ABSTRACT

Manuscript Type:	Empirical
Research Question/Issue:	We will examine the effects of firm- and country-level 'good corporate governance prescriptions' on firm performance before and during the recent financial crisis, using a large sample of 1197 firms across 26 European countries.
Research Findings/Insights:	Hierarchical linear modeling shows that 25 percent of the heterogeneity in firm performance is among countries, indicating the importance of including country-level institutions in our analyses. In the context of the crisis we find that the general quality of the legal system and creditor rights protection are positively related to firm performance but protection for equity investors is not. Contrary to good governance prescriptions, we find that board characteristics associated with vigilant monitoring perform worse in a financial crisis. In a crisis, CEO duality is associated with better performance and the number of board subcommittees has a negative impact. Board size, board and committee independence have no significant effect. We also find that the use of executive incentive compensation and the existence of a wedge between ownership and control rights negatively impacts on firm performance in a crisis. Our results are robust with regard to other statistical analyses (ordinary least squares). Other robustness checks suggest that the results may not be fully generalizable for firms in the financial sector.
Theoretical/Academic Implications:	The findings challenge the universality of good governance prescriptions and contribute to the growing body of work proposing that the efficacy of governance mechanisms may be contingent on organizational and environmental circumstances.
Practitioner/Policy Implications:	The study offers nuanced insights into policy and practitioner communities, showing that governance mechanisms operate differently in crisis and non-crisis periods. The tendency of the policy community to respond to a crisis with more stringent rules may be counterproductive since such measures may compromise executives' ability to respond appropriately to systemic shocks.

Keywords: Corporate Governance; Board of Directors; Executive discretion; CEO Compensation; European Countries; Financial Crisis; Multi-Level Analysis; Ownership.

DOES 'GOOD' CORPORATE GOVERNANCE HELP IN A CRISIS? THE

IMPACT OF COUNTRY- AND FIRM-LEVEL GOVERNANCE

MECHANISMS IN THE EUROPEAN FINANCIAL CRISIS

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INTRODUCTION

How does 'good' corporate governance influence firm performance in a severe financial crisis? Received wisdom, based predominantly upon agency theory reasoning, suggests that firm- and country- specific good governance prescriptions, including an independent and vigilant board, the separation of key leadership roles, incentive alignment between owners and managers, and legal protection for creditors and minority shareholders, will enhance corporate value in the normal course of events. But do these prescriptions apply universally in all situations and for all types of firms (Judge, 2012)? Recent research suggests that the efficacy of governance prescriptions may be contingent on a variety of factors, such as national economic development (Chen, Li & Shapiro, 2011), national institutions (Carney et al., 2011; Henrekson & Jakobsson, 2012; Renders & Gaeremynck, 2012), industry context (Chancharat, Krishnamurti & Tian, 2012), ownership structure (Bruton et al., 2010; Desender et al., 2012), and a firm's financial condition and stage in its life-cycle (Dowell, Shackell & Stuart, 2011). In this paper we contribute to contingency approaches in comparative corporate governance (Desender et al., 2012) by investigating which firm- and country-specific governance mechanisms can help firms maintain their financial performance in a financial crisis relative to their performance in more routine, steady-state financial conditions.

The 2007-2008 Transatlantic credit crisis has been the world's deepest since the Great Depression of the last century. The origins of the present crisis were initially attributed to governance failures in the financial sector. The collapse of the U.S. real-estate market and the subsequent failure to offload subprime risk ultimately resulted in a credit crisis (Gregoriou, 2009). Others implicate the use of novel and poorly understood financial instruments such as collateralized debt obligations. The use of high-powered incentive compensation for senior banking executives may have exacerbated the problem. However, many scholars believe that

inadequacies in the wider corporate sector were a more probable cause of the crisis. In this view, boards of directors were believed to be inadequate in monitoring executives and evaluating the risks they assumed (Muller-Kahle & Lewellyn, 2011). Others pinpoint institutional failings governing risk management, credit rating, and financial reporting standards that proved ineffective in signaling underlying structural problems (Conyon, Judge & Useem, 2011). While the determination of the probable multiple causes of the current crisis awaits a comprehensive analysis, we aim to shed some light on the problem by examining the efficacy of good governance prescriptions that are believed to have universal relevance. In particular, our objective is to evaluate the robustness of several firm- and country-specific governance mechanisms and the extent to which they have withstood the crisis, as reflected in the financial performance of publicly listed firms. To do so, we will examine the effects of firm- and country-level government mechanisms on firm performance before and during the recent financial crisis using a unique large sample of 1197 firms drawn from 26 European countries. The sample represents a strong test of the hypothesis since it consists of large and mature public corporations, for which good governance prescriptions are primarily intended.

The basic logic informing this study suggests that corporate governance mechanisms which are beneficial (or at least not harmful) in steady-state financial conditions may have more pernicious effects in the context of a financial crisis. In particular, we reason that the checks and balances on executive actions performed by corporate boards, which are beneficial in the steady-state, may prove overly restrictive on executive discretion in circumstances where decisive leadership and the ability to move quickly are valuable (Burkurt, Gromb & Panunzi, 1997; Finkelstein & D'Aveni, 1994). Furthermore, we reason that particular forms of executive compensation, ownership types, and country-level governance institution may work differently

and have different effects in steady-state and crisis conditions. This is because both costs and benefits are associated with different governance mechanisms and governance choices that are optimized for steady-state conditions may be misaligned in a crisis (Dowell, et al., 2011). In crisis situations, the costs associated with any particular governance mechanism may exceed its benefits, which may affect performance in a significant way.

Our contribution to the existing literature is threefold. Firstly, to our knowledge, this is the first study that focuses on the impact of firm-level and country-level governance mechanisms on European firms' performance during the recent financial crisis. We can observe that the quality of the institutional environment in European countries is generally well-developed; but nevertheless, there is significant variation in national financial system architectures needed to test for the impact of cross-country differences (Renders, Gaeremynck & Sercu, 2010; Van Essen, van Oosterhout & Heugens, 2012c). Secondly, we use hierarchical linear modeling to simultaneously model firm- and institutional-level variables, allowing us to determine how much different levels of analysis explain firm performance differences in steady-state and crisis conditions (Judge, 2011). Thirdly, our study contributes to the growing body of literature that points to the contingent quality of good governance prescriptions and their inherent trade-offs with respect to desirable corporate outcomes (Aguilera et al., 2008). Our study points specifically to the need for governance mechanisms to be evaluated with regard both to their ability to function efficiently in steady-state conditions as well to their robustness to financial shocks. We will proceed in the following manner. We develop four theory-based hypotheses about the influence of firm-level and country-level governance characteristics on firm performance during both normal economic situations and financial crises. Section 3 describes the sample, variables, and the hierarchical linear modeling approach that we employ. Section 4 presents the empirical

results. We conclude by pointing to the caveats regarding the limitations of research and discuss the policy and managerial implications of our findings, indicating avenues for future research into the efficacy of good governance prescriptions.

THEORY AND HYPOTHESES

A corporate governance system can be seen as a particular configuration of internal and external mechanisms that condition the generation and the distribution of residual earnings in a country's corporations (Shleifer & Vishny, 1997; Walsh & Seward, 1990). These mechanisms function at both the firm- and country-level of analysis (Judge, Gaur & Muller-Kahle, 2010). In this section, we develop a series of four hypotheses pertaining to ownership concentration and identity, board structure and composition, incentive compensation, and the quality of a country's governance institutions. We also consider how specific governance mechanisms are intended to work under steady-state conditions and hypothesize how their functioning might shift during a financial crisis and the likely influence on firm financial performance.

Ownership Concentration and Identity

Ownership concentration can be a beneficial corporate governance mechanism, since large shareholders have a greater incentive to monitor senior managers compared with more diversified minority shareholders (Shleifer & Vishny, 1986). Moreover, some large owners are in a position to intervene in the firm's affairs if necessary by, for example, correcting value-destroying managerial actions. The motivation for monitoring and intervention stems from the fact that some large shareholders lock up a sizeable proportion of their wealth in a single corporation. Nevertheless, there is a potential countervailing cost of ownership concentration,

since it creates the potential for large shareholders to seek the private benefits of control (Dyck & Zingales, 2004; Liu & Magnam, 2011; Van Essen et al., 2012c). The risk of realizing such costs is likely to be increased when the good governance prescription of one share-one vote is breached, for instance when large owners' voting rights exceed their cash flow rights through the use of instruments such as pyramid structures or dual class shares (Faccio & Lang, 2002). Liu and Magnan (2011) find that the wedge between voting and cash flow rights leads to lower firm value in normal times. We agree that concentrated owners may engage in shareholder expropriation at any point but we can reason that the probability of expropriation is likely to be increased during a financial crisis as it is more difficult then to realize the expected rate of return and large shareholder or insider expropriation becomes more common (Bertrand, Mehta & Mullainathan, 2002; Joh, 2003). During crises, large shareholders may seek to minimize their own losses during a profit shock by tunneling resources out of the firm to externalize losses onto minority shareholders and to escape their own creditors. For example, several studies find that the Asian financial crisis has intensified the incentives for controlling shareholders to expropriate minority investors (Friedman, Johnson & Mitton, 2003). We can thus formulate the following hypothesis:

Hypothesis 1a: The presence of a wedge between cash flow and voting rights has a negative impact on firm performance during a financial crisis.

However, we would hasten to add that concentrated owners do not make up a homogenous class, and there is growing research that suggests some owners may forego the temptation to expropriate and instead elect to 'prop up' and otherwise assist firms in which they hold large shares by providing resources from their own pockets (Friedman, Johnson & Mitton,

2003). Although the development of a full-fledged theory of ownership types is beyond the scope of this article, we seek to account for the possibility that different types of large owners in European firms have a differential impact on firm performance during a financial crisis. We can distinguish between institutional, relational, and governmental largest shareholders (Van Essen et al., 2012c). The institutional investor is the quintessential transactional blockholder. In the normal course of events, institutional shareholders will seek to maximize returns from their equity stake and, while they will closely monitor the returns, they will typically avoid active involvement in firms whose shares they hold (Kochhar & David, 1996). On the other hand, in the context of a crisis, institutional investors are known for pulling out of a stock very quickly if they are unhappy with the returns. Transactional investors are likely to seek liquidity and reallocate capital to greener pastures in a crisis (Park & Song, 2001). Institutional investors have therefore little incentive or capability to prop up or bail out an underperforming firm.

Relational shareholders, such as family owners, are typically tied strongly to their firm and consequently have longer investment horizons (Van Essen et al., 2012a). While there may be little difference in the performance of family versus other types of firms in the steady-state (Miller et al., 2007), family shareholders' long investment horizons and their willingness to prop up firms in adversity (Villalonga & Amit, 2010) are likely to help in weathering a crisis. Propping a firm up during adversity can increase its resilience and improve its performance. Moreover, family firms are less inclined to use debt financing and consequently have less levered capital structures (Mishra & McConaughy, 1999), which makes them less vulnerable to credit crises. Sraer & Thesmar (2007) find that family firms smooth out employment in response to industry shocks in sales, which they suggest supports the view that family firms' longer-horizons allow them to commit to long-term labour contracts. Similarly, research into business

groups suggest that parent corporations may be more inclined to bailout affiliated firms through cross-subsidization mechanisms in difficult economic conditions (Claessens, Fan & Lang, 2006; Gedajlovic & Shapiro, 2002).

Government-owned firms are driven by regulatory or policy considerations rather than economic objectives, which makes them a different kind of shareholder altogether (Van Essen et al., 2012c). Most studies show that government ownership is associated with inefficiency and financial underperformance compared with private firms (Boardman & Vining, 1989). In the context of the crisis we expect stakeholders of state-owned firms, such as employees and suppliers, to engage in protracted negotiations to protect their interests. Government sensitivity to these concerns may make it difficult for them to make the adjustments necessary to maintain their firm's profitability. Accordingly, we expect state-ownership to be harmful to firm performance in a crisis. We can thus formulate the following hypotheses regarding ownership identity:

Hypothesis 1b: Institutional ownership has a negative impact on firm performance during a financial crisis.

Hypothesis 1c: Government ownership has a negative impact on firm performance during a financial crisis.

Hypothesis 1d: Family ownership has a positive impact on firm performance during a financial crisis.

Hypothesis 1e: Parent corporation ownership has a positive impact on firm performance during a financial crisis.

Board Structure and Composition

While the board of directors can add value to a firm by providing good counsel and helping executives to identify and access scarce resources, there is general agreement that the primary role of a board of directors is to serve as a vigilant monitor of management. In the steady-state, board vigilance serves to mitigate the agency costs resulting from the separation of ownership and control (Jensen & Meckling, 1976). Characteristic good governance prescriptions regarding vigilance include constraints on CEO authority created by separating the CEO and Board Chair roles. Board vigilance can be compromised when both roles are combined in the same person, an occurrence known as 'CEO duality' (Coles, McWilliams & Sen, 2001; Fama, 1980; Fama & Jensen, 1983). An individual occupying both roles is very powerful and can readily manipulate the board's agenda and control the flow of information to the board. Other characteristics of a vigilant board include the independence of directors (Van Essen, Van Oosterhout & Carney, 2012b), small board size (Yermack, 1996), frequent board meetings (Grove et al., 2011), and an active array of specialized committees. For example, Bruno & Claessens (2010) find that the presence and independence of four functional committees (audit, nomination, compensation, governance) has a positive impact on firm value.

Notwithstanding the value of vigilant board oversight, alternative perspectives suggest that overzealous monitoring and frequent interference in a firm's affairs may discourage managerial initiatives (Burkurt, Gromb & Panunzi, 1997). In a large body of work, Finkelstein and his colleagues (Finkelstein & D'Aveni, 1994; Finkelstein & Hambrick, 1990) find that powerful CEOs, for example those with CEO duality, tend to have a beneficial effect on firm performance in uncertain environments where, unencumbered by fewer constraints, they can make quick decisions without the need to build consensus. CEO duality allows a single unified voice to guide a firm during a crisis as there is little ambiguity regarding who is in charge.

Independent directors are typically busy people with their own responsibilities and have little incentive or ability to inform themselves with intimate details of the firms day-to-day operations. Williamson (2007) contends that external representatives on boards of 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 external representatives typically "failed to act promptly and with urgency when a crisis occurs" (p.262). Accordingly, we reason that while board characteristics associated with vigilant oversight may represent best practice in stable-state conditions, such characteristics can inhibit managerial adjustment to the unforeseeable contingencies of a financial crisis with deleterious effects for a firm's financial performance. In the context of the crisis, we expect there to be a performance disadvantage in firms that overly constrain CEO discretion through board governance mechanisms. We can thus formulate the following hypothesis:

> *Hypothesis 2: Vigilant boards (those characterized by the separation of CEO and chair roles, a high fraction of independent directors, smaller boards, frequent meetings, and the presence and independence of functional committees) will have a negative impact on a firm's financial performance during a financial crisis.*

High-Powered Incentive Compensation

A foundational good governance prescription based upon agency theory can be used successfully to align senior management and shareholder interests through the use of high-powered incentive contracts in the form of stock options (Jensen & Murphy, 1990; Tosi & Gomez-Mejia, 1994) or forms of variable pay, such as annual bonuses (Baker, Jensen, & Murphy, 1988; Gray & Cannella, 1997; Mehran, 1995). Although equity-linked compensation

plans may work to align management and shareholder interests in the normal course of events, the accumulated research tends to conclude that stock-based compensation also induces managers to take excessive risks (Agarwal & Mandelker, 1987) and encourages short-term profit-maximizing (Peng & Roell, 2008), which can undermine long-term firm value. Importantly, equity-based compensation encourage executives to increase the leverage of a firm's capital structure (Mehran, 1992), which can boost returns to equity in favorable economic conditions. However, highly leveraged firms are more vulnerable during a financial crisis, because high interest rates increase debt costs and reduce profitability. Therefore, high-powered compensation incentives that typically boost firm performance in regular times, may work the other way around during crisis times. Grove et al. (2011) find that incentive pay has a positive impact on firm value during a pre-crisis period but no impact during times of crisis. Fahlenbrach & Stulz (2011) find some evidence that banks with CEOs whose incentives were better aligned with the interests of shareholders performed worse during the crisis. Accordingly, we can reason that the use of high-powered incentive compensation contracts will encourage executives to accentuate financial choices which have deleterious consequences for firm performance in crisis conditions. We can therefore formulate the following hypothesis:

> *Hypothesis 3: The employment of high-powered incentive compensation contracts for senior executives will be associated with lower firm performance during a financial crisis.*

Country-Level Governance Institutions

The emergence of the law and finance literature underscores the importance of country-level governance institutions that minimize the incidence of principal-principal conflicts (Young

et al., 2008). The core premise of this literature suggests that countries with good governance institutions, such as the rule of law and specific legal protection for investors and creditors, will develop large and liquid financial systems (La Porta et al., 1997, 1998). Specific legal protection for financial stakeholders can increase investor confidence in their ability to realize a return on their investment (Engelen & van Essen, 2010). The rule of law is an indicator of judicial integrity and respect for property rights. More specific legal protections exist to enhance a firm's ability to raise external finance either through either debt or equity. The logic of specific legal protection for shareholders ensures that corporate insiders respect their obligations towards smaller outside investors (Djankov et al., 2008b). Minority investors enjoy better protection when directors are legally empowered to act in their interests (Spamann, 2010). Creditor protection laws ensure that creditors are protected from default (Claessens, Djankov, & Klapper, 2003), which becomes more probable in the financial crisis. Stronger creditor rights lead to the increased availability of credit (Djankov, McLiesh & Shleifer, 2007; Djankov et al., 2008a), which might be more valuable during times of crisis as it keeps the credit line open. Moreover, superior judicial efficiency can improve the efficacy of loan recovery (Laeven & Majnoni, 2005). All things being equal, stronger legal protection for creditors is likely to enhance firm performance in a credit crisis, since provisions are likely to allay creditors' fears of default.

A financial crisis may create strong incentives for executives and controlling shareholders to engage in value destructive behaviors (Bertrand, Mehta & Mullainathan, 2002), through opportunistic expropriation or other forms of malfeasance, such as default on their credit commitments. Even if a country experiences a modest loss in investor confidence in the event of any financial shock, Johnson et al. (2000) show that firms, in countries with weakly enforceable minority protection rights, are more exposed to investors' reassessment of the probability of

expropriation and as a consequence, can exhibit worsened firm performance. While the impact of governance on firm performance might matter less in normal economic situations, when circumstances change drastically (e.g. a financial crisis), better governance becomes crucial to the preservation of firm value (Mitton, 2002). Stronger country level governance institutions should thus mitigate expropriation and tunneling and sustain firm performance in crisis conditions (Friedman, Johnson & Mitton, 2003). We can therefore formulate the following hypothesis:

>*Hypothesis 4a: Companies located in countries with a more developed legal framework have better firm performance during a financial crisis.*

Much law and finance literature emphasizes the beneficial effects of building equity market institutions that enable arms-length investment in liquid capital markets. However, many continental jurisdictions have developed a bank-based variant of these institutions (Hall & Soskice, 2001). Bank-based financial architectures place less emphasis on arms-length contracting and provide greater scope for more explicit coordination between firms and creditors. How different country level differences in financial architectures cope with financial crises and contribute to firm level performances is not well understood. On the one hand, with their more diversified portfolios, market-based investors typically possess a stronger risk bearing capacity (Levine, 1991). Bank-based financial systems, on the other hand, are shielded from the need to publicly disclose information about creditors, but they nevertheless allow more effective post lending monitoring, and are more powerful in enforcing debt repayment (Rajan & Zingales, 1998).

Consistent with the law and finance literature, we expect that, as a baseline condition, market based governance systems will better support firm performance in steady-state market conditions, while we expect the reverse is likely to hold in a financial crisis. In a market-based system, regulators are likely to respond to a crisis by 'shoring up the system' (La Porta, Lopez-De-Silanes & Schleifer, 2008) by, for example, refining and strengthening legal protection for investors. However, the effect of improved investor protection is unlikely to have much short-term impact on a firm's profitability. In contrast, in periods of market disorder, regulators in bank-based systems are more likely to intervene, using state mandates to seek immediate remedies. Moreover, due to the provisions for greater bank-firm coordination in bank-based systems (Hall & Soskice, 2001), bankers are better placed to take a leadership role in assisting troubled firms. Banks often have better information than arms-length investors, and can be more proactive in providing additional capital and participating in restructuring. We can therefore formulate the following hypothesis:

> *Hypotheses 4b: Firms based in bank-based financial systems are likely to perform better during a financial crisis than firms in a market-based financial system.*

DATA AND METHODS

Data Collection

Our sample consists of firms from 26 European countries. We collected most of the dataset manually between 2004 and mid-2009. In addition, digital information sources such as *Datastream*, *Worldscope*, and *BoardEx* were used to obtain firm-specific control variables and board characteristics. Country-specific data such as the overall quality of legal background institutions, shareholder minority protection, credit right indexes, and market- versus bank-based

system, were obtained from Kaufmann, Kraay and Mastruzzi (2009), Djankov et al. (2007, 2008b), Doing Business (World Bank), La Porta et al. (1998), Spamann (2010) and Demirguc-Kunt and Levine (2001). Our sample focuses on all major companies for each country by including all constituent firms of each country's major stock index[i], yielding a total sample of 1197 firms. Table 4 gives an overview of the number of firms per country.

Definition of the Dependent Variable

Our firm performance measure is the *cumulative adjusted stock return* (buy and hold return) during the financial crisis. Following Beltratti and Stulz (2009) and Fahlenbrach and Stulz (2010), we can measure a *crisis period* from July 2007 to January 2009. However, as a robustness check we can extend this period until March 2009, because most stock market indexes reached their minimum level during the first quarter of 2009. To isolate the firm-specific part of the cumulative stock return we adjust it for industry movements. Accordingly, our regression analyses use cumulative industry-adjusted returns rather than raw cumulative returns.

Definition of the Independent Variables

All our firm- and country-level independent variables lag the dependent variable, and are measured before the financial crisis to avoid possible confounding effects that are associated with the crisis (Durnev & Kim, 2005; Peng & Jiang, 2010). We first discuss the firm-level variables, followed by country-level institutional variables. We include three categories of firm-level corporate governance variables pertaining to 1) ownership concentration and owner identity, 2) board structure and composition, and 3) incentive compensation. We also include several control variables pertaining to CEO and firm characteristics. Country level independent variables pertain to the quality of the governance environment in each jurisdiction.

Ownership Concentration and Identity. The first set of variables captures the impact of ownership structure on firm performance. We constructed five dummy variables to distinguish the influence of concentrated and dispersed ownership on the one hand, and that of identities of concentrated owner on the other hand, on firm performance. *Concentrated ownership* is defined as a firm having a shareholder with 10% or more of the voting rights (Maury, 2006). Concentrated owners who reach this threshold are divided in the following four identity categories: *corporation*, *family*, *government,* and *institutional owner* (Faccio & Lang, 2002). To test our hypothesis of the impact of differences between voting and cash flow rights among European firms, we also collect the variable *Ownership Wedge* (Faccio & Lang, 2002). This dummy variable takes the value of one when there is difference between voting rights and cash flow rights of the largest shareholder and zero otherwise.

Board Structure and Composition. Our second set of variables includes governance characteristics related to the structure of authority and the composition of the board of directors. The primary determinant of the vigilant board is the extent to which the roles of chairman of the board and CEO are separated. Conversely, following Finkelsteain and Hambrick (1994) we suggest that the concentration of both roles in same person, CEO duality, is indicative of greater executive discretion. *CEO duality is* operationalized as a dummy variable which is otherwise set to one if the chair of the board is taken up by the CEO and zero. Additionally, we incorporate several measures of board composition that are commonly associated with board vigilance in an agency perspective. Good governance prescriptions deem smaller boards more effective (Yermack, 1996). Therefore we include *board size* measured as an indicator of board vigilance.

Non-executive directors (measured as the percentage of non-executive directors to the total numbers of directors) and *board independence* (measured as the percentage of independent directors to the total number of directors) are indicators of the impact of board composition on firm performance. The latter reflects the degree to which the board of directors operates independently from corporate insiders or major shareholders.[ii] We also include *board meeting frequency* (measured as the number of board meetings per year) as an additional indicator of board vigilance (Vafeas, 1999).

We complement these conventional board measures with a number of variables pertaining to a board's committee structure, which recent studies suggest are better proxies of governance quality (Bruno & Claessens, 2010; Chan & Li, 2003; Yeh, Chung & Liu, 2011). Firstly, we include a variable for the *number of functional committees* (measured from 0 to 5; of the audit, risk, compensation, nomination, and strategy committee). Secondly, where they exist we also include measures of strategy, risk, nomination, compensation, and auditing committee independence, operationalized as the proportion of independent directors in each committee. We reason that a large number of committees staffed by independent directors are more indicative of board vigilance.

Incentive Compensation. Finally, based upon the available data, we include two measures relating to executive incentive compensation. The first is *variable pay*, which measures the fraction of CEO variable cash bonus to total CEO cash compensation, which is the sum of the fixed and the variable part (Grove et al., 2011). The second is the use of a *stock option*, which is a dummy variable that equals 1 for firms that adopt stock option plans, and 0 for firms that do not.

Control Variables

To assess the impact of general firm characteristics, we collected the following set of control variables: *firm age* (Peng & Jiang, 2010), *firm size* measured as the log-value of total assets (Mitton, 2002), *firm leverage* measured as the value of debt divided by the value of total assets (Lang & Stulz, 1994), *firm diversification* (Mitton, 2002), and *market-to-book ratio* (Rajan & Zingales, 1998). A dummy variable for firms that have a listed *American Depository Receipt* (ADR) was also included, as recent literature suggests that a cross-listing might allow firms operating in a poor legal environment to bond themselves to a better institutional framework (Salva, 2003). Also included as control variables are several indicators of CEO and board educational and prior work experience characteristics, which have been identified as having some material impact on firm performance (Simzek, 2007). We include as variables *CEO age* (measured as the difference between the book year and the year of birth of the CEO), *CEO tenure* (measured as the number of years the executive has been CEO), *CEO elite education* (a dummy variable equal to 1 if the CEO has obtained his/her degree in a globally renowned academic institution) and *CEO outside board functions (*number of outside board functions the CEO holds within other corporations). Finally, we collected various extra board characteristics:

*board financial experience (*average number of years of professional experience in the financial sector of the board members) and *board financial education (*number of board members with a degree in finance or trained as accountants/auditors/financial consultants). Table 1 presents the definitions, data sources, and basic statistics of all firm-specific variables.

Insert Table 1 here

Institutional Variables

To investigate cross-country institutional differences, comparative corporate governance and international business studies typically use several proxies to measure the quality of countries' institutions: (1) a proxy measuring the general quality of the legal system (Heugens, Van Essen, & Van Oosterhout, 2009), (2) a proxy measuring investor protection (Liu & Magnam, 2011; Engelen & Van Essen, 2010) and creditor protection (Carney et al., 2011), and (3) quality of financial system (Carpenter et al., 2010). To measure the impact of the overall quality of legal background institutions in various European jurisdictions, we used Kaufmann et al.'s (2009) '*Rule of law'* and '*Corruption index'* measures. The Rule of law variable measures the extent to which agents have confidence in and abide by the rules of society, while the Corruption index measures the exercise of public power for private gain (Kaufmann et al., 2009). A higher score on the Corruption index reflects less corruption, while a higher score for the Rule of law implies more confidence in the legal system.

To measure the impact of the jurisdictional level of legal protection against the misuse of corporate assets by directors or large shareholders for their personal gain, we used the *Doing Business* '*Protecting investors'* indicator provided by the World Bank and the Spamann (2010) *'Anti-director rights index'*. To assess the impact of creditor right protection in each country we

used Djankov et al.'s (2007) '*Creditor right protection index*'. Djankov et al. (2007) and Djankov et al. (2008a) show that stronger creditor rights lead to increased availability of credit.

Finally, we also distinguished between market- and bank-based financial systems. We followed the methodology of Demirguc-Kunt & Levine (2001) to classify a country as having a '*Market- versus bank-based financial system*' in order to test whether the distinction between both financial architectures is an important determinant of firm performance in times of crisis. Table 2 presents the definitions, sources, and basic statistics of the country-specific variables. Table 3 reports all correlations for the dependent and main independent firm-level variables in our regressions.

Insert Tables 2 and 3 here

Sample Description

Table 4 presents sample description across the 26 countries included in our sample. The table shows that there are considerable differences in corporate governance practices across Europe. High levels of ownership concentration, measured by the percentage of shares held by the largest shareholder, can be found in Estonia, the Czech Republic, Poland and Turkey, while the UK, Switzerland and Sweden exhibit low levels of ownership concentration. Family ownership of publicly listed firms are prevalent in France, Italy and Greece, while institutional shareholders are more common in the Netherlands, Ireland and Sweden. With a few notable exceptions among central European states such as Czech Republic and Hungary government ownership of publicly listed corporations is relatively low in Europe. Consistent with Facio & Lang (2002), we find that largest shareholders have often more voting than cash flow rights, especially in Portugal, France and Sweden.

Insert Table 4 here

With regard to board structure and composition, CEO duality occurs most frequently in Czech and French firms and less frequently in Danish, Swedish and British firms. While the average board size across the full sample is 11 board members, we can see that boards in Lithuania (5 members), Estonia (7 members) and Turkey (8 members) are relatively small, while Germany (14 members), Portugal (14 members) and Hungary (14 members) have on average larger boards. The most independent boards are to be found in Finnish, Swiss, British and Dutch companies, while Estonian, German, Polish and Latvian companies are characterized by low levels of independence. On average, European boards of directors meet every one and a half months. Austrian (5 meetings) and German (5 meetings) boards assemble much less frequently, while Turkish companies (18 meetings) meet nearly every three weeks. The presence of functional committees also varies widely across European countries. Functional committees are very scarce and do not exist in the Baltic countries, Denmark and Poland, while the UK, Switzerland and Belgium have about three committees with the board. British and Irish companies have the highest number of independent committees, while Czech, Hungarian and Turkish companies have hardly any independent committees. Finally, table 4 shows that there is considerable variance between countries in the use of incentive compensation. Compensation through stock options is common among Irish, Luxembourg, Norwegian, Swedish and Swiss firms, while fixed pay seems to be the rule in Cypriot, Czech Republic, and Finnish firms.

Hierarchical Linear Modeling

Much of the comparative cross-country literature in corporate governance relies on OLS type regression (e.g. Aggarwal et al., 2010; Durnev & Kim, 2005; Klapper & Love, 2004). However, in this paper we adopt an alternative analytical method. We analyze our data using Hierarchical Linear Modeling (HLM) (Raudenbush & Bryck, 2002). The advantage of this analytical strategy is due to the hierarchical nature of the sample, in which firms are nested within countries. Nesting is a form of dependence which occurs in data where there are multiple levels and where lower level units are members of a higher level group (Holcomb et al., 2010). Hierarchical nesting means that firms within a country will be more similar, on average, than firms from different countries for instance because they share the same legal governance environment. We formally test whether firms are nested within countries in the next section (HLM null model).

One of the standard assumptions of most statistical techniques is the assumption of observation independence. If this assumption is violated, and in hierarchical structured data this is almost always the case, OLS regression techniques obtain standard errors that are too small for the parameters estimates, seriously affecting statistical significance testing and result interpretation (Hox, 2002;). The primary advantage of HLM is that it explicitly recognizes and corrects for the problem of hierarchical data (Holcomb et al, 2010). Indeed, the use of hierarchical modeling is likely to increase in the fields of finance (e.g. Engelen & Van Essen, 2010; Kayo & Kimura, 2011) and management literature (e.g. Grosvold & Brammer, 2011; Misangyi et al., 2006) as the preferred method for the analysis of nested data.

Our dataset contains a hierarchical structure with two levels (country and firm), each of which is represented by its own regression equation. The level 1 model predictors are firm-specific variables, while the level 2 model predictors are the country-specific variables. The

slopes and intercept at the level 1 model are allowed to differ across countries, an advantage that cannot be obtained through utilizing ordinary linear regression.

Analytically level 1 model can be expressed as:

$$Y_{ij} = \beta_{0j} + \beta_{1j}X_{1ij} + e_{ij} \hspace{4cm} [1]$$

and the level 2 model as:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}Z_{1j} \hspace{4cm} [2]$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}Z_{1j} \hspace{4cm} [3]$$

where Y_{ij} is cumulative stock return, X s are firm-specific variables and Zs are country-specific variables.

With HLM we can run a one-way analysis of variance (ANOVA) to measure how much of the variance of the stock market performance can be explained by country-specific characteristics versus firm-specific characteristics (HLM null model). We executed the different analyses using the HLM 6 software package (Raudenbush et al., 2004). Our HLM models employ the robust standard errors generated by the HLM software package, as these relax the assumptions of the variance-covariance matrix (Hox, 2002).

RESULTS

Firstly, we begin our analysis with a simple random ANOVA model (HLM null model) to calculate the corrected overall average stock market return. Secondly, following Yeh et al. (2011) and Grove et al. (2011) we employ the same dates in their pre- and crisis period analysis. In order to establish a baseline condition for good corporate governance in the steady-state we ran the HLM full model on the sample in the period prior to the onset of the Transatlantic financial crisis (i.e. July 2005- December 2006). Thirdly, to test whether good governance

helped during a financial crisis we ran the full HLM model following the onset of the transatlantic financial crisis (i.e. July 2007-December 2008). Fourthly, as a robustness check we also perform the same procedure with OLS regression. Fifthly, because some scholars attribute the financial crisis to the behavior of firms in the financial sector, we tested for differences between financial and nonfinancial companies.

HLM Null Model

Table 5 shows the results of the one-way ANOVA with random effects.[iii] The results support our decision to use HLM, as we found significant variation among countries (*variance component = .02, df = 25, p value = 0.000*). About 25% of the variance in firm performance is between countries. We found similar results when we extended this period until March 2009 as robustness check.[iv]

Insert Tables 5-7 here

HLM Full Model Main Effects

Corporate Governance in Steady-State Conditions. To establish the baseline condition Models 1 to 7 in Table 6 report the results of firm-level and country-level corporate governance characteristics in steady-state conditions. Model 1 incorporates ownership structure, board structure (except board independence and committee independence variables), incentive compensation and control variables. Model 2 introduces the board independence measure, and model 3 introduces the committee independence variables. Models 4, 5, 6, and 7 introduce different combinations of country specific indicators to a reduced set of firm level predictors. In these full models we do not include committee independence variables as this reduces our dataset

from 1179 to 437 observations. The HLM results for steady-state conditions show that virtually none of the governance measures have any significant impact on firm performance. Of the board characteristics, only auditing independence and compensation committee independence are significant but the signs point in different directions. We note that firm leverage contribute sometimes significantly positive to firm profitability in the steady-state. Of the country specific predictors Table 6 shows that rule of law (model 6) and market financial systems (models 4, 5 and 6) are significant, indicating that being located in a market oriented financial system helps firms outperform firms located in bank based financial systems. Taken together, these findings do not provide a ringing endorsement of good governance principles, but suggest that good governance does little harm to the performance of Europe's public corporations in steady-state circumstances.

Corporate Governance in Crisis Conditions. We repeat the procedure for the crisis period and the differences in results are striking. Table 7 presents the results. With regard to ownership structure we find a clear negative impact of ownership wedge on firm performance in all models (1 to 7). These results suggest that firms that employ pyramid or dual class shares lose on average 4 percent of their market value in a financial crisis. The result clearly supports Hypothesis 1a and lends support to the view that the good governance prescription of equating voting and cash flow rights can be helpful in a crisis. In contrast, the results provide no support for the view that relational owners with longer investment horizons are more likely to prop up their firms during a crisis. The effect of corporate or family largest shareholders is insignificant in all models and thus we reject hypothesis 1b. Surprisingly, and contrary to our expectations, institutional and government blockholders tend to have a positive impact on firm performance

and we therefore reject hypothesis 1c. Institutional ownership has a significantly positive impact on performance in models 1 to 3, suggesting that institutional owners' interest in maximizing returns from their equity stake will be undiminished in the context of the crisis, although the variable becomes insignificant when we add level 2 predictors. Perhaps most surprising is the finding that government ownership is significantly positive in all models. While much prior research suggests that state owned firms underperform their private counterparts (Boardman & Vining, 1989; Dewenter & Malatesta, 2001) these results suggest government owners may respond to financial crises by helping out underperforming firms. Moreover, anticipation of government support may encourage creditors and suppliers to maintain their commitments to a firm and so improve its chances of returning to profitability.

The results provide relatively strong support for hypotheses 2, namely that vigilant boards will have a negative impact in the context of the crisis. The CEO duality measure is significant and positive in all models suggesting that greater managerial discretion is more important than board vigilance in a crisis. Similarly, the number of board committees measure is negative and significant in model 1 and 2, suggesting that a complex board structure can inhibit managerial discretion, which can delay managerial responses to the unfolding events. Contrary to good governance prescriptions board size is significant and positive in several models in Table 7. Generally, the measures pertaining to board and committee independence are insignificant, suggesting that these good governance prescriptions are not helpful in crisis conditions. We suggest the balance of these indicators support hypothesis 2, namely that overly vigilant boards are not helpful in a crisis and firms which provide greater scope for managerial discretion is helpful.

The estimates reported in Table 7 provide strong support for hypothesis 3. Both incentive compensation variables are negative and significant in models 1 to 3. Firms using high-powered incentives to motivate senior executives, such as stock options and variable pay, will suffer during the financial crisis because executives may seek to optimize the pay in ways that are not optimal for firm investors (Fahlenbrach & Stulz, 2010; Judge, et al., 2011).

When we incorporate the country-level institutional variables as level 2 predictors to our base models (Model 4 to 7) we find that the general quality of the legal system, operationalized by the rule of law variable, is positively related to firm performance during the financial crisis, and lends support to hypothesis 4a. Indeed, our assessment of the economic effect of rule of law on firm performance suggests that one standard deviation increase in rule of law is associated with an increase in stock market return of some 4 percent. Interestingly, high-quality law is beneficial in both steady-state and crisis conditions. However, the results for other country level indicators are more nuanced. Measures of the corruption index show no impact on firm performance in either crisis or steady-state conditions. Contrary to our expectations, if expropriation becomes more severe during a crisis (Mitton, 2002) then we should expect to see a positive impact of shareholder protection provisions on firm performance. However, neither the *World Bank's Doing Business Shareholder Protection* Index in Models 4 and 5 nor Spamann (2010) *Anti-Director Rights Index* in Models 6 and 7 show any beneficial impact upon firm financial performance during the crisis. In marked contrast the level of *Creditor right protection,* which had no significant impact in steady-state conditions, has a significant positive impact on firm performance in all four models, lending support for hypothesis 4a. This result is consistent with Djankov et al. (2007, 2008a) who shows that strong creditor protection is associated with greater availability of credit. Our results show, perhaps unsurprisingly, that confidence boosting

creditor rights-protection is especially valuable during a credit crisis. The economics of creditor rights protection is of the same order as the rule of law, and a one standard deviation increase in creditor rights is associated with an increase in stock market returns of 4 percent.

Finally, our results show that the performance advantage for firms located in market-based systems in steady-state conditions will disappear in a crisis. While Table 6 shows that the market financial system is significantly positive in the steady-state, Models 4 to 7 in Table 7 show that the distinction between *bank-based and market-based financial system* has no significant impact on firm performance during the financial crisis. Thus while market-based systems are comparatively performance-friendly in steady-state conditions they may lose their comparative advantage in a crisis where both credit and equity financing are scarce.

ROBUSTNESS TESTS AND EXTENSIONS

In this section we test for the robustness of our crisis period findings by running OLS regressions as an alternative to HLM regressions and by splitting our sample in financial and non-financial firms.

OLS Regression Results

Although we make a strong case for the use of HLM, we test the robustness of our crisis period findings by running OLS regressions, which have hitherto been more common in the literature. The OLS results largely confirm our HLM results.[v] Both OLS and HLM indicate a positive impact of government ownership, board size, board frequency, an independent nomination committee, CEO duality, and of firm size. Both models also show a negative impact of ownership wedge, the number of functional committees, the use of stock option plans, variable pay, firm leverage, and firm diversification.

There are a few minor differences between the models. OLS does not find a positive impact of institutional ownership. When we introduce the country-level institutional variables into the model, we see that both OLS and HLM indicate the positive impact of the *Rule of Law* and of the *Creditor Right Protection* index. In contrast to the HLM model, the OLS shows a negative impact of the *World Bank's Doing Business Shareholder Protection* index on firm performance during crisis times, as well as a negative impact of *market-based financial systems* . Overall, the OLS regressions affirm the robustness of our HLM results.

Financial versus Non-Financial Firms

Because research on the US financial crisis implicates poor governance practices in the financial sector as a causal factor (Gregoriu, 2009) we can distinguish between financial and non-financial companies to test whether their respective performance during the crisis is driven by different governance factors. We can observe some important differences between both types of firms. The performance of non-financial firms is negatively influenced by the variable ownership wedge and positively by board size and CEO duality (except in one model), while those effects are not present in our financial firms subsample. Grove et al. (2011) found that there was no impact of CEO duality on the performance of financial firms in the crisis period and that there was a negative relationship in the pre-crisis period. We also find that financial firms with a greater fraction non-executive directors experience better firm performance during a crisis, while it tends to have no effect on non-financial firms. Williams & Nguyen (2005) and Yeh, Chung & Liu (2011) also stress the importance of independent directors for financial institutions during crisis times. Both financial and non-financial firms are adversely influenced by more equity-linked compensation. Financial firms are negatively influenced by stock option

plans (Chen, Steiner & Whyte, 2006), while non-financial firms are negatively influenced by variable pay.

When we compare the country-level institutional variables, we can observe that the firm performance of non-financial firms is positively influenced by the *Rule of Law*, while we cannot observe this effect for financial firms. Both types of firms seem to benefit from better creditor rights during the crisis. The firm performance of financial firms is negatively influenced by shareholder protection rights; a result that is similar to the findings of Beltratti and Stulz (2009). The overall conclusion from comparing both subsamples is that our main results are mostly valid for non-financial firms and cannot be completely generalized to financial firms (Grove et al., 2011).

LIMITATIONS OF OUR STUDY

There are some potential concerns with the HLM approach used to test our hypotheses. The first concern relates to the number of countries and firms per country available in our sample because the statistical power required to test relationships through HLM is affected by the number of groups and the number of members per group (Holcomb et al., 2010; Scherbaum & Ferreter, 2009). There is, however, conflicting literature on HLM regarding power requirements. For instance, Kreft & De Leeuw (1998) recommend 20 or more groups with a minimum group size of 5, while Maas & Hox (2005) call for sample sizes larger than 30. LaHuis and Ferguson (2009) find that increasing the number of members has a stronger effect on the power than increasing the number of groups. Scherbaum & Ferreter (2009) perform simulations to test the impact of the number of groups and group size on the power of testing. For medium effect sizes they find that 35 groups with 9 members per group or 30 groups with 14 members leads to the conventional power level of 80%. A sample with 25 groups and 11 members renders a statistical power of

70%, while increasing the number of member above 30 allows to reach again 80%. This would require a total sample size of 750 observations. Our sample comprised 26 groups with on average 46 members per group, or a total sample size of 1197, will therefore generate sufficient statistical power. The number of countries in our data set is also higher than in similar studies[vi], and it has more firms than for example Holcomb et al. (2010) who use 35 groups with average of 9 members (total sample size of 308) in their entrepreneurial finance study.

Secondly, like most other comparative corporate governance studies, our results may be subject to potential endogeneity. Although HLM corrects for observation dependence, it does not correct for endogeneity. Chhaochharia and Laeven (2009) point out that the corporate governance literature does not offer any suitable instruments to perform such an analysis. Similarly, Larcker, Richardson and Tuma note that in corporate governance research 'instrumental variables are weak predictors of the endogenous variables and the instrumental variables are themselves partially endogenous" (2007, p.1003). They conclude that it is difficult to use instrumental variables to address endogeneity issues in corporate governance settings. We sought to control for the endogenous nature of firm-level corporate governance variables as much as possible by lagging all our firm- and country-level independent variables (Durnev & Kim, 2005; Peng & Jiang, 2010). Such concerns have been further reduced as the global financial crisis was unanticipated by market participants, offering a natural experiment (Yeh, et al., 2011). Furthermore, a common way to control for endogeneity is to use 2SLS rather than use OLS results. As a further check we use the standard Durbin-Wu-Hausman test of endogeneity. As Baum (2006) suggests, the test is perhaps best interpreted not as a test for the endogeneity or the exogeneity of regressors per se, but rather as a test of the consequences of using different estimation methods on the same equation (Baum, 2006, p.212). A strong rejection of the null

favors using the 2SLS instead of OLS models estimates (Baum, 2006). In our case, the endogeneity test does not favor the use of 2SLS model instead of OLS (DWH-test statistics is significant at 0.38 level). So while we cannot completely eliminate concerns about endogeneity we recognize that it might limit our conclusions. In the worst case, we can only interpret our results as partial correlations (Bruno & Claessens, 2010).

Thirdly, although we sought to construct variables in a comparable manner across all countries in our data set (or use the same data source), it remains possible that differences in the definition or measurement of variables might vary between the countries in our sample. For instance, differences in disclosure about which compensation is included in the variable part (bonus, shares, and pension rights) might distort the calculation of the fraction variable versus fixed pay. This is a caveat to take into account when interpreting our results.

DISCUSSION

Using a large sample of 1197 firms from 26 European countries, we tested whether good governance influence firm performance in steady-state conditions versus times of distress. Through the application of hierarchical linear modeling, our study offers the first test of the combined effects of firm- and country-level governance. We are able to simultaneously model firm-level influences of ownership effects, board vigilance, incentive compensation, and the quality of country-level corporate governance institutions. Through this procedure we were able to show that country level institutions explain some 25 percent of the heterogeneity in firm performance. Most importantly we were able to show that the influences of several firm- and country-specific good governance prescriptions have different effects in steady-state and crisis conditions. Taken together, the findings contribute to the growing body of literature that suggest the efficacy and universality of good governance prescriptions may be subject to contextual and

firm specific contingencies (Aguilera et al., 2008; Desender et al., 2012; Dowell, Shackell & Stuart, 2011; Judge, 2012). The research implication is that scholars should investigate the extent to which governance prescriptions are universally valuable or whether their prescriptive value is contingent upon the existence and interaction with other factors.

Our findings on ownership structure are consistent with law and finance literature's best practice prescription of 'one-share one-vote' (Nenova, 2003). We found that an ownership wedge, and the inequality of cash-flow and voting rights, can be harmful in a crisis. This suggests that firms should eschew the use of excess-control devices, such as pyramids and dual class shares to increase their robustness to financial shocks. However, we found no support for our hypotheses that relational owners, such as families and corporations, may be able to increase the resilience of their firms by 'propping' them up in adverse conditions (Vilallonga & Amit, 2010). One possible explanation for this negative finding is that powerful relational owners may be prone to 'over-monitoring' and excessive interference in management decision-making (Burkurt, Gromb & Panunzi, 1997). The consequences of owner interference may lead to confusion about who is in charge and crowd-out management ability to respond quickly to market turbulence (Finkelstein & D'Aveni, 1984). This 'over-monitoring' interpretation is consistent with our hypotheses that vigilant boards may unduly constrain the discretion of the CEO, since we find that CEO duality is helpful in a crisis whereas small board size and large numbers of board sub-committees harms performance and the much lauded board independence indicators have no significant effect.

In this regard, financial crises often beget more complex and stringent rules (Romano, 2004) but continued strengthening of governance mechanisms may represent too much of a good thing (Bruno & Claessens, 2010). While governance reforms intended to improve managerial

oversight may be well intentioned, excessive monitoring can have dysfunctional consequences if they inhibit the executive's ability to manage (Finklestein & Hambrick, 1984). Indeed, excessive interference compromises the division of labour between owners and management, which is the reason owners appoint professional executives in the first place (Williamson, 2007). We recommend that future research should consider the trade-off between managerial oversight and discretion and investigate the differences between strong and optimal corporate governance mechanisms. Moreover, more research is needed to understand optimal governance since there are evident trade-offs between desirable governance components. For example, communication in large boards can be cumbersome, yet small boards may be overwhelmed and unable to help to manage the committee requirements of the public firm (Dowell, Shackell & Stuart, 2011).

Perhaps the strongest support for our argument that good governance practices can be counterproductive in crisis is in our finding regarding the pernicious effects of incentive compensation. We find that the neutral effects of stock options and variable payment schemes in the steady-state become harmful in a crisis, a view that is consistent with Conyon, Judge & Useem (2011) who consider whether economically rational pay practices may have exacerbated the effects of financial crises because "executives sought to optimize their pay in ways that were not optimal for the firm nor its investors" (p. 403). On this point we observe that the control variable for leverage has the largest and most significant negative effect on firm performance throughout the crisis. Insofar as stock options incentivize executives to leverage up the firm's capital structure (Mehran, 1992) then leverage, which has a strongly beneficial effect on firm performance in steady-state conditions, in combination with high-powered incentives, may prove to be a particularly combustible recipe in adverse financial circumstances.

Our country-level finding that the *Rule of Law* index is beneficial in both the steady-state and in financial adversity is consistent with research that suggests the primary institutional advantage of advanced economies, such as those comprising the majority of countries in our sample, resides in the overall quality of a jurisdiction's legal framework (Haggard & Tiede, 2011). The finding that superior *Creditor Right Protection* was beneficial for firms in this financial crisis is not surprising given the credit squeeze presenting a major challenge to European firms. On the other hand, the finding that superior measures of investor protection, as indicated by '*Investors Protection*' and *'Anti-director rights index'*, do not have a positive impact on firm performance during the financial crisis may be surprising to scholars in the law and finance tradition. However, protection for minority investors has improved significantly in many European jurisdictions over the last decade. And the relative ineffectiveness of such provisions in the recent crisis suggests that continuing increases in protection may be subject to diminishing returns. For example, Bruno and Claessens (2010) suggest that the effects of stringent country legal corporate governance requirement are neutral or negative.

Moreover, our finding that firms located in market based systems enjoy a comparative advantage in steady-state conditions but lose that advantage in crisis is consistent with Beltratti and Stulz's (2009) findings that some shareholder-friendly corporate governance mechanisms are counterproductive in a crisis. While we did not find that firms located in bank-based systems enjoyed better profitability in the crisis, it is possible the banks-based systems favor alternative corporate governance outcomes. For instance, in a financial crisis, banks may be more concerned stabilizing firms' capital structure rather than improving their profitability. However, we expect that the interplay between firm and country level to be complex and our current understanding of their interaction is not well understood. Some scholars suggest that country and firm level

government mechanisms may be substitutes for one another (Durnev & Kim, 2004; Klapper & Love, 2004), but these findings may be unique to emerging markets. A 'comparative capitalisms' perspective on more advanced economies suggests that firms develop strong complementarities with a country level financial system (Aggrawal et al., 2010; Hall & Soskice, 2001). Alternatively, they may have no impact on each another (Chhaochharia & Laeven, 2009). More research is warranted.

CONCLUSION

So do good governance principles as prescribed by agency theory matter in a crisis? Our study provides a nuanced answer to the question. Some prescriptions, such as the equality of cash flow and voting rights, the rule of law and creditor protection, are especially beneficial for firms in a crisis. However, other good governance prescriptions such as board independence, incentive compensation, and the separation of CEO & board chair, have on the whole proved harmful to firm performance in crisis times. Our interpretation suggests that governance prescriptions aimed at constraining executive discretion need to be optimized rather than maximized if executives are to be empowered to cope with difficult environments. Moreover, the growing interdependence of financial systems facilitates contagion and may increase the incidence of financial shocks. If so the ability to manage turbulence will be at a premium. The implication is that corporate governance prescriptions could be better optimized for periods of munificence where the primary emphasis is upon maximizing shareholder wealth and for periods of the adversity where the emphasis may need to shift toward restoring stability and reestablishing corporate resilience.

Table 1. Description and Summary of the Firm-Specific Variables (*Level 1*)

Variable	Description	Source	Year	Obs.	Mean	SD
Cumulative stock return (RAW1)	Total stock return between 1 July 2007 and 31 December 2008.	DataStream and Thomson		1197	-0.56	0.23
Cumulative stock return (RAW2)	Total stock return between the 1 July 2007 and 31 March 2009 (alternative measure).	DataStream and Thomson		1197	-0.59	0.24
Cumulative stock return (RAWN1)	Total stock return between 1 July 2005 and 31 December 2006.	DataStream and Thomson		1197	0.53	0.65
Cumulative stock return (RAWN2)	Total stock return between the 1 July 2005 and 31 March 2007 (alternative measure).	DataStream and Thomson		1197	0.63	0.75
Cumulative abnormal return (CRISIS1)	Total abnormal return (adjusted industry) between 1 July 2007 and 31 December 2008.	DataStream and Thomson		1197	0.01	0.23
Cumulative abnormal return (CRISIS2)	Total abnormal return (adjusted industry) between the 1 July 2007 and 31 March 2009 (alternative measure).	DataStream and Thomson		1197	0.01	0.23
Cumulative abnormal return (NORMAL1)	Total abnormal return (adjusted industry) between 1 July 2005 and 31 December 2006.	DataStream and Thomson		1197	0.00	0.63
Cumulative abnormal return (NORMAL2)	Total abnormal return (adjusted industry) between the 1 July 2005 and 31 March 2007 (alternative measure).	DataStream and Thomson		1197	-0.00	0.73
Corporate largest blockholder (CLB)	The largest shareholder is a corporate owner with more than 10% of the (ownership rights of the) shares.	Annual reports and company website	2004	1177	0.25	0.40
			2006	1177	0.25	0.41
Family largest blockholder (FLB)	The largest shareholder is a family owner with more than 10% of the (ownership rights of the) shares.	Annual reports and company website	2004	1177	0.23	0.38
			2006	1177	0.24	0.41
Government largest blockholder (GLB)	The largest shareholder is the government with more than 10% of the (ownership rights of the) shares.	Annual reports and company website	2004	1177	0.08	0.25
			2006	1177	0.06	0.23
Institution largest blockholder (ILB)	The largest shareholder is an institutional owner with more than 10% of the (ownership rights of the) shares.	Annual reports and company website	2004	1177	0.25	0.39
			2006	1177	0.27	0.42
Widely held firm (WHF)	There is no shareholder with more than 10% of the (voting rights of the) shares	Annual reports and company website	2004	1177	0.20	0.40
			2006	1177	0.21	0.39
Ownership wedge (WEDGE)	A dummy variable that is 1 for firms where there is difference between control rights and cash-flow rights of the largest shareholder.	Annual reports and company website	2004	1177	0.32	0.43
			2006	1177	0.32	0.45
Board size (BS)	Total numbers of directors who serve on the board.	Annual reports and company website	2004	1177	11.40	5.03
			2006	1177	11.04	4.83
Non-executive directors (NED)	A variable measuring the percentage of non-executive directors to the total number of directors.	Annual reports and company website	2004	1177	0.74	0.17
			2006	1177	0.74	0.17

Table 1. Description and Summary of the Firm-Specific Variables (*Level 1:* Continued)

Variable	Description	Source	Year	Obs.	Mean	SD
Board independence (BI)	A variable measuring the percentage of independent directors to the total number of directors.	Annual reports, company website, and BoardEx	2004	1177	0.36	0.26
			2006	1177	0.36	0.27
Board frequency (FREQ)	Number of annual board meetings	Annual report	2004	1130	9.03	6.10
			2006	1136	9.59	7.48
Number of board committees (NUMCOM)	The number of committees a board appoints (auditing, compensation, nomination, risk, and strategy committee).	Annual reports and BoardEx	2004	1177	1.83	1.18
			2006	1177	1.96	1.17
Auditing independence (AUDITIND)	Percentage independent board members on audit committee.	Annual reports and BoardEx	2004	1033	0.59	0.39
			2006	1072	0.62	0.44
Compensation independence (COMIND)	Percentage independent board members on compensation committee.	Annual reports and BoardEx	2004	858	0.59	0.36
			2006	881	0.62	0.36
Nomination independence (NOMIND)	Percentage independent board members on nomination committee.	Annual reports and BoardEx	2004	728	0.47	0.38
			2006	729	0.48	0.38
Risk independence (RISKIND)	Percentage independent board members on risk committee.	Annual reports and BoardEx	2004	479	0.19	0.33
			2006	490	0.13	0.28
Strategy independence (STAIND)	Percentage independent board members on strategy committee	Annual reports and BoardEx	2004	535	0.13	0.25
			2006	547	0.10	0.23
CEO duality (CD)	Situation where the positions of board chairman and CEO are held by one individual.	Annual reports, company website, and BoardEx	2004	1176	0.12	0.31
			2006	1177	0.12	0.32
Variable pay (VARIAB)	A variable measuring the fraction of CEO variable cash bonus to total CEO cash compensation.	Annual reports and Amadeus	2004	1033	0.31	0.18
			2006	1048	0.33	0.21
Stock option (SOD)	A dummy variable that is 1 for firms that adoption stock option plans, and 0 for firm not using stock options.	Annual reports and Amadeus	2004	1048	0.58	0.38
			2006	1056	0.63	0.42

Table 1. Description and Summary of the Firm-Specific Variables (*Level 1:* Continued)

Variable	Description	Source	Year	Obs.	Mean	SD
CEO age (AGE)	CEO age is the difference between the book year and the year of birth of the CEO	Annual reports and BoardEx	2004	1173	51.81	6.99
			2006	1173	51.98	7.37
CEO tenure (TENURE)	CEO tenure is operationalized as the number of years the executive has been CEO	Annual reports and BoardEx	2004	1173	5.71	5.87
			2006	1173	5.97	5.70
CEO elite education (ELITE)	A dummy variable equal to 1 if the CEO has obtained his/her degree in a globally renowned academic institution	Annual reports and BoardEx	2004	1169	0.12	0.27
			2006	1169	0.13	0.29
CEO outside board functions (CEOOUT)	The number of outside board functions the CEO holds within other corporations.	Annual reports, company website, and BoardEx	2004	1090	0.47	1.15
			2006	1091	1.42	2.02
Board financial experience (FINEX)	Is the average number of years of professional experience in the financial sector of the board members with financial experience.	Annual reports and/or board members CVs	2004	1090	13.55	8.61
			2006	1100	14.71	9.10
Board financial education (FINED)	The number of board members with a degree in Finance or trained as accountants/auditors/financial consultants	Annual reports and/or board members CVs	2004	1089	0.89	0.88
			2006	1088	1.09	1.19
Cross-listed (CL)	A dummy variable that is 1 for firms that have a listed American depository receipt (ADR).	Worldscope	2004	1177	0.14	0.34
			2006	1177	0.13	0.34
Firm size (FS)	An indicator of the size of the firm, measured as a firm's logarithm of total assets	Worldscope	2004	1177	14.15	2.29
			2006	1177	14.35	2.27
Firm age (FA)	A variable measuring the logarithm of number of years since the company was established.	Worldscope	2004	1177	60.78	58.85
			2006	1177	61.10	59.01
Firm leverage (FL)	A variable reflecting the degree of leverage of the firm, measured as total debt divided by total assets.	Worldscope	2004	1177	0.26	0.26
			2006	1177	0.25	0.17
Market to book value	Market value of a firms equity divided by book value of equity	Worldscope	2004	1177	3.06	1.55
			2006	1177	3.60	1.50
Firm diversification (FD)	Herfindahl-Hirschman index of the difference business segment sales.	Worldscope	2004	1177	0.60	0.26
			2006	1177	0.58	0.24

Table 2. Description and Summary of the Country-Specific Variables (*Level 2*)

Variable	Description	Source	Year	Obs.	Mean	SD
Rule of law	A variable which measures the extent to which agents have confidence in and abide by the rules of society in year 2004 and 2006. These include perceptions of the incidence of violent and non-violent crime, the effectiveness and predictability of the judiciary, and the enforceability of contracts. A higher value means a better rule of law.	Kaufmann et al., 2009	2004 2006	26 26	1.29 1.24	0.56 0.62
Corruption index	The corruption index measures ''the exercise of public power for private gain'' in year 2004 and 2006. It captures aspects ranging from the frequency of additional payments to get things done to the effects of corruption on the business environment. A higher score means less corruption.	Kaufmann et al., 2009	2004 2006	26 26	1.33 1.30	0.74 0.78
Shareholder protection	The strength of minority shareholder protections against misuse of corporate assets by insiders and large owners in year 2004 and 2006. A higher value means more protection of minority shareholders.	Doing Business, 2010	2004 2006	26 26	5.38 5.38	1.29 1.29
Anti-director rights index	Measuring the protection of shareholders on 6 components. Three are concerned with shareholder voting (voting by mail, voting without blocking of shares, and calling an extraordinary meeting), and three with minority protection (proportional board representation, preemptive rights, and judicial remedies). A higher value means more protection of minority shareholders.	Spamann, 2010	2002	26	3.68	0.99
Creditor right protection	Creditor right protection, an index aggregating different creditor rights. A higher value means better creditor protection.	Djankov et al., 2007	2002	26	1.88	0.97
Market financial system	A dummy variable that equals 1 if the country's financial system is market-based and 0 if it is bank-based.	Demirguc-Kunt and Levine, 2001		26	0.24	0.44

Table 3. Pearson Correlations between Main Variables in Our Model for Crisis Times

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. NORMAL1/ CRISIS1	1.00	0.92**	-0.01	0.02	0.07*	-0.02	-0.02	0.00	0.14**	0.01	-0.04	-0.07*	-0.02	-0.07*	0.03	0.08*	-0.03	0.08	0.06†	-0.06†	-0.10**
2. NORMAL2/ CRISIS2		1.00	-0.02	0.02	0.04	0.00	-0.03	0.01	0.07*	0.02	-0.01	-0.04	0.00	-0.05	0.02	0.05	-0.07	0.05	0.03	-0.02	0.08*
3. CLB			1.00	-0.31**	-0.15**	-0.34**	-0.27**	-0.08**	-0.02	0.09**	-0.17**	0.12**	-0.06†	-0.19**	-0.25**	-0.17**	-0.07	0.08	0.00	-0.06*	-0.06
4. FLB				1.00	-0.14**	-0.34**	-0.29**	0.34**	-0.10**	-0.14**	-0.14**	-0.08**	-0.22**	-0.10**	-0.09*	-0.04	-0.07	-0.02	0.11**	-0.13**	0.00
5. GLB					1.00	-0.16**	-0.13**	-0.11**	0.12**	0.11**	0.07*	0.05†	0.00	0.04	0.06†	0.03	0.04	0.11*	0.00	-0.03	-0.06*
6. ILB						1.00	-0.20**	-0.07*	-0.02	-0.01	0.08*	0.01	0.09**	0.08*	0.11**	0.01	0.01	0.00	-0.06†	0.10**	-0.04
7. WHF							1.00	-0.14**	0.06*	0.00	0.20**	-0.09**	0.22**	0.20**	0.18**	0.18**	0.09	-0.10*	-0.05†	0.12**	0.08*
8. WEDGE								1.00	-0.05	0.01	0.02	-0.05†	-0.08**	-0.06†	-0.09*	-0.13**	-0.07	0.02	0.06†	0.00	-0.10**
9. BS									1.00	0.04	-0.18**	-0.12**	0.14**	-0.15**	0.04	0.12**	0.18**	0.20**	0.00	0.00	0.21**
10. NED										1.00	0.18**	0.20**	0.07*	-0.10**	-0.13**	-0.22**	-0.08	-0.07	-0.04	0.05	-0.05
11. BI											1.00	-0.06*	0.37**	0.61**	0.60**	0.45**	0.18**	0.06	-0.06†	0.07*	-0.07*
12. FREQ												1.00	-0.02	-0.09**	-0.28**	-0.23**	-0.10†	-0.16**	-0.04	-0.05	-0.15**
13. NUMCOM													1.00	0.38**	0.42**	0.51**	0.30**	0.12*	-0.01	0.10**	0.08*
14. AUDITIND														1.00	0.67**	0.52**	0.13*	0.04	0.02	0.08*	-0.06†
15. COMIND															1.00	0.73**	0.20**	0.15**	-0.04	0.08*	0.08†
16. NOMIND																1.00	0.35**	0.23**	0.07†	0.01	0.11**
17. RISKIND																	1.00	0.53**	0.11*	-0.16*	0.09*
18. STAIND																		1.00	0.05	-0.13*	0.01
19. CD																			1.00	-0.08*	-0.03
20. SOD																				1.00	0.14**
21. VARIAB																					1.00

This table reports Pearson correlation coefficients between main variables for crisis times. Please see table 1 for detailed definitions of the variables.
The subscripts †, *, ** denote the coefficient is significant at the p<.10, p<.05, p<.01 level, respectively (two-tailed test).

Table 4. Cross-Country Summary Statistics of Firm specific Corporate Governance Variables for the year 2006

Country (obs)	CRISIS1	CRISIS2	CLB	FLB	GLB	ILB	WHF	WEDGE	BS	NED	BI	FREQ	NUMCOM
Austria (20)	-0.01	0.01	0.24	0.22	0.15	0.37	0.02	0.48	13.47	0.71	0.49	5.38	1.79
Belgium (20)	0.04	0.05	0.40	0.32	0.03	0.15	0.11	0.32	10.11	0.80	0.41	7.63	2.59
Cyprus (10)	-0.27	-0.27	0.00	0.33	0.00	0.33	0.33	0.50	8.63	0.69	0.39	21.00	3.00
Czech Republic (10)	0.33	0.25	0.33	0.00	0.33	0.33	0.00	0.33	13.00	0.66	0.16		2.42
Denmark (20)	-0.02	-0.06	0.32	0.16	0.11	0.26	0.18	0.45	10.37	0.21	0.23	8.15	0.56
Estonia (11)	-0.03	-0.05	1.00	0.00	0.00	0.00	0.00	0.10	7.00	0.43	0.00	12.66	0.00
Finland (25)	-0.01	0.00	0.25	0.17	0.23	0.15	0.21	0.34	9.94	0.77	0.59	11.82	1.78
France (120)	0.01	0.00	0.30	0.40	0.02	0.16	0.20	0.55	11.49	0.78	0.32	6.64	2.33
Germany (200)	0.09	0.04	0.22	0.36	0.04	0.17	0.21	0.19	14.35	0.68	0.06	5.03	1.00
Greece (20)	-0.07	-0.07	0.18	0.44	0.18	0.15	0.06	0.29	10.60	0.64	0.27	8.80	1.50
Hungary (10)	0.05	-0.02	0.50	0.00	0.50	0.00	0.00	0.00	14.00	0.56	0.27		1.67
Ireland (63)	-0.11	-0.11	0.09	0.16	0.07	0.44	0.29	0.15	9.73	0.65	0.52	7.92	2.73
Italy (69)	0.00	-0.02	0.21	0.45	0.09	0.17	0.08	0.45	12.25	0.77	0.44	10.50	1.60
Latvia (7)	-0.09	-0.06	0.25	0.25	0.00	0.25	0.25	0.20	11.00	0.60	0.13		0.00
Lithuania (16)	-0.24	-0.25	0.33	0.00	0.00	0.67	0.00	0.00	5.33	0.59	0.25		0.00
Luxembourg (11)	0.10	0.11	0.17	0.18	0.08	0.42	0.25	0.45	11.62	0.81	0.35	6.40	2.46
Netherlands (45)	-0.01	0.00	0.20	0.15	0.04	0.41	0.24	0.40	9.02	0.64	0.52	7.07	2.17
Norway (25)	-0.15	-0.10	0.31	0.08	0.18	0.35	0.15	0.31	8.85	0.91	0.37	12.80	1.65
Poland (30)	-0.03	-0.08	0.60	0.00	0.00	0.4	0.00	0.25	13.75	0.60	0.11		0.60
Portugal (20)	0.07	0.08	0.43	0.21	0.00	0.29	0.15	0.53	14.13	0.55	0.26	10.29	1.73
Slovenia (10)	-0.01	0.03	0.67	0.00	0.33	0.00	0.00	0.00	11.00	0.75	0.00		1.00
Spain (35)	0.10	0.04	0.45	0.15	0.00	0.23	0.23	0.15	13.36	0.81	0.40	12.00	2.91
Sweden (30)	-0.06	-0.02	0.15	0.19	0.04	0.47	0.20	0.65	9.97	0.91	0.47	10.77	2.27
Switzerland (20)	0.17	0.13	0.00	0.22	0.06	0.22	0.56	0.16	10.24	0.94	0.57	7.35	2.79
Turkey (100)	-0.01	0.02	0.55	0.20	0.04	0.18	0.04	0.26	8.30	0.86	0.11	22.72	1.00
United Kingdom (250)	0.02	0.05	0.09	0.07	0.00	0.32	0.53	0.09	10.21	0.65	0.54	8.47	2.96

This table presents cross-country mean values of firm specific corporate governance variables used in the study. The mean of 2006 values are reported in the cell for each country. *CRISIS1:* Total abnormal return between 1/07/2007 and 31/12/2008. *CRISIS2:* Total abnormal return between 1/07/2007 and 31/03/2009. *CLB:* Corporate largest blockholder. *FLB:* Family largest blockholder. *GLB:* Government largest blockholder. *ILB*: Institution largest blockholder. *WHF:* Widely held firm. *WEDGE:* Ownership wedge. *BS:* Board size. *NED:* Non-executive directors. *BI:* Board independence. *FREQ:* Board frequency. *NUMCOM:* Number of board committees. *AUDITIND:* Auditing independence. *COMIND:* Compensation independence. *NOMIND:* Nomination independence. *RISKIND:* Risk independence. *STAIND:* Strategy independence. *CD:* CEO duality. *SOD:* Stock option. *VARIAB:* Variable pay.

Table 4. Cross-Country Summary Statistics of Firm specific Corporate Governance Variables for the year 2006 (Continued)

Country (obs)	AUDITIND	COMIND	NOMIND	RISKIND	STAIND	CD	SOD	VARIAB
Austria (20)	0.71	0.78	0.65	0.58	0.71	0.06	0.39	0.24
Belgium (20)	0.59	0.58	0.53	0.00	0.04	0.06	0.64	0.31
Cyprus (10)	0.76	0.07	0.37	0.51	0.00	0.11	0.05	0.00
Czech Republic (10)	0.00	0.00	0.00	0.00	0.00	1	0.00	0.16
Denmark (20)	0.60	0.39	0.31	0.00	0.00	0.00	0.50	0.27
Estonia (11)						0.00		
Finland (25)	0.85	0.77	0.76	1.00	1.00	0	0.28	0.12
France (120)	0.53	0.50	0.53	0.28	0.26	0.55	0.52	0.31
Germany (200)	0.12	0.30	0.20	0.09	0.29	0.06	0.59	0.43
Greece (20)	0.66	0.57	0.56	0.00	0.00	0.04		
Hungary (10)	0.00	0.00	0.00	0.00	0.00	0.00		
Ireland (63)	0.87	0.83	0.81	0.28	0.00	0.11	0.88	0.36
Italy (69)	0.89	0.69	0.53	0.00	0.42	0.14	0.53	0.34
Latvia (7)						0.00		
Lithuania (16)	0.00	0.00	0.00	0.00	0.00	0.00		
Luxembourg (11)	0.76	0.86	0.67	0.00	0.00	0.21	1	0.47
Netherlands (45)	0.84	0.78	0.81	0.73	0.79	0.06	0.87	0.35
Norway (25)	0.54	0.64	0.80	0.00	0.00	0.00	0.96	0.25
Poland (30)	0.50	0.00	0.00	0.50	0.00	0.00	1.00	
Portugal (20)	0.66	0.31	0.60	0.69	0.00	0.38	0.67	0.37
Slovenia (10)	0.33	0.00	0.00	0.00	0.00	0.00		
Spain (35)	0.53	0.48	0.58	0.49	0.05	0.21	0.29	0.45
Sweden (30)	0.70	0.62	0.16	0.42	0.00	0.01	0.93	0.27
Switzerland (20)	0.74	0.75	0.58	0.71	0.08	0.19	1.00	0.25
Turkey (100)	0.20	0.00	0.00	0.16	0.00	0.06		
United Kingdom (250)	0.97	0.90	0.76	0.86	0.00	0.01	0.66	0.41

Table 5. HLM Analyses. Results Firm and Country Characteristics in Normal Times

Dependent Variable :	Total abnormal return (adjusted industry) between July 2005 – December 2006					
	Model (1)		Model (2)		Model (3)	
Fixed Effect	*Coefficient*	*t-stat*	*Coefficient*	*t-stat*	*Coefficient*	*t-stat*
Level 1 predictors						
Corporate largest blockholder	0.03	0.43	0.06	0.86	0.06	1.01
Family largest blockholder	0.01	0.14	0.02	0.29	0.02	0.29
Government largest blockholder	0.10	1.11	0.02	0.22	0.02	0.22
Institution largest blockholder	0.05	0.83	0.03	0.50	0.02	0.33
Ownership wedge	0.01	0.20	0.00	0.05	0.01	0.21
Board size	-0.01	-1.01	-0.00	-0.31	-0.01	-1.01
Non-executive directors	0.06	0.14			0.07	0.30
Board independence			-0.01	-0.11		
Board frequency	-0.01	-1.00	-0.00	-1.02	0.00	0.30
CEO duality	-0.01	-0.14	-0.01	-0.14	-0.01	-0.14
Number of board committees	-0.00	-0.20	0.01	0.50	0.00	0.05
Auditing independence					-0.30	-2.30*
Compensation independence					0.15	2.11*
Nomination independence					-0.06	-0.43
Risk independence					0.18	1.29
Strategy independence					-0.55	-1.61
Stock option	-0.02	-0.33	-0.02	-0.33	-0.03	-0.92
Variable pay	-0.08	-0.62	-0.08	-0.62	-0.08	-0.80
Board financial experience	-0.00	-1.00	-0.00	-0.94	0.01	1.00
Board financial education	0.02	0.67	0.02	0.67	0.01	0.25
CEO age	-0.00	-0.99	-0.01	-0.50	-0.00	-0.30
CEO tenure	-0.00	-0.80	-0.01	-0.40	-0.00	-0.13
CEO elite education	0.09	1.13	0.07	0.88	0.07	0.88
CEO outside board functions	-0.00	-0.20	-0.01	-0.50	-0.01	-0.52
Cross-listed	-0.06	-1.00	-0.06	-1.00	-0.06	-0.67
Firm size	-0.01	-1.00	-0.02	-1.94†	-0.03	-1.88†
Firm age	0.00	1.02	0.00	1.00	-0.00	-1.00
Firm leverage	0.09	1.29	0.09	1.29	0.17	1.71†
Firm diversification	0.02	1.43	0.02	1.23	0.02	1.00
Market to book value	0.00	2.21*	0.00	2.23*	0.00	0.40
R^2 *within countries*	0.07		0.05		0.14	
Level 2 predictors						
R^2 *between countries*	0.00		0.00		0.00	
N	931		931		430	

Please see tables 1-2 for detailed definitions of the variables. †, *, ** Denote the coefficient is significant at the 0.10, 0.05, 0.01 level, respectively (two-tailed test).

Table 5. HLM Analyses. Results Firm and Country Characteristics in Normal Times (Continued)

Dependent Variable :	Total abnormal return (adjusted industry) between July 2005 –December 2006							
	Model (4)		Model (5)		Model (6)		Model (7)	
Fixed Effect	*Coefficient*	*t-stat*	*Coefficient*	*t-stat*	*Coefficient*	*t-stat*	*Coefficient*	*t-stat*
Level 1 predictors								
Corporate largest blockholder	0.05	0.83	0.06	1.01	0.06	0.86	0.06	0.86
Family largest blockholder	0.02	0.29	0.02	0.29	0.02	0.29	0.02	0.29
Government largest blockholder	0.02	0.22	0.02	0.22	0.02	0.22	0.02	0.22
Institution largest blockholder	0.02	0.28	0.02	0.33	0.02	0.33	0.02	0.33
Ownership wedge	0.01	0.20	0.01	0.20	0.01	0.18	0.01	0.20
Board size	-0.00	-0.40	-0.00	-0.41	-0.00	-0.41	-0.00	-0.39
Non-executive directors	0.09	0.69	0.09	0.64	0.09	0.64	0.09	0.64
CEO duality	-0.01	-0.14	-0.01	-0.14	-0.01	-0.14	-0.01	-0.14
CEO age	-0.00	-1.01	-0.00	-1.00	-0.00	-0.99	-0.00	-0.83
CEO tenure	-0.00	-0.10	-0.00	-0.13	-0.00	-0.13	-0.01	-0.33
Cross-listed	-0.05	-0.83	-0.05	-0.83	-0.05	-0.83	-0.05	-0.82
Firm size	-0.03	-2.49*	-0.02	-2.03*	-0.03	-2.14*	-0.03	-2.90*
Firm age	0.00	1.00	0.00	0.91	0.00	0.87	0.00	0.81
Firm leverage	0.11	1.57	0.11	1.57	0.11	1.57	0.11	1.57
Firm diversification	0.02	1.43	0.02	1.43	0.02	1.38	0.02	1.43
Market to book value	0.00	2.01*	0.00	2.05*	0.00	2.11*	0.00	2.09*
R^2 *within countries*	0.05		0.05		0.05		0.05	
Level 2 predictors								
Rule of law	0.07	1.40			0.07	1.80†		
Corruption index			0.05	1.25			0.04	1.33
Shareholder protection	-0.03	-1.51	-0.03	-1.50				
Anti-director rights index					-0.02	-1.00	-0.03	-1.49
Creditor right protection	-0.02	-1.00	-0.02	-0.99	-0.03	-1.41	-0.03	-1.49
Market financial system	0.07	1.75†	0.07	1.83†	0.08	1.89†	0.08	1.51
R^2 *between countries*	0.18		0.15		0.19		0.13	
N	1149		1149		1149		1149	

Please see tables 1-2 for detailed definitions of the variables. †, *, ** Denote the coefficient is significant at the 0.10, 0.05, 0.01 level, respectively (two-tailed test).

Table 6. Results from the One-Way ANOVA Model
During Crisis

Fixed Effect	Coefficient	se		
Average Industry adjusted Crisis Return, γ_{00}	-0.00	0.02		
Random Effect	*Variance component*		*df*	*p value*
Level 2 effect, u_{0j}	0.02		25	0.00
Level 1 effect, e_{ij}	0.05			
Interclass correlation	0.25			

Legend: Dependent Variable: Crisis Return (July 2007/Dec2008).

Table .7 HLM Analyses. Results Firm and Country Characteristics in Crisis

Dependent Variable : December 2008	Total abnormal return (adjusted industry) between July 2007 –					
	Model (1)		Model (2)		Model (3)	
Fixed Effect	*Coefficient*	*t-stat*	*Coefficient*	*t-stat*	*Coefficient*	*t-stat*
Level 1 predictors						
Corporate largest blockholder	0.01	0.49	0.01	0.52	0.01	0.51
Family largest blockholder	0.02	0.67	0.02	0.65	0.02	0.62
Government largest blockholder	0.09	2.25*	0.09	2.31*	0.09	2.26*
Institution largest blockholder	0.04	1.89†	0.04	1.81†	0.04	1.89†
Ownership wedge	-0.04	-2.03*	-0.04	-2.09*	-0.05	-2.40*
Board size	0.01	2.71**	0.00	2.89**	0.00	0.80
Non-executive directors	0.05	1.00			0.03	0.43
Board independence			0.00	1.01		
Board frequency	0.00	1.82†	0.00	2.74**	-0.00	-0.89
CEO duality	0.03	1.80†	0.04	1.83†	0.02	1.74†
Number of board committees	-0.01	-2.02*	-0.02	-1.99*	-0.01	-0.49
Auditing independence					-0.04	-1.33
Compensation independence					0.05	0.83
Nomination independence					0.10	1.81†
Risk independence					-0.06	-0.87
Strategy independence					-0.13	-0.86
Stock option	-0.04	-2.06*	-0.04	-2.03*	-0.04	-1.93†
Variable pay	-0.07	-1.82†	-0.07	-1.79†	-0.03	-2.03*
Board financial experience	0.00	0.29	0.00	1.01	0.01	0.49
Board financial education	0.00	0.89	-0.00	-0.91	-0.00	-0.21
CEO age	0.00	0.87	0.00	0.31	0.00	0.29
CEO tenure	0.00	0.79	0.00	0.37	0.00	0.21
CEO elite education	-0.01	-0.33	-0.02	-0.67	-0.02	-0.62
CEO outside board functions	-0.00	-0.89	0.00	1.01	0.00	0.81
Cross-listed	0.03	1.49	0.04	1.80†	-0.03	-0.75
Firm size	0.01	1.00	0.01	1.79†	0.01	1.00
Firm age	-0.00	-0.89	-0.00	-0.91	-0.00	-2.10*
Firm leverage	-0.16	-3.21**	-0.14	-3.50**	-0.10	-1.11
Firm diversification	-0.01	-2.21*	-0.01	-2.01*	-0.01	-0.90
Market to book value	0.00	0.04	0.00	0.78	-0.00	-0.05
R^2 *within countries*	0.23		0.23		0.27	
Level 2 predictors						
R^2 *between countries*	0.00		0.00		0.00	
N	934		934		437	

Please see tables 1-2 for detailed definitions of the variables. †, *, ** Denote the coefficient is significant at the 0.10, 0.05, 0.01 level, respectively (two-tailed test).

Table 7. HLM Analyses. Results Firm and Country Characteristics in Crisis (Continued)

Dependent Variable :	Total abnormal return (adjusted industry) between July 2007 – December 2008							
	Model (4)		Model (5)		Model (6)		Model (7)	
Fixed Effect	*Coefficient*	*t-stat*	*Coefficient*	*t-stat*	*Coefficient*	*t-stat*	*Coefficient*	*t-stat*
Level 1 predictors								
Corporate largest blockholder	0.02	0.90	0.02	1.01	0.02	0.99	0.02	1.05
Family largest blockholder	0.04	1.23	0.04	1.27	0.05	1.45	0.05	1.54
Government largest blockholder	0.08	2.02*	0.08	2.21*	0.07	2.13*	0.06	2.01*
Institution largest blockholder	0.02	0.93	0.02	0.90	0.03	1.32	0.03	1.23
Ownership wedge	-0.04	-1.72†	-0.04	-1.99*	-0.04	-2.01*	-0.04	-2.06*
Board size	0.01	2.40**	0.01	2.03*	0.01	2.81**	0.01	2.71**
Non-executive directors	0.05	0.91	0.04	0.61	0.05	0.91	0.05	0.90
CEO duality	0.04	1.81†	0.04	1.80†	0.04	1.81†	0.04	1.79†
CEO age	-0.00	-0.30	0.00	0.33	0.00	0.65	0.00	0.53
CEO tenure	0.00	0.29	0.00	0.28	0.00	0.49	0.00	0.41
Cross-listed	0.02	1.09	0.02	0.91	0.03	1.21	0.03	1.30
Firm size	0.01	2.00*	0.01	2.02*	0.01	1.71†	0.01	2.12*
Firm age	-0.00	-0.40	-0.00	-0.90	-0.00	-1.01	-0.00	-0.40
Firm leverage	-0.16	-4.30**	-0.15	-3.75**	-0.13	-3.25**	-0.15	-3.79**
Firm diversification	-0.01	-1.71†	-0.01	-1.75†	-0.01	-1.01	-0.01	-1.06
Market to book value	0.00	0.40	0.00	0.71	0.00	0.71	0.00	0.87
R^2 *within countries*	0.20		0.20		0.20		0.20	
Level 2 predictors								
Rule of law	0.02	1.81†			0.02	1.79†		
Corruption index			0.01	1.01			0.01	1.09
Shareholder protection	-0.01	-1.04	-0.01	-0.90				
Anti-director rights index					0.00	1.01	0.00	0.40
Creditor right protection	0.03	2.08*	0.03	3.01**	0.03	2.01*	0.03	2.12*
Market financial system	-0.03	-1.40	-0.03	-1.40	-0.03	-1.34	-0.03	-1.49
R^2 *between countries*	0.24		0.21		0.22		0.21	
N	1142		1142		1142		1142	

Please see tables 1-2 for detailed definitions of the variables. †, *, ** Denote the coefficient is significant at the 0.10, 0.05, 0.01 level, respectively (two-tailed test).

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ENDNOTES

[i] The major stock indexes used in the study include Austria (ATX), Belgium (BEL 20), Cyprus (CY), Czech Republic (PSE), Denmark (OMX Copenhagen 20), Estonia (OMX Baltic Bench), Finland (OMX Helsinki 25), France (SBF 120), Germany (DAX, MDAX and SDAX), Hungary (BSE), Greece (FTSE/Athex 20), Ireland (ISEQ), Italy (FTSE MIB and FTSE Italia Mid Cap), Latvia (OMX Baltic Bench), Lithuania (OMX Baltic Bench), Luxembourg (LuxX), Netherlands (AEX and AMX), Norway (OBX), Poland (WSE), Portugal (PSI 20), Slovenia (LSE), Spain (IBEX 35), Sweden (OMX Stockholm 30), Switzerland (SMI), Turkey (ISE 100), and United Kingdom (FTSE 250).

[ii] A director is considered to be independent if he or she is not a manager, nor an employee of the company (or its subsidiaries), nor has been in the past, nor has a family relationship with senior management, nor is involved in business with the company (or its subsidiaries) or a major shareholder (Dulewicz & Herbert, 2004; Hooghiemstra & van Manen, 2004; Kang, Cheng & Gray, 2007).

[iii] See Raudenbush and Bryck (2002: 41) for more details on the calculation method.

[iv] The results are available from the authors upon request.

[v] The results are available from the authors upon request.

[vi] Aggarwal, Erel, Stulz & Williamson (2010) use 23 countries, Amman, Oesch & Schmid (2011) 22 countries, Bruno & Claessens (2010) 23 countries, Chhaochharia & Laeven (2009) 23 countries, Durnev and Kim (2005) 24 countries, while Mitton (2002) uses 5 countries and Klapper & Love (2004) use 14 countries.