The Role of Female CEOs on Firm Performance: Some Evidence from Indonesian Listed Firms

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Abstract: This study aims to discern the influence of female directors on firm performance. Data used for this research was derived from firms listed on the Indonesian Stock Exchange (IDX) during the period 2014-2015. The results show that 26 firms (5.9% of firms observed) appointed a woman as CEO. The findings show that a female CEO is negatively associated with firm performance. However, the result is insignificant. Nevertheless, the results in the subsample show interesting findings. Having a female CEO has a negative but significant association with firm performance in firms of a small size. In contrast, there is no evidence for this relationship in the subsample of larger firms.

1 INTRODUCTION

According to agency theory (Berle & Means, 1932), the establishment and management of business entities revolves around two different entities, with each having distinctive functions, namely principals and managers. The principal entrusts his/her fortune or capital to the person who manages the business, with the aim of increasing the wealth of the principal. Any conduct referring to the action to manage the wealth of the principal is now known as corporate governance. Corporate governance is a set of principles to govern the relationships among stakeholders with respect to rights and obligations, or, in other words, the system that directs and controls the company.

Understanding that there is a segregation of duties in managing business entities, for principals who may not be directly involved in managing daily business operations, managers or agents are appointed with responsibility for managing recurring business activities. Moreover, in Indonesia, a company's management structure is divided into the board of commissioners (chairpersons) and the board of directors (directors). In 2003, corporate governance evolved in many European countries pertaining to policies set upon the board of directors. The discussions proposed that women should have an equal chance to be at the top of the corporate structure, provided their abilities and merits met minimum requirements.

The 'glass ceiling' is a metaphor used to convey different treatments of men and women, where such action may result in discrimination to women on the job. The glass ceiling theory was first introduced by Gray Bryant in articles published in *Adweek* that discussed a hypothetical glass barrier blocking women's rise toward the top levels of management because of discrimination or being treated differently to men. The glass ceiling is described as a glass barrier that hinders women to develop or enhance their career to the level of top management (O'Connor, 2001). Cotter, Hermsen, Ovadia, and Vanneman (2001) say that the glass ceiling is closely tied with gender and that the abuse can be based on gender, ethnicity, race, religion, or other aspects of identity. These pre-conceived notions of inherent differences make women perceived as less capable to serve at the top level of management.

This research aims to examine how a female CEO can affect the performance of a company. The data used in this study is firms listed on the Indonesian Stock Exchange during 2014-2015. This study employed the regression method for testing the hypothesis. Using a sample of 802 firms' year observations, the results shows that, for firms with

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female CEOs, this has no significant association on firm performance, proxied by Return on Assets (ROA) and Return on Equity (ROE). Next, we split the sample into big and small firms subsamples. Interestingly, we find negativeand significant associations between female CEO and performance only in small firms subsample.

2 LITERATURE REVIEW

The behavior and the actions taken by individuals to achieve the goals of the group are a measure of the performance of a group. Indonesia (2009) contends that information pertaining to a company's performance, particularly profitability, is required to assess potential changes in the economic resources employed in the future. The company's performance can be determined through ratios, which is why this study uses ROA and ROE. ROA is a ratio used to measure the ability of management to obtain advantages or profits as a whole. The larger the value of ROA, the greater the profit levels generated by the firm. ROA is good measurement to assess the performance of the company's assets, which become the main source of determining the firm's ability to continue as a going concern in the future. Growth of assets is one among many indications of a company's ability to run its business. Moreover, the ROE ratio is used to assess the net profit in comparison to capital owned by the company.

Gul, Srinidhi, and Ng (2011) argue that a female CEO also provides better opportunities to improve weak corporate governance. The rationale is that a diverse board of directors, one that has male and female members, can override the weak mechanism of corporate governance. A diverse board can also indicate the specific information of the company against its stock price. The appointment of female CEOs also helps to resolve conflicts between stakeholders because women can strengthen the relationship between the board and provide a better view for the shareholder (Adams, Gray, & Nowland, 2011). Yasser (2012) shows that, compared to men, women prefer to avoid risks and are also more cautious about how cash is used in an enterprise. Furthermore, a company's performance can also be affected by the existing leadership structure within it (Dahya, Garcia, & Van Bommel, 2009). According to the previous studies, the benefits of having women in the management does not provide reassurance to female workers that they will be recruited easily into the ranks of top management. Assumptions that women cannot afford or do not deserve to occupy the top positions in management still prevail in most parts of the world. The glass ceiling theory purports that the work of a woman would never reach its full potential as there is a glass barrier impeding woman to break through to the peak of their careers. The theory describes the discrimination toward women to the extent that women cannot afford to occupy strategic positions in an organization solely because they are born as women. Bombuwela and Alwis (2013) show that the glass ceiling theory significantly influences the development of women's careers. Smith, Smith, and Verne (2011) have shown that there are great differences in the compensation obtained by male and female workers at businesses in Denmark, as well as the proportion of women in management, which was very low in 1996 but increased in the period from 1996 to 2005, resulting in a more balanced representation of women and men. Based on the background presented, this study aims to resolve whether there is a significant influence from having a female CEO on the performance of companies listed on the Indonesian Stock Exchange during the period 2014-2015.

3 RESEARCH METHODOLOGY

The type of research used in this study is quantitative research, which focuses on testing theories by establishing relationships among variables using statistical procedures (Sekaran, 2006). Quantitative research is objective in nature, including the collection and analysis of data and a statistical testing method. The population in this research is all companies, except for financial companies, registered on the Indonesian Stock Exchange (IDX) in the period 2014-2015. The sample of this research is all of the population.

3.1 Research Variable

This study employed several variables to assess firm performance. The variables employed refer to previous research carried out by Yasser, Mamun, and Mamun (2016), comprising dependent, independent, and control variables. Corporate financial performance is measured using ROA and ROE, while a female CEO acts as the independent variable. The control variables are firm size, board size, leverage, year fixed effects, and industry fixed effects.

3.1.1 Independent Variable

The independent variable in this study is a dummy variable. The dummy variable used in this research is defined as follows: when the company's CEO is a woman, it is worth 1, and if the CEO is not a woman, then the value is 0. These variables correspond to earlier research by Yasser et al. (2016).

3.1.2 Dependent Variable

Return on assets (ROA)

ROA is used to measure the effectiveness of the company in making a profit by utilizing its assets. ROA is obtained by dividing net income or income after income tax against the average total assets. ROA is computed using the following formula:

$$\text{ROA} = \frac{\text{Income after tax}}{\text{Total assets}} \quad (1)$$

Return on equity (ROE)

ROE measures the extent to which the firm is capable of generating net income after taxes using its own capital, which shows the efficiency of the use of the firm's own capital. The higher this ratio, the better and the more efficient the company is perceived to be. ROE measures the return of profit to capital that will be given to the shareholders of the company. Calculation of ROE can be formulated as follows:

$$\text{ROE} = \frac{\text{Income after tax}}{\text{Total equity}} \quad (2)$$

3.1.3 Control Variable

The control variables in the research are firm size, board size, and leverage. Firm size is a scale that can be used to classify large or small companies; it can be expressed in total assets owned by the company, including fixed assets, intangible assets, and other assets. Size of the company is measured by total assets owned by the company. Board size in this study is the sum of the existing board. In this research, the board size is divided into three, namely, the number of commissioners, the board of directors, and the number of internal audits. The number of commissioners was chosen because this will exert influence on the decision making regarding the policies that will be selected by the company. Leverage is the level of dependency of the company against debt that has become a source of operational activities of the company. In this research, leverage is measured using the Debt to Equity Ratio.

4 EMPIRICAL ANALYSIS

4.1 Descriptive Statistics

Descriptive statistics provide an overview of the variables to be tested in the research. They provide information pertaining to the minimum, maximum, average, and standard deviations of the variable. The observations for the data used in this research number 802 observations over a two-year period.

Table 1 shows the descriptive statistics results for variables during the years 2014 and 2015, where each variable amounted to 802 observations. The mean of ROA and ROE are 0.041 and 0.004 respectively. The average firm size is 8.1 trillion rupiah. There are 5.9 percent of firms has female CEO. Average number of board and commissioner size is 4. On average, each firm has 3 audit committee (AC). Table 2 presents the correlation matrix for all variables used in this research. It shows that female CEO has negative associations with ROA and ROE.

Table 1: Descriptive statistics

Variable	Mean	Median	Minimum	Maximum
ROA	0.041	0.040	-0.860	0.720
ROE	0.004	0.030	-2.620	1.380
FCEO	0.059	0.000	0.000	1.000
BOC	4.286	4.000	2.000	21.000
BOD	4.796	4.000	2.000	15.000
AC	3.059	3.000	1.000	6.000
SIZE	28.441	28.437	23.867	32.040
LEV	0.596	0.250	0.000	5.200

Table 2: Correlation matrix

Variable	*ROA*	*ROE*	*FCEO*	*BOC*	*BOD*	*AC*	*SIZE*	*LEV*
ROA	1.000							
ROE	0.599***	1.000						
	(0.000)							
FCEO	-0.012	-0.038	1.000					
	(0.728)	(0.284)						
BOC	0.067*	0.031	-0.023	1.000				
	(0.056)	(0.385)	(0.515)					
BOD	0.115***	0.110***	-0.064*	0.454***	1.000			
	(0.001)	(0.002)	(0.069)	(0.000)				
AC	-0.013	0.042	-0.033	0.226***	0.175***	1.000		
	(0.720)	(0.233)	(0.349)	(0.000)	(0.000)			
SIZE	0.059*	0.080**	-0.068*	0.500***	0.535***	0.244***	1.000	
	(0.096)	(0.023)	(0.055)	(0.000)	(0.000)	(0.000)		
LEV	-0.108***	-0.033	-0.071**	0.015	0.062*	0.112***	0.145***	1.000
	(0.002)	(0.350)	(0.043)	(0.671)	(0.081)	(0.002)	(0.000)	

4.2 Regression Analysis

This research aims to find empirical evidence in order to assess the relationship between the role of women CEOs and company performance for firms listed on the Indonesian Stock Exchange in the years 2014 and 2015. This research uses an ordinary least squares (OLS) regression model using STATA/MP 14.0 to perform regression analysis.

4.2.1 The Influence of Female CEO on Firm Performance

To test the hypothesis that was formulated in the previous chapter on whether there is a correlation between the influence of a female CEO (FCEO) on the performance of companies as measured by ROA and ROE, regression analysis is employed. This examines the influence of FCEO against ROA and ROE with control variables firm size, leverage, board of directors, chairman, and audit committee, as well as industry fixed effects and year fixed effect

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Table 3: Regression results

Variable	*ROA*		*ROE*	
	(1)	**(2)**	**(3)**	**(4)**
FCEO	-0.024	-0.024	-0.088	-0.088
	(-0.87)	(-1.06)	(-1.37)	(-1.13)
BOC	0.002	0.002	-0.008	-0.008
	(0.59)	(0.53)	(-0.88)	(-0.73)
BOD	0.008*	0.008**	0.014	0.014*
	(1.82)	(2.18)	(1.49)	(1.76)
AC	-0.011	-0.011	0.029	0.029
	(-0.76)	(-0.82)	(0.83)	(1.40)
SIZE	0.004	0.004	0.020*	0.020
	(0.76)	(0.64)	(1.69)	(1.43)
LEV	-0.021***	-0.021***	-0.015	-0.015
	(-2.98)	(-2.95)	(-0.90)	(-1.25)
CONSTANT	-0.063	-0.063	-0.693**	-0.693*
	(-0.46)	(-0.40)	(-2.19)	(-1.95)
Industry dummies	Included	Included	Included	Included
Year dummies	Included	Included	Included	Included
R2	0.070	0.070	0.047	0.047
N	802	802	802	802

Table 3 shows the results of the regression among dependent variables (ROA) to FCEO with several control variables. The regression results above include industry and year fixed effects in

order to reduce the difference between the regression results of the year and between industries in regression testing. These results show that FCEOs have no significant influence, with a coefficient of -0.070 and a t value of -0.98, significantly exceeding 10%. Female CEOs have a negative coefficient of -0.089 and a t value of -0.85 against ROE. The results of this research also comply with those of Yasser (2012), who found that a female CEO has no influence on firm performance. Other control variables also do not significantly affect ROA.

4.2.2 The Influence of Female CEO on Firm Performance (Big versus Small firms)

Regression analysis is employed to further discern the influence of female CEOs against the performance of the company, as well as to test the hypothesis in this research. In order to arrive at the empirical evidence, the researchers employed a second test against data used in the study based on the magnitude of firm size. Company data is divided based on the magnitude of the median firm size, i.e. 2.24 trillion. The first group comprises companies that have a magnitude larger than 2.24 trillion, and the second group represent companies with a firm size smaller than or equal to 2.24 trillion.

Table 4: Big versus small firms

Variable	Big Firms		Small Firms	
	ROA	***ROE***	***ROA***	***ROE***
FCEO	0.040	0.108	-0.075**	-0.237***
	(0.92)	(0.99)	(-2.08)	(-3.14)
BOC	0.008	0.002	-0.006	-0.019
	(1.59)	(0.14)	(-0.80)	(-1.18)
BOD	0.014**	0.029**	0.004	0.006
	(2.56)	(2.17)	(0.61)	(0.40)
AC	0.003	0.029	-0.041	0.015
	(0.16)	(0.63)	(-1.47)	(0.25)
SIZE	-0.012	0.006	0.027***	0.070***
	(-1.06)	(0.20)	(2.86)	(3.60)
LEV	-0.025***	-0.018	-0.012	-0.010
	(-2.70)	(-0.76)	(-1.10)	(-0.44)
CONSTANT	0.286	-0.500	-0.496*	-1.665***
	(0.90)	(-0.63)	(-1.89)	(-3.02)
Industry dummies	Included	Included	Included	Included
Year dummies	Included	Included	Included	Included
R2	0.081	0.049	0.115	0.114
N	401	401	401	401

Table 4 shows the results of the regression test on the group with a firm size smaller than or equal to 2.24 trillion. The regression results suggest that the female CEO coefficient of -0.158 and t value of -2.10 have a significant level of 5%. This means that the female CEO has a significant negative effect on performance (ROA). These findings correspond to the research of Yasser et al. (2016). A negative value in the regression coefficients indicate that companies led by female CEOs are at higher risk of a downturn in their performance. The control variable has a significant and positive influence (FSIZE) against the ROA coefficient, with a value of 0.000, significant at the 5% level (t value of 2.36), and the variable AC has significant negative effect, with a value of t -2.83, significant at the 1% level. Based on the results of the above regression, it can be concluded that a female CEO has a significant effect on companies of a relatively small size.

For the second group, i.e. the group of firms whose size is larger than 2.24 trillion, female CEOS have no effect on the company's performance. This can be seen in the Table 4.4's coefficients, where FCEO against ROA is 0.056 and the t value of 0.44 is higher than the 10% significance level. This means that female CEOs are insignificant and have a positive influence on performance in companies of a large size. The same also applies to the influence of

FCEO against ROE. The value of the coefficient of FCEO against ROE is 0.122, with a t value of 0.63. This means that a female CEO has a positive but not significant effect on performance in companies of large size.

5 DISCUSSION

From the results of the regression for small firm size, 28 companies have a woman as CEO and the rest have a man as CEO. This shows that quite a lot of companies in Indonesia have appointed a woman as leader. Twenty-eight such women have proven that they are capable of becoming chairman of management, breaking through the glass ceiling that might otherwise have impeded their careers. In this modern era, women cannot only claim to be responsible for the house – they can also claim to be helping the economy by choosing to go to work or to build a career.

Assumptions in society have also shifted. Where a woman used to have no chance of accessing education, now hundreds of women have been well educated, to a point where some of them are becoming professors. This suggests that cultural factors and family factors for individual women have been progressing. The old paradigm that postulates women as caretakers of the family is in retreat; cultural factors relating to the notion that women are considered to be irresponsible when choosing work above family are slowly receding.

The other factor is derived from individual women themselves. Women are often considered to be of a lower caste than men. Women have been regarded as feminine and less assertive, with the idea that leadership should always be handed over to men. This has resulted in a lack of confidence for a career woman. Furthermore, women who have worked still experience discrimination in a corporate culture that prefers men to be leaders. These factors have a major impact on the careers of women. A corporate culture that does not support career women will bring up discrimination and barriers as well as a leadership style that provides little, if any, room at all for women to reach the top of the chain of command.

Understanding the prevailing factors, up to now, women who are capable of being CEOs are far less than the number of men taking part as leaders in strategic positions within a corporation. However, in choosing a CEO, companies now prefer to do this based on the quality of the individual, and it can be either a man or a woman who has met the qualifications. In current competitive economic conditions, those who have a greater chance to lead a company are people who have gone through formal education. Smith et al. (2006) contend that women have a huge effect on performance when they have gone through formal education or vocational education.

This research reinforces the findings from the previous research of Yasser et al. (2016). Female CEOs have a negative and significant effect on companies in Asia; that is to say, women do not perform better than men. This research also shows that only a few of the companies listed on the Indonesian stock exchange have appointed a woman as CEO, accounting for only 5.8% of the total sample. These findings are in line with those of Yasser (2012), who found that only 3.3% of his sample had appointed a woman as CEO. This indicates that most companies consider men to be more competent and capable than women. Furthermore, these results also show that the theory of the glass ceiling is in force in the companies that have assets in Indonesia. However, firms that are relatively smaller, more of which have women as CEOs, demonstrate that the theory of the glass ceiling does not apply. This suggests that the theory of the glass ceiling is not fully applicable in companies listed on the Indonesian stock exchange. Female CEOs are able to lead these companies and provide a corporate leadership style and culture that is different from those provided by men.

6 RESEARCH CONCLUSION AND LIMITATIONS

Based on the test results obtained as well as the discussion in the previous chapter, the conclusions of the research are as follows:

1. Only 47 companies, or about 5.8% of the total sample of this research, had appointed a woman as CEO. This finding is in accordance with Yasser (2012), who found that only 3.33% of Pakistani companies had appointed a woman as CEO.
2. A female CEO has a negative and significant influence on performance in a company listed on the Indonesian Stock Exchange and with a size smaller than or equal to 2.24 trillion.
3. The theory of the glass ceiling in Indonesia applies to companies of a relatively greater size, whereas companies of a relatively small size indicate that the glass ceiling theory does not

apply because women are able to exert an influence on the performance of the company.

Several limitations impede this study in arriving at a flawless result with regard to the role of female CEOs and firm performance. This study only focuses on women capable of serving as CEO. Further criteria are required to view women's influence on the performance of a company. Based on the findings in the study, a suggestion for further research is to look more at female influence on companies that are of large size. Other variables need to be examined in order to observe the influence of women on company size and to see their effect on company performance.

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