The Effect of Board Gender Diversity and Firm Size on Cash Holding of Manufacturing Companies: Evidence from Indonesia

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ABSTRACT
The company's cash holding is closely related to the company's efforts to minimize external funding costs. Companies that have large amounts of cash have the hope that each financing can first be financed with the company's internal funding sources, if not, then use external funding sources. The level of cash holding of a company can be influenced by various factors, including board gender diversity and firm size. This study aims to prove empirically how gender diversity in the board of directors can increase cash holding and also how company size can increase the value of cash holding. This research was assisted by the EViews 10 software program. The test results prove that gender diversity in the board of directors does not have a positive effect on cash holding, but the size of the company has a positive effect on cash holding.

Keywords: Cash holding, Board Gender Diversity, Firm Size

1. INTRODUCTION
Companies in Indonesia, especially public companies, have begun to apply gender equality. This is in accordance with data published by Women in Business 2020 released by Grant Thornton International that Indonesia and Mexico are in 4th place with the highest percentage of women in senior management positions, which is 37%. Southeast Asian countries such as the Philippines are countries that apply the highest gender equality at 43%, followed by South Africa at 40%, and in third place in Europe, namely Poland at 38% (Setiawan, 2020). The report also shows that efforts to achieve gender equality in Indonesia, such as providing guidance and coaching (52 percent), creating an inclusive culture (35 percent), and setting targets or quotas for gender balance at the senior level (31 percent) showed an increase compared to the previous year [1].

Countries located in Asia Pacific by prioritizing the issue of gender equality in the workplace, it can increase the Gross Domestic Product (GDP) to 4.5 trillion US dollars until 2025 [2]. Likewise in America, when women are involved in the economy, people's purchasing power increases, by 28 percent and if it is converted into dollar, it may reach 32 US dollars [2]. If women are given good opportunities in education and training, company life can be much better increase.

Cash holding is the amount of cash and cash equivalents that can be easily converted into cash. The existence of cash has a very important role for the company, because without the presence of cash will result in the company's activities cannot run properly. Therefore, companies need to determine cash holding appropriately. This is because the right and optimal level of cash holding can support the company's operational financing and is able to accommodate sudden cash needs [3]. The company's cash holding is closely related to the company's efforts to minimize external funding costs. Companies that have large amounts of cash have the hope that each financing can first be financed with the company's internal funding sources, if not, then use external funding sources. The level of cash holding of a company can be influenced by various factors, including the board gender diversity and firm size that will be used in this study.
Several studies using gender issues associated with cash holding in several countries such as research [4] who examined Italian companies that yielded that companies managed by female CEOs had larger cash holdings. The reason is because according to our analysis female executives may avoid taking risks and therefore maintain a larger stock of liquidity for protective purposes [5]; [4]. In addition to the results of research that gave positive results, research by [6] gave different results where female executives (CEOs) who served in Pakistani non-financial public companies gave negative results on cash holdings. The reason is that the research results are in accordance with agency theory which states that the diversity of the board of directors, gender, can reduce agency problems in cash holding.

From the discussion of several previous studies, it can be concluded that there is no consistency in the results of research regarding the benefits of the diversity of the board of directors in this case gender which can affect the cash holdings of public manufacturing companies. Therefore, researchers are interested in re-examining whether there is an effect of board gender diversity and firm size on the cash holdings of Indonesian public manufacturing companies. The difference between our research and previous research is adding firm size variable which has an indication that it can have a positive effect on cash holding [7]. These results show that the larger the company, the greater the assets owned by the company so that the cash held is also greater, this is because the company is waiting for the use of assets in the form of cash to make more profitable investments [7].

Based on the description of the research problem above, the research questions asked are as follows:

1) Does the board of gender diversity in the company have a positive effect on the company's cash holding?
2) Does firm size have a positive effect on the company's cash holding

1.2. Our Contribution

The contribution of the research is to use the board gender diversity measurement by adding up the female board members by dividing the total number of members of the company's board of directors.

2. BACKGROUND

2.1. Cash Holding

It is interpreted as cash on hand or cash available to be invested in physical assets and to be distributed to investors [8], so it can be said that cash holding is cash holdings. The advantage of holding too much cash is that the company can save on conversion costs to cash so that if large amounts of cash are needed and suddenly the company can fulfil it. The disadvantage of cash holding is that it can cause more and more idle cash, which ultimately affects the loss of the company's opportunity to obtain optimal profits [7]. So, it can be concluded that the company's cash holding amount must be well controlled so that the company can advance and develop its company.

2.2. Board Diversity Gender and Firm Size

Gender socialization theory implies that gender differences exist where men and women have different characteristics, and this will lead to behavioral differences between men and women [9]. Several gender-related characteristics that have been identified in the literature include moral development, moral sensitivity and propensity to take risks [10]. Therefore, differences in the gender characteristics of women and men can influence the company's management decisions.

Several studies have proven that gender board diversity greatly affects financial performance, firm value, and also cash holdings. As research [4] whose research sample is an Italian public company which shows that companies managed by female CEOs have larger cash holdings. The reason is because according to our analysis female executives may avoid taking risks and therefore maintain a larger stock of liquidity for protective purposes [5]; [4]. In addition to the results of
research that gave positive results, research by [6] gave different results where female executives (CEOs) who served in Pakistani non-financial public companies gave negative results on cash holdings. The reason is that the research results are in accordance with agency theory which states that the diversity of the board of directors, gender, can reduce agency problems in cash holding.

Firm size or company size is an illustration of how big or small a company is as seen from the number of assets, total sales, and average sales in the company [11]. Larger companies have the ability to maintain a large level of cash holding, so that it can be used as a reserve when unexpected events occur in the future [11].

Several studies on firm size associated with cash holding consist of research [12]; [13]; [14] empirically proves that there is a significant positive effect between firm size and cash holding. However, the results of research [15]; [16] empirically prove that firm size has a significant negative relationship between firm size and cash holding. While the results of [17] produce different research results, namely that firm size has no effect on cash holding.

2.3. The Trade-off Theory and Pecking Order Theory

Based on this theory, assessing the optimal cash holdings is by considering the costs incurred from holding the cash with the benefits that will be obtained by the company. The main benefits that companies can get by holding cash include reducing the possibility of financial distress, fulfilling investment policies despite financial constraints, and minimizing costs for external funding or asset liquidation [18]. Meanwhile, the cost that must be incurred by the company to hold cash is the opportunity cost of capital invested in current assets with small returns. [18] stated that management who wants to maximize the welfare of its shareholders must regulate the company's cash holdings at a level where the benefits of holding cash are equal to or even exceed the costs that must be incurred by the company to hold the cash. Based on the trade-off theory, the company determines the optimal level of its cash holdings by charging the marginal costs and marginal benefits of cash holdings. Assuming that managers want to maximize the wealth of shareholders, keeping cash will certainly bear the "cost of carry" [19].

Pecking order theory suggests that there is no optimal level of cash holdings but cash has a role as a buffer between retained earnings and investment needs [19]. Cash will be available when the profit generated by the company exceeds its investment needs. When cash is available in excess and the company believes in the profitability of their investment, the excess cash will be paid to shareholders in the form of dividends [20]. Based on this theory, when it needs funds for the company's investment financing purposes, the company will choose to use the funding that is considered the cheapest, namely internal funding. If the need for investment cannot be obtained from internal funding, the company will use external funding from debt as the second source of funding, and equity as the last source of funding [13]; [19].

Pecking order theory also reveals the existence of a hierarchy in funding. Companies choose to use internal funding first and then external funding due to the costs of asymmetric information costs [13]; [19]. Companies in reality prefer internal funds to external funds because internal funds allow companies to no longer need to open themselves from the spotlight of outside investors. The company will maximize the value of the company based on consideration of the costs and benefits of holding cash [13]; [19].

2.4. Hypothesis Development

Entering the world of globalization/modern, the presence of women in corporate management has become a gender equality effort in companies around the world. This is because based on gender socialization theory implies that there are gender differences between men and women, where women have different characteristics from men, and this will lead to differences in behaviour between men and women [9]. This is reinforced by several research results that prove that the presence of women in the company's management team can affect company performance, such as the research of [21]; [22], which proves that gender diversity (women) on the board of commissioners and directors has a positive effect on the company's financial performance.
Based on several studies that have been summarized, there are several that have proven that board gender diversity has a positive effect on cash holding, such as the research of [23] proving that European companies that have female board members exceeding 50% of the composition can increase cash holding. The results of this study support the results of the study of [24], [4] leading to higher cash holdings for companies with more women serving on the board of directors. So this research proposes the following hypothesis:

H1: Board gender diversity has a positive effect on the company's financial performance

Firm size or company size is an illustration of how big or small a company is as seen from the number of assets, total sales, and average sales in the company [11]. Firm size will affect the company's cash holding level because the company will try to maintain its operating and investment levels [11]. Several studies on firm size associated with cash holding consist of research [12]; [13];[14] empirically proves that there is a significant positive effect between firm size and cash holding. Based on the results of the research above, the hypotheses proposed in this study are:

H2: Firm size has a positive effect on the company's financial performance

The research model is: \( CH = a_n + b\text{Gender}_n + c\text{FS}_t + d\text{NWC}_n + e\text{LEV}_n + e \)

3. METHODS

3.1. Population and Sample

The population used in this study were all companies for the 2017-2020 period listed on the Indonesia Stock Exchange (IDX). In this study, not all companies can be used, only companies according to predetermined criteria can be used as samples.

The sample used is all manufacturing companies for the 2017-2020 period listed on the Indonesia Stock Exchange (IDX). The sample of manufacturing companies in this study can be seen from the website www.sahamok.com and the data of the company concerned can be obtained from the website of the Indonesia Stock Exchange (IDX) which can be viewed at www.idx.co.id. The sampling technique used was purposive sampling method, with the aim of obtaining samples that were in line with predetermined criteria.

The following are some of the criteria that will be used as research samples, namely: (1)Listed on the IDX continuously in the period 2017-2020; (2)No loss in the period 2017-2020; (3)The financial statements use the rupiah currency (symbol: IDR); (4)Not conducting a merger in the period 2017-2020; (5) Not conducting an IPO in the period 2017-2020; (6) Did not experience delisting from the IDX in the 2017-2020 period. Based on the criteria described above, it is concluded that this study used 216 observational data that met the criteria.

3.2. Data Analysis Technique

This research uses a descriptive design with a quantitative approach. Quantitative data analysis techniques used in this study to process financial data using panel regression data analysis techniques. Panel regression is conducted to test a theory by detailing certain hypotheses, then collect data to support or refute the hypothesis based on statistical information (t test and F test) [25]; [26].

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3.3. Variables and Measurement

### Table 1 The Operationalization of Variables

<table>
<thead>
<tr>
<th>Variabel Terikat</th>
<th>Pengukuran</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash Holding (Kas)</td>
<td>Cash and cash equivalents Total Assets</td>
</tr>
<tr>
<td>Mokhtari et al. (2019)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variabel Babar</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Board Gender Diversity (Dimitrepolas and Koumasni Koromas, 2021)</td>
<td>Jumlah anggota dewan direksi wanita</td>
</tr>
<tr>
<td>Firm Size (Gada Izaman, 2017)</td>
<td>The natural logaritism of net total assets</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variabel Kontrol</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Working Capital (Ross et al., 2015)</td>
<td>Current Assets - Current Liabilities Total Assets</td>
</tr>
<tr>
<td>Leverage (Gada Izaman, 2017)</td>
<td>Total Debt Total assets</td>
</tr>
</tbody>
</table>

3.4. Analysis Model

\[ CH = a + b \text{Gender}_it + c \text{FS}_it + d \text{NWC}_it + e \text{LEV}_it + e \]

Notes:
- \( CH \) = Cash holding
- Gender = GEND (Proportion of Women on the Board of Directors)
- FS = firm size
- NWC = Net Working Capital
- LEV = Leverage
- e = error

4. FINDINGS AND DISCUSSIONS

4.1. Descriptive Statistical Analysis

### Table 2 Research Model

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std.Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH</td>
<td>216</td>
<td>0.0002</td>
<td>1.2721</td>
<td>0.1473</td>
<td>0.1645</td>
</tr>
<tr>
<td>GEND</td>
<td>216</td>
<td>0.0000</td>
<td>3.0000</td>
<td>0.5694</td>
<td>0.8211</td>
</tr>
<tr>
<td>SIZE</td>
<td>216</td>
<td>16.535</td>
<td>37.675</td>
<td>28.5165</td>
<td>-0.4964</td>
</tr>
<tr>
<td>NWC</td>
<td>216</td>
<td>0.0013</td>
<td>6.0507</td>
<td>0.3416</td>
<td>9.9639</td>
</tr>
<tr>
<td>LEV</td>
<td>216</td>
<td>0.0002</td>
<td>2.4092</td>
<td>0.3908</td>
<td>3.4321</td>
</tr>
</tbody>
</table>

Source: EViews 10 Output

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Based on the descriptive statistical table for the research model, it is stated that gender diversity as measured by the number of female members of the board of directors, the average value is 0.56944, meaning that the number of female members of the board of directors in publicly traded manufacturing companies is above 50%, which is half of the number of members of the board of directors. Meanwhile, the average size of open manufacturing companies is of medium size, as evidenced by the average value of 28.51. And according to the descriptive statistical table that the size of the small company is 16.53 and has the largest value of 37.67.

4.2. Hypothesis Testing Results

From the specification test above, it is concluded that this research is more appropriate to use the fixed effect estimation model using the Eviews-10 software. The results of the panel data regression test are listed in the table below:

<table>
<thead>
<tr>
<th>Table 3 Model Estimation Results for Research Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>GEND</td>
</tr>
<tr>
<td>SIZE</td>
</tr>
<tr>
<td>NWC</td>
</tr>
<tr>
<td>LEV</td>
</tr>
<tr>
<td>R²</td>
</tr>
<tr>
<td>F-statistics</td>
</tr>
<tr>
<td>DW stats</td>
</tr>
<tr>
<td>Prob.(F-stats)</td>
</tr>
</tbody>
</table>

Source: EVViews 10 Output

F-test

Table 4. shows the F value of 6.7132 and the probability of F of 0.0000. This means that the F test is proven to be significant because the probability F is less than the 10% significance level, which was previously determined in the research method in chapter 3. So, it can be concluded that the large number of female directors has an effect on cash holding for manufacturing companies listed on the IDX.

T-test

Table 4. shows the value of t which shows that: (1) The gender diversity of women in the board of directors does not affect the cash holding of manufacturing companies listed on the IDX, where the probability shows a value of 0.8151 where the value is greater than the 10% significance level; while (2) the firm size variable has an effect on the manufacturing cash holdings listed on the IDX with a probability value of 0.0448 less than the 10% significance level. (3) This research uses control variables in order to reduce the existence of other influences from outside besides the independent variables studied in this research, where the control variables used are net working capital and leverage. The results are shown in table 4.4 that the two control variables are net working capital and leverage. does not have a positive or negative effect on the cash holding performance of manufacturing companies listed on the IDX.
Coefficient of Determination ($R^2$)

The statistical test results for this research model are indicated by the $R^2$ value of 0.70776. Value 0.70776, or 70.77% means that the independent variables contained in the research model can explain the dependent variable 70.77% and 29.23% are explained by other independent variables outside the research model.

4.3. Discussion

The following is a research model that uses a fixed effect model and is processed using panel data regression:

$$\text{CH} = 0.0540 - 0.02807\times \text{GEND} + 0.426\times \text{SIZE} - 0.0188\times \text{NWC} - 0.0147\times \text{LEV}$$

Based on the panel data regression equation, it produces a negative coefficient value of 0.054 for the research model, meaning that if the independent variable is 0 or constant, the company's cash holding value increases by 0.054.

H1: Board gender diversity has no positive effect on the cash holding value of manufacturing companies listed on the IDX.

The measurement of board gender diversity in this study was measured by the number of women who filled the board of directors’ positions. The results of data processing prove that the number of women on the board of directors has no effect on the cash holding value of manufacturing companies listed on the IDX. The reason for the rejection of hypothesis one is because if there are more female directors on the firm's board, ceteris paribus, there is no effect on excess cash holdings implying that female directors are not likely to be overly cautious or optimistic. The results of this study support the research results of [27] who took a sample of public companies in the United States.

H2: Firm size has a positive effect on the cash holding value of manufacturing companies listed on the IDX.

Firm size as measured by logging total assets has been shown to have a positive effect on the value of cash holding. This means that large companies can increase the amount of cash holding for company operations. The reason is because the company will try to maintain its level of operations and investment [11]. Several studies on firm size associated with cash holding consist of research by [12]; [13]; [14].

Control Variable

Net working capital as a control variable in this research has been proven to have no effect on the cash holding value of manufacturing companies. This may be due to the fact that not every condition of the company can easily substitute current assets other than cash into cash. Companies that are experiencing unstable economic conditions or crises generally find it difficult to convert non-cash current assets into cash. The results of this study are in line with research conducted by Saleh and Prasetiono (2016) which shows that net working capital has no significant effect on cash holding.

While the leverage variable as the second control variable used in this study is also proven by the results that it does not have a significant positive effect on the cash holding value of manufacturing companies listed on the IDX. Leverage has no effect on cash holding, it can also be because the company tends to use external funds to finance the company's activities. The external funds referred to here are like debts to other companies, so when the debt is considered sufficient, the company's cash is used. Companies also tend to hold cash just in case which can be used at any time to deal with unexpected losses [28].

This research has implications for the government and politicians to make rules regarding gender equality (women and men) in serving as directors in companies.
5. CONCLUSIONS

The results of this study have proven that the gender diversity of women/board gender diversity who served in manufacturing companies listed on the BEI. Although the number of female directors in Indonesian manufacturing companies is more than 50%, this cannot increase the company's cash holding value. The reason is because if there are more female directors on the company's board, ceteris paribus, there is no effect on excess cash holdings implying that female directors are not likely to be overly cautious or optimistic. Large and small size manufacturing companies have a positive effect on the value of cash holding. This means that large companies can increase the amount of cash holding for company operations. The reason is because the company will try to maintain its operating and investment levels.

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