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Abstract

Purpose: This study aims to predict the conditions under which the association between corporate governance and firm financial performance is positive. Our paper is motivated by the fact that the separation between ownership and control creates sets of agency conflicts between company owners and managers. Therefore, it is expected that strong corporate governance systems bring alignment of interests between conflicted parties and accordingly companies are more likely to improve their financial performance. However, previous research did not report a consistent set of results.

Design/Methodology/Approach: Given the latent nature of corporate governance and agency conflicts, we used principal component analysis and exploratory factor analysis to proxy corporate governance and agency conflicts respectively. By using dynamic panel data modelling, we estimated the change in the relationship between corporate governance and firm financial performance as a function of the change in the level of agency conflicts using UK data for 78 non-financial companies listed in FTSE100 between 1999 and 2014.

Findings: Our results showed that there are significant differences in corporate governance qualities among companies. Moreover, we found that companies operating in high levels of agency conflicts outperform their counterparts operating in low levels of agency conflicts only when the former increases the quality of corporate governance. Specifically, firm financial performance is improved by approximately 11% if companies increase the quality of corporate governance due to the increase in the level of agency conflicts.

Research limitations/Implications: Lack of data on ownership structure for the period of study (1999-2014) was the main reason why we excluded it from the analysis. In addition, lack of reliable and quantifiable corporate governance data on small-medium size enterprises limits the findings only on big non-financial firms.

Practitioners/Policy Implication: The results of this research are useful for regulatory bodies, board of directors and those who are interested in corporate governance research (both practitioners and researchers) in two main points. First, we conclude that corporate governance provisions work as one system but not as individual mechanisms. Accordingly, measuring corporate governance as individual mechanisms might mislead the conclusions. Second, we unravel the importance of Corporate Governance mechanisms taking into account the agency conflicts factor. As a result, policy makers can make due changes to positively influence the regulatory framework of Corporate Governance mechanisms.

Social implications: This research contributes to the existing literature on corporate governance by increasing our understanding of the reason why companies, as key players in the society, have different structures of corporate governance. It paves the road towards more innovative measurements to the latent variables (e.g., corporate governance and agency conflicts) which capture the behavioral dimension of corporate governance and agency conflicts more objectively.

Originality/Value: The main contribution of this paper is , (i) to identify the situations within which firm financial performance is positive, and (ii) visualize the dynamic association among corporate governance, agency conflicts and firm financial performance.

Paper type: Empirical paper.

Introduction

The recent warning raised by experts and policy setters of a possible economic downturn has motivates us to revisit the association between corporate governance and firm business viability. Corporate governance as a set of devices has been considered as an institutional remedy for any misalignment between ownership and control thanks to its advisory and enforcing mechanisms such as the board of directors and managerial remuneration plans. However, the existence of corporate governance framework per se is not enough to account for any possible misalignment between ownership and control resulting in weak financial performance on behalf of the firms. The latter is acknowledged by a recent report (2020) issued by the Certified Financial Analysts (CFA) showed that approximately 25% of S&P 500 companies are exposed to on-going insolvent due to the risk of goodwill impairment while there is not enough reserves in the shareholders' equity to cover the impairment. Almost all previous empirical work which assessed the effectiveness of corporate governance in improving the viability of businesses assumed that this association between corporate governance and firm financial performance is direct and straightforward. However, this assumption contradicts the multi-dimensional and latent nature of corporate governance. For example, increasing board independence will not 'directly' improve organisational performance.

Corporate governance refers to the set of provisions altering the managerial decision-making process, especially when there is a separation between ownership and control (Larcker et al., 2007). The rationale behind the establishment of corporate governance originates on the premise that managers are incentivized to act for their own advantage rather than for the benefit of the firm owners. However, in the light of stewardship theories and the emergence of the institutional investors the agency theory has been put into question. This does not mean that the corporate governance tool should be abandoned. On the contrary we argue. In the light of disparities between managers and employees and considering the corporate scandals, corporate accountability, agency conflicts and transparency as put forward by the ever-evolving corporate governance codes the role of internal auditing should be given its appropriate attention. It is a historical observation that a new corporate governance code is launched following a business cycle effect (recession) or a major corporate scandal. Accordingly, the complexity and the entwined nature of the globalized business activities calls for certain warranties to make sure internally and ensure the externa stakeholders and investors that institutionalized mechanisms are in place to safeguard their vested interests. Hence, corporate

governance mechanisms and procedures (e.g., board of directors, safeguarding institutional shareholders, directors' remuneration and committees) provide a reasonable insurance for shareholders and different stakeholders whose interests might be in conflict with company managers that the latter will not take any opportunistic decisions which might detriment their interests thanks to the monitoring, advisory and disciplinary functions of corporate governance.

From this point of view, the logical premise is that with all these safeguarding elements in place one should reasonable expect a positive financial performance when high-quality corporate governance system is in place when the market conditions are favorable or minimization of losses when the market climate is adverse. However, previous studies (e.g. Yermack et al., 1996; Bhagat and Black, 2002; Bhagat and Bolton, 2009; Wintoki et al., 2012; Francis et al., 2015; Adams and Jiang, 2016; Andreou et al., 2016) which examined the association between corporate governance and financial performance did not report a consistent set of results. Apart from the measurement error associated with using individual, and randomly selected, corporate governance mechanisms to stand for corporate governance indicators (see Bhagat and Bolton, 2009; Adams and Jiang, 2016 and Shin et al., 2018), we attribute the inconsistency of the reported results to omission of certain proxies or indicators which have the potential of accounting for the aforementioned relationship. Our argument is that the agency conflicts which are discussed in virtually every corporate governance study (either directly or indirectly) have never been given the appropriate empirical attention. We posit and propose that the agency conflicts to moderate the relationship between corporate governance and firm financial performance since agency conflicts is the main driver of the continuous update when it comes to the UK corporate governance code (see the UK corporate governance code between 1992 and 2018).

Previous studies attempted to predict the relationship between corporate governance and firm financial performance in different firm specific characteristics claiming that the firm specific characteristics explain the change in that relationship. They found that the relationship between corporate governance and firm financial performance is contingent on (i) ownership structure (Nikolov and Whited, 2014), (ii) structure of company assets (Klapper and Love, 2004), (iii) leverage (Watts and Zimmerman, 1990), (iv) growth opportunities (Jensen, 1986; Lasfer 2002) and (v) business risk (Rantakari, 2011). Empirical evidence so far has attempted to proxy agency conflicts through firm specific characteristics which carry some sort of measurement error. In other words, those studies made a strong assumption that agency conflict is an observable variable whereas in reality it is a rather a latent one (unobserved). Scholars such as

Field 2009 makes it clear that failure to acknowledge the latent nature of unobserved variables increases the level of bias in the estimated coefficients (Borgholthaus et al., 2019).

This study contributes to the existing literature from a methodological and theoretical perspectives. From a methodological point of view, given the multi-dimensional nature of corporate governance (Solomon, 2013), there is a high likelihood that treating corporate governance as a collection of fragmented devices (e.g. board independence and CEO compensation) is likely to yield some sort of measurement error (Larcker et al., 2007; Dey, 2008). The natural question which arises here is that what and to which extent governance mechanisms tend to interact to form this governance system? In other words, are there any significant interconnections amongst the mechanism or all work in isolation? Although a theoretical argument will point to a positive answer nevertheless there is empirical evidence which convincingly address the aforementioned question. To account for the dearth of empirical evidence and based on the methodology first proposed by Larcker et al. (2007), we are utilizing Principal Component Analysis (PCA) to better proxy for corporate governance and take all the mechanisms into consideration rather than in a fragmented manner.

In order to avoid the selection bias of corporate governance variables as well as to overcome the problem of multi-collinearity, we built our unique dataset which includes 28 corporate governance mechanisms which represent all the available indicators and mechanisms suggested by the UK corporate governance code and empirical literature to create eight valid corporate governance factors which reflect eight different dimensions of corporate governance conditional upon PCA. Nevertheless, our contribution does not stop at the better re-calibration of the corporate governance indicators and mechanisms, but we take one step further and account explicitly for the latent nature exhibited by the agency conflicts. To our knowledge no empirical research has tried to account for the latter we base our estimation of this latent variable on the method put forward by Dey (2008) by utilizing factor analysis to proxy agency conflicts. We collected data corresponding to different scenarios under which the agency conflicts are more pronounced (for example when the CEO power is allowed to act without certain restraints) to build an agency conflicts score/index using factor analysis. The latter is recommended to estimate and measure latent variables from observable data and produced a newly constructed score/index for each cross-sectional unit across time (Field, 2009). Factor analysis derived its influence from the premise that certain variables exhibit somewhat similar patterns because they are linked to the latent variable which is the agency conflicts in our paper.

Our study differs from the previous research in several ways. Although the initial inspiration of our study stemmed on Dey's (2008) research, our research departs from Dey's (2008) original study in a number of ways. First, Dey (2008) examined the association between corporate governance and financial performance in different levels of agency conflicts in the US market; our study uses the UK as a field of study. Although both markets are highly internationalized there are some subtle differences in terms of corporate governance codes, business attitudes, board member decomposition, institutional framework, and acceptable attitudinal norms. Unlike Dey (2008), we position our study onto the dynamic or time-varying pillar of analysis amongst corporate governance, agency conflicts and financial performance rather than on the static or time-invariant pillar. Klopper et al. (2004) argued that board structure is an endogenous decision that companies decide to mitigate the negative impact of agency conflicts for better operations. Accordingly, companies should take into consideration the current level of agency conflicts and financial performance when they decide the composition of corporate governance mechanisms (such as board independence and directors' remuneration) to improve financial outcomes. The premise here is that companies should adjust the corporate structure in a way that mitigates the harm of agency conflicts without compromising financial performance. Unlike Dey (2008), we test the impact of corporate governance on firm financial outcomes conditional upon different levels of agency conflicts and different qualities of corporate governance. Mitchell (2012; p. 130) argued that using the interaction between two continuous variables with the application of "margins" help we can discover how the slope of the relationship between the two continuous variables changes in conjunction with the change in a third variable. The interaction between corporate governance and agency conflicts can also be described as the degree to which the slope of corporate governance against the firm's financial performance changes as a function of the level of agency conflicts. In other words, the financial performance is conditional upon corporate governance and different levels of agency conflicts all working in tandem.

Dey (2008) examined the impact of the mean of corporate governance on the mean of corporate financial performance using three different levels of agency conflicts (High, Medium, and Low). In this context, Dey (2008) applied cluster analysis to classify companies into clusters with high, medium, and low levels of agency conflicts. However, such exploratory data analysis techniques (e.g., clustering analysis) are highly relied on simulation techniques to identify the optimal number of clusters, which incorporates some sort of subjectivity in the

decision1. In other words, the companies are analyzed within each cluster with respect to agency conflicts, but cluster analysis does not offer any robust cut-off points to classify companies into distinguished clusters.

From a theoretical point of view, this study contributes to the existing literature by predicting the situations under which the firm value is maximized conditional upon the level of agency conflicts which work in tandem with corporate governance mechanisms. In addition, we can safely forecast of the change in the relationship between corporate governance and financial performance as a function of the change in the level of agency conflicts. From a policy setting perspective, if we can predict the change in the firm value as a function of the change in the level of agency conflicts paired with the quality of corporate governance, managers and owners can make explicit interventions into company's strategy and policy makers can identify companies which are likely to mitigate uncertainty into the financial and business environment. Increasing thereby the transparency and the fundamental role of corporate governance. By employing Mitchell's (2012) recommendations and owing to the fact that we are able to measure corporate governance and agency conflicts as continuous variables, we are able to graphically show the change in the relationship between corporate governance and firm financial performance as a function of the change in the level of agency conflicts. This technique enables us to graphically plot firms' financial performance using six different pair-wise matches stemming from the two levels of agency conflicts (high and low) and three different qualities of corporate governance (high, medium, and low).

Our results showed that companies have significant differences in terms of agency conflicts and corporate governance qualities which reflects the fact that there is no one single set of corporate governance procedures which fits all types of companies. On the other hand, we report that firm financial performance is positive only when high (low) corporate governance is paired with high (low) levels of agency conflicts. Moreover, firm financial performance is at its peak only when companies have high qualities of corporate governance and high levels

[1] In Dey's (2008) research, the researcher stated that there is no satisfactory method for identifying the optimal number of clusters for any type of cluster analysis. Accordingly, the researcher applied three simulation techniques, namely (i) the cubic clustering criterion (CCC), (ii) Pseudo-F-Statistic (PSF), and (iii) Pseudo-T^2-Statistic (PSTS). The methodology, which was developed, by Cooper and Milligan (1985, 1988) is based on the fact that the optimal number of clusters is the one which is repeated in the three previously mentioned methods (CCC, PSF and PSTS). In Dey's (2008) research, the first two methods found that the optimal number of clusters might be three or seven, while the third method found that the optimal number of clusters could be three, seven or nine. Despite the fact that three and seven are repeated in the methods, Dey (2008) chose the number of three clusters because the sample did not enable her to have seven clusters.

of agency conflicts. This interesting result shows that companies should not be encouraged to reduce the level of agency conflicts, on contrary, they should operate in an environment characterized by high levels of agency conflicts but to make the best of the opportunities found in such environment, those companies are encouraged to increase the quality of corporate governance system in order to mitigate the negative side of agency conflicts. It turns out that high level of agency conflicts boosts the companies to invest more into mitigating these conflicts by investing more resources into internal control they reap (somehow Inadvertently) higher financial gains. Another plausible explanation is that the market interprets positively the strive of companies to account for agency conflicts and given its non-observability on behalf of the outsiders the company outsiders view sympathetically these policies. We, finally, argue that empirical evidence that interpreting the relationship between corporate governance and financial performance is misleading in the absence of the level of agency conflicts.

The rest of this paper is structured as follows: section 2 is the theoretical framework and development of hypotheses. Section 3 is the research design. Section 4 is the empirical study followed by section 5 where we discuss the results and conclude.

2 Theoretical Framework and Hypothesis Development

In our paper, we aim to identify the situations in which the value of the firm is maximised. In this regard, we attempted to explain the relationship among corporate governance, financial performance, and agency conflicts in one model. We argue that the relationship between corporate governance and firm financial performance is explained by the level of agency conflicts since the latter is the main driver of corporate governance. Since shareholders (the principal) and managers (the agent) are utility maximizers, it is more likely to observe a conflict of interest between the two contracted parties because each of the two parties will attempt to maximize their utility at the expense of the other (Watts and Zimmerman, 1990). This conflict of interest is even exacerbated when there is a separation between ownership and control due to the information asymmetry gap (Larcker et al., 2007). Such a conflict of interest gives the managers the ability and opportunity to shirk (to behave opportunistically as opposed to the efficient behavior which maximizes the shareholders' return). The ability to shirk is coming from the fact that managers have more information than the shareholders due to the separation between ownership and control (Larcker et al., 2007; Farber, 2005). On the other hand, managers have the opportunity to shirk due to the flaws and shortcomings of contracts (e.g., debt and remuneration) as well as poor governance systems (Kyere and Ausloss, 2021; Chen and Zhang, 2018; Farber, 2005).

Empirical research (e.g., Sun et al., 2017; Ntim et al., 2015; Dey, 2008; Lasfer, 2002; Jensen and Meckling, 1976) found that such agency problems have a negative impact on firm market value. The reduction in the firm value is attributed to the fact that it is generally impossible for the owners or the managers at zero cost to ensure that the managers will make the optimal decisions from the owners' viewpoint. As a result, without bringing the alignment of interest between managers and owners, company value will continue to deteriorate (Ozkan, 2011; Farber, 2005).

2.1 Agency conflicts, corporate governance, and financial performance

Scholars of agency theory (e.g. Jensen and Meckling, 1976, Fama and Jensen, 1983, Baiman, 1990, Eisenhardt, 1992, Yermack, 1996, Larcker et al., 2007, Dey, 2008, Bhagat and Bolton, 2009, Ozkan, 2011; Kaplan, 2013; Ntim et al., 2015; Kyere, and Ausloss, 2021) proposed a considerable number of governance mechanisms (e.g. independent outside directors, independent monitoring committees, effective remuneration contracts that are linked to performance and promoting institutional shareholders and block holders to participate in the process of monitoring the management behaviour) which are effective in minimising, or even eliminating, the harm caused by agency problems.

Previous literature, which have examined the association between corporate governance and financial performance, did not report a consistent set of results. One possible explanation to such mixed results is that the association between corporate governance and financial performance is contingent on other factors which were not explicitly taken into consideration. In other words, the potential positive impact of corporate governance on firm financial performance is expected, only, in the presence of certain conditions. By following the evolution of the UK corporate governance code since its debut by the Cadbury Code (1992) till the Combined Code (2018), one can observe that the main driver[2] of the 'continuous' update of the UK corporate governance code was the agency conflicts that led to a series of corporate scandals[3] (e.g. Baring bank, MG Rover Group, Royal bank of Scotland group, and Tesco). However, previous literature did not directly link between corporate governance and its main

[2] Corporate governance is not only about constraining the managerial opportunistic behavior, but also to "*help build an environment of trust, transparency and accountability necessary for fostering long-term investment, financial stability and business integrity*", subsequently, corporate governance promotes for "*supporting stronger growth and more inclusive societies*" (OECD ,2015a, p. 7).

[3] Agency conflicts related to (i) poor monitoring, (ii) poor remuneration contracts which are not well linked with company performance and (iii) lack of independence were found to be the main reason behind those scandals (for more information, see Solomon, 2013).

reason of existence (agency conflicts), rather they attempted to construct an association between corporate governance and organizational financial performance. We argue that by controlling for agency conflicts and its potential impact on the association between corporate governance and firm financial performance is the missing piece in the puzzle.

Jensen and Meckling (1976) argued that the level of agency conflicts varies across firms depending on the attractiveness of "perquisites", the complexity of the operational environment and the extent of the information asymmetry gap between the shareholders and the managers. As a matter of fact the wider this gap is, the more likely that managers will opportunistically behave as opposed to firm value maximisation. This reflects the fact that companies are different in terms of the level of agency conflicts due to the differences in the symptoms of agency conflicts (attractiveness of perquisites, information asymmetry gap and level of monitoring). As a result, companies should set up the corporate governance system which is able to mitigate or even eliminate the harm caused by the symptoms of agency conflicts which in turn lead to the agency conflicts per se.

However, the cost of corporate governance depends on its quality (Solomon, 2013). For example, high quality corporate governance systems (e.g. advanced internal control system, hiring experienced and talented Non-Executive Directors (NED) who might receive high remuneration plans and engage with one of the Big-4 auditing firms to do the auditing of the company's financial accounts) are more costly compared to low quality counterparts (e.g. non-big 4 audit firms or superficial management control systems). Accordingly, companies operating in high agency conflicts environment should invest in high corporate governance systems and vice versa for companies operating in low levels of agency conflicts environment.

In other words, companies which operate in low levels of agency conflicts are expected to spend less on corporate governance systems compared with companies which operate in high magnitude of agency conflicts. As a result, if one company which operates in low levels of agency conflicts choose to invest in advanced governance devices, this might have a detrimental effect on its financial performance because the cost of having advanced corporate governance mechanisms outweigh the benefits. Hence, the relationship between corporate governance and financial performance might take different shapes according to the level of agency conflicts since the intensity of the latter might affect the firm financial performance. Motivated by this perspective, we hypothesize:

H_1: companies with high levels of agency conflicts and high corporate governance quality will have positive financial performance.

H2: companies with low levels of agency conflicts and high corporate governance quality will have negative financial performance.

3 Research Design

3.1 Data and Sample

Our sample consists of 76[4] non-financial companies listed in FTSE100 between 1999 and 2014[5]. Due to lack of quantifiable and reliable data before 1999[6], we were not able to trace the evolution of the UK corporate governance code since the debut of Cadbury Code (1992). Three main sources provide data for this study; corporate governance data was extracted from BoardEx, while the financial data was extracted from Compustat global (WRDS) and Data Stream. All financial and corporate governance variables are annual data relating to firms' accounting year. We matched corporate governance variables with financial variables in the bases of firms' accounting year, which vary across firms. Our sample includes only non-financial companies listed in FTSE100. We excluded the financial companies from the sample not only due to substantial differences in the capital structures but also due to a different set of regulations and governance cedes that they have to comply with.

3.2 Research Methodology

Our main hypothesis is that the level of agency conflicts positively moderates the association between corporate governance and firm financial performance. Before we test the moderation effect of agency conflicts in the association between corporate governance and financial performance, we captured the latent variables corporate governance and agency conflicts using principal component analysis and factor analysis, respectively. The analysis is made in two stages; in stage one, we regressed financial performance on corporate governance in order to identify the significant corporate governance factors. Then, in stage two, we controlled for the interaction between corporate governance and agency conflicts to see how the association between corporate governance and financial performance changes as a function of the level of agency conflicts.

[4] There are 78 non-financial companies listed in FTSE100, but while calculating the standard deviation of net revenues to total assets, Coca Cola and Royal Mail were excluded from the sample because both of them has only 1 year of financial data which is not enough to calculate the standard deviation.

[5] The UK corporate governance code did not introduce any significant changes to the code since 2014 to extend the sample to after 2014.

[6] BoardEx (the database we relied on collecting corporate governance information) coverage of governance data of the UK companies started in 1999.

3.3 Variables Measurement

3.3.1 Corporate Governance

Corporate governance has a special and complex nature which cannot be captured by individual mechanisms (Larcker et al., 2007; Dey, 2008). The argument is that corporate governance works as a system of devices rather than individual provisions (Solomon, 2013). However, due to lack of a coherent theory that shows how corporate governance mechanisms work together as a system, this study applies principal component analysis (thereafter PCA) which is able synthesise corporate governance mechanisms into more homogenous factors/dimensions. In order to reduce the measurement error and bias level, we collected data for 28 corporate governance mechanisms [almost all corporate governance provisions recommended by the UK corporate governance code and empirical research]. Then, the PCA was used to associate the 28 individual corporate governance variables with different dimensions of corporate governance. By doing so, more systematic measurement of corporate governance dimensions is produced to overcome the problem of measurement error associated with using single provisions. We generated eight valid corporate governance components which reflect eight different corporate governance dimensions using PCA (see table 1 in appendix A). For simplicity and ease of interpretation of results, we assigned a name to each corporate governance dimension based on the loaded variables.

Identifying the significant components of corporate governance

We regressed financial performance[7] on the eight corporate governance factors generated by PCA using GMM[8] estimator:

$$FinPer_{it} = \alpha + \pi_1 FinPer_{it-1} + \sum \beta_n XCorpGovFactor_{it} + \gamma_1 ttlassets_{it} + \gamma_2 2leverage_{it} + \gamma_3 fcf_{it} + \sigma_t + u_{it} \quad \ldots\ldots (1)$$

Where:

$FinPer_{it}$: financial performance of company i at time t, financial performance was captured by Tobin's Q and ROA. $FinPer_{it-1}$: financial performance of company i at time t_{-1}. $CorpGovFactor_{it}$: the corporate governance principal components for company i at time t. – 8

[7] We tested the impact of corporate governance on firm financial performance proxied by Tobin's Q and ROA in the short run (t), medium run (T_{+3}) and long run (t_{+5}).

[8] GMM fixed effect model removes time invariant effects such as industry effects.

principal components: Board Compliance, Board structure, Board diversification I, compliance of Board's subcommittees, Executive directors' experience, Executives' tenure, Non-Executive directors' experience, Board diversification II

$\underline{Ttlassets}_{it}$: total assets of firm i at time t. $\underline{Leverage}_{it}$: Leverage of firm i at time t, measured as the ratio of long-term debt to total assets. $\underline{fcf}_{it}$: Free Cash Flow for firm i at time t, proxied by the cash in hand scaled by total assets. Cash in hand is measured as cash plus short-term investment. σ_t: The time fixed effect. u_{it}: The idiosyncratic error.

The GMM is a dynamic panel data estimator that takes into consideration the simultaneous and dynamic effect between explanatory variables (corporate governance and agency conflicts) and outcome variable (firm financial outcomes) as well as the unobserved heterogeneity such as differences in the effectiveness of board members among firms (Adams and Veprauskaite, 2013). GMM uses the first differences to transform the equation, which removes any time invariant variables such as industry specific effect (Abdallah et al., 2015; Roodman, 2009; Mileva, 2007. Also, GMM allows for the modelling of partial adjustment mechanism by including one or more lags of the dependent variable which addresses the dynamic effect between dependent (financial outcomes) and independent regressors (corporate governance and agency conflicts) – see Adams and Veprauskaite, 2013; Roodman, 2009 for a further discussion. Moreover, GMM uses 'natura' and 'valid' instrumental variables by including the lags of the dependent and independent variables for endogenous variables (Roodman, 2009; p. 105). The results show a remarkable robustness under different time horizons namely short (t), medium (t_{+3}) and long (t_{+5}) run. Table 2 and Table 3 (Appendix A) show that Board *Compliance* and *Board Diversification* are the significant factors which influence corporate financial performance in different time horizons.

3.3.2 Agency conflicts

Given the latency of agency conflicts since it reflects human behavior, it is difficult to measure and capture such a term in a tangible way. We proxy agency conflicts by creating an agency conflicts score using a bunch of variables which echoes the situations where the agency conflicts are more likely to be pronounced. By doing so, we have a better measurement for the term "agency conflicts". These situations include firm size, free-cash-flow, complexity of business environment, growth opportunities, operating risk and leverage.

Firm size

Demsetz and Lehn (1985) argued that big companies usually engage with more operations than small companies do, which gives the managers of big companies the opportunity to shirk (over consume non-pecuniary benefits such as luxury offices). Additionally, Watts and Zimmerman (1990) shed the light on the fact that big companies are more likely to be under the scrutiny of the general public and the government, which motivates those big corporations to manage earnings in order to reduce reported profit in an attempt to reduce political costs.

Free Cash Flow

On the other hand, Jensen (1986) and Goranova et al. (2017) argued that the level of conflicts between shareholders and managers increases when there is a substantial free cash flow[9] because of the conflict arises on how to use this free cash flow. Managers tend to misuse the cash remained after funding projects and repaying the debt in value destroying activities (e.g. M&A activities) and/or increasing overconsumption of perquisites which have detrimental consequences on the firm value.

Complexity of business environment

Ranatakari (2007) reported that the volatility of operating environment affects the optimal organizational structure as the increase in the magnitude of volatility in operating environment increases the level of agency conflicts. This comes in accordance with Demsetz and Lehn (1985) when they reported that managers of firms with more volatile working environment are more likely to engage with moral hazard problems because it becomes difficult for the shareholders to monitor the management behavior. In addition, Stein (1997) argued that companies, which are operating in high complex environment, might suffer from resource misallocation due to the fact that CEOs of these firms lose their focus , and as a result, they are more likely not to take the optimal decisions that increase their companies' profitability compared to other CEOs who operate in less complicated environments.

Growth Opportunities

Furthermore, Jensen (1986) and Dey (2008) stated that companies with high growth opportunities are more likely to have information asymmetry problem because of the increasing power of their managers. Jensen (1986) justifies this as managers are incentivised to go beyond

[9] Free-Cash-Flow is the available cash on hand after funding all projects that have positive net present values (Jensen, 1986; p. 323)

the optimal size so that they justify increasing the resources under their control to meet or beat the high growth rates. On the other hand, Murphy (1985) argued that managers are also incentivised to go beyond the optimal size as this will increase their compensation given the fact that increase in compensation is associated with growth in sales. Lasfer (2002) in his UK based study reported that the relationship between board structure and firm value is contingent on the magnitude of the firm growth rate. Companies with low growth rates are more likely to have high levels of agency problems due to the substantial free-cash-flow they have.

Operating risk

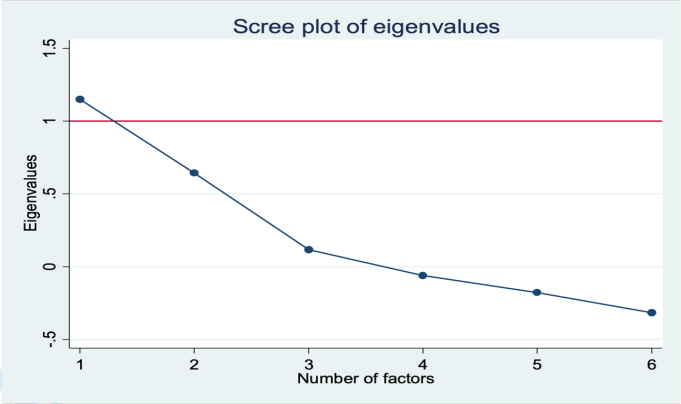
Dey (2008) stated that riskier firms usually suffer from high cost of debt capital. Accordingly, those riskier firms are self-incentivised to indulge to activities to reduce the perception of risk and as a result reducing the cost of debt capita. Thus, the severity of agency conflicts is expected to be higher in companies with high operating risk. Operating risk is measured by the standard deviation of sales deflated by total assets.

Leverage

Additionally, companies with high levels of leverage are more likely to exercise earnings management to keep the leverage ratio as small as possible; otherwise, managers might be penalized due to debt covenants that give the lender the right to intervene managers' decisions (Watts and Zimmerman, 1990). Such intervention negatively affects companies' financial performance. Examples of debt covenants could be; restrictions of mergers activity, restrictions on investment in other companies, restrictions on increasing debt and restrictions on selling some assets (Bowen et al., 2008; Watts and Zimmerman, 1986).

Those six variables previously discussed are used to capture the term agency conflicts by creating a score using factor analysis. Such an agency conflicts score helps us to determine the magnitude of agency conflicts numerically so we can distinguish between companies with different levels of agency conflicts (i.e., high, medium, and low levels of agency conflicts). The rule of thumb states that factors with eigenvalues greater than "one" are considered valid and robust. As a result, we captured agency conflicts by using only one factor (see figure X below).

Figure (X): the scree plot of the agency conflicts' factors' eigenvalues.



The results of factor analysis show that firm size and operating risk are the most 2 important variables in capturing the term agency conflicts since the factor loadings value are significantly high (see table 1).

Table (1): Factor loadings of agency conflicts

Variables	Factor loadings
Total assets (firm size)	0.6971
Standard deviation of total Sales deflated by total assets (operating risk)	0.6947

3.3.3 Financial Performance

To account for the financial performance, we use widely pretested proxies, namely ROA[10] and Tobin's Q. The latter (defined as the ratio of Market Value to Book Value[11]) accounts for the forward and the backward-looking nature when it comes to the economic value of the firm. In addition, the Tobin Q is subject to less manipulation compared to other variables, which are derived exclusively from financial statements. Hence, by incorporating, both market and statement data, we will be in position to capture the performance of the firm in a more consolidated manner. Various studies pointed to the importance of the Tobin Q as a fit dependent variable in a range of governance-to-firm value studies (Klapper and Love, 2004; Balasubramanian, Black and Khanna, 2010; Black, Carvalho, and Gorga, 2012; Connelly, Limpaphayom, and Nagarajan, 2012).

Before we run Model 2, we ran a T-test[12] in order to examine the significance of the difference between corporate governance qualities in high and low levels of agency conflicts. The data

[10] Estimations of the ROA model are reported in the appendix.

[11] We also measured Tobin's Q by the ratio of book value of debt plus market value of equity divided by the book value of assets. However, due to significant outliers and extreme values resulted from the effect of the book value of debt; we stick with the standard definition (Book to Market ratio).

[12] The results of the Wilcoxon-Mann-Whitney two-sample test for differences in medians between the two corporate governance factors in the two agency conflicts groups were similar to the results of the T-test.

showed a significant difference in the mean score of corporate governance (proxied by *Board Compliance* and *Board Diversification*) in companies with low and high levels of agency conflicts (see table 2).

Table (2): Independent groups' t-test of difference in mean corporate governance factors between high and low levels of agency conflicts groups.

	Corporate governance factor	Low agency conflicts	High agency conflicts	t-test
Mean	***Board Compliance***	-1.0003	0.9995	-17.2572***
SD		1.7647	2.0028	
Mean	***Board Diversification I***	-0.08405	0.08708	-1.8866*
SD		1.2806	1.6512	

*** p<0.01, ** p<0.05, * p<0.1
N= 1,061 and DF=1,059

Testing the moderation effect

In model (2), we regressed firm financial performance on corporate governance and agency conflicts using the GMM model to estimate the individual effect as well as the interaction effect between the regressors taking into account the dynamic nature of this relationship.

$$\boldsymbol{FinPerf_{it}} = \boldsymbol{\alpha} + \boldsymbol{\beta_1 FinPerf_{it_{-1}}} + \boldsymbol{\beta_2 Governance_{it}} + \boldsymbol{\beta_3 Agency_{it}} + \boldsymbol{\beta_4 Governance_{it}} * \boldsymbol{Agency_{it}} + \Omega_t + \varepsilon_{it} \ \ldots\ldots\ldots\ldots (2)$$

Where:

$FiPerf_{it}$: Tobin's Q of company i at time t. $FiPerf_{it-1}$: The first lag of Tobin's Q of company i at time t. $Governance_{it}$: Corporate governance factors of company i at time t. $Agency_{it}$: The agency score for company i at time t. ϵ_{it}: The idiosyncratic error term. Ω_t: Time fixed effects.

3.4 The association between corporate governance and financial performance as a function of agency conflicts

In order to, dynamically, see the change in the slope of the relationship between corporate governance and financial performance due to the change in the level of agency conflicts, we applied interaction effect with the use of margins at different distributional points of the regressors. This allows us to trace the change in Tobin's Q in different levels of corporate governance (low [10%], medium [50%] and high [90%]) and different levels of agency conflicts (low [10%] and high [90%]). By doing so, we can figure out the best scenario where the financial performance is maximised. As discussed earlier, we anticipate that more pronounced corporate governance mechanisms, such as board compliance and board diversification, will actively monitor and challenge the managers when the managers takes steps to change the strategy or gets involved in investment opportunities or various projects

which have the potential or instilling risks into the firm's operations. Thus, any relation among corporate governance, agency conflicts and financial outcomes should be more pronounced in the tails of the distribution of the agency conflict and corporate governance. In other words, the association between corporate governance and financial performance is contingent on the magnitude of agency conflicts and the quality of the corporate governance system applied.

In a typical GMM model, one has to set the endogenous as well as the exogenous and instrumental variables. Empirical literature (e.g. Lasfer, 2002; Klopper et al., 2004; Bhagat and Bolton, 2009; Wintoki et al., 2012; Abdallah et al., 2015) argued that the level of agency conflicts and board structure including board independence, board size and executives' compensation plans are endogenous[13] variables with a potential dynamic effect on Financial performance. Accordingly, we set "*Agency Conflicts*" and "*Board Compliance*" as well as the first lag of the financial performance indicator as endogenous variables. We used only the second lag of the endogenous variables as instruments because the first lag is expected to be auto correlated with the error term while the second lag is not (Roodman, 2009). The rule of thumb in the GMM estimator is that the number of instruments should not exceed the number of cross-sections in order not to weaken the estimations of the Hansen test of the validity of the instruments (whether the instruments are exogenous). In addition, standard errors are clustered to make sure that standard errors across firms are completely independent[14] (Peterson, 2009).

4. Results and Discussion

4.1 Descriptive statistics

We start the analysis by showing the descriptive statistics of our data. Table 1 shows the descriptive statistics of the corporate governance and agency conflicts variables. Based on the variables loaded to corporate governance and agency conflicts variables, higher scores of

[13] Endogenous variable here refers to the fact that it is not completely independent from the outcome variable.

[14] OLS estimates unbiased and true estimations if the residuals are IID (Independent and Identically Distributed). However, if the residuals are correlated across observations, the OLS does not produce the true variability of the coefficients estimates (Peterson, 2009; p. 435). There are two common types of dependence in panel data; (i) time-series dependence, and; (ii) cross-sectional dependence. The first form of dependency refers to the situation where the residuals of a given firm are correlated across years (Wooldridge, 2010). On the other hand, the second form refers to the situation where the residuals of a given year are correlated across difference firms (Paterson, 2009; p. 436). Failure to control this dependency leads to biased estimations. Accordingly, there are many ways (e.g. Fama and Macbeth standard errors, 1973; Newey and West, 1987) to correct the standard errors of estimations. Stata offers a command developed by Peterson (2009) which is able to correct standard errors to be independent and identically distributed.

corporate governance and agency conflicts reflect higher quality corporate governance and higher levels of agency conflicts respectively.

Table 1: Descriptive statistics of corporate governance factors and agency conflicts

Variables	Mean	Median	10%	90%	Skewness	Kurtosis
Board Compliance	0	0	-2.7	2.9	-0.1810	3.0547
Board Diversification I	0.001	0.1	-1.8	1.9	0 .2188	2.9365
Agency Conflicts	0.001	-0.2	-0.7	0 .6	2.944	16.82

4.2 Results of H_1 and H_2: The moderation effect of agency conflicts on the association between corporate governance and financial performance

We regressed financial performance proxied by Tobin's Q on corporate governance and agency conflicts taking into consideration the potential impact of the interaction between the two independent variables (agency conflicts and corporate governance). Tables (*5*) and (*6*) show the estimations of the individual effects as well as the interaction effect of corporate governance and the level of agency conflicts on Tobin's Q[15].

Table (5): The estimations of the individual effect of Corporate Governance and Agency Conflicts on Tobin's Q

VARIABLES	Tobin's Q
First lag of Tobin's Q	0.9985***
	(0.0044)
Agency conflicts	-0.1067***
	(0.0344)
Board Compliance	0.0742***
	(0.0157)
Board Diversification	-0.0031
	(0.0090)
Observations	976
Number of firm_id	76
AR (2)	0.320
Hansen Test	0.320

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

[15] The ROA model results are reported in table 4 in the appendix. The interaction effect between corporate governance proxied by Board Compliance and the level of agency conflicts was positive and significant.

Table (6): The estimations of the individual effect as well as the interaction effect of Corporate Governance and Agency Conflicts on Tobin's Q

VARIABLES	Tobin's Q
First lag of Tobin's Q	1.0176***
	(0.0066)
Agency conflicts	0.0038
	(0.0861)
Board Compliance	0.0118
	(0.0224)
Board Compliance * Agency conflicts	0.1043**
	(0.0522)
Board Diversification	-0.0011
	(0.0166)
Board Diversification * Agency conflicts	0.1173*
	(0.0622)
Observations	976
Number of firm_id	76
AR (2)	0.430
Hansen Test	0.851

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Supporting our hypotheses, we found that agency conflicts moderate the association between corporate governance and firm financial performance. The interaction effect of corporate governance and agency conflicts was positive and statistically significant (corporate governance was proxied by board compliance β=0.1043, P-value: 0.045) (corporate governance proxied by board diversity β=0.1172, P-value: 0.059). One can interpret the coefficient of the interaction effect between board compliance and agency conflicts in (*table 6*) as the reported Tobin's Q goes up by 10.43% for each one-unit increase in 'both' agency conflicts and the quality of corporate governance proxied by Board Compliance. However, the reported Tobin's Q increases by 11.72% for each one unit increase in board diversification and agency conflicts. On the other hand, the individual effect of corporate governance (proxied by board compliance and board diversification) and agency conflicts are insignificant when we controlled for the interaction between the two variables. These insignificant coefficients of the individual effects reflect the fact that agency conflicts perfectly moderate the association between corporate governance and financial performance.

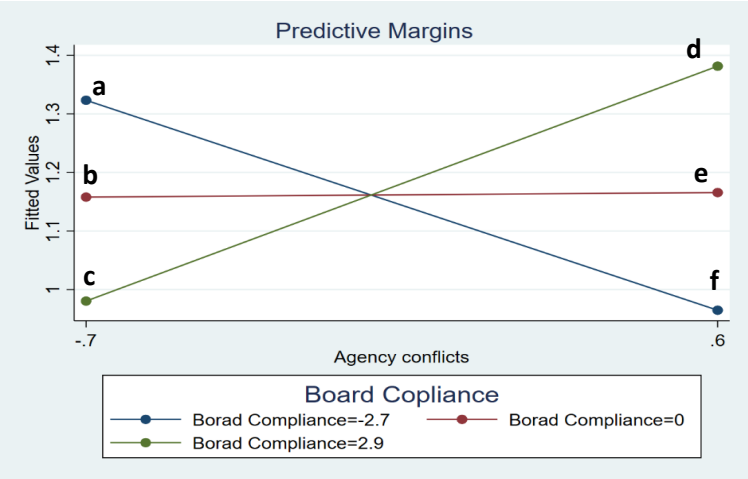
4.3 Results of H1 and H2 : The moderating effect of agency conflict on the relationship between Corporate Governance quality and Financial Performance

We test H_1 and H_2 using Model (2) where we regress Tobin's Q on corporate governance and agency conflicts. The regression results showed that testing the individual effect of corporate

governance and agency conflicts on firm financial outcomes does not reflect the true impact on firm financial performance.in understanding how the two variables affect the financial performance of a firm. Without controlling for the interaction between corporate governance and agency conflicts, both agency conflicts and corporate governance had a significant impact on firm financial performance proxied by Tobin's Q, (see *table 5*). However, after controlling for the possible interaction effect of the two variables on firm financial performance, the individual effect of corporate governance and agency conflicts turns insignificant. On the other hand, the interaction effect between the two terms was positive and statistically significant for the two factors of corporate governance (board compliance and board diversification) (see *table 6*). One can interpret the coefficient of the interaction effect between board compliance and agency conflicts in *table 6* as the reported Tobin's Q goes up by 10.43% for each one-unit increase in 'both' agency conflicts and the quality of corporate governance proxied by Board Compliance.

Figure (*1*) provides a visualization to the change in the relationship between corporate governance and Tobin's Q in different levels of agency conflicts (bottom 10% and highest 10%). It shows how the relationship between corporate governance proxied by "*Board Compliance*" and financial performance proxied by "*Tobin's Q*" changes as a function of the "*level of agency conflicts*". For example, Tobin's Q deteriorated from point "a" to point "f" as the level of agency conflicts increases (from the bottom 10% to the highest 10%) holding the level of Board Compliance constant (low at the bottom 10%). This is because companies with low levels of agency conflicts do not need to invest 'too much' on high quality governance systems, for example, increasing board independence and/or increasing NEDS' total compensation. This cost saving boosted up financial performance as an application for the "cost benefit approach". However, keeping the level of 'low' governance quality constant, Tobin's Q goes down up to point (f), the lowest reported Tobin's Q, with the increase in agency conflicts. This is justified as the increase in agency conflicts with low quality corporate governance mechanisms in place enabled opportunistic managers to expropriate company resources to serve their own interests at the expense of the shareholders' interest.

Figure (1): the relationship between financial performance and corporate governance in different levels of agency conflicts and different qualities of corporate governance proxied by Board Compliance



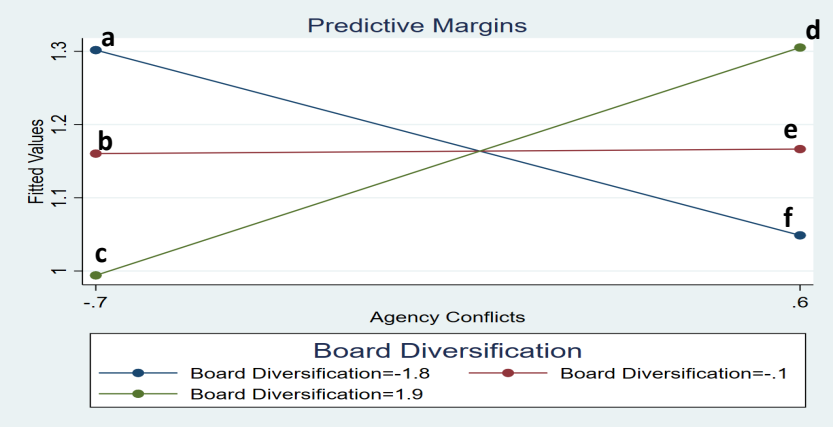
On the other hand, Tobin's Q improved from point "c" to point "d" as the level of agency conflicts increases (from the bottom 10% to the highest 10%) holding the level of Board Compliance constant (high at the highest 10%). The results showed that point "4" has the highest reported Tobin's Q in our sample. At point "d", we have the situation where the level of agency conflicts is maximised (the highest 10%) and the level of Board Compliance is very high (the highest 10%). This reflects the fact that reducing the level of agency conflicts is not the best way to maximize financial performance because point "a" where the level of agency conflicts is low is in a worse off situation compared with point "d" where the level of agency conflicts is high (the highest 10%). The secret ingredient is the quality of corporate governance that can mitigate the harm of the negative side of agency conflicts. At point (d), we have high levels of agency conflicts (90^{th} percentile), but thanks to the high quality of corporate governance mechanisms in place, companies were able to control managers' opportunistic behaviour in a way that enables the companies to benefit from the opportunities[16] available in high agency conflicts environment without compromising financial outcomes.

Figure (*2*) shows how the relationship between corporate governance proxied by "*Board Diversification*" and financial performance proxied by "*Tobin's Q*" changes as a function of the "*level of agency conflicts*". The findings come in line with the findings of Board Compliance. Companies with high levels of agency conflicts and more diversified boards outperform other companies. This reflects the ability of corporate governance proxied by Board

[16] Opportunities include benefitting from financial resources by cross listing a company in multiple markets. Increasing debt levels to reduce the cost of capital (Damodaran, 2006). Working in more volatile environment trying to increase sales revenues (

Diversification to control the harmful effect of agency conflicts without compromising firm financial performance proxied by Tobin's Q.

Figure (3): the relationship between financial performance and corporate governance in different levels of agency conflicts and different qualities of corporate governance proxied by Board Diversification



4.3.1 The moderation effect of agency conflicts in the association between corporate governance and financial performance [The dynamic relationship]

We hypothesized that the level of agency conflicts is positively moderating the association between corporate governance and firm financial performance. Thus, highlighting the dynamic nature of the relationship. In contrast to Previous literature (e.g., Bushman et al., 2004; Klopper et al., 2004; Ranatakari, 2007; Nikolov and Whited, 2014) who found that the increase in agency conflicts deteriorates firm financial performance, we find that the relationship between agency conflicts and financial performance is conditional on the quality of the corporate governance mechanisms applied. As we discussed earlier, the increase in agency conflicts comes from the increase in the situations in which the level of information asymmetry increases due to the lack of direct monitoring on managers' behavior. This lack of direct monitoring enables greedy and opportunistic managers to exploit the superior information they have compared with the company shareholders to deviate from the optimal behaviour at which, the shareholders' wealth is maximized.

On the other hand, operating in a high agency conflicts environment can be beneficial if we consider the opportunities those companies could have from being, to name but few, (i) cross-listed in different markets, (ii) having huge amount of assets and (iii) creating extensive free cash flow. Accordingly, having opportunistic managers at the top of the executive team of a company could be a value adding decision if companies are able to control for the negative side of being opportunistic. Thus, having opportunistic managers and high-quality corporate governance mechanisms is the recipe for increasing firm financial performance because such

opportunistic managers are "utility maximizers" who seek for opportunities to increase their wealth. Therefore, by having high quality monitoring devices, those managers cannot deviate from the optimal behaviour, which creates a win-win situation to the managers and company shareholders in a way that improves firm financial outcomes (see point "d" in figures *1* and *2*).

Having a look at real data to see the type of companies and industries that exhibit high financial performance in high (low) levels of agency conflicts and high (low) levels of board compliance will give us a better picture about the market. Figures (3and 4) shows the scatter plot between Tobin's Q and Board Compliance for the highest and bottom 10% of agency conflicts respectively.

Figure (3) shows that companies listed in pharmaceutical industry (e.g., AstraZeneca and GSK), Telecommunications (e.g., Vodafone and BT) and Food retailers (Tesco) are the most profitable companies when we have high levels of agency conflicts and high levels of board compliance. However, pharmaceutical companies are in a better off situation compared with other industries. On the other hand, industries including (i) patent "owners and lessors", (ii) Equipment rental and leasing, and (iii) testing laboratories exhibit the most profitable industries in situations where there are low levels of agency conflicts and low levels of board compliance (show figure 4).

Our results come in line with the results of Dey (2008) in her US based study as she reported a positive association between the level of agency conflicts and the quality of corporate governance mechanisms in place. In addition, the effect of mean corporate governance in companies with high level of agency conflicts on firm financial performance proxied by Tobin's Q is greater than those companies that have medium and low levels of agency conflicts. On the other hand, our findings contradict with those of Lasfer (2002) in her UK based study as her findings support stewardship hypothesis. She reported that companies which are operating in high levels of agency conflicts proxied by growth opportunities and with low quality of corporate governance proxied by board structure (less independent directors and more dual CEOs) have higher firm value proxied by Tobin's Q than others with different levels of agency conflicts and agency conflicts.

Figure (4): Tobin's Q and Board Compliance at the top 10% of Agency conflicts

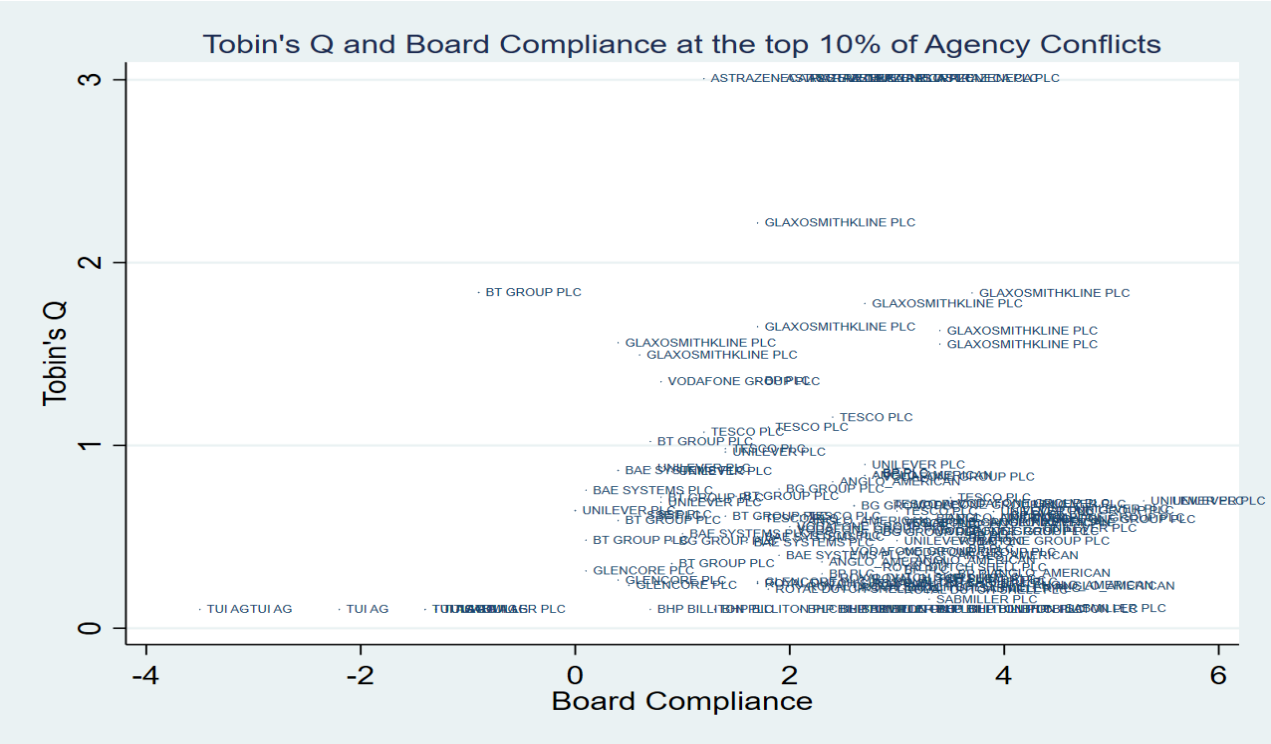
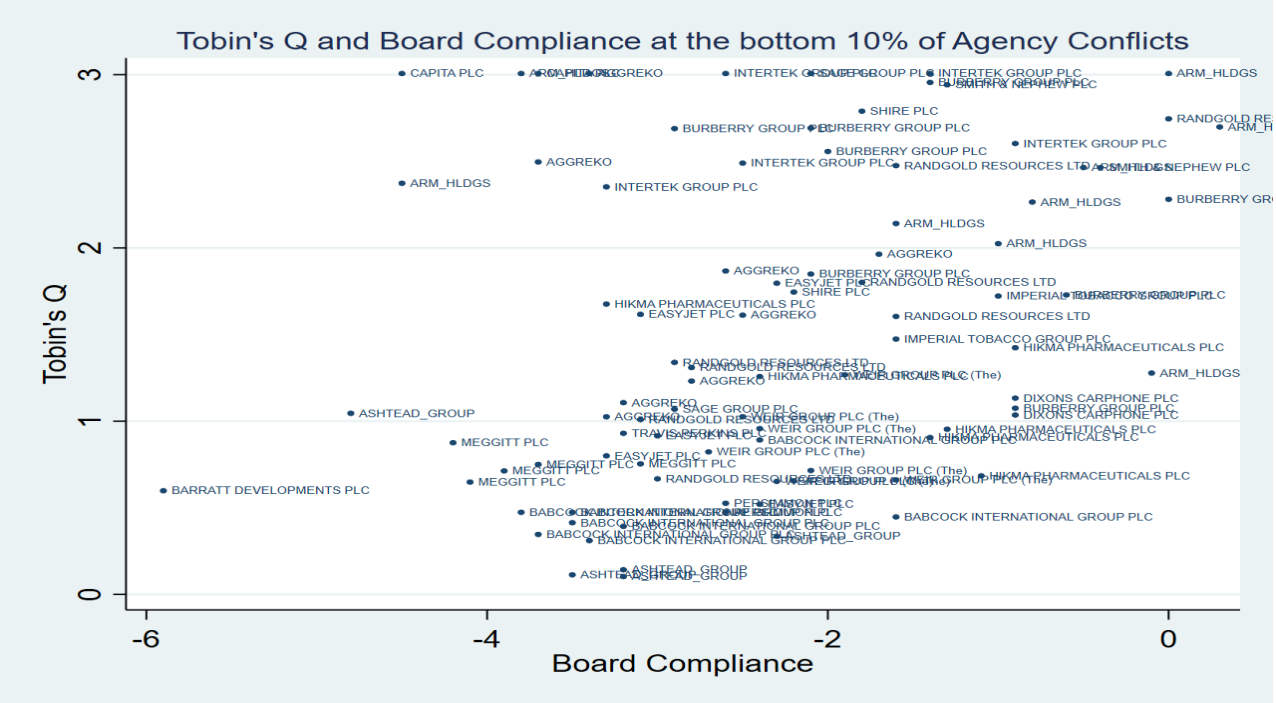


Figure (5): Tobin's Q and Board Compliance at the bottom 10% of Agency conflicts



4.3.2 Robustness tests

We measured firm financial performance using Return on Assets (ROA), and the results were robust as we reported that the level of agency conflicts positively moderates the association between corporate governance and firm financial performance. However, the positive impact

of the interaction between agency conflicts and corporate governance on firm financial performance is more pronounced when financial performance is proxied by Tobin's Q. On the other hand, we proxied agency conflicts and corporate governance using dummy variables (values greater than the mean [0 for Board compliance, 0.1 for Board diversification, and -0.2 for agency conflicts] and the results showed that the interaction effect between corporate governance and agency conflicts is still positive and significant.

5 Conclusion, policy implications and future research

The main purpose of this study is to investigate whether the association between corporate governance and firm financial performance fluctuates as a function of the magnitude of agency conflicts. This research contributes to the existing literature on corporate governance by increasing our understanding of the reason why companies have different structures of corporate governance. It paves the road towards more innovative measurements to the latent variables (e.g. corporate governance and agency conflicts) which capture the complex nature of corporate governance and agency conflicts (human behavior) more objectively.

Corporate governance structure is an endogenous decision; the empirical results showed that there is a significant difference between qualities of corporate governance in high and low levels of agency conflicts. In addition, our empirical results showed that there is no one corporate governance system fits all companies., in addition, we found an empirical evidence, which supports the fact that high quality corporate governance can transform agency conflicts from a threat to an opportunity if the former could control the negative side of the latter. This was evidenced by the fact that companies with high levels of agency conflicts and high-quality corporate governance mechanisms outperform other companies with different combination of agency conflicts and corporate governance.

On the other hand, the findings are also important from a policy change point of view. We argue that policy setters will be more able to achieve the objective of improving firm financial performance by identifying the significant corporate governance dimensions that need to change as well as the types of companies for which such changes are more beneficial.

This research reiterates the importance of testing the development of corporate governance in order to spot the weaknesses of the governance code and make due changes accordingly. This includes testing the multidimensional nature of corporate governance, and how the interaction between different dimensions of corporate governance exercises an impact on organizational performance. This will increase our understanding of the reason why companies have different

structures of corporate governance and paves the road towards finding more innovative measurements to the impact of different corporate governance structures on organisational performance in general and financial performance in specific.

5.1 Limitations

Lack of data on ownership structure for the period of study (1999-2014) was the main reason why we excluded it from the analysis. In addition, lack of reliable and quantifiable corporate governance data on small-medium size enterprises limits the findings only on big non-financial firms.

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Appendix A

Table 1: The outputs of the principal component analysis and Cronbach's Alpha

No.	Principal component (governance factor)	Significant components	Factor loadings	Cronbach's Alpha
1	Board Compliance	Board independence NC Indep. RC Indep. ED total comp. NED total comp.	0.4538 0.4479 0.3818 0.3182 0.3858	0.63
2	Board structure	Board size Board busyness Director's qualification	0.5438 0.4734 0.5319	0.72
3	Board diversification I	Female NED Foreign Directors	0.6533 0.6714	0.95
4	compliance of Board's subcommittees	Directors' overlapping AC Size NC Size	0.5711 0.5072 0.4016	0.64
5	Executive directors' experience	Executives' board experience Executives' board experience (years)	0.5765 0.6576	0.64
6	Executives' tenure	Executive directors' tenure CEO Tenure	0.6547 0.6327	0.70
7	Non-Executive directors' experience	NEDs' board experience NEDs' board experience (years) NEDs' average age	0.3639 0.5446 0.5615	0.50
8	Board diversification II	NEDs' with more than 9 years in co. Female executives. NEDs' average tenure	0.5599 0.3684 0.5792	0.53

Table 2: Corporate governance factors and firm financial outcomes (GMM)

		(1)	(2)
VARIABLES	Expected sign	TQ	ROA
Lagged dependent variable (t-1)	+	0.3850***	0.5219***
		(0.1425)	(0.1710)
Board Compliance	+	0.2379**	0.0116***
		(0.0937)	(0.0043)
Board structure	-	0.1059	-0.0017
		(0.0734)	(0.0024)
Board Diversification I	+	-0.0681**	-0.0026*
		(0.0313)	(0.0014)
compliance of Boards' subcommittees	-	-0.0379	-0.0004
		(0.0367)	(0.0016)
Executive directors' experience	-	-0.0211	-0.0030*
		(0.0323)	(0.0017)
Executives' Tenure	-	0.0082	-0.0002
		(0.0220)	(0.0017)
Non-Executive directors' experience	+	0.0256	-0.0008
		(0.0276)	(0.0017)
Board diversification II	?	-0.0426*	0.0003
		(0.0253)	(0.0018)
Total Assets	-	-0.6351***	-0.0132***
		(0.1159)	(0.0043)
leverage	-	-0.7170*	-0.0380**
		(0.3619)	(0.0174)
Free-Cash-Flow	-	-0.1286	0.0154
		(0.3819)	(0.0233)
Observations		809	892
Number of firm_id		76	76
Industry Fixed Effect	Yes		
Time Fixed Effect	Yes		

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Source: Own computations.

Table 3: the association between corporate governance factors and financial performance in the medium and long-run

	T_{+3}		T_{+5}	
VARIABLES	Tobin's Q	ROA	Tobin's Q	ROA
Lagged dependent var	0.5084***	0 .4615***	0 .6791***	-0.0723
	(0.1019)	(0.1550)	(0.2402)	(0.1706)
Board Compliance	0.1806**	0.0118**	0.1452	0.0221**
	(0.0770)	(0.0047)	(0.1066)	(0.0084)
Board structure	0.0228	0.0010	0.1179*	0.0211***
	(0.0578)	(0.0025)	(0.0683)	(0.0073)
Board Diversification I	-0.0604*	-0.0044***	-0.0673*	-0.0098**
	(0.0321)	(0.0015)	(0.0375)	(0.0040)
Compliance of Boards' subcommittees	-0.0208	-0.0021	-0.0614**	-0.0056**
	(0.0238)	(0.0016)	(0.0255)	(0.0028)
Executive directors' experience	-0.0198	-0.0002	0.0056	-0.0018
	(0.0232)	(0.0018)	(0.0239)	(0.0030)
Executives' Tenure	-0.0071	-0.0003	-0.0379	-0.0025
	(0.0249)	(0.0017)	(0.0306)	(0.0034)
Non-Executive directors' experience	-0.0063	0.0021	0.0211	0.0002
	(0.0261)	(0.0017)	(0.0349)	(0.0040)
Board diversification II	-0.0210	0.0029	-0.0133	-0.0096***
	(0.0278)	(0.0019)	(0.0355)	(0.0033)
LN total assets	-0.1098	-0.0148***	-0.0777	-0.0200**
	(0.0718)	(0.0050)	(0.0943)	(0.0080)
Leverage	0.0288	-0.0131	0.0000	0.0323
	(0.2089)	(0.0154)	(0.3373)	(0.0224)
Free-Cash-Flow	0.0447	-0.0191	-0.6909	-0.0014
	(0.3455)	(0.0183)	(0.4942)	(0.0387)
Observations	729	815	593	593
Number of firm_id	73	76	72	72
Time Fixed Effect	Yes			

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Source: Own computation

Table 4: The estimations of the individual effect as well as the interaction effect of Corporate Governance and Agency Conflicts on ROA

VARIABLES	ROA
First lag of ROA	0.7331***
	(0.0667)
Agency Conflicts	-0.0349***
	(0.0068)
Board Compliance	0.0097***
	(0.0028)
Agency Conflicts X Board Compliance	0.0040**
	(0.0017)
Board Diversification	-0.0002
	(0.0008)
Agency Conflicts X Board Diversification	-0.0070**
	(0.0032)
Observations	976
Number of firm_id	76

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

An empirical evaluation of the impact of agency conflicts on the association between corporate governance and firm financial performance

Abstract

Purpose: This study aims to predict the conditions under which the association between corporate governance and firm financial performance is positive. Our paper is motivated by the fact that the separation between ownership and control creates sets of agency conflicts between company owners and managers. Therefore, it is expected that strong corporate governance systems bring alignment of interests between conflicted parties and accordingly companies are more likely to improve their financial performance. However, previous research did not report a consistent set of results.

Design/Methodology/Approach: Given the latent nature of corporate governance and agency conflicts, we used principal component analysis and exploratory factor analysis to proxy corporate governance and agency conflicts respectively. By using dynamic panel data modelling, we estimated the change in the relationship between corporate governance and firm financial performance as a function of the change in the level of agency conflicts using UK data for 78 non-financial companies listed in FTSE100 between 1999 and 2014.

Findings: Our results showed that there are significant differences in corporate governance qualities among companies. Moreover, we found that companies operating in high levels of agency conflicts outperform their counterparts operating in low levels of agency conflicts only when the former increases the quality of corporate governance. Specifically, firm financial performance is improved by approximately 11% if companies increase the quality of corporate governance due to the increase in the level of agency conflicts.

Research limitations/Implications: Lack of data on ownership structure for the period of study (1999-2014) was the main reason why we excluded it from the analysis. In addition, lack of reliable and quantifiable corporate governance data on small-medium size enterprises limits the findings only on big non-financial firms.

Practitioners/Policy Implication: The results of this research are useful for regulatory bodies, board of directors and those who are interested in corporate governance research (both practitioners and researchers) in two main points. First, we conclude that corporate governance provisions work as one system but not as individual mechanisms. Accordingly, measuring corporate governance as individual mechanisms might mislead the conclusions. Second, we unravel the importance of Corporate Governance mechanisms taking into account the agency conflicts factor. As a result, policy makers can make due changes to positively influence the regulatory framework of Corporate Governance mechanisms.

Social implications: This research contributes to the existing literature on corporate governance by increasing our understanding of the reason why companies, as key players in the society, have different structures of corporate governance. It paves the road towards more innovative measurements to the latent variables (e.g., corporate governance and agency conflicts) which capture the behavioral dimension of corporate governance and agency conflicts more objectively.

Originality/Value: The main contribution of this paper is, (i) to identify the situations within which firm financial performance is positive, and (ii) visualize the dynamic association among corporate governance, agency conflicts and firm financial performance.

Paper type: Empirical paper.

Introduction

A proper system of corporate governance is widely viewed as an important requirement for the financial and non-financial success and viability of listed companies and for the good of society at large as the corporate governance codes and their revision indicate. After decades of research and policy advocacy and in the light of economic downturns-past, present and future- has motivated the scope of this paper to delve into the association between corporate governance and firm business viability using a unique approach never tested before to the best of our knowledge. Corporate governance as a set of devices is considered as an institutional remedy for any misalignment between ownership and control thanks to its advisory and enforcing mechanisms such as the board of directors, committees and managerial remuneration plans. However, the existence of corporate governance framework per se is not enough to account for any possible misalignment between ownership and control resulting in weak financial performance on behalf of the firms. The latter is acknowledged by a recent report (2020) issued by the Certified Financial Analysts (CFA) showed that almost 25% of S&P 500 companies are exposed to on-going insolvent due to equity thinning as a result of the aforementioned misalignment. The empirical work so far has largely saw and investigated the association between corporate governance and firm financial performance as direct and casual. In this paper we argue that corporate governance is not self-driven as it presupposes engagement with agents and forces of change: The premise that corporate governance compliance causes good firm performance contradicts the multi-dimensional and latent nature of corporate governance. For example, increasing board independence will not 'directly' improve organisational performance.

Corporate governance refers to the set of provisions altering the managerial decision-making process, especially when there is a separation between ownership and control (Larcker et al., 2007). This very separation of management and control gave rise to see the managers as agents vying to act for their own benefit (Jensen and Meckling, 1976) although the stewardship theories and the emergence of the institutional investors have dented the propositions of the agency theory. This does not mean that the corporate governance tool should be abandoned. On the contrary the latter is updated and in the light of disparities between managers and employees and considering the corporate scandals, corporate accountability, agency conflicts and transparency as put forward by the ever-evolving corporate governance codes the role of internal auditing should be given its appropriate attention. It is a historical observation that a new corporate governance code is launched following a market turmoil or a major corporate

scandal. Accordingly, the complexity and the entwined nature of the globalized business activities call for certain warranties ensuring that institutionalized mechanisms are in place to safeguard the stakeholders' vested interests and prevent managers' opportunistic behavior.

The premise that with all these safeguarding elements in place one should reasonable expect a positive financial performance when high-quality corporate governance system is in place given the state of the market climate. Nevertheless, previous studies (e.g. Yermack et al., 1996; Bhagat and Black, 2002; Bhagat and Bolton, 2009; Wintoki et al., 2012; Francis et al., 2015; Adams and Jiang, 2016; Andreou et al., 2016) which examined the association between corporate governance and financial performance failed to report a consistent set of results. One of the reasons behind this apparent inconsistency is the measurement error associated with individual and randomly selected corporate governance mechanisms to stand for corporate governance indicators and the subsequent omission of certain indicators and proxies (see Bhagat and Bolton, 2009; Adams and Jiang, 2016 and Shin et al., 2018). Our argument is that the agency conflicts which are discussed in virtually every corporate governance study have never been given the appropriate empirical attention. We propose that the agency conflicts to moderate the relationship between corporate governance and firm financial performance since agency conflicts are the main driver of the continuous update when it comes to the UK corporate governance code (see the UK corporate governance code between 1992 and 2014).

A handful of studies proxied the agency conflicts conditional upon firms' specific characteristics in an attempt to account-more meaningfully-for the relationship between corporate governance and firms' financial performance. They found that the relationship between corporate governance and firm financial performance is contingent on (i) ownership structure (Nikolov and Whited, 2014), (ii) structure of company assets (Klapper and Love, 2004), (iii) leverage (Watts and Zimmerman, 1990), (iv) growth opportunities (Jensen, 1986; Lasfer 2002) and (v) business risk (Rantakari, 2011). Apart from the inherent measurement error, those studies made a strong assumption that agency conflict is an observable variable whereas in reality it is a rather a latent one (unobserved). Scholars such as Field (2009) and Borgholthaus et al., (2019) makes it clear that failure to acknowledge the latent nature of unobserved variables increases the level of bias in the estimated coefficients.

Our study, the first to address the latent nature of agency conflicts, makes *five* key contributions: *First*, using a comprehensive, hand-collected dataset, it offers an empirical account of governance practices, shedding new light on the corporate governance of listed companies. *Second*, our study delves into the multi-dimensional nature of corporate

governance (Solomon, 2013) and explicitly does *not* treat corporate governance as a collection of fragmented devices (e.g. board independence and CEO compensation) as it will yield some sort of measurement error (Larcker et al., 2007; Dey, 2008). Instead, the article looks into any potential interconnections amongst the mechanisms rather than assuming that all work in isolation. Hence, we are utilizing Principal Component Analysis (PCA) to better proxy for corporate governance and take all the mechanisms into consideration rather than in a fragmented manner as insinuated by Larcker et al., (2007). In an attempt to avoid any selection bias of corporate governance variables and multi-collinearity, the study employs a unique dataset of 28 corporate governance mechanisms for the very first time in empirical research *Fourth*, we explicitly account for the latent nature exhibited by the agency conflicts. To our knowledge no empirical research has explicitly accounted for the latter by utilizing factor analysis. We collected data corresponding to different scenarios under which the agency conflicts are more pronounced (for example when the CEO power is allowed to act without certain restraints) to build an agency conflicts score/index using factor analysis. The latter is recommended to estimate and measure latent variables from observable data and produced a newly constructed score/index for each firm across time. Factor analysis derived its influence from the premise that certain variables exhibit somewhat similar patterns because they are linked to a latent variable which is the agency conflicts in our paper (see Field, 2009). *Fifth*, our methodology predicts the conditions under which the firm value is maximized conditional upon the level of agency conflicts which work in tandem with corporate governance mechanisms. From a *policy setting perspective*, if we can predict the change in the firm value as a function of the change in the level of agency conflicts paired with the quality of corporate governance, managers and owners can make explicit interventions into company's strategy and policy makers can identify companies which are likely to mitigate uncertainty into the financial and business environment. Increasing thereby the transparency and the fundamental role of corporate governance

A similar study can be traced *only* in the work done by Dey (2008) for the US market. However, our study departs from Dey's (2008) original study in a number of ways. First, unlike Dey (2008) we focus on the UK as a field of study. Although both US and UK markets are highly internationalized there are some pronounced differences in terms of corporate governance codes, business attitudes, board member composition, institutional framework, and acceptable attitudinal norms. Second, we position our study onto the dynamic or time-varying pillar of analysis amongst corporate governance, agency conflicts and financial performance rather than

on the static or time-invariant pillar employed by Dey (2008). For example, corporate governance mechanisms such as board structure, board independence and directors' remuneration are a dynamics mechanism which firms adjust it to mitigate the negative impact of agency conflicts on financial performance as Klopper et al. (2004) argues. Hence, the time-varying element is taken into account. Third, unlike Dey (2008), we test the impact of corporate governance on firm financial outcomes conditional upon different levels of agency conflicts and different qualities of corporate governance. Mitchell (2012; p. 130) argued that using the interaction between two continuous variables with the application of "margins" help we can discover how the slope of the relationship between the two continuous variables changes in conjunction with the change in a third variable. In other words, the financial performance is conditional upon corporate governance and different levels of agency conflicts all working in tandem. Finally, Dey (2008) examined the impact of the mean of corporate governance on the mean of corporate financial performance using three different levels of agency conflicts (High, Medium, and Low). In this context, Dey (2008) applied cluster analysis to classify companies into clusters with high, medium, and low levels of agency conflicts. However, clustering analysis is relied on simulation techniques and inherent subjectivity to identify the optimal number of clusters and objectively distinguish their cut-off points[1]. By employing Mitchell's (2012) theoretical recommendations measuring corporate governance and agency conflicts as time-varying variables, we are able to graphically show the change in the relationship between corporate governance quality (high, medium and low) and firm financial performance as a function of the change in the level of agency conflicts (high and low) – a significant departure from Dey's (2008) static work.

Our results showed that companies have significant differences in terms of agency conflicts and corporate governance qualities which reflects the fact that there is no one single set of corporate governance procedures which fits all types of companies. On the other hand, we report that firm financial performance is positive only when high (low) corporate governance

[1] In Dey's (2008) research, the researcher stated that there is no satisfactory method for identifying the optimal number of clusters for any type of cluster analysis. Accordingly, the researcher applied three simulation techniques, namely (i) the cubic clustering criterion (CCC), (ii) Pseudo-F-Statistic (PSF), and (iii) Pseudo-T^2-Statistic (PSTS). The methodology, which was developed, by Cooper and Milligan (1985, 1988) is based on the fact that the optimal number of clusters is the one which is repeated in the three previously mentioned methods (CCC, PSF and PSTS). In Dey's (2008) research, the first two methods found that the optimal number of clusters might be three or seven, while the third method found that the optimal number of clusters could be three, seven or nine. Despite the fact that three and seven are repeated in the methods, Dey (2008) chose the number of three clusters because the sample did not enable her to have seven clusters.

is paired with high (low) levels of agency conflicts. Moreover, firm financial performance is at its peak only when companies have high qualities of corporate governance and high levels of agency conflicts. This interesting result shows that companies should not be encouraged to reduce the level of agency conflicts, on contrary, they should operate in an environment characterized by high levels of agency conflicts but to make the best of the opportunities found in such environment, those companies are encouraged to increase the quality of corporate governance system in order to mitigate the negative side of agency conflicts. It turns out that high level of agency conflicts boosts the companies to invest more into mitigating these conflicts by investing more resources into internal control they reap (somehow inadvertently) higher financial gains. Another plausible explanation is that the market interprets positively the strive of companies to account for agency conflicts and given its non-observability on behalf of the outsiders the company outsiders view sympathetically these policies. We, finally, argue that empirical evidence that interpreting the relationship between corporate governance and financial performance is misleading in the absence of the level of agency conflicts.

The rest of this paper is structured as follows: section 2 is the theoretical framework and development of hypotheses. Section 3 is the research design. Section 4 is the empirical study followed by section 5 where we discuss the results and conclude.

2 Theoretical Framework and Hypothesis Development

In our paper, we attempt to explain the relationship among corporate governance, financial performance and agency conflicts in one model. We argue that the relationship between corporate governance and firm financial performance is explained by the level of agency conflicts since the latter is the main driver of corporate governance. Since shareholders (the principal) and managers (the agent) are utility maximizers, it is more likely to observe a conflict of interest between the two contracted parties because each of the two parties will attempt to maximize their utility at the expense of the other (Watts and Zimmerman, 1990). This conflict of interest is even exacerbated when there is a separation between ownership and control due to the information asymmetry gap which leads to behave even more opportunistically as the managers have more information than the shareholders (Larcker et al., 2007; Farber, 2005). On the other hand, managers behave opportunistically due to the flaws and shortcomings of contracts as well as poor governance systems (Kyere and Ausloss, 2021; Chen and Zhang, 2018; Farber, 2005).

Empirical research (e.g., Sun et al., 2017; Ntim et al., 2015; Dey, 2008; Lasfer, 2002; Jensen and Meckling, 1976) found that such agency problems have a negative impact on firm market value. It is generally impossible to ensure *at zero cost* that the managers will make the optimal decisions from the owners' viewpoint. As a result, without the *costly* alignment of interest between managers and owners, company value is likely to deteriorate (Ozkan, 2011; Farber, 2005).

2.1 Agency Conflicts, Corporate Governance and Financial Performance

The premise is that agency conflicts have a negative impact on organisational performance, and that it is impossible to mitigate the harm of agency conflicts at zero cost (Jensen and Meckling, 1976). As a result, companies spend some resources (agency costs) such as having NEDs in the boardroom to monitor manager's behavior and auditing companies' financial accounts to narrow/close the gap of information asymmetry between managers and shareholders in a way that it becomes difficult for the managers to deviate from the efficient behaviour (Larcker et al., 2007; Ozkan, 2011, and Kyere, and Ausloss, 2021). As a result, the intuition was that if companies implement strong governance mechanisms, one can expect an improvement in firm financial performance, or at least companies not to fail as a result of managerial opportunism.

Previous literature, which have examined the association between corporate governance and financial performance, did not report a consistent set of results. One possible explanation to such mixed results is the omission of certain factors which were not explicitly taken into consideration. If we look into the evolution of the UK corporate governance code from its debut in 1992 (Cadbury Code) till the Combined Code (2018), one can observe that the main driver[2] of the 'continuous' update of the UK corporate governance code was the agency conflicts that led to a series of corporate scandals[3] (e.g. Baring Bank, MG Rover Group, Royal Bank of Scotland Group and Tesco). However, previous empirical literature did not directly link corporate governance and its main reason of existence (agency conflicts) but attempted to construct an association between corporate governance and organizational financial

[2] Corporate governance is not only about constraining the managerial opportunistic behavior, but also to "*help build an environment of trust, transparency and accountability necessary for fostering long-term investment, financial stability and business integrity*", subsequently, corporate governance promotes for "*supporting stronger growth and more inclusive societies*" (OECD ,2015a, p. 7).

[3] Agency conflicts related to (i) poor monitoring, (ii) poor remuneration contracts which are not well linked with company performance and (iii) lack of independence were found to be the main reason behind those scandals (for more information, see Solomon, 2013).

performance. We argue that by controlling for agency conflicts and its potential impact on the association between corporate governance and firm financial performance is the missing piece in the puzzle.

Jensen and Meckling (1976) argued that the level of agency conflicts varies across firms depending on the attractiveness of "perquisites", the complexity of the operational environment and the extent of the information asymmetry gap between the shareholders and the managers. As a matter of fact, the wider this gap is, the more likely that managers will opportunistically behave as opposed to firm value maximisation. This reflects the fact that companies differ in terms of the level of agency conflicts due to the differences in the symptoms of agency conflicts (attractiveness of perquisites, information asymmetry gap and level of monitoring). As a result, companies should set up the corporate governance system which is able to mitigate or even eliminate the harm caused by the symptoms of agency conflicts which in turn lead to the agency conflicts per se.

However, the cost of corporate governance depends on its quality (Solomon, 2013). For example, high quality corporate governance systems (e.g. advanced internal control system, hiring experienced and talented Non-Executive Directors (NED) who might receive high remuneration plans and engage with one of the Big-4 auditing firms to do the auditing of the company's financial accounts) are more costly compared to their low quality counterparts (e.g. non-Big 4 audit firms or superficial management control systems). Accordingly, companies operating in high agency conflicts environment should invest in 'expensive' corporate governance systems with a view to maintaining a touch with their financial targets. Conversely, companies which exhibit low levels of agency conflicts are expected to spend less on corporate governance systems The implication here is profound: if one company exhibiting low levels of agency conflicts invests in advanced or 'expensive' governance devices, this might have a detrimental effect on its financial performance because the cost of having advanced corporate governance mechanisms outweigh the benefits. The aforementioned analysis leads us to hypothesize:

H_1: Companies with high levels of agency conflicts and high corporate governance quality will have positive financial performance.

H2: Companies with low levels of agency conflicts and high corporate governance quality will have negative financial performance.

3 Research Design

3.1 Data and Sample

Our sample consists of 76[4] non-financial[5] companies listed in FTSE100 between 1999 and 2014[6]. Hence, we followed these companies from 1999 onwards. Due to lack of quantifiable and reliable data before 1999[7], we were not able to trace the evolution of the UK corporate governance code since the debut of Cadbury Code (1992). The boardroom of FTSE100 companies have special characteristics which make our UK sample representative. The data showed that the level of internationalisation of the board of FTSE100 companies is significantly high (average of foreign directors was around 40%) with a majority of American directors. This makes FTSE100 boardroom reflect the attributes of international markets (especially the US) since the directors are equipped with international exposure. Furthermore, the UK financial authorities introduced significant revisions of the Corporate Governance Codes since 1998 onwards compared to other markets. This makes the UK market an ideal ground to account for the time-varying nature of the corporate governance mechanisms as affected by the codes' mandates. An ideal ground for the nature of our study Three main sources provide data for this study; corporate governance data was extracted from BoardEx, while the financial data was extracted from Compustat global (WRDS) and Data Stream. All financial and corporate governance variables are annual data relating to firms' accounting year. We matched corporate governance variables with financial variables in the bases of firms' accounting year, which vary across firms. Our sample includes only non-financial companies listed in FTSE100. We *excluded* the financial companies from the sample not only due to substantial differences in the capital structures but also due to a different set of regulations and governance codes that they have to comply with (such as the Basle Accords).

[4] There are 78 non-financial companies listed in FTSE100, but while calculating the standard deviation of net revenues to total assets, Coca Cola and Royal Mail were excluded from the sample because both of them has only 1 year of financial data which is not enough to calculate the standard deviation.

[5] The reason why we excluded the financial companies from the sample is that financial companies have to comply with a different set of governance regulations (e.g., Basel 3) and the fact that financial companies have different financial structure than the non-financial peers.

[6] The UK corporate governance code did not introduce any significant changes to the code since 2014, as a result we did not extend our sample to include the financial reports following 2014 so we do not alter the variance of our sample.

[7] BoardEx (the database we relied on collecting corporate governance information) coverage of governance data of the UK companies started in 1999.

3.2 Research Methodology

Our main hypothesis is that the level of agency conflicts positively moderates the association between corporate governance and firm financial performance. Before we test the moderation effect of agency conflicts in the association between corporate governance and financial performance, we captured the latent variables corporate governance and agency conflicts using principal component analysis and factor analysis, respectively. The analysis is made in two stages; in stage one, we regressed financial performance on corporate governance in order to identify the significant corporate governance factors. Then, in stage two, we controlled for the interaction between corporate governance and agency conflicts to see how the association between corporate governance and financial performance changes as a function of the level of agency conflicts.

3.3 Variables Measurement

3.3.1 Corporate Governance

Corporate governance has a special and complex nature which cannot be captured by individual mechanisms (Larcker et al., 2007; Dey, 2008). The argument is that corporate governance works as a system of devices rather than individual provisions (Solomon, 2013). However, due to lack of a coherent theory that shows how corporate governance mechanisms work together as a system, this study applies principal component analysis (thereafter PCA) which is able synthesise corporate governance mechanisms into more homogenous factors/dimensions. In order to reduce the measurement error and bias level, we collected data for 28 corporate governance mechanisms (*almost all corporate governance provisions recommended by the UK corporate governance code and empirical research*). Then, the PCA was used to associate the 28 individual corporate governance variables with different dimensions of corporate governance. By doing so, more systematic measurement of corporate governance dimensions is produced to overcome the problem of measurement error associated with using single provisions. We generated eight valid corporate governance components which reflect eight different corporate governance dimensions using PCA (see Table 1 in Appendix A). For simplicity and ease of interpretation of results, we assigned a name to each corporate governance dimension based on the loaded variables.

Identifying the significant components of corporate governance

We regressed financial performance[8] on the eight corporate governance factors generated by PCA using GMM[9] estimator:

$$FinPer_{it} = \alpha + \pi_1 FinPer_{it-1} + \sum \beta_n XCorpGovFactor_{it} + \gamma_1 ttlassets_{it} + \gamma_2 2leverage_{it} + \gamma_3 fcf_{it} + \sigma_t + u_{it} \quad \ldots\ldots (1)$$

Where:

$FinPer_{it}$: financial performance of company i at time t, financial performance was captured by Tobin's Q and ROA. $FinPer_{it-1}$: financial performance of company i at time t_{-1}. $CorpGovFactor_{it:}$ the corporate governance principal components for company i at time t. – 8 principal components: Board Compliance, Board structure, Board diversification I, compliance of Board's subcommittees, Executive directors' experience, Executives' tenure, Non-Executive directors' experience, Board diversification II

$Ttlassets_{it}$: total assets of firm i at time t. $Leverage_{it}$: Leverage of firm i at time t, measured as the ratio of long-term debt to total assets. fcf_{it}: Free Cash Flow for firm i at time t, proxied by the cash in hand scaled by total assets. Cash in hand is measured as cash plus short-term investment. σ_t: The time fixed effect. u_{it}: The idiosyncratic error.

The GMM is a dynamic panel data estimator that takes into consideration the simultaneous and dynamic effect between explanatory variables (corporate governance and agency conflicts) and outcome variable (firm financial outcomes) as well as the unobserved heterogeneity such as differences in the effectiveness of board members among firms (Adams and Veprauskaite, 2013). GMM uses the first differences to transform the equation, which removes any time invariant variables such as industry specific effect (Abdallah et al., 2015; Roodman, 2009; Mileva, 2007. Also, GMM allows for the modelling of partial adjustment mechanism by including one or more lags of the dependent variable which addresses the dynamic effect between dependent (financial outcomes) and independent regressors (corporate governance and agency conflicts) – see Adams and Veprauskaite, 2013; Roodman, 2009 for a further discussion. Moreover, GMM uses 'natura' and 'valid' instrumental variables by including the

[8] We tested the impact of corporate governance on firm financial performance proxied by Tobin's Q and ROA in the short run (t), medium run (T_{+3}) and long run (t_{+5}).

[9] GMM fixed effect model removes time invariant effects such as industry effects.

lags of the dependent and independent variables for endogenous variables (Roodman, 2009; p. 105). The results show a remarkable robustness under different time horizons namely short (t), medium (t_{+3}) and long (t_{+5}) run. Table 2 and Table 3 (Appendix A) show that Board *Compliance* and *Board Diversification* are the significant factors which influence corporate financial performance in different time horizons.

3.3.2 Agency Conflicts

Given the latency or unobservability of agency conflicts since it reflects human behavior, it is difficult to measure and capture such a term in a tangible way. We proxy agency conflicts by creating an agency conflicts score using a bunch of variables which echoes the situations where the agency conflicts are more likely to be pronounced. By doing so, we have a better measurement for the term "agency conflicts". These situations include firm size, free-cash-flow, complexity of business environment, growth opportunities, operating risk and leverage.

Firm Size

Demsetz and Lehn (1985) argued that big companies usually engage with more operations than small companies do, which gives the managers of big companies the opportunity to shirk (over consume non-pecuniary benefits such as luxury offices). Additionally, Watts and Zimmerman (1990) shed the light on the fact that big companies are more likely to be under the scrutiny of the general public and the government, which motivates those big corporations to manage earnings in order to reduce reported profit in an attempt to reduce political costs.

Free Cash Flow

On the other hand, Jensen (1986) and Goranova et al. (2017) argued that the level of conflicts between shareholders and managers increases when there is a substantial free cash flow[10] because of the conflict arises on how to use this free cash flow. Managers tend to misuse the cash remained after funding projects and repaying the debt in value destroying activities (e.g. M&A activities) and/or increasing overconsumption of perquisites which have detrimental consequences on the firm value.

Complexity Of Business Environment

Ranatakari (2007) reported that the volatility of operating environment affects the optimal organizational structure as the increase in the magnitude of volatility in operating environment

[10] Free-Cash-Flow is the available cash on hand after funding all projects that have positive net present values (Jensen, 1986; p. 323)

increases the level of agency conflicts. This comes in accordance with Demsetz and Lehn (1985) when they reported that managers of firms with more volatile working environment are more likely to engage with moral hazard problems because it becomes difficult for the shareholders to monitor the management behavior. In addition, Stein (1997) argued that companies, which are operating in high complex environment, might suffer from resource misallocation due to the fact that CEOs of these firms lose their focus , and as a result, they are more likely not to take the optimal decisions that increase their companies' profitability compared to other CEOs who operate in less complicated environments.

Growth Opportunities

Furthermore, Jensen (1986) and Dey (2008) stated that companies with high growth opportunities are more likely to have information asymmetry problem because of the increasing power of their managers. Jensen (1986) justifies this as managers are incentivised to go beyond the optimal size so that they justify increasing the resources under their control to meet or beat the high growth rates. On the other hand, Murphy (1985) argued that managers are also incentivised to go beyond the optimal size as this will increase their compensation given the fact that increase in compensation is associated with growth in sales. Lasfer (2002) in his UK based study reported that the relationship between board structure and firm value is contingent on the magnitude of the firm growth rate. Companies with low growth rates are more likely to have high levels of agency problems due to the substantial free-cash-flow they have.

Operating Risk

Dey (2008) stated that riskier firms usually suffer from high cost of debt capital. Accordingly, those riskier firms are self-incentivised to indulge to activities to reduce the perception of risk and as a result reducing the cost of debt capita. Thus, the severity of agency conflicts is expected to be higher in companies with high operating risk. Operating risk is measured by the standard deviation of sales deflated by total assets.

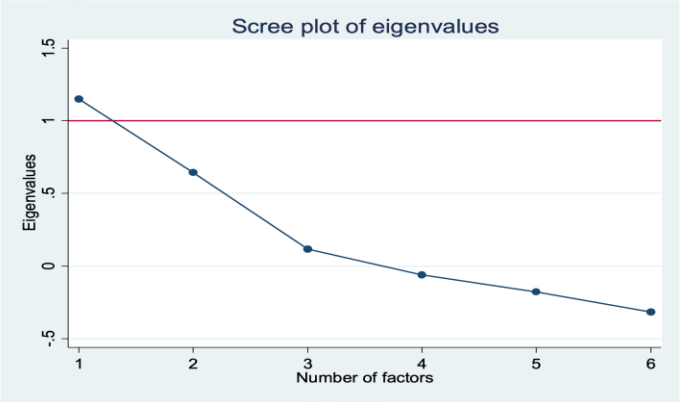
Leverage

Additionally, companies with high levels of leverage are more likely to exercise earnings management to keep the leverage ratio as small as possible; otherwise, managers might be penalized due to debt covenants that give the lender the right to intervene managers' decisions (Watts and Zimmerman, 1990). Such intervention negatively affects companies' financial performance. Examples of debt covenants could be; restrictions of mergers activity, restrictions

on investment in other companies, restrictions on increasing debt and restrictions on selling some assets (Bowen et al., 2008; Watts and Zimmerman, 1986).

Those six variables previously discussed are used to capture the term agency conflicts by creating a score using factor analysis. Such an agency conflicts score helps us to determine the magnitude of agency conflicts numerically so we can distinguish between companies with different levels of agency conflicts (i.e., high, medium, and low levels of agency conflicts). The rule of thumb states that factors with eigenvalues greater than "one" are considered valid and robust. As a result, we captured agency conflicts by using only one factor (see Figure X below).

Figure (X): The scree plot of the agency conflicts' factors' eigenvalues.



The results of factor analysis show that firm size and operating risk are the most 2 important variables in capturing the term agency conflicts since the factor loadings value are significantly high (see table 1).

Table (1): Factor loadings of agency conflicts

Variables	Factor loadings
Total assets (firm size)	0.6971
Standard deviation of total Sales deflated by total assets (operating risk)	0.6947

3.3.3 Financial Performance

To account for the financial performance, we use widely pretested proxies, namely ROA[11] and Tobin's Q. The latter (defined as the ratio of Market Value to Book Value[12]) accounts for the forward and the backward-looking nature when it comes to the economic value of the firm. In addition, the Tobin Q is subject to less manipulation compared to other variables, which are

[11] Estimations of the ROA model are reported in the appendix.

[12] We also measured Tobin's Q by the ratio of book value of debt plus market value of equity divided by the book value of assets. However, due to significant outliers and extreme values resulted from the effect of the book value of debt; we stick with the standard definition (Book to Market ratio).

derived exclusively from financial statements. Hence, by incorporating, both market and statement data, we will be in position to capture the performance of the firm in a more consolidated manner. Various studies pointed to the importance of the Tobin Q as a fit dependent variable in a range of governance - to - firm value studies (Klapper and Love, 2004; Balasubramanian, Black and Khanna, 2010; Black, Carvalho, and Gorga, 2012; Connelly, Limpaphayom, and Nagarajan, 2012).

Other proxies for financial performance such as abnormal market return have been used by other researchers (see Masulis et al., 2007; Chhaochhara and Grinstein, 2007 and Larcker et al., 2018; Carlini et al., 2020). But given the longitudinal nature of our data, abnormal market return might not be suitable to capture the impact of corporate governance on firm financial performance in the long run. Additionally, abnormal market return evaluates the market reaction towards a given event which is not the scope of our study. On the other hand, one of the pros of Tobin's Q is that it captures both accounting and market performance of firms which implicitly makes Tobin's Q a comprehensive financial performance indicator.

Before we run Model 2, we ran a T-test[13] in order to examine the significance of the difference between corporate governance qualities in high and low levels of agency conflicts. The data showed a significant difference in the mean score of corporate governance (proxied by *Board Compliance* and *Board Diversification*) in companies with low and high levels of agency conflicts (see table 2).

Table (2): Independent groups' t-test of difference in mean corporate governance factors between high and low levels of agency conflicts groups.

Corporate governance factor		Low agency conflicts	High agency conflicts	t-test
Mean	***Board Compliance***	-1.0003	0.9995	-17.2572***
SD		1.7647	2.0028	
Mean	***Board Diversification I***	-0.08405	0.08708	-1.8866*
SD		1.2806	1.6512	

*** p<0.01, ** p<0.05, * p<0.1
N= 1,061 and DF=1,059

Testing the moderation effect

[13] The results of the Wilcoxon-Mann-Whitney two-sample test for differences in medians between the two corporate governance factors in the two agency conflicts groups were similar to the results of the T-test.

In model (2), we regressed firm financial performance on corporate governance and agency conflicts using the GMM model to estimate the individual effect as well as the interaction effect between the regressors taking into account the dynamic nature of this relationship.

$$\boldsymbol{FinPerf_{it}} = \boldsymbol{\alpha} + \boldsymbol{\beta_1 FinPerf_{it_{-1}}} + \boldsymbol{\beta_2 Governance_{it}} + \boldsymbol{\beta_3 Agency_{it}} + \boldsymbol{\beta_4 Governance_{it}} * \boldsymbol{Agency_{it}} + \Omega_t + \varepsilon_{it} \quad \ldots\ldots (2)$$

Where:

FiPerf$_{it}$: Tobin's Q of company i at time t. FiPerf$_{it-1}$: The first lag of Tobin's Q of company i at time t. Governance$_{it}$: Corporate governance factors of company i at time t. Agency$_{it}$: The agency score for company i at time t. ϵ_{it}: The idiosyncratic error term. Ω_t: Time fixed effects.

3.4 The Association Between Corporate Governance and Financial Performance as A Function of Agency Conflicts

In order to, dynamically, see the change in the slope of the relationship between corporate governance and financial performance due to the change in the level of agency conflicts, we applied interaction effect with the use of margins at different distributional points of the regressors. This allows us to trace the change in Tobin's Q in different levels of corporate governance (low [10%], medium [50%] and high [90%]) and different levels of agency conflicts (low [10%] and high [90%]). By doing so, we can figure out the best scenario where the financial performance is maximised. As discussed earlier, we anticipate that more pronounced corporate governance mechanisms, such as board compliance and board diversification, will actively monitor and challenge the managers when the managers takes steps to change the strategy or gets involved in investment opportunities or various projects which have the potential or instilling risks into the firm's operations. Thus, any relation among corporate governance, agency conflicts and financial outcomes should be more pronounced in the tails of the distribution of the agency conflict and corporate governance. In other words, the association between corporate governance and financial performance is contingent on the magnitude of agency conflicts and the quality of the corporate governance system applied.

In a typical GMM model, one has to set the endogenous as well as the exogenous and instrumental variables. Empirical literature (e.g. Lasfer, 2002; Klopper et al., 2004; Bhagat and Bolton, 2009; Wintoki et al., 2012; Abdallah et al., 2015) argued that the level of agency conflicts and board structure including board independence, board size and executives'

compensation plans are endogenous[14] variables with a potential dynamic effect on Financial performance. Accordingly, we set "*Agency Conflicts*" and "*Board Compliance*" as well as the first lag of the financial performance indicator as endogenous variables. We used only the second lag of the endogenous variables as instruments because the first lag is expected to be auto correlated with the error term while the second lag is not (Roodman, 2009). The rule of thumb in the GMM estimator is that the number of instruments should not exceed the number of cross-sections in order not to weaken the estimations of the Hansen test of the validity of the instruments (whether the instruments are exogenous). In addition, standard errors are clustered to make sure that standard errors across firms are completely independent[15] (Peterson, 2009).

4. Results and Discussion

4.1 Descriptive Statistics

We start the analysis by showing the descriptive statistics of our data. Table 1 shows the descriptive statistics of the corporate governance and agency conflicts variables. Based on the variables loaded to corporate governance and agency conflicts variables, higher scores of corporate governance and agency conflicts reflect higher quality corporate governance and higher levels of agency conflicts respectively.

Table 1: Descriptive statistics of corporate governance factors and agency conflicts

Variables	Mean	Median	10%	90%	Skewness	Kurtosis
Board Compliance	0	0	-2.7	2.9	-0.1810	3.0547
Board Diversification I	0.001	0.1	-1.8	1.9	0 .2188	2.9365
Agency Conflicts	0.001	-0.2	-0.7	0 .6	2.944	16.82

4.2 The Moderation Effect Of Agency Conflicts On The Association Between Corporate Governance And Financial Performance

[14] Endogenous variable here refers to the fact that it is not completely independent from the outcome variable.

[15] OLS estimates unbiased and true estimations if the residuals are IID (Independent and Identically Distributed). However, if the residuals are correlated across observations, the OLS does not produce the true variability of the coefficients estimates (Peterson, 2009; p. 435). There are two common types of dependence in panel data; (i) time-series dependence, and; (ii) cross-sectional dependence. The first form of dependency refers to the situation where the residuals of a given firm are correlated across years (Wooldridge, 2010). On the other hand, the second form refers to the situation where the residuals of a given year are correlated across difference firms (Paterson, 2009; p. 436). Failure to control this dependency leads to biased estimations. Accordingly, there are many ways (e.g. Fama and Macbeth standard errors, 1973; Newey and West, 1987) to correct the standard errors of estimations. Stata offers a command developed by Peterson (2009) which is able to correct standard errors to be independent and identically distributed.

We regressed financial performance proxied by Tobin's Q on corporate governance and agency conflicts taking into consideration the potential impact of the interaction between the two independent variables (agency conflicts and corporate governance). Tables (*5*) and (*6*) show the estimations of the individual effects as well as the interaction effect of corporate governance and the level of agency conflicts on Tobin's Q[16].

Table (5): The estimations of the individual effect of Corporate Governance and Agency Conflicts on Tobin's Q

VARIABLES	Tobin's Q
First lag of Tobin's Q	0.9985***
	(0.0044)
Agency conflicts	-0.1067***
	(0.0344)
Board Compliance	0.0742***
	(0.0157)
Board Diversification	-0.0031
	(0.0090)
Observations	976
Number of firm_id	76
AR (2)	0.320
Hansen Test	0.320

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table (6): The estimations of the individual effect as well as the interaction effect of Corporate Governance and Agency Conflicts on Tobin's Q

VARIABLES	Tobin's Q
First lag of Tobin's Q	1.0176***
	(0.0066)
Agency conflicts	0.0038
	(0.0861)
Board Compliance	0.0118
	(0.0224)
Board Compliance * Agency conflicts	0.1043**
	(0.0522)
Board Diversification	-0.0011
	(0.0166)
Board Diversification * Agency conflicts	0.1173*
	(0.0622)
Observations	976
Number of firm_id	76
AR (2)	0.430
Hansen Test	0.851

[16] The ROA model results are reported in table 4 in the appendix. The interaction effect between corporate governance proxied by Board Compliance and the level of agency conflicts was positive and significant.

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

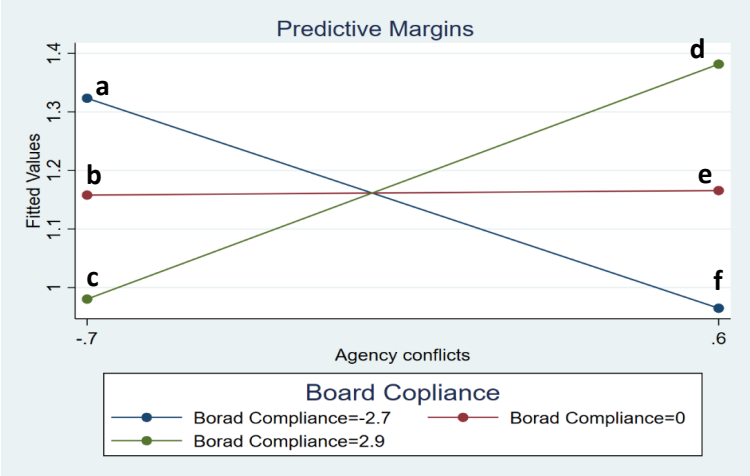
Supporting our hypotheses, we found that agency conflicts moderate the association between corporate governance and firm financial performance. The interaction effect of corporate governance and agency conflicts was positive and statistically significant (corporate governance was proxied by board compliance β=0.1043, P-value: 0.045) (corporate governance proxied by board diversity β=0.1172, P-value: 0.059). One can interpret the coefficient of the interaction effect between board compliance and agency conflicts in (*table 6*) as the reported Tobin's Q goes up by 10.43% for each one-unit increase in 'both' agency conflicts and the quality of corporate governance proxied by Board Compliance. However, the reported Tobin's Q increases by 11.72% for each one unit increase in board diversification and agency conflicts. On the other hand, the individual effect of corporate governance (proxied by board compliance and board diversification) and agency conflicts are insignificant when we controlled for the interaction between the two variables. These insignificant coefficients of the individual effects reflect the fact that agency conflicts perfectly moderate the association between corporate governance and financial performance.

4.3 The Moderating Effect Of Agency Conflict On The Relationship Between Corporate Governance Quality And Financial Performance

We test H_1 and H_2 using Model (2) where we regress Tobin's Q on corporate governance and agency conflicts. The regression results showed that testing the individual effect of corporate governance and agency conflicts on firm financial outcomes does not reflect the true impact on firm financial performance.in understanding how the two variables affect the financial performance of a firm. Without controlling for the interaction between corporate governance and agency conflicts, both agency conflicts and corporate governance had a significant impact on firm financial performance proxied by Tobin's Q, (see *table 5*). However, after controlling for the possible interaction effect of the two variables on firm financial performance, the individual effect of corporate governance and agency conflicts turns insignificant. On the other hand, the interaction effect between the two terms was positive and statistically significant for the two factors of corporate governance (board compliance and board diversification) (see *table 6*). One can interpret the coefficient of the interaction effect between board compliance and agency conflicts in *table 6* as the reported Tobin's Q goes up by 10.43% for each one-unit increase in 'both' agency conflicts and the quality of corporate governance proxied by Board Compliance.

Figure (*1*) provides a visualization to the change in the relationship between corporate governance and Tobin's Q in different levels of agency conflicts (bottom 10% and highest 10%). It shows how the relationship between corporate governance proxied by "*Board Compliance*" and financial performance proxied by "*Tobin's Q*" changes as a function of the "*level of agency conflicts*". For example, Tobin's Q deteriorated from point "a" to point "f" as the level of agency conflicts increases (from the bottom 10% to the highest 10%) holding the level of Board Compliance constant (low at the bottom 10%). This is because companies with low levels of agency conflicts do not need to invest 'too much' on high quality governance systems, for example, increasing board independence and/or increasing NEDS' total compensation. This cost saving boosted up financial performance as an application for the "cost benefit approach". However, keeping the level of 'low' governance quality constant, Tobin's Q goes down up to point (f), the lowest reported Tobin's Q, with the increase in agency conflicts. This is justified as the increase in agency conflicts with low quality corporate governance mechanisms in place enabled opportunistic managers to expropriate company resources to serve their own interests at the expense of the shareholders' interest.

Figure (1): the relationship between financial performance and corporate governance in different levels of agency conflicts and different qualities of corporate governance proxied by Board Compliance

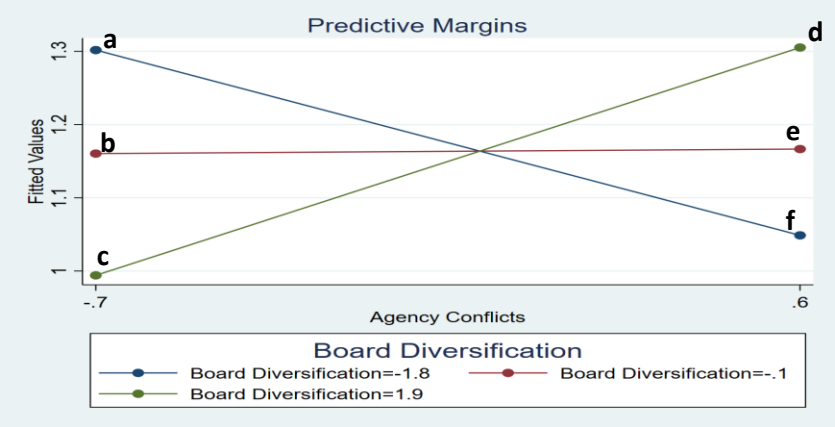


On the other hand, Tobin's Q improved from point "c" to point "d" as the level of agency conflicts increases (from the bottom 10% to the highest 10%) holding the level of Board Compliance constant (high at the highest 10%). The results showed that point "4" has the highest reported Tobin's Q in our sample. At point "d", we have the situation where the level of agency conflicts is maximised (the highest 10%) and the level of Board Compliance is very high (the highest 10%). This reflects the fact that reducing the level of agency conflicts is not the best way to maximize financial performance because point "a" where the level of agency conflicts is low is in a worse off situation compared with point "d" where the level of agency

conflicts is high (the highest 10%). The secret ingredient is the quality of corporate governance that can mitigate the harm of the negative side of agency conflicts. At point (d), we have high levels of agency conflicts (90th percentile), but thanks to the high quality of corporate governance mechanisms in place, companies were able to control managers' opportunistic behaviour in a way that enables the companies to benefit from the opportunities[17] available in high agency conflicts environment without compromising financial outcomes.

Figure (*2*) shows how the relationship between corporate governance proxied by "*Board Diversification*" and financial performance proxied by "*Tobin's Q*" changes as a function of the "*level of agency conflicts*". The findings come in line with the findings of Board Compliance. Companies with high levels of agency conflicts and more diversified boards outperform other companies. This reflects the ability of corporate governance proxied by Board Diversification to control the harmful effect of agency conflicts without compromising firm financial performance proxied by Tobin's Q.

Figure (3): the relationship between financial performance and corporate governance in different levels of agency conflicts and different qualities of corporate governance proxied by Board Diversification



4.3.1 The Moderation Effect Of Agency Conflicts In The Association Between Corporate Governance And Financial Performance [The Dynamic Relationship]

We hypothesized that the level of agency conflicts is positively moderating the association between corporate governance and firm financial performance. Thus, highlighting the dynamic nature of the relationship. In contrast to Previous literature (e.g., Bushman et al., 2004; Klopper et al., 2004; Ranatakari, 2007; Nikolov and Whited, 2014) who found that the increase in agency conflicts deteriorates firm financial performance, we find that the relationship between

[17] Opportunities include benefitting from financial resources by cross listing a company in multiple markets. Increasing debt levels to reduce the cost of capital (Damodaran, 2006). Working in more volatile environment trying to increase sales revenues (

agency conflicts and financial performance is conditional on the quality of the corporate governance mechanisms applied. As we discussed earlier, the increase in agency conflicts comes from the increase in the situations in which the level of information asymmetry increases due to the lack of direct monitoring on managers' behavior. This lack of direct monitoring enables greedy and opportunistic managers to exploit the superior information they have compared with the company shareholders to deviate from the optimal behaviour at which, the shareholders' wealth is maximized.

On the other hand, operating in a high agency conflicts environment can be beneficial if we consider the opportunities those companies could have from being, to name but few, (i) cross-listed in different markets, (ii) having huge amount of assets and (iii) creating extensive free cash flow. Accordingly, having opportunistic managers at the top of the executive team of a company could be a value adding decision if companies are able to control for the negative side of being opportunistic. Thus, having opportunistic managers and high-quality corporate governance mechanisms is the recipe for increasing firm financial performance because such opportunistic managers are "utility maximizers" who seek for opportunities to increase their wealth. Therefore, by having high quality monitoring devices, those managers cannot deviate from the optimal behaviour, which creates a win-win situation to the managers and company shareholders in a way that improves firm financial outcomes (see point "d" in figures *1* and *2*).

Having a look at real data to see the type of companies and industries that exhibit high financial performance in high (low) levels of agency conflicts and high (low) levels of board compliance will give us a better picture about the market. Figures (3and 4) shows the scatter plot between Tobin's Q and Board Compliance for the highest and bottom 10% of agency conflicts respectively.

Figure (3) shows that companies listed in pharmaceutical industry (e.g., AstraZeneca and GSK), Telecommunications (e.g., Vodafone and BT) and Food retailers (Tesco) are the most profitable companies when we have high levels of agency conflicts and high levels of board compliance. However, pharmaceutical companies are in a better off situation compared with other industries. On the other hand, industries including (i) patent "owners and lessors", (ii) Equipment rental and leasing, and (iii) testing laboratories exhibit the most profitable industries in situations where there are low levels of agency conflicts and low levels of board compliance (show figure 4).

Our results come in line with the results of Dey (2008) in her US based study as she reported a positive association between the level of agency conflicts and the quality of corporate governance mechanisms in place. In addition, the effect of mean corporate governance in companies with high level of agency conflicts on firm financial performance proxied by Tobin's Q is greater than those companies that have medium and low levels of agency conflicts. On the other hand, our findings contradict with those of Lasfer (2002) in her UK based study as her findings support stewardship hypothesis. She reported that companies which are operating in high levels of agency conflicts proxied by growth opportunities and with low quality of corporate governance proxied by board structure (less independent directors and more dual CEOs) have higher firm value proxied by Tobin's Q than others with different levels of agency conflicts and agency conflicts.

Figure (4): Tobin's Q and Board Compliance at the top 10% of Agency conflicts

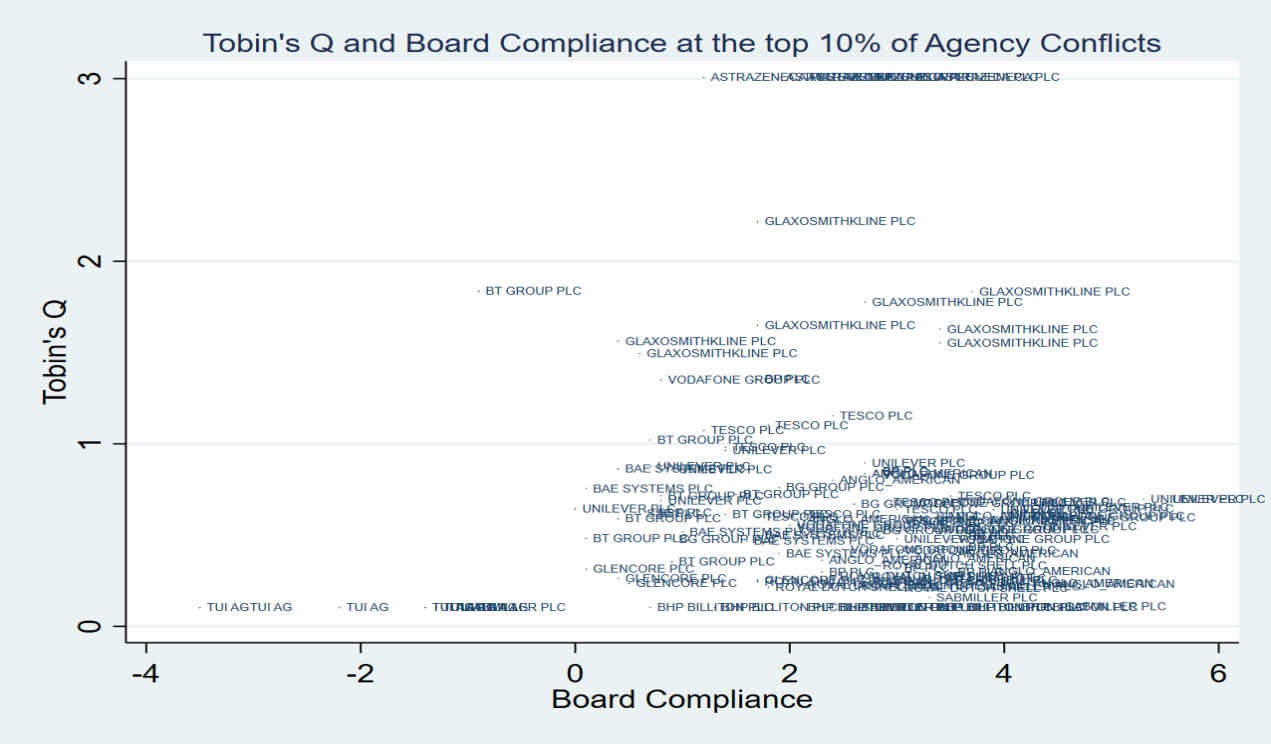
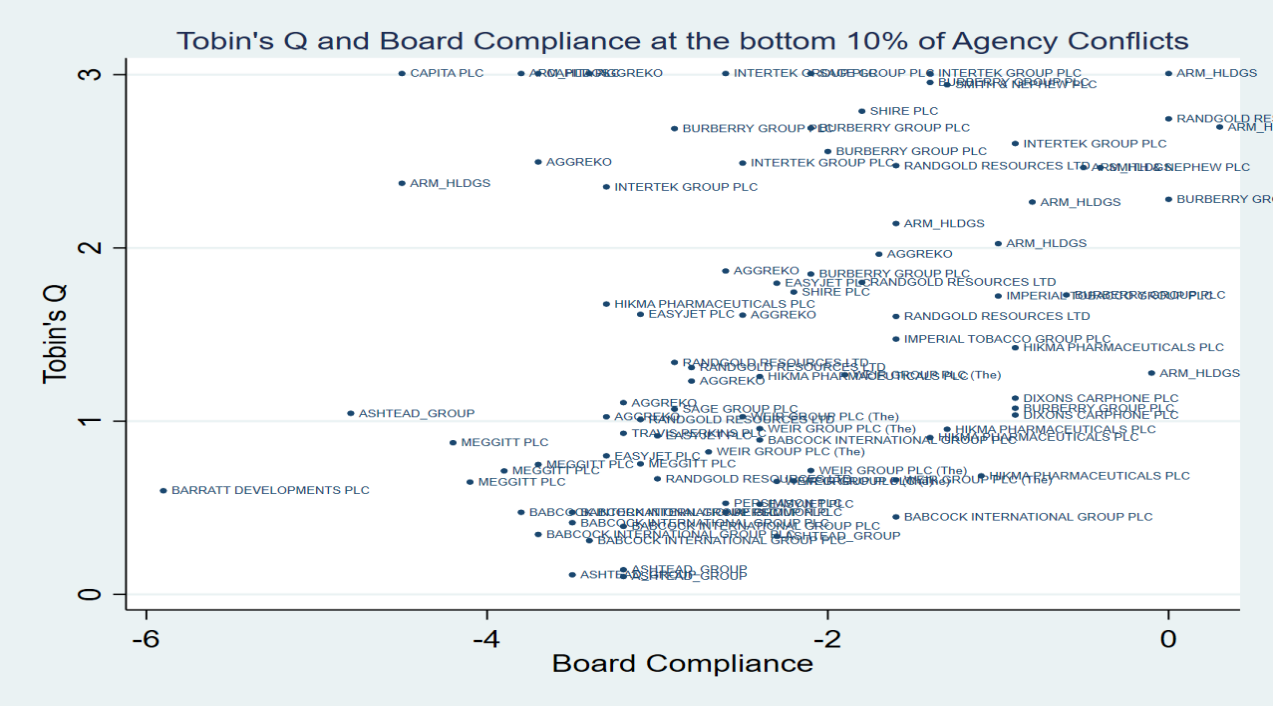


Figure (5): Tobin's Q and Board Compliance at the bottom 10% of Agency conflicts



4.3.2 Robustness Tests

We measured firm financial performance using Return on Assets (ROA), and the results were robust as we reported that the level of agency conflicts positively moderates the association between corporate governance and firm financial performance. However, the positive impact of the interaction between agency conflicts and corporate governance on firm financial performance is more pronounced when financial performance is proxied by Tobin's Q. On the other hand, we proxied agency conflicts and corporate governance using dummy variables (values greater than the mean [0 for Board compliance, 0.1 for Board diversification, and -0.2 for agency conflicts] and the results showed that the interaction effect between corporate governance and agency conflicts is still positive and significant.

4.3.3 Further Analysis

We also examined the change in the relationship between the interaction of corporate governance and agency conflicts and firm financial performance before and after the financial crisis (2009). In line with our expectations, the interaction between board compliance and agency conflicts was positive and significant before and after the financial crisis (see Table 5 and Table 6 in the Appendix). We attributed this result to the fact that no significant changes have been made to the board independence, remuneration and audit committee since the 2003 Higgs report. On the other hand, the only significant change was the interaction between board diversification and agency conflicts before and after the financial crisis. Before 2009, this

interaction was negative and statistically significant. However, from 2009 onwards, the coefficient of this interaction turned positive which reflects the tendency of FTSE100 boards to comply with the Walker review of increasing the level of board diversification.

5 Conclusion, Policy Implications and Future Research

The main purpose of this study is to investigate whether the association between corporate governance and firm financial performance fluctuates as a function of the magnitude of agency conflicts. As we reiterated, it is the first study which attempted to do so. This research reveals that the UK companies exhibit different levels of corporate governance and different levels of agency conflicts. It paves the road towards more innovative measurements to the latent variables (e.g. corporate governance and agency conflicts) which capture the complex nature of corporate governance and agency conflicts (human behavior) more objectively.

Corporate governance structure is informed by the Codes, but the implementation and the nature of the latter is taking place away from the public domain. Our empirical results show that there is a significant difference between the quality of the corporate governance in the light of high and low levels of agency conflicts. In addition, our empirical results showed that there is no one corporate governance system which is applied to all companies. We reported evidence supporting the fact that high quality corporate governance can transform agency conflicts from a threat to an opportunity if the former could control the negative side of the latter. This was evidenced by the fact that companies with high levels of agency conflicts and high-quality corporate governance mechanisms outperform other companies with different combination of agency conflicts and corporate governance.

One of the problems with the current debate on corporate governance is that there are many different, and often conflicting, views on the nature and purpose of the firm (profit maximisation, concentration of in-house activities or outsourcing of activities, social contribution, incorporation of the profits versus socialisation of the damages, ethical productivity, etc.). This debate arrays from positive issues concerning how institutions actually work, to normative issues concerning what should be the firm's purpose. Therefore, in order to make sense of this debate, it is useful to consider the different analytical backgrounds or approaches that are often employed. As supported by our findings, the results provided evidence that at the heart of the aforementioned debate lies the problem of the agency conflict in an ever-increasing globalised environment. As a result, our findings are also important from a policy change point of view. We argue that policy setters will be more able to achieve the

objective of improving firm financial performance by identifying the significant corporate governance dimensions that need to change as well as the types of companies for which such changes are more beneficial.

This research reiterates the importance of testing the development of corporate governance in order to spot the weaknesses of the governance code and make due changes accordingly. This includes testing the multidimensional nature of corporate governance, and how the interaction between different dimensions of corporate governance exercises an impact on organizational performance. This will increase our understanding of the reason why companies have different structures of corporate governance and paves the road towards finding more innovative measurements to the impact of different corporate governance structures on organisational performance in general and financial performance in specific.

5.1 Limitations

Lack of data on ownership structure for the period of study (1999-2014) was the main reason why we excluded it from the analysis. In addition, lack of reliable and quantifiable corporate governance data on small-medium size enterprises limits the findings only on big non-financial firms.

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Appendix A

Table 1: The outputs of the principal component analysis and Cronbach's Alpha

No.	Principal component (governance factor)	Significant components	Factor loadings	Cronbach's Alpha
1	Board Compliance	Board independence NC Indep. RC Indep. ED total comp. NED total comp.	0.4538 0.4479 0.3818 0.3182 0.3858	0.63
2	Board structure	Board size Board busyness Director's qualification	0.5438 0.4734 0.5319	0.72
3	Board diversification I	Female NED Foreign Directors	0.6533 0.6714	0.95
4	compliance of Board's subcommittees	Directors' overlapping AC Size NC Size	0.5711 0.5072 0.4016	0.64
5	Executive directors' experience	Executives' board experience Executives' board experience (years)	0.5765 0.6576	0.64
6	Executives' tenure	Executive directors' tenure CEO Tenure	0.6547 0.6327	0.70
7	Non-Executive directors' experience	NEDs' board experience NEDs' board experience (years) NEDs' average age	0.3639 0.5446 0.5615	0.50
8	Board diversification II	NEDs' with more than 9 years in co. Female executives. NEDs' average tenure	0.5599 0.3684 0.5792	0.53

Table 2: Corporate governance factors and firm financial outcomes (GMM)

		(1)	(2)
VARIABLES	Expected sign	TQ	ROA
Lagged dependent variable (t-1)	+	0.3850***	0.5219***

		(0.1425)	(0.1710)
Board Compliance	+	0.2379**	0.0116***
		(0.0937)	(0.0043)
Board structure	-	0.1059	-0.0017
		(0.0734)	(0.0024)
Board Diversification I	+	-0.0681**	-0.0026*
		(0.0313)	(0.0014)
compliance of Boards' subcommittees	-	-0.0379	-0.0004
		(0.0367)	(0.0016)
Executive directors' experience	-	-0.0211	-0.0030*
		(0.0323)	(0.0017)
Executives' Tenure	-	0.0082	-0.0002
		(0.0220)	(0.0017)
Non-Executive directors' experience	+	0.0256	-0.0008
		(0.0276)	(0.0017)
Board diversification II	?	-0.0426*	0.0003
		(0.0253)	(0.0018)
Total Assets	-	-0.6351***	-0.0132***
		(0.1159)	(0.0043)
leverage	-	-0.7170*	-0.0380**
		(0.3619)	(0.0174)
Free-Cash-Flow	-	-0.1286	0.0154
		(0.3819)	(0.0233)
Observations		809	892
Number of firm_id		76	76
Industry Fixed Effect	Yes		
Time Fixed Effect	Yes		

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Source: Own computations.

Table 3: the association between corporate governance factors and financial performance in the medium and long-run

	T_{+3}		T_{+5}	
VARIABLES	Tobin's Q	ROA	Tobin's Q	ROA
Lagged dependent var	0.5084***	0 .4615***	0 .6791***	-0.0723
	(0.1019)	(0.1550)	(0.2402)	(0.1706)
Board Compliance	0.1806**	0.0118**	0.1452	0.0221**
	(0.0770)	(0.0047)	(0.1066)	(0.0084)
Board structure	0.0228	0.0010	0.1179*	0.0211***
	(0.0578)	(0.0025)	(0.0683)	(0.0073)
Board Diversification I	-0.0604*	-0.0044***	-0.0673*	-0.0098**
	(0.0321)	(0.0015)	(0.0375)	(0.0040)
Compliance of Boards' subcommittees	-0.0208	-0.0021	-0.0614**	-0.0056**
	(0.0238)	(0.0016)	(0.0255)	(0.0028)
Executive directors' experience	-0.0198	-0.0002	0.0056	-0.0018
	(0.0232)	(0.0018)	(0.0239)	(0.0030)
Executives' Tenure	-0.0071	-0.0003	-0.0379	-0.0025
	(0.0249)	(0.0017)	(0.0306)	(0.0034)
Non-Executive directors' experience	-0.0063	0.0021	0.0211	0.0002
	(0.0261)	(0.0017)	(0.0349)	(0.0040)
Board diversification II	-0.0210	0.0029	-0.0133	-0.0096***
	(0.0278)	(0.0019)	(0.0355)	(0.0033)
LN total assets	-0.1098	-0.0148***	-0.0777	-0.0200**
	(0.0718)	(0.0050)	(0.0943)	(0.0080)
Leverage	0.0288	-0.0131	0.0000	0.0323
	(0.2089)	(0.0154)	(0.3373)	(0.0224)
Free-Cash-Flow	0.0447	-0.0191	-0.6909	-0.0014
	(0.3455)	(0.0183)	(0.4942)	(0.0387)
Observations	729	815	593	593
Number of firm_id	73	76	72	72
Time Fixed Effect	Yes			

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Source: Own computation

Table 4: The estimations of the individual effect as well as the interaction effect of Corporate Governance and Agency Conflicts on ROA

VARIABLES	ROA
First lag of ROA	0.7331***
	(0.0667)
Agency Conflicts	-0.0349***
	(0.0068)
Board Compliance	0.0097***
	(0.0028)
Agency Conflicts X Board Compliance	0.0040**
	(0.0017)
Board Diversification	-0.0002
	(0.0008)
Agency Conflicts X Board Diversification	-0.0070**
	(0.0032)
Observations	976
Number of firm_id	76

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5: *The relationship between the interaction of corporate governance and agency conflicts and financial performance before the financial crisis (2009)*

VARIABLES	Tobin's Q
First lag of Tobin's Q	0.8195***
	(0.0014)
Agency conflicts	-1.234***
	(0.0390)
Board Compliance	0.1823***
	(0.0053)
Board Compliance * Agency conflicts	0.0692***
	(0.0074)
Board Diversification	0.0258***
	(0.0089)
Board Diversification * Agency conflicts	-0.3610***
	(0.0126)
Observations	540
Number of firm_id	71

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6: *The relationship between the interaction of corporate governance and agency conflicts and financial performance after the financial crisis (2009)*

VARIABLES	Tobin's Q
First lag of Tobin's Q	1.0696***
	(0.0048)
Agency conflicts	-0.0843
	(0.0717)
Board Compliance	0.0433***
	(0.0132)
Board Compliance * Agency conflicts	0.0475**
	(0.0214)
Board Diversification	0.0101
	(0.0080)
Board Diversification * Agency conflicts	0.0259[18]
	(0.0160)
Observations	436
Number of firm_id	76

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

[18] The p-value was a border line (10.6%).

Dear reviewers,

We would like to thank you for the time you spent on reviewing our paper titled "An empirical evaluation of the impact of agency conflicts on the association between corporate governance and firm financial performance", and the valuable comments which you provided for us. In the following table, you can find the changes we made based on your comments. Please see below:

Reviewer 1 comments:

Comment	Page number of the adjustments we made
the author needs to think more about how this current study pushes the boundary of existing literature and theory.	- Pages 3 and 4, our five contributions - Page 6, 2nd paragraph.
The paper does not do adequate justice to the literature on corporate governance firm performance and agency conflict	- We re-wrote section 2 (theoretical framework and hypotheses development), please see pages 6-8.
The study claims to use the 76 non-financial companies listed. what is the justification for the sample size of 76 firms.	- Page 9, footnotes 4, 5 and 6.
there is limitation in the motivation for the study	We demonstrated the motivation of this research in the first paragraph in page 5, and also, we added a new paragraph (page 6, 2nd paragraph) where we made the theoretical contribution more visible.

The paper identifies the any implications for research, policy, there is no clear link of this to the implication for practice.	- We added a new paragraph to make the policy implications clearer, please see page 25, section 5, 3rd paragraph.
	- We also re-wrote the introduction and also look at pages:
	  - 3; 3rd and 4th paragraphs.
	  - 4 in full.
	  - 5; 1st paragraph.

Also, as stated above the analysis does not provide enough clarity of the connection of the three main concepts of corporate governance, firm financial performance.	Section 4.3 (page 19), we refined the theoretical framework and the research hypotheses. See: - Page 6: second paragraph. - Page 7: the full page. - page 8: 2nd paragraph
Development of hypotheses	- Page 6: second paragraph. - Page 7: the full page. - page 8: 2nd paragraph
Justification of the sample of study (76 non-financial FTSE100 listed companies).	- Page 9, Section 3.1, 1st paragraph, - Page 9, footnotes 4, 5 and 6.
Justification of the period of study	- Page 9, section 3.1, footnotes number 6 and 7.
Proof reading	we are willing to complete the proofreading in the next round of the review

Reviewer 2 comments

Comment	Page number of the adjustments we made
Justification of the sample of study (76 non-financial FTSE100 listed companies).	- Page 9, Section 3.1, 1st paragraph, - Page 9, footnotes 4, 5 and 6.
Justification of the period of study	- Page 9, section 3.1, footnotes number 6 and 7.
Additional financial indicators	- Page 15, 2nd paragraph starting with (other proxies).
Adding the analysis of pre and post financial crisis.	- Page 24, the last paragraph: We added a new section (4.3.3). Also, we reported the regression results of the two models (before and after the financial crisis) using tables 5 and 6 in the appendix (pages 34 & 35).

We appreciate the time you are going to spend in the 2nd round of reviewing our paper and we are looking forward to hearing from you.

Sincerely,

The authors of the paper

An empirical evaluation of the impact of agency conflicts on the association between corporate governance and firm financial performance

Abstract

Purpose: To~~his study aimeds to~~ predict and understand the ~~predict the~~ conditions under which the association between ~~under which the association between~~ corporate governance and ~~firm~~ a company's ~~-~~financial performance is positive or meaningful by empirically accounting for agency conflicts ~~is positive~~. This study ~~Our paper~~study~~paper~~ ~~is~~ motivated by ~~the fact that~~ the fact that the separation between ownership and control creates ~~sets of~~ agency conflicts between company owners and managers. Therefore, ~~it is expected that~~ strong corporate governance systems are expected to ~~bring~~ align~~ment of~~ the interests ~~of between~~ conflicting~~ed~~ parties whereby ~~and, accordingly,~~ companies become~~are~~ more likely to improve their financial performance. However, previous research did not yield~~has~~~~did not reported~~ ~~a~~ consistent ~~set of~~ results in this regard.

Design/Methodology/Approach: Given the latent nature of corporate governance and agency conflicts, ~~we~~ this study use~~s~~d principal component ~~analysis~~ and exploratory factor analysc~~i~~s to proxy for corporate governance and agency conflicts, respectively. U~~By u~~sing dynamic panel data modelling, we estimate~~d~~ the ~~the~~ change in the relationship between corporate governance and a~~-~~ company's~~firm~~ financial performance as a function of the change in the level of agency conflict~~s~~ using data from the UK ~~data~~ on~~for~~ 78 non-financial companies listed i~~o~~n the FTSE100 between 1999 and 2014.

Findings: The c~~Our results showed that there are significant differences in c~~orporate governance quality~~ies~~ of~~among~~ companies is significantly differed. Moreover, ~~we found that~~ companies operating at~~in~~ high level~~s~~s of agency conflict~~s~~ outperform~~ed~~ their counterparts operating in low levels of agency conflict~~s~~ only when the former i~~mproves~~d~~ncreases~~ the ~~quality of~~ corporate governance quality. This implies~~Specifically~~ that~~,~~ ~~firm~~ financial performance ~~is~~ improve~~s~~d by approximately 11% if companies i~~mprove~~n~~crease the quality of~~ corporate governance quality due to an~~the~~ increase in the level of agency conflicts.

Research limitations/Implications: Lack of data on ownership structure for the ~~period of~~ study period (1999-2014) was the main reason ~~why~~ we excluded it from the analysis. A~~In a~~dditionally, the lack of reliable and quantifiable corporate governance data on small-medium ~~small-medium~~ size~~d~~ enterprises limit~~ss the~~ findings on~~to~~ large~~only on big~~ non-financial companie~~firm~~s.

Practitioners/Policy Implication: The authors propose a framework/tool for the impact of the level of corporate governance compliance on financial performance conditional upon the level of agency conflicts whose importance has largely been neglected by the empirical literature. By providing the right "lens" to de-fragmentise the corporate governance mechanisms and estimate empirically the unobserved agency conflicts, researchers, practitioners and investors are able to get further insights on the composing elements of financial performance and evaluate it more objectively. Managers can allocate companies' resources more efficiently and thus improve financial performance. The auditors can get further background information when they compile their report on company's directors. The study's findings offer valuable suggestions for accounting and corporate governance regulators to further put forward and improve accounting standards so as to enhance existing regulations and internal mechanisms

Commented [A1]: Dear Author,

Thank you for choosing to use our English Editing Service for the first time. I have ensured that my work meets the scope of this service, and I look forward to receiving your feedback regarding my work on this manuscript.

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which in turn could decrease the scope for managerial opportunistic behaviour as the latter can be empirically estimated through our framework. ~~Our~~The ~~results~~ results of this research ~~would be~~are useful mainly for auditors and regulatory bodies in two main ~~ways~~points. First, ~~by providing~~our research gives the auditors and policy setters with the right ~~'"lens'"~~ to~~to understand~~see the unobserved terms like ~~'"agency conflicts'"~~ and ~~'"corporate governance'"~~ ~~corporate governance'~~. ~~This would help improve their capability~~As a result, the auditors and ~~policy setters will become more capable of evaluating~~ a company's~~firm performance more objectively and taking~~making~~ better judgmental decisions in situations~~,~~ such as~~like high/low agency conflicts/corporate governance. Second, by establishing the fact that corporate governance works as one system, and~~but not as an individual mechanism~~,s thus improving~~es the perception about~~of how~~the functioning of corporate governance functions~~way that corporate governance is functioning~~.

Social implications: The findings point out the need for a revised framework accounting for the principal-agent (mis)alignment and the engrained information asymmetries. By acknowledging the level of corporate governance compliance and agency conflict, managers and shareholders should actively strive for the effectiveness of companies, the efficiency of the stock markets and the minimisation of the agency costs. Furthermore, policy makers can look into the development of a code of corporate governance to effectively regulate firms rather than enforcing rigid laws that may not be value relevant. With all these settings in place, the likelihood of corporate failures, corporate scandals as well as corporate violations with the ensuing penalties is set to be reduced. Hence, valuable resources, social capital and effort can be directed into more productive activities.~~.~~ ~~This paper~~research ~~provides an~~ gives ~~empirical explanation for the collapse of companiefirms~~phenomenon of firms' ~~collapse despite of the existence of corporate governance systems in place. Companies are key players in the society, and their survival is crucial~~of ~~a great importance for the society's~~ survival of the society. ~~Our results~~The results of this research show that the level of agency conflicts is the ~~primary factor that influences~~ main driver ~~the choice of~~in~~of choosing the right set of corporate governance systems~~ that a company should apply to maximise its performance. ~~AIn additionally~~Also, this ~~paperstudy~~paper paves the ~~way~~road ~~for~~towards more innovative measurements ~~of~~to the latent ~~variables (e.g., corporate governance and agency conflicts) that~~which ~~capture the behavioural dimension of corporate governance and agency conflicts more objectively~~.

Originality/Value: This study adds to the existing literature by offering empirical and explicit evidence on the dynamic association between corporate governance, agency conflicts and financial performance against a backdrop of high demand for strong corporate governance practices/codes. To the best of the authors' knowledge, there is no study that has yet empirically examined the moderating effect of the level of agency conflicts given the level of corporate governance compliance on financial performance for listed and internationally-aligned companies. ~~The main contributions of this paperstudy are as follows:paper is, (i) it identifies the situations within which a companyfirm's financial performance is positive, and (ii) it visualiszes the dynamic association betweenamong corporate governance, agency conflicts, and a companyfirm's financial performance~~.

Paper type: Empirical paper.

1. Introduction

Proper~~A proper system of~~ corporate governance is crucial~~widely viewed as an important requirement~~ for the financial and non-financial success ~~and~~ as well as the viability of ~~listed~~ companies and for the good of the society at large, as indicated by ~~the~~ corporate governance codes and their revisions (Kedia and Philippon, 2009; Stuebs and Sun, 2015; Baraibar-Diez et al., 2018; UK Financial Reporting Council, 2018;; Zaman, et al, 2022) ~~indicate~~. After decades of research and policy advocacy and in the light of economic downturns, the ~~-~~past, present, and ~~future haves~~potential future downturns and business developments motivated us~~the scope of this paper~~ to study~~delve into~~ the association between corporate governance and a company's~~firm~~ business viability using a unique approach that, to the best of our knowledge, has never been adopted so far~~tested before, to the best of our knowledge~~. Corporate governance, as a set of devices, is ~~considered as~~ an institutional remedy for any misalignment between ownership and control owing~~thanks~~ to its advisory and enforcing mechanisms, such as the board of directors, committees, and managerial remuneration plans (Larcker et al., 2007; Kyere and Ausloos, 2021). However, the existence of a corporate governance framework, per se, cannot adequately~~is not enough to~~ account for any possible misalignment between ownership and control ~~,~~ result~~ing~~ing in weak financial performance of companies or even corporate failures (such as Enron in 2001; Worldcom in 2002, Bear Stearns and Lehman Brothers in 2008 and Thomas Cook in 2019)~~n behalf of the firms~~. Nevertheless, ~~This~~e ~~latter wa~~is ~~acknowledged by~~ a recent report (2020) issued by ~~the~~ Certified Financial Analysts (CFA) ~~), which~~ show~~ed~~s that almost 25% of S&P 500 companies are exposed to ~~on going~~ insolvency~~t~~ due to equity thinning despite the revisions in the corporate governance codes. The risk of insolvency permeates the ~~as a result of the~~ aforementioned misalignment. The empirical work thus~~o~~ far has largely examined~~saw and investigated~~ the association between corporate governance and companies' ~~firms'~~ financial performance as direct and causal and the logic for this association arises because governance improves efficiency in the monitoring of managerial activities thereby decreasing agency conflicts (Hermalin and Weisbach, 1998; Gompers et al, 2003; Brown and Caylor, 2006; Bebchuk et al., 2009; Akbar et al., 2016; Bhagat and Bolton, 2019) ~~casual~~. This paper~~In this paper, we~~ argues that corporate governance is not self-driven because~~, as~~ it presupposes engagement with agents and forces of change. ~~:~~ The premise that corporate governance compliance leads to good company ~~causes good firm~~ performance contradicts the multi-dimensional and latent nature of corporate governance. For example, increasing board independence does~~will~~ not 'directly' improve organisational performance.

Commented [A3]: Although this sentence is grammatically correct, this part might need a brief explanation that throws light on how exactly the codes and amendments reflect the importance of corporate governance. Doing so would improve clarity for your readers.

Commented [A4]: This might seem like awkward construction. Did you mean the economic downturns of the past, present, and the probable ones of the future?

Commented [A5]: Please check if the revisions reflect your intended meaning.

Corporate governance refers to a~~the~~ set of provisions that alter~~ing~~ the managerial decision-making process, especially when there is a separation between ownership and control (Larcker et al., 2007). This ~~very~~ separation of management and control gives~~ave~~ rise to ~~see the~~ managers as agents vying to act for their own benefit (Jensen and Meckling, 1976), although ~~the~~ stewardship theories and the emergence of ~~the~~ institutional investors have dented the propositions of ~~the~~ agency theory. This does not imply that~~mean that the~~ corporate governance tools should be abandoned. In contrast,~~On the contrary~~ the latter should be updated~~latter is updated~~. Further, i~~and i~~n the ~~the~~ light of disparities between managers and employees~~ and considering, the~~ corporate scandals, corporate accountability, agency conflicts, and transparency, as put forward by the ever-evolving corporate governance codes, the role of internal auditing should be given ~~its~~ appropriate attention (Fich and Slezak, 2008; Amana and Nguyen, 2013; Elsayed and Elbardan, 2018; Assenso-Okofo, et al., 2021). It is a historical observation that a new corporate governance code is always launched following ~~a~~ market turmoil or a major corporate scandal (see the various revisions of the Corporate Governance Codes since 1992 in the United Kingdom or the Sarbanes-Oxley Act 2002 as well as Dodd-Frank Act 2010 in the United States). Accordingly, the complexity and ~~the~~ entwined nature of ~~the~~ globali~~s~~z~~z~~ed business activities call for certain warranties ensuring that institutionali~~s~~z~~z~~ed mechanisms are in place to safeguard ~~the~~ stakeholders' vested interests and prevent managers' opportunistic behaviour.

The premise that with all these safeguarding elements in place, one should reasonably~~ve~~ expect ~~a~~ positive financial performance when a high-quality corporate governance system is in place. Alternately, a high-quality corporate governance system will ensure minimization of losses in the event of market turmoil.~~, given the state of the market climate.~~ ~~—~~ Nevertheless, previous studies (e.g. Yermack et al., 1996; Bhagat and Black, 2002; Core et al; 2006; Bhagat and Bolton, 2009; Wintoki et al., 2012; Francis et al., 2015; Pandeya et al., 2015; Adams and Jiang, 2016; Andreou et al., 2016, Al-Gamrh, et al. 2020; Radu et al 2022) ~~which~~ examin~~ing~~ed the association between corporate governance and a company's financial performance failed to report a consistent set of results. One of the reasons for~~behind~~ these inconstancies ~~is apparent inconsistency~~ is the measurement error associated with individual and randomly selected corporate governance ~~mechanisms as~~to stand for corporate governance indicators and the subsequent omission of certain ~~indicators~~ mechanisms and proxies (see Bhagat and Bolton, 2009; Adams and Jiang, 2016 and Shin et al., 2018). This study argues ~~We argue~~~~Our argument is that~~ that the agency conflicts ~~which are~~ discussed in virtually every corporate governance

Commented [A6]: **Tip:** Repeated article error refers to the unnecessary repetition of the same article in a series or list.

For example,
Original: We verified the samples using *the* source image, *the* original image, and the final image.
Revision: We verified the samples using *the* source image, original image, and final image.
It's fine to place the article before the first item in the list only.

Commented [A7]: This seems like an incomplete sentence. Please check if you meant 'the premise that with all these safeguards in place, one should expect positive financial performance from a company that has a high-quality corporate governance system is largely accepted'. If not, then kindly clarify the same so that I can help revise this further.

Commented [A8]: The original sentence construction was awkward and unclear. However, kindly check and ensure that the revisions are in line with your intended meaning.

study have never received~~been given the~~ appropriate empirical attention. Keeping all the above mentioned points in mind, this study specifically controls for the effects~~We propose tha~~ of ~~t~~ ~~the~~ agency conflicts and how the latter ~~to~~ moderate the relationship between corporate governance and a company's ~~firms'~~ financial performance ~~because, since~~given that the agency conflicts primarily motivate the continuous update of the UK corporate governance code~~are the main driver of the continuous update in~~when it comes to the UK corporate governance code (see the UK corporate governance code between 1992 and 2018~~4~~). We choose the UK for this investigation because it offers an international setting where corporate governance regulations have been updated regularly.

This study is the first to address the latent nature of agency conflicts and makes several contributions. *First*, using a comprehensive, hand-collected dataset, it offers an empirical account of governance practices, shedding new light on the corporate governance of listed companies. *Second*, this study looks into any potential interconnections among the corporate governance mechanisms rather than assuming that everything works in isolation (e.g., board independence and CEO compensation) because in doing so would cause measurement error and selection bias (Larcker et al., 2007; Dey, 2008; Solomon, 2013). Hence, this study utilises Principal Component Analysis (PCA) based on a unique dataset of 28 corporate mechanisms and considers all these mechanisms in its entirety as suggested by Larcker et al. (2007). By doing so our study accounts for different levels of corporate governance quality. *Third*, this study explicitly accounts for the latent nature exhibited by agency conflicts using factor analysis. By hand-collecting data our study builds an agency conflict score/index for different levels of agency conflicts (for example, when CEO power is allowed to act without certain restraints) using factor analysis. The latter is recommended to estimate and measure latent variables from observable data and to produce a newly constructed score/index for each company over time. Factor analysis was employed because certain variables exhibit somewhat similar patterns as they are linked to a latent variable, which, in this paper, is 'agency conflict' (see Field, 2009). No study has ever assessed empirically the impact of different levels of agency conflicts within the corporate governance and companies' financial performance realm.

Our results show that companies' financial performance is maximized only when high corporate governance is paired with high levels of agency conflict. However, low corporate governance compliance also boosts financial performance as long as the agency conflicts are low. The direct implication is that the companies may unnecessarily overspend on corporate governance compliance incurring a profound opportunity cost. From a *policy setting*

perspective, if we can predict the change in company value as a function of the change in the level of agency conflicts paired with the quality of corporate governance, managers and owners can make explicit interventions into a company's strategy and policymakers can identify companies which are likely to mitigate uncertainty in the financial and business environment, thereby increasing transparency and the fundamental role of corporate governance.

The rest of this paper is structured as follows. Section 2 presents the theoretical framework and development of the hypotheses. Section 3 presents the research design of the paper. Section 4 presents the empirical research, followed by section 5, which discusses the results and conclusion.

2. Literature Review

As mentioned in the previous section, the aim of this study is to account explicitly and empirically for agency conflicts as the link between corporate governance and companies' financial performance. However, only a ~~A~~ handful of studies ~~-~~proxied ~~the~~ agency conflicts conditional ~~up~~on companies~~firms~~' specific characteristics ~~in an attempt~~ to account ~~more for~~~~meaningfully for~~ the relationship between corporate governance and companie~~firms~~s' financial performance. They found~~found~~ that this~~e~~ relationship ~~between corporate governance and firms' financial performance~~ is contingent on (i) ownership structure[1] (Nikolov and Whited, 2014), (ii) the structure of company assets (Klapper and Love, 2004), (iii) leverage (Watts and Zimmerman, 1990), (iv) growth opportunities (Jensen, 1986; Lasfer 2002), and (v) business risk (Rantakari, 2011). Apart from the inherent measurement error, th~~e~~ese studies strongly~~made a strong~~ assum~~edption~~ that agency conflict is an observable variable, whereas in reality, it is ~~a rather~~ a latent variable~~one~~ (unobserved). Scholars, such as Field (2009) and Borgholthaus et al.~~,~~ (2019) explicitly ~~clarifiedymakes it clear~~pointed out ~~-~~that ~~-~~failure to acknowledge the latent nature of unobserved variables inevitably ~~increases~~ results in~~the level of~~ bias~~ed~~ ~~in the estimated~~estimated ~~-~~coefficients.

[1]Ownership structure refers to the composition of the ownership of a company~~firm~~. This includes the proportion of shares owned by all types of shareholders, including~~,~~ (i) company management, (ii) institutional shareholders, (iii) blockholders, (iv) employees, (v) individuals, etc.

Our paperstudy is, the first to address the latent nature of agency conflicts and, makes *five* key contributions.: *First*, using a comprehensive, hand-collected dataset, it offers an empirical account of governance practices, shedding new light on the corporate governance of listed companies. *Second*, itour study delves into the multi-dimensional nature of corporate governance (Solomon, 2013) and explicitly does *not* treat corporate governance as a collection of fragmented devices (e.g. board independence and CEO compensation), because doing so as wouldit will causeyield some sort of measurement error (Larcker et al., 2007; Dey, 2008). Instead, this paperthe article looks into any potential interconnections amongst the mechanisms, rather than assuming that everythingall works in isolation. Hence, we are utilisedzing Principal Component Analysis (PCA), ato better proxy for corporate governance, and considered all the mechanismstake all the mechanisms into consideration in entirety instead of rather than in a fragmented manner, as insinuated by Larcker et al., (2007). TIn an attempt to avoid any selection bias of corporate governance variables and multi-collinearity, wethise study employeds a unique dataset of 28 corporate governance mechanisms for the very first time in empirical research. *Fourthfifth*, this paperwe explicitly accounts for the latent nature exhibited by the agency conflicts. To the best of our knowledge, no empirical research has done soexplicitly accounted for the latter usingby utilizing factor analysis.

We collected data corresponding to different scenarios under which the agency conflicts are more pronounced (for example, when the CEO power is allowed to act without certain restraints) to build an agency conflicts score/index using factor analysis. The latter is recommended to estimate and measure latent variables from observable data and to produced a newly constructed score/index for each companyfirm overacross time. Factor analysis was employed becausederived its influence from the premise that certain variables exhibit somewhat similar patterns asbecause they are linked to a latent variable, which, in this paper, is the 'agency conflict's in our paper (see Field, 2009). *Fifth*, our methodology predicts the conditions under which the companyfirm value is maximiszed, conditional upon the level of agency conflicts which work in tandem with corporate governance mechanisms. From a *policy setting perspective*, if we can predict the change in the companyfirm value as a function of the change in the level of agency conflicts paired with the quality of corporate governance, managers and owners can make explicit interventions into a company's strategy, and policy makers can identify companies which are likely to mitigate uncertainty into the financial and business environment, thereby. iIncreasing thereby the transparency and the fundamental role of corporate governance.

Commented [A9]: Kindly specify the third point.

Commented [A10]: 'Firm' and 'company' has been used interchangeably throughout the manuscript. However, for uniformity of expression, it is advisable to use any one consistently.

A similar study can be traced *only* in the work done by Dey (2008) for the US market. However, our paperstudy differsdeparts from Dey's (2008) original study in severala number of ways. First, unlike Dey (2008), we focus on the UK as thea field of study. Although both the US and UK markets are highly internationaliszed, there are some pronounced differences in terms of corporate governance codes, business attitudes, board member composition, institutional frameworks, and acceptable attitudinal norms. –Second, we position our paperstudystudy withinonto the dynamic or time-varying pillar of analysis amongpermeatingst corporate governance, agency conflicts, and financial performance, rather than on the static or time-invariant pillar employed by Dey (2008). For example, corporate governance mechanisms, such as board structure, board independence, and directors' remuneration are a dynamics mechanisms thatwhich companiesfirms adjust it to mitigate the negative impact of agency conflicts on financial performance, as Klopper et al. (2004) explicitly find.argueds. Hence, athe time-varying element was consideredis taken into account. Third, unlike Dey (2008), we testedwe test the impact of different corporate governance mechanisms on companiefirms' financial outcomes, conditional upon different levels of agency conflicts and different qualities of corporate governance following the theoretical recommendations by –Mitchell (2012; p. 130)[2] argued that using the interaction between two continuous variables with the application of '"margins',"' help we can discover how the slope of the relationship between the two continuous variables changes in conjunction with the change in a third variable. In other words, the financial performance is conditional upon corporate governance, and different levels of agency conflicts all working in tandem. Finally, Dey (2008) examined the impact of the mean of corporate governance on the mean of corporate financial performance using three different levels of agency conflicts (hHigh, mMedium, and lLow). In this context, Dey (2008) applied cluster analysis to classify companies into clusters with high, medium, and low levels of agency conflicts. However, clustering analysis is reliesd on simulation techniques and inherent subjectivity to identify the optimal number of clusters and there is no objectivity inely distinguish their cut-off points[3]. By employing Mitchell's (2012) theoretical recommendations

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[2] Mitchell (2012; p. 130) argues that by using the interaction between two continuous variables with the application of 'margins', it is possible to estimate how the slope of the relationship between two continuous variables changes in conjunction with the change in a third variable. In other words, financial performance is related to corporate governance conditional upon different levels of agency conflicts.

[3] In Dey's (2008) research, the researcher stated that there is no satisfactory method for identifying the optimal number of clusters for any type of cluster analysis. Accordingly, the researcher applied three simulation techniques, namely (i) the cubic clustering criterion (CCC), (ii) Pseudo-F-Statistic (PSF), and (iii) Pseudo-T^2-Statistic (PSTS). The methodology, which was developed, by Cooper and Milligan (1985, 1988), is based on the

measuring corporate governance and agency conflicts as time-varying variables, we canare able to graphically show the change in the relationship between corporate governance quality (high, medium, and low) and a company'sfirm financial performance as a function of the change in the level of agency conflicts (high and low). This is, a significant departure from Dey's (2008) static work.

Our results showeded that companies have significant differences in terms of agency conflicts and corporate governance qualities. This which reflects the fact that there is no one single set of corporate governance procedures which fits all types of companies. However,On the other hand, w wee also showedreport that companiefirms' financial performance is positive only when high (low) corporate governance is paired with high (low) levels of agency conflicts. Moreover, a company'sfirm financial performance is at its peaks only when it hascompanies have a high qualityies of corporate governance and a high levels of agency conflictss. This impliesnteresting result shows that companies should not be encouraged to lowerreduce the level of agency conflicts.;; Oon the contrary, they should operate in an environment characterisized by high levels of agency conflicts, and but to make the best of the opportunities found in such an environment, these companieswhichthose companies mustare encouraged to increase the quality of the corporate governance system in order to mitigate the negative aspectsside of agency conflicts. It turns out that a high level of agency conflicts boosts the companies to invest more into mitigating these conflicts by investing more resources into internal controls they reap (somehow inadvertently) higher financial gains. Another plausible explanation is that the market positively interprets positively the strive of companies to account for agency conflicts, and given theits non-observability on behalf of the outsiders, the company outsiders view these policies sympathetically these policies. We, Ffinally, this paper argueswe argue that in the absence of agency conflicts, empirical evidence that interpretsing the relationship between corporate governance and financial performance is misleading in the absence of the level of agency conflicts.

The rest of this paper is structured as follows. Section: section 2 presentsis the theoretical framework and development of the hypotheses. Section 3 presentsis the research design of the

Commented [A12]: Although lengthy sentences cannot always be avoided, wherever possible, it is advisable to break them into shorter sentences. This improves clarity and readability for your readers.

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fact that the optimal number of clusters is the one which is repeated in the three previously mentioned methods (CCC, PSF, and PSTS). In Dey's (2008) research, the first two methods found that the optimal number of clusters might be three or seven, while the third method found that the optimal number of clusters could be three, seven, or nine. Despite the fact that three and seven are repeated in the methods, Dey (2008) chose the number of three clusters because the sample did not allowenable her to have seven clusters.

paperstudy. Section 4 presentsis the empirical researchstudy, followed by sSsection 5, whichwhere we discusses the results and conclusionde.

2.1 Theoretical Framework and Hypothesis Development

This paperIn thisour studypaper, we attempt to explains the relationship betweenamong corporate governance, financial performance, and agency conflicts in one model. We It argues that the relationship between corporate governance and a companyfirm's financial performance is explained by the level of agency conflicts, since the latter is the main driving forceer of corporate governance. The premise is that better governance enhances efficiency in the monitoring of managerial projects. This in turn, encourages managers to pursue value-maximizing activities and to avoid expropriation of firms' resources such as privileged consumption (Love. 2011). AsSince shareholders (the principals) and managers (the agents) are utility maximisers, the agency theory postulates that the two parties theyit areis more likely to observe oversee a conflict of interest between the two contracted parties because each of in the their attempt to the two parties will attempt to maximise their utility at the expense of the other (Jensen and Meckling, 1976; Watts and Zimmerman, 1990). This conflict of interest is even exacerbated when there is a pronounced separation between ownership and control due to the information asymmetryweak governance systems and shortcomings of contracts, gap which leads to managerial behave even more opportunistically behaviour, asas the managers have more information than the shareholders (Farber, 2005; Larcker et al., 2007; Chen and Zhang, 2018; Kyere and Ausloss, 2021; Farber, 2005). Further, mOn the other hand, managers behave opportunistically becausedue ofto the flaws and shortcomings of contracts, as well as poor governance systems (Kyere and Ausloss, 2021; Chen and Zhang, 2018; Farber, 2005).

Empirical research (e.g., Jensen and Meckling, 1976;Sun et al., 2017; Lasfer, 2002; Dey, 2008; Ntim et al., 2015; Dey, 2008; Lasfer, 2002;Sun et al., 2017 Jensen and Meckling, 1976) foundioundsreports that such agency problems have a negative impact on a company's valuationsfirm market value. It is generally impossible to ensure, *at zero cost*, that the managers will make the optimal decisions from the owners' viewpoint. ConsequentlyAs a result, without the *costly* alignment of interests between managers and owners through corporate governance, the company value is likely to deteriorate as a result of the agency conflicts (Farber, 2005; Ozkan, 2011; Farber, 2005). This study attempts to account empirically for the role played by the aforementioned agency conflicts.

2.1 ~~1~~ Agency Conflicts, Corporate Governance, ~~and~~ Financial Performance and Hypotheses Development

The ~~premise~~ premise is that the agency conflicts have a negative impact on organisational performance, ~~,~~ and ~~that~~ it is impossible to mitigate this~~e harm of agency conflicts~~ at zero cost (Jensen and Meckling, 1976). As a result, companies spend some resources (agency costs), such as having ~~NEDs~~non-executive directors in the boardroom to monitor managers'~~manager's~~ behaviour and auditing companies' financial accounts to narrow/close the gap of information asymmetry between managers and shareholders in a way that makes it~~it becomes~~ difficult for ~~the~~ managers to exhibit opportunistic ~~deviate from the efficient~~ behaviour (Larcker et al., 2007; Ozkan, 2011, and Kyere, and Ausloss, 2021). ~~Hence~~As it is stated in the previous section~~As a result~~, ~~the intuition was that~~ if companies implement strong governance mechanisms, one can expect an improvement in a company~~firm~~'s financial performance, or at least expect companies to avoid failure~~not to fail~~ as a result of managerial opportunism. Although the rationale behind updated corporate governance codes is to enhance corporate governance mechanisms (usually after corporate scandals or failures[4]),

~~Previous literature, which have examininged the association between corporate governance and financial performance, did not presentreport a consistent set of results. One possible explanation forto such mixed results is the omission of certain factors which were not explicitly taken into consideredation. If we look into the evolution of the UK corporate governance code from its debut in 1992 (Cadbury Code) untill the Combined Code (2018), one can observe that the main driving factorer[5] ofof the 'continuous' update of the UK corporate governance code was the the agency conflicts that led to a series of corporate scandals[6] (e.g. Baring Bank, MG Rover Group, Royal Bank of Scotland Group, and Tesco). However,~~ previous empirical literature failed to explicitly account for ~~did not directly link corporate governance and its main reason forof existence (~~the agency conflicts~~)~~. Although the latter is the main reason for the existence of corporate governance codes, the empirical evidence focuses on the ~~Instead, it~~but

[4] In the UK there have been some significant corporate scandals/failures due to poor governance such as Baring Bank, MG Rover Group, Royal Bank of Scotland Group, and Tesco

[5] ~~Corporate governance is not only about constraining the managerial opportunistic behavior, but also to '"*help build an environment of trust, transparency and accountability necessary for fostering long-term investment, financial stability and business integrity*"', subsequently, corporate governance promotes for '"*supporting stronger growth and more inclusive societies*"' (OECD, 2015a, p. 7).~~

[6] ~~Agency conflicts related to (i) poor monitoring, (ii) poor remuneration contracts which are not well linked with company performance, and (iii) lack of independence were found to be the main reasons behind those scandals (for more information, see Solomon, 2013).~~

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~~attempted to construct an~~ direct and causal association between corporate governance and ~~organiszational~~ financial performance. This study attempts to control explicitly and empirically for the ~~We argue that by controlling for agency conflicts and their~~its potential impact on the ~~association between corporate governance and a company's~~firm financial performance is the missing piece in this association ~~e puzzle~~.

Jensen and Meckling (1976) argued that the level of agency conflicts varies ~~–~~across companies~~firms~~ depending on the attractiveness of ~~"~~perquisites", the complexity of the operational environment, and the extent of ~~the~~ information asymmetry ~~gap~~ between ~~the~~ shareholders and ~~the~~ managers. In~~As a matter of~~ fact, the wider this asymmetry~~gap is~~, the more likely ~~the that~~ managers are to~~will~~ behave opportunistically ~~behave~~ instead of~~as opposed to~~ behaving in favour of the company's~~firm~~ value maximisation. This reflects the fact that companies differ in terms of the levels of agency conflict~~s~~ due to ~~the~~ differences in the symptoms of agency conflict~~s~~ (attractiveness of perquisites, information asymmetry gap, and level of monitoring). Consequently~~As a result~~, companies should set up a~~the~~ corporate governance system that~~which~~ is able to mitigate or even eliminate the harm caused by these symptoms ~~of agency conflicts which in turn leads to the agency conflicts per se~~.

However, the cost of corporate governance depends on its quality (Solomon, 2013). For example, high ~~–~~quality corporate governance systems (e.g. advanced internal control system, hiring experienced and high-salaried ~~and talented n~~N~~o~~non-ce~~E~~xecutive d~~D~~irectors ~~(NED) who might receive high remuneration plans~~ and engagement e ~~–~~with the ~~one of the~~ Big-4 auditing companies~~firms to do the auditing of the company's financial accounts~~) are ~~more~~ costlier~~y~~ compared to their low ~~–~~quality counterparts ~~(e.g. non Big 4 audit companiefirms or superficial management control systems)~~. Accordingly, companies operating in high agency conflicts environment should invest in 'expensive' corporate governance systems with a view to maintaining ~~a~~ touch with their financial targets. Conversely, companies which exhibit low levels of agency conflict~~s~~ are expected to spend less on corporate governance systems. The implication here is profound: if one company exhibiting low levels of agency conflict~~s~~ invests in advanced or 'expensive' governance devices, this might adversely affect~~have a detrimental effect on~~ its financial performance because the cost of having advanced corporate governance mechanisms outweigh the benefits. The aforementioned analysis leads us to hypothesis~~z~~e the following ~~:~~

H_1: Companies with high level~~s~~ of agency conflict~~ss~~ and high corporate governance quality exhibit~~will have~~ positive financial performance.

H2: Companies with low levels of agency conflicts and high corporate governance quality exhibit negative financial performance.

3 Research Design

3.1 Data and Sample

Our sample consists of 76[7] non-financial[8] companies listed in the FTSE100 between 1999 and 2014[9] as we. Hence, we followed these companies from 1999 onwards. Due to the lack of quantifiable and reliable data before 1999[10], we were are unable to trace the evolution of the UK corporate governance code since upon its the debut with of the Cadbury Code (1992). The boardroom of FTSE100 companies has special characteristics that make our UK sample highly representative. The data showsed that the level of internationalisation of the board of FTSE100 companies is significantly high (average of foreign directors was is around 40%) with a majority of the American directorsones being the most representative nationality). This makes the FTSE100 boardroom reflective of the attributes of international markets (especially the US) becausesince the directors are equipped with international exposure. Furthermore, the UK financial authorities have introduced significant revisions inof the cCorporate gGovernance cCodes since 1998, onwards compared to other markets. This makes the UK market an ideal ground to account for the time-varying nature of the corporate governance mechanisms as affected by the codes' mandates of the codes. An ideal basisground for the nature of our researchstudystudy is that we derived data fromt tThree main sources provide data for this study:; corporate governance data werewas extracted from BoardEx, while the financial data werewas extracted from Compustat Gglobal (WRDS), and Data Stream. All the financial and corporate governance variables are annual data relateding to companiefirms' accounting years. We matched corporate governance variables with financial variables in the baseds onf firms' accounting years, which vary across companiefirms. Our sample includesds only non-financial companies listed in the FTSE100.

[7] There are 78 non-financial companies listed in FTSE100, but while calculating the standard deviation of net revenues to total assets, Coca Cola and Royal Mail were excluded from the sample because both of them haves only 1 year of financial data, which areis not enough to calculate the standard deviation.

[8] The reason why we excluded the financial companies from the sample is that financial companies have to comply with a different set of governance regulations (e.g., Basel 3) and the fact that financial companies have different financial structure than the non-financial peers.

[9] The UK corporate governance code did not introduce any significant changes to the code since 2014., Aas a result, we did not extend our sample to include the financial reports following 2014; there were no so we do not alterations in the variance of our sample.

[10] BoardEx (the database we relied on collecting corporate governance information) coverage of governance data of the UK companies started in 1999.

We *excluded* ~~the~~ financial companies from the sample not only due to substantial differences in ~~the~~ capital structures, but also due to a different set of regulations and governance codes that they have to comply with (such as the Basle Accords). By doing so we ensure further homogeneity in our sample.

3.2 Research Methodology

Our main hypothesis is that the level of agency conflict~~s~~ ~~positively~~ moderates the association between corporate governance and companie~~firm~~s' financial performance. Before ~~we tested~~testing the moderating~~moderation~~ effect of agency conflicts o~~i~~n the association between corporate governance and financial performance, we capture~~d~~ the latent (unobserved) variables of corporate governance and agency conflicts using principal component analysis (PCA) and factor analysis, respectively. The analysis ~~wais~~is conducted~~made~~ in two stages. In~~; in~~ stage one, we regress~~ed~~ financial performance on corporate governance ~~in order~~ to identify the ~~the~~ significant corporate governance factors. ~~s.~~ ~~Then, I~~in stage two, we ~~controll~~controle~~d~~ for the interaction between corporate governance and agency conflicts to ~~see~~ assess how the association between corporate governance and financial performance changes~~d~~s as a function of the level of agency conflicts.

3.3 Variables Measurement

3.3.1 Corporate Governance

Corporate governance ~~has~~ is a ~~a special and~~ complex in nature and works as a system of devices rather than as individual provisions (~~nature which cannot be captured by individual mechanisms~~ (Larcker et al., 2007; Dey, 2008~~;). The argument is that corporate governance works as a system of devices rather than as individual provisions~~ (Solomon, 2013). ~~However~~In the light of a shortage of~~, due to the lack of a coherent~~ empirical evidence ~~theory that shows how corporate governance mechanisms work together as a system~~linking these individual devices together, we~~this study~~ apply~~ied~~s principal component analysis (~~thereafter~~ PCA) which ~~is able~~ synthesise~~s~~ corporate governance mechanisms into more homogenous factors/dimensions. Furthermore, ~~In order T~~to reduce the measurement error and bias level, we collect~~ed~~ data on~~for~~ 28 corporate governance mechanisms with a view to reducing the measurement error and biasedness (*almost all corporate governance provisions recommended by the UK corporate governance code and empirical research*). ~~Then, the~~ PCA ~~was~~ is then used to associate the 28 individual corporate governance variables with different ~~dimensions~~

aspects of corporate governance. This produceddBy doing so, a more systematic measurement of corporate governance dimensions is produced to overcome the problem of measurement error associated with using single provisions. We generateded eight (8) valid corporate governance components which reflecting eight different corporate governance dimensions using PCA (see Table 1 in Appendix A). For simplicity and ease of interpretation of the results, we assigned a name to each corporate governance dimension based on the loaded variables.

Identifying the significant components of corporate governance

We regressed financial performance[11] on the eight corporate governance factors generated by PCA, using the Generalised Method of Moments - GMM[12] estimator:

$$FinPer_{it} = \alpha + \pi_1 FinPer_{it-1} + \sum \beta_n XCorpGovFactor_{it} + \gamma_1 ttlassets_{it} + \gamma_2 2leverage_{it} + \gamma_3 fcf_{it} + \sigma_t + u_{it} \quad \ldots\ldots (1)$$

Where:

$FinPer_{it}$: The financial performance of company i at time t and, financial performance was captured by Tobin's Q and ROA. $FinPer_{it-1}$: fFfinancial performance of company i at time t_{-1}. $CorpGovFactor_{it}$: The principal components of corporate governance the corporate governance principal components for company i at time t. Eight8 principal components: bBoard cCompliance, bBoard structure, bBoard diversification I, compliance of bBoard's subcommittees, eExecutive directors' experience, eExecutives' tenure, nNon-eExecutive directors' experience, bBoard diversification II.

$Ttlassets_{it}$: total assets of companyfirm i at time t. $Leverage_{it}$: lLeverage of companyfirm i at time t, measured as the ratio of long-term debt to total assets. fcf_{it}: fFree cCash fFlow for companyfirm i at time t, proxied by the cash in hand scaled by total assets. Cash in the hand is measured as cash plus short-term investments. σ_t: The time- fixed effect. u_{it}: The idiosyncratic error.

The GMM is a dynamic panel data estimator that takes into consideration the simultaneous and dynamic effect between explanatory variables (corporate governance and agency conflicts) and the outcome variable (companyfirm financial outcomes), as well as the unobserved heterogeneity, such as differences in the effectiveness of board members among companiefirms

[11] We tested the impact of corporate governance on companyfirm financial performance proxied by Tobin's Q and ROA in the short run (t), medium run (T_{+3}), and long run (t_{+5}).

[12] GMM fixed effect model removes time invariant effects, such as industry effects.

(Adams and Veprauskaite, 2013). GMM uses the first differences to transform the equation, which removes any time-invariant variables, such as industry-specific effects (Mileva, 2007; Roodman, 2009; Abdallah et al., 2015~~; Roodman, 2009; Mileva, 2007~~). A~~In~~ additionally~~Also~~, GMM allows for the modelling of partial adjustment mechanisms by including one or more lags of the dependent variable which addresses the dynamic effect between the dependent variable (financial outcomes) and independent regressors (corporate governance and agency conflicts) (Roodman, 2009; ~~see~~ Adams and Veprauskaite, 2013~~; Roodman, 2009) for a further discussion~~. Moreover, GMM uses 'natural' and 'valid' instrumental variables by including the lags of the dependent and independent variables for endogenous variables (Roodman, 2009; p. 105). The results showed ~~a~~ remarkable robustness under different time horizons, namely, short (t), medium (t_{+3}), and long (t_{+5}) runs. Tables 2 and ~~Table~~ 3 (Appendix ~~A~~) show that b~~B~~oard *Compliance* and *Board Diversification* are the significant factors which influence corporate financial performance in different time horizons.

3.3.2 Agency Conflicts

Given the latency or unobservability of agency conflicts because~~since~~ they~~it~~ reflect~~s~~ human behaviour, it is difficult to measure and capture such a term in a tangible way. We proxy~~ied~~ agency conflicts by creating an agency conflict~~s~~ score using a number~~bunch~~ of variables which echo~~es~~ ~~the~~ situations wherein~~inwhere which~~~~the~~ agency conflicts are more likely to be pronounced. Doing so yields~~By doing so, we have~~ a better measurement of~~for~~ the term "~~"~~agency conflicts"~~"~~. These situations include company~~firm~~ size, free-cash-flow, complexity of the business environment, growth opportunities, operating risk, and leverage.

Company~~Firm~~ Size

Demsetz and Lehn (1985) argue~~d~~ that big companies usually engage in~~with~~ more operations than small companies do, which gives them managers of big companies the opportunity to shirk (over-consuming~~e~~ non-pecuniary benefits, such as luxury offices). Additionally, Watts and Zimmerman (1990) shed ~~the~~ light on the fact that big companies are more likely to be under the scrutiny of the general public and ~~the~~ government, which motivates them~~those big corporations~~ to manage earnings ~~in order to reduce reported profits~~ in an attempt to gain favourable reviews and attention~~, reduce political costs~~.

Free Cash Flow

~~On the other hand,~~ Jensen (1986) and Goranova et al. (2017) argue~~d t~~that the level of conflict~~s~~ between shareholders and managers increases when there is ~~a~~ substantial free cash flow[13] due~~because~~ to~~of~~ the conflict arising from the~~arises on how to~~ use of this~~this free cash~~ flow. Managers tend to misuse the cash remaining~~ed~~ after funding projects and repaying the debt in value~~-~~-destroying activities (e.g. m~~M~~ergers and ~~&A~~ acquisitions (M&A) activities) and/or increasing overconsumption of perquisites which have detrimental consequences on ~~the~~ company~~firm~~ value.

Complexity Of Business Environment

Ranatakari (2007) report~~ed~~ that the volatility of the operating environment affects the optimal organis~~z~~ational structure, as an~~the~~ increase in the magnitude of volatility in the operating environment increases the level of agency conflicts. This is~~comes~~ in accordance with the seminal findings by Demsetz and Lehn (1985)~~, when~~ who~~they~~ reported that managers of companie~~firms~~s with more volatile working environments are more likely to engage in~~with~~ moral hazard problems because it becomes difficult for ~~the~~ shareholders to monitor ~~the~~ management behaviour. Further~~In addition~~, Stein (1997) argued that companies~~,~~ that~~which~~ ~~are~~ operat~~e~~~~ing~~ in highly complex environments~~,~~ might suffer from resource misallocation because~~due to the fact that~~ CEOs of these companie~~firms~~s lose their focus~~-~~, and as a result, they are more likely not to m~~t~~ake ~~the~~ optimal decisions that increase their companies' profitability compared to other CEOs who operate in less complicated environments.

Growth Opportunities

~~Furthermore,~~ Jensen (1986) and Dey (2008) state~~dd~~ that companies with high growth opportunities are more likely to have information asymmetry problems because of the increasing power of their managers. Jensen (1986) justifie~~ds~~ this as managers are incentivised to go beyond the optimal size so that they justify increasing the resources under their control to meet or beat ~~the~~ high growth rates. ~~On the other hand,~~ Murphy (1985) argue~~ds~~ that managers are ~~also~~ incentivised to go beyond the optimal size, as this will increase their compensation, given ~~the fact~~ that an increase in compensation is associated with growth in sales. Lasfer (2002), in his UK based study, report~~eds~~ that the relationship between board structure and company~~firm~~ value is contingent on the magnitude of the company's~~the firm's~~ growth rate.

[13] Free-Cash-Flow is the available cash~~-in~~on~~-~~hand after funding all projects that have positive net present values (Jensen, 1986; p. 323)

Companies with low growth rates are more likely to have high levels of agency problems becausedue ofto their substantial free cash flow cashthey flowhave.

Operating Risk

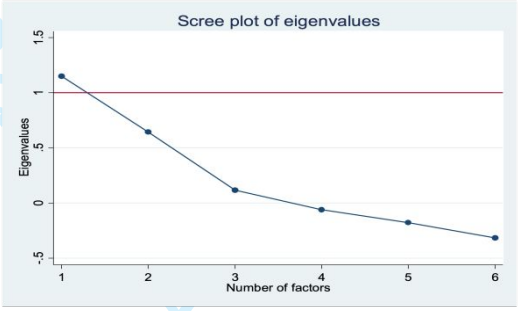
Dey (2008) statessdsd that riskier companiefirms usually suffer from a high cost of debt capital. Accordingly, thecose riskier companiefirms are self-incentiviszsed to indulge into activities to reduce the perception of risk and, as a result, reducing the cost of debt capital. Thus, the severity of agency conflicts is expected to be higher in companies with high operating risk. Operating risk is measured by the standard deviation of sales, deflated by total assets.

Leverage

CAdditionally, companies with high levels of leverage are more likely to exercise earnings management to keep the leverage ratio as small as possible; otherwise, managers might be penaliszed due to debt covenants that providegive the lender with the right to intervene in theirmanagers' decisions (Watts and Zimmerman, 1990). Such interventions negatively affects companies' financial performance. Examples of debt covenants includecould be, restrictions onf mergers activity, restrictions on investment in other companies, restrictions on increasing debt, and restrictions on selling some assets (Bowen et al., 2008; Watts and Zimmerman, 1986).

Thosee six variables previously discussed weareare used to capture the term agency conflicts by creating a score using factor analysis. Such an agency conflicts score helps us to determine the magnitude of agency conflicts numerically, so we can distinguish between companies with different levels of agency conflicts (i.e., high, medium, and low levels of agency conflicts). The rule of thumb states that factors with eigenvalues greater than ""one"" are considered valid and robust. HenceAs a result, we capturedd agency conflicts by using only one factor (see *Figure 1IX* below).

Figure (1IX): The scree plot of the agency conflicts' factors' eigenvalues.



The results revealedof the factor analysis show that companyfirm size and operating risk are the two most 2 important variables in capturing the term agency conflicts becausesince the factor loadings values are significantly high (see Ttable 1).

Table (1): Factor loadings of agency conflicts

Variables	Factor loadings
Total assets (companyfirm size)	0.6971
Standard deviation of total Sales deflated by total assets (operating risk)	0.6947

3.3.3 Financial Performance

To account for the financial performance, we used widely pretested proxies, namely- ROA[14] and Tobin's Q. The latter (defined as the ratio of mMarket vValue to bBook vValue[15]) accounts for the forward and the backward-looking nature ofwhen it comes to the economic value of the companyfirm. AIn additionally, the Tobin's Q is subject to less manipulation thancompared to other variables, which are derived exclusively from financial statements. Hence, by incorporating both market and financial statements' data, we cane will be in position to capture the performance of the companyfirm in a more consolidated manner. Various studies pointed towards the importance of the Tobin Q as a fit dependent variable in a range of governance-to-companyfirm value studies (Klapper and Love, 2004; Balasubramanian, Black and Khanna, 2010; Black, Carvalho, and Gorga, 2012; Connelly, Limpaphayom, and Nagarajan, 2012).

Other proxies for financial performance, such as abnormal market returns, have also been used by other researchers (see Masulis et al., 2007; Chhaochhara and Grinstein, 2007 and Larcker

[14] Estimations of the ROA model are reported in the appendix.

[15] We also measured Tobin's Q by the ratio of book value of debt plus market value of equity divided by the book value of assets. However, due to significant outliers and extreme values that resulted from the effect of the book value of debt, we usedstick with the standard definition (Book to Market ratio).

et al., 2018; Carlini et al., 2020). However,But given the longitudinal nature of our data, abnormal market returns might not be suitable for capturingto capture the impact of corporate governance on companiefirms' financial performance in the long run. -Additionally, abnormal market returns evaluates the market reaction towards a given event, which goes beyondis not the the scope of our spapertudy. On the other hand, one of the pros advantages of Tobin's Q is that it captures both the accounting and market performance of companiefirms which implicitly makes Tobin's Q a comprehensive financial performance indicator.

Before we raunrunning mModel 2, we ruan a tT-test[16] in order to examine the significance of the difference between corporate governance qualities in high and low levels of agency conflict settingss. The t-test data results showeded a significant difference in the mean score of corporate governance (proxied by *Board Compliance* and *Board Diversification*) in companies with low and high levels of agency conflictss (see Ttable 2).

Table (2): Independent groups' t-test of difference in mean corporate governance factors between high and low levels of agency conflicts groups.

Corporate governance factor		Low agency conflicts	High agency conflicts	t-test
Mean	***Board Compliance***	-1.0003	0.9995	-17.2572***
SD		1.7647	2.0028	
Mean	***Board Diversification I***	-0.08405	0.08708	-1.8866*
SD		1.2806	1.6512	

*** p<0.01, ** p<0.05, * p<0.1
N= 1,061 and DF=1,059

Testing the moderation effect

In mMmodel (2), we regressed companyfirm financial performance on corporate governance and agency conflicts using the GMM model to estimate the individual effect as well as the interaction effect between the regressors, taking into account the dynamic nature of this relationship.

$$FinPerf_{it} = \alpha + \beta_1 FinPerf_{it-1} + \beta_2 Governance_{it} + \beta_3 Agency_{it} + \beta_4 Governance_{it} * Agency_{it} + \Omega_t + \varepsilon_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Where:

[16] The results of the Wilcoxon-Mann-Whitney two-sample test for differences in medians between the two corporate governance factors in the two agency conflicts groups were similar to the results of the T-test.

$FiPerf_{it}$: Tobin's Q of company i at time t. $FiPerf_{it-1}$: ~~The~~ first lag of Tobin's Q of company i at time t. $Governance_{it}$: c~~C~~orporate governance factors of company i at time t. $Agency_{it}$: ~~The~~ agency score for company i at time t.ϵ_{it}: ~~The~~ idiosyncratic error term. Ω_t: t~~T~~ime ~~-~~fixed effects.

3.4 The Association Between Corporate Governance and Financial Performance as A Function of Agency Conflicts

~~In order~~ T~~t~~o~~,~~ dynamically observe~~, see~~ the change in the slope of the relationship between corporate governance and financial performance due to the change in the level of agency conflicts, we apply~~ied~~ the interaction effect with the use of margins at different distributional points of the regressors. This allows~~ed~~s us to *dynamically* trace the change in Tobin's Q at~~in~~ different levels of corporate governance (low [10%], medium [50%], and high [90%]) and different levels of agency conflicts~~s~~ (low [10%] and high [90%]). ~~-~~Thus~~By doing so~~, we ~~could~~can determine~~figure out~~ the best scenario in~~where~~ which~~the~~ financial performance is maximised. As discussed earlier, we anticipate~~d~~ that more pronounced corporate governance mechanisms, such as board compliance and ~~board~~ diversification, will actively monitor and challenge ~~the~~ managers when the~~y managers~~ take~~s~~ steps to change the strategy or get~~s~~ involved in investment opportunities or various projects which have the potential or instilling risks into the company~~firm~~'s operations. Thus, any relationship between~~among~~ corporate governance, agency conflicts, and financial outcomes should be more pronounced in the tails of the distribution of ~~the~~ agency conflict and corporate governance. In other words, the association between corporate governance and financial performance is contingent on the magnitude of agency conflicts and the quality of the corporate governance system ~~applied~~.

In a typical GMM model, ~~one has to set the~~ endogenous ~~as well as, the~~ exogenous, and instrumental variables must be set. Empirical literature (e.g. Lasfer, 2002; Klopper et al., 2004; Bhagat and Bolton, 2009; Wintoki et al., 2012; Abdallah et al., 2015) argue~~dsd~~ that the level of agency conflicts and board structure, including board independence, board size, and executives' compensation plans, are endogenous[17] variables with a potential dynamic effect on f~~F~~inancial performance. Accordingly, we set ~~"~~*a~~A~~gency c~~C~~onflicts*~~"~~ and ~~"~~*b~~B~~oard c~~C~~ompliance*~~"~~ as well as the first lag of the financial performance indicator as endogenous variables. We use~~d~~ only the second lag of the endogenous variables as instruments because unlike the second lag, the first lag is expected to be auto-correlated with the error term~~, whereaswhile the second lag~~

[17] Endogenous variable here refers to the fact that it is not completely independent from the outcome variable.

~~is not~~ (Roodman, 2009). ~~The rule of thumb I~~In the GMM estimator, the rule of thumb is that the number of instruments should not exceed the number of cross-sections ~~in order not~~ to avoid weakening the estimations of the Hansen test of the validity of the instruments (whether the instruments are exogenous). A~~In a~~dditionally, standard errors are clustered to ensure~~make sure~~ that standard errors across companie~~firm~~s are completely independent[18] (Peterson, 2009).

4. Results and Discussion

4.1 Descriptive Statistics

We start the analysis by showing the descriptive statistics of our data. Table 1 shows the descriptive statistics of the corporate governance and agency conflicts variables. Based on the variables loaded to corporate governance and agency conflicts variables, higher scores of corporate governance and agency conflicts reflect higher quality corporate governance and higher levels of agency conflicts respectively.

Table 1: Descriptive statistics of corporate governance factors and agency conflicts

Variables	Mean	Median	10%	90%	Skewness	Kurtosis
Board Compliance	0	0	-2.7	2.9	-0.1810	3.0547
Board Diversification I	0.001	0.1	-1.8	1.9	0 .2188	2.9365
Agency Conflicts	0.001	-0.2	-0.7	0 .6	2.944	16.82

4.2 The Moderation Effect Of Agency Conflicts On The Association Between Corporate Governance And Financial Performance

We regressed financial performance proxied by Tobin's Q on corporate governance and agency conflicts taking into consideration the potential impact of the interaction between the two independent variables (agency conflicts and corporate governance). Tables (*5*) and (*6*) show the estimations of the individual effects as well as the interaction effect of corporate governance and the level of agency conflicts on Tobin's Q[19].

[18] OLS estimates unbiased and true estimations if the residuals are IID (Independent and Identically Distributed). However, if the residuals are correlated across observations, the OLS does not produce the true variability of the coefficient~~s~~ estimates (Peterson, 2009; p. 435). There are two common types of dependence in panel data~~:~~; (i) time-series dependence~~,~~ and~~;~~ (ii) cross-sectional dependence. The first form of dependency refers to the situation where the residuals of a given company~~firm~~ are correlated across years (Wooldridge, 2010). T~~On the other hand, t~~he second form refers to the situation where the residuals of a given year are correlated across difference companies~~firms~~ (Paterson, 2009; p. 436). Failure to control this dependency leads to biased estimations. Accordingly, there are many ways (e.g. Fama and Macbeth standard errors, 1973; Newey and West, 1987) to correct the standard errors of estimations. Stata offers a command developed by Peterson (2009) which is able to correct standard errors to be independent and identically distributed.

[19] The ROA model results are reported in table 4 in the appendix. The interaction effect between corporate governance proxied by Board Compliance and the level of agency conflicts was positive and significant.

Table (5): The estimations of the individual effect of Corporate Governance and Agency Conflicts on Tobin's Q

VARIABLES	Tobin's Q
First lag of Tobin's Q	0.9985***
	(0.0044)
Agency conflicts	-0.1067***
	(0.0344)
Board Compliance	0.0742***
	(0.0157)
Board Diversification	-0.0031
	(0.0090)
Observations	976
Number of firm_id	76
AR (2)	0.320
Hansen Test	0.320

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table (6): The estimations of the individual effect as well as the interaction effect of Corporate Governance and Agency Conflicts on Tobin's Q

VARIABLES	Tobin's Q
First lag of Tobin's Q	1.0176***
	(0.0066)
Agency conflicts	0.0038
	(0.0861)
Board Compliance	0.0118
	(0.0224)
Board Compliance * Agency conflicts	0.1043**
	(0.0522)
Board Diversification	-0.0011
	(0.0166)
Board Diversification * Agency conflicts	0.1173*
	(0.0622)
Observations	976
Number of firm_id	76
AR (2)	0.430
Hansen Test	0.851

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Supporting our hypotheses, we found that agency conflicts moderate the association between corporate governance and firm financial performance. The interaction effect of corporate governance and agency conflicts was positive and statistically significant (corporate governance was proxied by board compliance β=0.1043, P-value: 0.045) (corporate governance proxied by board diversity β=0.1172, P-value: 0.059). One can interpret the coefficient of the interaction effect between board compliance and agency conflicts in (*table 6*) as the reported Tobin's Q goes up by 10.43% for each one-unit increase in 'both' agency conflicts and the quality of corporate governance proxied by Board Compliance. However, the reported Tobin's Q increases by 11.72% for each one unit increase in board diversification and agency conflicts. On the other hand, the individual effect of corporate governance (proxied by board compliance and board diversification) and agency conflicts are insignificant when we controlled for the interaction between the two variables. These insignificant coefficients of the individual effects reflect the fact that agency conflicts perfectly moderate the association between corporate governance and financial performance.

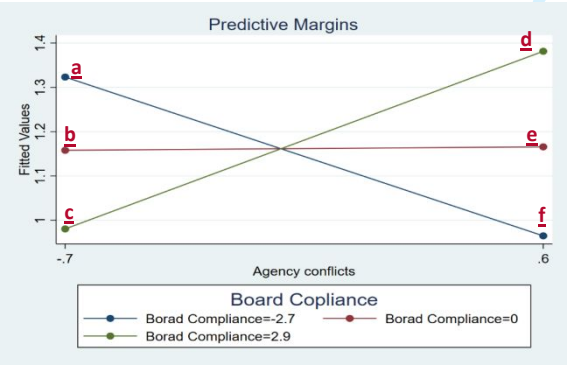
4.3 The Moderating Effect of Agency Conflict on The Relationship Between Corporate Governance Quality and Financial Performance

We test H_1 and H_2 using Model (2) where we regress Tobin's Q on corporate governance and agency conflicts. The regression results showed that testing the individual effect of corporate governance and agency conflicts on firm financial outcomes does not reflect the true impact on firm financial performance.in understanding how the two variables affect the financial performance of a firm. Without controlling for the interaction between corporate governance and agency conflicts, both agency conflicts and corporate governance had a significant impact on firm financial performance proxied by Tobin's Q, (see *table 5*). However, after controlling for the possible interaction effect of the two variables on firm financial performance, the individual effect of corporate governance and agency conflicts turns insignificant. On the other hand, the interaction effect between the two terms was positive and statistically significant for the two factors of corporate governance (board compliance and board diversification) (see *table 6*). One can interpret the coefficient of the interaction effect between board compliance and agency conflicts in *table 6* as the reported Tobin's Q goes up by 10.43% for each one-unit increase in 'both' agency conflicts and the quality of corporate governance proxied by Board Compliance.

Figure (*2*) provides a visualization to the change in the relationship between corporate governance and Tobin's Q in different levels of agency conflicts (bottom 10% and highest

10%). It shows how the relationship between corporate governance proxied by "*Board Compliance*" and financial performance proxied by "*Tobin's Q*" changes as a function of the "*level of agency conflicts*". For example, Tobin's Q deteriorated from point "a" to point "f" as the level of agency conflicts increases (from the bottom 10% to the highest 10%) holding the level of Board Compliance constant (low at the bottom 10%). This is because companies with low levels of agency conflicts do not need to invest 'too much' on high quality governance systems, for example, increasing board independence and/or increasing NEDS' total compensation. This cost saving boosted up financial performance as an application for the "cost benefit approach". However, keeping the level of 'low' governance quality constant, Tobin's Q goes down up to point (f), the lowest reported Tobin's Q, with the increase in agency conflicts. This is justified as the increase in agency conflicts with low quality corporate governance mechanisms in place enabled opportunistic managers to expropriate company resources to serve their own interests at the expense of the shareholders' interest.

Figure (2): the relationship between financial performance and corporate governance in different levels of agency conflicts and different qualities of corporate governance proxied by Board Compliance

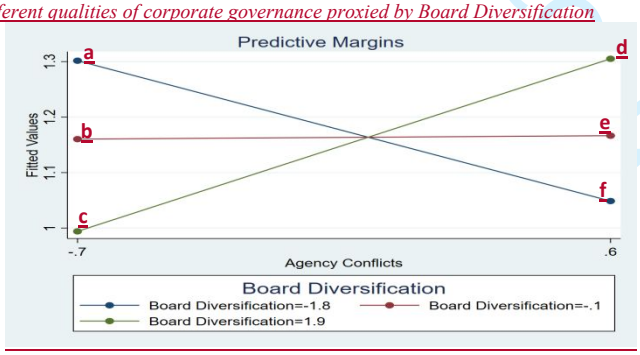


On the other hand, Tobin's Q improved from point "c" to point "d" as the level of agency conflicts increases (from the bottom 10% to the highest 10%) holding the level of Board Compliance constant (high at the highest 10%). The results showed that point "4" has the highest reported Tobin's Q in our sample. At point "d", we have the situation where the level

of agency conflicts is maximised (the highest 10%) and the level of Board Compliance is very high (the highest 10%). This reflects the fact that reducing the level of agency conflicts is not the best way to maximize financial performance because point "a" where the level of agency conflicts is low is in a worse off situation compared with point "d" where the level of agency conflicts is high (the highest 10%). The secret ingredient is the quality of corporate governance that can mitigate the harm of the negative side of agency conflicts. At point (d), we have high levels of agency conflicts (90th percentile), but thanks to the high quality of corporate governance mechanisms in place, companies were able to control managers' opportunistic behaviour in a way that enables the companies to benefit from the opportunities[20] available in high agency conflicts environment without compromising financial outcomes.

Figure (*3*) shows how the relationship between corporate governance proxied by "*Board Diversification*" and financial performance proxied by "*Tobin's Q*" changes as a function of the "*level of agency conflicts*". The findings come in line with the findings of Board Compliance. Companies with high levels of agency conflicts and more diversified boards outperform other companies. This reflects the ability of corporate governance proxied by Board Diversification to control the harmful effect of agency conflicts without compromising firm financial performance proxied by Tobin's Q.

Figure (3): the relationship between financial performance and corporate governance in different levels of agency conflicts and different qualities of corporate governance proxied by Board Diversification



[20] Opportunities include benefitting from financial resources by cross listing a company in multiple markets. Increasing debt levels to reduce the cost of capital (Damodaran, 2006). Working in more volatile environment trying to increase sales revenues (

4.3.1 The Moderation Effect of Agency Conflicts In The Association Between Corporate Governance and Financial Performance [The Dynamic Relationship]

We hypothesized that the level of agency conflicts is positively moderating the association between corporate governance and firm financial performance. Thus, highlighting the dynamic nature of the relationship. In contrast to Previous literature (e.g., Bushman et al., 2004; Klapper and Love, 2004; Ranatakari, 2007; Nikolov and Whited, 2014) who found that the increase in agency conflicts deteriorates firm financial performance, we find that the relationship between agency conflicts and financial performance is conditional on the quality of the corporate governance mechanisms applied. As we discussed earlier, the increase in agency conflicts comes from the increase in the situations in which the level of information asymmetry increases due to the lack of direct monitoring on managers' behavior. This lack of direct monitoring enables greedy and opportunistic managers to exploit the superior information they have compared with the company shareholders to deviate from the optimal behaviour at which, the shareholders' wealth is maximized.

On the other hand, operating in a high agency conflicts environment can be beneficial if we consider the opportunities those companies could have from being, to name but few, (i) cross-listed in different markets, (ii) having huge amount of assets and (iii) creating extensive free cash flow. Accordingly, having opportunistic managers at the top of the executive team of a company could be a value adding decision if companies are able to control for the negative side of being opportunistic. Thus, having opportunistic managers and high-quality corporate governance mechanisms is the recipe for increasing firm financial performance because such opportunistic managers are "utility maximizers" who seek for opportunities to increase their wealth. Therefore, by having high quality monitoring devices, those managers cannot deviate from the optimal behaviour, which creates a win-win situation to the managers and company shareholders in a way that improves firm financial outcomes (see point "d" in figures *2* and *3*).

Having a look at real data to see the type of companies and industries that exhibit high financial performance in high (low) levels of agency conflicts and high (low) levels of board compliance will give us a better picture about the market. Figures (4and 5) show the scatter plot between Tobin's Q and Board Compliance for the highest and bottom 10% of agency conflicts respectively.

Figure (4) shows that companies listed in pharmaceutical industry (e.g., AstraZeneca and GSK), Telecommunications (e.g., Vodafone and BT) and Food retailers (Tesco) are the most

profitable companies when we have high levels of agency conflicts and high levels of board compliance. However, pharmaceutical companies are in a better off situation compared with other industries. On the other hand, industries including (i) patent "owners and lessors", (ii) Equipment rental and leasing, and (iii) testing laboratories exhibit the most profitable industries in situations where there are low levels of agency conflicts and low levels of board compliance (see figure 5).

Our results come in line with the results of Dey (2008) in her US based study as she reported a positive association between the level of agency conflicts and the quality of corporate governance mechanisms in place. In addition, the effect of mean corporate governance in companies with high level of agency conflicts on firm financial performance proxied by Tobin's Q is greater than those companies that have medium and low levels of agency conflicts. On the other hand, our findings contradict with those of Lasfer (2002) in her UK based study as her findings support stewardship hypothesis. She reported that companies which are operating in high levels of agency conflicts proxied by growth opportunities and with low quality of corporate governance proxied by board structure (less independent directors and more dual CEOs) have higher firm value proxied by Tobin's Q than others with different levels of agency conflicts and agency conflicts.

Figure (4): Tobin's Q and Board Compliance at the top 10% of Agency conflicts

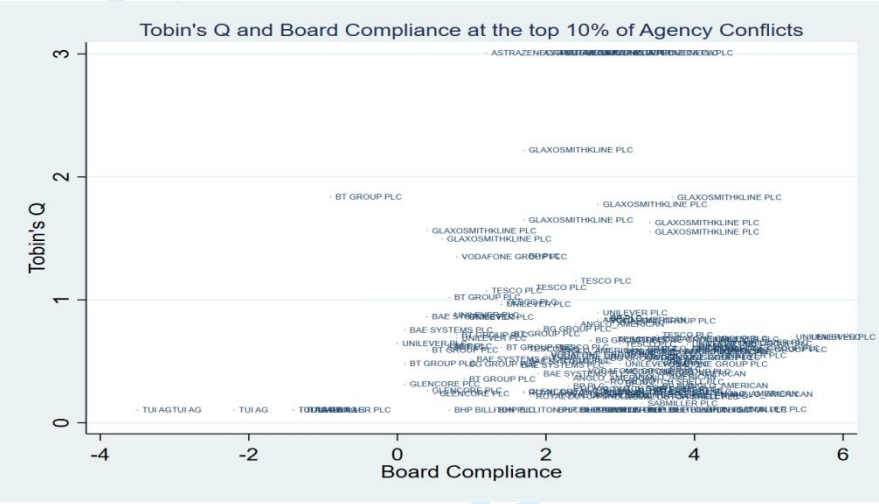
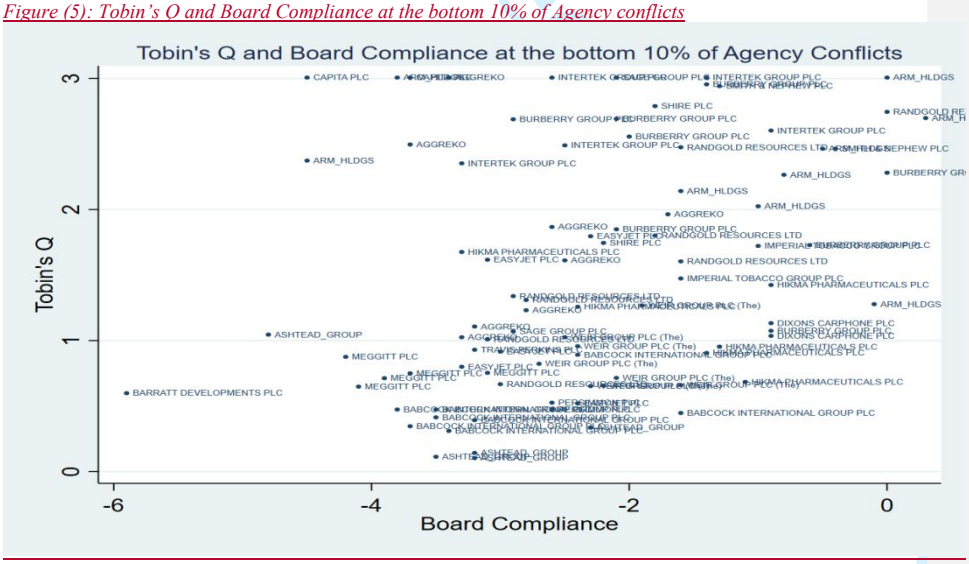


Figure (5): Tobin's Q and Board Compliance at the bottom 10% of Agency conflicts



4.3.2 Robustness Tests

We measured firm financial performance using Return on Assets (ROA), and the results were robust as we reported that the level of agency conflicts positively moderates the association between corporate governance and firm financial performance. However, the positive impact of the interaction between agency conflicts and corporate governance on firm financial performance is more pronounced when financial performance is proxied by Tobin's Q. On the other hand, we proxied agency conflicts and corporate governance using dummy variables

(values greater than the mean [0 for Board compliance, 0.1 for Board diversification, and -0.2 for agency conflicts] and the results showed that the interaction effect between corporate governance and agency conflicts is still positive and significant.

4.3.3 Further Analysis

We also examined the change in the relationship between the interaction of corporate governance and agency conflicts and firm financial performance before and after the financial crisis (2009). In line with our expectations, the interaction between board compliance and agency conflicts was positive and significant before and after the financial crisis (see Table 5 and Table 6 in the Appendix). We attributed this result to the fact that no significant changes have been made to the board independence, remuneration and audit committee since the 2003 Higgs report. On the other hand, the only significant change was the interaction between board diversification and agency conflicts before and after the financial crisis. Before 2009, this interaction was negative and statistically significant. However, from 2009 onwards, the coefficient of this interaction turned positive which reflects the tendency of FTSE100 boards to comply with the Walker review of increasing the level of board diversification.

5 Conclusion, Policy Implications and Future Research

The present study aims to bridge a gap in the literature by empirically examining the overly neglected tripolar corporate governance-agency conflicts-financial performance relationship during a period of transition to an intensively legalized governance environment in the United Kingdom as the continuous update of corporate governance codes testify. The study ~~contribute~~contributes further evidence to the ongoing debate about the effectiveness of established corporate governance mechanisms.

Corporate governance structure is informed by the c~~C~~odes, but the implementation and the nature of the latter is taking place away from the public domain. Our empirical results show that there is a significant difference between the quality of the corporate governance in the light of high and low levels of agency conflicts. In addition, our empirical results shows~~ed~~ that there is not ~~one~~a universal corporate governance system which is applied to all companies. ~~We report~~This study -reports evidence supporting the fact that high quality corporate governance can transform agency conflicts from a threat to an opportunity if the former could control the negative side of the latter. This is evidenced by the fact that companies with high levels of agency conflicts and high-quality corporate governance mechanisms outperform other companies with different combination of agency conflicts and corporate governance. ~~The analysis shows that the level of agency conflicts moderates the relationship between the level~~

~~of corporate governance mechanisms and financial performance by introducing trade-offs among the monitoring mechanisms. It seems our results echo the ones reported by Michelon et al., (2015) for internal control systems disclosures made by financial companies only.~~

This study adds to the limited and somehow not very thorough empirical evidence on the governance-agency conflicts-performance relationship. The study departs from using a binary coding system or scoring to construct an index for corporate governance as it is likely not to replicate the relative importance and weights of the different corporate governance provisions (Owusu and Weir, 2016). The study follows the same rationale when it comes to accounting for the latent nature of the agency conflicts – the first of its kind.

~~The analysis shows that the level of agency conflicts moderates the relationship between the level of corporate governance mechanisms and financial performance by introducing trade-offs among the monitoring mechanisms. It seems our results echo the ones reported by Michelon et al., (2015) for internal control systems disclosures made by financial companies only.~~

One of the problems with the current debate on corporate governance is that there are many different, and often conflicting, views on the nature and purpose of the firm (profit maximisation, concentration of in-house activities or outsourcing of activities, social contribution, incorporation of the profits versus socialisation of the damages, ethical productivity, etc.). This debate arrays from positive issues concerning how ~~institutions~~entities actually work, to normative issues concerning what should be the firm's purpose. Therefore, in order to make sense of this debate, it is useful to consider the different analytical backgrounds or approaches that are often employed. As supported by our findings, the results provide evidence that at the heart of the aforementioned debate lies the problem of the agency conflict in an ever-increasing globalised environment. As a result, our findings are also important from a policy change point of view. We argue that policy setters will be more able to achieve the objective of improving firm financial performance by identifying the significant corporate governance dimensions that need to change as well as the types of companies for which such changes are more beneficial.

Keeping all the aforementioned points in mind, ~~T~~the analysis shows that the level of agency conflicts moderates the relationship between the level of corporate governance mechanisms and financial performance by introducing trade-offs among the monitoring mechanisms. It seems our results echo the ones reported by Michelon et al., (2015) for internal control systems

disclosures made by financial companies only. The findings could be suitable for the providers of corporate capital as they must consider the level of each company's corporate governance compliance and demand additional information in order to arrive at a better investment decision when observed earnings are not highly informative of the internal monitoring systems and conflicts. The findings of the study could be beneficial for regulators since they are setting the benchmarks for the acceptable level of corporate governance standards. Thus, they must reflect strengthening governance mechanisms either though new codes and disclosures or stronger enforcement in cases where agency conflicts is of such extent that may obstructs information transparency and quality. By implementing such policy certain negative aspects attributable to agency conflicts such as corporate failures, scandals and penalties are envisaged to be reduced making the allocation of capital more transparent and efficient.

5.1 Limitations

Lack of data on ownership structure for the period of study (1999-2014) was the main reason why we excluded it from the analysis. In addition, lack of reliable and quantifiable corporate governance data on small-medium size enterprises limits the findings only on big non-financial firms.

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Appendix

Table 1: The outputs of the principal component analysis and Cronbach's Alpha

No.	Principal component (governance factor)	Significant components	Factor loadings	Cronbach's Alpha
1	Board Compliance	Board independence NC Indep. RC Indep. ED total comp. NED total comp.	0.4538 0.4479 0.3818 0.3182 0.3858	0.63
2	Board structure	Board size Board busyness Director's qualification	0.5438 0.4734 0.5319	0.72
3	Board diversification I	Female NED Foreign Directors	0.6533 0.6714	0.95
4	compliance of Board's subcommittees	Directors' overlapping AC Size NC Size	0.5711 0.5072 0.4016	0.64
5	Executive directors' experience	Executives' board experience Executives' board experience (years)	0.5765 0.6576	0.64
6	Executives' tenure	Executive directors' tenure CEO Tenure	0.6547 0.6327	0.70
7	Non-Executive directors' experience	NEDs' board experience NEDs' board experience (years) NEDs' average age	0.3639 0.5446 0.5615	0.50
8	Board diversification II	NEDs' with more than 9 years in co. Female executives. NEDs' average tenure	0.5599 0.3684 0.5792	0.53

Table 2: Corporate governance factors and firm financial outcomes (GMM)

		(1)	(2)
VARIABLES	Expected sign	TQ	ROA
Lagged dependent variable (t-1)	+	0.3850***	0.5219***

		(0.1425)	(0.1710)
Board Compliance	+	0.2379**	0.0116***
		(0.0937)	(0.0043)
Board structure	-	0.1059	-0.0017
		(0.0734)	(0.0024)
Board Diversification I	+	-0.0681**	-0.0026*
		(0.0313)	(0.0014)
compliance of Boards' subcommittees	-	-0.0379	-0.0004
		(0.0367)	(0.0016)
Executive directors' experience	-	-0.0211	-0.0030*
		(0.0323)	(0.0017)
Executives' Tenure	-	0.0082	-0.0002
		(0.0220)	(0.0017)
Non-Executive directors' experience	+	0.0256	-0.0008
		(0.0276)	(0.0017)
Board diversification II	?	-0.0426*	0.0003
		(0.0253)	(0.0018)
Total Assets	-	-0.6351***	-0.0132***
		(0.1159)	(0.0043)
leverage	-	-0.7170*	-0.0380**
		(0.3619)	(0.0174)
Free-Cash-Flow	-	-0.1286	0.0154
		(0.3819)	(0.0233)
Observations		809	892
Number of firm_id		76	76
Industry Fixed Effect	Yes		
Time Fixed Effect	Yes		

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Source: Own computations.

Table 3: the association between corporate governance factors and financial performance in the medium and long-run

	T_{+3}		T_{+5}	
VARIABLES	Tobin's Q	ROA	Tobin's Q	ROA
Lagged dependent var	0.5084***	0 .4615***	0 .6791***	-0.0723
	(0.1019)	(0.1550)	(0.2402)	(0.1706)
Board Compliance	0.1806**	0.0118**	0.1452	0.0221**
	(0.0770)	(0.0047)	(0.1066)	(0.0084)
Board structure	0.0228	0.0010	0.1179*	0.0211***
	(0.0578)	(0.0025)	(0.0683)	(0.0073)
Board Diversification I	-0.0604*	-0.0044***	-0.0673*	-0.0098**
	(0.0321)	(0.0015)	(0.0375)	(0.0040)
Compliance of Boards' subcommittees	-0.0208	-0.0021	-0.0614**	-0.0056**
	(0.0238)	(0.0016)	(0.0255)	(0.0028)
Executive directors' experience	-0.0198	-0.0002	0.0056	-0.0018
	(0.0232)	(0.0018)	(0.0239)	(0.0030)
Executives' Tenure	-0.0071	-0.0003	-0.0379	-0.0025
	(0.0249)	(0.0017)	(0.0306)	(0.0034)
Non-Executive directors' experience	-0.0063	0.0021	0.0211	0.0002
	(0.0261)	(0.0017)	(0.0349)	(0.0040)
Board diversification II	-0.0210	0.0029	-0.0133	-0.0096***
	(0.0278)	(0.0019)	(0.0355)	(0.0033)
LN total assets	-0.1098	-0.0148***	-0.0777	-0.0200**
	(0.0718)	(0.0050)	(0.0943)	(0.0080)
Leverage	0.0288	-0.0131	0.0000	0.0323
	(0.2089)	(0.0154)	(0.3373)	(0.0224)
Free-Cash-Flow	0.0447	-0.0191	-0.6909	-0.0014
	(0.3455)	(0.0183)	(0.4942)	(0.0387)
Observations	729	815	593	593
Number of firm_id	73	76	72	72
Time Fixed Effect	Yes			

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Source: Own computation

t_{+5}

Table 4: The estimations of the individual effect as well as the interaction effect of Corporate Governance and Agency Conflicts on ROA

VARIABLES	ROA
First lag of ROA	0.7331***
	(0.0667)
Agency Conflicts	-0.0349***
	(0.0068)
Board Compliance	0.0097***
	(0.0028)
Agency Conflicts X Board Compliance	0.0040**
	(0.0017)
Board Diversification	-0.0002
	(0.0008)
Agency Conflicts X Board Diversification	-0.0070**
	(0.0032)
Observations	976
Number of firm_id	76

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5: *The relationship between the interaction of corporate governance and agency conflicts and financial performance before the financial crisis (2009)*

VARIABLES	Tobin's Q
First lag of Tobin's Q	0.8195***
	(0.0014)
Agency conflicts	-1.234***
	(0.0390)
Board Compliance	0.1823***
	(0.0053)
Board Compliance * Agency conflicts	0.0692***
	(0.0074)
Board Diversification	0.0258***
	(0.0089)
Board Diversification * Agency conflicts	-0.3610***
	(0.0126)
Observations	540
Number of firm_id	71

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6: *The relationship between the interaction of corporate governance and agency conflicts and financial performance after the financial crisis (2009)*

VARIABLES	Tobin's Q
First lag of Tobin's Q	1.0696***
	(0.0048)
Agency conflicts	-0.0843
	(0.0717)
Board Compliance	0.0433***
	(0.0132)
Board Compliance * Agency conflicts	0.0475**
	(0.0214)
Board Diversification	0.0101
	(0.0080)
Board Diversification * Agency conflicts	0.0259[21]
	(0.0160)
Observations	436
Number of firm_id	76

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

[21] The p-value is a border line (10.6%).

Stuebs, M. and Sun Li (2015) *International Journal of Law and Management*, Vol. 57 No. 1, pp. 38-52

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By employing Mitchell's (2012) theoretical recommendations measuring corporate governance and agency conflicts as time-varying variables, we can graphically show the change in the relationship between corporate governance quality (high, medium, and low) and a company's financial performance as a function of the change in the level of agency conflicts (high and low). This is a significant departure from Dey's (2008) static work.

Our results shows that companies have significant differences in terms of agency conflicts and corporate governance qualities. This reflects the fact that there is no single set of corporate governance procedures which fits all types of companies. However, we also showed that companies' financial performance is positive only when high (low) corporate governance is paired with high (low) levels of agency conflict. Moreover, a company's financial performance peaks only when it has a high quality of corporate governance and a high level of agency conflicts. This implies that companies should not be encouraged to lower the level of agency conflicts. On the contrary, they should operate in an environment characterised by high levels of agency conflict, and to make the best of the opportunities found in such an environment, these companies must increase the quality of the corporate governance system to mitigate the negative aspects of agency conflicts. It turns out that a high level of agency conflict boosts companies to invest more in mitigating these conflicts by investing more resources into internal controls they reap (somehow inadvertently) higher financial gains. Another plausible explanation is that the market positively interprets the strive of companies to account for agency conflicts, and given the non-observability on behalf of outsiders, company outsiders view these policies sympathetically. Finally, this paper argues that in the absence of agency conflicts, empirical evidence that interprets the relationship between corporate governance and financial performance is misleading.

Commented [A15]: Although lengthy sentences cannot always be avoided, wherever possible, it is advisable to break them into shorter sentences. This improves clarity and readability for your readers.

Commented [A16]: This is unclear. Did you mean 'It turns out that a high level of agency conflict encourages companies to invest more in mitigating these conflicts, and by investing more resources into internal controls, they reap higher financial gains'?

CONCLUSIONS

Although the relations between corporate governance mechanisms and financial performance expectations have been the subject of numerous studies, no study has examined the moderating influence of agency conflicts on this relationship. The present study aims to bridge a gap in the literature by empirically examining the overly neglected tripolar corporate governance-agency conflicts-financial performance relationship during a period of transition to an intensively legalized governance environment in the United Kingdom as the continuous update of corporate governance codes testify. The study contribute further evidence to the ongoing debate about the effectiveness of established corporate governance mechanisms.

This study adds to the limited and somehow not very thorough empirical evidence on the governance-agency conflicts-performance relationship. The study departs from using a binary coding system or scoring to construct an index for corporate governance as it is likely not to replicate the relative importance and weights of the different corporate governance provisions (Owusu and Weir, 2016). The study follows the same rationale when it comes to accounting for the latent nature of the agency conflicts – the first of its kind.

The analysis shows that the level of agency conflicts moderates the relationship between the level of corporate governance mechanisms and financial performance by introducing trade-offs among the monitoring mechanisms. It seems our results echo the ones reported by Michelon et al., (2015) for internal control systems disclosures made by financial companies only. The findings could be suitable for the providers of corporate capital as they must consider the level of each company's corporate governance compliance and demand additional information in order to arrive at a better investment decision when observed earnings are not highly informative of the internal monitoring systems and conflicts. The findings of the study could be beneficial for regulators since they are setting the benchmarks for the acceptable level of corporate governance standards. Thus, they must reflect strengthening governance mechanisms either though new codes and disclosures or stronger enforcement in cases where agency conflicts is of such extent that may obstructs information transparency and quality. By implementing such policy certain negative aspects attributable to agency conflicts such as corporate failures, scandals and penalties are envisaged to be reduced making the allocation of capital more transparent and efficient.

Dear reviewers,

We would like to thank you for the time you spent on reviewing our paper titled "***An empirical evaluation of the impact of agency conflicts on the association between corporate governance and firm financial performance***", and the valuable comments which you provided for us. In the following table, you can find the changes we made based on your comments. Please see below:

Reviewer 1 opinion: ***Acceptance with no changes***

Reviewer 2 opinion: ***Minor revision***

Comments in details with the corresponding action taken by the authors

Reviewer 2 Comments	Corresponding action taken by the authors
Abstract: social implications	- The whole section is rewritten in blue font.
Mixing between the terms "corporate governance mechanisms" and "ownership structure"	- Footnote 1 in page 6 in blue font is provided to remove any confusion.
Grammar and writing	- The paper is proofread by Wiley – a well-known organisation for its proofreading services. A proof of proofreading can be obtained if you go to the "review" menu, then choose "All markups" from the trach changes menu. You can also compare it with the original draft if you choose the option "original" from the same drop-down menu. - *On the other hand, our inputs are in blue which makes it easy to distinguish the changes made by the proof-reader, and the changes/additions we made.*
The introduction is long and should be split into 2 sections: introduction and literature review.	- 2 sections have been created as suggested; the introduction is in page 3 and the literature review is in page 6.
Theoretical contribution and the motivation of the study are not the same.	- The new introduction explicitly distinguishes between the theoretical contribution and the motivation. Please see the changes in pages 3-6 in blue.
The conceptual framework of the study is not available	- We appreciate your comment/observation but giving the nature of this study (deductive research), we are not building a new concept, so we need to provide a conceptual framework. Rather, we provide a theoretical framework as part of the development of the testable hypotheses on pages 8 and 9.
Better justification for the implications of this study for the accounting practice/profession	- The abstract is adjusted to better explain the implications for the accounting practice.

	- Also, we rewrote almost the entire conclusion (pages 25-27) to better reflect the findings of our study on the accounting practice/profession. Changes are in blue fonts.

One last note:

We would like to propose a new title for our paper which should better reflect the empirical work done. The new proposed title will not change the main research question but will better reflect the work done especially after the changes we made based on your valuable comments. The new proposed title is:

"Accounting for Agency Conflicts and Their Explicit Impact on Companies' Performance. Evidence from Empirical Data"

We appreciate the time you are going to spend in the 2nd round of reviewing our paper and we are looking forward to hearing from you.

Sincerely,
The authors of the paper