Iarina Corniciuc – Does boardroom diversity affect a firm's financial performance?

My research examines the impact of diversity on a firm's financial performance, and before I get started, I want to highlight that the ethical argument for increasing diversity is irrefutable. But through this research, I hope to provide an economic case for diversity to further strengthen the argument.

And so a boardroom is composed of a group of people who manage a company. This area looking at the composition of boardrooms is extremely relevant because of the fast changes it has undertook in recent years. As can be seen in Figure 1, the percent of female directors for FTSE 350 firms fluctuated around 10% between 2001 and 2010. Then beyond that point you can see a sharp increase with the average percent of female directors now being at 30%. Further to this figure 2 shows the average percent of firms with at least one female director, which I will from now on refer to as female presence. This graph shows a gradual increase through the years with all firms now having at least one female director.

This topic has been highly debated due to the policy implications and while the UK has only engaged in soft policies such as voluntary quotas, the EU has been debating a mandatory quota of 40% female directors for many years.

There are two defining theories hypothesize in previous literature which are further explore my research. The first one being critical mass theory and this states that there exists a specific threshold and only beyond this point can the benefits of a relationship be observed. The most recent papers examining this theory in relation to gender diversity, are by Torchia and Joecks and they both find similar results of a critical mass point of 30% female composition, which has a statistically significant positive impact on the firm's performance. However, a specific point is yet to be collectively agreed on in academic literature with only these two papers arguing that there exists a specific threshold a notable extension of the critical mass theory is a token theory developed by Kanter, and she coined the famous term tokenism. So token theory suggests that when the percent of female board members is below 15%, they're seen as representing their category rather than being seen as an individual, therefore they expend more energy than dominant group trying to assimilate, causing stress and isolation, which can in turn impact their performance.
While there are few papers on this topic, the literature as a whole has reached no consensus on the relationship between boardroom diversity and performance with a whole range of papers showing positive, negative, and insignificant relationships. Furthermore there is a gap in research in the UK with the majority of research being carried out in the USA and due to the fast changing composition of boardrooms more recent research is needed. Lastly, no papers examine the critical mass theory and a token theory on UK firms nor are there papers that examine the impact of nationality count on the firm performance, which I'll be contributing with my research.

The way I'll carry out my research is by using two firm performance variables Tobin's Q, which is a stock based measure of a company's total market value divided by its total assets and as a robustness check I'll use a second performance variable return on assets. This is an accounting based measure of a company's net income divided by its total assets. I will use three diversity variables, the first one being percent of females, the second one being female presence and the third one nationality count, and this is the number of diverse nationalities on the boardroom. For control variables, I'll be using firm size measured as a look logarithm of total assets, and my second control variable will be board size measured as the total number of board directors. I will also include a year dummy variable to control for factors changing overtime. I will run three regressions pooled OLS, random effects and fixed effects and I will be controlling for industry fixed effects, for the panel aggression I created my variables by collecting data from Fame and specifically for FTSE 350 firms in the UK and I chose to look at public firms as they are monitored more by the

government and so it has a more direct policy implication. The variables are measured across 2001 to 2020 and there are 347 firms in the data set. So before I ran my aggression I ran the Hausman test to determine the best model and since the P value was zero, I rejected the null hypothesis that random effects are independent and select the fixed effects estimator as the most appropriate model labelled as FE in the column three and six.

As you can see on the slide shaded in red, the results show that there is a statistically significant positive impact between the percent of females and the two performance variables returning assets and Tobin's Q to justify the positive significant relationship for return on assets there are numerous theories on the benefits of heterogeneous teams and most of theories point to the varying cognitive frameworks. This means that diverse groups are found to be more innovative as they cover a wider range of knowledge. They are also a better reflection of the varying consumer segments of the firm and so can better address their needs. Largely due to their knowledge differences they are found to debate more and engage in deeper discussions. These benefits could therefore explain the economic gains found in the regression.

I then use female presence as an explanatory variable to see whether there is a difference in the performance of those firms that have at least one female in comparison to those firms that have no female present on the board. Interestingly when using female presence as a diversity variable, there was not much of a significant impact on the performance variable. This could be due to Kanter's token theory, which specifies that below certain threshold female presence will have will not have a significant impact due to not being treated as an individual, but rather being perceived as a token.

To explore another diversity variable. I then use nationality count as highlighted in the table. There is a positive and statistically significant relationship between the firm performance and nationality count. This could again be attributed to the varying cognitive framework theories. And to further explore the relationship between gender diversity and firm performance, I ran a regression to test for token theory, the variable token female which is dummy variable equalling to one when the percent of females are below 15% and equalling to 0 otherwise, shows a statistically significant negative coefficient. This is in line with Kanter's token theory.

And then my last regression I run in Table 5 is to determine what the critical mass point is so that threshold where the most benefits are reaped in relationship. I used five sex ratios with the first one being 10% and below and this is used as a base group, so is excluded from the regression. As can be see highlighted in the table the highest positive coefficient is observed at 40% and above. So the critical mass point lies at 40%.

To summarize the results, they show up positive and strongly significant relationship in all regressions for the two diversity variables, gender and nationality. Furthermore, my research shows proof of token theory and of a critical mass point at 40%, which is different from previous literature which showed a critical mass point at 30%. In regards to the robustness of my results, although panel day technique such as fixed effects has partially addressed endogeneity problems from omitted variable bias and unobserved changes overtime, there still exists a problem of reverse causality. However, running different models which mitigate for reverse causality, such as a two stage least squares regression and the Arellano bond estimator. the coefficient still show a positive and significant relationship for the gender diversity variable. From these findings, my paper has a possible policy implication of a 40% quota similar to the one that the EU directive was considering, which the UK vetoed in 2012.

Lastly, there exist further areas of research which can explore further diversity variables,

some of which include ethnicity, education, professional background, age which were not available in my data set.