

The Impact of Female Monitoring Effect and Executive Effect on Corporate Performance

—Evidence from Listed Companies in China

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ABSTRACT

This paper examines the association between gender diversity and firm performance for Chinese listed companies. Gender diversity effect is divided into monitoring effect and executive effect. The former one refers to woman as an independent director, while the later one is identified as woman as a high-position manager in company. In a sample of Chinese companies that issued IPOs since 2016, this study shows that, on average, female independent directors have no significant impact on firm-performance. However, there is a strong correlation between the number of women executives and corporate return on equity. It could be taken to suggest that Chinese listed companies do benefit from increasing gender diversity in the senior management teams, which could complement their rather poor corporate governance practices.

Keywords: *gender diversity, corporate performance, female leadership, Chinese listed market*

1. INTRODUCTION

A report released by the United Nations in October 2020 shows that less than 50% of working-age women participate in the labor market, this figure has barely changed over the past 25 years. In terms of power and decision-making process, globally, women held just 28% of management positions in 2019, almost the same proportion as in 1995. In 2020, only 37 CEOs of Fortune 500 companies were women. As a result of the COVID-19 pandemic, unpaid housework and nursing work falls disproportionately on women, limiting their role in the workplace. Therefore, it is worth studying whether women contribute to company performance, and the research results can be used to suggest whether companies should promote women to senior positions, so as to reduce the widespread discrimination against women in the workplace.

Asian countries have been relatively less active in promoting gender diversity than their European counterparts [1]. Findings based on empirical data from Europe may not be applicable to Asian countries, especially China, due to differences in culture, population and economic development. This research aims to examine the influence of gender diversity on corporate

performance based on data collected from Chinese listed companies, thereby providing more practical guidance to Chinese companies and economies than learning from foreign experience.

2. LITERATURE REVIEW

2.1. *The relation between gender diversity and company performance*

Under the background that companies are required or encouraged to promote more females on the board, more studies have been conducted to explore the linkage between gender diversity on the board of directors and corporate performance. The research results are varied, with some pointing out there is positive relationship between these two variables, while others proving that adding a female director to improve the company's performance is gender-neutral or the existence of female impairs the financial/accounting performance of a firm.

2.1.1. *Positive relationship between gender diversity and company performance*

Many studies have shown that, on average, companies with women on their boards perform better. For example,

in a sample of 343 Romanian companies listed on BSE (Bucharest Stock Exchange) during 2012–2016, after controlling firm size, board size, listing age, Ionascu et al. [2] found that gender diversity (proxied by the proportion of females on the board of directors and dummy variable equal to 1 if the company has a woman president of the board and 0 otherwise) is positively related with market-based and accounting-based performance (expressed by Tobin's Q and ROA), and they further deduced a conclusion from this result that in European's emerging market, such as Romanian, gender diversity could complement their poor corporate governance practices. Adams and Raguathan [3] presented that banks with more gender-diverse boards had fared better during 2008 financial crisis. Moreover, using top 1000 listed firms in terms of their market capitalization in 10 economics of Asia-Pacific from 2012 to 2013, Qian [1] concluded female representations on board and the appointment of new female directors had positive effect on the company performance in the following year. The ROA of the firm with at least one female on board is 6.6%, which is 0.9% higher than that of the all-male firm (5.7%) [1]. His research also shows that companies performed best when there were two females on the board. Catalyst data further argued Fortune 500 companies with at least three women on their boards performed significantly differently between 2004 and 2008 [4]. This result was confirmed by an article in the Empower Women that companies with strong female leadership had higher average annual financial returns (11.1% vs 7.4%) and higher PE ratios (1.76 vs 1.56) than other Index members [5]. Strong female leadership is featured as a higher percentage of female directors than the national average, having at least three women on their boards, or having a female-appointed CEO and at least one female director.

2.1.2. Negative or no relationship between gender diversity and company performance

However, this positive correlation between gender-diverse board and a firm's financial performance is not irrefutable. After considering factors that affect the financial performance but not the gender diversity, such as corporate governance, corporate takeover defense, or market competition, the result could be opposite. Adams and Ferreira [6] argued that the average impact of gender diversity on firm performance during the period 1996–2003 is negative, which is caused by the acquisition of companies with weaker defenses. Although García-Meca, García-Sánchez, and Martínez-Ferrero [7] analyzed 159 banks from nine countries during 2004–2010 and draw a conclusion that gender diversity improve the banks' financial performance, in the context of weaker regulation and investor protection, the linkage between board diversity and bank performance was less strong. Moreover, the study conducted by Amore and Garofalo [8] suggested that banks with female executives

did better in a low-competition environment, but experienced a significant decline in performance in a more competitive environment.

2.2. How gender diversity affects the corporate performance

The debate about how women affect company performance also varies. In a variety of literature, one of the loudest voices is that women tend to be more conservative and ethically-oriented than their male counterparts. However, the nature of risk aversion can lead to different results for companies.

2.2.1. Reduce the probability of adverse selection

The oft-discussed argument is that female executive will mitigate adverse selection when running the company and this conclusion is backed up by surveys from the banking industry. Bellucci, Borisov and Zazzaro [9] found that female loan officers tend to be more cautious than males when making decisions regarding giving loans to new, unestablished loan applicants. Moreover, loans handled by female loan officers tend to be less likely to turn problematic than those screened by male loan officers [10]. Thus, a fall in bad debts or bad loans can boost the bank's balance-sheet performance.

2.2.2. Reduce the conflicts among stakeholders

It is widely accepted that resolving conflicts between stakeholders, especially litigation, is time-consuming, laborious and costly. Wall and Callister [11] recognized females executives as peacemakers to maintain conflict situations under control. Weisbach and Hermalin [12] suggested the women who play an important role in calming the flames of war between shareholders and managers, thereby increasing shareholder value. Later, Lenard et al. [13] found that the presence of female leaders (on the board or in senior management) lowers the likelihood of lawsuits caused by financial reporting fraud. In synthesis of above arguments, it can be concluded that gender diversity contributes to the steady development of a company.

2.2.3. Excessive disclosure

However, some researchers illustrate that it is women's conservatism that weaken the financial performance of a firm because they may exaggerate the problem within the company. After a comprehensive study of the role of gender diversity in high positions (boards of directors, audit committees, chief executives, or chief financial officers), Khelif and Achek [14] pointed out the women in these positions resulted in conservative financial reporting, an increased level of reporting on social and environmental issues, as well as lower tax aggressiveness. When female executives are appointed to

be a chief auditor, Khelif and Achek [14] further demonstrated that female executives lead to higher audit fees, shorter reporting lags, and a higher likelihood of negative audit opinions being issued. Moreover, Arun, Almahrog and Aribi [15] found that the presence of women on boards in the UK is associated with lower earnings management.

2.2.4. Miss investment opportunities

The study published by Carter, Franco and Gine [16] showed female managers are more likely to adopt less risky business practices, leading to less funds reserve. For example, Huang and Kisgen [17] focused on female-led firms and male-led firms during 1993-2005 and found that female leaders tend to avoid undertaking acquisitions or issuing debts due to their preference of risk aversion.

2.3. Summary

There is no hard evidence on whether increasing the number of women on boards have positive impact on a company's financial performance. When researchers consider different market or corporate background, the picture of this impact is more ambiguous. Taking into account the gender characteristics of women's preference for risk aversion, it cannot be simple to conclude that the presence of female executives will penalize or enhance the performance of companies in terms of accounting or financial indicators. However, based on the existing empirical studies, the number of investigations that support the firm-value-added concept exceeds that in favor of the concept of value neutrality or value destruction which is caused by the presence of the women in the management team. Additionally, empirical study is the main method to study the relationship between females on board and corporate performance, but few scholars deeply explore why gender diversity on board have impact on the corporate performance. Therefore, this paper will move on to study the relation between female executives and firm performance and discuss the benefits or drawbacks of gender-diverse board for a company.

3. METHODOLOGY

3.1. Research hypothesis and model

Liu, Wei and Xie [18] pointed out that few studies consider both the executive effect and monitoring effect of females. Executive effect of females on board is characterized as woman in senior positions in a company to make decisions, while the monitoring effect refers to the female independent directors who do not hold office in the company but are empowered to make independent judgment on the company's affairs. Further, the study of this issue is of greater significance for developing countries as the proportion of female executives in

developing countries is relatively low. For instance, there are no women in chairs and CEO positions at the top 100 companies in Japan, and there are no women on board at the top 100 companies in India and South Korea respectively [1]. Also, the research on whether the presence of female on board has a positive impact on the performance of enterprises in developing countries is also immature and inadequate. Therefore, this paper will focus on China, the biggest developing country, to investigate the linkage between executive effect of females and firm performance, as well as the women's monitoring effect and firm performance.

Firm performance is measured by the accounting-based variable – ROE, which can provide an objective indication of the company's recent past and present performance [2]. To test the monitoring effect, the dummy variable (DivMon) is used to depict the presence of a female independent directors in a company. Besides, the proxy for executive effect, labeled as DivExe, is the proportion of female high-position managers (directors on board, chief executive officer, chief financial officer, supervisors) in total number of senior executives. Moreover, a set of control variables should be taken into account, as Campbell and Minguez-Vera [19] suggested that the existent uncertainty about the role of gender diversity is due to the omission of other factors that can explain financial performance. The model that comes from Vafaei, Ahmed and Mather [20] is used as a reference to control firm size, the number of executives, corporate leverage ratio, and listing age. Therefore, hypotheses and models can be established:

H1: There is a statistically significant positive relation between female independent directors (monitoring effect) and firm performance.

$$ROE_{ij} = \alpha_0 + \alpha_1 DivMon_{ij} + \alpha_2 FirmSize_{ij} + \alpha_3 ManagerSize_{ij} + \alpha_4 Leverage_{ij} + \varepsilon_{ij}$$

H2: There is a statistically significant positive relation between female high-position executives (executive effect) and firm performance.

$$ROE_{ij} = \alpha_0 + \alpha_1 DivExe_{ij} + \alpha_2 FirmSize_{ij} + \alpha_3 ManagerSize_{ij} + \alpha_4 Leverage_{ij} + \varepsilon_{ij}$$

where:

ROE_{ij} – Ratio of net income to total equity (%);

$DivMon_{ij}$ – dummy variable: 0 for no female independent directors, 1 for having female independent directors;

$DivExe_{ij}$ – percentage of female high-position managers accounting for the total number of high-position managers;

$FirmSize_{ij}$ – Natural logarithm of market capitalization;

$ManagerSize_{ij}$ – Natural logarithm of the number of high-position managers;

$Leverage_{ij}$ – Ratio of total debts to total assets;

$IndustryDummy_{ij}$ – Dummy variables for industries to control for fixed effects.

3.2. Research data

The population for this study comprised 1434 companies that issued IPOs in China’s A-share market in the past five years (2016-2020). This period was chosen to ensure the freshness of the data, so as to obtain more meaningful implications for China’s future development. Out of the 1434 firms, missing gender diversity and financial data reduced our population to 119 observations. Also, because of inadequate financial data in 2016 and 2020, the study time period is shortened to three years (2017-2019), leading to 351 firm-year observations in the end. Companies that issued IPO in China’s stock market in 2016 did not disclose the whole year financial report of 2016, and the financial data in 2020 are likely to be outliers because the company performance was severely influenced by Coronavirus. These 119 companies come from 6 industries, with manufacturing companies being the most represented (85.71%). The sources of data include China Stock Market Accounting Research Database (CSMAR) and RESSET Economic and Finance Database, as well as listed companies’ websites for information on gender diversity. Cross-checks were performed to ensure data

Table 2. Descriptive Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max
ROE	357	10.813	8.056	-49.710	60.790
DivMon	357	0.462	0.499	0	1
DivExe	357	0.215	0.126	0	0.667
Leverage	357	0.333	0.168	0.064	0.866
FirmSize	357	3611611830.185	5800573289.229	1230061493.750	56189739162.663
ManagerSize	357	16.166	3.595	9	35

In terms of regression analysis, it was divided into three steps. First, Panel OLS regressions are run to get the general view of the linkage between gender diversity and firm performance; Hausman test is then employed to check fixed effect. In the third stage, we test endogeneity of the gender diversity variables across all models and perform second stage regressions (2SLS) in the case of endogenous variables. Overall, performance proxy (ROE) appears to be significantly correlated with the proportion of female executives (DivExe); contrarily, ROE is not statistical associated with the existence of woman independent directors (DivMon). However, after further controlling for endogeneity, the association between ROE and DivExe is rendered insignificant.

accuracy. Additionally, since most companies employ one or two independent directors, dummy variables are used to measure whether a company has female independent directors. If the percentage of female independent directors is applied to test the monitoring effect, $DivMon_{ij}$ will turn to 0%, 50% or 100%, which is meaningless.

Table1. Sample description

Industry Composition		
Name	Number	Percentage
Manufacturing	102	85.71%
Wholesale and retail trade	2	1.68%
Finance	1	0.84%
Real estate	1	0.84%
Public utilities	8	6.72%
Comprehensive	5	4.20%
Total	119	100%

4. RESULTS AND DISCUSSIONS

Descriptive statistics are presented in Table2. The number of high-position managers in a firm ranges from a minimum of 9 to a maximum of 35, with a mean of 3.60. The maximum proportion of female high-position managers is 66.7%, while the minimum figure is 0, and the mean is 12.6%, which indicates a majority of firm tend not to hire females as executives or promote junior female managers to senior positions. Moreover, the number of companies that do not employ female independent directors exceeds the number that do because the mean of dummy variable which represents the existence of female independent directors is less than half of one.

Besides, when dummy variable is used to depict the presence of female high-position managers, there is a different picture showing inconspicuous relationship between the existence of woman executives and ROE. It is due largely to a majority of dummy variable equal to 1, leading to no linear relation between explanatory and explained variables.

The regression result of monitoring effect is shown in Table3. The coefficient of DivMon (-0.958) tells us that female independent directors make negative effect on a firm’s ROE, suggesting that female independent directors who supervise the high-position managers on behalf of minority shareholders are unable to put forward

reasonable advice on agency issues and internal conflicts of enterprises. This is contrast to what Hermalin and Weisbach [12] illustrated in 2000 that female executives have ability to mitigate the conflicts between managers can conflicts and increase the share values. The reason of this poor monitoring effect can be attributed to the lack of a sound judicial system of independent directors in China, and the imbalance between the rights and obligations of independent directors. Moreover, the lack of a positive correlation between woman independent directors and firm performance can be explained by the low number of female independent directors on the boards of Chinese companies, which may minimize the influence of female independent directors in the decision-making process.

Table 3. Panel regression of monitoring effect

Independent Variables	Dependent Variable: ROE	
	Panel OLS	Panel OLS Fixed Effects
Intercept	-134.121**** [-8.80]	-194.010**** [-7.12]
<i>DivMon</i>	-0.958 [-1.17]	-1.202 [-1.04]
Leverage	-6.822* [-2.52]	2.777 [0.53]
FrimSize	6.670**** [10.01]	8.895**** [7.38]
ManagerSize	0.281 [0.15]	3.112 [1.30]

Significance levels: **** 0.001, *** 0.01, ** 0.05, * 0.1; t statistic in parenthesis.

Multicollinearity test result is shown in Table4. The mean VIF is less than 10, so there is no multicollinearity problem.

Table 4. Multicollinearity test

Variable	VIF	1/VIF
Leverage	1.04	0.964826
ManagerSize	1.03	0.967949
FirmSize	1.01	0.955515
DivExe	1.00	0.998418
Mean VIF	1.02	

Table5 presents the panel regression results of executive effect (model 2). Consistent with most literature, statistical evidence supports the idea that female high-position managers have positive impact on the company performance. That is, one more percent of female executives in the company will lead to 3.85% increase in ROE. However, these results are not yet conclusive as it has previously been documented that endogeneity can influence the relationship between board diversity and corporate performance [2]. To address this issue, previous literatures employed instrumental variables (IV) and second stage regressions (2SLS) [2]. Durbin-Wu Hausman test is also used to detect the endogeneity of DivExe. A valid IV has to be correlated

with the endogenous explanatory variable but should have no independent effect on the dependent variable [2]. However, effective IVs are hard to find because they are usually considered as controllable variables and contained within assumed regression model, such as company size or board size [21]. Ionascu et al. [2] pointed out that state-owned companies and companies controlled by a small number of non-institutional investors were more likely to appoint women as members of the boards. Meanwhile, a majority of China’s listed firms are privatized former state-owned enterprises [18], so ownership is recognized as the main instrumental variable to replace the DivExe. Table5 also reports the results of the second-stage regression analysis. The data obtained by 2SLS contradicts our hypothesis and the correlation is no longer significant or even positive. In addition, Durbin-Wu Hausman test tells us that all variables are exogenous (Table6).

Table 5. Panel regression of executive effect

Independent Variables	Dependent Variable: ROE		
	Panel OLS	Panel OLS Fixed Effects	Panel 2SLS Second Stage
Intercept	-135.223**** [-8.89]	-195.956**** [-7.22]	-113.501**** [-4.33]
<i>DivExe</i>	3.853** [1.97]	4.532* [1.74]	-50.651 [-0.78]
Leverage	-6.858* [-2.54]	-1.622**** [0.31]	-8.167 [-1.95]
FrimSize	6.675**** [10.05]	8.948**** [7.47]	6.693**** [5.80]
ManagerSize	0.126 [0.07]	2.904 [1.24]	-2.546 [-0.69]

Significance levels: **** 0.001, *** 0.01, ** 0.05, * 0.1; t statistic in parenthesis.

Table 6. Durbin-Wu Hausman Test

Durbin (score) chi2(1)	= 2.47153 (p = 0.1159)
Wu-Hausman F(1,345)	= 2.44651 (p = 0.1187)

Among control variables, Leverage is negatively correlated with performance across all models. Leverage, on the one hand, will bring high cost to firms either in terms of direct expenses or in terms of indirect costs; on the other hand, capital scarcity has a disciplinary role in orienting firms towards efficiency [22]. Regression results indicate financial distress prevails for listed Chinese companies because leveraged companies underperform. Then, the company size is positively correlated to firm performance, but the number of high-position managers in a company has no relationship with its ROE.

5. CONCLUSION

This paper verifies whether the quantitative characteristics of female independent directors and female executives have a significant effect on company performance. There are three major findings in the study, they three are presented as follows. Firstly, the quantitative characteristics of female independent

directors have no significant effect on the performance of financial listed companies. Secondly, more population of women executives in the company lead to higher company performance. Thirdly, ownership of the firm, which is used as an instrument variable in regression model, has no impact on whether females can be appointed as high-position managers. Therefore, it can be concluded that a firm will potentially loses economic value due to a lack of gender diversity in a firm's management team. In terms of future research, I will pay more attention to the relationship between the gender characteristic of female directors and the firm's performance, since the characteristic role of women in decision-making progress has not been examined yet.

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