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Relevance of corporate boards in driving performance in the period that covers financial crisis

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Appendix

Table 1: The economic and market indicators of Ireland, Spain and Singapore

	Capital Investment as % of GDP			Economic growth: the rate of change of real GDP		
Years	Spain	Ireland	Singapore	Spain	Ireland	Singapore
2004	28.75	27.23	23.10	3.17	4.58	9.55
2005	30.75	30.37	21.37	3.72	5.67	7.49
2006	31.30	31.89	22.32	4.17	5.47	8.86
2007	31.34	29.22	23.12	3.77	4.93	9.11
2008	29.60	24.62	30.44	1.12	-2.61	1.79
2009	24.57	20.31	27.67	-3.57	-6.37	-0.6
2010	23.55	17.46	27.87	0.01	-0.28	15.24
2011	21.11	17.65	27.26	-0.62	2.77	6.21
2012	20.23	19.33	29.99	-2.09	-0.31	3.41
2013	19.14	18.08	29.00	-1.23	0.17	4.44
2014	19.78	20.32	27.64	1.39	4.79	2.92

Source: World Bank Data

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Table 2: Operationalisation of determinants

Determinants	Operationalization
Dependent (Firm performance variable)	
Tobin's Q	Market capitalization divided by Total assets
Independent	
Corporate governance variable	
Female	The proportion of female directors on the board.
Non-Executive Directors (NEDs)	The ratio of non-executive and/or independent directors to total number of directors on the board.
Board size	Board size is the natural logarithm of board size. Board size is the total number of directors on the board.
Control variables in firm level	
Firm size	The natural logarithm of firm size is used in the models. Firm size is the book value of total assets.
Firm Age	Age of the company since incorporation
Leverage	Leverage is the book value of long term debt to the book value of total assets.
Sales growth	Sales growth is obtained by the given equation: (Current Period Net Sales - Prior Period Net Sales) / Prior Period Net Sales
Capex Growth (Capital expenditure growth)	Capital expenditure growth suggests the ability of the companies to commit funds for long-term use.
STA (Sales to Total Assets)	Sales to Assets ratio is expressed as Net sales divided by Total assets
ROA	Return on Assets

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Table 3: Summary statistics of Irish firms for 210 observations

Variable	Mean	Std. Dev.	Min	Max
Board Size	10.66	3.83	5.00	23.00
NED	0.63	0.15	0.30	1.00
Female	0.08	0.08	0.00	0.33
Firm Age	58.69	41.41	14.00	163.00
Leverage	23.59	19.08	0.00	114.45
Firm Size	6.65	2.01	1.52	10.02
Sales Growth	0.01	0.06	-0.27	0.37
STA	1.16	0.97	0.05	10.36
Capex Growth	5.20	64.69	-5.18	933.31
ROA	6.07	9.73	-40.10	36.81
TQ	1.19	1.14	0.04	6.13

Table 4: Summary statistics of Spanish firms for 520 observations

Variable	Mean	Std. Dev	Min	Max
Board Size	11.57	3.47	4.00	26.00
NED	0.79	0.16	0.00	1.00
Female	0.08	0.10	0.00	0.50
Firm Age	44.28	31.76	3.00	157.00
Leverage	0.34	0.22	0.00	2.35
Firm Size	6.94	2.05	1.68	11.94
Sales Growth	0.01	0.06	-0.54	0.52
STA	0.68	0.40	0.02	4.06
Capex Growth	783.02	2163.87	0.00	24099.56
ROA	4.29	7.19	-26.13	36.21
TQ	0.79	0.88	0.03	5.98

Table 5: Correlation matrix of Irish firms

	Board Size	NED	Female	Firm Age	Leverage	Firm Size	Sales Growth	STA	Capex Growth	ROA	TQ
Board Size	1.00										
NED	0.40	1.00									
Female	0.00	0.18	1.00								
Firm Age	0.06	0.11	0.07	1.00							
Leverage	0.30	0.03	0.15	0.14	1.00						
Firm Size	0.51	0.33	0.50	0.03	0.04	1.00					
Sales Growth	0.02	0.06	0.02	0.18	0.13	0.04	1.00				
STA	0.01	0.01	0.03	0.06	0.26	0.01	0.00	1.00			
Capex Growth	0.04	0.01	0.00	0.03	0.03	0.11	0.01	0.01	1.00		
ROA	0.13	0.01	0.11	0.01	0.39	0.34	0.14	0.30	0.02	1.00	
TQ	0.03	0.03	0.07	0.29	0.39	0.18	0.16	0.16	0.02	0.52	1.00

Table 6: Correlation matrix of Spanish firms

	Board Size	NED	Female	Firm Age	Leverage	Firm Size	Sales Growth	STA	Capex Growth	ROA	TQ
Board Size	1										
NED	0.22	1.00									
Female	0.02	0.16	1.00								
Firm Age	-0.11	-0.06	0.04	1.00							
Leverage	0.27	0.04	0.07	-0.08	1.00						
Firm Size	0.59	0.23	0.11	-0.17	0.12	1.00					
Sales Growth	0.02	0.01	-0.18	-0.11	-0.10	0.06	1.00				
STA	-0.28	-0.06	0.10	0.02	-0.20	-0.18	-0.14	1.00			
Capex Growth	0.29	0.06	0.04	0.05	0.19	0.54	0.00	-0.20	1.00		
ROA	0.10	0.06	-0.07	-0.05	-0.37	0.45	0.18	0.12	0.13	1.00	
TQ	-0.15	0.01	-0.02	-0.10	-0.43	0.20	0.08	0.33	-0.09	0.57	1.00

Table 7: Regression estimations of Irish firms with TQ as dependent variables for the study period (2005-14) and during the global financial crisis (GFC) (2007-09) period.

	2005-14 Full Period			2007-09 GFC		
	TQ-FE	TQ-RE	TQ-GLS	TQ-FE	TQ-RE	TQ-GLS
Board Size	-0.075	-0.062	-0.046	-0.014	-0.029	-0.028
	(2.68)***	(2.42)**	(1.98)**	-0.7	-1.44	-0.92
NED	-0.742	-0.97	0.138	0.281	-0.041	-0.078
	-1.19	-1.7	-0.3	-0.48	-0.07	-0.13
Female	-0.327	-1.634	-2.964	-0.217	-1.967	-1.974
	-0.31	-1.8	(2.85)***	-0.21	(2.08)**	-1.5
Firm Age	-0.038	-0.008	-0.007	-0.024	-0.004	-0.004
	(2.26)**	-1.74	(4.63)***	-0.77	-1.09	(2.47)*
Leverage	-0.008	-0.008	-0.007	0.001	-0.009	-0.005
	(2.02)**	(2.20)**	-1.66	-0.14	-1.81	-1.12
Firm Size	0.583	0.424	0.129	0.516	0.348	0.109
	(7.72)***	(6.50)***	(2.74)***	(8.33)***	(6.86)***	(2.11)*
Sales Growth	1.57	1.624	0.71	-0.049	-0.082	0.054
	(2.28)**	(2.31)**	-0.64	-0.15	-0.24	-0.06
STA	0.08	0.071	-0.013	-0.307	-0.372	-0.258
	-1.38	-1.22	-0.19	-1.72	(2.55)**	(2.14)*
Capex Growth	0	0	-0.001	-0.164	-0.152	-0.001
	-0.01	0	-0.99	(2.07)**	(2.07)**	0
ROA	0.007	0.015	0.051	0.004	0.008	0.035
	-1.05	(2.30)**	(6.61)***	-1.37	(2.26)**	(4.87)**
Constant	0.894	0.256	1.247	-0.832	-0.085	1.084
	-0.82	-0.41	(3.81)***	-0.47	-0.15	(2.85)**
R2	0.44	0.23		0.83	0.21	
N	209	209	209	63	63	63

Note: ** indicates significance at 5% level and *** indicates significance at 1% level (t-statistic/z-values in parentheses). FE-indicates fixed effects regression model, RE indicates random effects regression model and GLS is generalized least squares regression model estimation.

Table 8: Regression estimations of Spanish firms with TQ as dependent variables for the study period (2005-14) and during the global financial crisis (GFC) (2007-09) period.

	2005-14 Full Period			2007-09 GFC		
	TQ-FE	TQ-RE	TQ-GLS	TQ-FE	TQ-RE	TQ-GLS
Board Size	-0.057	-0.076	-0.051	0.016	-0.024	-0.033
	(3.40)***	(5.05)***	(4.80)***	-0.58	-1.24	(2.40)**
NED	0.8	0.5	-0.005	-0.186	-0.455	-0.198
	(4.10)***	(2.55)**	-0.03	-0.51	-1.68	-0.94
Female	1.132	0.069	-0.205	1.173	0.621	-0.154
	(3.12)***	-0.21	-0.72	(1.98)**	-1.29	-0.38
Firm Age	-0.039	-0.003	-0.002	-0.007	-0.001	-0.001
	(4.88)***	-1.41	(2.14)**	-0.35	-0.26	-1.2
Leverage	-0.372	-0.569	-0.831	-0.106	-0.618	-1.081
	(2.78)***	(4.16)***	(5.59)***	-0.3	(2.10)**	(4.02)***
Firm Size	0.449	0.291	0.118	0.41	0.214	0.161
	(11.59)***	(9.31)**	(5.12)***	(5.68)***	(5.18)***	(4.90)***
Sales Growth	-1.255	-0.366	-0.022	-1.112	-0.753	-0.99
	(3.47)***	-0.99	-0.05	(2.58)**	-1.75	-1.46
STA	0.705	0.66	0.459	0.307	0.361	0.308
	(8.03)***	(7.59)***	(6.07)***	(2.35)**	(3.19)***	(2.77)***
Capex Growth	0	0	0	0	0	0
	-1.82	(2.53)**	(3.56)***	-0.85	(2.60)***	(3.09)***
ROA	0.021	0.029	0.046	-0.001	-0.002	0.017
	(5.12)***	(6.75)***	(8.98)***	-0.23	-0.34	(2.61)***
Constant	-1.069	-0.959	0.482	-2.174	-0.209	0.276
	(2.01)**	(3.04)***	(2.45)**	-1.93	-0.58	-1.1
R2	0.52	0.33		0.35	0.38	
N	520	520	520	156	156	156

Note: ** indicates significance at 5% level and *** indicates significance at 1% level (t-statistic/z-values in parentheses)

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Table 9: Comparison of standard error estimates under three model estimations for Spanish and Irish firms for the period 2005-2014.

Variables	Spanish Firms			Irish Firms		
	Driscoll-Kraay	**Newey-West**	**OLS**	**Driscoll-Kraay**	**Newey-West**	**OLS**
Board Size	0.05	-0.05	-0.08	-0.05	-0.05	-0.08
	(0.0122)**	(0.0188)**	(0.0212)***	(-0.007)***	(-0.0305)	(0.0333)*
NED	0.01	0.01	0.45	0.26	0.26	-0.63
	(-0.1828)	(-0.2278)	(-0.3071)	(-0.7738)	(-0.7513)	0.86
Female	-0.09	-0.09	0.11	-2.72	-2.72	-2.27
	(-0.4283)	(-0.3792)	(-0.4351)	(0.4421)***	(1.3105)*	(0.9634)*
Firm Age	0.00	0.00	0.00	-0.01	-0.01	-0.01
	(-0.0006)	(-0.001)	(-0.0026)	(0.0015)**	(0.0022)**	0.00
Leverage	-0.84	-0.84	-0.57	-0.01	-0.01	-0.01
	(0.1647)***	(0.3137)**	0.46	0.00	0.01	0.01
Firm Size	0.09	0.09	0.29	0.12	0.12	0.42
	(0.0305)*	(0.04272)*	(0.0524)***	(0.0169)***	0.07	(0.1044)***
Sales Growth	-0.22	-0.22	-0.56	0.47	0.47	1.34
	(-1.1178)	(-0.9591)	(-0.9877)	0.76	1.20	(0.6658)*
STA	0.49	0.49	0.67	-0.19	-0.19	0.14
	(0.0825)***	(0.1413)***	(0.1756)***	(0.0457)**	0.13	0.20
Capex Growth	0.00	0.00	0.00	-0.03	-0.03	0.01
	0.00	0.00	0.00	0.04	0.03	0.02
ROA	0.04	0.04	0.02	0.05	0.05	0.02
	(0.0157)*	(0.0103)***	(0.0067)***	(0.0084)***	(0.0189)**	(0.0082)*
Constant	0.59	0.59	-0.96	1.40	1.40	0.05
	(0.0892)***	(0.2631)*	(0.4008)*	(0.4078)**	(0.5794)*	0.81
R^2	0.45		0.33	0.42		0.24
N	468.00	468.00	468.00	189.00	189.00	189.00

Note: The dependent variable in the regression is the Tobin'q and $*$, $**$, and $***$ imply statistical significance on the 10%, 5% and 1% level, respectively.

Relevance of corporate boards in driving performance in the period that covers financial crisis

Abstract

Purpose of the study: This study examines the relevance of boards in driving firm level performance. For this purpose, it considers firms listed on Ireland and Spain stock exchanges for the period 2005 to 2014, over a period that includes the global financial crisis.

Design/methodology/approach: This study uses panel data regression analysis to analyse the effects of board characteristics on performance and also uses alternate model specifications to test the significance of robustness of relationships.

Findings: The impact of board size on performance is negative and significant for Irish and Spanish firms for the study period. In general, the board independence has a positive effect on the performance of Spanish firms for the complete study period and suggests consistency with the resource dependency theory.

Research implications: The analysis suggests that in general the non-executive and the board size do not affect the corporate performance of Irish and Spanish firms during the financial crisis. The fixed effects model suggests positive effects of gender diversity on performance for Spanish firms while, the random effects indicates negative relationship between gender diversity and performance for Irish companies.

Practical Implications: The evidence on the Spanish firms suggests that female representation on the boards may be critical during the financial crisis

Originality/value: This study contributes to the literature on the corporate governance practices and performance of two countries that were strongly affected by the crisis in the European Union. As governments increasingly contemplate board gender diversity policies, our study offers useful empirical insights on Spanish and Irish firms.

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1. Introduction

This study empirically examines the relationship between board characteristics and firm level performance of companies listed on the Ireland and Spain stock exchanges for the period 2005 to 2014. The study of these two countries provides a context to understand the role of boards in affecting the performance in a period that also includes the great financial crisis (GFC) of 2008. Therefore, this study is important for two reasons. Firstly, the opening decade of the 21st century was characterized by successive shocks, feedback effects between the financial and productive sectors, a rapid deterioration in many countries' fiscal position, difficulties in creating jobs during the recovery and, lastly, the worsening euro area sovereign debt crisis (Estrade et al., 2009 and European Commission, 2012). The events of this period provides a significant challenge to boards and directors.

Three corporate governance indicators (board size, female representation and board independence) were chosen in testing the hypothesized relationship between corporate governance practices with firm performance, which was measured by Tobin's Q. Descriptive and correlation analysis were used to examine the hypotheses in this study. The result showed that board size had a significantly negative relationship with Tobin's Q for the firms of the two countries.   The impact of board size on performance is negative and significant for Irish firms and Spanish firms for the study period. Board independence had a positive effect on Spanish firms for the complete study period and also during the financial crisis period and suggests consistency with the resource dependency theory. Female representation is negative and a significant driver of performance for Irish firms only.

Corporate governance has strong links to both economic and social outcomes. Corporate governance codes play an increasingly important role in addressing gender balance on corporate boards. To illustrate, Spain adopted a law on effective equality between women and men in 2007, which recommends to large companies that, within eight years, the board composition of their board proportion should be between 40% and 60% female (Rodriguez–Fernández et al., 2014). While for Ireland, no quota law or proposal is underway on gender diversity. Their approach is considered as soft law as it relies on the principle of comply or explain. The impact of the two codes - quota law as in Spain or soft law as in Ireland is unclear from the literature.

The board of directors is one governance mechanism that a firm may use to mitigate agency costs associated with the separation of ownership from control. Despite being the subject of much attention from regulators and the combined code, boards display considerable cross sectional variation. Agency theory suggests that management will act in their own interest if they have the latitude to do so. Any power conveyed by ownership will be exploited by management to construct a board that does not monitor them. Zajac and Westphal (1996) drawing on organization behaviour and organizational sociology as well as financial agency theory explain why both passive boards and controlling boards exist. For example, a passive

CEO dominated board will recruit non-executive directors (NEDs) that have served on other passive boards.

Governance practice occurs in specific economic, social and legal contexts. These vary significantly between Ireland and Spain. The Irish Stock Exchange requires that companies make a disclosure statement in their annual report with respect to their corporate governance practices which (a) explains how they apply the principles of the code and (b) states whether they comply with the code and if the latter is the case explain the reasons for non-compliance. However, mere compliance with the letter of the Combined Code does not ensure that a company is well-governed as the board is only one part of the overall corporate governance architecture of a company. Other aspects of a company's governance structure include its ownership structure, its level of debt and the market for corporate control. It has been suggested (Agrawal and Knoeber, 1996; Rediker and Seth, 1995) that all of these governance mechanisms are in fact substitutes for each other. Further, companies' adoption of corporate governance best practice alone will not guarantee progress. Many other factors dictate the success of firms, among other things, key issue is effective and competent supervision to ensure proper compliance (Claessens and Yurtoglu, 2012).

Considering the Spanish and Irish environment allows us to expand previous results typical of the Anglo-Saxon corporate system to different settings. In Spain and Ireland, the legal protection of shareholders is not as extensive as that found in Anglo-American markets and Spanish and Irish stock markets are less developed and play a far lesser role than British or American markets do (Fernández-Méndez and Arrondo-García 2007; Donnelly and Mulcahy, 2008). Furthermore, Spanish data is interesting because boards are dominated by executive directors (Olivencia 1998; Heidrick and Struggles 2003), and as a result, they are able to pursue their own interests by limiting the effectiveness of monitoring resources (Ruiz-Barbadillo et al., 2007). From the legal origin point of view, Irish corporate governance codes originate from common law jurisdiction while Spain belongs to civil law jurisdiction.

Although gender equality became a priority on the governmental agenda especially in the years preceding the economic crisis from 2004 to 2010, the Spain's gender equality policies and institutions between 2009 and 2016 have been progressively dismantled and are currently endangered by the austerity policies adopted in Spain in response to the 2008 economic crisis. In this context of backlash, the future of gender equality policies in Spain looks extremely uncertain (Lombardo, 2016). Further, the absence of sanctions for noncompliant companies weakened the effectiveness of the statutory policy. The law only established incentives, such as a governmental 'equality award' for companies that stand out in the promotion of equality and a priority for such companies in contracts with the government. Yet, compared to nullifying boards' decisions, as it is done in Belgium, or suspension of board members' compensation or dissolution of the board, as in Norway, enjoying a lower preference in the granting of government contracts is a weak sanction for incompliant companies (Piscopo and Clark Muntean 2013).

Do these and other cross-country differences in corporate governance features lead to significant differences in performances of firms in these countries? This study expands the

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literature by examining the effects of corporate governance on performance during the crisis period (2007-2009) and also the period as a whole that covers the pre-crisis, crisis and post-crisis (2004-2014). The study uses regression models involving panel data analysis and Tobin's Q as a performance proxy.

The study explores two main questions:

(1) What relationship exists between the board characteristics and firm level performance with a special reference to the financial crisis?

(2) Are the experiences of the two countries comparable?

1.1 Why Spain and Ireland?

Spain and Ireland are among those countries that were most affected by the European crisis in 2008. The severity of economic crisis that has plagued Spain and Ireland since 2008 is an important incentive to work on this subject in order to contribute research insights on the effects of corporate governance on performance of the company, the investors and the government (Rodriguez–Fernández et al*.,* 2014). Further, these types of studies may also have a predictive value, as indicated by some authors (Conyon et al., 2011), to highlight the usefulness of research in this field to ameliorate future financial crises.

Until 2007, the Spanish economy outperformed most other European countries. However, these settings lead to some adverse adjustments for the Spanish economy where the low and stable interest rate allowed a rapid growth in corporate and household credit and debt (Estrada, Jimeno and Malo de Molina, 2009) and the real exchange rate to appreciate. As for Ireland, it had strong economic growth in the early 1990s. With the increased domestic demand, Ireland had a severe economic expansion. Ireland faced two big problems, a sharp decline in cyclical construction-related revenues and the sudden appearance of very large losses in the domestic banking system (European Commission, 2011).

Given, both Spain and Ireland experienced economic shocks as shown in Table 1 it is important to shed some light on how effective boards were in driving firm performance during this period. Table 1 also includes Singapore to enable comparison between a country that has been resilient to economic crisis with those of distressed countries: Ireland and Spain.

Table 1: The economic and market indicators of Ireland, Spain and Singapore

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Although the global economy is more integrated, there is no specifically determined or best corporate governance structure for each company because of the different cultures, polities and societies in different countries (Dian, 2014). In this case, it is useful to undertake a cross-country comparison and provide insights into the role of corporate governance in affecting performance during the financial crisis and over a period that covers crisis for the two countries. Moreover, the study of two countries is important because it provides us a context to examine the significant role of the corporate governance and boards in steering the companies towards performance in the decade in which the world economy has undergone a phase of marked instability and has been characterized by successive shocks.

We have several principal findings. First, the cross-country comparison of the corporate governance characteristics like board size, female representation, and non-executive directors are similar for the two countries as shown in the descriptive statistics. Second, inspite of the common features regarding female representation and non-executive directors, there is a significant variation in the cross-country relationships with corporate performance. The female representation has positive and significant effects on performance for Spanish firms. However they are negative and significant for Irish firms. Likewise, the non-executive directors of Spanish firms affect performance significantly and positively, while in the case of Irish companies they are insignificant. Third, the experiences of the board size affecting the performance in the two countries are comparable. While one characteristic has a positive relationship with performance in one country it has negative or no relationship in another country. Fourth, these findings are relevant for the literature on governance for at least two reasons: i), findings in a specific country cannot be generalized to other countries and ii) a set of variables that is used to study a specific country is most likely not the complete set of variables in another country.

The remainder of the paper is organized as follows: Section 2 presents the literature review and hypotheses development; Section 3 presents the methodology and data analysis; Section 4 presents the empirical findings, and Section 5 presents the conclusions.

2. Literature Review

The two main theories considered in this study are agency theory and resource dependency theory. These theories provide fundamental explanations to many of the findings in this study. Agency theory assumes that principals and agents have divergent interests and that agents are essentially self-serving and self-centred (Berle & Means, 1932). It concerns itself with the conflict of interests between principals and agents and therefore focuses on the monitoring and control function of the board. Agency theory as posited by Jensen and Meckling (1976) assumes that agency problems can be resolved with appropriately designed contracts by specifying the rights belonging to agents and principals. Fama and Jensen (1983, p. 302) refer to such contracts as "internal rules of the game which specify the rights of each agent in the organisation, performance criteria on which agents are evaluated and the payoff functions they face." However, unforeseen events or circumstances require allocation of residual rights, most of which end up with the agents (managers), giving them discretion to

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allocate funds as they choose (Shleifer & Vishny, 1997). The inability or difficulty in writing perfect contracts, therefore, leads to increased managerial discretion which encapsulates the same agency problem. The managers who possess superior knowledge and expertise about the firm are in a position to pursue self-interests rather than shareholders (owners) interests (Fama, 1980; Fama & Jensen, 1983). This pursuit of self-interests increases the costs to the firm, which may include the costs of structuring the contracts, costs of monitoring and controlling the behaviour of the agents, and loss incurred due to sub-optimal decisions being taken by the agents.

The resource dependence theory takes a positive view and underscores the importance of board as a resource in helping the firm secure access to diverse resources in which the boards can add value to the firm's performance by using their networks and outside connections (Pfeffer and Salancik, 1978). Accordingly, this perspective views governance structure and the board composition as a resource that can add value to the firm (Carpenter and Westphal, 2001). A key argument of the resource dependence theory is that organisations attempt to exert control over their environment by co-opting the resources needed to survive (Pfeffer & Salancik, 1978). Accordingly, boards are considered as a link between the firm and the essential resources that a firm needs from the external environment for superior performance. Appointment of outsiders on the board helps in gaining access to resources critical to firm success (Johnson et al., 1996, p. 410). In the resource dependence role, outside directors "bring resources to the firm, such as information, skills, access to key constituents (e.g., suppliers, buyers, public policy decision makers, social groups) and legitimacy" (Hillman et al., 2000, p. 238).

The two most important functions of the board of directors are those of advising and monitoring (Raheja, 2005; Adams and Ferriera, 2009). The advisory function involves the provision of expert advice to the CEO and access to critical information and resources (Fama and Jensen, 1983). This is performed by both insiders and outsiders, although Fama and Jensen (1983) note the importance of outside directors, who bring valuable expertise and potentially important connections. Raheja (2005) argues that insiders are an important source of firm-specific information for the board, but may have distorted objectives due to private benefits and lack of independence from the CEO. Compared to insiders, outsiders are more independent, providing better monitoring, but are less informed about the firm's activities.

The board is presumed to be more independent as the number of outside directors increases proportionately. According to Cadbury (1992) the non-executive directors are responsible for reviewing the performance of both the board and executive directors. Their positions are usually part time, they often sit on many boards, and they are typically paid less than executive directors are (Davies, 2002). Although the use of independent directors has become increasingly accepted, especially in Anglo-American countries where the stock market performance of listed companies attracts a great deal of interest from the public, some scholars question its rationale (e.g., Bhagat and Black 2002; Coles, Daniel and Naveen, 2008). These critics argue that monitoring by independent directors can be ineffective.

On the other hand, a positive relationship between board independence and firm value is predicted by both Agency Theory and Resource Dependent Theory and empirically, there are studies that document these views (Lei and Song, 2012; Duchin, Matsusaka, and Ozbas, 2010) and show a significant linkage between the higher level of board independence and firm valuation. Further, from Irish companies perspective, Donnelly and Kelly (2005) found that the board structure is primarily determined as the result of a bargaining process between the management and outside shareholders.

Board independence is often defined as the percentage of non-executive directors and/or independent directors on the board. Despite all the value placed on the independent director by financial market participants and regulators, empirical evidence on the relationships between board independence and firm performance is largely inconclusive (Bozec, 2013).

Similarly, non-executive directors are believed to be more vigilant monitors of firm management, but Williamson (2007) contends that non-executive directors have an information disadvantage compared with insiders and are typically slow to react in situations of adversity. Williamson warns that boards comprising a high ratio of non-executive directors typically "failed to act promptly and with urgency when a crisis occurs" (2007:262). Accordingly, following Essen et al. (2013) this study reasons that while good governance board characteristics associated with vigilant oversight may represent best practice in stable state conditions, these same characteristics can inhibit managerial discretion and limit their capacity to respond to the contingencies of a financial crisis with negative effects for a firm's financial performance. On the basis of the literature review our study proposes the following hypothesis:

Hypothesis 1: There is no relationship between the proportion of non-executive directors on the board and corporate performance, while a *high fraction of independent directors, will have a more negative/positive impact on a firm's financial performance during financial crisis.*

As pointed out by Guest (2009) for large boards, coordination and communication problems arise because it is more difficult to arrange board meetings, reach consensus, leading to slower and less-efficient decision making (Jensen, 1993). Secondly, board cohesiveness is undermined because board members will be less likely to communicate clearly with each other and reach a consensus (Lipton and Lorsch, 1992).

Evidence from other countries is broadly consistent but less robust. For Switzerland, Loderer and Peyer (2002) find a significantly negative impact on Tobin's Q (although not on profitability), whereas Beiner et al. (2004, 2006) find no negative impact. For Malaysian firms, both Mak and Kusnadi (2005) and Haniffa and Hudaib (2006) find a significantly negative impact of board size on Tobin's Q, while Bozec (2005) finds that board size has a significantly negative effect on sales margin but not profitability for 25 large Canadian firms. For the UK, Conyon and Peck (1998) examine 481 listed UK firms for 1992–1995 and find a

significantly negative effect of board size on both markets to book value and profitability, whereas Lasfer (2004) finds a significantly negative impact on Tobin's Q. The evidence presents mixed results on the relationship between board size and corporate performance. Therefore, our study proposes the following hypothesis:

Hypothesis 2: The relationship could be either positive/negative between the board size and corporate performance

The presence of gender diversity on boards is assumed to produce significant positive consequences for board effectiveness (Adams, de Haan, Terjesen, and van Ees, 2015). For example, Adams and Ferreira (2009) show that boards with a balanced gender representation can allocate more time to board monitoring, so supporting the idea that a more diverse board may be more independent from top managers. The empirical evidence linking gender diversity to firm financial performance is more equivocal (Kumar and Zattoni, 2016). With regard to the relationship between the introduction of quota law and firm performance, Ferreira (2015) argues that previous studies are affected by too many methodological problems to produce conclusive results. More recently, however, combining the results of 140 studies in a meta-analysis, Post and Byron (2015) show that women on boards tend to positively affect accounting returns, but do not have a large influence on market performance. The evidence presents mixed views on the relationship between gender diversity and corporate performance. Therefore, our study proposes the following hypothesis:

Hypothesis 3: The relationship could be either positive/negative between the gender diversity and corporate performance

3. Data Source and Methodology

This study investigates corporate governance-firm financial performance relationship of 21 companies listed on Ireland stock exchange Index, ISEQ20 and 52 in Spain stock index, IBEX35 for the period 2005 to 2014. The firm-year observations that do not have three-year continuous data are eliminated to reduce error. The final panel data is strongly balanced for the two countries. Company performance data and other accounting data for explanatory variables were downloaded from *Thomson One Banker (Worldscope database)*. Data on board structure determinants were hand collected from annual reports of each observed company and all the annual reports were downloaded from companies' official website. Table 2 below describes the dependent and independent variables used in the study.

The initial number of Spanish companies collected from *Thomson One Banker* was 133 making it 1330 firm-year observations for the ten years' period. Following the literature, our study focuses only on non-financial firms as corporate governance aspects and financial structure of banks and financial firms are different than those of non-financial firms (Adams & Mehran, 2003, Bauer, Frijns, Otten & Tourani-Rad, 2008 and Gupta, Krishnamurti, & Tourani-Rad, 2013). Consequently, it excluded 69 financial companies, as they have different marketing system and regulatory factors concerning corporate governance. Out of the

remaining sample, the study verified the data availability and continuity. Those companies whose data was not available continuously for three year periods were excluded and finally, the study was left with 52 Spanish firms. A similar, approach was applied to Irish firms in choosing and finalising the sample. Out of 47 Irish firms that were initially considered, 21 Irish companies with 210 firm-year observations are finally included in the study. Therefore, the final sample includes 520 observations for Spain and 210 for Ireland. The critical issue, both theoretically and empirically, is what determines the inclusion of countries in the selected sample used in the regression equation. If cross-country data were available randomly, the selectivity bias would not be a problem. If, on the other hand, the availability of required data were not randomly determined, then selection bias could be a significant issue (Jayant & Rivera, 2002). It is evident from the sample selection procedure undertaken in the study, that it is very unlikely that our analysis suffer from sample selection bias.

The corporate governance variables include: board size, composition, female representation (gender diversity) and characteristics of the firms are captured by efficiency ratios (sales to total assets, leverage (debt to total assets), firm size and firm age). The financial performance is measured by Tobin Q, which is defined as the market value of equity plus the book value of debt all divided by the book value of total assets (i.e. a numerical variable). It is considered as the dependent variable in the regression estimations.

Given the differences in size, conduct and corporate structure between the financial and non-financial firms, the present study considers the non-financial firms (see, e.g., Schultz, Tan, and Walsh, 2010; Nguyen, Locke, and Reddy, 2014). Firms, whose outside directors effectively monitor the performance of management, should have higher level of sales, than comparable firms whose management is less well disciplined (John and Senbet, 1998). Hence, the present study also considers the price to sales to asset ratio as one of the control variables.

Empirical Specification and estimation strategy

To address the concern that corporate governance variables and profitability are jointly determined by unobservable firm specific variables, the study employs a fixed-effects model, which represents a common method of controlling for omitted variables in a panel data set (see e.g., Yermack, 1996; Wintoki, 2012). In order to consider the effects of corporate governance on performance of Spanish and Irish listed companies, a basic specification with controlling firm characteristics is expressed as below.

$$Y_{it} = \varphi_0 + \varphi_1 X_{1it} + \varphi_3 X_{2it} + u_{it} \quad (1)$$

where dependent variables (Y_{it}), includes: the Tobin's Q in equation (2) below. The, X_{1it} is a vector of independent variables as listed and described in the Table 2. The baseline model in this study is as follows:

$$Tobin\ \ Q_{it} = \propto\ +\ \beta_1 Board\ size_{it} +\ \beta_2 NED_{it} +\ \beta_3 Female_{it} +\ \beta_3 Firm\ Age$$
$$+\ \beta_4 Leverage_{it} +\ \beta_5 Firm\ size_{it} +\ \beta_6 Sales\ growth_{it} +\ \beta_7 STA_{it}$$
$$+\ \beta_8 Capex\ Growth_{it} +\ \beta_9\ \ ROA_{it} +\ \varepsilon_{it}\ - - -\ (2)$$

Using STATA 14 version, the study employs different regression techniques that includes fixed effects model and random effects model, and the generalised least square model (GLS). The models were chosen based on findings of diagnostics tests that includes: Hausman tests (to decide between the fixed and random effects), Breusch-Pagan Lagrange multiplier tests (choosing between OLS and Random effects model).

Following the post estimation tests for autocorrelation (Wooldridge test in panel data, Durbin-Watson and Durbin alternate tests reject the null and suggests issues pertaining to autocorrelation) and heteroscedasticity (the modified Wald test for group wise heteroskedasticity), this study uses robust standard errors that ensures valid statistical inference when some regression model's assumptions are violated as developed by Huber (1967), Eicker (1967), and White (1980). If the residuals are independently distributed, standard errors, which are obtained by aid of this estimator, are consistent even if the residuals are heteroscedastic. In Stata, heteroscedasticity consistent or "White" standard errors are obtained by choosing option vce (robust) which is available for most estimation commands.

The study also uses the Newey and West (1987) approach to obtain heteroscedasticity and autocorrelation consistent standard errors. In Stata, Newey-West standard errors for panel datasets are obtained by choosing option force of the Newey command. The study also implements nonparametric corrections for the cross-sectional dependence as proposed by Driscoll and Kraay's that applies a Newey-West type correction to the sequence of cross-sectional averages of the moment conditions. Adjusting the standard error estimates in this way guarantees that the covariance matrix estimator is consistent, independently of the cross-sectional dimension N (i.e. also for $N \rightarrow \infty$).

Controls for Endogenity: Endogeneity is an issue in governance studies that makes interpretation of the results difficult. As pointed out by Hermalin and Weisbach (2003), the relation between board characteristics and firm performance may be spurious because a company's governance structure and performance are endogenously determined. This issue is less likely to be problematic in our setting because the financial crisis is largely an exogenous macroeconomic shock. The study, however, employs an instrumental variable approach to check for endogeneity and the tests results suggest that the endogeneity is not an issue. Therefore, the study uses panel data analysis, and the Hausman test results support fixed effect model as appropriate over random effects model.

Ferreira, Ferreira, and Raposo (2011) suggest that by looking only at within-firm changes, firm fixed effects regression is an effective method of solving the potential endogeneity

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problems in board structure research. To control for possible unobserved firm characteristics, we estimate our main specification by using firm-level fixed effects. To address the potential issue of omitted variables, our study will carry out a panel data analysis and introduce selected control variables that might affect performance but would not be affected by it. The control variables include leverage, firm size, sales growth, sales to asset ratio (STA), growth in capital expenditure and return on total asset (ROA).

Table 2: Operationalisation of determinants

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4. Empirical Findings

4.1 Descriptive Statistics

It is evident from Table 3, that the boards in *Ireland* are mostly independent. The representation of the independent or non-executive directors is 6 for a board size of 10.66 (0.63 x 10.66), while the female board members are 0.85 for a board size of 10.66 (0.08 x 10.66).

Table 3: Summary statistics of Irish Firms for 210 observations

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In the case of *Spain*, Table 4 shows that the representation of the non-executive directors mean size is 9 (0.79 x 11.57) and the mean of female board members is 0.94 for a board size of 11.57 (0.08 x 11.57).

Table 4: Summary statistics of Spanish firms for 520 observations

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4.2 Correlation matrix

Tables 5 and 6 show correlation matrix for the Irish and Spanish samples respectively. It is evident from the results presented in Tables 5 and 6 that correlations between the explanatory and dependent variables are not an issue. There is no indication of multi-collinearity between the variables and none of them are close to a 0.90 limit. It is mentioned in the literature that when correlations between two variables exceed 0.80 or 0.90 multicolinearity is considered as a problem for the model (Judge et al., 1985). As there is no multicolinearity problem between independent variables, therefore, the multiple regression model can be utilized with these variables.

Table 5 Correlation matrix of Irish firms

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Table 6: Correlation matrix of Spanish firms

4.3 Regression Analysis

It is evident from Table 7 that, in the case of Irish firms, the board size affects significantly and negatively for the study period 2005-14 and is less relevant during the financial crisis period. While, the non-executive directors are not significant drivers of the performance under both the periods. However, the female representation has significant and negative effect at 1% level during the study period under generalised least square estimation and at 5% level during the financial crisis period. The firm size and return on assets has positive and significant effects on the performance, mostly, at 1% level. This suggests that as the size of firm increases, performance is likely to move upward. While the sales growth affects performance significantly for the complete sample period.

Table 7: Regression estimations of Irish Firms with Tobin's Q as dependent variables

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It is evident from Table 8 that, in the case of Spanish firms, the board size affects performance negatively and significantly at 1% level for the study period 2005-14 and has minimum effects on performance during the financial crisis period. While, the influence of the non-executive directors is positive and significant at 1% (5%) levels for the complete study period and has little effect during the financial crisis period. Further, the female representation affects performance positively and significantly at 1% level for the study period 2005-14 and significant and positive at 5% level during the financial crisis period under fixed effects specification. The firm size, ROA, Capex growth and sales to asset ratio are positive and mostly significant at 1% level for the study period and also during the financial crisis period. The effects of women corporate engagement in board decision making would have been more evident if the implementation of legal instruments to enforce gender quotas were initiated as indicated by Armstrong and Walby, (2012).

Table 8: Regression estimations of Spanish Firms with Tobin's Q as dependent variables

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Table 9 provides the coefficient estimates from the regression model in estimated by pooled OLS (vce, robust), the standard errors (in parentheses) are obtained from the covariance matrix estimators in the column headings. The association between the board size and performance is robust and significant for the two countries and corroborates with the results presented in Tables 7 and 8. The female board representation is significant and negative in the case of Irish firms and not significant for Spanish firms.

Table 9: Comparison of standard error estimates under three model estimations for Spanish and Irish firms for the period 2005-2014.

It is therefore, evident from the above that the results of Spanish and Irish firms supports the rejection of the null hypothesis and suggests a negative and significant relationship between the board size and performance for the study period. However, the results on board size do

not support the rejection of the null for the firms in both countries during the financial crisis period. In the case of female representation, the results for the Spanish firms favour the rejection of the null hypothesis for the study period at 1% level and during the crisis period at 10% level. However, the results on female board representation suggest rejection of the null at 5% level in the case of the Irish firms for the study period and also during the financial crisis period. While, in the case the Spanish firms, the non-executive directors shows a positive and significant relationship with the performance and support the rejection of the null hypothesis at 1% level for the study period and also during the crisis period at 1% level. While the results do not support the rejection of the null hypothesis in the case of Irish firms.

5. Discussion and Conclusions

This research considers two theories: resource dependency theory and agency theory, to explain the linkages between the board characteristics (female representation, non-executive directors, and board size) and firm performance. The resource dependence theory suggests that companies accrue benefits through boards via three channels: advice and counsel, legitimacy, and access to resources/channels of communication (Pfeffer and Salancik, 1978).

The average size of the boards for the firms in the two countries is eleven.

We find no evidence on the board size in the Spain and Ireland leading to a more positive firm performance. In contrast, we find a negative relation between the board size and performance. Overall, our evidence supports the argument that problems of poor communication and decision-making undermine the effectiveness of boards. Further, the role of boards is not significant during the financial crisis period. The experiences of the firms in the two countries are comparable and are consistent with the proposition of the resource dependency and agency views, and they are in line with Kiel and Nicholson (2003). The results for Spanish firms do not confirm the findings of Essen et al. (2013) who reason that good governance board may represent best practice in stable state conditions but inhibit managerial discretion and limit their capacity to respond to the contingencies of a financial crisis.

Although the boards are characterised as independent with non-executive directors comprising above 60% as shown in descriptive statistics for Irish firms and nearly 80% of Spanish firms, yet the experiences on the linkages between the non-executive directors and performance of the two countries differ.

The non-executive directors of Spanish firms affect performance positively and significantly at 1% level. The evidence is robust across all the three model estimations used in the study. Further, even during the financial crisis period the association between non-executive directors and performance is positive and significant. The Spanish experience suggests that the non-executive directors are adding value to the firm's performance through their networks and external connections during the financial crisis period and also for the period that covers

pre, during and post financial crisis. These results are in line with the agency and resource dependency theories.

While, the association between non-executive directors and performance of Irish firms is not significant. The non-executive directors are not driving the performance. This corroborates the views of Williamson (2007) who contends that non-executive directors have an information disadvantage compared with insiders and are typically slow to react in situations of adversity. From the results, we can infer that the independent boards might be either less informed or not consistent with the resource dependency view.

Although the descriptive statistics shows that the corporates of the two countries average one woman on each board they differ in the way they affect the performance. The results suggest that the female representation has significant effects on performance for the Spanish firms for the study period as well as during the financial crisis period. These findings corroborates with the view that one potential determinant of a boards' effectiveness is its gender diversity, as the gender mix of a team may offer an assortment of knowledge and skills.

While, in the case of Irish companies, the results are significant and negative. This phenomenon is consistent with critical mass theory, according to which, women and others different from the dominant group are likely to face tokenism when they are the sole representative of their group characteristic (Kanter, 1977). Consequently, the dominant group may tend to see women first as a female, embodying the sex role stereotype, and only later as individuals. The real change occurs when there are three or more women on the board (Erkut et al., 2008).

The control variables firm size and sales to total assets (STA) has a positive effect on performance for the Spanish companies during the sample period and also for the financial crisis period. In the case of Irish firms, the results on the association between performance and firm size is comparable to the Spanish firms, but differs in the case of STA, wherein the association with the performance is not robust and significantly established. While the panel regression results indicate that leverage has a negative effect on performance across all the three estimation models for Spanish firms. This trend continues to document the similar results during the global financial crisis period.

Although the strategy of gender mainstreaming is backed in Spain through a legal mandate at both the central and the regional levels, gender has not been mainstreamed into policy reforms adopted in response to the economic crisis. In 2015, women only represented 17 per cent of corporate members of the publicly listed companies, below the EU-28 average of 21 per cent. Although, the two countries have contrasting approaches towards ensuring gender balance. The Spanish firms have quota law while Irish companies have soft laws. The 3/2007 Equality law gave Spanish public companies and listed firms eight years, that is until 2015, to achieve a a representation in their boards of a minimum of 40 per cent and a maximum of 60 per cent of each sex. However, the absence of sanctions for noncompliant companies weakened the effectiveness of the statutory policy. The 3/2007 law only established

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incentives, such as a governmental 'equality award' for companies that stand out in the promotion of equality and a priority for such companies in contracts with the government.

Nonetheless, there is, a potential to empower boards in the two countries through gender diversity initiatives. It can be concluded that in general, there is a significant difference between the Irish and Spanish board characteristics in influencing performance. The results are robust even after nonparametric corrections for the cross-sectional dependence as proposed by Driscoll and Kraay's are applied.

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