The impact of compliance, board committees and insider CEOs on firm survival during crisis

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ABSTRACT

This study investigates the relationship between internal corporate governance mechanisms and firm survival during a financial crisis. Using a sample of FTSE 350 listed companies for the time period 2003–2010, our results show significant differences in the corporate governance mechanisms of firms that survived and those that failed during the 2007–2009 financial crisis. The findings indicate that compliance with the UK Corporate Governance Code is negatively associated with the survival of firms when they experience exogenous shocks. However, the existence of insider CEOs and a higher number of board committees in organisations increase the chances of survival during an economic downturn. These findings have policy implications and show that non-compliance with a prescribed code of corporate governance does not necessarily lead to poor governance. Moreover, the establishment of extra board committees and CEO succession planning are shown as important dynamics in firms' strategic decisions, as they have implications for the survival of firms during difficult economic conditions.

1. Introduction

In 21st-century organisations, corporate governance is seen as a set of mechanisms that ensures that firms survive and realise their strategic objectives in both good and bad economic conditions. However, the failures of several large corporations in the past and the recent collapses of Carillion and Thomas Cook in the UK have raised serious concerns about the quality and effectiveness of firm-level corporate governance practices. While there is a large body of literature in market-based accounting research that investigates corporate failure (Agarwal & Taffler, 2008; Balcaen & Ooghe, 2006), this phenomenon has received relatively little attention in corporate governance research. From the early articulation of the rationale for corporate governance in the Cadbury (1992), it has been argued that better-governed companies would be well equipped to deal with the internal and external risks that threaten their survival. For instance, the Cadbury Report documents that strong corporate governance mechanisms could prevent the failure of firms (Cadbury, 1992, para. 1.9). In line with this, evidence in the existing

governance literature shows an association between board structure and corporate failure (Daily & Dalton, 1994; Elloumi & Gueyie, 2001). These studies, however, only examine the role of board structure in corporate failure and thus ignore several other measures in current corporate governance systems.

The 2007–2009 financial crisis led to the collapse of several big corporations (such as Northern Rock and the Royal Bank of Scotland in the UK, and Lehman Brothers in the USA) and the underlying causes of these failures were mainly regarded as ineffective corporate governance practices (Kirkpatrick, 2009). However, Erkens, Hung, and Matos (2012) document that banks with better governance mechanisms – proxied by higher board independence and institutional ownership – experienced worse stock returns. Despite these contrasting views on the role of governance and firm performance during the crisis, governance codes in many countries were reviewed and more stringent regulatory requirements were introduced. For instance, the Walker, 2009) of corporate governance mechanisms in the UK and the Dodd–Frank Wall Street Reform and Consumer Protection Act (2010) in the US

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recommended substantial changes to the corporate governance of banks and large financial institutions. The Financial Reporting Council[1] (FRC) in the UK also revised the UK Corporate Governance Code (hereafter, UK CGC) in 2010, 2012, 2014 and 2018. The FRC also issued a new Stewardship Code in 2012 (which was revised in 2018) – the first ever code for institutional investors that most directly identifies agency problems for those investors who rely on institutional investors to manage their investments.

The increased regulatory emphasis on corporate governance prescriptions has motivated researchers from different countries to examine the association between compliance with corporate governance codes and firm performance (see for example, Adjaoud & Ben-Amar, 2010; Aggarwal, Erel, Ferreira, & Matos, 2011; Ahmad, Akbar, Kodwani, Halari, & Shah, 2021; Bebchuk, Cohen, & Ferrell, 2009; Farag, Mallin, & Ow-Yong, 2014; Gompers, Ishii, & Metrick, 2003). These studies mainly document a positive association between corporate governance compliance and firm performance. In the UK context, Elmagrhi, Ntim, Wang, Abdou, and Zalata (2018) argue that compliance with the UK CGC is associated with lower executive pay and that pay-for-performance sensitivity improves in fully compliant firms. This implies that higher compliance could indicate strong corporate governance and reduced agency problems. The overall results of existing studies in this area would therefore imply that, if strong firm-level corporate governance mechanisms enhance monitoring and protect the interests of shareholders, then firms that comply with a country's corporate governance code would be better placed to survive during crisis periods.

However, to the best of the authors' knowledge, the existing governance literature has not addressed the impact of compliance on firm survival during crises. It is therefore argued that there is a lack of empirical evidence on the relationship between governance compliance and firm survival. In order to fill this gap, this study explores firm-level corporate governance differences between firms that survived and those that failed during the recent financial crisis. In doing so, it investigates whether or not compliance with the prescriptions of the UK CGC, CEO characteristics and the existence of board committees are associated with the likelihood of survival during crisis.

We extend the traditional literature on governance and firm survival and include several board-related attributes in our analyses (i.e. board sub-committees, CEO succession planning, and the application of a detailed governance compliance index). In order to determine how the level of compliance with the UK CGC is associated with the survival of firms, we have developed a comprehensive corporate governance compliance index that contains 22 governance provisions. To develop the compliance index, 2192 corporate governance reports were carefully studied. We then carried out content analysis of the information in these reports to measure the level of compliance with the UK CGC.

This study contributes to the existing literature in several ways. First, it provides new insights on how compliance with a prescribed code of corporate governance may affect the survival of firms when they experience an exogenous shock in the form of a financial crisis. It builds on the existing literature that covers the relationship between compliance and performance through the application of an index, where the mixed findings are mainly attributed to the use of different proxies for measuring firm performance (Arcot, Bruno, & Faure-Grimaud, 2010; Bozec & Bozec, 2012; Farag et al., 2014; Gompers et al., 2003; Lu, Ntim, Zhang, & Li, 2022). However, instead of focusing on traditional financial performance measures (which have been extensively examined in the past 30 years since the publication of the Cadbury Report in 1992), this research regards survival as one of the primary objectives of all firms and uses it as the main variable of interest. Firm survival has also been regarded as an unambiguous measure of performance (Chancharat, Krishnamurti, & Tian, 2012). In this regard, the UK CGC of 2018 also

requires disclosure on 'going concerns', 'principal risks' and any 'material uncertainties' that are directly related with the survival of firms (FRC, 2018, Provisions, 28–29). Furthermore, Dowell et al. (2011, p. 1026) document that, 'while governance might have only marginal effects during routine periods of a firm's existence, governance mechanisms can have a significant effect on a firm's survival when it is at high risk of failure'. It is therefore argued that, by investigating the impact of compliance on survival during crises, this study makes a valuable contribution to the existing literature in this area.

Second, this research examines how CEOs characteristics could affect the survival of firms during a crisis scenario. In this regard, evidence in the existing literature suggests that various CEO characteristics have implications for organisational performance (Finkelstein & D'aveni, 1994), such as: bankruptcy and turnaround (Abebe & Tangpong, 2018; Susan, Gary, & Howard, 2002), disclosure quality (Brockman, Salas, Campbell, & Lee, 2019), non-financial targets and bonuses (Bachmann, Loyeung, Matolcsy, & Spiropoulos, 2020) and risk-taking in decision-making (Farag & Mallin, 2016; Tan & Liu, 2016). Moreover, Principle B.2 of the UK CGC also notes the importance of succession planning and considers this as one of the key roles of boards of directors. In line with this, the empirical literature shows that the performance of insider and externally appointed CEOs could be perceived very differently. Thurm (2007) documents that the appointment of an outsider as the CEO is seen as a failure to groom the next generation from within the organisation through succession planning. As a result, over the last few years the appointment of insider CEOs has gradually increased in the USA. We contribute to this debate by investigating whether having an insider as a CEO affects firms' survival during a period of financial crisis.

Third, this study examines the role and effectiveness of various board committees in firm survival (Harrison, 1987; Yeh, Chung, & Liu, 2011). Most of the existing studies in this area have analysed the composition and effectiveness of three main board committees, namely the audit committee (Defond, Hann, & Xuesong, 2005; Ghafran & O'sullivan, 2017; Nekhili, Gull, Chtioui, & Radhouane, 2020), the nomination committee (McKnight & Weir, 2009) and the remuneration committee (Strobl, Rama, & Mishra, 2016; Sun & Cahan, 2009). The establishment of these three core committees is one of the key requirements of the UK CGC, as well as most other governance codes around the world. We contribute to this debate by investigating whether the existence of extra board committees (in addition to the nomination, remuneration and audit committees) within the overall governance attributes of a firm has implications for firms' survival.[2]

Finally, this study contributes to the literature on the existence of a risk committee and its impact on organisational outcomes during a financial crisis period. From a regulatory perspective, Provision 28 of the UK CGC (2018) requires that 'the board should carry out a robust assessment of the company's emerging and principal risks'. Extant literature documents that the existence of a risk committee and its composition is an important element of board processes for managing risk-taking during a financial crisis (Ellul & Yerramilli, 2013; McNulty, Florackis, & Ormrod, 2013; Poletti-Hughes & Briano-Turrent, 2019). Furthermore, Yeh et al. (2011) argue that the existence of risk committees is associated with better corporate performance during crisis, as it affects directors' excessive risk-taking behaviours. The level of risk-taking is regarded as an important factor for firms' survival and it is therefore expected that the existence of a risk committee will lead to the thorough assessment, management and control of risks during crisis. In line with this argument, this research examines whether the existence of a separate risk committee affects firms' survival during an economic

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[1] The Financial Reporting Council is the UK's independent regulator, responsible for promoting high-quality corporate governance and reporting.

[2] For instance, AMEC Plc had the following seven extra board committees: (a) Charities Committee, (b) Compliance and Ethics Committee, (c) Share Transaction Committee, (d) Corporate Transaction Committee, (e) Pension and Retirement Benefits Committee, (f) Risk Review Committee and (g) Banking Committee.

downturn, such as the 2007–2009 financial crisis.

Using a sample of FTSE 350 listed companies for the period 2003–2010, this study documents significant differences, in terms of compliance and corporate governance mechanisms, between firms that survived and those that failed during the 2007–2009 financial crisis. Firms that survived during the crisis were less compliant with the UK CGC, had insider CEOs, and had established more board sub-committees in their governance structures. The findings from our multivariate analysis also indicate that compliance with the UK CGC had a negative relationship with the survival of UK firms, suggesting that, at the time of an exogenous shock, choosing the 'explain' pillar of a principles-based governance system of 'comply or explain' might be more important for establishing effective governance arrangements. This implies that compliance with the spirit of the principles outlined in the code might be more important than a box-ticking exercise to appear compliant. We also find that the appointment of insider CEOs and the existence of a higher number of board committees increase the chances of survival during a crisis. Finally, for non-financial firms, the existence of a risk committee is positively associated with survival but this relationship is negative for the sub-sample of financial firms.

The remainder of the paper is organised as follows. Section 2 provides a review of the existing literature on corporate governance and provides an overview of the theoretical background for the development of our research hypotheses. In Section 3, we present details of the data and research methodology. Section 4 outlines the results and provides a discussion of the findings. Finally, Section 5 concludes the paper by presenting a short summary of the main contributions.

2. Literature review and hypotheses development

2.1. Theoretical insights

The relationship between corporate governance and firm survival during difficult economic times can be explained by a number of theoretical perspectives, such as agency theory, stewardship theory and resource dependence theory. In the context of agency theory, owners and managers have different attitudes towards risk, and the conflict of interest between owners and managers/directors[3] leads to higher agency costs (Jensen & Meckling, 1976). However, agency costs cannot be dealt with through contracts alone (Hart, 1995) and, in order to monitor managers' self-serving behaviour, make them accountable and make sure that free cash flows are either returned to shareholders or reinvested, organisations need effective corporate governance mechanisms (Shleifer & Vishny, 1997). Using the propositions of agency theory, Frantz and Instefjord (2013) propose a model that shows that improvements in corporate governance reduce the likelihood of default and are associated with a lower cost of capital.

If the risk–reward perspective of agency theory as outlined by Eisenhardt (1989) is considered, then in compliant firms the risk-taking behaviour of managers might be more aligned with that of the principals. This is because compliant firms would have richer information systems that could also reduce information asymmetry arising from the agency relationship. In line with this, Beekes, Brown, Zhan, and Zhang (2016) document that better-governed firms make more frequent and informative disclosures. Therefore, such firms might take on riskier projects that are profitable (in line with the principals' preferences) and be more likely to survive during difficult times. However, it is also possible that, even if managers' risk-taking attitude is in line with that of the principals, in times of exogenous shock and an uncertain business environment, the risk–reward equilibrium will be disturbed, which may make such firms more likely to fail (Dowell et al., 2011). This research therefore takes the predictions of agency theory on board and examines

how compliance with the UK CGC affected firm survival during the 2007–2009 financial crisis.

In contrast with agency theory, stewardship theory assumes that executives (agents) are trustworthy individuals and will pursue organisational interests even when those interests are in conflict with their self-interest. Stewardship theory also assumes that executive directors know their company very well and possess superior formal and informal knowledge about the firm. They are therefore in a good position to make informed decisions about company affairs (Donaldson, 1990; Donaldson & Davis, 1991). Consequently, the proponents of stewardship theory argue that improved organisational performance can be achieved by internal governance mechanisms that encourage collaboration and trust (Nicholson & Kiel, 2007). Therefore, in line with stewardship theory, this study takes the view that firms with governance structures that include an insider CEO and extra board committees will be more likely to survive during the crisis.

2.2. Hypotheses development

2.2.1. Compliance index and survival

A number of studies have investigated the association between corporate governance indices and firm performance (see for example, Adjaoud & Ben-Amar, 2010; Aggarwal et al., 2011; Ahmad, Akbar, Kodwani, et al., 2021; Farag et al., 2014; Gompers et al., 2003; Ullah, Ahmad, Akbar, Kodwani, & Frecknall-Hughes, 2021). In line with the theoretical framework of agency theory, a key assumption in using governance indices is that a higher level of compliance with a prescribed code of corporate governance will reflect better monitoring and control mechanisms to safeguard the interests of shareholders. A positive relationship between the level of compliance with governance codes and firms' corporate performance (both operating and stock market) is therefore expected under the framework of agency theory. Consequently, compliant firms are expected to be better placed to survive a period of exogenous shock.

While discussing the effectiveness of compliance during extraordinary times, Dowell et al. (2011) argue that financial crises change the relative costs and benefits of governance mechanisms. They argue that one-size-fits-all prescriptions are more likely to be ineffective, as there are both costs and benefits associated with any governance mechanism. Board executives are therefore expected to act in a rational manner and adapt those governance mechanisms that cost less than the expected benefits of their implementation (Zajac & Westphal, 1994). It is therefore argued that the costs of firms' corporate governance mechanisms adopted during normal economic times will outweigh their benefits during a financial crisis scenario and may need substantial changes. Another argument takes a similar line, suggesting that the governance mechanisms become ineffective in circumstances when the environment shifts faster than the changes made to governance mechanisms (Dowell et al., 2011). Therefore, a negative relationship between compliance and firm survival during a period of exogenous shock may be expected.

Since the publication of the Cadbury Report in the UK in 1992, several studies have attempted to measure the effectiveness of corporate governance codes and their implications for firm-level outcomes in the UK and other parts of the world. Following the influential index-based empirical work of Gompers et al. (2003), the use of an index is a popular methodological approach in assessing the level of compliance with certain provisions of a code. For example, Dahya and McConnell (2007) examine the relationship between governance compliance and performance of non-financial listed companies during the period 1989–1996, and show a positive relationship between the two. Similarly, Farag et al. (2014) investigate the association between governance characteristics and performance of UK firms listed on the Alternative Investment Market (AIM) and report a positive relationship between corporate governance characteristics and financial performance. In contrast, Dedman (2016) shows that non-compliance with one particular provision of the governance code is not detrimental and might not negatively

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[3] The word 'directors' is used in this paper to refer to executive directors or managers. It does not refer to non-executive directors.

affect firm performance. However, if companies are not compliant with most of the provisions consistently over a number of years, then it can be argued that such a practice might be harmful for a company's performance.

More recently, among other index-based studies, Akbar, Poletti-Hughes, El-Faitouri, and Shah (2016) examine the impact of compliance with the UK CGC on the performance of 435 UK listed firms between 1999 and 2009. Applying more robust estimation methods (i.e. generalised method of moments), they did not find any significant impact of compliance on the financial performance of UK firms. It can therefore be argued that the positive and spurious correlation between governance indices and the performance of firms in prior empirical work could partly be attributed to the choices of inappropriate estimation techniques that fail to control for endogeneity issues (see for example, Wintoki, Linck, & Netter, 2012). In a review study covering the impact of corporate governance regulations of different countries, Cuomo, Mallin, and Zattoni (2016) confirm that inconclusive results seem to be caused by methodological and conceptual issues in prior empirical research. They question the effectiveness of various governance regulations and argue that (a) companies approach their national governance codes more symbolically, (b) the multiple codes in different countries may have conflicting requirements, and (c) the existence of these multiple codes give a free hand to the corporate sector.

Similarly, applying a principal component analysis approach and using 31 provisions from the UK CGC, Elmagrhi et al. (2018) develop a firm-level governance disclosure index to investigate the relationship between compliance and executive compensation in the UK. They find that compliant firms are more likely to pay lower compensation to their executives. In another study, Elgharbawy and Abdel-Kader (2016) argue that compliance with a principles-based corporate governance code promotes corporate entrepreneurship in UK firms. Moreover, Elmagrhi, Ntim, and Wang (2016) argue that certain firm-level strong governance mechanisms (i.e. board size, gender diversity, independence and ownership) are associated with increased compliance and detailed disclosure in the case of non-compliance with the UK CGC. More recently, Ahmad, Akbar, Halari, and Shah (2021) document that non-compliance with the UK CGC is positively associated with various measures of risk. The findings of these studies imply an association between higher compliance, enhanced governance and positive firm-level outcomes.

In contrast, another stream of literature in this area records that the majority of the index-based studies have focused only on the compliance aspect of 'comply or explain' codes (Hooghiemstra, 2012). However, principles-based governance systems have two pillars: 'comply' and 'explain'. The findings of the existing literature that covers only one aspect from the 'comply' or 'explain' approach would imply that researchers might not be able to fully capture the effectiveness of corporate governance codes. In line with this, Shrives and Brennan (2017) examine the quality of explanations provided by UK firms when they choose to explain rather than comply, and document that non-compliant firms use 'weasel words' and ambiguous statements in justifying non-compliance, and thus abuse the flexibility granted by the regulators.

The foregoing discussion shows that, despite the existence of many published studies in this area, none of the above-mentioned studies investigates whether the increased level of compliance with a prescribed code of corporate governance affects the survival of firms. In addition, concerning the survival of firms and controlling the problems arising from the separation of ownership and control, the UK FRC (2008) recommends the use of effective corporate governance mechanisms and considers those to be essential for firms' long-term success and survival. In line with this, most of the UK CGC's recommendations aim to improve monitoring, accountability and transparency in organisations. We therefore argue that, if the purpose of the UK CGC is to protect the interests of shareholders and to ensure firms' long-term success, companies that are fully compliant with the code will stand a better chance of surviving exogenous shocks, such as a financial crisis. This leads us to form the following research hypothesis:

H1. There is a positive relationship between the level of compliance with the UK Corporate Governance Code and firm survival during a financial crisis.

2.2.2. Insider CEO and survival

CEO characteristics and how they affect various firm-level outcomes have been the focus of many studies (Freund, Kovacs, Nguyen, & Phan, 2023; Qiao, Adegbite, & Nguyen, 2022). There is evidence in the existing literature that shows an association between internally promoted or externally recruited CEOs and firm survival during difficult economic times (Abebe & Tangpong, 2018; Visintin, Pittino, & Minichilli, 2017). In line with the assumptions of stewardship theory, insider CEOs acquire expertise through long-term tenure in the company of their employment, which can benefit their firms for the following two reasons. First, they are more knowledgeable about the firm's specific products, competitors, markets, customers and employees. Second, they have developed social networks with superiors, subordinates and peers, through which they gain information and the support needed to perform their job more effectively (Kotter, 1982). In addition, CEOs with a long tenure are less likely to undertake risky decisions (Farag & Mallin, 2016). Therefore, insider CEOs are expected to be in a better position to guide their firms through difficult economic times such as a financial crisis. We therefore argue that those firms where CEOs are insiders are more likely to withstand the financial shocks and survive during an economic downturn.

Given the importance of succession planning in changing competitive environments, the UK CGC requires firms' nomination committees to put in place plans for appointments to the board of directors in the medium and long term. For instance, the code outlines that:

the nomination committee should give full consideration to succession planning in the course of its work, taking into account the challenges and opportunities facing the company and what skills and expertise are therefore needed on the board in the future. The committee should make recommendations to the board as regards plans for succession for both executive and nonexecutive directors. (FRC, 2003).

In line with this, one of the sample firms of this study that had promoted an internal candidate to the position of CEO, 3i Group plc, mentioned in its 2009 annual report that:

A Group succession and contingency plan is prepared by management and reviewed periodically by the Board. The purpose of this plan is to identify suitable candidates for succession to key senior management positions, agree their training and development needs, and ensure the necessary human resources are in place for the Company to meet its objectives. (3iGroupPlc, 2009).

This indicates the importance of succession planning for key board appointments in general and the CEO position in particular from the perspective of the regulators as well as the firm. Therefore, it is an important empirical question to investigate in the context of a financial crisis.

In line with the above discussions, Mobbs (2015) argues that insiders of longer tenure have a significant portion of their human capital invested in their firms and therefore have the experience to lead their firms as CEOs, which could have a positive effect on firm valuation and operating performance. It is also possible that insider CEOs have accumulated an ownership stake in their firms and, during a crisis period, firm-specific human capital and longer tenure, along with individuals' knowledge of the firm, become more valuable for the firm's survival. The positive impact of extended tenure on firm performance has also been documented in the existing literature (Hermalin & Weisbach, 1991; Vafeas & Theodorou, 1998). More recently, Brockman, Salas, et al. (2019) report for a sample S&P1500 firms that insider CEOs are more likely to issue accurate voluntary earnings forecasts, and investors

react more strongly to forecasts issued by such CEOs.

Tao and Zhao (2019) show that firms in which an insider is appointed as CEO have better accounting and stock market performance and a lower level of volatility. In addition, Brockman, Krishnan, Lee, and Salas (2019) argue that insider CEOs are associated with lower audit fees as their knowledge of the firm plays an important role in mitigating audit risk. Similarly, Susan et al. (2002) show that financially distressed firms that replace their CEO with an outsider are more likely to experience bankruptcy, and, where the CEO is an insider, the chances of the firm's survival are higher. It is therefore expected that insider CEOs' knowledge, expertise and commitment could be important factors for firm survival during the financial crisis period, which leads us to form the following hypothesis:

H2. There is a positive relationship between insider CEOs and the survival of firms during a financial crisis.

2.2.3. The role of extra board committees and a risk committee

In addition to other board characteristics, board committees also play a significant role in the success of organisations. From the perspective of stewardship theory, board committees provide a primary role in supporting executive management decision-making through direct advice and counsel (Davis, Schoorman, & Donaldson, 1997). Within an effective governance system, the existence of board committees plays an important role because they facilitate the performance of special tasks (Bilimoria & Piderit, 1994). In line with this, Kesner (1988) argues that all important decisions of the board are initiated at the committee level, while Jiraporn, Singh, and Lee (2009) state that board effectiveness is accomplished through board committees. Board committees provide advice to support management in key strategic decisions and at the same time they perform a proactive independent monitoring role to protect the interests of shareholders (Klein, 1998; Spira & Bender, 2004). Furthermore, Harrison (1987) argues that the effective use of board committees can lead to more responsible behaviour by corporate boards and a stronger protection of shareholders' interests. The UK CGC requires that 'the board and its committees should have a combination of skills, experience and knowledge' (FRC, 2018, p.8). The role of board committees could also be explained through the lens of resource dependence theory if their composition is dominated by non-executive directors (NEDs). However, as the main focus of this study is on extra board committees, which might be entirely composed of executive directors, the use of stewardship theory provides a better theoretical foundation to investigate this relationship.

Given the important role that board committees could play in the corporate governance of firms, the presence of different types of board committees, their composition and their role have been the focus of several research papers in recent years. Existing studies have therefore analysed the composition, role and effectiveness of three main board committees, namely the audit committee (Ghafran & O'sullivan, 2017; Peasnell, Pope, & Young, 2005), the nomination committee (McKnight & Weir, 2009) and the remuneration committee (Strobl et al., 2016; Sun & Cahan, 2009). This is mainly because the establishment of these three core committees is one of the key recommendations of most corporate governance codes in different countries.

There is also a growing body of literature that focuses on the composition and effectiveness of additional board sub-committees, such as the finance and investment committee (Klein, 1998) the corporate governance committee (Huang, Lobo, & Zhou, 2009), the environmental committee (Liao, Luo, & Tang, 2015), the executive committee (Vafeas & Vlittis, 2019) and the risk committee (McNulty et al., 2013; Yeh et al., 2011). In the UK context, McKnight and Weir (2009) study the association between board nomination committees and firm performance, and report that nomination committees lead to an increase in agency costs. However, as the establishment of a nomination committee is a requirement of the UK CGC, if the existence of this committee leads to increased costs, then one could expect that the establishment of any

other committee in addition to those recommended by the UK CGC should also lead to increased costs, and a higher probability of failure during the crisis period. On the other hand, it can also be argued that extra board committees are established voluntarily to improve monitoring and meet the needs of the organisation rather than to comply with external regulatory requirements. It is therefore expected that the existence of extra board committees in organisations will produce a positive impact on firm performance and survival in difficult economic times.

This study therefore focuses on the role of extra board committees in the survival of the sample organisations during a crisis (see Appendix A for details of these committees). These committees are established to carry out specialised tasks and provide advice to support management in key strategic areas of business, such as finance, disclosure, risk management and corporate social responsibility. For instance, GlaxoSmithKline (GSK) outlines in its 2005 annual report that:

The Corporate Responsibility Committee consists entirely of Non-Executive Directors and provides a Board-level forum for the regular review of external issues that have the potential for serious impact upon the Group's business and for the oversight of reputation management. The Committee is also responsible for governance oversight of the Group's worldwide donations and community support. The Committee meets formally three times a year and otherwise as necessary. (GlaxoSmithKline, 2005).

Similarly, Enterprise Inns describes in its 2007 annual report the roles of its finance and disclosure committees as follows:

The Board has delegated, within agreed terms of reference, responsibility for certain matters of a routine nature which are not reserved for full Board consideration to a Finance Committee. This Committee comprises two executive directors, one of which must be the Chief Financial Officer. In addition and to ensure full compliance with its obligations under the Disclosure Rules published by the UK Listing Authority, the Company has established a Disclosure Committee comprising the Chairman, Chief Executive and Chief Financial Officer to maintain adequate procedures, systems and controls to enable it to make timely and accurate disclosure of information via a regulatory news service when it is impracticable to hold a full Board meeting. (EnterpriseInns, 2007).

The above-mentioned quotations show that firms establish these additional board sub-committees with clear terms of reference and with a view to providing support to the board of directors. Therefore, it can be argued that the establishment of such committees would provide more agility and could improve oversight and governance within firms. This could ultimately have a positive impact on the survival of firms during difficult economic times. In line with this, the impact of extra board committees on firm survival is investigated in this study.

The UK CGC includes specific guidelines on risk management and internal control systems. For instance, provision C.2.1 of the UK CGC (2014) requires that directors should disclose the risk assessment frameworks of their companies in annual reports. In addition, firms are also required to report information about any potential risks they face and the methods they use to mitigate or manage those risks (FRC, 2014). The presumption underlying this provision appears to be that a firm that establishes a risk committee will be in a better position to assess and mitigate the risks it faces. In this regard, Ellul and Yerramilli (2013) show that the composition of risk committees affected the risk exposure of financial firms during the 2007–2009 financial crisis. In the UK context, McNulty et al. (2013) find no association between the existence of a risk committee and financial risk during a crisis but their sample only includes 141 non-financial firms, of which only 4.13% had established risk/audit committees. Therefore, they caution against dismissing the importance of risk committees during a financial crisis scenario. More recently, for a sample of US firms, Malik, Nowland, and Buckby (2021) document that the voluntary establishment of a risk committee reduces the financial constraints risk for such firms. In line with these arguments, this study investigates not only the effects of the existence of

extra board committees but also the association between risk committees and firm survival during the crisis period.

This study therefore considers the existence of extra board committees and risk committees as a crucial support mechanism for the management of organisations. We therefore test the following two hypotheses:

H3. There is a positive relationship between extra board committees and the survival of firms during a financial crisis.

H4. There is a positive relationship between risk committees and the survival of firms during a financial crisis.

3. Data and methodology

3.1. Data sample

This study is based on a sample of FTSE 350 listed companies for the period 2003–2010. All those companies that were listed on the FTSE 350 for at least three years before 2007 are included in the study sample. This enabled us to examine the impact of internal corporate governance mechanisms on firm survival during the financial crisis period, which is commonly believed to have started in July 2007 (Aebi, Sabato, & Schmid, 2012; Beltratti & Stulz, 2012; Fahlenbrach & Stulz, 2011). Evidence in the existing literature documents that the recent financial crisis ended in 2009. For instance, Ormazabal (2018) argues that the turmoil caused by the crisis receded in 2009, while Vallascas, Mollah, and Keasey (2017) claim that the financial crisis ended in 2009. Furthermore, the gross domestic product (GDP) figures for the UK from the Office for National Statistics[4] show that the UK economy recorded positive growth in the third quarter of 2009, for the first time since the start of the financial crisis, and that for all quarters of 2010 the UK economy also recorded positive GDP.[5] We therefore consider 2010 to be a full year after the financial crisis ended. Therefore, the impact of various governance mechanisms on firm survival is analysed for four years starting in 2007. Since the economic difficulties associated with the financial crisis would have receded by 2010, extending the time period beyond this year is considered outside the focus of this research paper.

The FTSE 350 was selected as the target sample because it represents approximately 96% of the market capitalisation of firms listed on the London Stock Exchange.[6] Therefore, the results of our study could be considered largely representative of the whole UK stock market. Lynall, Golden, and Hillman (2003) argue that firm-level corporate governance is affected by the life cycle and their financiers. Therefore, an argument could be made that the results of this study might not apply to smaller listed companies. However, in the UK context, Farag et al. (2014) developed a corporate governance index (CGAIM50) for firms listed on the AIM, and, although AIM listed firms are not required to report their compliance with the UK CGC, there is a high degree of similarity between the governance provisions included in CGAIM50 and those included in the index in this study. Additionally, as part of the listing requirements in the UK, all FTSE 350 companies have to either comply with the UK CGC or, if not, explain their reasons for non-compliance. As a result, smaller companies that are not constituents of the FTSE 350 index are not required by the UK Listing Authority (UKLA) to report their compliance with the UK CGC; hence, we excluded these companies from our sample. Finally, the principles-based system of corporate governance is applied in many countries around the world. For instance, a majority of the Commonwealth countries, many European countries

such as Austria and Germany, and other major economies like Hong Kong, Singapore, Australia and Canada all have formally adopted the basic premise of the 'comply or explain' principles. Therefore, from this perspective the results may be applicable in other similar contexts that are based on the principles of 'comply or explain'.

The initial sample consisted of a total of 284 listed companies from different sectors and industries, including utilities. However, utility companies are generally regarded as highly regulated, which may affect their corporate governance practices and survival at the time of the financial crisis and are therefore excluded by most of the published studies in this area from their samples (Aebi et al., 2012; Yermack, 1996). Thus, in line with the existing literature in this area, we excluded utilities from the sample of our study. The final sample thus consisted of 274 companies, containing 188 non-financial and 86 financial companies. Table 1 provides the number of firms from each industry using the FTSE Industry Classification Benchmark (ICB).

The data collection process of this study was completed through the application of four different sources: Morningstar Company Intelligence (previously known as Hemscott Guru Database), companies' annual reports, Datastream/Worldscope, and Companies House. Data for compliance with the UK CGC, insider CEOs, risk committees and extra board committees were manually collected from the annual reports of the sample companies, which were mostly downloaded from Morningstar Company Intelligence or otherwise downloaded from the companies' websites. We carried out a content analysis of 2192 corporate governance reports (274 firms, eight years) to develop a compliance index for each firm in our sample. Data for other corporate governance control variables, i.e. board size, board independence, remuneration and directors' share ownership, were collected from Morningstar Company Intelligence, and the financial and accounting data were collected from Datastream/Worldscope. For those companies that were delisted at some point in the period after 2007, data were not available with Morningstar Company Intelligence or on their websites. In all such cases, data were collected from Companies House.

3.2. Empirical model and methods

In order to examine the determinants of firm survival during the 2007–2009 financial crisis, both univariate and multivariate analyses were conducted in this research. In the univariate analysis we compared the governance characteristics of firms that failed with those that survived, whereas in the multivariate analysis we examined those factors that might determine firms' survival during the crisis. Following Chen, Firth, Gao, and Rui (2006), we used a *t*-test to check for significant differences in means, and multivariate probit regression for determinants of firms' survival. In the context of this study a firm is considered to have survived during the financial crisis period if it did not receive any government bailout (Adams, 2012) or was still operating as a going concern by the end of 2010 (i.e. it did not go bankrupt), or was not delisted, or did not carry out any major corporate actions (e.g. mergers and acquisitions and share issues during or soon after the credit

Table 1
Number of failed and survived firms in each industry based on ICB industry classification.

Industry	Failed	Survived	Total
Oil and gas	6	9	15
Basic materials	5	7	12
Industrials	18	43	61
Consumer goods	13	14	27
Health care	0	5	5
Consumer services	17	32	49
Telecommunications	1	3	4
Financials	33	53	86
Technology	3	12	15
Total	96	178	274

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crunch of 2007–2009[7]). Using mergers and acquisition as proxies for failure during the financial crisis period is in line with the existing literature in this area (Dahiya & Klapper, 2007).

As the dependent variable used in this study, '*firm survival*', is a binary variable and the data used is panel data, the application of a probit regression model is regarded as an appropriate econometric specification for this type of analysis (Agrawal & Chadha, 2005; Beasley, 1996; Uzun, Szewczyk, & Varma, 2004). Moreover, the probit approach is appropriate as this study aims to explain rather than predict which of the two alternatives (i.e. survival and failure) may occur (Hoetker, 2007; Maddala, 1991). The Cox proportional hazards model (Cox, 1972) is generally applied in survival studies when the aim is to predict the time to failure. However, this model is not suitable in the context of the current study. This is because the current research does not aim to predict the time to failure; it instead investigates the corporate governance mechanisms that could explain whether firms would fail or survive in the case of an exogenous shock such as a financial crisis (Chancharat et al., 2012). Therefore, by employing the maximum likelihood estimates the following probit model is used:

$$Survival = \beta_0 + \beta_1 CI_{it} + \beta_2 EBC_{it} + \beta_3 RC_{it} + \beta_4 INSCEO_{it}$$
$$+ \sum_{n}^{N} \beta_{1n} CONTROLS + \mu_{it}$$

where survival is a binary variable that takes the value 1 if a firm has survived and 0 otherwise. The compliance index (CI) takes into account the level of compliance with 22 provisions of the UK CGC (these provisions are outlined in Appendix B). For each occurrence of compliance, it takes the value 1 and 0 otherwise. Therefore, the CI score for each company could vary between 22 (fully compliant) and 0 (fully non-compliant). EBC is the number of extra board committees, RC is a binary variable that takes the value 1 if a firm has a risk committee and 0 otherwise, INSCEO is a dummy variable that takes the value 1 if the CEO is an insider and 0 otherwise, CONTROLS is $1 \times N$ vector of control variables, and μ_{it} is the error term.

There is evidence in the existing literature that shows that not all of the provisions in an equally weighted governance index are important in the same way for good corporate governance practices (Bebchuk et al., 2009). To overcome this problem, Black, Carvalho, Khanna, Kim, and Yurtoglu (2017) recommend using a principal component analysis (PCA) to identify the main components within an index. Therefore, in addition to running the models on the aggregate CI score, this study also conducts a PCA. In addition to this, we analysed the impact of some individual provisions of our index on survival. The individual provisions considered are P2, P3, P4, P8, P11, P15 and P18 as these were the provisions with which most firms in our sample were more frequently non-compliant (refer to Appendix B for further details about these provisions).

We have used three main models in our analyses. Model 1 includes all of the sample firms, whereas Model 2 and Model 3 examine the governance–survival relationship for financial and non-financial firms separately. This separate analysis of financial and non-financial firms is based on the level of regulation in the two sectors, because financial firms are highly regulated and their governance mechanisms are significantly different from the non-financial firms.

3.3. Control variables

In addition to the main variables of interest, this study also incorporates a number of governance and other firm-specific controls in the empirical models. There is evidence in the existing literature that suggests that small corporate boards are more effective than large corporate boards in decision-making and exercising control (Haniffa & Hudaib, 2006; Yermack, 1996) and are also more valuable in financially distressed firms (Dowell et al., 2011). Board size is therefore used as a control variable in this study. Similarly, the existence of NEDs on boards is associated with an increased likelihood of corporate survival, hence we control for board independence (Chancharat et al., 2012; Farag & Mallin, 2017). Moreover, the existence of various types of compensation schemes is commonly used as a governance mechanism to align the interests of managers with shareholders. We therefore include salary, bonuses, benefits and board ownership as controls (Belghitar & Clark, 2015; Haque & Ntim, 2020). In terms of other firm-specific characteristics, we control for firm size (Susan et al., 2002), liquidity (Hunter, 1982), capital ratio and market beta (Beltratti & Stulz, 2012), leverage (Black & Kim, 2012) and profitability (Bonetti, Magnan, & Parbonetti, 2016). Definitions for all these control variables are provided in Table 2.

4. Results and discussion

4.1. Descriptive statistics

Table 3 provides the descriptive statistics for all the variables used in the study. It should be noted that, because of the binary or dummy nature of some of the variables, the mean for these variables should be interpreted as the percentage of companies that satisfy a given criterion (Chancharat et al., 2012). The binary variables employed in the study include survival, INSCEO and RC.

As reported in Table 3, the mean level of compliance for surviving

Table 2
Definition of variables used in the study.

Variable name and symbol	Definition
Dependent variables	
Survival	A firm is considered to have survived the financial crisis if, it did not receive any government bailouts or was still operating as a going concern by the end of 2010 (i. e. did not go bankrupt), or was not delisted, or did not carry out any major corporate actions (e.g. mergers and acquisitions, and shares issues during or soon after the credit crunch of 2007–2009). This is a binary variable that takes the value 1 if a firm has survived and 0 otherwise.
Independent variables	
Compliance index (CI)	A score ranging between 0 and 22, showing the level of compliance with 22 provisions of the UK Corporate Governance Code. For each of the provisions it takes the value 1 for each occurrence of compliance and 0 otherwise.
Extra board committees (EBC)	The number of extra committees in addition to the audit, remuneration and nomination committees.
Risk committee (RC)	RC is a binary variable that takes the value 1 if risk committee is present and 0 otherwise.
Insider CEO (INSCEO)	INSCEO is a binary variable which takes the value 1 if the CEO is an insider and 0 otherwise.
Corporate governance control variables	
Board size (BSIZE)	The total number of directors on the board.
Board independence (NED)	The ratio of NEDs to total board size.
Directors' share ownership (%) (OWN)	The total percentage of equity shares held by all board members.
Salary in £ million (SAL)	The total salaries paid to directors.
Bonuses in £ million (BON)	The total bonuses paid to directors.
Benefits in £ million (BEN)	The total benefits paid to directors.
Firm-specific control variables	
Liquidity (LIQ)	The ratio of a firm's current assets to current liabilities.
Capital ratio (%) (CAP)	The percentage of total equity to total assets.
Return on assets (ROA)	ROA measured as earnings before interest and taxes (EBIT) divided by the total assets.
Beta value (BETA)	A measure of company riskiness.
Firm size (FSIZE)	Natural log of total assets.
Leverage (LEV)	The percentage of total debt to assets.

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[7] In technical terms firms involved in major corporate actions like M&A or issuance of shares did not fail but such firms either failed or came close to failure. Therefore, without these major corporate actions they would not have survived (we thank an anonymous reviewer for raising this point)

Table 3

Descriptive statistics.

Variables	CI	INSCEO	EBC	RC	NED	SAL	BON	BEN	BSIZE	OWN	LEV	FSIZE	CAP	BETA	LIQ	ROA
Survived firms ($N = 178$)																
Observations	1472	1472	1472	1472	1472	1369	1472	1472	1472	1472	1472	1457	1472	1472	1472	1472
Mean	19.01	0.80	1.38	0.24	0.65	1.33	0.80	0.09	8.22	4.04	21.25	7.18	50.58	1.12	1.87	8.75
Std. dev.	2.75	0.40	1.38	0.41	0.19	0.90	1.21	0.15	2.55	10.75	19.14	1.72	33.46	0.65	2.62	9.33
Min	6	0	0	0	0	0.04	0	0	3	0	0	2.89	−42.05	0	0	−42.09
Max	22	1	8	1	1	7.83	11.67	1.44	20	90.5	129.05	12.76	160.87	6.27	33.59	48.01
Failed firms ($N = 96$)																
Observations	751	751	751	751	751	720	751	751	751	751	751	750	751	751	751	751
Mean	20.06	0.69	1.27	0.21	0.64	1.50	0.93	0.12	8.60	2.71	32.20	7.92	39.79	1.07	1.71	7.14
Std. dev.	2.09	0.46	1.15	0.42	0.15	0.85	1.43	0.26	2.38	7.35	22.77	1.85	26.06	0.65	1.56	8.31
Min	13	0	0	0	0.14	0.05	0	0	4	0.01	0	2.55	−41.83	0.02	0	−36.52
Max	22	1	6	1	1	7.34	16.63	3.14	20	47.58	136.91	14.69	177.2	3.92	15.25	41.82

firms is 19.01, as compared to 20.06 for failed firms, which implies that the level of compliance with the UK CGC is higher for failed firms. This could indicate that the difference in terms of CI between the firms that failed and those that survived is very marginal. However, Bebchuk et al. (2009) show that particular individual provisions in a composite index are more important than others. Indeed, the results reported in Tables 8 and 9 also show that not all provisions are equally important. Therefore, compliance or non-compliance with a single provision could have important implications for the survival of firms during the financial crisis. In addition, Table 3 shows that 80% of the surviving firms had an insider CEO, compared to 69% for the failed firms, suggesting that a higher proportion of surviving firms had an insider CEO. In addition, Table 3 also shows that 24% of the surviving firms had a risk committee, as compared to 21% of firms that failed, and surviving firms had a greater number of extra board committees.

Table 4 reports the correlation matrix, which helps us in detecting the presence of high collinearity between the variables. For explanatory variables, the highest correlation is between the INSCEO and CI (−0.26), and, for control variables, the highest and second highest correlation is between SAL and BSIZE (0.70) and SAL and FSIZE (0.60) respectively. In econometric terms, however, the existence of high collinearity could be an issue in circumstances where the correlation between two variables is more than 0.80 (Gujarati, 2003). Therefore, high collinearity does not seem to be a problem in our data sample. However, as the correlation between some control variables is close to the 0.80 threshold, we also employed variance inflation factors (VIFs) and tolerance statistics to check for multicollinearity. The results reported in Table 5 show that the maximum value for VIFs is 3.63 and the lowest value for tolerance statistics is 0.275. The VIF (tolerance statistics) values are well below (above) the commonly used thresholds of 10 (0.10) (Field, 2009). This again gives us confidence that multicollinearity is not an issue in our analyses. In the following section, results from the univariate and multivariate analyses are discussed.

4.2. Univariate analysis

The results of the univariate analysis are presented in Table 6, where we first compare the governance characteristics of firms for the whole sample and then analyse financial and non-financial firms separately. The results show that firms that failed during the financial crisis were significantly more compliant with the UK CGC than those firms that survived. This result does not support hypothesis H_1, which states that a higher level of compliance with the UK CGC is positively associated with firm survival. This result remains unchanged when financial and non-financial firms are analysed separately. This provides the initial evidence suggesting that non-compliance with the UK CGC may not necessarily signal poor corporate governance practices.

Table 6 also shows that a significantly higher percentage of firms that survived had an insider CEO. This result is significant at the 1% level and the level of significance is unchanged when the sample is split between financial and non-financial firms. This result provides preliminary

evidence in support of H_2, which predicts a positive relationship between INSCEO and firm survival. These results also support hypotheses H_3 and H_4, suggesting that firms that survived during the financial crisis had significantly higher number of board committees and had also established a risk committee in their corporate board structure.

4.3. Multivariate analysis

This section presents the results of the multivariate analysis on the determinants of firm survival during the financial crisis period. Table 7 shows the results for multivariate analysis from the probit regression models. Model 1 outlines results when the data is analysed for the whole sample, while Model 2 and Model 3 show the results for financial and non-financial firms, respectively.

Table 7 shows that CI is significantly negatively associated with the survival of firms ($\beta = -0.0911, \beta = -0.0813$ and $\beta = -0.0872, p < 0.01$ for all models). Consistent with the univariate analysis, these results also do not support H_1, which predicts a positive association between the level of compliance with the UK CGC and firm survival during the crisis period. This finding indicates that non-compliance may not necessarily signal poor governance practices, and that companies can achieve effective governance practices by opting for the second important pillar of the 'comply or explain' principle – providing explanations for non-compliance. From a regulatory perspective, 'comply or explain' are the two equally important pillars of an effective principles-based system of corporate governance. The 'comply or explain' principle of the UK CGC offers flexibility, whereby firms either comply or, in the event of non-compliance, explain the reasons for non-compliance. The FRC (2014, para 3) also acknowledges that 'an alternative to following a provision may be justified in particular circumstances if good governance can be achieved by other means'. In particular, the FRC expects that, '[i]n their responses to explanations, shareholders should pay due regard to companies' individual circumstances and bear in mind in particular the size and complexity of the company and the nature of the risks and challenges it faces' (FRC, 2014, p. 4). The outcome of this finding indicates that UK firms that provide explanations in response to non-compliance had a better chance of survival during the crisis period, as they may have implemented stronger internal governance mechanisms than those prescribed in the UK CGC. A recent review of the UK CGC by Grant Thornton also confirms that: 'Comply or explain' offers companies flexibility to present their individual approach and an explanation may be both justified and beneficial' (Grant Thornton, 2018, p.2).

We therefore argue that non-compliant firms may have had sound business reasons to deviate from the prescriptions of the UK CGC. This is consistent with the findings of Arcot and Bruno (2006), who document that non-compliant companies that provide explanations and justifications for deviations outperform those firms that are compliant with the UK CGC; as a result, in such situations non-compliant firms cannot be regarded as badly governed. This implies that investors may fully appreciate the circumstances of a company in which non-compliance is

Table 4
Correlation matrix.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
SURVIVAL	1.000																
CI	-0.191*	1.000															
INSCEO	0.179*	-0.255*	1.000														
SAL	-0.093*	0.261*	-0.218*	1.000													
BON	-0.045	0.104*	-0.078*	0.572*	1.000												
BEN	-0.077*	0.103*	-0.086*	0.474*	0.298*	1.000											
NED	0.050	-0.095*	0.279*	-0.382*	-0.178*	-0.147*	1.000										
BSIZE	-0.070*	0.173*	-0.176*	0.697*	0.430*	0.304*	-0.188*	1.000									
OWN	0.064*	-0.182*	0.001	0.018	0.006	-0.024	-0.083*	0.026	1.000								
RC	-0.027	0.098*	-0.138*	0.165*	0.182*	0.078*	-0.074*	0.187*	0.088*	1.000							
EBC	-0.041	0.241*	-0.114*	0.321*	0.215*	0.158*	-0.006	0.318*	-0.057*	0.377*	1.000						
ROA	0.084*	0.061*	-0.099*	0.065*	0.027	0.038	-0.124*	0.039	0.070*	0.069*	0.016	1.000					
FSIZE	-0.196*	0.330*	-0.124*	0.603*	0.416*	0.312*	0.031	0.526*	-0.122*	0.167*	0.433*	-0.135*	1.000				
BETA	0.035	0.071*	0.008	-0.015	-0.002	0.006	0.012	-0.025	0.092*	0.032	0.001	-0.200*	-0.014	1.000			
CAPITAL	0.162*	-0.377*	0.317*	-0.326*	-0.209*	-0.139*	0.204*	-0.312*	0.003	-0.209*	-0.221*	0.016	-0.435*	-0.014	1.000		
LIQ	0.032	-0.131*	0.147*	-0.155*	-0.104*	-0.062*	0.093*	-0.146*	0.021	-0.038	-0.092*	-0.046	-0.120*	0.077*	0.243*	1.000	
LEV	-0.246*	0.178*	-0.150*	0.118*	0.034	0.073*	-0.060*	0.110*	-0.041	0.012	0.077*	0.024	0.222*	-0.122*	-0.402*	-0.139*	1.000

* shows significance at the 0.01 level.

Table 5
Variance inflation factors (VIF) and tolerance statistics.

Variable	VIF	1/VIF
SAL	3.63	0.275177
FSIZE	2.56	0.390461
BSIZE	2.16	0.462178
CAP	1.74	0.575714
BON	1.55	0.643240
NED	1.49	0.670144
EBC	1.47	0.682496
CI	1.37	0.729405
BEN	1.30	0.769655
RC	1.29	0.774062
INSCEO	1.24	0.805463
LEV	1.23	0.812050
ROA	1.18	0.849732
BETA	1.11	0.904499
OWN	1.10	0.905316
LIQ	1.10	0.911711
Mean VIF	1.60	

inevitable.

The above result could also indicate that firms might be adopting corporate governance mechanisms that ensure they are compliant with the UK CGC, without evaluating their need for those mechanisms. In other words, compliant firms may be applying the UK CGC symbolically as a box-ticking exercise to fulfil the requirements and are thus avoiding the external disciplinary mechanisms in capital markets that result from non-compliance. Such firms will appear more compliant, but their governance mechanisms will not be fit for purpose and could face difficulties during extraordinary economic times, such as the financial crisis. In this regard, existing research findings document that some companies do not explain the reasons for their non-compliance because of a fear of risks, and as a result they tend to comply with the UK CGC, irrespective of their circumstances and need for compliance (Arcot et al., 2010). Similarly, in a letter to the *Financial Times*, Richard Hopper, chairman of Informa PLC, stated that:

> There are still too many institutional shareholders or their collective voice-pieces who approach the code as a rather rigid list of absolute obligations and who appear reluctant even to consider explanations for non-compliance. Explanations of non-compliance by companies are at best ignored by some shareholders organisations or at worst the company is criticized for not achieving a full set of ticked boxes.[8]

Indeed, in the US context, Tosun (2021) finds that, when companies are forced to comply with governance mechanisms, their performance worsens. Although the UK CGC is not mandatory, if companies perceive it to be so, then it is plausible to expect that their performance will deteriorate.

Another possible explanation for the above result could be that firms might be misreporting their compliance with the UK CGC. In this regard, the Pension Investment Research Consultants (PIRC) have reported a divergence: 47% of companies consider themselves fully compliant with the UK CGC, whereas only 34% of companies are regarded as fully compliant (Ali & Gregoriou, 2011). Similarly, while reviewing the compliance of UK FTSE 350 companies, a recent report by Grant Thornton LLP documents that, although 44% of companies claim full compliance with the UK CGC, only 25% of the firms claiming full compliance make all the disclosures to support their claim (Grant Thornton, 2018). More recently, Orihara and Eshraghi (2022) show that firms try to achieve compliance without considering the requirements carefully, which has a detrimental effect on shareholder value. It can be argued that, if a company claims compliance without implementing the

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[8] http://www.ft.com/cms/s/0/bbfff43e-4b44-11da-aadc-0000779e2340.html.

Table 6
Univariate (mean) comparisons of companies that failed and those that survived during the financial crisis.

	Whole sample ($N = 274$)			Non-financial firms ($N = 188$)			Financial firms ($N = 86$)		
Variables	Survived	Failed	*t*-value	Survived	Failed	*t*-value	Survived	Failed	*t*-value
No of firms	*178*	*96*		*125*	*63*		*53*	*33*	
CI	19.01	20.06	9.1655***	19.57	20.20	5.1146***	17.62	19.77	9.7326***
INSCEO	0.80	0.69	−6.0125***	0.77	0.66	−4.2650***	0.88	0.73	−5.2407***
EBC	1.26	1.37	1.9291*	1.33	1.31	−0.2868	1.08	1.49	4.5549***
RC	0.21	0.23	1.2774	0.22	0.15	−3.2010***	0.17	0.39	6.2990***
NED	0.65	0.63	−2.3377	0.61	0.62	1.8380*	0.75	0.65	−6.6441***
SAL	1.32	1.50	4.2752***	1.49	1.43	−1.4929	0.91	1.64	9.3743***
BON	0.80	0.92	2.1093**	0.83	0.71	−2.2475**	0.72	1.33	4.3673***
BEN	0.09	0.12	3.6467***	0.10	0.11	1.2638	0.06	0.13	4.6314***
BSIZE	8.22	8.59	3.3296***	8.46	8.33	−1.0458	7.62	9.09	6.4927***
OWN	4.03	2.70	−3.0429***	4.43	3.37	−1.7553*	3.04	1.41	−3.9016***
LEV	21.24	32.19	11.9501***	24.99	29.09	3.6815***	11.98	38.23	18.4376***
FSIZE	7.17	7.92	9.3822***	7.17	7.92	9.3822***	7.15	7.50	4.1472***
CAP	50.57	39.79	−7.7200***	43.40	39.42	−2.8261**	68.29	40.50	−22.0048***
BETA	1.12	1.07	−1.6229*	1.11	1.14	0.6329	1.13	0.94	−5.1520***
LIQ	1.86	1.70	−1.5088	1.54	1.58	0.7715	2.67	1.94	−2.4466**
ROA	8.74	7.13	−3.9925***	10.79	8.75	−4.0488***	3.70	4.00	0.5825

*** significance at p < 0.01, ** significance at p < 0.05, * significance at *p* < 0.1.

Table 7
Probit regression results.

Independent variables	Model 1 Whole sample	Model 2 Financial firms	Model 3 Non-financial firms
CI	−0.0911***	−0.0813***	−0.0872***
	(0.0150)	(0.0294)	(0.0189)
INSCEO	0.412***	0.422***	0.308***
	(0.0597)	(0.122)	(0.0836)
EBC	0.0608**	0.0476	0.0426**
	(0.0276)	(0.0853)	(0.0309)
RC	0.0120	−0.633***	0.197***
	(0.0828)	(0.220)	(0.101)
SAL	−0.0339	−0.449***	−0.0719
	(0.0691)	(0.168)	(0.0938)
BON	0.0263	−0.0379	−0.133**
	(0.0289)	(0.0443)	(0.0623)
BEN	−0.152	−0.176	−0.390*
	(0.180)	(0.409)	(0.231)
NED	0.219	−1.076**	0.144
	(0.219)	(0.498)	(0.291)
BSIZE	0.0303*	0.0867**	0.00208
	(0.0184)	(0.0396)	(0.0230)
OWN	0.00320	0.106***	0.00125
	(0.00349)	(0.0254)	(0.00374)
LEV	−0.0132***	−0.0488***	−0.00238
	(0.00167)	(0.00470)	(0.00206)
FSIZE	−0.0619**	−0.0433	−0.0713
	(0.0310)	(0.0647)	(0.0436)
BETA	0.0405	0.846***	−0.0813
	(0.0553)	(0.155)	(0.0621)
CAP	0.000907	−0.00368	0.00260
	(0.00140)	(0.00310)	(0.00187)
LIQ	−0.0126	−0.0127	−0.0769**
	(0.0144)	(0.0176)	(0.0373)
ROA	0.0168***	0.00669	0.0184***
	(0.00430)	(0.0113)	(0.00486)
Constant	1.613***	2.487***	1.739***
	(0.421)	(0.888)	(0.509)
Industry controls	Yes	Yes	Yes
Year controls	Yes	Yes	Yes
Observations	2081	643	1438

Table 7 provides the probit regression results for the determinants of firms' survival during the financial crisis. The dependent variable (Survival) is a binary variable and takes the value 1 if a firm survives the financial crisis, and 0 otherwise. Model 1 shows the results when the data analysed for the whole sample, Model 2 and Model 3 outlines the results for financial firms and non-financial firms respectively. Year and industry controls are included in all models. The definitions and symbols for all independent and control variables are the same as outlined in Table 1. ***significance at $p < 0.01$, **significance at $p < 0.05$, *significance at $p < 0.1$. Standard errors in parentheses.

corporate governance mechanisms recommended by the UK CGC, their governance mechanisms cannot be regarded to be as strong as reported in their annual reports. Therefore, in extraordinary situations, such as the financial crisis, the relative importance of firm-level corporate governance changes and weaknesses in them are more likely to be exposed. This implies that corporate governance mechanisms that deviate from the recommendations of the UK CGC but which are suitable for the needs of a company become important for survival. Hence, a negative relationship between compliance and survival during the crisis period can be observed.

The unexpected compliance–survival relationship can also be viewed as a support for the proposition put forward by Dowell et al. (2011), who hypothesise that firm-specific governance mechanisms are contingent upon firm-specific circumstances, that financial crises change the relative costs and benefits of governance mechanisms, and that one-size-fits-all prescriptions are likely to be ineffective in the context of a crisis period. They only focus on board structures and survival in a specific crisis relevant for internet firms only. Our results provide further insights that a widespread exogenous shock that affected many industries changed the importance of compliance with a prescribed code of corporate governance. The costs of firms' corporate governance mechanisms adapted during normal economic times may outweigh their benefits during a financial crisis period and may need changes. However, when the environment shifts faster than the changes made in governance mechanisms, then the governance mechanisms in place may be regarded as ineffective (Dowell et al., 2011). The findings of this study show that those firms that chose not to comply with the UK CGC and provided explanations were perhaps able to change their governance mechanisms during the crisis according to their needs. This strategy may have played a crucial role in their survival during the crisis.

Table 7 also shows a significantly positive relationship between insider CEOs and firm survival ($\beta = 0.412, \beta = 0.422$ and $\beta = 0.308, p < 0.01$ for all models). This result indicates that firms where the CEOs had been internally promoted to the position were more likely to survive during the financial crisis. This result supports H_2, which states that firms with insider CEOs are more likely to survive during the crisis period. This finding could imply that the knowledge, expertise and commitment of insider CEOs might be important factors for firm survival during the financial crisis period (Kotter, 1982). Similarly, Susan et al. (2002) focus on firms facing financial difficulties during their normal course of operations and find that firms where internal CEOs are replaced by external CEOs are more likely to fail and their chances of failure increase 'twofold'. Our study provides further evidence that, even in the case of an exogenous shock, insider CEOs may be beneficial

for the survival of firms. In addition, Mobbs (2015) documents that insiders are more important for companies where firm-specific human capital is regarded as more important than other factors. CEOs of long tenure are less likely to consider risky decisions, and that could significantly increase a firm's chances of survival (Farag & Mallin, 2016). More recently, Tao and Zhao (2019) show that firms where an insider is appointed as CEO have better operating performance and lower stock volatility. Moreover, Brockman, Krishnan, et al. (2019) argue that insider CEOs are associated with lower audit fees as their knowledge of the firm plays a significant role in mitigating the firm's audit risk. In light of all of this, we argue that, during a crisis period, firm-specific human capital becomes more important, and as a result insider CEOs will have a positive impact on reducing the risk exposure of their firms and increase the likelihood of survival. It can also be argued that the long tenures and higher ownership stakes of insider CEOs can help in aligning their interests with those of shareholders. This study therefore documents that all those firms whose CEOs are insiders will be in a better position to survive during a period of economic downturn.

In relation to the existence of extra board committees, Table 7 shows that the existence of extra board committees is significantly positively associated with the survival of firms ($\beta = 0.0608, p < 0.05, \beta = 0.0246$, p < 0.05 for Models 1 and 3, respectively), which supports H_3. For Model 2, this association is statistically not significant, but the coefficient sign is positive ($\beta = 0.0476, p > 0.10$). The positive association between extra board committees and firm survival can be attributed to different factors, such as the support they provide to management in key strategic decisions, taking up an increased and effective monitoring role for protecting the interests of shareholders, and promoting more responsible behaviour by corporate boards (Harrison, 1987). We therefore argue that during a crisis period the support provided by board committees and its impact on the monitoring mechanisms and behaviour of the board of directors become more important, which could ultimately affect firms' survival during difficult times.

The results in Table 7 also show a positive association between risk committees and firm survival ($\beta = 0.0120$, p > 0.10 for Model 1, $\beta = 0.197, p < 0.01$ for Model 3) for non-financial firms. This finding supports H_4, which states that having a risk committee on corporate boards is positively associated with the survival of firms. This finding is consistent with earlier studies, which show that board processes and the composition of risk committees affect the risk-taking of firms during a financial crisis (Ellul & Yerramilli, 2013; McNulty et al., 2013). It is important to note that Ellul and Yerramilli (2013) only focus on banks and show that a strong risk management function made banks safer during the financial crisis. Nevertheless, their study could provide an explanation for the findings of this research. The existence of a risk committee in non-financial firms could indicate dedicated and stronger risk management mechanisms than in firms that do not have a risk committee. When these firms encounter an exogenous shock such as a financial crisis, the existence of risk committees may be an important factor in shaping their risk-taking strategies, which in turn could influence their survival.

In contrast to the non-financial firms, the results for the financial firms in Table 7 show a negative association between risk committees and firm survival ($\beta = -0.633, p < 0.01$ for Model 2). This is consistent with the argument that board committees lead to increased agency problems (McKnight & Weir, 2009). It may also indicate that, in the presence of more regulatory requirements in the financial sector, and in the presence of an audit committee, there is no need to have a separate risk committee on corporate boards. Furthermore, for financial firms Aebi et al. (2012) also show a negative relationship between risk committees and performance during the financial crisis, while Akbar, Kharabsheh, Poletti-Hughes, and Shah (2017) document that the existence of a risk committee leads to increased risk-taking in financial firms. Therefore, the results of this study imply that, if a risk committee is associated with increased risk-taking, during the financial crisis the risk-taking strategy might be decreasing the chances of survival.

It can also be argued that, compared to non-financial firms, the financial sector was more severely affected by the crisis, and hence the latter had a higher likelihood of failure during the crisis period. Additionally, this finding indicates that the existence of a risk committee could be considered a sign of good corporate governance mechanisms and could be aligning the risk-taking behaviour of managers with the interests of the shareholders. As a result, it was not the corporate governance mechanisms that increased the chances of failure of financial firms during the crisis period; rather, their strategies and external factors resulted in their failure (Beltratti & Stulz, 2012). These findings, therefore, indicate that the external environment presented by the financial crisis affected financial firms differently and support the view that the impact of corporate governance on organisational outcomes is context-specific (Van Essen, Engelen, & Carney, 2013).

This finding may also indicate that, although financial firms had adopted more risky strategies, the presence of a risk committee had conveyed a safety signal to their institutional shareholders, regulators and other stakeholders. The riskier strategies adopted, however, did not pay off and increased their chances of failure during the crisis period. Another possible explanation of the negative relationship between risk committees and firms' survival could be associated with the presence of more experts on the corporate boards and in their risk committees to carry out risk assessments of those organisations. As a result, those firms might have adopted riskier but profit-making strategies before the crisis period. However, at the time of financial crisis, owing to changes in the external business environment, the risks that were taken by the financial firms did not pay off and decreased the likelihood of those firms surviving.

On the corporate governance control related variables, the results in Table 7 show that directors' salaries and bonuses are negatively associated with the survival of firms, whereas ownership structure is positively associated with it. This indicates that increasing board ownership is an effective incentive tool to align directors' interests with shareholders, thereby reducing agency problems (Khurshed, Lin, & Wang, 2011). Directors' incentives in the form of increased ownership of firms would encourage directors to take a long-term view and increase a firm's chances of survival (Dixon, Guariglia, & Vijayakumaran, 2015; Fama, 1980; Jensen & Meckling, 1976). However, salaries and bonuses might encourage directors to take a short-term view, which may result in changing their attitude towards taking excessive risks (Farag & Mallin, 2016; Kampkötter, 2015), suggesting that the excessive risk-taking behaviour could decrease firms' chances of survival during the crisis period. In this regard, Mehran, Morrison, and Shapiro (2011) show a positive association between remuneration and risk-taking attitude in banks, while Cheng, Hong, and Scheinkman (2015) report that those firms that take higher risks normally pay more compensation to their management.

4.3.1. Principal component analysis

In line with the existing literature in this area we have formed principal components from the 22 provisions included in our CI index (Black et al., 2017). This has helped us to examine five principal components with the highest eigenvalues, which explain 62% of the variance. For each component, corporate governance provisions with a loading of greater than 0.4 are retained (Costello & Osborne, 2005). We use promax oblique rotation, as it allows for factors to be correlated and results in the principal components that are easier to interpret (Field, 2009). The analyses resulted in five principal components: *committee independence, remuneration, committee establishment, board independence* and *performance evaluation*.

According to the results of the PCA reported in Table 8, out of the five principal components only two (remuneration and board independence) are significantly associated with the survival of firms. These findings are in line with the results reported for the aggregate CI index in Table 7. The results in Table 8 show that compliance with the UK CGC's provisions in relation to remuneration and board independence decreases

Table 8
Survival and principal component results.

Independent variables	Model 1 Whole sample	Model 2 Financial firms	Model 3 Non-financial firms
CIndep	−0.0360	−0.0854	−0.0215
	(0.0254)	(0.0774)	(0.0287)
Remun	−0.176***	−0.503***	−0.163***
	(0.0556)	(0.175)	(0.0585)
CEst	−0.0133	0.685**	−0.0242
	(0.0312)	(0.281)	(0.0315)
Indep	−0.0792***	−0.196**	−0.0888***
	(0.0285)	(0.0928)	(0.0317)
PEval	−0.00745	−0.0755	0.0139
	(0.0277)	(0.115)	(0.0295)
ROA	0.0228***	0.000383	0.0186***
	(0.00414)	(0.0102)	(0.00474)
FSIZE	−0.0641***	−0.139**	−0.0549*
	(0.0210)	(0.0552)	(0.0281)
BETA	0.0726	0.723***	−0.00906
	(0.0512)	(0.167)	(0.0550)
CAP	−0.00229	−0.00606	0.00287
	(0.00144)	(0.00371)	(0.00180)
LIQ	−0.0407**	−0.0190	−0.127***
	(0.0188)	(0.0266)	(0.0372)
LEV	−0.0139***	−0.0487***	−0.00543***
	(0.00171)	(0.00509)	(0.00205)
Constant	1.125***	1.817***	0.944***
	(0.225)	(0.644)	(0.262)
Industry controls	Yes	Yes	Yes
Year controls	Yes	Yes	Yes
Observations	1638	358	1280

Table 8 provides the probit regression results for the determinants of firms' survival based on PCA of five principal components: committee independence (CIndep), remuneration (Remun), committee establishment (CEst), board independence (Indep) and performance evaluation (PEval). The definitions and symbols for all other independent and control variables are the same as outlined in Table 1. ***significance at p < 0.01, **significance at p < 0.05, *significance at p < 0.1. Standard errors in parentheses.

firms' chances of survival during difficult economic times. While remuneration consists of factors related to the remuneration structure of organisations, independence is related to the presence of independent non-executive directors on corporate boards. The results of the PCA provide further evidence in support of the main results reported in Table 7 in relation to remuneration and board independence, where a negative association is observed between the various elements of remuneration and the presence of NEDs with firm survival.

Table 8 shows that those firms that are compliant with the UK CGC's provisions in relation to remuneration and independence are less likely to survive during the crisis period. This finding may indicate that firms' compliance with governance provisions in relation to the payment of performance-based remunerations and keeping a higher proportion of NEDs on their corporate boards produces a negative impact on their survival during difficult economic times. This result supports the findings of Frantz, Instefjord, and Walker (2013), who propose that shareholders are better off when firms do not fully disclose compensation schemes. In the current study, firms that were compliant with the UK CGC's provisions in relation to remuneration may also have disclosed greater details about their compensation schemes, which could explain the negative association between compliance with these provisions and firms' survival.

4.3.2. Individual provisions and firm survival

In addition to the PCA we also regress some of the individual provisions on firm survival. The individual provisions considered are P2, P3, P4, P8, P11, P15 and P18 as most firms in our sample were frequently non-compliant with these provisions. The results reported in Table 9 reveal that compliance with P3 is positively associated with the survival of firms during difficult economic times. P3 measures the UK CGC's requirement in relation to the appointment of a *senior independent*

Table 9
Survival and individual provisions.

Independent variables	Model 1 Whole sample	Model 2 Financial firms	Model 3 Non-financial firms
P2	−0.209**	−0.262	−0.272***
	(0.0906)	(0.247)	(0.105)
P3	0.252**	1.354***	0.0436
	(0.117)	(0.263)	(0.154)
P4	−0.165**	−0.718***	−0.0228
	(0.0831)	(0.219)	(0.0972)
P8	−0.0176	−0.470	−0.117
	(0.105)	(0.301)	(0.121)
P11	−0.263***	−0.443*	−0.178*
	(0.0862)	(0.239)	(0.0976)
P15	−0.00280	−0.865***	0.120
	(0.0985)	(0.276)	(0.112)
P18	−0.223**	−0.497**	−0.143
	(0.108)	(0.248)	(0.127)
ROA	0.0227***	0.00695	0.0208***
	(0.00405)	(0.0106)	(0.00469)
FSIZE	−0.0505**	−0.0881	−0.0411
	(0.0210)	(0.0562)	(0.0283)
BETA	0.0773	0.653***	−0.00882
	(0.0511)	(0.165)	(0.0554)
CAP	−0.00110	−0.00370	0.00278
	(0.00135)	(0.00322)	(0.00180)
LIQ	−0.0402**	−0.0362	−0.116***
	(0.0173)	(0.0242)	(0.0369)
LEV	−0.0141***	−0.0538***	−0.00571***
	(0.00171)	(0.00536)	(0.00206)
Constant	1.391***	2.003***	1.269***
	(0.233)	(0.641)	(0.273)
Industry controls	Yes	Yes	Yes
Year controls	Yes	Yes	Yes
Observations	1715	427	1288

Table 9 provides the probit regression results for the determinants of firms' survival based on individual provisions: P2, P3, P4, P8, P11, P15 and P18. The definitions and symbols for all other independent and control variables are the same as outlined in Table 1. ***significance at $p < 0.01$, **significance at $p < 0.05$, *significance at $p < 0.1$. Standard errors in parentheses.

director (SID). In relation to this, the results in Table 9 show that having a SID on the corporate board is beneficial for companies during difficult economic times, especially in the case of financial firms. However, all the other six provisions – P2, P4, P8, P11, P15 and P18 – are negatively associated with firm survival. Appendix B shows that these provisions measure compliance with the independence requirement set out in the governance code in different ways. The results in Table 9 therefore confirm our results reported for the aggregate CI in Table 7, and PCA analyses reported in Table 8. It shows that, as per the CI, most of the individual provisions are also negatively associated with firm survival.

4.4. Robustness checks

In order to check the robustness of the results, various tests were carried out. First there are a number of provisions included in the CI that capture the independence of board members. However, the NED ratio is also included in the model as a proxy for board independence, which could result in board independence being counted twice. Therefore, the model was run again excluding NEDs and the results are reported in Table 10, which still shows that CI is significantly negatively associated with survival (Model $1, \beta = -0.075$, Model 2, -0.076 and Model 3 $-0.073, p < 0.01$ for all models). Moreover, as firm-level governance variables, board size, board independence, board ownership and compensation are not the focus of this study and existing research shows that they may have no bearing on firm performance (Dalton, Daily, Ellstrand, & Johnson, 1998), these are excluded from the regression and the results are reported in Table 11, which shows that results are unchanged. This would suggest that CI is a robust measure that captures the quality of corporate governance mechanisms.

Table 10

CI and survival results excluding NEDs.

Independent variables	Model 1 Whole sample	Model 2 Financial firms	Model 2 Non-financial firms
CI	−0.0751***	−0.0765***	−0.0729***
	(0.0144)	(0.0285)	(0.0182)
INSCEO	0.334***	0.362***	0.250***
	(0.0564)	(0.117)	(0.0806)
EBC	0.0707***	0.0471	0.0373
	(0.0267)	(0.0846)	(0.0297)
RC	−0.0723	−0.616***	0.179*
	(0.0778)	(0.217)	(0.0965)
SAL	0.0390	−0.245*	0.105
	(0.0593)	(0.140)	(0.0833)
BON	0.0107	−0.0350	0.131**
	(0.0278)	(0.0421)	(0.0598)
BEN	−0.243	0.0633	−0.453**
	(0.174)	(0.411)	(0.223)
BSIZE	0.0124	0.0668*	−0.000333
	(0.0174)	(0.0375)	(0.0217)
OWN	0.00108	0.108***	−0.00148
	(0.00330)	(0.0245)	(0.00354)
LEV	−0.0124***	−0.0469***	−0.00292
	(0.00158)	(0.00452)	(0.00195)
FSIZE	−0.0982***	−0.0765	−0.106***
	(0.0260)	(0.0612)	(0.0351)
BETA	0.111**	0.852***	0.0287
	(0.0484)	(0.150)	(0.0523)
CAP	−0.000691	−0.00432	0.00231
	(0.00126)	(0.00294)	(0.00171)
LIQ	−0.0230*	−0.0113	−0.102***
	(0.0138)	(0.0177)	(0.0350)
ROA	0.0185***	0.00869	0.0155***
	(0.00376)	(0.0106)	(0.00432)
Constant	2.225***	1.944**	2.163***
	(0.351)	(0.790)	(0.428)
Industry controls	Yes	Yes	Yes
Year controls	Yes	Yes	Yes
Observations	2081	643	1438

Table 10 provides the probit regression results for the determinants of firms' survival after excluding NEDs from control variables. The definitions and symbols for all independent and control variables are the same as outlined in Table 1. ***significance at p < 0.01, **significance at p < 0.05, *significance at p < 0.1. Standard errors in parentheses.

In addition, a different measure of survival is used by excluding those companies that were involved in mergers and acquisition as this activity may not necessarily be a sign of failure. We also use a stricter definition of survival where companies that received government bailouts were excluded from our sample. The revised results are reported in Tables 12 and 13, which show that our findings are robust while using a different measure of survival.

As an additional robustness test, the relationship between corporate governance and the survival of firms is analysed by adopting the average cross-sectional methodology developed by Rajan and Zingales (1995) and then used by Florackis and Ozkan (2008). Specifically, the dependent variable is measured at any time after 2007, while the independent variables are measured for the period 2003–2006 (Florackis & Ozkan, 2008). The mean values of all independent variables are then regressed on survival using a logit regression. These results are reported in Table 14 and are consistent with the results obtained from the probit regression.

Finally, as highlighted earlier, endogeneity is a major concern in corporate finance research that examines the relationship between various firm-level governance mechanisms and organisational outcomes. This study covers an extraordinary time period (the financial crisis) and survival is measured during this period, while internal corporate governance mechanisms are measured in the pre-crisis period, thus reducing concerns about endogeneity (Mitton, 2002). However, to further control for endogeneity and confirm that our results are robust, we have employed lagged values of independent variables (Coles,

Table 11

CI and survival results after excluding all internal corporate governance control variables.

Independent variables	Model 1 Whole sample	Model 2 Financial firms	Model 3 Non-financial firms
CI	−0.0706***	−0.0773***	−0.0708***
	(0.0133)	(0.0261)	(0.0165)
INSCEO	0.323***	0.310***	0.310***
	(0.0544)	(0.100)	(0.0763)
EBC	0.0725***	0.0535	0.0443
	(0.0262)	(0.0733)	(0.0291)
RC	−0.0546	−0.395**	0.188**
	(0.0754)	(0.180)	(0.0938)
LEV	−0.0126***	−0.0442***	−0.00334*
	(0.00149)	(0.00377)	(0.00184)
FSIZE	−0.100***	−0.153***	−0.0593**
	(0.0198)	(0.0465)	(0.0261)
Capital	−0.00187	−0.00725***	0.000696
	(0.00119)	(0.00261)	(0.00153)
ROA	0.0139***	−0.00292	0.0116***
	(0.00333)	(0.00890)	(0.00383)
Constant	2.491***	4.018***	1.923***
	(0.309)	(0.679)	(0.367)
Industry controls	Yes	Yes	Yes
Year controls	Yes	Yes	Yes
Observations	2207	679	1528

Table 11 provides the probit regression results for the determinants of firms' survival after excluding all internal corporate governance variables as control. The definitions and symbols for all independent and control variables are the same as outlined in Table 1. ***significance at p < 0.01, **significance at p < 0.05, *significance at p < 0.1. Standard errors in parentheses.

Daniel, & Naveen, 2008; Himmelberg, Hubbard, & Palia, 1999). In doing so, we have used four-year lagged values of independent variables for which the results are reported in Table 15. Four years is the maximum lag that can be used as the dependent variable is measured over 2007–2010 and the sample period starts from 2003. Therefore, the 2007 values of the dependent variable survival are regressed on the values of independent variables measured during 2003 and so on. The results in Table 15 confirm that our findings are robust to any potential endogeneity problems.

5. Summary and conclusion

This study examined the role of compliance with a prescribed code of corporate governance, CEO characteristics and the presence of extra board committees in firms' survival during the 2007–2009 financial crisis in the UK. In our preliminary analysis, we compared the governance characteristics of firms that survived with those that failed during the financial crisis period. We then proceeded to examine the determinants of firm survival in the UK during the financial crisis. Our findings, which are based on a sample of FTSE 350 firms, reveal that the internal governance mechanisms of firms that survived during the 2007–2009 financial crisis are significantly different from those in firms that failed. First, firms that survived during the crisis period were significantly less compliant with the UK CGC than those that failed. Second, most of the surviving firms had a CEO promoted internally to the post. Third, those firms that survived had established a higher number of extra board committees in their governance structures.

The findings of this research show that compliant firms are more vulnerable to external shocks and they are more likely to fail during the crisis period. We do not see non-compliance as a matter of concern as the level of flexibility offered by the UK CGC allows firms to be non-compliant so that they can opt for governance mechanisms that can best suit their size, structure and strategic requirements; in particular, they can modify their governance arrangements during difficult economic times according to their business needs. This also provides support for the principles-based 'comply or explain' system of corporate governance in the UK. It further suggests that non-compliant firms that

Table 12
CI and survival results after excluding mergers and acquisitions.

Independent variables	Model 1 Whole sample	Model 2 Financial firms	Model 3 Non-financial firms
CI	−0.0536***	−0.110***	−0.0611***
	(0.0223)	(0.0983)	(0.0262)
INSCEO	0.615***	1.095***	0.530***
	(0.0900)	(0.329)	(0.120)
EBC	0.0788**	−0.0460	0.00463
	(0.0386)	(0.165)	(0.0465)
RC	−0.00876	−0.435	0.548***
	(0.116)	(0.416)	(0.171)
SAL	0.202**	−0.793**	0.557***
	(0.0933)	(0.319)	(0.161)
BON	0.0159	0.109	0.0703
	(0.0415)	(0.0890)	(0.0923)
BEN	−0.483*	1.565*	−0.888**
	(0.252)	(0.937)	(0.358)
NED	0.494	0.120	0.547
	(0.310)	(0.990)	(0.408)
BSIZE	−0.0239	0.123	−0.0744**
	(0.0249)	(0.0799)	(0.0317)
OWN	−0.00329	0.997***	−0.00877*
	(0.00462)	(0.246)	(0.00512)
LEV	−0.00476**	−0.0473***	0.00231
	(0.00234)	(0.00964)	(0.00337)
FSIZE	−0.119***	0.0386	0.0588
	(0.0355)	(0.132)	(0.0577)
BETA	0.124*	0.785**	0.115
	(0.0717)	(0.336)	(0.0761)
CAP	0.00642***	0.0164**	0.00813***
	(0.00205)	(0.00768)	(0.00270)
LIQ	−0.0158	0.0152	−0.0576
	(0.0231)	(0.0371)	(0.0537)
ROA	0.00585	−0.0788**	0.00595
	(0.00569)	(0.0314)	(0.00640)
Constant	1.900***	0.833	0.679
	(0.541)	(2.282)	(0.628)
Industry controls	Yes	Yes	Yes
Year controls	Yes	Yes	Yes
Observations	1559	472	1087

Table 12 provides the probit regression results for the determinants of firms' survival after excluding mergers and acquisitions from the definition of survival. The definitions and symbols for all independent and control variables are the same as outlined in Table 1. ***significance at p < 0.01, **significance at p < 0.05, *significance at p < 0.1. Standard errors in parentheses.

Table 13
CI and survival results after excluding mergers, acquisitions and bailouts.

Independent variables	Model 1 Whole sample	Model 2 Financial firms	Model 3 Non-financial firms
CI	−0.0780***	−0.393**	−0.0611**
	(0.0234)	(0.170)	(0.0262)
INSCEO	0.583***	1.495***	0.530***
	(0.0927)	(0.470)	(0.120)
EBC	0.0503	−0.313	0.00463
	(0.0407)	(0.212)	(0.0465)
RC	0.300**	0.343	0.548***
	(0.131)	(0.516)	(0.171)
SAL	0.265**	−1.563***	0.557***
	(0.121)	(0.558)	(0.161)
BON	0.130*	0.307	0.0703
	(0.0735)	(0.343)	(0.0923)
BEN	−0.540*	4.362**	−0.888**
	(0.292)	(1.850)	(0.358)
NED	0.695**	0.730	0.547
	(0.326)	(1.186)	(0.408)
BSIZE	−0.0408	0.279**	−0.0744**
	(0.0272)	(0.119)	(0.0317)
OWN	−0.00565	0.796***	−0.00877*
	(0.00486)	(0.264)	(0.00512)
LEV	−0.00414*	−0.0447***	0.00231
	(0.00244)	(0.0104)	(0.00337)
FSIZE	−0.0116	0.351*	0.0588
	(0.0412)	(0.182)	(0.0577)
BETA	0.162**	0.938**	0.115
	(0.0735)	(0.434)	(0.0761)
CAP	0.00727***	0.0259***	0.00813***
	(0.00210)	(0.00986)	(0.00270)
LIQ	−0.0281	−0.0109	−0.0576
	(0.0230)	(0.0427)	(0.0537)
ROA	0.00421	−0.103***	0.00595
	(0.00580)	(0.0397)	(0.00640)
Constant	1.438**	2.722	0.679
	(0.565)	(3.333)	(0.628)
Industry Controls	Yes	Yes	Yes
Year Controls	Yes	Yes	Yes
Observations	1528	441	1087

Table 13 provides the probit regression results for the determinants of firms' survival after excluding mergers, acquisitions and bailouts from the definition of survival. The definitions and symbols for all independent and control variables are the same as outlined in Table 1. ***significance at $p < 0.01$, **significance at $p < 0.05$, *significance at $p < 0.1$. Standard errors in parentheses.

adopt corporate governance mechanisms other than those recommended by the UK CGC and choose to explain their non-compliance are not necessarily badly governed, because their non-compliance has helped them survive during difficult economic conditions. In addition, we argue that, in line with the findings of Dowell et al. (2011), firms that are able to make quick changes to their governance structures rather than rigidly follow the prescriptions of a code are better placed to cope with the uncertainties and threats posed by an exogenous shock such as a financial crisis.

Interestingly, this paper also documents that compliance with different provisions of the governance code is not equally important. Compliance with the UK CGC's requirement in relation to the appointment of a SID increases firms' chances of survival. We argue that such an appointment would enhance the monitoring mechanisms in UK firms and a positive contribution by a SID would support the theoretical perspective offered by agency theory. Moreover, compliance with the UK CGC's requirement in relation to performance-based pay and the presence of NEDs on corporate boards are negatively associated with firm survival. This endorses the criticisms and concerns raised over performance-based pay and the ineffectiveness of non-executive directors during the financial crisis. In relation to NEDs and performance-based pay, our findings are in line with the assumption of stewardship theory, whereby external monitoring and excessive pay are not needed to motivate executives.

The existence of extra board committees increases the chances of

firms' survival during the crisis period. This could imply that establishing sub-committees provides support to boards of directors in strategic decisions and enhances the process of monitoring firms' management, which could lead to more responsible behaviour by board members. From an agency theory perspective, extra board committees would signal improved monitoring and better corporate governance structures. It is also possible that firms would be more cautious in difficult economic times, and they might voluntarily implement additional layers of governance (through extra board committees) to minimise their vulnerability to exogenous shocks. From a stewardship theory perspective, the existence of extra board committees would indicate that the board has access to expert advice and support during extraordinary times.

We report different implications of a risk committee for the survival of firms in the financial and non-financial sectors. In the case of non-financial firms, the existence of a risk committee is positively, whereas for financial firms it is negatively associated with firm survival. We argue that, compared to the non-financial sector, the financial sector was more severely affected by the financial crisis, and hence firms in this sector had a higher likelihood of failure during the crisis period. This suggests that it was not the corporate governance mechanisms that increased the chances of failure of financial firms; rather, their operating strategies and external factors resulted in their failure during the crisis period. This could also imply that governance mechanisms might affect firms differently across different industries. Therefore, the one-size-fits-

Table 14

CI and survival using logit regression results for mean governance values before the crisis and survival during the crisis.

Independent variables	(1) Model 1 Whole sample	(2) Model 2 Financial firms	(3) Model 3 Non-financial firms
Mean_CI	−0.268***	−0.326***	−0.267***
	(0.0353)	(0.0845)	(0.0473)
Mean_INSCEO	0.542***	1.084***	0.377***
	(0.0991)	(0.339)	(0.142)
Mean_EBC	0.201***	0.142	0.179***
	(0.0522)	(0.277)	(0.0576)
Mean_RC	−0.231	−1.870**	0.349*
	(0.149)	(0.777)	(0.188)
Mean_SAL	0.774***	−4.332***	1.705***
	(0.230)	(1.043)	(0.413)
Mean_BON	−0.0429	−0.389*	0.852***
	(0.0863)	(0.221)	(0.261)
Mean_BEN	−2.570***	0.569	−5.243***
	(0.672)	(2.876)	(0.917)
Mean_NED	2.123***	−10.52***	2.521**
	(0.701)	(2.680)	(1.069)
Mean_BSIZE	−0.0226	0.799***	−0.189***
	(0.0518)	(0.187)	(0.0715)
Mean_OWN	−0.00916	0.723***	−0.0143*
	(0.00687)	(0.120)	(0.00797)
Mean_LEV	−0.0332***	−0.149***	−0.00365
	(0.00343)	(0.0184)	(0.00461)
Mean_FSIZE	−0.250***	0.678**	−0.549***
	(0.0659)	(0.336)	(0.0998)
Mean_BETA	0.479***	4.017***	0.267**
	(0.119)	(0.673)	(0.124)
Mean_CAP	−0.00597**	−0.00157	0.00568
	(0.00273)	(0.0102)	(0.00405)
Mean_LIQ	−0.115***	−0.104	−0.315***
	(0.0398)	(0.0847)	(0.0856)
Mean_ROA	0.0638***	0.0178	0.0420***
	(0.0101)	(0.0705)	(0.0117)
Constant	5.487***	5.583*	6.668***
	(0.877)	(3.173)	(1.077)
Industry Controls	Yes	Yes	Yes
Year Controls	Yes	Yes	Yes
Observations	2138	679	1459

Table 14 provides the logistic regression results for the determinants of firms' survival during the financial crisis. Model 1 shows the results when the data is analysed for the whole sample; Model 2 and Model 3 outline the results for financial firms and non-financial firms respectively. The prefix 'Mean' for each independent variable indicates mean values from 2003 to 2006 have been used. ***significance at p < 0.01, **significance at p < 0.05, *significance at p < 0.1. Standard errors in parentheses.

all approach of governance might not work and hence there is a need for industry-specific governance structures.

The appointment of an insider CEO could be beneficial for companies during difficult economic times. This is consistent with the prior work of Susan et al. (2002), who argue that replacing a CEO with an outsider increases the probability of bankruptcy 'twofold'. The benefits associated with an insider CEO could result from the knowledge, expertise and ownership stake they have acquired over the years, which help these firms to operate in and manage a period of financial crisis. Again, from the perspective of stewardship theory, this suggests that promoting someone within the company to the position of a CEO could be beneficial for firms during times of exogenous shocks. Insider CEOs have firm-specific knowledge and are therefore better placed to lead their organisations during difficult economic times. This finding has implications for CEO succession planning in listed companies. In this regard, the UK CGC requires board of directors to have plans in place for the CEO succession-related issues. This could imply that it will be more beneficial for firms to have a CEO who had previously worked in the company and was internally promoted to their position. This is because insiders are potentially more aware of the firm's dynamic environment and complex business models, hence providing support for stewardship theory, which

Table 15

CI and survival results for four-year lags of independent variables.

Independent variables	Model 1 Whole sample	Model 2 Financial firms	Model 3 Non-financial firms
CI	−0.0831***	−0.132***	−0.0830***
	(0.0212)	(0.0457)	(0.0267)
INSCEO	0.317***	0.496***	0.214*
	(0.0830)	(0.188)	(0.121)
EBC	0.119***	0.153	0.0721
	(0.0410)	(0.135)	(0.0460)
RC	−0.0973	−1.072***	0.178
	(0.119)	(0.363)	(0.147)
SAL	0.0607	−0.363	0.0589
	(0.106)	(0.298)	(0.142)
BON	−0.00717	−0.00349	0.0822
	(0.0465)	(0.0771)	(0.0900)
BEN	−0.106	−0.606	−0.0732
	(0.281)	(0.960)	(0.421)
NED	0.0833	−1.461*	−0.0851
	(0.296)	(0.767)	(0.383)
BSIZE	0.000204	−0.00841	0.0162
	(0.0253)	(0.0601)	(0.0318)
OWN	0.00519	0.0959***	0.00306
	(0.00533)	(0.0325)	(0.00567)
LEV	−0.0108***	−0.0502***	−0.000186
	(0.00236)	(0.00733)	(0.00293)
FSIZE	−0.0943**	0.0843	−0.103*
	(0.0403)	(0.114)	(0.0536)
BETA	0.295***	1.494***	0.165**
	(0.0748)	(0.278)	(0.0779)
CAP	−0.000742	−0.00475	0.00232
	(0.00186)	(0.00496)	(0.00262)
LIQ	−0.0166	−0.0103	−0.0924*
	(0.0209)	(0.0283)	(0.0543)
ROA	0.0125**	0.0171	0.00806
	(0.00594)	(0.0255)	(0.00654)
Constant	2.105***	2.788**	2.126***
	(0.532)	(1.309)	(0.641)
Industry Controls	Yes	Yes	Yes
Year Controls	Yes	Yes	Yes
Observations	955	301	654

Table 15 provides the probit regression results for the determinants of firms' survival after using four year lags of all independendant variables. The definitions and symbols for all independent and control variables are the same as outlined in Table 1. ***significance at p < 0.01, **significance at p < 0.05, *significance at p < 0.1. Standard errors in parentheses.

calls for governance mechanisms that promote trust and collaboration.

In light of the above discussions, the findings of this study have several implications. After recovering from the pandemic, the UK economy is facing some severe economic challenges and hence the findings of our research are very timely. In terms of policymaking, this paper documents that the 'comply or explain' system is working well and there is no need to move towards mandatory compliance with the UK CGC. For investors, the findings would imply that non-compliance with the UK CGC may not necessarily mean bad or poor governance and that investors need to carefully scrutinise the quality of explanations and justifications reported by non-compliant companies in the UK. The finding also indicates that, in addition to the existence of remuneration, audit and nomination committees, policymakers should encourage companies to establish more sub-committees in their board structures. It is therefore argued that the existence of more sub-committees could provide support and advice mechanisms, which might be beneficial for companies' survival during difficult economic conditions. Our results are explained from multiple theoretical perspectives, and we believe that using more than one theory would be the way forward for corporate governance researchers in exploring complex governance issues. We also recommend the application of multiple theories and methodological pluralism in developing a new theory of corporate governance, as the traditional agency assumptions may not necessarily hold in different institutional/economic contexts.

The findings of this research show that CEO succession planning is an

important factor in firms' strategic decisions, because it has implications for the survival and success of companies in the long term. A process of firms' employees internally progressing to the position of CEO is therefore regarded as an important issue by this paper. The existence of an insider CEO in firms is positively associated with survival during difficult economic times. Companies are therefore encouraged to reform their internal progression policies, so that there is a greater chance for insider employees to reach the position of CEO. Therefore, our paper has policy implications for career progression and the internal promotion of employees in organisations.

The findings of this study also imply that compliance with the prescriptions of corporate governance codes and explanations for deviations need to be assessed very carefully. In this regard, regulatory bodies around the world including the Financial Reporting Council in the UK have gradually shifted their attention from the compliance aspect to the quality of explanations reported in response to non-compliance. Future index-based studies could perhaps capture both dimensions of the comply or explain system in understanding its relationship with firm-specific outcomes such as performance and survival.

Finally, despite the contributions this research makes, it also has a number of limitations. First, it covers the time period from 2003 to 2010, which is only eight years and covers the most recent financial crisis. Extending the sample period to more years by including other crisis periods will certainly help in producing better insights about the issues raised in this paper. Second, while looking at our findings, one might argue that these are country-specific and may not be applicable to other contexts owing to institutional differences among countries. Therefore, a cross-country comparison covering the comply or explain regimes will be beneficial for understanding the role of cross-country differences in the rule of law, regulation quality, investor protection and judicial efficiency and their interaction with internal governance mechanisms and the survival of firms. Third, we have only employed quantitative research methods in this paper. The application of a mixed research methodology may help in strengthening the evidence produced in this paper. Despite recognising these limitations, conducting all such investigations are beyond the scope of this paper and are therefore left to future research.

Declaration of Competing Interest

The authors declare no conflict of interest.

Data availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Appendix A. Extra committees on board in the sample firms

	Committee name
1	Executive committee
2	Risk committee*
3	Corporate social responsibility committee
4	Management engagement committee
5	Health and safety committee
6	Finance committee
7	Disclosure committee
8	General purpose committee
9	Treasury committee

*Risk committee is analysed separately.

Appendix B. Provisions from the UK Corporate Governance Code that were used in developing the compliance index (CI)

Provisions		How compliance was recorded using content analysis
P1	Principle A.2 of the Code states that there should be a clear division of responsibilities at the head of the company between the running of the board and the executive responsibility for the running of the company's business. No one individual should have unfettered powers of decision.	Company's statement on compliance in the annual report.
P2	Principle A.2.2 of the Code states that the chairman should, on appointment, meet the independence criteria set out in Section A.3.1 of the Code.	Company's statement on compliance and cross-checked with chairman's profile in the annual report.
P3	Principle A.3.3 states that the board should appoint one of the independent non-executive directors to be the senior independent director.	Company's statement on compliance and cross-checked with the directors' profiles in the annual report.
P4	Principle A.3.2 states that, except for smaller companies, at least half of the board excluding the chairman should be independent non-executive directors (INEDs).	Company's statement on compliance and cross-checked with the directors' profiles in the annual report.
P5	Principle A.3.2 states that the majority of non-executive directors (NEDs) should be independent.	Company's statement on compliance and cross-checked with the directors' profiles in the annual report.
P6	Principles A.4.1, C.3.1 and B.2.1 state that the board should establish nomination, audit and remuneration committees.	Company's statement on compliance and cross-checked with the relevant information in the annual report.
P7	Principle A.4.6 states that a separate section of the annual report should describe the work of the nomination committee, including the process it has used in relation to board appointments.	Company's statement on compliance and cross-checked with the relevant information in the annual report.
P8	Principles A.4.1, C.3.1 and B.2 state that the audit, nomination and remuneration committees should be headed by INEDs.	Company's statement on compliance and cross-checked with the directors' profiles in the annual report.
P9	Principle A.4.5 states that executive directors should not take more than one non-executive directorship in a FTSE 100 company nor the chairmanship of such a company.	Company's statement on compliance and cross-checked with the directors' profiles in the annual report.
P10	Principle A.6.1 states that the board should report in the annual report how the performance evaluation of the board, its committees and its individual directors has been conducted.	Company's statement on compliance as reported in the annual report.
P11	Principle A.6.1 states that independent non-executive directors led by a senior independent director should be responsible for performance evaluation of the chairman, taking into account the views of executive directors.	Company's statement on compliance and cross-checked with the directors' profile in the annual report.

(*continued*)

Provisions		How compliance was recorded using content analysis
P12	Principle A.7.1 states that all directors should be subject to election at their first AGM, and re-election every three years.	Company's statement on compliance and cross-checked with the relevant information in the annual report.
P13	Principle B.1.1 states that performance-related elements of remuneration should form a significant proportion of the total remuneration package of executive directors and should be designed to align their interests with those of shareholders and to give these directors keen incentives to perform at the highest levels.	Company's statement on compliance as reported in the annual report.
P14	Principle B.1.2 states that remuneration for NEDs should not include share options.	Company's statement on compliance and cross-checked with the directors' remuneration in the annual report.
P15	Principle B.2.1 states that remuneration committees should be entirely composed of independent non-executive directors.	Company's statement on compliance and cross-checked with the directors' profile in the annual report.
P16	Principle C.2 states that the board should maintain a sound system of internal controls to safeguard shareholders' investments and the company's assets.	Company's statement on compliance as reported in the annual report.
P17	Principle C.2.1 states that the board should, at least annually, conduct a review of the effectiveness of the company's system of internal controls and should report to shareholders that they have done so.	Company's statement on compliance or otherwise reported in the annual report.
P18	Principle C.3.1 states that at least three members of the audit committee should be independent non-executive directors.	Company's statement on compliance and cross-checked with the directors' profile in the annual report.
P19	Principle C.3.1 states that the board should satisfy itself that at least one member of the audit committee has recent and relevant financial experience.	Company's statement on compliance and cross-checked with the directors' profile in the annual report.
P20	Principle D.1.2 states that the board should report in the annual report the steps taken to ensure that the board, including the NEDs, has developed an understanding of the views of major shareholders of the company.	Company's statement on compliance as reported in the annual report.
P21	Principle B.1.6 states that notice or contract periods should be set at one year or less.	Company's statement on compliance and cross-checked with the directors' profile in the annual report.
P22	Principle C.3.2 states that the main role and responsibilities of the audit committee should be set out in written terms of reference.	Company's statement on compliance and cross-checked with the relevant information in the annual report.

Appendix C

Corporate action	No of firms	Percentage	Cumulative percentage
Rights issue	28	10.22	10.22
Government bailout	4	1.46	11.68
Merged	20	7.3	18.98
No activity	178	64.96	83.94
Delisted or acquired*	44	16.06	100
Total	274	100	

*One firm was delisted as it went into liquidation. All other firms were acquired.

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