performance, then this finding supports the Central Bank's efforts to enhance CG practices in the banking sector. We document the positive impact of bank size on performance. Thus, this finding supports the central bank's policy to encourage banks to merge so they become larger. We also find that capital adequacy ratio positively influences performance. This finding supports the central bank's effort to strenghten banks' capital base by increasing the minimum capital adequacy ratio from 8 percent to 12 percent. Finally, we find that the regional banks consistently outperform private banks in both performance measures. One possible explanation is that the regional banks have the privilege of obtaining funding from local governments so they can offer low interest rate for the funding. From the perspective of competition policy, this privilege can be viewed as

unfair to other banks. Further, from the tax payers' point of view, it may also not be in their best interests to spend their taxes on low-interest investments such as savings/deposits in regional banks. Thus, the policy of providing privileges to regional banks for accessing cheap funding may need to be reassessed in light of these concerns.

Conclusions

This study aims to investigate the causality relationship (endogeneity) between CG practices and bank performance. The determinants of bank performance are CG practice, age of bank, CAR, and type of banks while the determinants of CG practices are bank performance, size of bank, foreign ownership, and listing status.

Using a composite index of CG according to Bank Indonesia regulation No. 8/14/PBI, we find that CG practices, CAR, regional bank and foreign-owned bank have positive influences on bank performance measured by ROA. But, bank performance measured by ROE is only positively affected by CG practices and regional bank.

Further, we find that CG practices have a positive impact on bank performance, but not vice versa. On the other words, we do not find the causality relationship between CG practices and bank performance. This study also shows that CG practices are positively affected by size of bank.

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