Heliyon 6 (2020) e03452

Contents lists available at ScienceDirect

Heliyon

journal homepage: www.cell.com/heliyon

Research article

Remuneration committees, executive remuneration, and firm performance in Indonesia

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ARTICLE INFO

Keywords:
Business
Remuneration committee
Remuneration
Firm performance

ABSTRACT

Indonesia is currently in the process of mandating the establishment of Remuneration Committees (RCs) for all listed companies. However, little is known about the effectiveness of RCs in Indonesia. This study sheds light on this issue, by examining the relationships between RCs, executive and board of director remuneration, and firm performance in Indonesia. This study uses 847 observations of firms listed on the Indonesian Stock Exchange (IDX) during 2014–2017. Our results indicate that RCs are positively related to executives remuneration and firm performance. In particular, higher remuneration is only linked to higher performance in firms that have established a remuneration committee. This study documents the interactions between RCs, remuneration levels of senior company officers and firm performance in an emerging market setting with voluntary formation of RCs. This study has implications for regulators and company management in Indonesia (and other emerging markets), as the existence of remuneration committees is found to be associated with more effective remuneration packages and higher firm performance.

1. Introduction

The existence of various cases of major corporate failures, such as WorldCom, Enron, and Satyam (often called "Enron India"), has caused considerable concern among investors and regulators. To alleviate these concerns and provide investors with increased confidence in financial investments, authorities have introduced initiatives to improve internal control structures of corporations. In Indonesia, this process started in 2000, with the introduction of the Code for Good Corporate Governance issued by the National Committee on Corporate Governance. A subsequent version was issued in 2006 promoting the voluntary establishment of certain board committees, such as audit, nomination and remuneration, risk policy and corporate governance committees.

The most recent edition of the Indonesian Corporate Governance Manual, issued in June 2018, states that listed companies "must have" audit, nomination and remuneration committees. This shift in focus from voluntary formation of board committees to mandatory formation is interesting, as little to no research has been conducted in Indonesia about the effectiveness of such committees. This study helps to address this issue by examining the role of the remuneration committee on the remuneration practices of senior company officers and its associated effect on firm performance.

Indonesia is a market with a somewhat unique or unusual board structure. Based on the Financial Services Authority Regulation No. 33 /POJK.04/2014, Indonesian companies adhere to a two-tier board system. Indonesian companies have both a board of commissioners and a board of directors. The board of commissioners functions in a similar way to a board of directors in other countries. Whereas, the board of directors in Indonesia is similar to the top management team in other countries. Board committees are overseen by the board of commissioners in Indonesia, just as they would be overseen by a board of directors in other markets. To maintain consistency with the terminology used in other markets, we refer to boards of commissioners as boards of directors, and boards of directors as executives in the remainder of this paper.

In Indonesia, nomination and remuneration committees are formed to manage the compensation of the board of directors and executives. Based on the Financial Services Authority Regulation 34/POJK.04/2014, it is explained that the Nomination and Remuneration Committee is a committee formed by and responsible to the board of directors in its functions and duties. Furthermore, the Nomination and Remuneration Committee must consist of three members, where the chairperson of the committee

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https://doi.org/10.1016/j.heliyon.2020.e03452
Received 20 May 2019; Received in revised form 14 January 2020; Accepted 17 February 2020

Table 1. Variable definitions.

Variable	Definition	Source
Remuneration Variables:		
REM_EXE	Natural logarithm of all executives' remuneration	Annual Report
REM_DIR	Natural logarithm of all board of directors' remuneration	Annual Report
REM_ALL	Natural logarithm of all executives' and board of directors' remuneration	Annual Report
Performance Variables:		
ROA	Return on Assets; Earnings before interest and taxes (EBIT) divided by book value of total assets	ORBIS
TOBINSQ	Tobin's Q; Market value of equity and book value of all liabilities divided by total assets	ORBIS
ROE	Return on Equity; Net income divided by total equity	ORBIS
Remuneration Committee Variable:		
RC	The existence of a Remuneration Committee; A dummy variable equal to"1″ if a firm has a RC, otherwise "0"	Annual Report
Control Variables:		
DIR	Total number of directors on the board	Annual Report
EXE	Total number of executives	Annual Report
INDDIR	Percentage of independent directors on the board	Annual Report
AUDCOM	Total members of the audit committee	Annual Report
BIG4	Big Four Auditor; A dummy variable equal to "1" if the firm is audited by a big four auditor, otherwise "0"	Annual Report
GROWTH	Sales Growth; proportional change in sales	ORBIS
LEV	Leverage; Total liabilities divided by total assets	ORBIS
FSIZE	Firm Size; Natural logarithm of total assets	ORBIS
FAGE	Company Age; Natural logarithm of total years since company establishment	ORBIS
OCF	Cash Flow Ratio; operating cash flow divided by total assets at the beginning of year	ORBIS
CAPINT	Capital Intensity; fixed assets divided by total assets	ORBIS

Table 2. Sample distribution.

Year	Number of firms with RC	Number of firms without RC	Total
2014	39	154	193
2015	108	164	272
2016	123	133	256
2017	76	50	126
Total	346	501	847

Table 3. Summary statistics (n = 847).

	Mean	Median	Minimum	Maximum
REM_EXE	17,860,000,000	10,340,000,000	32,070,600	179,800,000,000
REM_DIR	6,474,000,000	2,650,000,000	12,000,000	165,500,000,000
REM_ALL	27,500,000,000	12,070,000,000	70,000,000	1,193,000,000,000
ROA	4.928	4.095	-31.140	47.920
TOBINSQ	1.174	0.605	0.040	11.380
ROE	4.665	5.755	-98.630	89.890
RC	0.408	0.000	0.000	1.000
DIR	4.376	4.000	1.000	22.000
EXE	4.875	5.000	2.000	16.000
INDDIR	37.795	33.333	0.000	300.000
AUDCOM	2.962	3.000	0.000	6.000
BIG4	0.417	0.000	0.000	1.000
GROWTH	0.097	0.039	-0.831	3.775
LEV	0.464	0.464	0.040	0.906
FSIZE	6,922,000,000,000	1,541,000,000,000	161,000,000	89,600,000,000,000
FAGE	3.341	3.466	1.792	4.477
OCF	0.071	0.060	-0.126	0.410
CAPINT	0.552	0.557	0.075	0.958

Notes: This table presents summary statistics for all the variables used in this study for the period 2014–2017. Values for REM_EXE, REM_DIR, REM_ALL and SIZE are presented as raw values and not natural logarithms.

Table 4. Pearson correlations.

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]
[1] REM_EXE	1.000																	
[2] REM_DIR	0.707***	1.000																
	(0.000)																	
[3] REM_ALL	0.969***	0.821***	1.000															
	(0.000)	(0.000)																
[4] ROA	0.216***	0.097**	0.269***	1.000														
	(0.000)	(0.035)	(0.000)															
[5] TOBINSQ	0.098**	0.035	0.119***	0.464***	1.000													
	(0.031)	(0.438)	(0.000)	(0.000)														
[6] ROE	0.168***	0.126***	0.235***	0.849***	0.373***	1.000												
	(0.000)	(0.006)	(0.000)	(0.000)	(0.000)													
[7] RC	0.375***	0.260***	0.326***	0.144***	0.137***	0.087***	1.000											
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.009)												
[8] DIR	0.321***	0.402***	0.443***	0.133***	0.117***	0.150***	0.280***	1.000										
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)											
[9] EXE	0.489***	0.363***	0.555***	0.180***	0.093***	0.142***	0.260***	0.443***	1.000									
	(0.000)	(0.000)	(0.000)	(0.000)	(0.005)	(0.000)	(0.000)	(0.000)										
[10] INDDIR	0.033	0.059	0.068**	-0.088***	-0.116***	-0.048	0.044	0.028	0.067**	1.000								
	(0.475)	(0.196)	(0.041)	(0.008)	(0.000)	(0.148)	(0.187)	(0.399)	(0.044)									
[11] AUDCOM	0.233***	0.202***	0.155***	0.065**	0.003	0.056*	0.130***	0.187***	0.197***	0.077**	1.000							
	(0.000)	(0.000)	(0.000)	(0.049)	(0.923)	(0.089)	(0.000)	(0.000)	(0.000)	(0.019)								
[12] BIG4	0.372***	0.254***	0.414***	0.263***	0.139***	0.203***	0.199***	0.318***	0.338***	-0.005	0.207***	1.000						
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.877)	(0.000)							
[13] GROWTH	-0.024	0.037	-0.044	0.064*	0.068**	0.074**	-0.010	-0.031	-0.043	-0.026	0.019	-0.026	1.000					
	(0.604)	(0.419)	(0.185)	(0.052)	(0.039)	(0.025)	(0.772)	(0.344)	(0.194)	(0.427)	(0.558)	(0.440)						
[14] LEV	0.065	0.065	0.085**	-0.228***	-0.169***	-0.107***	0.047	0.026	0.061*	0.067*	-0.004	-0.024	-0.009	1.000				
	(0.168)	(0.168)	(0.014)	(0.000)	(0.000)	(0.002)	(0.175)	(0.452)	(0.074)	(0.052)	(0.897)	(0.477)	(0.798)					
[15] FSIZE	0.168***	0.165***	0.265***	0.055*	-0.027	0.062*	0.080**	0.263***	0.281***	0.023	0.119***	0.194***	-0.062*	0.144***	1.000			
	(0.000)	(0.000)	(0.000)	(0.098)	(0.419)	(0.061)	(0.015)	(0.000)	(0.000)	(0.485)	(0.000)	(0.000)	(0.062)	(0.000)				
[16] FAGE	0.098**	0.073	0.122***	0.141***	0.064*	0.123***	0.002	0.180***	0.149***	-0.028	-0.005	0.116***	-0.058*	-0.054	-0.081**	1.000		
	(0.031)	(0.109)	(0.000)	(0.000)	(0.052)	(0.000)	(0.945)	(0.000)	(0.000)	(0.397)	(0.869)	(0.000)	(0.079)	(0.119)	(0.014)			
[17] OCF	0.270***	0.117**	0.269***	0.576***	0.379***	0.451***	0.169***	0.167***	0.196***	-0.118***	0.079**	0.316***	-0.024	-0.106***	0.104***	0.086***	1.000	
	(0.000)	(0.010)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.017)	(0.000)	(0.471)	(0.002)	(0.002)	(0.009)		
[18] CAPINT	0.038	0.019	0.053	-0.243***	-0.039	-0.168***	0.116***	0.093***	0.061*	0.016	0.077**	0.014	0.036	0.085**	0.162***	-0.196***	-0.017	1.000
	(0.411)	(0.677)	(0.109)	(0.000)	(0.236)	(0.000)	(0.000)	(0.005)	(0.066)	(0.627)	(0.020)	(0.668)	(0.274)	(0.013)	(0.000)	(0.000)	(0.599)	

Notes: This table reports the Pearson Correlation test results with *p < 0,1, **p < 0,05, ***p < 0,01, significant in 10%, 5%, and 1%.

must be an independent member of the board of directors, while the committee members may come from the board of directors, parties from outside the company, and those who hold managerial positions under the executive in charge of human resources. Thus, Nomination and Remuneration Committees are expected to support the mechanism of good corporate governance.

Agency theory argues that corporate governance mechanisms must be effectively implemented as a form of good internal control to reduce information gaps and possible agency costs. Based on agency theory, the board of directors is believed to be an important element of corporate governance. The board of directors is responsible for monitoring, controlling and linking companies with their external environment (Carter et al., 2010). The board of directors can then delegate some of its powers to specific committees responsible for a particular area, where the committee members are specialized.

Specialist committees are important corporate governance mechanisms to protect the interests of shareholders, by providing independent opinions on the various activities of the company and the executives. Agyemang-Mintah (2016) states that in the absence of a specific committee within a company's structure, it is like an executive writing a contract of agreement with the right hand then signing it with the left one. The establishment of specific committees are expected to improve the oversight and control of management, while remaining in line with the expectations and interests of shareholders. And, good control and management are expected to be associated with improved firm performance. Based on the regulation in Indonesia regarding the board of directors' supporting committees, the most important committee to incentivize management to work effectively is the Remuneration Committee (RC).

In Indonesia, the RC serves to evaluate and provide recommendations regarding remuneration policies of the board of directors and executives. Prior to the introduction of the new edition of the Indonesian Corporate Governance Manual in 2018, establishment of RCs was only mandated for banking and financial companies. For other companies, the establishment of RCs was voluntary. However, even though it was voluntary, an increasing number of listed companies in Indonesia have been establishing RCs. Based on the Financial Services Authority Regulation 34/POJK.04/2014, companies that register on IDX are required to have Nomination and Remuneration Committee to improve the application of the principles of good corporate governance. In Indonesia, the establishment of a Nomination and Remuneration Committee has been recommended in the GCG General Guidelines (Financial Services Authority, 2014). Furthermore, the applicable capital market regulations encourage public companies to provide

Table 5. Characteristics of firms with and without Remuneration Committees.

	Firms with RC	Firms without RC	t-value	z-value
	N = 346	N = 501		
REM_EXE	23.473	22.439	8.839***	8.645***
REM_DIR	22.047	21.297	5.878***	5.636***
REM_ALL	23.635	22.744	10.386***	10.061***
ROA	6.860	3.597	4.391***	5.253***
TOBINSQ	1.466	0.973	4.157***	4.398***
ROE	6.937	3.101	2.626***	4.660***
DIR	5.022	3.931	8.793***	9.265***
EXE	5.503	4.443	8.134***	7.648***
INDDIR	38.615	37.231	1.321	1.041
AUDCOM	3.075	2.883	3.949***	4.950***
BIG4	0.535	0.335	6.130***	6.010***
GROWTH	0.091	0.101	-0.289	2.359**
LEV	0.475	0.456	1.357	1.358
FSIZE	27.481	26.951	2.433**	4.637**
FAGE	3.342	3.340	0.069	-0.124
OCF	0.089	0.058	5.163***	4.909***
CAPINT	0.584	0.529	3.512***	3.431***

Notes: This table reports the characteristics of firms with RC and without RC. The t-test and z-test are displayed with *t > 1,645, **t > 1,960, ***t > 2,326 and *z > 1,640 **z > 1,960 ***z > 2,570, significant in 10%, 5%, and 1%.

disclosures if they have Nomination and Remuneration Committee. In practice, there are 122 out of 494 (25%) Public Companies that have a Nomination and Remuneration Committee and disclose it in the annual report.

Remuneration of the board of directors and executives needs to be considered in corporate governance, because the level of remuneration must be designed in such a way as to be attractive enough to incentivize the board of directors and executives to run the company effectively. Thus, RCs play an important role in maintaining and controlling the board of directors and executives, where an effective RC can ensure that the remuneration structure (salary, honorarium, incentives, and allowances) of the board of directors and executives has been set to maximize performance, so that it will reduce agency costs and information asymmetry. Based on agency theory, the goals of shareholders and management must be harmonized. Thus, higher compensation rates will result in higher corporate performance in broadly diversified ownership companies (Kraft and Niederprüm, 1999). Jiang et al. (2009) also shows that CEO compensation is positively related to the firm performance in companies with low concentrated ownership structures. In order for managers to act in the company's long-term interests, it requires alignment of incentives among many managers (Barron and Waddell, 2008).

Prior research demonstrates that the existence of RCs in corporate governance structures can provide significant benefits to the company's risk level and increase the level of voluntary disclosure (Tao and Hutchinson, 2013; Kanapathippillai et al., 2016). Jaafar et al. (2015) find a positive relationship between remuneration committees and remuneration in Malaysia, which suggests the effectiveness of the committee in reducing agency problems and motivating managers to perform. The existence of RCs can educate top management in responding to risk incentive compensation. Feng and Rao (2018) explained that CEOs respond to risk incentives from their remuneration by making risky investments (eg., R&D) but still mitigating their personal risks by increasing company liquidity. Furthermore, Agyemang-Mintah (2016) and Ahmed (2010) show that, with the establishment of RCs, the committee can monitor and advise executive management on salary decisions that reduce agency costs and should ultimately lead to better performance.

This study specifically examines the relationships between RCs and executive and board of director remuneration, and firm performance in Indonesia, during a period of voluntary formation of RCs. In this study, remuneration is conceptualized as a motivational tool for directors and executives to improve company performance (Devers et al., 2008). Ferris et al., 2018 shows that an appropriate executive compensation structure can significantly affect firm performance. We believe that it is important to know if RCs are an effective corporate governance mechanism in Indonesia, before they are mandated on all listed companies.

The study predicts that companies with RCs will have more effective remuneration packages, in the form of higher remuneration for executives and board of directors. In addition, the existence of RCs is expected to provide senior company officers with effective remuneration that incentivizes them to maximize their performance and the performance of the company. To test these relationships, this study uses 847 observations of listed companies on the Indonesia Stock Exchange (IDX) during the period 2014 to 2017.

We find that remuneration committees are positively related to the levels of executive remuneration and firm performance. In particular, further testing indicates that higher remuneration is only linked to higher performance in firms that have established a remuneration committee. These results indicate that remuneration committees play an important and effective role in setting the remuneration of senior company officers, which motivates these officers to perform effectively and is associated with higher firm performance.

The remainder of this paper proceeds as follows: Section 2 contains the hypothesis development; Section 3 details the sample, variables and research models; Section 4 contains empirical analysis, including univariate and multivariate analysis and further testing; and Section 5 contains the conclusions of the study, including implications and suggestions for further research.

2. Hypotheses development

Based on agency theory, shareholders allow executives to manage business operations on their behalf (Jensen and Meckling, 1976). However, in this setting a divergence of interests between shareholders and managers can occur. This conflict is usually known as the agency problem. Jensen and Meckling (1976) stated that, in order to mitigate the agency problem, firms should improve remuneration and align it with executives' and shareholders' interests. Better remuneration helps maintain and motivate executives and managers to generate higher performance (MCCG 2007 revised).

Table 6. Remuneration committees and executives and board of director remuneration.

	(1)	(2)	(3)
	REM_EXE	REM_DIR	REM_ALL
RC	0.221**	-0.039	0.050
	(2.03)	(-0.31)	(0.72)
DIR	-0.011	0.106***	0.027
	(-0.34)	(3.61)	(1.40)
EXE	0.164***	0.091***	0.152***
	(5.52)	(2.71)	(7.74)
INDDIR	-0.001	0.002	-0.001
	(-0.23)	(0.63)	(-0.37)
AUDCOM	0.044	0.067	-0.061
	(0.56)	(0.85)	(-1.25)
BIG4	0.221*	-0.002	0.154*
	(1.84)	(-0.02)	(1.87)
GROWTH	-0.122	0.047	-0.067
	(-1.13)	(0.28)	(-0.89)
LEV	-0.042	-0.135	-0.021
	(-0.17)	(-0.47)	(-0.13)
FSIZE	0.319***	0.375***	0.412***
	(7.59)	(7.05)	(14.07)
FAGE	-0.006	-0.037	0.132*
	(-0.06)	(-0.34)	(1.94)
OCF	1.738***	0.187	1.462***
	(2.91)	(0.27)	(3.89)
CAPINT	-0.572***	-0.931***	-0.558***
	(-2.62)	(-3.34)	(-3.68)
CONSTANT	12.718***	9.591***	10.221***
	(10.56)	(6.56)	(12.31)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
r2	0.462	0.368	0.571
N	449	449	847

Notes: This table presents regression results testing the effect of RCs on executive remuneration (REM_EXE), board of director remuneration (REM_DIR), and total executive and board of director remuneration (REM_ALL). Standard errors are clustered by firm and year. *, **, *** denote significance at the 10 percent, 5 percent, and 1 percent levels (two-tailed) respectively.
*p < .1, **p < .05, ***p < .01.

RC is a committee whose duty is to support and advise the board of directors on remuneration, such as setting the salary, horrorarium, incentives, and allowances of the board of directors and executives to maximize performance. Furthermore, the committee will propose remuneration fairly based on the board of directors and executives abilities and performance as a form of appreciation and to maintain executives. Jaafar et al. (2015) find a significant positive relationship between remuneration committee and remuneration in Malaysia, which suggests the effectiveness of the committee. They argue that remuneration committees design remuneration without the influence of the board, as MCCG suggested. Chou & Buchdadi (2018) examine the relationship between executive compensation and company performance and also the impact of the remuneration and nomination committee (RNC) on executive compensation (EC) and company performance. Their results show that the role of the RNC could prevent overpayment in executive compensation (EC), thus the RNC could create an effective remuneration package. Thus, we predict that the existence of RCs is associated with more effective remuneration packages, in the form of higher remuneration for executives and boards of directors.

H1. RCs are positively related to executive and board of director remuneration.

The existence of RCs can also reduce the agency problem that may occur by designing remuneration in such a way, based on executives' performance, to motivate the board of directors and executives to produce the best decisions that can have an impact on improving firm performance (Chizema, 2015). Agyemang-Mintah (2016) and Ahmed (2010) show that with the establishment of the RCs, the committee will monitor and advise executive management on salary decisions that can reduce agency costs and ultimately lead to better performance. Thus, we predict that the existence of RCs can improve firm performance.

H2. RCs are positively related to firm performance.

3. Method

3.1. Data and sample

This study consists of all non-financial companies listed on the Indonesian Stock Exchange (IDX) for the 2014–2017 period. We use panel data, which is a combination of time series and cross-sectional company data. Sources of data used in this study include company annual reports and the ORBIS database. After merging observations from these two sources of data, a total population of 2,920 firm-year observations were available. Then, the following sample selection criteria were applied. First, exclude all companies in the financial, insurance and real estate industries (SIC 6) because of the different nature of their financial statements. Second, exclude any observations with missing data

Table 7. Remuneration committees and firm performance.

	TOBINSQ	ROA	ROE
	(1)	(2)	(3)
RC	0.435***	1.548**	0.040
	(4.26)	(2.25)	(0.03)
DIR	0.048	-0.251	0.154
	(1.39)	(-1.26)	(0.39)
EXE	0.016	0.038	-0.293
	(0.48)	(0.22)	(-0.78)
INDDIR	-0.008	-0.016	-0.009
	(-1.58)	(-0.79)	(-0.19)
AUDCOM	-0.019	0.198	0.438
	(-0.18)	(0.51)	(0.47)
BIG4	0.039	0.401	-1.152
	(0.37)	(0.63)	(-0.76)
GROWTH	0.284*	1.682**	3.264**
	(1.75)	(2.04)	(2.00)
LEV	-0.897***	-9.503***	-6.492
	(-2.66)	(-6.12)	(-1.52)
FSIZE	-0.032	1.232***	2.568***
	(-0.72)	(4.58)	(4.12)
FAGE	0.060	0.499	1.280
	(0.54)	(0.79)	(0.96)
OCF	6.630***	60.262***	95.426***
	(5.73)	(10.70)	(9.07)
CAPINT	-0.264	-12.602***	-15.207***
	(-0.72)	(-7.77)	(-4.57)
CONSTANT	1.691	-22.701***	-68.062***
	(1.41)	(-2.88)	(-3.94)
Year FE7	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
r2	0.239	0.484	0.310
N	847	847	847

Notes: This table presents regression results testing the effect of RCs on firm performance (ROA, TOBINSQ and ROE). Standard errors are clustered by firm and year. *, **, *** denote significance at the 10 percent, 5 percent, and 1 percent levels (two-tailed) respectively.
*p < .1, **p < .05, ***p < .01.

for the main variables used in this study. This resulted in a final sample of 847 firm-year observations.

3.2. Variable definitions

The dependent variables in this study are remuneration and firm performance. The remuneration variables (REMUNERATION) are measured as follows: natural logarithm of all executives' remuneration (REM_EXE), natural logarithm of all board of directors' remuneration (REM_DIR), and natural logarithm of all executives' and board of directors' remuneration (REM_ALL). Firm performance (PERFORMANCE) is measured by Return on Assets (ROA), Tobin's Q (TOBINSQ) and Return on Equity (ROE). ROA is earnings before interest and taxes divided by the total book value of total assets. Tobin's Q is the market value of equity and book value of liabilities, all divided by total assets. ROE is net income divided by total equity.

The main independent variable used in this study is the presence of a remuneration committee (RC). This is measured using a dummy variable equal to "1" if the firm has a remuneration committee and "0" otherwise.

The control variables used in this study include firm size, firm age, leverage, growth, operating cash flows, fixed asset intensity, executive team and board of director size, independence of the board of directors, size of the audit committee and auditor type. These are consistent with prior research (Agyemang-Mintah, 2016; Saat and Kallamu, 2013; Muttakin et al., 2015; Chauhan et al., 2016; Cashman et al., 2012; Field and Mkrtchyan, 2017; Harymawan and Nowland, 2016) and are defined as follows: FSIZE is the natural logarithm of total assets; FAGE is the natural logarithm of the number of years since the company was established; LEV is total debt divided by total assets; GROWTH is the proportional change in sales; CAPINT is fixed assets divided by total assets; OCF is cash flows from operations divided by total assets; DIR is the total number of directors; EXE is the total number of executives; INDDIR is the percentage of independent directors on the board; AUDCOM is the total number of members of the audit committee; BIG4 is a dummy variable equal to "1" for firms audited by a big four auditor, and "0" otherwise. Definitions and measurements of all variables used in this study are presented in the Table 1.

3.3. Methodology

This study uses ordinary least square (OLS) regressions with fixed year and industry effects to control for differences in economic conditions and industry characteristics. Standard errors are clustered at the firm level. The first model relates the level of executive, board of director and total remuneration to the existence of a remuneration committee. The second model relates measures of firm performance (ROA, TOBINSQ and ROE) to the existence of a remuneration committee. Based on our hypotheses, we expect the coefficients on RC to be positive in both models.

Table 8. Remuneration committees, remuneration and firm performance.

	TOBINSQ		
	(1)	(2)	(3)
RC	-3.457	-8.780***	-6.885**
	(-1.51)	(-2.74)	(-2.59)
RC*REM_ALL	0.167*		
	(1.70)		
RC*REM_EXE		0.394***	
		(2.83)	
RC*REM_DIR			0.332***
			(2.72)
REM_ALL	-0.059		
	(-0.86)		
REM_EXE		-0.022	
		(-0.31)	
REM_DIR			-0.088
			(-1.10)
DIR	0.047	0.076	0.063
	(1.39)	(1.64)	(1.40)
EXE	0.016	-0.024	-0.006
	(0.47)	(-0.47)	(-0.11)
INDDIR	-0.008	-0.004	-0.004
	(-1.54)	(-0.73)	(-0.75)
AUDCOM	-0.021	-0.010	-0.019
	(-0.19)	(-0.06)	(-0.11)
BIG4	0.045	-0.040	-0.035
	(0.43)	(-0.30)	(-0.26)
GROWTH	0.289*	0.523	0.503
	(1.78)	(1.61)	(1.54)
LEV	-0.872**	-0.641	-0.626
	(-2.58)	(-1.20)	(-1.16)
FSIZE	-0.043	-0.089	-0.058
	(-0.69)	(-1.47)	(-0.87)
FAGE	0.060	-0.167	-0.184
	(0.54)	(-1.14)	(-1.25)
OCF	6.471***	6.385***	6.754***
	(5.45)	(3.73)	(3.79)
CAPINT	-0.283	-0.707	-0.721
	(-0.75)	(-1.48)	(-1.45)
CONSTANT	3.355**	4.521**	5.183**
	(2.23)	(2.11)	(2.23)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
r2	0.242	0.280	0.273
N	847	449	449

Notes: This table presents regression results testing the effect of RCs and executive remuneration (REM_EXE), board of director remuneration (REM_DIR), and total executive and board of director remuneration (REM_ALL) on firm performance (TOBINSQ). Standard errors are clustered by firm and year. *, **, *** denote significance at the 10 percent, 5 percent, and 1 percent levels (two-tailed) respectively.
*p < .1, **p < .05, ***p < .01.

$$\boldsymbol{REMUNERATION}_{i,t} = \beta_0 + \beta_1 \boldsymbol{RC}_{i,t} + \beta_2 \boldsymbol{DIR}_{i,t} + \beta_3 \boldsymbol{EXE}_{i,t} + \beta_4 \boldsymbol{INDDIR}_{i,t} + \beta_5 \boldsymbol{AUDCOM}_{i,t} + \beta_6 \boldsymbol{BIG4}_{i,t} + \beta_7 \boldsymbol{GROWTH}_{i,t} + \beta_8 \boldsymbol{LEV}_{i,t} + \beta_9 \boldsymbol{FSIZE}_{i,t} + \beta_{10} \boldsymbol{FAGE}_{i,t} + \beta_{11} \boldsymbol{OCF}_{i,t} + \beta_{12} \boldsymbol{CAPINT}_{i,t} + \boldsymbol{YEAR}_{i,t} + \boldsymbol{INDUSTRY}_{i,t} + \boldsymbol{\varepsilon}_{i,t} \quad (1)$$

$$\boldsymbol{PERFORMANCE}_{i,t} = \beta_0 + \beta_1 \boldsymbol{RC}_{i,t} + \beta_2 \boldsymbol{DIR}_{i,t} + \beta_3 \boldsymbol{EXE}_{i,t} + \beta_4 \boldsymbol{INDDIR}_{i,t} + \beta_5 \boldsymbol{AUDCOM}_{i,t} + \beta_6 \boldsymbol{BIG4}_{i,t} + \beta_7 \boldsymbol{GROWTH}_{i,t} + \beta_8 \boldsymbol{LEV}_{i,t} + \beta_9 \boldsymbol{FSIZE}_{i,t} + \beta_{10} \boldsymbol{FAGE}_{i,t} + \beta_{11} \boldsymbol{OCF}_{i,t} + \beta_{12} \boldsymbol{CAPINT}_{i,t} + \boldsymbol{YEAR}_{i,t} + \boldsymbol{INDUSTRY}_{i,t} + \boldsymbol{\varepsilon}_{i,t} \quad (2)$$

Table 9. Remuneration committees and executive and board of director remuneration using a matched sample.

	(1)	(2)	(3)
	REM_EXE	REM_DIR	REM_ALL
RC	0.319**	-0.023	0.081
	(2.57)	(-0.16)	(1.08)
CONSTANT	12.745***	8.942***	10.559***
	(9.63)	(5.45)	(11.75)
Control Variables	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
r2	0.416	0.354	0.555
N	385	385	743

Notes: Using a Coarsened Exact Matching (CEM) sub-sample, this table presents the results of models of RCs on executives' remuneration (REM_EXE), board of directors' remuneration (REM_DIR), and total executives' and board of directors' remuneration (REM_ALL). Standard errors are clustered by firm and year. *, **, *** denote significance at the 10 percent, 5 percent, and 1 percent levels (two-tailed) respectively.
*p < .1, **p < .05, ***p < .01.

Table 10. Remuneration committees and firm performance using a matched sample.

	TOBINSQ	ROA	ROE
	(1)	(2)	(3)
RC	0.372***	1.652***	0.968
	(3.38)	(2.61)	(0.68)
CONSTANT	1.758	-13.999**	-48.659***
	(1.36)	(-1.99)	(-3.09)
Control Variables	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
r2	0.230	0.517	0.349
N	743	743	743

Notes: Using a Coarsened Exact Matching (CEM) sub-sample, this table presents the results of models of RCs on firm performance (ROA, TOBINSQ and ROE). Standard errors are clustered by firm and year. *, **, *** denote significance at the 10 percent, 5 percent, and 1 percent levels (two-tailed) respectively.
*p < .1, **p < .05, ***p < .01.

4. Results and discussion

4.1. Descriptive statistics and univariate analysis

Table 2 contains the distribution of the sample by year. Of the 847 observations, 346 are from firms with RCs, which is equal to 41 percent of the sample. The number of firms with RCs increases from 39 in 2014 to 108 in 2015, to 123 in 2016, and decreases to 76 in 2017.

Table 3 shows descriptive statistics. The average total remuneration of executives and the board of directors is IDR 27, 500, 000,000. In the subsamples that report information on executive and board of director remuneration separately (n = 449), the average remuneration of executives is IDR 17, 860, 000,000 and the average remuneration of the board of directors is IDR 6,474, 000, 000. For the performance variables, the average firm has ROA of 4.928 percent, ROE of 4.665 percent and a Tobin's Q of 1.174. The average company has growth of 9.7%, leverage of 46.4%, total assets of IDR 6,922, 000, 000,000, fixed asset intensity of 55.2%, and operating cash flow of 7.1%. In addition, the average company has 4.376 directors, 4.875 executives, 37.795 percent of independent directors, audit committee size of 2.962 and is 41.7 percent likely to have a Big4 auditor.

Table 4 shows the Pearson correlations between the variables. The correlations between RC and the remuneration variables are all positive and significant at the 1% level, consistent with Hypothesis 1. The correlations between RC and the performance variables are all positive and significant at a minimum of the 5% level, consistent with Hypothesis 2.

Table 5 provides some initial analysis of the differences between firms with and without remuneration committees. Results are presented for differences in means using t-tests and differences in medians using Wilcoxon z-tests. Consistent with Hypothesis 1, we find that firms with remuneration committees have higher total remuneration, higher executive remuneration and higher board of director remuneration. Also, consistent with our second hypothesis, we find that firms with RCs have higher performance (ROA, ROE and Tobin's Q). The results for the control variables also indicate that firms with RCs are larger in size, have greater operating cash flows, fixed assets intensity, have more executives and bigger board of directors, bigger audit committees and are more likely to hire a Big4 auditor. These are important differences, which we will control for in our multivariate analysis.

4.2. RCs and remuneration

To test the first hypothesis in this study, we relate the existence of a remuneration committee to the level of remuneration of executives and directors using model 1. Table 6 shows the results of this analysis. In the first specification, the coefficient on RC is positive and significant (t = 2.03), indicating that the presence of a remuneration committee is associated with higher executive remuneration. In the second specification, the coefficient on RC is insignificant, indicating no relationship between remuneration committees and board of director remuneration. In the third specification, the coefficient on RC is also insignificant, indicating no relationship between remuneration committees and total remuneration. Thus, these results provide partial support for Hypothesis

Table 11. Remuneration committees, remuneration and firm performance using a matched sample.

	TOBINSQ		
	(1)	(2)	(3)
RC	-3.302	-7.558**	-7.033***
	(-1.28)	(-2.26)	(-2.70)
RC*REM_ALL	0.158		
	(1.42)		
RC*REM_EXE		0.335**	
		(2.31)	
RC*REM_DIR			0.335***
			(2.78)
REM_ALL	-0.051		
	(-0.67)		
REM_EXE		0.035	
		(0.52)	
REM_DIR			-0.068
			(-0.82)
CONSTANT	3.153**	3.181	4.576**
	(1.96)	(1.55)	(2.05)
Control Variables	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
r2	0.233	0.277	0.271
N	743	385	385

Notes: Using a Coarsened Exact Matching (CEM) sub-sample, this table presents the results of models of RCs and executive remuneration (REM_EXE), board of director remuneration (REM_DIR), and total executive and board of director remuneration (REM_ALL) on firm performance (TOBINSQ). Standard errors are clustered by firm and year. *, **, *** denote significance at the 10 percent, 5 percent, and 1 percent levels (two-tailed) respectively.
*p < .1, **p < .05, ***p < .01.

1, in that the existence of remuneration committees is only linked to higher remuneration for executives. This result is consistent with research by Jaafar et al. (2015), who found a significant positive relationship between remuneration committees and remuneration in Malaysia, which indicated the effectiveness of the committee.

The results for the control variables indicate that remuneration is higher in bigger firms, firms with higher operating cashflows, firm with lower capital intensity and firms with more executives. There is also some evidence that bigger and more independent boards of directors are associated with higher board of director remuneration.

4.3. RCs and performance

To test the second hypothesis in this study, we relate the presence of remuneration committees to firm performance using model 2. Table 7 displays these results. The first specification relates the presence of remuneration committees to firm performance in the form of Tobin's Q. The coefficient on RC is positive and significant (t = 4.26). The second specification uses ROA as the measure of firm performance, and we find a positive and significant coefficient (t = 2.25) on RC. In the third specification, using ROE as the measure of firm performance, we find that the coefficient on RC is insignificant. These first two results provide support for Hypothesis 2, indicating that the existence of a remuneration committee is associated with higher Tobin's Q and higher ROA. These results are consistent with Agyemang-Mintah (2016) and Ahmed (2010), which show that with the establishment of a RC, the committee will monitor and advise executive management on salary decisions that can reduce agency costs and ultimately lead to better performance. Results for the control variables indicate that firm performance is positively related to firm size, operating cash flows and firm growth, and negatively related to leverage and capital intensity.

4.4. Further analysis

The results presented above document positive associations between the presence of remuneration committees and remuneration and firm performance. However, we acknowledge that omitted variable bias is a concern as there are other potential factors outside of our research framework that could be influencing our reported results. To help alleviate this concern, we conduct some further analysis to more clearly identify the influence of remuneration committees on remuneration and firm performance. We use model 3 below to relate remuneration committees, remuneration and their interactive effect to firm performance.

$$\begin{aligned} \boldsymbol{PERFORMANCE}_{i,t} = {} & \boldsymbol{\beta}_0 + \boldsymbol{\beta}_1 \boldsymbol{RC}_{i,t} + \boldsymbol{\beta}_2 \boldsymbol{REMUNERATION}_{i,t} \\ & + \boldsymbol{\beta}_3 \boldsymbol{RC}^{*} \boldsymbol{REMUNERATION}_{i,t} + \boldsymbol{\beta}_4 \boldsymbol{DIR}_{i,t} + \boldsymbol{\beta}_5 \boldsymbol{EXE}_{i,t} + \boldsymbol{\beta}_6 \boldsymbol{INDDIR}_{i,t} \\ & + \boldsymbol{\beta}_7 \boldsymbol{AUDCOM}_{i,t} + \boldsymbol{\beta}_8 \boldsymbol{BIG4}_{i,t} + \boldsymbol{\beta}_9 \boldsymbol{GROWTH}_{i,t} + \boldsymbol{\beta}_{10} \boldsymbol{LEV}_{i,t} + \boldsymbol{\beta}_{11} \boldsymbol{FSIZE}_{i,t} \\ & + \boldsymbol{\beta}_{12} \boldsymbol{FAGE}_{i,t} + \boldsymbol{\beta}_{13} \boldsymbol{OCF}_{i,t} + \boldsymbol{\beta}_{14} \boldsymbol{CAPINT}_{i,t} + \boldsymbol{YEAR}_{i,t} + \boldsymbol{INDUSTRY}_{i,t} \\ & + \boldsymbol{\varepsilon}_{i,t} \end{aligned} \tag{3}$$

The results for model 3 are presented in Table 8. Tobins' Q is used as the measure of firm performance is this analysis. In the first specification, we find a positive coefficient (t = 1.70) on RC*REM_ALL, and an insignificant coefficient on REM_ALL. This positive coefficient on RC*REM_ALL indicates that for firms with remuneration committees, higher remuneration of executives and directors is associated with higher firm performance. An indicator that companies that have a remuneration committee are creating effective remuneration packages that lead to higher firm performance.

In the second and third specifications, we use executive and board of director remuneration separately (due to their high correlation as reported in Table 4). We find negative coefficients (t = -2.74, -2.59) on RC and positive coefficients on RC*REM_EXE (t = 2.83) and RC*REM_DIR (t

= 2.72). The coefficients on REM_EXE and REM_DIR are insignificant. The results of these interaction terms indicate that for firms with remuneration committees, higher executive remuneration and higher board of director remuneration are associated with higher firm performance. Thus, these results are stronger evidence that it is the combined effect of remuneration committees on remuneration packages that leads to higher firm performance. The results of this study are consistent with research by Chou & Buchdadi (2018), which shows that remuneration and nomination committees (RNCs) have a strong impact on company performance.

4.5. Robustness checking

As a robustness check, we repeat our analysis with matched sample analysis using Coarsened Exact Matching (CEM). This analysis allows us to more cleanly compare the treatment group (remuneration committee group) to the control group (non-remuneration committee group). After the matching process, we have 743 firm-year observations in these two groups. Then, we re-run the regression to check whether the results from the main regression are robust when we use the matching sub-sample.

Table 9 shows the results of the regressions of remuneration committees on remuneration. Consistent with the main findings, we find that remuneration committees are positively and significantly correlated to executive remuneration. We also do not find significant relationships between remuneration committees and both director and all (executive and director) remuneration.

Similar to the results in Table 7, the results in Table 10 also provide evidence that the existence of remuneration committees is significantly positively related to firm performance. Specifically, to both Tobin's Q and ROA. We also do not find a significant association between remuneration committees and ROE.

Finally, we check the results in Table 8 using our matched sub-sample (see Table 11). In general, the results are consistent with our main findings. Executive and director remuneration is only positively related to firm performance in firms with remuneration committees. Therefore, in summary, the results of our study are consistent in the full sample and the matched sample.

5. Conclusions

The most recent edition of the Indonesian Corporate Governance Manual, issued in June 2018, states that listed companies must establish a remuneration committee. This shift in focus from voluntary formation of board committees to mandatory formation is interesting, as little to no research has been conducted in Indonesia about the effectiveness of such committees. This study helps to address this issue by examining the role of the remuneration committee on the remuneration practices of senior company officers and its associated effect on firm performance.

The study predicts that companies with RCs will have more effective remuneration packages, in the form of higher remuneration for executives and board of directors. In addition, the existence of RCs is expected to provide senior company officers with effective remuneration that incentivizes them to maximize their performance and the performance of the company.

To test these relationships, this study uses 847 observations of listed companies on the Indonesian Stock Exchange (IDX) during the period 2014 to 2017. Our results indicate that RCs are positively related to the level of executive remuneration and firm performance. In particular, higher remuneration is only linked to higher performance in firms that have established a remuneration committee.

This study has implications for regulators and company management in Indonesia and other emerging markets, as the existence of remuneration committees is found to be associated with more effective remuneration packages and higher firm performance. However, since our research setting is in the scenario of voluntary formation of remuneration committees, it would be interesting for future research to investigate if the same results are found if companies are forced to establish such committees. It is possible that RCs are an optimal corporate governance structure for some, but not all listed companies in Indonesia and other developing markets.

This study can assist companies in maintaining corporate sustainability through the right remuneration scheme for directors and executives, and in evaluating the performance of remuneration committees. This research also contributes to the literature related to remuneration in Indonesia by providing evidence that clearly shows that the existence of remuneration committees is important in aligning the relationship between director and executive remuneration and firm performance.

Another avenue of future research is to further investigate the remuneration practices of board of directors and executives in Indonesia. In other markets, more detailed information is available about the specific components of remuneration and whether the components are fixed or variable consideration. We call on regulators and listed companies in Indonesia to disclose more details of their board of director and executive remuneration packages.

Declarations

Author contribution statement

Iman Harymawan, Azmi Inayati, John Nowland: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Dian Agustia, Mohammad Nasih: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data.

Funding statement

This work was supported by the Universitas Airlangga under the “Penelitian Unggulan Fakultas (PUF)” scheme in 2018.

Competing interest statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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