Do Female Directors Add Value?

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Abstract: This study investigates whether female directors have a significant effect on financial performance of publicly listed companies in the Vietnamese market. Using a dynamic random-effects model to explore a panel dataset comprising 480 firm-year observations, we report that the companies with female directors in their boardrooms perform better than those without. Our finding thus supports the proposition that boardroom gender diversity appears to be an important internal corporate governance strategy which helps to improve firm performance. As Vietnam and many other East Asian countries are now implementing compulsory policies or calling for voluntary attempts to increase board gender diversity, our paper is especially timely and provides useful insight for policy formulation.

Keywords: Corporate governance; financial performance; female directors; east Asian; Vietnam

JEL Classification: C23; G30; G32; G34

1. Introduction

Gender diversity in boardrooms is one of the controversial issue of corporate governance. Motivated by the view that female directors may have a significantly positive impact on firms' governance and profitability, more and more countries are now implementing compulsory policies or calling for voluntary attempts to increase gender diversity in the boardrooms. In Vietnam, while gender equality in social activities has become a hot issue in political agenda, the relationship between board gender diversity and firm performance has not received much attention from scholars. A recent study of Nguyen, Locke, and Reddy (2015), using system GMM regression method, suggests that boardroom gender diversity does have a positive effect on financial performance of the Vietnamese listed companies.

This current study differs from the study of Nguyen et al. (2015) in that we employ another econometric estimation technique, namely a dynamic random-effects estimation technique to take into account the unobservable heterogeneity inherent

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in the corporate governance–firm performance relationship. Our study shows that the presence of female directors may have a significantly positive influence on firm financial performance as measured by Tobin's Q ratio. This finding is consistent with much earlier work including Bonn, Yoshikawa, and Phan (2004); Campbell and Mínguez-Vera (2008); Erhardt, Werbel, and Shrader (2003); and Lückerath-Rovers (2013), amongst others. However, it is very important to advise that the regression estimations in this research are implemented under a strict assumption of the exogeneity, that is, corporate governance mechanisms are treated as exogenous factors of the firm. If that is not the case, then this study's findings should be interpreted with care.

The remainder of this paper is organised as follows. First, we review the related literature to develop our main research hypothesis. Data, data sources, and method are described next. We finally present the results of the data analysis and conclude the paper with the findings' discussion and limitations of the study.

2. Literature Review and Hypothesis Development

Although gender diversity is widely used as one of the key proxies for board diversity, there is no consensus amongst researchers about what board diversity covers. Walt and Ingley (2003) state that board diversity is the combination of various characteristics of directors, which are associated with decision-making and other processes within the board. These characteristics can be categorised as: (i) observable characteristics including demographic characteristics such as ethnicity, nationality, gender and age; and (ii) unobservable characteristics such as knowledge, educational and professional background, industry experience, amongst others (Erhardt et al., 2003). Erhardt et al. (2003) comment that most of the recent studies on the relationship between board diversity and financial performance concentrate on demographic characteristics, including gender and ethnicity. Hence, they simply define board diversity as the portrayal of ethnic and gender differences within the board. Similarly, Lückerath-Rovers (2013); and Walt and Ingley (2003) document that being the most easy distinguished demographic characteristic, gender is widely utilised as the primary characteristics of the board diversity in the extant literature.

Theoretically, agency theorists advocate that the diversity of the board is one of the measures of its independence (Jensen & Meckling, 1976), and that independent boards are more effective at their function of managerial monitoring, which may lead to a positive impact on firm performance (Muth & Donaldson, 1998). Similarly, Erhardt et al. (2003) argue that board diversity and the subsequent conflicts, caused by diverse group dynamics, may have positive influences on managerial monitoring function and could be employed to diminish potential agency problems. According to resource dependence theory, board diversity helps

companies to obtain and maintain their important external resources. For example, with regard to legitimacy, most governments in the world call for gender equality, which put pressure on companies to add women to their boards. Hillman, Cannella, and Harris (2002) suggest that the legitimacy of firms may be improved by adding more female directors in the boardrooms. It is also argued that firm's credibility and performance can be improved by the prestige of its board members (Hillman & Dalziel, 2003). By extension, this implies that the reputation of firms can be affected by their leaders' individual characteristics (human capital) which can be obtained by the diversification of the board.

Empirically, it is questionable whether board diversity, especially in terms of gender diversity, may provide the board with better efficiency that can motivate the firm performance (Rose, 2007). In this regard, it is argued that although gender diversity may be widely considered as an indicator of positive discrimination, its influence on the firm performance is not clear (Erhardt et al., 2003). In fact, the empirical studies on this relationship provide us with inconsistent results (Lückerath-Rovers, 2013; Rose, 2007). For example, using a sample data of 112 large companies in the U.S market at two different years (1993 and 1998), Erhardt et al. (2003) indicate that board diversity (as measured by the percentage of women and minorities on the board) is positively related to firm performance (as measured by return on total assets [ROA] and return on investment [ROI] ratios). For smaller economies, Lückerath-Rovers (2013), through investigating the nexus of gender diversity on the board and firm performance in 99 Dutch listed companies, concludes that companies with female directors have better profitability than those without female directors on their boards. Similarly, Reddy, Locke, Scrimgeour, and Gunasekarage (2008) find that there is a significant positive relationship between women directors and financial performance of small cap companies in New Zealand, giving support for the gender diversification of the board. Meanwhile, a study of Rose (2007), examining a sample data of all Danish companies listed on Copenhagen Stock Exchange during 1998–2001 in a cross-sectional analysis, shows that there is no significant relationship between firm performance and female board representation.

While the relationship between gender diversity and firm performance is becoming increasingly one of the important topics of modern corporate governance, there is likely a lack of empirical evidence regarding this relationship within the Asian context. A rare study of Bonn et al. (2004), comparing the effect of board diversity (as measured by the ratio of female directors on the board) on firm performance between Japan and Australia, provides mixed evidence. They find that this nexus for Australian companies is positive when performance is measured by the market to book ratio, but is insignificant with ROA ratio. Meanwhile, this relationship is insignificant for both measures for Japanese firms. Bonn et al. (2004) discuss that the quantity of female directors of Japanese companies is too small (about 0.86%

on average) to have any influence on firm performance. It is argued that the modest representation of female directors on the board is comprehensible in male-dominant Asian societies where females usually take on their traditional role. In contrast, using a dynamic panel generalised method of moment approach, a more recent study of Wellalage and Locke (2013) shows that female board representation has a significant negative impact on firm value of Sri Lankan listed companies. This finding is consistent with that obtained by Adams and Ferreira (2009) using data from the U.S market.

Given that the predictions of agency theory and resources dependence theory about the potential influences of board diversity on the quality of board decisions, which in turn will be able to be reflected in firm performance (Lückerath-Rovers, 2013; Van der Walt, Ingley, Shergill, & Townsend, 2006), it is not unreasonable to hypothesise that gender diversity will have a significant impact on firm financial performance. Hence, we propose the main hypothesis of this research as follows:

Hypothesis: There is a significant relationship between board gender diversity and financial performance of publicly listed companies in Vietnam.

3. Data and Method

3.1. Data and Data Sources

We collect data of 120 non-financial companies listing on the Ho-Chi-Minh Stock Exchange (*HOSE*) and the Hanoi Stock Exchange (*HNX*) during a four-year period from 2008 to 2011. Hence, a panel dataset comprising 480 firm-year observations is used. The detailed definitions of variables used in this study are as follows. The financial performance measure, namely Tobin's Q is used as dependent variables (denoted by *qratio*). Tobin's Q is the sum of market value of equity and book value of debt all divided by the book value of total assets.

Explanatory variables include: (i) boardroom gender diversity (the percentage of female directors, denoted by *womdir*); (ii) board size (the natural logarithm of total number of board directors, denoted by *lnbsize*); (iii) block-holder ownership (the percentage of common stocks held by shareholders who own at least five percent of the total number of a firm's common stocks, denoted by *block*); (iv) leverage (total debt over total assets, denoted by *lev*); (v) firm age (the natural logarithm of number of years from the time a company first appears on the stock markets, denoted by *lnfage*); (vi) firm size (the natural logarithm transformation of the book value of total assets, denoted by *fsize*). In addition, industry dummies and year dummies are included in all of the models, where appropriate.

3.2. Method

In this study, we use one year lagged dependent variable (denoted by *lagqratio*) as an explanatory variable in the regression models to capture unobserved factors that can interact with the relationship between corporate governance variables and performance variable. It is argued that including the lagged dependent variable as a proxy for omitted variables is a simple and useful approach to account for historical factors that have potential impacts on current differences in the regressant (Wooldridge, 2009).

Moreover, by using panel data, this study can take into account the unobservable heterogeneity ignored by several prior researches (e.g., Bonn et al., 2004; Lückerath-Rovers, 2013; and Rose, 2007 amongst others). Unobservable heterogeneity exists when the relationship between corporate governance and performance is influenced by unobserved factors. For example, company specific features such as managerial skills, company culture, or employee capability, which are unobserved and constant over time, may affect firm performance. Fixed-effects model and random-effects model are two common methods to estimate unobserved effects using panel data. To compare with prior studies and examine the potential problems from ignoring the unobservable heterogeneity, we estimate three models using panel data: (i) a pooled OLS model; (ii) a fixed-effects model; and (iii) a random-effects model.

Nevertheless, according to Brown, Beekes, and Verhoeven (2011), one of the main pitfalls of the fixed-effects (within estimators) model is that it only uses time variation in variables within each cross-sectional observation (each firm) to drive the regression results. This is obvious inadequate since most of the corporate governance variables are time-invariance variables or slowly-changing variables (in our case: *womdir* variable). In this situation, the fixed-effects (within estimators) model is inappropriate because it cannot provide good estimators. Whereas, random-effects model is widely utilised to analyse panel data with large cross-sectional objects (companies) relative to time (years) (Bartels, 2008).

It is common for researchers to employ Hausman test to choose between fixed-effects and random-effects models. Hausman test examines the differences between the random-effects and fixed- effects estimates. This test is implemented under an important assumption of random-effects model that unobserved factors are uncorrelated with explanatory variables. However, Bartels (2008) criticises that this is an impractical hypothesis which makes the fixed-effects model become a better choice. This implies that Hausman test is not the unique criterion to select between the two models. Wooldridge (2002) judges that:

In cases where the key variables do not vary much over time, fixed-effects method can lead to imprecise estimates. We may be forced to use random-effects estimation in order to learn anything about the population parameters. […] Without

using an instrumental variables approach, random-effects estimation is probably our only choice (pp. 326, 328).

Thus, if the assumption underlying random-effects model holds, this model will be appropriate with our data features (*N* is large, *T* is small, and key variable does not vary much over time). To put more effort into controlling for the part of unobserved factors correlated with independent variables, we include dummy variables for different industries in the estimated model.

4. Results and Discussion

Preliminary regression results conducted by using ordinary least squares approach for pooled data are shown in Column 2 and Column 3 of Table **1**1. The results indicate that *womdir* variable (the percentage of female directors) is positively and significantly related to Tobin's Q at the 5% level (0.0027, $t = 2.01$), suggesting that the research hypothesis should be accepted. This finding is similar to those obtained by a number of studies including Reddy et al. (2008) in New Zealand market, Campbell and Mínguez-Vera (2008) in Spain market, Lückerath-Rovers (2013) in the Netherlands, and Erhardt et al. (2003) in the U.S market. From Column 2 and Column 3 of Table **1**1, it is obvious that past performance can statistically significantly explain the variation in current performance (0.6592, $t = 9.18$). This is consistent with Wintoki, Linck, and Netter (2012) who confirm the importance of using lagged performance variable to evaluate the influence of corporate governance mechanisms on firm performance.

Given that there might be some unobservable heterogeneity that cannot be completely captured by past performance (Wintoki et al., 2012), we conduct fixed-effects (within estimators and between estimators) and random-effects specifications to address the concern that unobservable heterogeneity is driving the results. We also continue to use lagged dependent variable in the right hand-side of these models to account for dynamic. The fixed-effects regression results (within estimators) including coefficients and *t*-statistics are presented in Column 4 and Column 5 of Table **1**1, respectively. The result shows that the coefficients of the key variable (*womdir*) and the past performance variable (*lagqratio*) now appear insignificantly. This may be the consequence of the shortcomings of the fixed-effects model mentioned in the subsection *Method*.

The fixed-effects (between estimators) model is also adopted to compare with the fixed-effects (within estimators) model's results. It can be seen from Column 6 and Column 7 of Table **1**1 that the coefficients of *womdir* and *lagqratio* are significant at 5% and 1% levels, respectively. However, this model regresses time average of dependent variable on time averages of explanatory variables, therefore, it "ignores important information on how the variables change over time" (Wooldridge, 2009,

p. 482). Hence, in this study, both fixed-effects models (within estimators and between estimators) are undesirable.

The regression results of the random-effects model are shown in two last columns of Table **1**1. We can observe that the percentage of female directors on the boardroom) is positively and significantly related to Tobin's Q at the 5% level (0.0027, t = 2.35). The research hypothesis, therefore, should be accepted. This result coincides with several prior studies that confirm the positive relationship between gender diversity and firm performance (e.g. Campbell & Mínguez-Vera, 2008; Erhardt et al., 2003; Lückerath-Rovers, 2013; and Reddy et al., 2008).

Regarding to other corporate governance variables, there is statistical evidence of a significantly positive linkage between block-holder ownership and firm performance. This finding is similar to the results obtained by Xu and Wang (1997) for the Chinese market. It is argued that concentrated ownership offers greater incentives for alignment of the interests of management and shareholders that result in better firm financial performance (Haniffa & Hudaib, 2006). However, Mak and Li (2001) notice that ownership characteristics such as block-holder ownership or managerial ownership should be assumed to be endogenously determined. They suggest that using two-stage least squares regression may lead to better estimates.

Table 1. Pooled OLS, Fixed-effects and Random-effects regression results

	Regressant: Tobin's Q							
	Pooled OLS		**Fixed effects (within estimators)**		**Fixed effects (between estimators)**		**Random effects**	
Regressors	***b/(se)***	***t***	***b/(se)***	***t***	***b/(se)***	***t***	***b/(se)***	***z***
womdir	0.0027**	2.010	0.0030	1.059	0.0020**	2.290	0.0027**	2.352
	(0.001)		(0.003)		(0.001)		(0.001)	
block	0.0012	1.533	0.0042*	1.914	-0.0002	-0.357	0.0012**	2.396
	(0.001)		(0.002)		(0.001)		(0.001)	
lnbsize	0.0756	0.924	0.0491	0.311	0.0365	0.568	0.0756	0.971
	(0.082)		(0.158)		(0.064)		(0.078)	
lnfage	0.0317	0.918	0.1954	1.398	0.0168	0.617	0.0317	0.965
	(0.035)		(0.140)		(0.027)		(0.033)	
fsize	0.0226	1.096	-0.2502**	-2.190	0.0126	1.156	0.0226	1.225
	(0.021)		(0.114)		(0.011)		(0.018)	
lev	-0.0003	-0.288	0.0052*	1.900	0.0004	0.679	-0.0003	-0.336
	(0.001)		(0.003)		(0.001)		(0.001)	
lagqratio	0.6592***	9.175	0.0706	0.423	0.8450***	31.731	0.6592***	10.767
	(0.072)		(0.167)		(0.027)		(0.061)	
constant	-0.4737	-0.838	7.2163**	2.390	-0.8657**	-2.466	-0.4737	-0.939
	(0.565)		(3.019)		(0.351)		(0.505)	
year dummies	Yes		Yes		Yes		Yes	
industry dummies	Yes		No		Yes		Yes	
N	359		359		359		359	
R^2	0.6829		0.4839		0.9328			

Note: Asterisks indicate significance at 10% (*), 5% (**), and 1% (***). The heteroskedasticity-robust standard errors [se] of pooled OLS estimates; the White robust standard errors, adjusted for within cluster correlations, of fixed-effects model; and the heteroskedasticity-robust standard errors of random-effects model are included in parentheses in Columns 2; 6; and 8. *t* statistic and *z* statistics are presented in Columns 3; 5; 7; and 9, respectively. Year dummies and industry dummies are

unreported. Year dummy 2009 and Industry dummy Oil & Gas are treated as the benchmark categories to avoid dummy variable trap.

5. Conclusion and Limitations

This research discovers the relationship between gender diversity in boardrooms and financial performance of the Vietnamese publicly listed companies. After controlling for firm size, firm age, time (year), industry, leverage, unobserved historical factors, and other corporate governance characteristics, this research finds that boardroom gender diversity has a significantly positive effect on financial performance of the Vietnamese listed companies.

Tentative findings notwithstanding, this study does have limitations. First, this study contributes to the international debate on the gender diversity-performance relationship by adopting a panel data methodology that can better control for unobservable heterogeneity. However, this paper does not take into account other sources of endogeneity in this relationship which are pointed out by Schultz, Tan, and Walsh (2010); and Wintoki et al. (2012). It is still questionable whether greater gender diversity on the boardroom may generate higher firm performance, or on the contrary, better-performing companies will appoint more female directors on their boardrooms. Further studies will gain more robust and reliable interpretations if they can account for such sources of endogeneity.

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