The impact of gender diversity in the boardroom on dividend policy: evidence from Swedish listed companies

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ABSTRACT

In recent times, shareholders, regulators and researchers have increasingly shown concern about the gender diversity in the boardroom and dividend policy. Many researches show that women in the board can better represent the shareholders’ interest. There are different findings in the previous literature regarding the relationship between gender diversity in the boardroom and dividend policy in Sweden. This paper aims at examining the relationship between women directors in the boardroom and dividend payout, in additional, examining the components of women directors in the boardroom, that is, how the proportion of women directors, the proportion of independent women directors, the proportion of executive women directors and the proportion of institutional women directors affect dividend payout. The study analyzed the 273 companies currently listed on the Nasdaq OMX Stockholm Stock during the period 2011 and 2015. Three different two-way fixed effects models and regression analysis are used to obtain the required data. Our findings indicated that there is a positive significant relationship between the percentage of women directors, independent women directors and dividend payout in three different models. By the regression result of these three models, there is no significant relationship between the proportion of executive women directors/institutional women directors and dividend payout. Thus, our result confirms that the proportion of women directors and independent women directors in the boardroom has effect on the dividend payout. The empirical evidence on this study can support Swedish board gender quota proposal, which requires at least 40% of their board members of public traded companies are female by 2019.

Key words:
Women directors; Independent women directors; Executive women directors; Institutional women directors; Dividend payout; Swedish board gender quota

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1. Introduction
In times of vivid debates about Swedish board gender quota proposal killed by opposition parties which include the Moderate Party, the Centre Party, the Liberals and the Christian Democrats Party, more and more policy makers, governments, companies, gender activists are appealing to the gender balance in the boardroom. The gender quota proposal requires that at least 40% of their board members of public traded companies are female by 2019. According to SCB Statistics Sweden research on gender diversity, Table 1 shows that 29% of members of Swedish listed companies' boards are female in the recent year 2015. This number is below the European commission (2016)'s goal of 40% for major European companies. The current gender distribution in the boardroom is not satisfactory.

Comparing with other European countries, Norway is the first country enacting binding gender quota by a 40% for female directors in 2008. Following the Norway, Spain has also enacted the same legislation on gender quota 40% by 2015. Gender equality is one of the cornerstones of Swedish society. Sweden has come a long way in making sure that women and men are treated equally no matter in the school or workplace, while the rejection of Swedish gender quota proposal on September 2016 seems against people’s expectation of gender diversity, which caused my interest to further investigate the relationship between female directors in the boardroom and the corporate governance, specially, on the dividend policy.

Table 1: The proportion of female directors in the boardroom of Swedish public traded company from year 2011 to 2015.

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>24%</td>
</tr>
<tr>
<td>2012</td>
<td>23.50%</td>
</tr>
<tr>
<td>2013</td>
<td>23.70%</td>
</tr>
<tr>
<td>2014</td>
<td>26%</td>
</tr>
<tr>
<td>2015</td>
<td>29%</td>
</tr>
</tbody>
</table>

Source: SCB Statistics Sweden

2 http://www.scb.se/sv_/Hitta-statistik/Temaomraden/Jamstalldhet/Indikatorer/Excel--Makt-och-inflytande/
Recent research suggest that the board characteristics play a vital role in the corporate governance structure of large business firms (Fama & Jensen, 1983; Baysinger & Butler, 1985). One of the most important links between the board and corporate governance is that dividend payout policy is approved by directors on board. Dividend payout policy is a key way to resolve agency conflicts between shareholders and managers by mitigating the free cash flow problem (Easterbrook, 1984; Jensen, 1983).

The board characteristics have effect on the dividend policy. Gender diversity as one of the board characteristics has been widely investigated by prior empirical research. The role of women directors in the boardroom has received growing attention and gender diversity issues have caused a great amount of discussion since women participation in the boardroom is increasingly perceived to be valuable.

Previous researches in the field of gender diversity and corporate governance have concentrated in two respects. Some of them focused that firm performance and firm value can be effected by the women directors in the boardroom (Adams & Ferreira, 2009; Carter et al, 2003; Campbell & Miguez-Vera, 2008; Catalyst, 2004; Farrell & Hersch, 2005; Nielsen & Huse, 2010; Shrader et al., 1997). Based on corporate governance some academic literature provide evidence that women directors play a vital role on the monitoring and control of board activities (Adams & Ferreira, 2009; Erhardt et al, 2003; Huse & Solberg, 2006; Rose, 2007), also have significant impact on the financial reporting quality (Gulzar & Wang, 2011; Qi & Tian, 2012). While others investigate the association between female directors and board characteristics, suggesting that based on the behavior different between women and men, women are more focused on relationship and cooperation (Tarr-Whelan, 2009). The gender diversity on boards, as presented by the presence of women directors, bring a greater variety of perspectives for decision-making, which increases the creation and innovation of problem solution (Byoun et al, 2016). Fama Jensen (1983) and Cartel et al (2003) document that women directors affect the managers’ behavior through the working process. Moreover, Female participation in the boardroom could improve the board communication (Huse & Solberg, 2006; Stephenson 2014) and enrich the board discussion (Joy 2008). Terjesen (2009) presents that better communication and discussion can effectively promote the monitoring of board activities, further reduce the agency cost by the information asymmetric between managers and shareholders (Adams & Ferreira, 2009).

Female directors in the boardroom consists of independent, executive and institutional women directors. Executive women directors could provide important and specific company information to the board since they participate in the firm management (Srinidhi et al, 2011). They invest in the firm by their own human capital and closely associate with the firm value. Unlike executive women directors, independent women directors are independent and free from the influence of managers since they do not invest in the company with their own human capital. They help the board’s decision-making and play the function of monitoring and controlling (Jensen & Meckling, 1976; Fama & Jensen, 1983). The main purpose of independent directors is to keep their reputation and be honest reporting to the board (Weisbach, 1988). For the institutional women directors, their interest is the same as shareholders since they are also external stakeholders of company. They can make independent decision and enhance the monitoring to the managers (Short et al, 2002). As Srinidhi et al (2011) states, the diversity of incentives among independent, executive and institutional directors do have impact on the boardroom.

1.1 Research questions
Firstly, do proportion of female directors in the boardroom affect dividend payout policy? Do proportion of independent/institutional/executive female directors in the boardroom affect dividend payout policy respectively? Secondly, what is the relationship between them? The answer to these questions are interesting for two reasons. They can help us understand the effect of female directors on corporate governance, more concisely, on dividend payout policy. They can also shed light on whether the Swedish governance gender quota proposal should be advocated. Does corporate board gender diversity, as presented by the presence of women directors on board, affect dividend payout policy in Swedish listed companies?

1.2 Literature gap and contribution

Only a few empirical studies examine the direct relations between women directors and dividend policy. Byoun et al (2016) investigate whether women directors-related features of 2234 unique firms in the United States had a positive or negative effect on the dividend policy from 1997 to 2008. The result shows that gender diversity has a significant positively impact on dividend payout. Pucheta-Martinez et al (2016) use panel data from sample of 894 firms in Spain between 2004 and 2012, finding out a positive impact of the proportion of women directors on the dividend payout. To the best of my knowledge, due to the limited research when it comes to gender diversity on the Swedish market in relation to dividend policy, the authors’ aim is to fill this literature gap to extend the knowledge of how gender diversity is used in association dividend payout. Furthermore, moving beyond the current literature, this paper specifically investigates the relationship between dividend policy and the participation of independent, executive and institutional female directors respectively in the Sweden context.

From a theoretical perspective, this paper carries forward the existing research achievements and examine specially whether the female directors in the boardroom has impact on dividend policy in the Swedish listed companies. Furthermore, the author particularly interested in exploring whether independent women directors, institutional women directors, and executive women directors are associated with dividend policy. Based on empirical research, this paper will also make practical contributions to the growing research on the impact of gender diversity in the boardroom on corporate governance in several ways. Firstly, the study supports the previous research by adding further evidence of the relationship between gender diversity in the boardroom and dividend policy in the Swedish listed company. Secondly, most of previous research focused on the proportion of women directors as a whole, while few research considered the association between components of women directors and dividend policy. In this paper, by adding the independent/institutional/executive women directors respectively as independent variables, will complement the prior research. Thirdly, my study further helps the external stakeholders who trend to invest in the Swedish stock market and care about dividend payout for their decision-making. Finally, the paper can be useful for policymakers and regulators, further provide suggestion to the Swedish government that the gender quota proposal need to be enacted as legislation because more females can reduce the agency cost and improve the effective of corporate governance of Swedish listed companies, which is also aligned with the European Commission (2016) on encouraging a binding quota 40% of women directors in the boardroom for all EU companies.

1.3 Limitations

This paper has two limitations. Firstly, the result and analysis of model is based on the Swedish listed company from year 2011 to 2015. There is geography and time limitation. The result can not apply to other countries and other time periods. Secondly, several control
variables have been included in the model, while still has many unknown independent variables which have not been considered into the model.

1.4 Research design
Based on previous evidence and research, the paper puts up with several hypotheses which are related to the effect of women directors on the board on dividend policy. Then by collecting and analyzing empirical data, the author try to compare the result from the regression model with the hypothesis, further make deep analysis and draw the conclusion. The empirical data is drawn from 273 companies listed in the Nasdaq OMX Stockholm Stock exchange. The study uses panel data based on the 273 companies during the year 2011 and 2015.

1.5 Structure
The remainder of my article is organized as follows. Section 2 introduces the Swedish board background. Section 3 presents the theory background and the link between the gender diversity and dividend policy according to the previous research, and furthermore develop my hypotheses. Section 4 presents data, variables and model. Section 5 describes the result and discussion of the model. The last section is the conclusion part of the paper.

2. Swedish board background
According to the Swedish Companies Act, Sweden has one single board of directors by using a one-tier corporate governance model. In Sweden, the CEO of company does not need to be a director on the board, which is different from the rules in the USA. However, even if the CEO is not a board member, he still can come into board room and affect decisions. Moreover, in the Swedish public traded companies, a director cannot take the CEO and chairman position at the same time (the Swedish Company Act).

Swedish politicians have complained that there are too few women on board of company. Comparing with men, women in Sweden held few positions on board in Swedish public traded companies. From the perspective of the equality between man and woman, the gender diversity in company boards is also a competitive issue. On 9th September 2016, Swedish’s opposition parties rejected a gender quota on board proposal (kvotering till börsbolagens styrelser) by the government. The proposal suggests that the presence of woman directors will take at least 40% of their board members by 2019 in the Swedish public traded companies. The rejection of the gender quota on board have triggered much discussion and criticism, which causes my interest to further investigate whether the presence of the women directors have effect on the dividend policy.

3. Literature Review
3.1 Theoretical background
This part is divided into three perspectives. Firstly, the author tries to elaborate the theoretical framework under the effect of women directors on dividend payout, most focus on the agency theory and agency cost caused by the different interests between the managers and shareholders. Secondly, the paper would make an explanatory about how the gender diversity or women directors make contribution to the corporate governance from a social perspective. Thirdly, the author combines the agency theory and the characters of women directors together trying to explain why the women director on the board might affect the dividend policy based on the previous evidence and prior research.

There are a lot of research on the topic of corporate governance structure and the role of board directors. Those researches aim at finding the optimal board composition and investigating the effective corporate governance structure in order to reduce agency cost and increase firm value. Agency theory states the conflicts of interest between shareholders and managers of companies because of the information asymmetries and ownership separation. Managers will seek to maximize their own utility at the expense of
corporate shareholders, which generate agent cost. Jensen & Meckling (1976) states that dividend payout can reduce agency cost since manager would not invest the money on low-return or wasted in his self-interest. Similarly, Krafft (2013) also states that dividend payout can avoid the future cash flow be absorbed by managers. In the same line, Grossman & Hart (1980), Easterbrook (1984) and Rozeff (1982) describe that dividend can help reduce agency cost which consists of the cost of monitoring managers and the cost because of risk aversion of the managers by reducing future cash flow. Dividend policy has effect on both managers and shareholders’ interests. Moreover, dividend distribution can reduce the firms retained profit and increase the debt ratio by the company, which is also associated with the companies’ profit distribution plan and investment financing decisions (Pucheta-Martinez et al, 2016). Given that the dividend policy plays an important role in the corporate governance and has been caused much attention about it.

The gender diversity on board as one of the factors can affect the decision on dividend payout. Many previous research shows that board characteristics indeed affect firm performance, which include the effect of gender diversity on boards on the firm performance. The gender diversity on board can improve the mutual monitoring function on companies (Byoun et al, 2013; Kandel & Lazear, 1992). In the vein, Gul et al (2011) and Srinidhi et al (2011) claims that board diversity can enhance the quality of information disclosure and earnings. The women directors in the boards is increasingly realized to be valuable. Tarr-Whelan (2009) addresses that comparing with men, women are more focused on relationships and cooperation. She states that companies have higher profit with higher proportion of women in senior positions. Carter et al (2010) claims that women directors can increase the board independence and trend to ask more questions. McKinsey & Company (2010) is in line with Tarr-Whelan (2009) study, finds that firms have higher financial performance with higher fraction of women directors on board. Same as Nguyen & Faff (2007), they find that the presence of women directors on board increases firm value based on the evidence of Australian.

The previous research has various findings in the effect of board diversity on firm performance and dividend policy. Sharad (1997) find that the women directors have a negative effect on firm performance. Farrell & Hersch (2005) find that there is no significant effect of corporate diversity on firm performance. However, the recent research Knyazeva (2009) show that heterogeneous boards can decrease cash holdings and increase dividend payout. In the same line, Carter et al (2010) finds the positive relationship between the board diversity and the Tobin’s Q and firm value. Wellalage et al (2012) also show that female directors and female CEO trend to have higher dividend payout. Van Pelt (2013) & Byoun et al (2016) find that the board diversity has an important impact on dividend payout policy, and help to mitigate the free cash flow problem. In the line with Byoun et al (2006), Pucheta-Martinez et al (2016) get same research result that the presence of women directors on board has positive impact on dividend payout policy in the evidence of Spanish public traded companies.

3.2 Hypothesis

3.2.1 The proportion of woman directors

Some sociology and cognitive study about women character states that comparing with men, women are more risk-adverse and conservative, good at communication and cooperation (Carter et al, 2014; Tarr-Whelan 2009). Women have high ability to mitigate conflicts. The dividend policy as one way can reduce agency cost and mitigate the conflicts between managers and shareholders (Adams & Ferreira, 2009). Considering the characters of women, the women directors seems have
trend to payout dividend as the way to mitigate and solve the conflicts.

Based on the previous research, Carter et al (2003) shows significant positive relationships between the proportion of women directors on the board and firm value. Pucheta-Martínez (2016) document that the proportion of women directors are positively related to dividend payout. In the same line, Byoun et al (2006) also find that companies have higher trend to pay dividend with higher women directors. The first hypothesis of my study is that **H1: The proportion of women directors on the board has a positive effect on the dividend payout.**

### 3.2.2 The proportion of independent women directors.

According to The Swedish Corporate Governance Code, an independent director is a director who has no business relationship with the company. The independent women directors can be treated as outsider of companies. The independent directors can be much more independent and justice for the companies’ decision making since they don’t have interests’ connection with the company, which makes them behave much more effectively and effectively on monitoring and supervision the companies (Fama Jensen, 1983; Adams & Ferreira, 2009). Wallalage et al (2012) describes the participation of independent directors will add more perspectives to the board since the independent directors have different background, for instance some of them are professors or researchers. The board view of independent directors can help the company improve their decision-making. Combining the woman self-characters, for instance, conservative and risk-adverse, and the common character of independent directors, the independent woman director has more possibility to distribute dividend. Some prior research also states the same opinion as above (Byoun et al, 2013; Wallalage et al, 2012; Pucheta-Martínez & Bel-Oms, 2016). The second hypothesis of this study is that **H2: The proportion of independent women directors are positively associated with dividend payout.**

#### 3.2.3 The proportion of executive women directors.

Executive directors as the internal employees of company have closely relationship to the company’s management process. Executive directors have also more information than other board members. Based on the agency theory, Rozeff (1982) and Easterbrook (1984) claim that dividend payout can increase the monitoring and supervision on company by financial market, since dividend payout will reduce the cash flow in the company and company trends to finance their operation or investment activities by issuing new stocks or borrowing from financial institution. In this way, the company will be reviewed by the market and some organizations, further increase the monitoring to the company. Yermack (1996) argues that women executive directors are less objective because of their inter-interest with the company. Combining with the women character which is conservative and risk-adverse, as an executive manager in the company they do not want to expose themselves on the risk. Therefore, executive women directors trend to reduce the dividend payout. In the same line, Francis et al (2015) find that executive directors have negative effect on the dividend payout. According to previous research, finding shows that the women executive directors are negatively related to the dividend payout (Van Pelt, 2013; Pucheta-Martínez & Bel-Oms, 2016). Hence, the third hypothesis of the study is that **H3: The executive women directors have negative effect on the dividend policy.**

#### 3.2.4 The proportion of institutional women directors.

Institutional directors as external stakeholders of company are aligned with the interest of shareholders. From the view of Short et al (2002), institutional directors can make their decision independently and enhance the
transparency of company by effective monitoring. According to Eckbo & Verma (1994), based on the agency theory, institutional directors trend to distribute more dividend in order to reduce free cash flow, furthermore, reduce the agency cost. This is because the large cash flow will be used by managers who like to invest in the activities for their own interest (Jensen 1986). Institutional women directors have tendency to have more dividend payout because of conservative and risk-adverse. Previous study shows that institutional women directors have positive effect on dividend payout (Short et al, 2002; Van Pelt 2013). Accordingly, the fourth hypothesis of the study is that H4: The institutional women directors are positively associated with dividend policy.

4. Research design
4.1 Sample
The research uses the quantitative approach and data is collected from various sources. It is an explanatory research, aiming at examine the association between dependent variable (dividend payout) and independent variables (female directors). The sample is drawn from companies currently listed on the Nasdaq OMX Stockholm Stock Exchange during a five-year period, 2011-2015. The information about board directors’ name, gender, position and other characteristics comes from the public website of different companies and their annually published integrated reporting. Moreover, part of the data about board information comes from the books “Styrelser och revisor i Sveriges Börsföretag” (Fristedt & Sundqvist) from year 2010 to 2015. For the other financial data, such as, ROA, ROE and Leverage, is collected from the financial time series database by Thomson Reuters Datastream. Some other financial data is collected and calculated by Excel from the companies’ financial statements which are public on the company website. During the period 2011 to 2015, several companies have entered and exited from the Stockholm Stock Exchange. the sample will exclude those companies which are not continually existing in the Stockholm Stock Exchange during the five-year period. Some firms are also eliminated from my sample because the data is not available. Furthermore, banking and financial industries are also eliminated because those industries are controlled by special regulations and might cause the problem of asymmetry information. Finally, total company number is 273 including in the sample. My analysis includes the general analysis covering all the 273 companies.

4.2 Dependent Variable
The dependent variable will represent the dividend payout. Many previous literatures use three ways to describe the dividend payout respectively, which increases the variation of dependent variable and increase the interpretive capacity by the model (Byou et al, 2016; Pucheta-Martínez & Bel-Oms, 2016). Accordingly, this study will also use three different way to define the dependent variable. Firstly, the dummy variable is used as dependent variable. The dependent variable is equal to 1 if the company currently pays dividend. Otherwise, the dummy variable is taking 0 without paying dividend by company (Al-Najjar & Hussainey, 2009; Byou et al. 2013; Pucheta-Martínez & Bel-Oms, 2016). The dummy dependent variable is written as Y_DDY. Secondly, the logarithm of dividend per share is used as dependent variable, which is written as Y_DPS in the model as following (Kuman, 2006; Pucheta-Martínez Bel-Oms, 2016). Thirdly, the ratio between the total amount cash dividend divided by market value of the firm on the Stockholm Stock Exchange is treated as the dependent variable (Fenn & Liang, 2001; Pucheta-Martínez & Bel-Oms, 2016), which can be written as Y_RDM.

4.3 Independent variables
The independent or explanatory variable in this study consists of main explanatory variables, which are used for representing the woman
effect, and other explanatory variables which can also affect explained variable. There are four variables in total as the main explanatory variables. The proportion of women directors on the board is written as PWOMD in the model, is calculated as the ratio between the number of woman director on the board and the total number of the board. The proportion of independent women directors on the board is written as PINDD, is measured by the number of independent women directors on the board divided by the total director’s number on the board. The proportion of Executive women directors is written as PEXED in the model, is the ratio between the number of executive women directors and the total directors on the board. The proportion of Institutional women directors is written as PINSW, is calculated by the number of institutional women directors divided by the total number of directors on the board.

Aiming at constructing a good model, some other variable will also be added to the model. Hedenstedt & Raaballeb (2007) find that dividend payout is positively associate with ROE and negatively associated with concentrated owner structure and firm size in the evidence of Denmark. Pucheta-Martínez & Bel-Oms (2016) document that there is positive relationship between the ROE, firm size, board size and dividend payout, and is negative relationship between investment management, leverage, high management ownership between dividend payout. Rozeff (1982) also states that board size, ROE, management ownership has effect on dividend policy. According to previous research, the other variables can be developed as following. Board Size is written as BS in the model, which is measured as the total number of directors on the boards. Al-Najjar & Hussainey (2009) also shows that firm size affect dividend payout. Firm Size is written as FS in the model, which is calculated as total assets. Return on Equity is written as ROE, is calculated by the net income/shareholder's equity. ROE states how the firm earnings per capital affect the dividend policy. If the company has good return and free cash flow, the company would have more likelihood to distribute dividend to shareholders. Growth opportunity is written as GOP, which is calculated as the book market ratio. When the company is growing fast, the company prefer keep more retained profit, therefore, the dividend payout is less (Farinha, 2003). Debt Ratio is written as DRA. As Van Pelt (2013) and Pucheta-Martínez & Bel-Oms (2016) states, more debt would lead to less dividend payout since the company will prefer reduce their finance cost by reducing the outflow of cash flow. This debt ratio is also one indicator which can represent the ownership structure of the company.

### 4.4 Model

The model is designed as below. The study will choose to use panel data combining the cross-section data and time series data, which can improve the degree of freedom, increase variation, and reducing the collinearity through the model. In the model, \( i = 1,2,\ldots,273 \), represents the different companies. \( T = 2011, 2012, 2013, 2014, 2015 \) represents the time period.

\[
Y_{DDY_{it}} = \alpha + \beta_{PWOMD} \ast PWOMD_{it} + \beta_{PINDD} \ast PINDD_{it} + \beta_{PEXED} \ast PEXED_{it} + \beta_{PINSW} \ast PINSW_{it} + \beta_{BS} \ast BS_{it} + \beta_{FS} \ast FS_{it} + \beta_{ROE} \ast ROE_{it} + \beta_{GOP} \ast GOP_{it} + \beta_{DRA} \ast DRA_{it} + \mu_{i} + \lambda_{t} + \varepsilon_{it}
\]

\[
Y_{DPS_{it}} = \alpha + \beta_{PWOMD} \ast PWOMD_{it} + \beta_{PINDD} \ast PINDD_{it} + \beta_{PEXED} \ast PEXED_{it} + \beta_{PINSW} \ast PINSW_{it} + \beta_{BS} \ast BS_{it} + \beta_{FS} \ast FS_{it} + \beta_{ROE} \ast ROE_{it} + \beta_{GOP} \ast GOP_{it} + \beta_{DRA} \ast DRA_{it} + \mu_{i} + \lambda_{t} + \varepsilon_{it}
\]

\[
Y_{RDM_{it}} = \alpha + \beta_{PWOMD} \ast PWOMD_{it} + \beta_{PINDD} \ast PINDD_{it} + \beta_{PEXED} \ast PEXED_{it} + \beta_{PINSW} \ast PINSW_{it} + \beta_{BS} \ast BS_{it} + \beta_{FS} \ast FS_{it} + \beta_{ROE} \ast ROE_{it} + \beta_{GOP} \ast GOP_{it} + \beta_{DRA} \ast DRA_{it} + \mu_{i} + \lambda_{t} + \varepsilon_{it}
\]
<table>
<thead>
<tr>
<th>Variables</th>
<th>Description</th>
<th>Expected sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWOMD</td>
<td>Total number of women in BD/Total number of members of BD</td>
<td>+</td>
</tr>
<tr>
<td>PINDD</td>
<td>Total number of independent women in BD/Total number of mem</td>
<td>+</td>
</tr>
<tr>
<td>PEXED</td>
<td>Total number of executive women ex BD/Total number of member</td>
<td>-</td>
</tr>
<tr>
<td>PINSW</td>
<td>Total number of institutional women in BD/Total number of memb</td>
<td>+</td>
</tr>
<tr>
<td>BS</td>
<td>Total numbers of directors in the boardroom</td>
<td>+</td>
</tr>
<tr>
<td>FS</td>
<td>Total assets (log)</td>
<td>+</td>
</tr>
<tr>
<td>ROE</td>
<td>Ratio of net income/stockholder's equity</td>
<td>+</td>
</tr>
<tr>
<td>GOP</td>
<td>Rate of assets growth</td>
<td>-</td>
</tr>
<tr>
<td>DRA</td>
<td>Ratio of book value of debt over total assets</td>
<td>-</td>
</tr>
</tbody>
</table>

Finally, the model uses a two-way fixed effects model, where represents individual-fixed effects, as it encapsulates all the individual heterogeneity that affect dependable variable cross-sectionally but do not vary over time, for instance, the industry that a firm operates in. In the model captures all of the variables that vary over time but are constant cross-sectionally, for instance, business cycle. Next step is to analyse the regression result, describe the characteristics of the collected data, for instance, mean and variance, then identify the significant of coefficient and the economic meaning by the model.

5. Results and analysis
According to the sample from 2011 to 2015, the percentage of female directors are less than male directors in general. Average numbers collected from 273 listed companies on Nasdaq OMX Stockholm from year 2011 to 2015 show that about 82% of listed companies has at least one female director in the boardroom, about 43% of listed companies has at least two female directors in the boardroom, and about 26% of listed companies has at least three female directors in the boardroom. According to the SCB³ new updated information, the overall female directors in the boardroom of listed companies is about 30% in the year of 2016. Even though the percentage of women directors are continually increasing from 24% in the year of 2011 to 30% in the year of 2016. women are still underrepresented in the boardroom compared to men. The aim of this paper is to investigate whether women directors have effect on dividend policy and whether listed firms should strive to include more women directors in their boardroom.

Table 3 shows that the sample number, mean, standard deviation, also shows the 25th, 50th, and 75th percentiles for all variables. From the dummies variables Y_DDY can be seen that 59% of listed companies pay dividends, while 41% of listed companies decide not to pay dividends. Furthermore, from Y_DPS, the mean of the logarithm of total paid dividend per share is 4.783. From Y_RDM, cash dividend on common stock dividend by the market value of common stock of firms is 18,965.

Table 3 also presents that the percentage of women directors on the board is 23.6% on average, consisting of 15.1% independent women directors, 7.5% executive directors and 1% institutional directors.

The average board size is 6.566. The firm size is 8.727(the natural logarithm of total assets). The average ROE is 15.698. The growth of opportunities is 36.2% on average and debt ratio is 51.2%.
Spearman correlation matrix

Table 4 presents the result of Spearman correlation matrix. The aim of Spearman correlation matrix is to test if there is multicollinearity between variables. From the data can be seen, only Y_DDY, Y_DPS, and Y_RDM has higher coefficient which is higher than 0.5. While these three independent variables will not present together at the same model, they belong to three different models. For other coefficients, almost all of them are below 0.5. According to Archambeault and DeZoort (2001), the correlation coefficients are not enough high to cause multicollinearity. In this model, the lower correlation coefficients will not cause significant multicollinearity problems.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Expected sign</th>
<th>Model 1 Y_DDY</th>
<th>Model 2 Y_DPS</th>
<th>Model 3 Y_RDM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Estimated coefficient</td>
<td>Estimated coefficient</td>
<td>Estimated coefficient</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(P-value)</td>
<td>(P-value)</td>
<td>(P-value)</td>
</tr>
<tr>
<td>PWOMD</td>
<td>+</td>
<td>5.269*</td>
<td>5.565**</td>
<td>8.239**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.083)</td>
<td>(0.024)</td>
<td>(0.037)</td>
</tr>
<tr>
<td>PINDD</td>
<td>+</td>
<td>3.065**</td>
<td>3.576**</td>
<td>6.35*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.022)</td>
<td>(0.020)</td>
<td>(0.091)</td>
</tr>
<tr>
<td>PEXED</td>
<td>-</td>
<td>-1.3**</td>
<td>-3.356**</td>
<td>-1.3**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.039)</td>
<td>(0.019)</td>
<td>(0.153)</td>
</tr>
<tr>
<td>PINSW</td>
<td>-</td>
<td>0.275</td>
<td>10.618</td>
<td>-3.501</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.10)</td>
<td>(0.34)</td>
<td>(0.708)</td>
</tr>
<tr>
<td>BS</td>
<td>+</td>
<td>1.300**</td>
<td>11.800*</td>
<td>6.800**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.027)</td>
<td>(0.060)</td>
<td>(0.008)</td>
</tr>
<tr>
<td>FS</td>
<td>-</td>
<td>0.271**</td>
<td>1.567**</td>
<td>1.087**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.014)</td>
<td>(0.024)</td>
<td>(0.027)</td>
</tr>
<tr>
<td>ROE</td>
<td>-</td>
<td>-0.610*</td>
<td>-8.158**</td>
<td>-1.269*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.019)</td>
<td>(0.013)</td>
<td>(0.081)</td>
</tr>
<tr>
<td>GOP</td>
<td>-</td>
<td>-0.301**</td>
<td>0.378**</td>
<td>0.128*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.019)</td>
<td>(0.013)</td>
<td>(0.081)</td>
</tr>
<tr>
<td>DRA</td>
<td>-</td>
<td>-1.799**</td>
<td>-0.189**</td>
<td>-0.113*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.000)</td>
<td>(0.026)</td>
<td>(0.070)</td>
</tr>
</tbody>
</table>

Regression

Table 5 can be observed that the percentage of women directors (PWOMD), the percentage of independent women directors (PINDD) and the percentage of executive women directors (PEXED) has the same sign as the expected sigh. Moreover, the percent of women directors (PWOMD) and the percentage of independent women directors (PINDD) are statistically significant. This finding is consistent with some of previous empirical findings in different countries. Some studies have found that there is a positive significant relationship between the percentage of women directors/independent women directors and dividend payout (Dezso & Rose, 2012; Low et al, 2015; Byoun et al, 2016; Pucheta-Martinez et al 2016; Vafaei et al, 2015).

The findings are also consistent with the theoretical background. The more women directors in the boardroom is, the more the boardroom is able to reduce information asymmetry between managers and stockholders (Alves et al, 2014). Dividend payout is one of most effective ways to reduce the information asymmetry problem (Adams & Ferreira, 2009). In addition, independent women directors can also help reduce the information asymmetry problem since independent women directors may act as good monitors in the boardroom (Sharma, 2011: Bathala & Rao, 1995). Our finding also shows that the proportion of independent women directors is positive associated with dividend payout.

The percentage of institutional women directors and executive women directors are not statistic significant according to its p value. In addition, the board size(BS), firm size(FS) and ROE are consistent with expected sign and has statistic significant. The GOP and DRA also have significant result and are align with the expected sign.

In model1, where dependent variable is dummy variable, PWOMD, PINDD and PEXED are statistically significant. All of these four hypotheses cannot be rejected. Therefore, the percentage of women director, independent director and institutional directors are positively associated with dividend payout, and the percentage of executive women directors are negatively associated with dividend payout.

For model 2, the percentage of executive women directors are positively associated with dividend payout, which is also statistically significant. In model2, we need to reject the third hypothesis.

For model 3, the percentage of executive women directors and the percentage of institutional women directors are not statistically significant even though they have same expected sign as our hypotheses.

On the whole, the finding suggests that with the increasing of percentage of women directors and independent women directors in the boardroom will increase dividend payout. In addition, the finding cannot provide evidence of relationship between the percentage of executive women directors and institutional women directors with the dividend payout. The result also suggests that board size, firm size and ROE are positively associated with dividend payout, moreover, growth of opportunity and debt ratio are negatively associated with dividend payout.

6. Conclusion

This study finds that companies with gender diversity are more likely to pay dividend compared with less gender diversity board. Jensen (1986) states that dividend payout policy is one of most effective ways to reduce free cash flow problem and information asymmetry problem between managers and owners. The dividend policy is approved by the board and therefore the gender diversity in the boardroom have an influence on the dividend payout. Previous literature has different findings about the impact of gender diversity in the boardroom on the dividend payout. This paper examines the relationship between the components of women directors in the boardroom and dividend payout in the Swedish context. Several researches have investigated...
the relationship between gender diversity and dividend payout in Sweden (Byoun et al, 2015; Kans 2012), while no previous Swedish literature has investigated the effect of the components of women directors in the boardroom on the dividend payout. This study contributes to this research gap and focuses on the effect of proportion of women directors, independent women directors, executive women directors and institutional women directors on dividend payout.

Our study results from 273 Swedish companies currently listed on the Nasdaq OMX Stockholm analyzed that the proportion of women directors and independent women directors have significant positive effect on the dividend payout. These results are consistent with Ye et al (2010) and Sharma (2011). From the three different two-way effect models, our study observes that there is no significant relationship between the proportion of executive and institutional women directors and dividend payout since there are few institutional women directors in the Swedish boardroom.

Furthermore, our study also suggests that board size, firm size and ROE are positively associated with dividend payout, is supported by Rozeff (1982), Fama & French (2001). Moreover, growth of opportunity and debt ratio are negatively associated with dividend payout. Since the Swedish board gender quota was rejected in 2016, more and more regulators and researchers think that women in the boardroom can better represent the shareholders’ interest and reduce the information asymmetry between managers and owners. In the light of above, this study suggests that Swedish board gender quota should be advocated since increasing women representation in the boardroom can increase the dividend payout and further reduce agency and free cash flow problem.

7. Reference


