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Board diversity and firm performance across Europe

A. Ciavarella

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Board diversity e *performance* delle imprese quotate in Europa

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Sintesi del lavoro

Negli ultimi anni si è sviluppato un vivo dibattito sul tema della diversità degli organi di amministrazione delle imprese, sia tra gli accademici sia tra i *policy makers*. Nel 2014 la Commissione europea ha emanato la Direttiva 2014/95/UE che prevede, tra l'altro, che le società quotate forniscano informazioni sulla politica in materia di *board diversity* eventualmente adottata. Con riferimento specifico alla diversità di genere, numerosi paesi hanno adottato iniziative legislative o di auto-regolamentazione.

In questo lavoro si analizza la diversità degli organi di amministrazione per un campione di società quotate in Francia, Germania, Italia, Regno Unito e Spagna, nel periodo 2006-2016. L'analisi considera diversi aspetti della diversità: diversità di genere, nazionalità ed età (*demographic diversity*) e diversità nell'istruzione e nel profilo professionale (*cognitive diversity*).

Nel periodo considerato, si è assistito a un incremento della diversità di genere e nazionalità in tutti i paesi analizzati. In particolare, la presenza delle donne negli organi di amministrazione è aumentata non solo negli ordinamenti in cui sono state adottate specifiche leggi (Francia, Italia e Germania) ma anche nei paesi che hanno avviato iniziative di autodisciplina (Regno Unito e Spagna). Inoltre, il livello di diversità differisce tra amministratori esecutivi e non esecutivi. Questi ultimi, infatti, si caratterizzano per una maggiore eterogeneità rispetto a genere e nazionalità, nonché per un'età media più alta, una minore durata dell'incarico (*tenure*) e una maggiore esperienza come amministratori in società quotate.

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Lo studio valuta anche la correlazione esistente tra *board diversity* e alcune misure di *performance* dell'impresa attraverso analisi econometriche panel ad effetti fissi. I risultati non lasciano emergere correlazioni significative tra le variabili di *diversity* e quelle di *performance* quando la diversità viene riferita al *board* nel suo complesso. Fa eccezione la *diversity* degli amministratori in termini di *tenure*, che incide negativamente sul Roa; al contrario, le *performance* sono migliori per le società i cui consiglieri siedono da più tempo nei rispettivi organi di amministrazione.

Se si analizza la diversità dei soli amministratori esecutivi, l'analisi evidenzia una correlazione positiva e significativa tra *performance* (misurate tramite Roa ed Ebitda) e presenza nel *board* di donne e amministratori stranieri. Inoltre, la presenza di amministratori stranieri sembra influire positivamente anche sulla Tobin's Q (rapporto tra il valore di mercato di un'impresa e il costo di sostituzione del capitale) e sul Roe. Infine, in linea con le evidenze relative al *board* nel suo complesso, le performance migliorano in imprese con organi di amministrazione con un livello medio di *tenure* più elevato.

Board diversity and firm performance across Europe

*A. Ciavarella**

Abstract

This study explores the relationship between board diversity and firm performance for a sample of companies listed in Italy, France, Germany, Spain and United Kingdom. We consider different dimensions of diversity, both demographic (gender, age and nationality diversity) and cognitive or non-observable (diversity in directors' experience and education). We focus on diversity of both the entire board and its executive members only. We don't find a significant relationship between firms' performance and board diversity. However, when considering executive directors alone, results show that firms where female and foreign directors are more represented have better performance than others. As for cognitive diversity, results indicate that performance increases when directors have a longer tenure.

JEL Classifications: G30, G38, K38

Keywords: board diversity, board of directors, corporate governance, female board representation, firm performance.

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1 Introduction

In the last years the issue of board diversity has received an increasing attention from both academics and practitioners. Diversity on boards, especially of non-executive board members, has become a key issue of corporate governance. Arguments in favor of diversity highlight the benefits both in terms of efficiency and better monitoring. Diversity (of gender, nationality, age, professional background) is deemed to broaden the debate within the boards and help to avoid the danger of "groupthink"; increase creativity and innovation; improve problem solving; promote the exchange of ideas, providing new insights and perspectives to the board (Watson et al.,1993; Siciliano, 1996; Coffey and Wang, 1998; Carter et al., 2003; Schippers et al., 2003). Firms, however, can incur also costs from greater diversity, due to communication and coordination problems, higher conflicts among directors, longer decision-making process.

Since 2010, following the 2007-2008 financial crisis, the issue has been addressed by the European Commission (EC) in the Green Paper "*Corporate governance in financial institutions and remuneration policies*". In this paper the European Commission underlined how the financial crisis had revealed serious flaws in board performance at a number of financial institutions, since many non-executive directors were not able to form objective judgements on management decisions. In particular, a lack of diversity within boards could in some cases have contributed to the failure of non-executive board members to effectively challenge management decisions.

The topic of board diversity was then re-addressed in the 2011 *Green Paper on corporate governance*, where the EC restated the importance for listed companies of having diverse non-executive members, since "*diversity in the members' profiles and backgrounds gives the board a range of values, views and sets of competencies. It can lead to a wider pool of resources and expertise. Different leadership experiences, national or regional backgrounds or gender can provide effective means to tackle 'group-think' and generate new ideas. More diversity leads to more discussion, more monitoring and more challenges in the boardroom. It potentially results in better decisions but getting to those decisions may take more time. Therefore, the commitment and support of the chairperson is indispensable*".

Recently, the European Commission has adopted the Directive 2014/95/EU that, as announced in the 2012 *Action Plan* on corporate governance, requires to certain large companies to disclose information on the policy adopted in relation to board diversity. In particular, firms have to "*provide a description of the diversity policy applied in relation to the undertaking's administrative, management and supervisory bodies with regard to aspects such as, for instance, age, gender, or educational and professional backgrounds, the objectives of that diversity policy, how it has been implemented and the results in the reporting period. If no such policy is applied, the statement shall contain an explanation as to why this is the case*".

The European Commission has also devoted special attention to a specific aspect of diversity, namely gender diversity. In its *Strategy for Equality between Women and Men*, it put the issue of women on boards high on the political agenda

already in 2010. In 2011, the European Commission called for credible self-regulation by companies to ensure better gender balance in companies' boards. One year later, in November 2012, the Commission proposed legislation with the aim of attaining a 40% objective of the under-represented sex in non-executive board-member positions in publicly listed companies, with the aim to accelerate progress towards a better gender balance on the corporate boards of European companies.

The issue of female participation at board level has also been addressed by legislative initiatives in many countries. Norway was the first to mandate 40% representation of both men and women on the boards of listed firms. After Norway, other countries have enacted similar laws (Italy, France, Belgium). Most recently, Germany passed a law requiring listed firms to have 30% of women on supervisory boards as of 2016. Other countries (United Kingdom, Portugal) have addressed the issue through self-regulatory initiatives. However, even where there are not legal requirements or other national measures, boards are under increasing pressure to appoint female directors.

Given the emphasis being placed on board diversity as a part of good corporate governance, the relationship between board diversity and firms' value has become one of the main topics explored in the related economic literature. However, existing empirical evidence has produced mixed results. While some authors find a positive relationship between diversity and performance (Carter et al., 2010; Cook and Glass, 2015; Campbell and Minguez-Vera, 2008), some others find the opposite or no significant relationship (Zahra and Stanton, 1988; Rose, 2007; Shrader et al., 1997; Adams and Ferreira, 2009).

The literature exploring the impact of board diversity on performance usually refers to the board as a whole or to its non-executive members. Indeed, many legislative actions adopted until now regard only non-executive directors, with the idea that their diversity could improve the monitoring ability of the board. However, whether diversity of executive directors has an impact on firms' performance has remained an unexplored empirical question. As far as we know, only a few authors have investigated the topic, mainly with reference to US listed firms. For example, Erhardt et al. (2003) study the relationship between gender and racial diversity of executive board members and some financial indicators of firm performance (return on assets and investment) for a sample of large US firms, finding a positive association. Khan and Vieito (2013) investigate whether or not the gender of the CEO matters in terms of firm performance and risk on a panel of US firms over the period 1992-2004 and find that firm risk level is smaller in firms with a female CEO.

Other papers analyze the impact of diversity among top managers. For example, Dwyera et al. (2003) find that the impact of gender diversity on performance depends on the organizational context and that gender diversity in management has positive effects in firms seeking growth. Smith et al. (2006), using data for the 2500 largest Danish firms during the period 1993-2001, find that the proportion of women in top management jobs tends to have positive effects on firm performance.

Krishnan and Parsons (2008) find a positive relationship between gender diversity in senior management and earning quality. Christiansen et al. (2016) study the link between gender diversity in senior corporate positions and firm performance of 2 million companies (listed and not) in Europe, finding a positive relationship between return on asset and the percentage of women.

In this paper we explore the issue of board diversity for the board as a whole and for its executive members only. Differently for previous studies, which mainly focus on US firms, we consider a sample of listed firms across five European countries, i.e., France, Germany, Italy, Spain and the United Kingdom, over the period 2006-2016. We explore different measures of diversity, in line with previous research which usually distinguishes between observable (demographic) and non-observable (cognitive) diversity. The former includes differences in gender, age, race and ethnicity, while the latter refers to diversity in professional background, education, values, knowledge (Pelled, 1996; Boeker, 1997; Timmerman, 2000). As measure of firms' performance, we use Return on assets (Roa), in line with the main literature developed until now. In some econometric specifications we also use other measures of performance, such as Ebitda, Roe and Adjusted Tobin's Q. As for the empirical methodology, a firm fixed effect model is used, as in Carter et al. (2010).

When considering diversity at board level, we don't find indication of a statistically significant relationship between diversity and firms performance; differently, when turning to executive directors' diversity, results indicate that performance are higher in firms where executives are more diverse both in terms of gender and nationality. With regard to cognitive diversity, the econometric analysis indicates a negative effect of heterogeneity in directors' tenure on performance, since Roa improves with the average directors' tenure.

We contribute to the literature on the relationship between board diversity and firm outcomes in two ways. First, most of the evidence on the topic is based on US data. We enrich the literature with an analysis based on firms listed in Europe. Secondly, we point out how also executives' diversity could be beneficial to companies. Until now the main literature developed on the topic has underlined the benefits of diversity in terms of better monitoring: the presence of non-executive directors with different backgrounds, demographic characteristics and education can ultimately improve the monitoring ability of the board by fostering creativity and innovation, reducing the risk of groupthink, promoting the exchange of ideas. However, the benefits of diversity can bring improvements also beyond the better monitoring, by enhancing the ability of executive directors to manage the company affairs. Indeed, more creativity and innovation, a lower risk of groupthink, the contribution of new insights and perspectives, are also beneficial for the company management. Corporate diversity could favor a better understanding of the marketplaces, which are themselves becoming more diverse; diversity could also enhance the effectiveness of corporate leadership, since diverse top managers take a broader view; diversity could promote more effective global relationship and improve problem-solving (Carter et al. 2003).

The rest of the paper is organized as follows. Section 2 provides a survey of the empirical literature on the relation between board composition and firms outcomes. In Section 3 we describe our data and the methodology used, we provide some descriptive statistics on board composition across countries in our sample (par. 3.1) and present the results of the econometric analysis (par. 3.2). Finally, Section 4 concludes.

2 The empirical literature on the relation between board composition and firms outcomes

Over the years, many researchers have focused on board diversity, claiming both positive and negative effects on company's financial performance and governance. Heterogeneity refers to director education, experience, profession, gender, ethnicity, age. The most researchable aspects of diversity are nationality and gender of directors, especially after the introduction of gender quotas in many European countries.

As for nationality, a number of studies have examined the effects of minority representation on corporate performance. Zahra and Stanton (1988) study how the percentage of ethnic minority directors affects several accounting measures of financial value, such as return on equity and earning per share, finding no statistical significant relationship.

Rose (2007), analyzing a sample of listed Danish firms during the period of 1998–2001 in a cross sectional analysis, does not find any significant link between firm performance as measured by Tobin's Q and the proportion of foreigners.

Carter et al. (2010) explore the relationship between board diversity and firm value (as measured by Tobin's Q) for Fortune 1000 firms, defining the former as the percentage of African Americans, Asians, Hispanic, and women on the board. They find that board diversity is associated with a significant improvement in financial performance.

Masulis et al. (2012a) examine the benefits and costs associated with foreign independent directors at US corporations and find mixed results. From one side, firms with foreign independent directors make better cross-border acquisitions when the targets are from the home regions of these directors. From the other side, foreign directors display lower attendance rates and are associated with a greater likelihood of financial misreporting, higher CEO compensation, a lower sensitivity of CEO turnover to performance and poorer performance.

Rose et al. (2013) study the impact of female board representation as well as citizenship on corporate performance, based on a sample of the largest listed firms in the Nordic countries as well as Germany. They find that board members with a background from common law have a significant positive influence on corporate performance measured as Roa, Roe and Roce.

Cook and Glass (2015) examine the effect of ethnic minority board members on firm performance, as defined by corporate governance and product development/innovation measures. Using panel data analysis with time and firm-level fixed effects, they find a positive relationship between diverse board and effective governance and product development.

Gupta et al. (2015) study the effect of gender and ethnic diversity not only on firm financial performance (Roa and Roe), but also on non-financial performance, as measured by firms' corporate social responsibility score. Considering a sample of US firms between 2003 and 2012, they find that a more gender and ethnically diverse board may enhance firm performance on social, environment and governance dimensions but not necessarily results in better financial performances.

Rampling (2011) examines 350 companies in United Kingdom, US and Australia from 2000 to 2012. He analyzes the effect of gender and ethnicity on different firm performance measures and finds that board diversity has a direct impact on Ebit but has a lower impact on Roa and Roe, though the results are mixed.

The relationship between gender diversity and firms' outcomes has been intensively investigated in the last years, with mixed results.

In some cases, no statistically significant relation between female on corporate boards and accounting and financial measures is found (Smith et al., 2006; Rose, 2007; Rose et al., 2013). For example, Rose (2007) finds no significant link between Danish firms' performance as measured by Tobin's Q and female board representation. Considering a sample of the largest listed firms in the Nordic countries as well as Germany, Rose et al. (2013) find no support for any performance impact relating to female board representation.

Other studies find instead a positive relationship between performance and women presence on boards. Campbell and Minguez-Vera (2008) study the relationship between gender diversity and financial performance for a sample of Spanish firms and find that gender diversity has a positive effect on firm value. Farrel and Hersch (2005) find insignificant abnormal returns on the announcement of a woman added to the board, but higher women ratio leads to better financial performance. The same positive result is found by Erhardt et al. (2003) and Carter et al. (2003).

A negative effect of the percentage of women on firms outcome is found by Shrader et al. (1997), who provide evidence of a negative relation between the percentage of female on boards and accounting measures of performance for a sample of Fortune 500 firms in 1993. Adams and Ferreira (2009) find a negative relationship between gender diversity and both Tobin's Q and Return on assets. However, they show that female directors have better attendance records than men and that their behavior positively affects their male colleagues, since in firms with more diverse board overall attendance behavior of directors improves.

As for Italy, Bianco et al. (2015) shed some light on female representation before the introduction of a gender quota legislation in 2012 and on the relevance of family connections. They find that in the majority of diverse Italian boards at least

one of the women has a family connection with the controlling shareholder. Moreover, the number of board meetings appears to be negatively correlated with both the presence of family members and that of women on boards, whereas women show lower attendance to board meetings than male directors.

A recent stream of literature analyzes the relationship between gender diversity and economic outcomes in the context of quotas. Indeed, in the last years, after the leading example of Norway, many countries have taken legislative actions in order to increase female representation at board level (Italy, Belgium, Netherlands and France in 2011, Germany in 2016). The most part of these studies regard Norway and find negative effects of gender quota (Ahern and Dittmar, 2012; Matsa and Miller, 2013; Bertrand et al., 2014). As for Italy, Ferrari et al. (2016) document a negative relation between the share of women and the variability of stock market prices and a positive effect of the quota law on stock market returns at the date of board's election. As for France, Ferreira et al. (2017) analyze the impact of board gender quotas on the labor market for corporate directors and find that, by changing the director search technology used by firms, the French quota has improved the stability of director-firm matches. Comi et al. (2017) study the effect of gender quotas on firm performance in several countries (Belgium, France, Italy and Spain) and find a negative or insignificant effect in all countries but Italy, where a positive effect on productivity is found.

Some papers analyze the effects on firm performance of some characteristics of directors, such as education and professional experience.

Güner et al. (2008) and Minton et al. (2014) consider financial expertise in directors operating in the banking sector. Güner et al. (2008) study the impact of financial experts, especially commercial bankers, on internal investment and on the financing of investment with bank loans over 14 years. They find that financial experts exert significant influence. When commercial bankers join the board, external funding increases and investment cash flow sensitivity decreases. Investment bankers on boards are associated with larger bond issues but worse acquisitions. Minton et al. (2014) find that financial expertise among independent directors of US firms supported increased risk-taking prior to the 2007-8 crisis. Rose (2007) does not find any relationship between firms' performance and board members' educational background.

Other papers focus on industry experience of directors. For example, Drobetz et al. (2016) find that board industry experience, measured by the percentage of outside directors with prior experience in the same industry, is a valuable corporate governance mechanism. Indeed, firms with more experienced outside directors are valued at a premium compared to others. Moreover, firms with experienced boards limit investment distortions by building up valuable financial slack and undertake shareholder-value friendly investments.

Masulis et al. (2012b), Falye et al. (2014), Kang (2013) document a positive valuation effect associated with a higher fraction of experienced directors on boards,

and show a relation between board industry experience and innovation, acquisition outcomes, and CEO turnover.

Many studies focus on the relation between independence and firm outcomes. Baysinger and Butler (1985) test the relationship between board independence and return on equity, finding that boards with both insiders and outsiders produce the best financial value. Yermack (1996), Bhagat and Black (1999) and Agrawal and Knoeber (1996) find a negative correlation between Tobin's q and the proportion of independent directors. Bhagat and Black (2002) find no relationship between long-term market returns and independence. Rosenstein and Wyatt (1990) use an event study methodology and find a very slight increase in stock prices when a company appointed an additional outside director.

More recently, Terjesen et al. (2016), analyzing a sample of 3876 listed companies in 47 countries in 2010, find that a greater percentage of independent directors increases performance, as measured by return on assets and Tobin's Q. They also find that, ceteris paribus, this positive effect is higher when among independent directors there is a greater proportion of women.

Some authors have also tried to assess the impact on firms results of a composite indicator of board diversity, which takes into account different aspects of heterogeneity.

For example, Anderson et al. (2011) construct an indicator of board diversity which takes into account age, gender, ethnic minority, education, professional and board experience. Their analysis refers to Russell 1000 industrial firms over the period 2003-2005 and tries to assess the effect of diversity on Tobin's Q. They find that firms performance is positively correlated to board diversity. Moreover, in firms operating in complex environment, the demand for board heterogeneity increases. Both social and occupational components of board diversity increase performance, even if the former has a stronger effect.

Bernile et al. (2016) study the relation between board diversity and firm risk (as measured by the annualized total volatility of daily stock returns) for a sample of US non-financial and non-utility firms in the period 1996-2014. Their diversity index is based on gender, age, ethnicity, college education, financial expertise, board experience. Their analysis suggests that in diverse firms the level of risk is lower, due to less risky financial policies, and performance is higher. Moreover, firms with diverse board members invest more in R&D and have more efficient innovation processes.

Furthermore, Giannetti and Zhao (2015) explore how board diversity affects firm performance volatility. They measure board diversity along a number of dimensions: ethnic, gender diversity and age diversity, diversity in directors' industry experience and in education. However, through a factor analysis, they are able to extract the relevant source of variation, which results to be ethnic diversity. Their analysis indicates that firms with more diverse boards have greater stock return and fundamental volatility, suggesting that board diversity makes decision-making more unpredictable. In their research, they find that executive turnover and director turnover are higher in firms with diverse boards. In these firms, turnover appears largely unrelated

to firm performance indicating that there may be conflicts in the boardroom. Firms with diverse boards also have more board meetings suggesting difficulties in the decision-making process. Finally, analysts make larger forecast errors in predicting the performance of firms with diverse boards, supporting the assumption that the diverse preferences of board members lead to hard to predict decisions.

Overall, the huge literature on the relation between board diversity and firm outcome does not reach a conclusive evidence. While some authors find a positive effect of board diversity, others fail to find any statistically significant results or find a negative relationship. Overall, as Adams and Ferreira (2009) suggest, the impact of board diversity on performance is likely to be heterogeneous: some firms benefit from more diversity while others not. Board diversity has costs and benefits and the balance between these benefits and costs varies across firms. For example, diverse boards may be more useful in large firms operating with complex asset structures who need more intensive monitoring from directors and complex advice. Another example is provided by women, who are considered better monitors than men since they are more likely to be independent from managers. An excessive presence of women in well governed companies could be counterproductive since it could lead to over-monitoring. Hence, imposing quota can be favorable in some contexts and counterproductive in others.

3 Data and methodology

In order to investigate the relationship between board diversity and firm performance, we consider the major listed firms in term of market capitalization in France, Germany, Italy, Spain and United Kingdom. For the sake of comparison, financial companies, which are subject to different rules from those envisaged for corporate firms, are not included. The period under analysis is 2006-2016. Data on directors' characteristics are taken from Boardex, a dataset containing information on the characteristics of directors all around the world, while accounting data are taken from Bloomberg. Data on country gross domestic products are taken from Eurostat. We start by selecting the first 100 non-financial firms in terms of market capitalization for every country, obtaining a sample of 5500 listed firms. However, when matching this sample with available data on directors' characteristics, we obtain an unbalanced sample of 4,883 observations (Table 1).

In order to study the relationship between board diversity and firms performance, we use a fixed effects regression model with standards errors adjusted for potential heteroschedasticity and year dummies included. Firm performance is measured using firms' Return on asset (Roa). We also perform some other regression analyses using Industry-adjusted Tobin's Q, Ebitda (Earnings before interest, taxes, depreciation and amortization) and Roe (Return on equity). To obtain Industry-adjusted Tobin's Q, we subtract the average industry Tobin's Q from the Tobin's Q of each firm.

Diversity is divided in two categories: observable (demographic) diversity and non-observable (cognitive) diversity[1].

Demographic diversity is measured by taking into account the age, the gender and the nationality of directors. Heterogeneity in nationality can enrich boardroom discussion since individual from different cultures may diverge in beliefs, preference, perspectives, values, which may be reflected in their contribution to the board. Gender diversity could improve board functioning bringing different perspectives, problem-solving attributes, stimulating critical thinking and creativity. Moreover, diversity in directors' ages could enrich board discussion since people from different age groups have diverse life experiences and perspectives. For example, older directors could bring more experience in the boardroom while younger directors could be more innovative and less risk-averse.

We measure diversity in nationality by using a dummy variable equal to one if the number of foreign directors in a firm is higher than the median value of foreign directors in our sample. Gender diversity is measured through a dummy variable equal to one if the number of female directors in a company is higher than the median value of female directors in our sample. Finally, we measure age diversity as the coefficient of variation of directors age for every board, as in Anderson et al. (2011) and Giannetti and Zhao (2016).

With reference to cognitive diversity, we consider heterogeneity in both education and directors experience. The former is measured by using the percentage of graduated directors for each board. The latter is measured by using three different proxies, in line with Anderson et al. (2011), Bernile et al. (2016) and Giannetti and Zhao (2016). First, we consider the heterogeneity of director tenure as measured by the coefficient of variation of time on the firm's board for each director. Secondly, we use the coefficient of variation of the number of corporate boards that directors have served upon. Third, we calculate the coefficient of variation of the average years directors have sat on a board of a listed company. The underling idea is that director decision making and deliberations are not only influenced by prior work experience but also by the time spent serving as director on the firm's board and serving as a director on other corporate boards.

We use several control variables in our models. In order to control for country differences, we use the logarithm of gross domestic product for each country. To control for firm and industry characteristics, we use different variables. As proxies for firm size, we use the natural logarithm of the total assets. Firm risk is measured by firm volatility. To control for the effects of past performance we employ prior year Return on assets and Tobin's Q. We also include sales growth to proxy for firms growth opportunities.

Table 2 provides some descriptive information for our sample of firms and Table 3 describes the variables used in the regression.

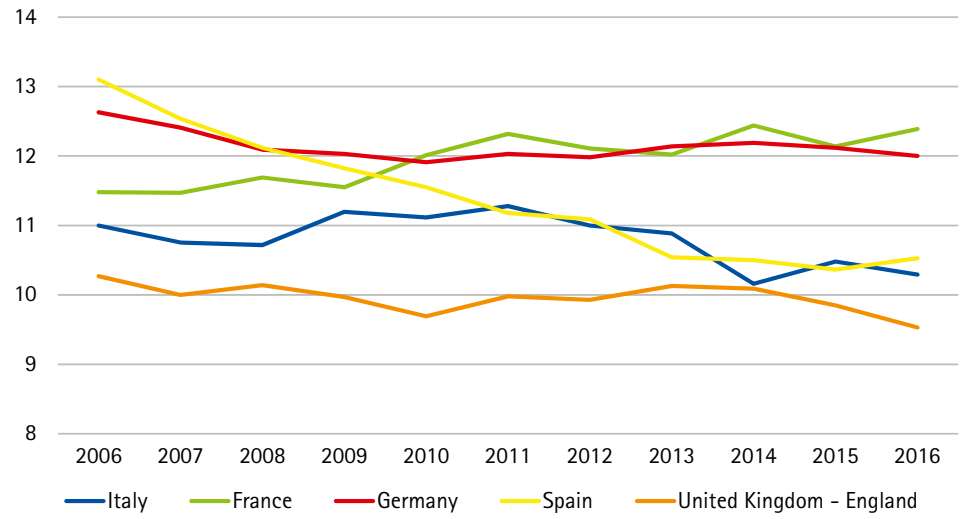
1 For firms adopting the two-tier system the supervisory board is considered when we analyze diversity at board level.

3.1 Some descriptive statistics on boards composition across countries

In this paragraph we provide some descriptive statistics regarding boards composition across countries in our sample.

Over 2006-2016 board size has declined on average in all countries but France, where the average number of board members is increased of nearly one percentage point up to 12.4, a value which is slightly higher than the corresponding value for supervisory boards in Germany (12 members on average; Figure 1). At the end of 2016 the smallest boards are English (9.5 directors on average), followed by Italian (10.3 directors) and Spanish boards (10.5 members). In the latter country the evidence shows a substantial reduction in the average board size, which in 2006 was equal to 13.

Figure 1 – Average board size

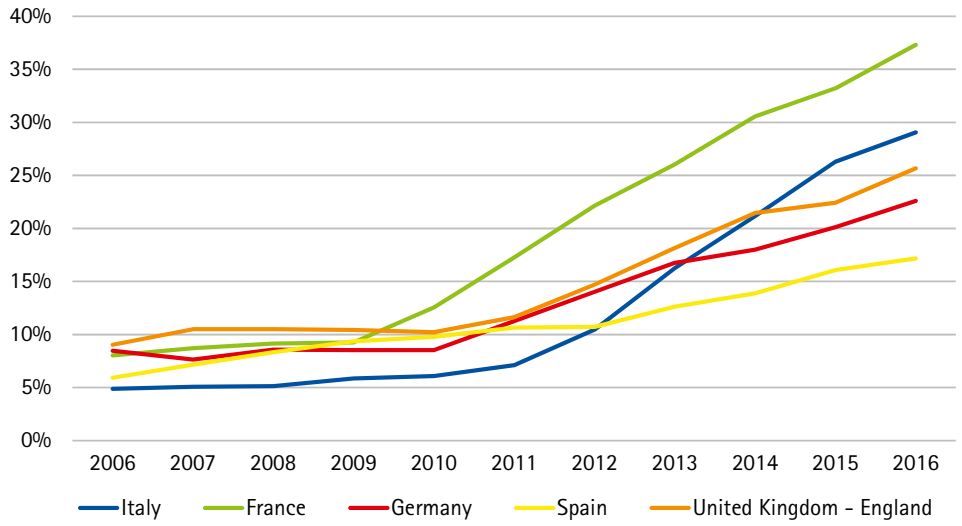


Source: Boardex.

Until 2012 women's representation on boards of the firms in our sample has remained limited, with Italy recording the lowest figures (10.5%; Figure 2). Since then, however, the presence of female directors has significantly grown thanks to the gender laws and to the self-regulatory initiatives adopted over time. Gender balance has shown the largest acceleration in major French companies, where by the end of 2016 women accounted on average for 37.3% of board directors, up from 8% in 2006. This result was triggered by the 2011 law, which has envisaged a progressive application of gender quotas from 2014 onwards. In detail, listed companies had to set the proportion of board members of each gender no lower than 20% for the first appointments after 1 January 2014, and no lower than 40% for the first appoint-

ments after 1 January 2017. This provision has also been extended to large unlisted firms with more than 500 employees or revenues higher than 5 million euros.

Figure 2 – Percentage of female directors



Source: Boardex.

Over the last years, gender diversity has been steadily advancing also in Italian large corporates, driven by the implementation of Law 120/2011. The law mandates gender quotas for the three board appointments subsequent August 2012. According to the law, the members of the under-represented gender shall account for at least one-third of the board (one-fifth for the first term). Following the newly enacted gender law, Italy is now the second country, after France, displaying the highest percentage of female directors (29% at the end of 2016).

Germany has addressed gender representation only in 2015, by passing the Gender Equality Act applicable from January 2016. The law requires that at least 30% of supervisory board members of some big companies have to be women. Probably due to increasing market pressure, female representation in supervisory boards has however started to grow long before the adoption of the law, almost tripling its value over the time span under review, from 8.5% in 2006 to 22.6% in 2016.

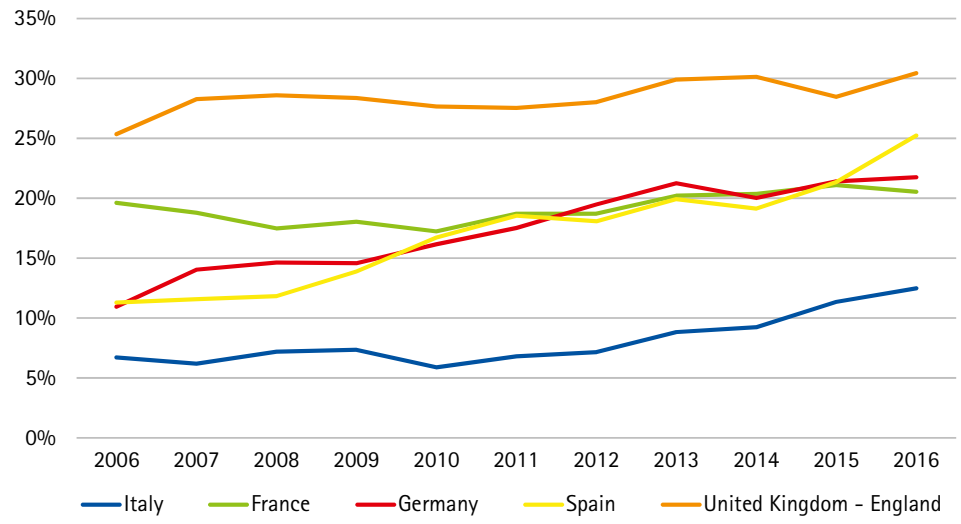
Differently from the countries analysed so far, the rise in female representation in major British and Spanish firms was driven by self-regulatory initiatives.

In the United Kingdom, a 2011 recommendation was designed to achieve 25% of female representation in FTSE100 companies by 2015. Following this initiative, the percentage of women holding a seat in the boards of the sampled companies has risen from 9.0% in 2006 to 25.7% in 2016.

The Spanish Self-Regulatory Code advocates for a greater female representation on corporate boards through a 2015 recommendation suggesting that before 2020 the director selection policy should pursue the goal of having at least 30% of board seats held by women.[2] At the end of 2016, therefore, major Spanish companies still lag behind their European peers, with a percentage of female directors equal to 17%, which is nevertheless higher than its 2006 level equal to 6%.

Representation of foreign directors has increased across all the European sampled countries, although at a different pace. Listed firms in the United Kingdom have traditionally been the most diverse in terms of nationality, while Italian corporates lie at the other end of the spectrum (Figure 3). In details, at the end of 2016 foreign directors accounted for 30% of the board members in major British companies (25% in 2006), while achieving 12.5% in the boards of the Italian peers (6.7% in 2006). Board composition in terms of nationality has experienced a rise in diversity also in Germany and Spain, where the percentage of foreign directors has passed from almost 11% to 25% and to 22% respectively, while it has remained substantially stable in France.

Figure 3 – Percentage of foreign directors

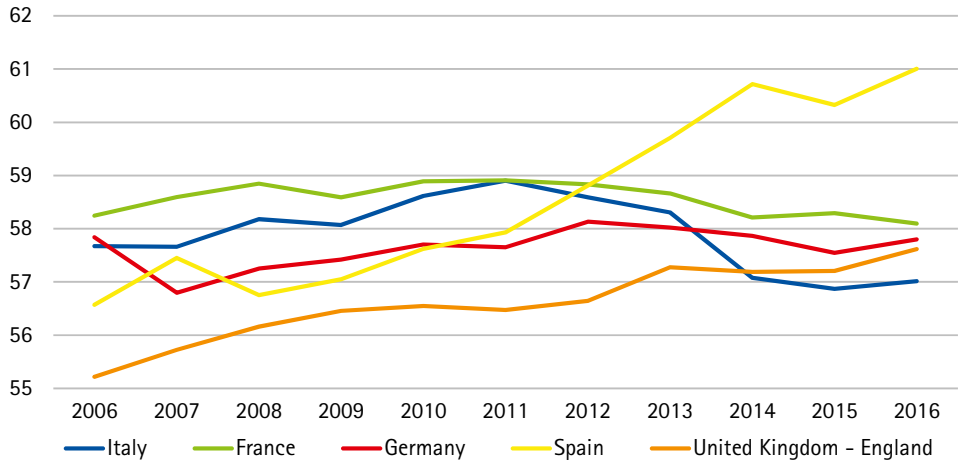


Source: Boardex.

As for boards' age, at the end of 2016 Spanish boards are the oldest, with an average age of 61 years, while Italian boards are the youngest (the average age is 57 years). In the period considered data on the average board age are quite stable, with the exception of Spain, where the average age is sharply increased (Figure 4).

2 In 2007 a law was passed requiring a representation of at least 40% of each gender by 2015. However, such a law is directed only to state owned companies with more than 250 employees and it does not envisage penalties.

Figure 4 – Average age of directors

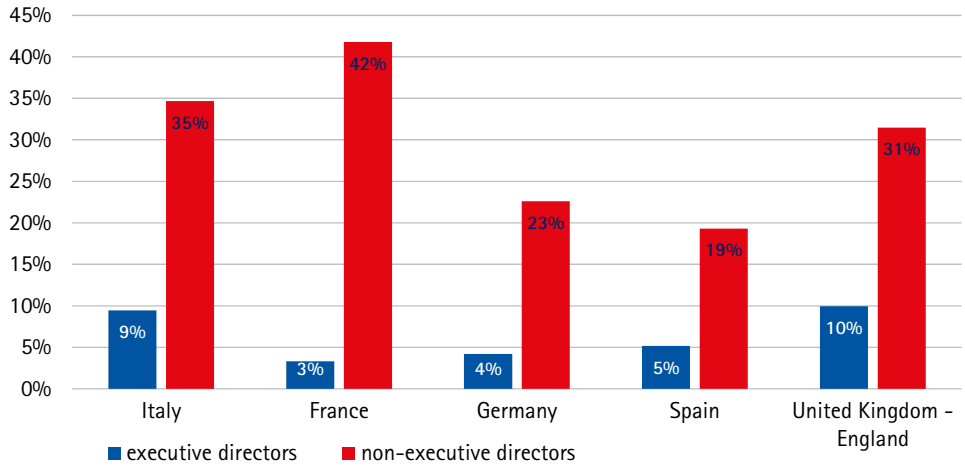


Source: Boardex.

In Figures 5-7 observable board characteristics (namely gender, nationality and age) are calculated separating for executive and non-executive directors at the end of 2016 (for Germany data refer respectively to the members of the management and the supervisory boards).

As expected, executive directors are less diverse then non-executives, both in terms of gender and nationality. As for gender diversity, the 30.4% of non-executives is represented by women *versus* the 6.5% of executives. In France the differences are particularly relevant, since only 3.3% of executive directors are women, versus 42% of non-executives. This evidence is partly explained considering the way listed firms have reacted to the regulatory and self-regulatory initiatives on gender diversity. Indeed, different studies show that female directors appointed pursuant to the gender laws are mainly independent directors and only in a few cases cover executive roles (Consob, 2015; Figure 5).

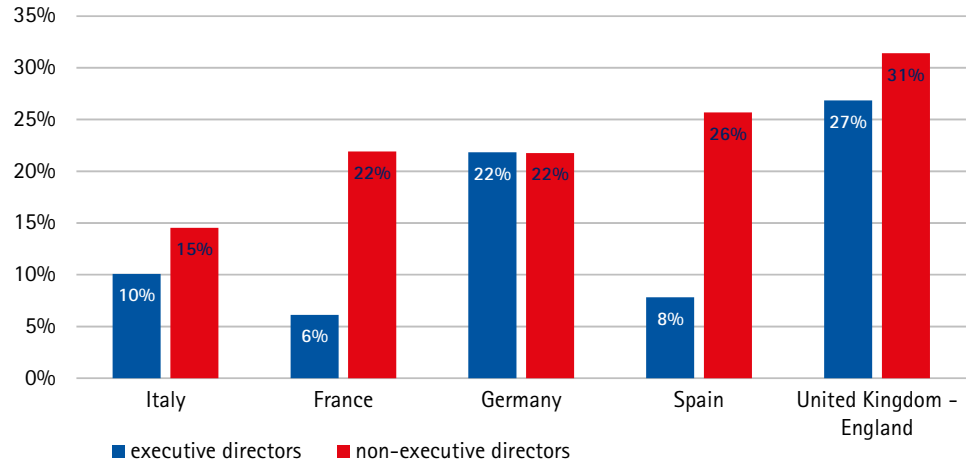
Figure 5 – Percentage of female directors among executive and non-executive directors



Source: Boardex. Mean values at the end of 2016.

When it comes to directors' nationality, heterogeneity is still higher among non-executives. However, this is particularly evident in France and in Spain, while the mismatch is less pronounced in the other countries. Overall, almost 24% (16%) of non-executive (executive) directors is foreign (Figure 6).

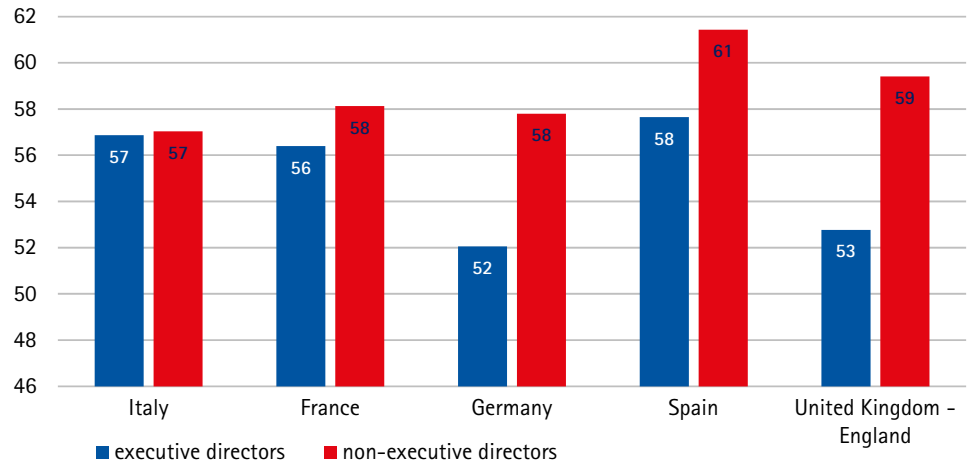
Figure 6 – Percentage of foreign directors among executive and non-executive directors



Source: Boardex. Mean values at the end of 2016.

As for age, on average non-executive directors are nearly 59 years, almost 4 years older than executives. Differences are less pronounced in France and in Italy (Figure 7).

Figure 7 – Average age of executive and non-executive directors

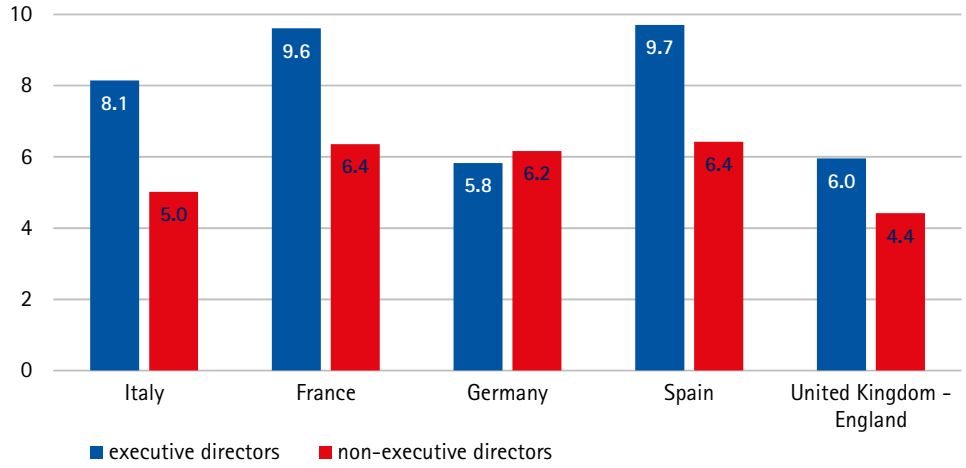


Source: Boardex. Mean values at the end of 2016.

Finally, in Figures 8-11 are reported data on non-observable directors' characteristics, such as directors tenure, the number of other quoted boards which directors have served upon, the years of experience as directors on quoted boards and the percentage of graduated directors.

With the exception of Germany, executive directors have on average a higher tenure. Overall, they have been directors for almost 8 years, compared to 5.6 years of non-executives. Executives tenure is particularly high in France and in Spain, where on average directors are board members since almost 10 years, and lower in Germany and United Kingdom (the average tenure is 6 years; Figure 8).

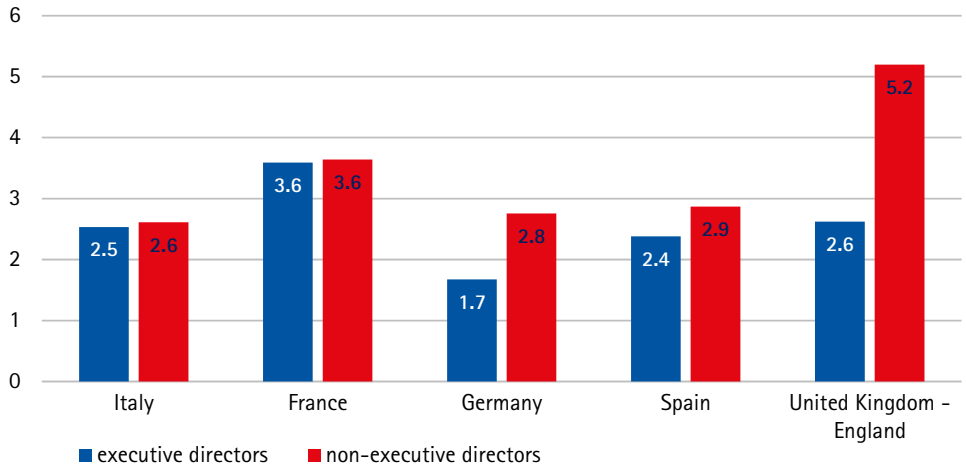
Figure 8 – Tenure of executive and non-executive directors



Source: Boardex. Mean values at the end of 2016.

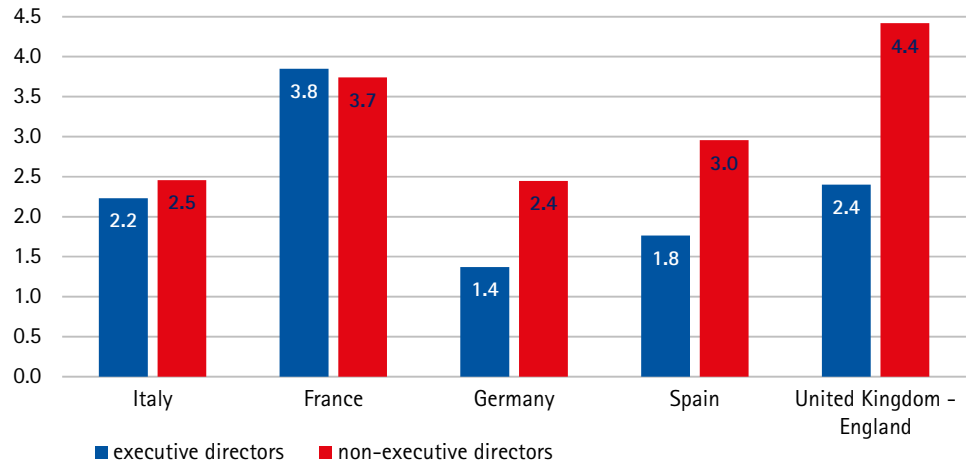
Looking at the directors professional background, data on the number of other quoted boards served and on the years spent as directors in other listed firms show that non-executives have on average a higher directors experience. On average, they have served as directors on other 3.4 boards of listed companies (compared to 2.6 boards for executives) and have been directors in other listed companies for 3.2 years (2.3 years for executives). Non-executive directors of British companies are those with the highest number of listed firms served and the longer experience as directors (Figure 9 and Figure 10).

Figure 9 – Other boards served by executive and non-executive directors



Source: Boardex. Mean values at the end of 2016.

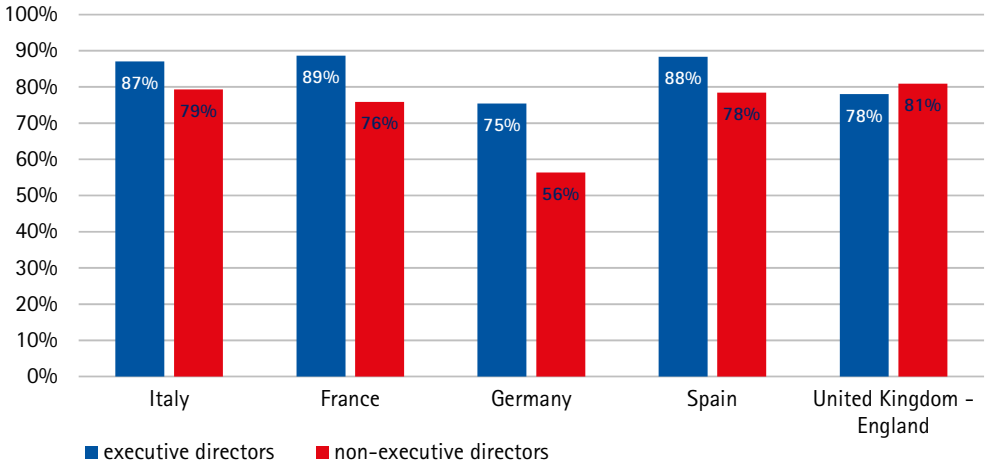
Figure 10 – Number of years spent as directors for executive and non-executive directors



Source: Boardex. Mean values at the end of 2016.

As for the level of education, almost everywhere there is a high percentage of graduated directors (higher than 80%), with the exception of supervisory directors in Germany, who are graduated in 6 cases out of 10 (Figure 11).

Figure 11 – Percentage of graduated directors among executive and non-executives



Source: Boardex. Mean values at the end of 2016.

3.2 Empirical analysis

In what follows we present the results of our regression analyses aimed at investigating the relationship between firm performance and board diversity. We use as performance measure the firms' Return on asset (Roa) and start by evaluating diversity of the entire board (Table 4).

First, we consider the relation between Roa and demographic diversity, namely age, gender and nationality diversity (column 1). We control for firms sales

growth, total assets, price volatility, lagged Roa and country gross domestic product. Results show a negative relationship between nationality diversity and Roa, while no effect is found for the other variables. In column 2 we regress Roa against variables measuring diversity in the education and in the professional experience: the coefficient of variation of board tenure, the coefficient of variation of the number of boards of listed firms that directors have served upon, the coefficient of variation of the years that directors have served on boards of other listed firms, the percentage of graduated directors. The coefficient for the heterogeneity in the tenure is negative and significant while the other variables do not seem to affect Roa. Finally, in column 3 we consider both nationality diversity and board tenure. In order to understand why diversity in tenure has a negative effect on performance, we use the average value of board tenure. Results show a positive relationship between this variable and Roa, suggesting that more time on boards spent by directors has a positive impact on performance. Differently, the coefficient for *dummy foreign directors* continues to be negative but loses its statistical significance.

Above results suggest the absence of a relationship between board diversity and firms' performance. Except for variability in the directors' tenure, no other variable results significant. These results are in line with those found by other studied, who fail to find a relationship between diversity and firms outcomes (Zahra and Stanton, 1988; Rose, 2007; Rose et al. 2013; Smith et al., 2006).

In order to further investigate the issue, we turn to analyze the link between firms' performance and executive directors diversity. In Table 5 we present the results of the analysis. As for observable diversity (column 1), data indicate a positive relationship between Roa and both gender and nationality diversity among executives. The coefficients for the variables *dummy female directors (ex)* and *dummy foreign directors (ex)* are both significant at 5 percent level. In column 2 we consider the effects of cognitive diversity. In line with previous results, only the tenure heterogeneity has a (negative) effect on performance. In the specification in column 3 we regress Roa against our measures of demographic diversity and the average executive directors tenure. Results still suggest that a higher presence of foreign and female directors among executives has positive effects on performance. Moreover, Roa is higher in firms where executive directors have on average a greater seniority. The positive effect of demographic diversity of executives is in line with Erhardt et al. (2003), who find a positive correlation between executive board of directors heterogeneity (in term of gender and race) and both return on assets and return on investment. As for gender diversity, the result is also in line with Khan and Vieito (2013), who find that Roa increases much more if the firm is managed by a female CEO instead of a male CEO. Also, Catalyst's (2004) provide evidence that women in top management will produce better return to equity and to shareholders.

In Table 6 we check whether there is a relation between demographic diversity across executives and other performance measures: Ebitda (Earnings before interest, taxes, depreciation and amortization), Roe (Return on equity) and Industry-adjusted Tobin's Q. The positive effect of nationality diversity is confirmed in all the

specifications while the effect of gender diversity is positive and significant only when Ebitda is considered as a dependent variable.

Overall, the results of the econometric analyses suggest that executives diversity, mainly in terms of gender and nationality, could have a beneficial effect on firms' performance, even if these effects could change depending on the performance measures considered. In particular, the effect of the variable *dummy female directors (ex)* is not robust to all econometric specifications.

4 Conclusion

A critical issue in corporate governance appears to be the relationship between board diversity and firms' performance. We examine this relation for a sample of firms listed in the main European countries, namely France, Germany, Italy, Spain and United Kingdom. Directors heterogeneity is measured along different dimensions, both demographic (diversity in the age, gender and nationality) and cognitive (diversity in education and professional background).

We analyze the issue either considering the board as a whole, and measuring diversity of executive directors only. As for board diversity, the econometric analysis does not show a statistically significant relationship between performance and diversity, except for the heterogeneity in directors' tenure, which has a negative effect on Roa. Differently, gender and nationality diversity of executive directors is positively associated with both Roa and Ebitda. Moreover, nationality diversity has also a positive effect on Adjusted Tobin's Q and Roe.

This paper contributes to the related literature in two ways. First, it provides evidence on the relationship between board diversity and firms performance in Europe, while the most part of the existing studies concerns Us listed firms. Secondly, this study points out how also executives' diversity could be beneficial to companies: while more diverse non-executive directors could be better monitors, higher diversity across executive directors could enhance their ability to manage the company affairs. Indeed, our results support such view, since firms with a higher proportion of women and foreign directors among executives have better performance than others.

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Appendix

Table 1 – Number of firms in the sample

year	France	Germany	Italy	Spain	United Kingdom	*total*
2006	100	100	57	50	100	*407*
2007	100	100	69	54	100	*423*
2008	100	100	67	67	100	*434*
2009	100	100	66	63	100	*429*
2010	100	100	70	71	100	*441*
2011	100	100	68	78	100	*446*
2012	100	100	68	78	100	*446*
2013	100	100	69	74	100	*443*
2014	100	100	95	74	100	*469*
2015	100	100	94	77	100	*471*
2016	100	100	96	78	100	*474*
total	*1.100*	*1.100*	*819*	*764*	*1.100*	*4.883*

Table 2 – Description of the sample

Name	Obs	Mean	St. deviation	Min	Max
Firm characteristics					
ROA	4775	4.89	13.02	-136.14	429.49
Adjusted Tobin's Q	4759	-1.21	2.22	-9.12	76.10
ROE	4883	14.20	61.97	-527.02	2409.86
Ebitda	4883	1585.57	3824.30	-4198	45549.62
Total asset	4883	15458.18	34566.21	2.49	409732
Sales growth	4883	7.91	3824.30	-99.93	1740.89
Price volatility	4429	26.72	8.55	11.1	69.09
Gdp	4883	1985160.47	554334.40	1007974	3134070
Board characteristics (for firms adopting the two-tier system the supervisory board is considered)					
Board size	4883	11.24	3.80	2	25
% executive directors (firms adopting the two-tier system excluded)	3485	0.24	0.14	0.05	0.83
Avg. Board Age	4858	57.80	4.44	33	76
CV Board Age	4785	15.44	5.30	0	39.72
% Female directors	4883	0.15	0.12	0	0.63
Dummy female directors (>median value=1)	4883	0.47	0.50	0	1
% Foreign directors	4199	0.19	0.21	0	1
Dummy foreign directors (>median value=0.125)	4199	0.49	0.50	0	1
Average Board Tenure	4880	5.99	3.07	0	21.94
CV Board tenure	4872	69.23	30.07	0	300
Average n. other Quoted Boards	4880	3.45	1.58	1	11.27
CV n. other Quoted Boards	4880	76.43	26.13	0	200.79
Average years on other quoted boards	4880	2.85	1.71	0	10.98
CV years on other quoted boards	4775	128.79	59.82	0	435.89
% graduated directors	4859	0.71	0.22	0.07	1
Executive directors characteristics (for firms adopting the two-tier system the management board is considered)					
Number executives	4786	2.93	1.67	1	13
Avg. Board Age (ex)	4609	53.96	6.02	30	80
CV Board Age (ex)	3414	11.85	7.96	0	50.91
% Female directors (ex)	4786	0.04	0.13	0	1
Dummy female directors (ex) (>median value=0)	4786	0.15	0.32	0	1
% Foreign directors (ex)	3899	0.15	0.27	0	1
Dummy foreign directors (>median value=0) (ex)	3899	0.31	0.46	0	1
Average Board Tenure (ex)	4782	7.05	5.18	0	35.50
CV Board tenure (ex)	3700	56.89	38.29	0	192.56
Average n. other Quoted Boards (ex)	4782	2.71	2.27	1	18
CV n. other quoted boards (ex)	3709	44.12	33.22	0	150
Average years on other quoted boards (ex)	4751	1.95	2.47	0	20.60
CV years on other quoted boards (ex)	2758	119.20	58.55	0	300
% graduated directors (ex)	4464	0.83	0.23	0.17	1

Table 3 – Description of the variables

Name	Description
Firm characteristics	
ROA	Return on assets
L.ROA	Lagged value of Return on assets
Adjusted Tobin's Q	Difference between the firm Tobin's Q (ratio between the market value of the firm and its book value) and the Tobin's Q of the industry which the firm belongs
L. Adjusted Tobin's Q	Lagged value of *Adjusted Tobin's Q*
ROE	Return on equity
L.ROE	Lagged value of Return on equity
Ebitda	Earnings Before Interest, Taxes, Depreciation and Amortization
L. Ebitda	Lagged value of Earnings Before Interest, Taxes, Depreciation and Amortization
Ln(Asset)	The natural logarithm of a firm's book value of assets
Sales growth	The increase in the sales of a company from year to year
Price volatility company	A measure of the risk of price moves for a security calculated from the standard deviation of day to day logarithmic historical price changes
Ln(Gdp)	The natural logarithm of the country gross domestic product
Board characteristics (for firms adopting the two-tier system the supervisory board is considered)	
CV Board Age	Coefficient of variation of director age across the entire board
Dummy female directors	Dummy variable equal to one if the number of female directors is higher than the median value (higher than 1)
Dummy foreign directors	Dummy variable equal to one if the number of foreign directors is higher than the median value (higher than 0.125)
Average Board Tenure	The average tenure (years) across the entire board
CV Board tenure	Coefficient of variation of time on the firm's board
CV n. other Quoted Boards	Coefficient of variation of the number of corporate boards of listed firms that directors have served upon
CV years on other quoted boards	Coefficient of variation of the years that directors have served on boards of other listed firms
% graduated directors	Percentage of graduated directors
Executive directors characteristics	
CV Board Age (ex)	Coefficient of variation of executive directors age
Dummy female directors (ex)	Dummy variable equal to one if the number of female executive directors is higher than the median value (higher than 0)
Dummy foreign directors (ex)	Dummy variable equal to one if the number of foreign executive directors is higher than the median value (higher than 0)
Average Board Tenure	The average tenure (years) of executive directors
CV Board tenure (ex)	Coefficient of variation of time on the firm's board for executives
CV n. other Quoted Boards (ex)	Coefficient of variation of the number of corporate boards of listed firms that executive directors have served upon
CV years on other quoted boards (ex)	Coefficient of variation of the years that executive directors have served on boards of other listed firms
% graduated directors (ex)	Percentage of graduated directors among executives

Table 4 – Board heterogeneity and firm performance

	Dependent variable: Roa		
	(1)	(2)	(3)
L.ROA	0.1172 (0.344)	0.1266 (0.120)	0.1157 (0.343)
Ln(Gdp)	-1.22e-06 (0.292)	-0.9667 (0.681)	1.1015 (0.627)
Ln(Total asset)	-0.8344 (0.583)	-0.9469 (0.415)	-0.9045 (0.544)
Sales growth	0.0105 (0.116)	0.0101* (0.069)	0.0107 (0.108)
Price volatility company	-0.0514 (0.605)	-0.1481* (0.094)	-0.0268 (0.790)
CV Board Age	-0.1199 (0.170)		
Dummy female directors	0.5695 (0.315)		
Dummy foreign directors	-1.0893* (0.080)		-0.9289 (0.114)
CV Board tenure		-0.0162* (0.058)	
CV n. other Quoted Boards		-0.0079 (0.488)	
CV years on other quoted boards		-0.0068 (0.459)	
% graduated directors		-0.8496 (0.701)	
Average Board Tenure			0.3421*** (0.002)
C	18.8971 (0.117)	34.6867 (0.292)	-2.9961 (0.926)
Year dummies	YES	YES	YES
Obs	3527	3955	3534
R^2	20.67	25.43	20.22

All specifications show results from firm fixed effects regressions. Standards errors are adjusted for potential heteroskedasticity. Year dummies are included. Columns 1 and 3: The sample consists of an unbalanced panel of firms listed in France, Germany, Italy, Spain and United Kingdom in the period 2006-2016.
Regressors: lagged Roa, natural logarithm of the country gross domestic product, natural logarithm of firm total assets, sales growth, price volatility, coefficient of variation of boards age, a dummy variable for women presence, a dummy variable for foreign directors presence, coefficient of variation of board tenure, coefficient of variation of the number of corporate boards of listed firms that directors have served upon, coefficient of variation of the years that directors have served on boards of other listed firms, the percentage of graduated directors on the board, the average tenure. In parentheses p-values are reported. * , **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Table 5 – Executive directors heterogeneity and firm performance (ROA)

	Dependent variable: ROA		
	(1)	(2)	(3)
L.ROA	0.1744*	0.0693	0.1681*
	(0.071)	(0.126)	(0.081)
Ln(Gdp)	-2.46e-06**	-0.6465	0.8112
	(0.027)	(0.818)	(0.735)
Ln(Total asset)	-0.6723	1.3627	-0.8185
	(0.539)	(0.431)	(0.436)
Sales growth	0.0152	0.0142	0.0151
	(0.119)	(0.118)	(0.118)
Price volatility company	-0.1732**	-0.2788***	-0.1699**
	(0.010)	(0.000)	(0.015)
CV Board Age (ex)	-0.0568		-0.0546
	(0.298)		(0.298)
Dummy female directors (ex)	1.7336**		1.9668***
	(0.015)		(0.007)
Dummy foreign directors (ex)	1.5609**		1.6992**
	(0.026)		(0.015)
CV Board tenure (ex)		-0.0146**	
		(0.025)	
CV n. other Quoted Boards (ex)		-0.0030	
		(0.821)	
CV years on other quoted boards (ex)		0.0099	
		(0.163)	
% graduated directors (ex)		-2.5288	
		(0.218)	
Average Board Tenure (ex)			0.2048**
			(0.029)
C	21.1439**	13.0280	4.5292
	(0.017)	(0.755)	(0.899)
Year dummies	YES	YES	YES
Obs	2482	3955	2482
R^2	35.41	25.43	36.76

All specifications show results from firm fixed effects regressions. Standards errors are adjusted for potential heteroskedasticity. Year dummies are included. Columns 1 and 3: The sample consists of an unbalanced panel of firms listed in France, Germany, Italy, Spain and United Kingdom in the period 2006-2016.

Regressors: lagged Roa, natural logarithm of the country gross domestic product, natural logarithm of firm total assets, sales growth, price volatility, coefficient of variation of executive directors age, a dummy variable for the presence of a woman among executives, a dummy variable for foreign executive directors presence, coefficient of variation of executive directors tenure, coefficient of variation of the number of corporate boards of listed firms that executive directors have served upon, coefficient of variation of the years that executive directors have served on boards of other listed firms, the percentage of graduated executive directors on the board, the average executive directors tenure. In parentheses p-values are reported. * , **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Table 6 – Executive directors heterogeneity and other measures of firm performance

	Dependent variable		
	(1) Ebitda	(2) ROE	(3) Adjusted Tobin's Q
L.Ebitda	0.2682*** (0.000)		
L. Adjusted Tobin's Q			0.2296** (0.016)
L.ROE		0.6540*** (0.000)	
Ln(Gdp)	1.9376 (0.772)	15.9883 (0.315)	0.3615 (0.394)
Ln(Total asset)	9.5795*** (0.000)	-5.4796 (0.201)	-0.0642 (0.573)
Sales growth	0.0143 (0.228)	0.0266 (0.149)	0.0000 (0.701)
Price volatility company	-0.0775 (0.611)	-0.2319 (0.433)	-0.0075 (0.347)
CV Board Age (ex)	0.0056 (0.925)	-0.1006 (0.489)	-0.0052 (0.292)
Dummy female directors (ex)	4.1800** (0.012)	5.6610 (0.147)	0.1589 (0.349)
Dummy foreign directors (ex)	3.5778** (0.033)	9.3295** (0.038)	0.3021* (0.072)
C	-95.1327 (0.353)	-171.839 (0.460)	-4.5010 (0.492)
Year dummies	YES	YES	YES
Obs	2484	2447	2475
R^2	71.10	77.67	73.74

All specifications show results from firm fixed effects regressions. Standards errors are adjusted for potential heteroskedasticity. Year dummies are included. Columns 1 and 3: The sample consists of an unbalanced panel of firms listed in France, Germany, Italy, Spain and United Kingdom in the period 2006-2016.
Regressors: lagged Ebitda, lagged *Adjusted Tobin's Q*, lagged Roe, natural logarithm of the country gross domestic product, natural logarithm of firm total assets, sales growth, price volatility, coefficient of variation of executive directors age, a dummy variable for the presence of a woman among executives, a dummy variable for foreign executive directors presence. In parentheses p-values are reported. * , **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

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