“Gender diversity and firm value: a study on boards of public manufacturing firms in Indonesia”

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Abstract

This study aims to analyze the effect of gender diversity in both the Board of Commissioners and Board of Directors, as well as the effect of education background of the President Commissioner on the firm value. Gender diversity is measured from the proportion of women in Board of Commissioners and Board of Directors, while the education background is measured by the education background of the President Commissioner. In this research, the firm value is measured by Tobins Q.

The sample used in this study consist of 70 manufacturing companies listed in Indonesian Stock Exchange in the year 2012. This study employs multiple linear regression to draw the research results.

The analysis results show that gender diversity in both the Board of Commissioners and Board of Directors significantly affects firm value. On the contrary, the education background of the President Commissioner does not affect firm value. This result support the argument that diversity of boards will, through various ways, affect firm financial value in the long and short term.

Keywords

board diversity, corporate governance, education background, firm value, Tobins Q.

JEL Classification

M14, G21

INTRODUCTION

One of the aims of business (firm) is to increase their value by maximizing stockholder’s wealth. Nurlaela and Islahuddin (2008) state that the higher the stock price, the higher the stockholder’s welfare. The implementation of corporate governance is believed to increase firm value, because governance explains how a firm is directed and monitored, for example, through the formulation of firm objectives and monitoring of performance to achieve the objectives regarding firm and stockholder interest (Meier, 2005).

Corporate governance itself is related with firm boards. To be able to implement corporate governance, a firm has to own a Board of Commissioners, Board of Directors, and Audit Committee (General Guidelines of Good Corporate Governance, 2006). The composition of board in a firm is believed to affect firm value, both in the short term and in the long term (Carter et al., 2003).

One of the issues regarding board diversity (gender diversity) is the proportion of certain gender in the Board of Commissioners and Board of Directors. In its relation with accounting, Llewellyn and Walker (2000, p.
state in Narsa (2006) that “…practices of accounting and accountability are deeply implicated in gender relations…”. This issue also has an implication on job field, accounting profession is no exception. Futurists John Naisbitt and Patricia Aburdene, in both their books Megatrends (2000) and Megatrends for Women, state that the 21st century is women century. They state that women in the US, Asia, Europe have won various competition with their counterpart (men) in filling top management position in several well-known firms (Teg & Utami, 2013).

In Indonesia, there is a number of firms that open an opportunity for women to hold an important position. Research conducted by the Centre of Government, Institution, and Organization Study in the National University of Singapore (NUS) Business School shows that from 424 firms listed in Indonesia Stock Exchange (IDX), 40% have women as the member of their Board of Directors or Board of Commissioners (Aria, 2012). One of the companies that proved an opportunity for women to become firm leader is PT Unilever Indonesia Tbk. The total number of women in Unilever Management Trainees (MT) in 2010 is pretty high with 57 percent. Unilever set a target that 55 percent of their MT, 55 percent of their managers, 50 percent of their senior managers, and 35 percent of their directors are female.

Carter et al.’s (2003) study in the US showed positive and significant relationship between the women member’s in the Board of Directors and firm performance. On the other hand, Hanani and Aryani’s (2011) study in Indonesia showed that gender proportion in Board of Commissioners has negative relationship with firm performance, while gender proportion in the Board of Directors has no effect on firm performance. However, Teg and Utami (2013), also in Indonesia, found that gender diversity has positive effect on financial performance of a firm. We were motivated by this inconclusive result of the previous research, and therefore aims to contribute to the debate of the effect of board diversity and firm value.

Apart from gender diversity, there is another factor that may affect firm performance, that is, the education background. The education background of President Commissioner in business (finance) also becomes a determining factor. The study that analyzes the relationship between education background and firm value is relatively scarce. Kusumastuti et al. (2007) conduct a study on the effect of gender proportion of Board of Directors members on firm value in manufacturing company listed in Jakarta Stock Exchange in 2005. The result shows that the presence of women and education background in economy and business statistically has no significant effect on firm value.

Although this research shows similarity to the research of Kusumastuti (2007), there are several fundamental differences between the two studies, such as (1) this study uses upper echelon theory in explaining gender diversity in Indonesia, this theory underlines the second and third differences on the research variable, (2) in this study, diversity is seen from both the diversity of the Board of Commissioners and the Board of Directors. According to upper echelon theory, the top management is the decision maker in a firm, which consists of Board of Commissioners and Board of Directors, (3) this study includes education background in the analysis.

The reminder of the paper is organized as follows. We develop the theoretical framework and hypotheses in section 1. Our research methods are described in section 2. The empirical analysis and discussion are presented in section 3, followed by conclusion, limitation, and suggestions in final section.

1. LITERATURE REVIEW

Upper echelon theory was introduced by Hambrick dan Mason (1984). This theory assumes that what happen in a firm can be analyzed from its top management team. This theory also assumes that top management is the main strategic decision maker in an organization. Because the executives who have the responsibility toward their organization, thus their characteristics, what they do, and how they performed it, will specifically affect organizational outcomes (Finkelstein & Hambrick,
This theory has been widely used in corporate governance research (Hambrick & Manson, 1984). Upper echelon theory is the basis to study the importance of both Board of Commissioners and Board of Directors characteristics, because firm performance is a reflection of firm top management (Wan Yusof, 2010).

In order to build their corporate governance model, a firm needs credible Board of Commissioners and Board of Directors (Puspita & Lukviarman, 2007). In performing their activities, firms should always consider stockholders and other stakeholder interest by providing equal opportunity in employees income, career, and performance without discrimination based on tribe, belief, race, group, gender, and physical condition. The organizational management will be better if the board has heterogeneous members, so that they will be able to complete each other’s competence and credibility. Thus, board of governance is one of the key input factors in achieving optimization of resources management to achieve organizational objectives (Puspita & Lukviarman, 2007).

The main objective of a firm is to increase firm value through the increase of owner or stockholder welfare. Firm value can be defined as investor opinion about the firm reflected by its stock price. According to Fama (1978), firm value will be reflected in its stock price. For firms that sell their stock to public (go public), the indicator of firm value is its stock price. According to Herawati (2008), one of the alternatives used to assess firm value is Tobins Q. Tobins Q is an indicator to measure firm performance, especially firm value, which shows management performance in managing firm assets (Sudiyatno & Puspitasari, 2010).

According to the upper echelon theory, managerial characteristics and background explain the selection of strategy, and, as a consequence, affect firm performance (Hambrick & Mason, 1984). In upper echelon theory, the individual characteristics that may affect firm performance are: age, education, years of service, and gender. Carpenter et al. (2004) show that gender is a characteristic considered in upper echelon research. Education background also becomes one of the characteristics of top management. Clark and Smith (2002) in Aini and Sumiyana (2007) found that higher education level in top management positively affects firm innovation. Education level will provide a hint for investor about Commissioner or Director ability.

1.1. Gender diversity in Board of Commissioners and firm value

Carter et al. (2003) state that diversity in management will make them consider more heterogeneous information in taking a decision. A more diversified Board of Directors will have a better understanding about their market, thus will have more diversified creativity and innovation, besides, providing positive image for their stockholders and customers.

However, Hambrick and Mason (1984) also state that heterogeneity has a potency to cause top management spending much more time for debate, so that their firm is unable to react promptly toward changes in market, especially if the firm runs in a competitive environment. The diversity may lead to more conflicts, thus even though the decision taken is better, the firm still has to experience negative effect, that is, slow decision making process.

Carter et al. (2003) study the relationship between the proportion of women and the minority. The result shows that there is a positive and significant relationship between the proportion of women and minority in Board of Directors and firm performance. Kusumastuti et al. (2007) find different result in which women presence does not affect firm value. Based on the description, we can develop the following hypothesis:

H1: Gender diversity in Board of Commissioners has a positive effect on firm value.

1.2. Gender diversity in Board of Directors and firm value

Robinson and Dechant (1997) argue that the diversity of Board of Directors will, through various ways, affect firm financial value in the long and short term. There are several firms that pay attention on Board of Directors ability, because it has a duty to motivate and control all activities and decision made by CEO (Chief Executive Officer). The study conducted by Carter et al. (2003) shows that there is a positive relationship between wom-
en presence (minority in the Board of Directors) and firm value. In line with Carter et al. (2003), the study conducted by Teg and Utami (2013) also shows that gender diversity has a positive effect on market performance and firm internal performance. This means that the higher the gender diversity in the Board of Directors, the better is the firm market performance.

However, the study by Pudjiastuti and Mardiyah (2007) shows that there is a negative effect of the number of women directors on firm performance. From this resume, we can propose the following hypothesis:

\[ H2: \text{Gender diversity in the Board of Directors has a positive effect on firm value.} \]

### 1.3. Education background and firm value

Resource Dependence theory (RDT) states that diversity will increase creativity and innovation. According to this view, attitude, cognitive function, and belief are not distributed randomly in the population, but tend to vary systematically according to the demographic variables such as education background.

Research conducted by Ponnu (2008) which investigates the effect of academic quality of Board of Directors members on firm performance used 30 firms listed in Malaysia Stock Exchange. The result shows that there is no significant difference between the firm with Commissioners who have high qualification and the firm with Commissioners who have low qualification. Pomeroy (2010) finds that Commissioner and Committee member who has decent accounting/finance education background provides more critics to the firm. Commissioners with business education background will manage their business and take decisions better. The education background of Board of Commissioners members will have an important effect on the knowledge they have. Commissioners who have better knowledge in business and economy will have better ability to manage a business than those who do not (Kusumastuti et al., 2005). Therefore, we proposed the following hypothesis:

\[ H3: \text{The education background of Commissioner has a positive effect on firm value.} \]

### 2. RESEARCH METHOD

This study uses secondary data gathered from Indonesian Stock Exchange (IDX) website (http://www.idx.co.id) in the form of annual report. The sample analyzed in this study consists of manufacturing firms listed in IDX. The sample was selected using purposive sampling method by choosing the firms that present the data needed in the analysis. Based on the sample selection criteria on Table 1, we selected 70 firms as the sample from the total of 139 firms listed in IDX in 2012.

### Table 1. Sample Selection

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing firms listed in IDX in 2012</td>
<td>139</td>
</tr>
<tr>
<td>Annual reports not available on IDX</td>
<td>(24)</td>
</tr>
<tr>
<td>Gender and/or education information not available on annual report</td>
<td>(28)</td>
</tr>
<tr>
<td>Data outlier</td>
<td>(17)</td>
</tr>
<tr>
<td>Research sample</td>
<td>70</td>
</tr>
</tbody>
</table>

This study employs multiple linear regression to draw the research results. The following is the operational definition and measurement of the variables.

### 2.1. Firm value

This study includes the variable firm value as a dependent variable. Firm value is an economic assessment that reflects overall market value of a firm. Firm value is proxied with Tobins Q ratio. Tobins Q ratio is defined as a ratio that compare stock value of a firm listed in the stock market and book value of equity. Tobins Q ratio used in this study is in line with the study conducted by Darmawati (2004), Kusumastuti et al. (2007), and Hanani and Aryani (2011) and is calculated using the following equation:

\[ TOBIN = \frac{MVE + DEBT}{TA}, \]
2.2. Gender proportion in the Board of Commissioners

Board of Commissioners is a Committee that has a duty to supervise and provide suggestions for the Director of a firm (Fransiska & Hermawan, 2013). Carter et al. (2003) found that a firm that has two or more women as Committee members has higher firm value. Gender diversity in Board of Commissioners is measured using the percentage of women in Board of Commissioners compared to total members of Board of Commissioners (Carter et al., 2003), thus calculated using the following formula:

\[
GEND\_DK = \frac{\text{Total number of female members of board}}{\text{Total member of board of commissioners}}
\]

2.3. Gender proportion in the Board of Directors

National Committee on Governance Policy (2006) explains that Director as a firm member has a duty and is responsible collegially in managing a firm. Catalyst (2007) found that from financial persecution, the average financial performance of a firm with higher proportion of female members in the Board of Directors is significantly better than those with lower proportion. Gender diversity in the Board of Directors is measured using the percentage of female members compared to total members of Board of Directors (Carter et al., 2003). Thus, the formula to calculate the percentage of female members in the Board of Directors is as follows:

\[
GEND\_DK = \frac{\text{Total number of female members of board}}{\text{Total member of board of commissioners}}
\]

2.4. Education background of President Commissioner

In this study, the education background of Commissioner is used as control variable. The education background of a Commissioner will highly affect his/her knowledge. Commissioner who has better knowledge in business and economy will have better ability to manage a business than those who do not (Kusumastuti et al., 2005). This study also argues that education background of President Commissioner will determine the diversity in the Board of Commissioners and Board of Directors. The education background of President Commissioner is measured using a dummy variable in which 1 represents Directors with business or financial education background and 0 represents Directors without business or financial education background.

3. ANALYSIS AND DISCUSSION

Based on the data presented in Table 2, the result of descriptive statistic shows that the average Tobins Q is 1.2209. From overall sample of firms, there are 40 firms that have Tobins Q value below average and 30 firms have Tobins Q value above average. This means that 57 percent of sampled firms have market value lower than the value recorded in the book of assets. Compared to the study conducted by Kusumastuti (2007) in manufacturing firms listed in the Jakarta Stock Exchange in 2005, which shows that 72.9 percent of the sampled firms have market value lower than recorded in their book of assets. Gender proportion in the Board of Commissioners has the lowest value of 0.00 and the highest value of 0.67. The mean value of gender proportion in the Board of Commissioners is 0.0519, this means that on average, the percentage of female members in the Board is 5 percent. This
result is lower than the result of the research conducted by Darmadi (2011), which shows that the percentage of female members is 11 percent.

The gender proportion in the Board of Directors has the lowest value of 0.00 and the highest value of 0.40. The mean value of this variable is 0.0839, which means 8 percent of Board of Directors members are women. This result is lower than the percentage found by Teg and Utami (2013) on the firms listed in IDX in 2009–2011, which shows that 38.3 percent of managers are female.

Education background is a dummy variable that has the lowest value of 0 and the highest value of 1. The score 0 appears 37 times, and 1 appears 33 times. This means that 53% of the firms have no Commissioners with education background in business and finance. In order to acquire good regression model, the data have to pass the classical assumption test that consists of normality, multicollinearity, heteroscedasticity, and autocorrelation (Ghozali, 2010). Overall, the data acquired in this study passed the classical assumption test, thus can be used to prepare the research model estimation.

Based on Table 3, we can see that the research model is fit (significance of F test is lower than 5%), thus it can be used to predict the effect of gender diversity in the Board of Commissioners, gender diversity in the Board of Directors, and education background in economy and business on Tobins Q. The result is in line with the study conducted by

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**Table 2. Descriptive statistic**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEND DK</td>
<td>.00</td>
<td>.67</td>
<td>.0519</td>
<td>.13190</td>
</tr>
<tr>
<td>GEND DD</td>
<td>.00</td>
<td>.40</td>
<td>.0839</td>
<td>.12810</td>
</tr>
<tr>
<td>EDU DK</td>
<td>.00</td>
<td>1.00</td>
<td>.4714</td>
<td>.50279</td>
</tr>
<tr>
<td>TOBINS Q</td>
<td>.19</td>
<td>2.97</td>
<td>1.2209</td>
<td>.51456</td>
</tr>
</tbody>
</table>

*Variable definition:*
- GEND DK = The proportion of female members in the Board of Commissioners;
- GEND DD = The proportion of female members in the Board of Directors;
- EDU DK = Education background of President Commissioner;
- TOBIN = Firm value, measured using Tobins Q

---

**Table 3. Results**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Predicted sign</th>
<th>Coefficient</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td></td>
<td>1.070</td>
<td>0.000</td>
</tr>
<tr>
<td>GEND DK</td>
<td>+</td>
<td>1.001</td>
<td>0.031 **</td>
</tr>
<tr>
<td>GEND DD</td>
<td>+</td>
<td>1.043</td>
<td>0.027 **</td>
</tr>
<tr>
<td>EDU DK</td>
<td>+</td>
<td>0.025</td>
<td>0.834</td>
</tr>
</tbody>
</table>

| Adj. $R^2$ | 0.105          |
| $F$-statistic | 3.712         |
| Prob ($F$-statistic) | 0.016         |
| N           | 70             |

*Notes: ***, **, * shows that the coefficient is significant at 0.01, 0.05, 0.1*
Carter et al. (2003) that diversity in the board is believed to affect firm value. The analysis result also shows that the variation in independent variable may explain 10.5 percent (adjusted R square) of the variation in the dependent variable, while the rest of variations are affected by another variable.

Based on Table 3, we find that partially, the proportion of women Commissioners has a positive and significant effect on firm value. From the results, we get the meaning p-value of 0.031 or lower than 0.05, which means the proportion of women Commissioners affects firm value, thus H1 is supported. This research provides evidence that gender diversity in the Board of Commissioners has a positive and significant effect on firm value; this means that the more diverse the gender of Board of Commissioners member, the higher is the firm value. This result supports the study conducted by Ararat et al. (2010) and Carter et al. (2003) who prove that the presence of women will result in better performance, because the decision taken by the Board of Commissioners and the Board of Directors is an effort to achieve maximum performance. However, this finding is different from the previous studies conducted in Indonesia by Pudjiastuti and Mardiyah (2007), Hanani and Aryani (2011) who found that the presence of women in the Board of Commissioners has a negative impact on firm performance.

The result of this study also support Adams and Ferreira (2004) who found that the high proportion of female Commissioners tends to make the Board more diverse and more successful than the homogenous Board of Commissioners. Because mixed members of male and female gender in the Board of Commissioners is more effective in performing supervision, besides, women are inherently considered to be more stable than men. Women employ collaborative leadership style, which can provide dynamic benefit through win-win solution strategy. Women also have high circumspection, tend to avoid risk, and are more thorough than men. Thus, the presence of women in the Board will assist the Board to take more precise decisions (Sudana & Arlindania, 2011).

The next variable is the proportion of women members in the Board of Directors in which this variable also has a positive and significant effect on firm value, with the meaning of p-value of 0.027 or lower than 0.05. This means that the proportion of women directors affects firm value, thus H2 is supported. This result is in line with the study conducted by Luckerath-Rovers (2010), Teg and Utami (2013) who prove that gender diversity has a positive effect on firm performance and supports the study conducted by Carter et al. (2003) who found that firm with the high proportion of women members in the Board (two or more women members) has higher firm value proxied with Tobins Q ratio than the firm with less than two women directors.

This study provides evidence that gender diversity in the Board of Directors has a positive and significant effect on firm value. This means that the more diversified the Board of Directors (in terms of gender), the higher is the firm value. The presence of women in the top management or directors will assist the firm in taking a decision to increase firm value with lower risk. This, due to the existence of women in the Board of Directors, brings changes in the organization, women tend to listen, motivate, and provide support and able to encourage better teamwork. Thus, higher proportion of women in the Board of Directors will lead to more effective decision making by firm directors (Pudjiastuti & Mardiyah, 2007).

The high proportion of women members in the Board of Directors will result in the better decision making, because women directors have different understanding compared with men directors. Female directors are considered to have better understanding of firm market segment than male directors and this may lead to the improvement in the quality of firm decision making process (Singh & Vinnicombe, 2004).

While education background has no effect on firm value at 5% significance level, H3 is not supported. This may be caused by the selection of education background to be analyzed in this study. In this study, we only analyze the education background in economy and business, while the increase in firm performance depends on various factors, such as the competency of President Commissioner, which is line with firms business type. This is supported by the statement of Suhardjanto and Permatasari (2010) that there is a probability that the compatibility between firms business type and board education background is needed more.
CONCLUSION, LIMITATIONS, AND SUGGESTIONS

Based on the analysis result and discussion described in the previous section, we can draw the following conclusion: gender diversity in the Board of Commissioners and Board of Directors has a positive and significant effect on firm value. This result provide evidence to the issues regarding Board diversity (gender diversity) that the proportion of certain gender in the Board of Commissioners and Board of Directors is believed to affect firm value both in the short term and in the long term.

Limitations

The result of this study shows that only gender diversity in the Board of Commissioners and Board of Directors which significantly and positively affect firm value, while education background of President Commissioner has no effect on firm performance. This may be caused by the limitations of this study. We only analyze three independent variables. Thus, there might be another factor that has more significant effect on firm value, which is not analyzed in this study.

Recommendations

1. For firm, this study shows that gender diversity has a positive and significant effect on firm value, thus it will be better to consider the diversity in the Boards when they plan to select their Board members, because it will affect their firms value.

2. For the future researcher, it is recommended to conduct a study with longitudinal data so that they can show the trend of gender diversity in all firms listed in IDX.

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