

## WOMEN ON BOARD AND FIRM PERFORMANCE: EVIDENCE FROM INDONESIA LQ45

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**Abstract:** This paper examines how the existence of women on board affect firm performance in Indonesia with a sample of Indonesia LQ 45. Women on board measured by (1) the percentage of female director and (2) the percentage of independent female director over a number of female directors. The result shows that the firms which have women on board have significant higher ROA and NPM, thus having women on board doesn't significantly affect ROE. Moreover, firms having women on board as an independent director have significantly higher NPM. This result shows that it will not hurt the firm to have women on board, instead of having women on board statistically increase net profit margin in Indonesia LQ45.

**Keywords:** board of director, firm performance, board diversity.

### **Introduction**

One of the major issues in corporate finance has always been about board diversity. The firm's board is one of the most important internal control devices on monitoring and controlling management from opportunistic behavior (Fama and Jensen, 1983, Adams et.al 2010). Recently, the issue of board diversity has gained more interest including how gender influence firm performance.

Indonesia is one of the countries which respect men more than women in the management level. The key issue is whether the gender of the board could stimulate firm performance in Indonesia. For instance, as argued by Carver (2002), board diversity can be justified by referring to the concept of ownership and moral obligations of boards in their stewardship role. While Adams et.al (2009) suggest that gender-diverse boards allocate more effort on monitoring the firm.

A study of French firms (Bennouri et al, 2018) finds a relationship between female directorship and firms' accounting ROA and ROE. Another study of large European firms (Green & Homroy, 2018) shows that there is a positive effect of female board representation on firm performance.

This paper examines the impact on firm performance of the presence of women on the board. This, I argue, allows me to examine the impact of having women on board on firm performance when they are included in the position of monitoring and advising the firm.

### **Literature Review**

Boards of director existence are expected to monitor and advise managers. The relationship between board gender diversity and corporate performance is usually explained by agency theory (monitoring function), by the diversity brought to the board by female directors (resource dependence theory and human capital theory), or by comparison on women directors to their male peers (behavioral based theories). Female directors bring fresh viewpoints as well as professional backgrounds different from those of the "old boys' club." The new skills brought by female directors to the board deliver new perspectives and valuable advice to top managers (Anderson et al., 2011), result in better decisions related to problem-solving (Daily and Dalton, 2003; Hillman et al., 2002), enhance creativity and innovation (Robinson and Dechant, 1997), and improve access to information (Beckman and Haunschild, 2002).

However, (female) diversity in the boardroom may degrade interactions among board members because of potentially lower cohesiveness (DiTomaso et al., 2007; Herring, 2009 ). Diversity may also lead to tokenism if female board members are not sufficiently numerous ( Torchia et al., 2011 ). In Indonesia, some still think that having women on the management team will hurt the pride of man. This is shown that some of the company is not having female director. The study of Sila et al (2016) finds that there is no evidence that female boardroom representation will impact equity risk.

Several studies have mention the benefit of women existence in the board room. The proportion of women as boards has a positive effect on ROA and has no effect on Tobin's Q (Carter et al 2010). Firms in Dutch with women as directors have better performance as measured by ROE (Lukerath-Rovers, 2011).

There are some perspectives on the case of women composition in the boardroom (Milliken and Martin, 1996; Biggins, 1999), the fulfillment of moral obligations to shareholders (Carver, 2002), stakeholders (Keasey, Thompson, and Wright, 1997), corporate philanthropy (Coffey and Wong, 1998), and commercial reasons (Mattis, 2000; Daily and Dalton, 2003). Women in the boardroom refer to the existence of women in the boardroom as executive director and independent director. According to Limited Company Law of Indonesia year 2007 and PBI 2009 the directors have the obligation to carry out the operational activities of the company.

To test the result with a sample of firms listed in Indonesia LQ 45, this paper test the following hypotheses:

**Hypothesis 1.** *The firms which have women on board have higher ROA*

**Hypothesis 2.** *The firms which have women on board have higher ROE*

**Hypothesis 3.** *The firms which have women on board have higher NPM*

**Hypothesis 4.** *The firms which have women on board as independent director have no higher ROA*

**Hypothesis 5.** *The firms which have women on board as independent director have no higher ROE*

**Hypothesis 6.** *The firms which have women on board as independent director have no higher NPM*

## Data and Descriptive Statistics

### *Sample Selection*

This paper used Indonesia LQ 45 index. LQ comes from liquidity and 45 is a symbol of independence year of Indonesia. The meaning of LQ 45 is the top 45 firms which have high liquidity and easy to trade. To be included in this index, the firms need to be qualified as top 60 highest market capitalization in the last two months, top 60 in market transaction within 12 months, listed at least 3 months and have a good prospect of growth. This index was calculated every six months by Indonesia Stock Exchange research division. From one report to another, there are some companies added or dropped. Since the list of LQ 45 can change in every report, I include only those firms which is consistently listed in LQ 45 from 2015 to 2017. The final sample of this paper is 117 firm-year observation with 39 unique firm. LQ 45 report can be obtained from Indonesia Stock Exchange website. Accounting variables taken from LQ 45 report and annual financial statement published in Indonesia Stock Exchange website.

### *Firm performance measures*

Table 1 contains the definition of the variables used in this paper. For performance measures, I followed the literature by using three accounting measures:

Return on Assets (ROA), Return on Equity (ROE) and Net Profit Margin (NPM).

**Table 1.** Definitions of variables.

Variable	Measure
<i>Firm performance variables</i>	
ROA	Ratio of net income to total assets.
ROE	Ratio of net income to stockholders' equity. NPM
	Ratio of net income to total sales.
<i>Female directorship variables</i>	
Female directorship	Percentage of female directors on board.
Independent female directors	Percentage of non-executive female directors to total female directors.
<i>Governance variables</i>	
Board size	Number of directors on the board.
Board independence	Ratio of number of non-executive independent directors to total board size.
<i>Control variables</i>	
Leverage	Ratio of total financial debt to total assets.
Sales growth	Percentage growth in reported sales between year t and year t-1.
Firm size	Natural logarithm of the total assets.

All variables are measured at the firm-year level. All accounting variables are winsorized at the 1% and 99% levels

#### *Women on board measures*

This paper has two measurements on the presence of women on board. The first one is female directorship which is calculated as the percentage of women on the board. The second one is the percentage of independent female director over the number of women on the board (Bennouri, et al.,2018).

#### *Control Variables*

Following the previous literature which mention there are relationship established between performance and governance quality ( Adams et al., 2010 ), I use the size of the board proxied by the number of board members and the percentage of independent director.

I also follow the literature and use variables that are reported to correlate with firm performance. These variables are related to company ownership structures (family ownership and institutional ownership), firm size, leverage, and sales growth.

*Descriptive Statistics*

Table 2 summarizes the descriptive statistics for the variables used in this study of the 117 firm year observation. The firms sampled have an average ROA of 8.53%, average ROE of 19.01 and NPM of 15.53. This high number is because the firms included in this study are all top listed firms.

For corporate governance variable, the average of the existence of women on board is 7.4% with maximum of four women on board. The size of the board of LQ 45 is in the range of 6 to 21 which means the average of the firms are having 2 women on board. The maximum percentage of independent director is 36%, average of the firm shows 17% independent director and from that 17%, the average of 6% are women.

**Table 2.** Descriptive statistics

				Min	Max
				-4.57	45.79
<u>Obs</u>	<u>Mean</u>	<u>Std.Dev</u>	<u>ROA (%)</u>	117	8.53 9.54
ROE (%)	117	19.01	26.36	-7.87	160.99
NPM(%)	117	15.53	10.56	-13.68	49.93
Female Directorship (%)	117	7.4	9.14	0	4
Independent Female Directorship(%)	117	6	16	0	50
Board Size	117	13.23	3.31	6	21
Board Independence (%)	117	17	5	6	36
Leverage	117	21.51	21.5	13.31	91.93
Growth rate	117	0.06	0.25	-0.99	1.11
<u>Firm Size</u>	<u>117</u>	<u>17.45</u>	<u>1.67</u>	<u>9.98</u>	<u>20.84</u>

Table 3 shows the relationship between the number of women on board and the average of firm performance. Indonesia LQ 45 for the sample period of 2015 to 2017 is having maximum 4 women on board. This result shows that the firms which have women on board are slightly better in ROA, quite significant better in ROE and significantly better in NPM.

**Table 3.** Firm performance as a function of the women on board

Number of women on				
board	Number of obs	ROA%	ROE%	NPM
0	56	8.39	17.18	11.89
1<4	61	8.67	20.69	18.88

Table 4 shows the correlation matrix between variables.

**Table 4.** Correlation matrix

	1	2	3	4	5	6	7	8	9	10
1 ROA	1.000									
2 ROE	0.875*	1.000								
3 NPM	0.246**	0.196	1.000							
4 Fdirectorship	0.203*	0.159	0.389*	1.000						
5 IFDirectorship	0.077	(0.030)	0.408*	0.452*	1.000					
6 Boardsize	(0.101)	0.050	0.123	(0.045)	(0.030)	1.000				
7 Independence	(0.093)	(0.119)	(0.019)	0.018	(0.028)	0.275*	1.000			
8 Leverage	(0.189)	0.178	0.105	(0.004)	(0.105)*	0.370*	(0.063)	1.000		
9 Growth Rate	(0.021)	0.018	(0.067)	(0.149)	(0.255)	0.039	(0.006)	0.238*	1.000	
10 Firm Size	(0.287)	(0.158)	0.135	(0.162)	(0.224)*	0.677	0.185*	0.394*	0.456*	1.000

This table presents correlations between variables used in this paper. All variables are as defined in Table 1.

\*Represents significance at the 1% level.

## Empirical Result

### *Female directorship and firm performance*

The percentage of female directors in Australia, Canada, Japan, and Europe is estimated to be 8.7%, 10.6%, 0.4%, and 8.0%, respectively (Equal Opportunity for Women in the Workplace Agency—EOWA, 2006; and European Professional Women’s Network—EPWN, 2004).

In this paper, the percentage of women on board are 7.4% as mentioned in the Table 2. To answer Hypothesis 1, Hypothesis 2 and Hypothesis 3 I use ordinary least square with a model as follow:

$$\text{Firm Performance} = \beta_0 + \beta_1 \text{female directorship} + \text{control variables} + \text{fixed effect} + \varepsilon$$

I measure firm performance as ROA, ROE and NPM. Table 5 shows the regression result. Model 1, 3 and 5 shows the result without intervention from the control variables. Model 2, 4 and 6 shows the result as the control variables included. I also include year fixed effects on the regression.

The result shows that firms having women on board is having significantly higher ROA, ROE and NPM for model 1, 3, and 5.

**Table 5.** Regression of Female Directorship and Firm Performance

*t* statistics in parentheses

\* p<0.10, \*\* p<0.05, \*\*\* p<0.01

Constant	7.560*** (4.60)	(3.43)	(3.84)	(2.59)	12.18*** (7.09)	-15.18 (-1.08)
Female Directorship	0.220** (2.29)	0.192* (1.75)	0.477* (1.78)	0.449 (1.51)	0.450*** (4.49)	0.461*** (3.67)
Board Size		0.898** (2.04)		2.599** (2.18)		-0.227 (-0.45)
Independence		-17.31 (-0.86)		-59.65 (-1.10)		24.28 (1.06)
Leverage		-0.0768 (-1.51)		0.213 (1.55)		0.0343 (0.59)
Growth Rate		7.993* (1.92)		16.02 (1.42)		-4.431 (-0.93)
Firm Size		-2.267** (-2.53)		-5.961** (-2.46)		1.403 (1.37)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.0250	0.1030	0.0054	0.0792	0.1294	0.1360
N	117	78	117	78	117	78
	ROA		ROE		NPM	
	(1)	(2)	(3)	(4)	(5)	(6)
		42.18***	17.62***	86.14**		

However, after I include the control variables, the resultant change in ROE. Firms having women on board are not significantly having higher ROE. Thus, this study shows that it will not hurt the firm to have women on board. It is good to have women on board. Firms having women on board have a significantly higher return on assets and higher net profit margin.

*Independent female directorship and firm performance*

Women on board have only 7.4% of the total number of boards. There are firms which have 50% of the total women on board as an independent director. This means if the firm has two women on board, then one of them will be an independent director.

To answer Hypothesis 4, Hypothesis 5 and Hypothesis 6, I use regression as follow:

$$\text{Firm Performance} = \beta_0 + \beta_1 \text{independent female directorship} + \text{control variables} + \text{fixed effect} + \varepsilon$$

I measure firm performance as ROA, ROE, and NPM. Table 6 shows the regression result. Model 1, 3 and 5 shows the result without intervention from the control variables. Model 2, 4 and 6 show the result as the control variables included. I also include year fixed effects on the regression.

**Table 6.** Regression of Independence Female Directorship and Firm Performance

	ROA		ROE		NPM		
	(1)	(2)	(3)	(4)	(5)	(6)	
Constant	8.834*** (5.66)	45.67*** (3.57)	21.06*** (4.87)	101.4*** (2.96)	14.00*** (8.83)	-20.50 (-1.45)	<i>t</i> statistics in parenthe ses
Independence Female Directorship	4.687 (0.86)	0.179 (0.03)	-4.311 (-0.28)	-13.47 (-0.80)	26.44*** (4.76)	27.16*** (3.90)	*
Board Size		0.911* (1.98)		2.853** (2.31)		-0.625 (-1.23)	p<0.10, **
Independence		-15.20 (-0.74)		-51.40 (-0.94)		22.99 (1.01)	p<0.05, ***
Leverage		-0.0734 (-1.41)		0.214 (1.54)		0.0552 (0.96)	p<0.01
Growth Rate		7.476* (1.76)		14.31 (1.26)		-4.702 (-1.00)	
Firm Size		-2.429** (-2.58)		-6.868*** (-2.72)		2.034* (1.95)	
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	
Adjusted R <sup>2</sup>	0.0125	0.0639	-0.0218	0.0579	0.1452	0.1536	
<i>N</i>	117	78	117	78	117	78	

The result shows that firms which have women on board as independent director are having significantly higher NPM. The firms which have women on board as an independent director is not significantly have a higher return on assets and return on equity. However, it will not hurt the firm to have women on board. It is good to have women on board. Firms having women on board as independent director have a significantly higher net profit margin.

## **Conclusion**

This study explores whether firms having women on board have higher firm performance in Indonesia LQ 45 index listed companies between 2015 to 2017. Firm performances are measured by ROA, ROE and NPM. The result has shown that firms which have women on board do have a higher return on assets and net profit margin. Moreover, firms which have women on board as independent director have a higher net profit margin. It will not hurt the company to have women on board. This result is similar to the study of China's listed firm (Liu et al, 2014) where female executive directors have a positive effect on firm performance than female independent director. In our paper, both are strong for net profit margin.

This paper contributes to the literature on the relationship between women on board and firm performance by pointing out that having women on board will not hurt the firms at all, even better firm which have women on board are better in ROA and NPM. Thus, them firm listed in Indonesia don't have any regulation on having independent director above 50% as the regulation in SOX 2003. However, when in the future this regulation applied in Indonesia, the firms will be better when they include women on board as independent directors supported by the result from this paper.



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