The association between quality of corporate governance and firm performance: Evidence from Spain, Europe and a global setting

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DOCTORAL THESIS

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IQS SCHOOL OF MANAGEMENT

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Manuel E. Núñez Izquierdo

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Summary:

The question of how corporate governance relates to firm performance has captured considerable attention from scholars, regulators, and market participants alike. The main objective pursued in this doctoral thesis is to examine the association between the quality of corporate governance and firm performance. We have measured this governance quality through two of the main channels: commercial indexes widely used as a proxy for corporate governance, and the degree of compliance with the recommendations of a country's code. The proposed models have been tested empirically for the Spanish, European and global setting to confirm if the assumed positive association does materialize.

Chapters 2, 3 and 4 constitute the main body of this investigation. In Chapter 2, we investigate the governance-performance relationship using a leading CGR for a representative sample of the European landscape. In Chapter 3, we empirically examine whether higher levels of compliance with the recommendations included in the Spanish Unified Good Governance Code (UGGC) have an impact on firm performance using a unique panel data set of listed companies. Chapter 4 reflects the empirical study carried out to determine the probable association between the quality of corporate governance measured through the leading CGR and firm performance at a global scale.

Overall, our results fail to support a consistent significant relationship between CGR and firm performance for our samples of large European and global firms respectively. Second, the results obtained in Chapter 3 point to a weak impact on the performance of companies from the quality of corporate governance when measured through a compliance with local code recommendations. These results hold for the overall proxy of corporate governance as well as for the proxies that represent the main governance categories or areas of recommendations.

Keywords - corporate governance, commercial ratings, ISS Quickscore, firm performance, compliance with governance codes, legal tradition.

La asociación entre calidad del gobierno corporativo y el desempeño de la empresa: evidencias para España, Europa y un escenario global

Resumen:

La pregunta de cómo el gobierno corporativo se relaciona con el desempeño de la empresa ha captado una considerable atención por parte de académicos, autoridades e inversores. El principal objetivo de esta tesis doctoral es examinar la asociación entre la calidad del gobierno corporativo y el desempeño de la empresa. Hemos medido esta calidad de gobernanza a través de dos de los principales indicadores: índices comerciales de gobierno corporativo ampliamente utilizados y por medio del grado de cumplimiento de las recomendaciones del código de un país. Los modelos propuestos han sido analizados empíricamente para el entorno español, europeo y mundial, para confirmar si la supuesta asociación positiva se materializa.

Los capítulos 2, 3 y 4 constituyen el cuerpo principal de esta investigación. En el Capítulo 2, investigamos la relación entre gobierno corporativo y desempeño de la empresa utilizando un índice comercial líder, para una muestra representativa del panorama europeo. En el Capítulo 3, examinamos empíricamente si altos niveles de cumplimiento de las recomendaciones incluidas en el Código Unificado de Buen Gobierno de España (UGGC) tienen un impacto en el desempeño de la empresa, utilizando un conjunto único de datos de panel de las compañías analizadas. El Capítulo 4 refleja el estudio empírico llevado a cabo para determinar la probable asociación entre la calidad del gobierno corporativo medido a través del índice comercial líder y el desempeño de la empresa a escala global.

En general, nuestros resultados no validan una relación significativa y consistente entre el índice comercial de gobierno corporativo y el desempeño de la empresa para nuestras muestras de grandes empresas europeas y globales. En segundo lugar, los resultados obtenidos en el Capítulo 3 apuntan a un impacto débil en el desempeño de las empresas cuando la calidad del gobierno corporativo se mide a través del cumplimiento de las recomendaciones del código local. Estos resultados son válidos tanto para el indicador general de gobierno corporativo, como para los indicadores parciales que representan las principales categorías de gobernanza o áreas de recomendaciones.

Palabras clave: gobierno corporativo, índices comerciales, ISS Quickscore, desempeño de la empresa, cumplimiento de los códigos de gobernanza, tradición legal.

L'associació entre qualitat del govern corporatiu i acompliment empresarial: evidències d'Espanya, Europa i un entorn global

Resum:

La qüestió de com el govern corporatiu es relaciona amb el desenvolupament de l'empresa ha captat una considerable atenció dels acadèmics, els reguladors i els inversors. L'objectiu principal que es persegueix en aquesta tesi doctoral és examinar la relació entre la qualitat del govern corporatiu i el rendiment de l'empresa. Hem mesurat aquesta qualitat de govern mitjançant dos dels principals indicadors: els índexs comercials àmpliament utilitzats i el grau de compliment de les recomanacions del codi d'un país. Els models proposats han estat provats empíricament per a l'entorn espanyol, europeu i global per confirmar si es materialitza la suposada associació positiva.

Els capítols 2, 3 i 4 constitueixen el cos principal d'aquesta investigació. En el capítol 2, investiguem la relació entre govern corporatiu i desenvolupament de l'empresa utilitzant un índex comercial de govern corporatiu líder per a una mostra representativa del paisatge europeu. En el capítol 3, examinem empíricament si els nivells més alts de compliment de les recomanacions incloses en el Codi Unificat de Bon Govern (UGGC) tenen un impacte en el rendiment de l'empresa mitjançant un conjunt únic de dades de panell d'empreses cotitzades. El capítol 4 reflecteix l'estudi empíric realitzat per determinar la possible associació entre la qualitat del govern corporatiu mesurada a través de l'índex comercial líder i el rendiment de la companyia a escala global.

En general, els nostres resultats no validen una relació significativa i consistent entre l'índex comercial i el desenvolupament de l'empesa per a las nostras mostras de grans empreses europees i mundials. En segon lloc, els resultats obtinguts en el capítol 3 apunten a un impacte feble en el desenvolupament de les empreses de la qualitat del govern corporatiu quan aquesta es mesura mitjançant el compliment de les recomanacions del codi local. Aquests resultats es refereixen tant a l'indicador general de govern corporatiu com als indicadors parcials de les principals categories de governança o àrees de recomanacions.

Paraules clau: govern corporatiu, classificacions comercials, ISS Quickscore, desenvolupament de l'empresa, compliment de codis de governança, tradició legal.

Contents

Chapter 1. Introduction

Corporate governance has captured a lot of media attention and emerged as a subject of public policy discussion, particularly since the Enron scandal erupted in the US in the early 2000´s, and more recently due to the global financial downturn. In addition, the swift globalization trend and cross-country investments have amplified the claim for common standards on corporate governance assessment. In light of this, governance indicators are becoming increasingly important for firms in their quest to improve their performance and secure their appeal for global investors. Commonly, investors perceive well-governed companies to be better investments than poorly governed ones. Based on agency theory (Jensen and Meckling, 1976), the relation between quality of governance and firm performance is quite straightforward. Consequently, it has become common for investors to incorporate corporate governance issues when making investment decisions.

This increase in the regulation of corporate governance and the special importance that economic actors attach to this aspect have been followed by a growing interest in the study of the factors that most influence its quality. Moreover, these developments have raised a number of important questions about the linkages between the effectiveness of corporate governance policies and firm performance, becoming an area of intense study in the economics and finance community during the past decade.

Most of the works that have investigated the association between governance and firm performance refer to two predominant lines of research relying either on the use of single governance provisions or on academic governance indexes. Overall, these studies have yielded non-conclusive results about a systematic relation between the indexes and performance. Conversely, there is rather limited empirical literature that examines this association using commercial governance ratings (CGR) as a proxy for corporate governance, or studies that examine the impact on firm performance from compliance with a complete set of official governance guidelines. Remarkably, this is happening at a time when both proxies of quality of governance have gained notorious approval among market participants and regulators.

Therefore, this investigation intends to contribute to this area of research by 1) shedding light on the usefulness and reliability of CGR in their association with firm performance, and 2) by investigating the impact on performance from compliance with the local governance codes. This is the main objective pursued in this doctoral thesis.

The motivation of this study is justified by the practical importance of the subject: to improve corporate governance structures and practices. In addition, there is a growing demand for reliable measures of corporate governance that should lead to better firm performance while safeguarding investors' interests (Aguilera and Jackson, 2010).

On one hand, we acknowledge the growing popularity among investors of CGR developed by a number of consultant agencies led by the Institutional Shareholders Service (ISS) as proxy for quality of corporate governance. These CGR are replacing the daunting task of gathering and analyzing all available information to make a sound evaluation of management and corporate practices. However, their reliability as effective measures of corporate governance continues to be questioned.

On the other hand, while in the 1990's only few countries had governance codes, following the publication of the influential 1992 Cadbury Committee's Code of Best Governance Practices in the UK, twenty years later more than 110 countries and international organizations have issued one or several codes of governance. Through adherence to this soft legislation, governments have sought to level the ground for governance practices as well as compliance with local codes of governance aim to fulfill this necessity.

In Chapter 2, we investigate the governance-performance relationship using a leading commercial governance index for a representative sample of the European landscape. It is expected that companies with higher quality of governance show stronger performance. The use of a non-US sample allows us to extend prior US evidence. We also aim to contribute to the research on the use of CGR as predictors of firm performance by providing new evidence obtained with the latest versions available of leading CGR. Our study is complimentary to the ongoing scholarly debate over whether governance attributes are largely determined by country factors or by firm practices. We investigate the relationship between governance rating and firm performance using multivariate regression analysis.

As it has been widely documented in the corporate governance literature (La Porta et al., 1998), there is a fundamental difference between common-law jurisdictions (mainly identified with the Anglo-Saxon governance systems), where shareholders' perspectives rule, and the continental Europe governance civil-law model, where broader stakeholders' perspectives are shared and governance recommendations issued at the country level are largely voluntary. We exploit this institutional diversity in our sample, based on the comparison between the civil-law and the common-law models, which has been the focus of corporate governance researchers.

In Chapter 3, we empirically examine whether higher levels of compliance with the recommendations included in the Spanish Unified Good Governance Code (UGGC) have an impact on firm performance using a unique hand-collected panel data set of 145 listed companies for the research period between 2007 and 2012. We address the significance of compliance with the Spanish UGGC by answering the question of whether differences in these compliance ratios can help to explain variations in performance that have not been captured by other relevant characteristics of the firm. Although the available evidence is rather mixed, we expect a positive relationship between compliance with the UGGC and performance. The use of dynamic panel data and the introduction in our models of a larger set of control variables and particularly lagged dependent variables constitute an important contribution.

We find that, in spite of the increasing compliance trend, there is no conclusive evidence that adherence to the UGGC guidelines is a performance relevant factor. Therefore, our findings would further support the lack of consensus in this line of research regarding the true impact of compliance with globally disseminated codes of best corporate governance practices on firm performance.

Chapter 4 reflects the empirical study carried out to determine the probable association between the quality of corporate governance measured through a world leading CGR and the performance of the company. We extend and refine the analysis conducted in Chapter 2 focused on the European level, to the global scale. There are only few cross-country investigations and almost all of them test this relationship using their self-constructed governance ratings. This is, to our knowledge, the second study that documents the relationship between a commercial rating and firm performance in a global setting, following Krafft *et al.* (2014).

We provide new evidence obtained by using a sample of 1103 firms from the Standard and Poor's (S&P) 1200 Global Index. We proxy for governance risk by using the latest available version of leading ISS governance ratings. Our attention has been addressed to two relevant issues. First, to test how this relationship applies to our overall global standardized dataset, and secondly, to investigate if there is any influence from legal tradition that could partially explain this relationship. Similar to our investigation in Chapter 2 for a European background, we show, however, that the results are maintained across the main legal origin groups.

Overall, a distinctive feature of our research is that, compared to most of prior research (Aggarwal et al., 2009; Chhaochharia and Laeven, 2009) that used a single indicator of performance, we use several metrics in order to report sounder results. We also do not limit our study to the aggregate governance scores, as is typical in the literature, but also address the scores of main governance sub-indexes (Chapters 2 and 4) and areas of governance recommendations (Chapter 3). Such an approach should offer a more complete and precise picture of the relationship between our governance proxies and firm performance. Finally, another main distinction in our investigation is that we control for past performance. This reduces the sources of endogeneity that can yield spurious results (Schultz et al., 2010).

Chapter 2. Evaluating the link between commercial governance ratings and firm performance in a cross-European setting[1]

2.1. Abstract

Purpose - This paper explores the ability of commercial governance ratings to predict firm performance.

Design/methodology/approach - Based on the review of the corporate governance literature we pose five hypotheses on the relationship between commercial governance ratings and firm performance. Then, we test these hypotheses for the latest version of the Institutional Shareholder Services Inc. (ISS) index (Quickscore) with a sample of firms formed by the constituents of the Standard and Poor's Europe 350 stock market index.

Findings - We have not found a consistent significant relationship between Quickscore ratings and firm performance. This main result holds across a variety of checks.

Research limitations/implications - Some of the additional analyses are conducted with rather small samples. The results of these analyses have to be carefully taken. Recommendations for further research are offered.

Practical implications - Our results call into question the usefulness of commercial governance ratings, marketed by influential consultant companies, and which are becoming increasingly popular among investors, as reliable predictors of firm performance.

Originality/value - Despite an increasing body of research on the use of commercial governance ratings as predictors of firm performance, the available research is heavily concentrated in the US market. No previous study has explored this relationship using the recently developed ISS index Quickscore in a cross-European setting. The use of a cross-country sample of companies allows us to address the impact of institutional factors on the commercial governance ratings-firm performance relationship. Moreover, we do not limit our study to the overall scores of the index but examine also the partial scores (pillars) which intend to assess specific dimensions of governance. This makes the evaluation of the relationship more complex and challenging.

Keywords - corporate governance, commercial ratings, ISS Quickscore, firm performance.

[1] This chapter is based on Núñez Izquierdo, M. and Garcia-Blandon, J. (2017). "Evaluating the link between commercial governance ratings and firm *performance* in a cross-European setting", Management Decision, 55, 2089-2110.

2.2. Introduction

Corporate governance has captured a lot of media attention and emerged as a subject of public policy discussion, particularly since the Enron scandal erupted in the US in the early 2000´s and, more recently, due to the global financial crisis and the Volkswagen fraud. In parallel with this, corporate governance has become an area of intense study in the economics and finance community during the past decade. In light of this, governance indicators are becoming increasingly important for firms in their quest to improve external financing conditions. Furthermore, evidence from surveys conducted by consulting firm McKinsey & Co. showed that over 75% of investors are willing to pay a premium for shares of firms with high governance standards. These results imply that investors perceive well-governed companies to be better investments than poorly governed ones. Consequently, it has become common for investors to incorporate corporate governance issues when making investment decisions.

With this aim, commercial governance ratings (CGR) are designed to replace the daunting task of gathering and analyzing all available information to make a sound evaluation of management and corporate practices. Thus, during the past decade, a growing market for CGR and proxy voting advisers has emerged, led by agencies such as Institutional Shareholder Services Inc. (ISS) and Governance Metrics International (GMI).

While the impact of corporate governance on firm performance has been extensively studied by management and finance scholars, very limited attention has been given to the use of CGR as a proxy for corporate governance. As pointed out by Bhagat *et al*. (2008, pg. 1818), "the more compelling reason for the success of indexes is the elegant simplicity of having one summary number for capturing the multiple dimensionality of governance." This paper is intended to help fill this gap by shedding light on the usefulness and reliability of CGR to investors and market participants.

We investigate the ability of CGR to predict firm performance. Our sample of companies includes the constituents of the Standard and Poor´s Europe 350 Index that have been previously analyzed by ISS. We focus on the ISS Quickscore governance index (hereinafter *QUICKSCORE*), as it currently stands as the leading commercial database in terms of coverage (number of firms and markets) available to generate robust and generalizable quantitative results. We investigate the relationship between CGR and firm performance using multivariate regression analysis. As in most previous related studies, we use return on assets (ROA) and return on equity (ROE) as proxies of performance. Additionally, a key

valuation indicator, the Tobin's Q, is also used.[2] It is expected that companies with higher governance risk (higher *QUICKSCORE* ratings) show weaker performance, after accounting for the impact of control variables. If this were not so, we might question these ratings as reliable predictors of performance. Moreover, unlike most prior research, we do not limit our study to the aggregate governance score but also address the scores of main governance sub-indexes (pillars), such as board structure, compensation, shareholder rights or audit practices. Such an approach should offer a more complete and precise picture of the relationship between CGR and firm performance.

The use of a non-US sample allows us to extend prior US evidence. Contrary to most previous studies on this subject that handle relatively homogeneous US companies' datasets, we use a broad sample of European companies. Given the importance of the institutional setting on governance issues, US evidence should not be directly extrapolated to other countries (Aggarwal *et al*., 2007). As it has been widely documented in the corporate governance literature (Jensen and Meckling, 1976; La Porta *et al*., 1998), there is a fundamental difference between common-law jurisdictions (mainly identified with the Anglo-Saxon governance systems), where shareholders' perspectives rule, and the continental Europe governance civil-law model, where broader stakeholders' perspectives are shared and governance recommendations issued at the country level are largely voluntary.

On the second hand, our multi country sample allows us to address how the institutional setting affects the issue investigated, adding statistical power to our results. This is due to the different regulatory requirements across countries that should lead to more variation in the ratings. We exploit this institutional diversity in our sample following Bauer *et al.*'s (2003) approach, based on the comparison between the civil-law and the common-law models, which has been the focus of corporate governance researchers in the European context. Despite recent documented convergence in corporate governance between continental Europe and the UK and Ireland (Wójcik, 2006), the European governance setting is still diverse, with a concentrated ownership regime presented in various degrees in continental Europe. Overall, our emphasis is on the different governance qualities between these two broad European regions when measured by CGR, and not on the analysis of the different governance systems across countries.

[2]Within this study, we refer indistinctively to *TOBINQ*, *ROA* and *ROE* as firm-level performance indicators.

The motivation of this study relies on the sound and growing demand for reliable measures of corporate governance that should lead to better firm performance while safeguarding investors' interests (Aguilera and Jackson, 2010). The increasingly popular CGR aim to fulfill this necessity. However, in keeping with the growing success of CGR among investors and market participants, their reliability as effective measures of corporate governance has emerged as a meaningful research question in the academic field. While there are already some papers addressing this issue (Brown and Caylor, 2006; Cheng and Wu, 2006), the lack of consensus on the trustworthiness of CGR welcomes further research on this issue. Moreover, it should be noted that research periods in most prior studies end at the beginning of this century. Since both, the importance of corporate governance issues for firms and market participants as well as the use, availability and complexity of CGR have dramatically changed during the last two decades, results reported by prior studies need to be updated.

We aim to contribute to the research on the use of CGR as predictors of firm performance by providing new evidence obtained with the latest version available of *QUICKSCORE* (ISS Quickscore 2.0). This is, to our knowledge, the second study using this specific rating. In a prior study with a limited sample of US firms, Gherghina *et al*. (2014), reported the lack of a statistically significant relationship with the companies' value. While our research shares some similarities with Gherghina *et al*. (2014), unlike them, we investigate a large sample of firms from 16 European countries following a cross-regional approach. According to Doidge *et al.* (2007), country characteristics explain a much larger share of the variance in governance ratings than firm characteristics. Our study is complimentary to the ongoing scholarly debate over whether governance attributes are largely determined by country factors or by firm practices. Furthermore, we incorporate the companies´ ownership structure as a control variable, given its importance in the analysis of the influence of governance on performance. As stated by Bebchuk and Hamdani (2009), different ownership structures demand different governance practices. Finally, while most prior research (Brown and Caylor, 2006; Daines *et al.*, 2010; Gherghina *et al*., 2014) used a single indicator of performance, we use several metrics in order to report sounder results.

In anticipation of our results, we do not find a consistent significant relationship between CGR and firm performance. This result holds for the overall rating of corporate governance as well as for the segmented ratings. Therefore, our findings call into question the usefulness of CGR marketed by influential consultant companies as predictors of performance.

According to our findings, investors should take decisions based on CGR only with due reservations. Furthermore, our results should also encourage the providers of CGR to investigate on the causes of this lack of relationship in order to produce more accurate ratings.

The study proceeds as follows. We review prior literature on the relationship between governance ratings and performance. The paper continues with a description of the methodology. Finally, we present and discuss the results of the empirical analysis as well as conclusions and implications drawn from these results.

2.3. Review of the literature

In this section, we review the literature on the governance ratings-firm performance relationship. Prior studies can be classified by the type of governance ratings used, into studies which construct their own governance indexes (academic indexes) and those using governance metrics developed by rating agencies.

In a well-known example of the first approach, Gompers *et al.* (2003) constructed an index of governance quality (G-index) using data provided by the Investor Responsibility Research Center (IRRC). The authors concluded that the value of good corporate governance (lower G-index) is reflected in equity prices. They also found a high correlation between the G-index and several measures of firm performance. Their findings support the hypothesis that well-governed companies outperform poorly governed firms. Following Gompers *et al*. (2003), but using a smaller set of governance provisions resulting in the entrenchment rating (labeled E-index), Bebchuk *et al.* (2009) found a negative and significant relationship between the E-index level and firm valuation as well as abnormal stock returns. Similarly, Larcker and Richardson (2007), using principal components analysis (PCA) applied to US companies, reported a positive and significant relationship between academic governance indexes and firm performance. As the aforementioned studies conducted with US datasets, studies with non-US samples have produced similar results. Drobetz *et al*. (2003) built their own governance rating to study German firms, where worker representatives are usually a powerful voice on corporate supervisory boards and concluded that superior governance standards positively impact performance. Later on, Klapper and Love (2004) built an average governance index based on the Credit Lyonnais Securities Asia (CLSA) report, and observed strong correlation between governance and performance for the 25 emerging economies analyzed. Finally, similar studies with samples

of British (Padgett and Shabbir, 2005), Swiss (Beiner *et al.*, 2006) and Greek (Toudas and Karathanassis, 2007) firms, have also reported a significant direct relationship between the quality of governance as measured by academic ratings, and performance.

While the initial incursion into building governance ratings was for academic analysis, it has quickly evolved into an array of CGR marketed to investors. A number of organizations, including major credit rating companies (Standard and Poor´s, Moody´s and Fitch) as well as voting proxy companies such as ISS and GMI, have continued to develop governance ratings. Contrary to academic ratings, which are more rigid and narrow in scope, main CGR evaluate the ratings against the industry and average company size. In addition, the methodology and data is adjusted periodically to reflect changes in governance practices in the country and/or sectors, and they use multiple data sources.

Prior studies using CGR have been generally conducted with US samples. Brown and Caylor (2006) extended Gompers *et al.* (2003) academic governance rating, by developing a more complete measure of corporate governance using data provided by ISS. Their Gov-Score index included 51 governance factors divided into eight main categories and covered a larger database. They then related Gov-Score to operating performance, valuation and dividend payouts for more than 2000 US firms, showing a positive and significant relationship between governance scores and these indicators. Later on, Cheng and Wu (2006) studied the relationship between ISS Corporate Governance Quotient Index (CGQ) and total shareholders' return (raw and industry adjusted) for a large sample of US firms. They showed that firms gaining positive governance momentum, defined as an improvement in the overall quality of corporate governance, outperformed the other pool of firms. Furthermore, Aggarwal *et al.* (2007) built a pair of governance indexes based on CGQ to compare the governance of foreign companies and US firms. They found that non-US firms with better governance than a match sample of US firms have higher valuation than non-US firms with weaker governance.

However, other papers have failed to report a significant relationship between CGR and performance. Hence, Epps and Cereola (2008) used the CGQ for large US companies and found no evidence linking CGR and operating performance. Afterwards, Daines *et al.* (2010) built a broad comparison of leading CGR, including ISS and GMI ratings, establishing an association with several firm valuation and operating performance metrics for US firms. Their findings yield consistent weak results about a systematic relation between the indexes and performance. More recently, Gherghina *et al.* (2014) reported a

lack of a statistically significant relationship between ISS CGR and company value for a limited US large firms sample.

As far as research conducted within Europe, which is the focus of this paper, there are also mixed results. Some studies show that CGR have a positive and significant impact on firm performance, as reflected by Hitz and Lehmann (2015) with a sample of UK and German companies, and Renders *et al.* (2010) on a set of European companies. Conversely, Bauer *et al.* (2003) failed to document a consistent significant relationship between CGR and performance for distinct UK and European Monetary Union datasets.

In summary, as more companies are required to comply with governance best practices codes, the use of CGR to measure this compliance is becoming increasingly popular. In addition, the relationship between CGR and firm performance has emerged as an important line of research. However, despite the growing attention devoted to this topic, prior studies do not agree on the nature of this relationship. Moreover, relatively few studies have been conducted on a cross-national basis. Following our discussion in the introductory section, our investigation intends to fill this gap.

2.4. Research methodology

2.4.1. Hypotheses

Based on agency theory (Jensen and Meckling, 1976), we should observe a direct link between governance and firm performance. Well-governed firms exhibit higher investors' confidence on the back of higher management's monitoring and disciplining. As a result, they are supposed to carry lower risk and enjoy lower cost of capital, which should translate into higher valuation and performance.

CGR provide an observable measure of the unobservable concept of corporate governance. As discussed in the review of the literature, CGR are becoming an important tool for measuring the quality of governance. Hence, firms that rank better on these ratings should display stronger economic performance. We address the relevance of CGR by answering the question of whether differences in these ratings can help to explain variations in performance which have not been captured by other relevant characteristics of the firm. Due to the nature of *QUICKSCORE*, where a high score represents higher governance risk (lower governance quality), we hypothesize:

Hypothesis 1. Higher governance risk, in accordance with *QUICKSCORE* is negatively and significantly associated with performance.

Given that our governance index is an aggregate metric based on four main corporate governance categories or pillars, the fact that Hypothesis 1 holds for the index does not necessarily mean that it will hold true for each of the pillars and viceversa. We agree with ISS in grouping all the factors analyzed into these four main pillars, as they represent the most critical areas in relation to a successful corporate governance. Next, we develop the hypotheses for the four pillars.

In light of the prominent role and important transformation suffered by the board of directors within past decades, numerous studies have focused on the relation between several attributes of the board (size, composition, practices) and firm performance (Yermack, 1996; Bhagat and Bolton, 2008). As this board structure (*BOARDST*) pillar of *QUICKSCORE* gathers more than 50 attributes of the board of directors, including the most relevant ones covered in prior research, we believe that it should reveal the expected relationship between this governance category and performance. Accordingly, we hypothesize:

Hypothesis 1.1. Higher governance risk related to poor board structure practices (*BOARDST*) is negatively and significantly associated with performance.

An important insight shared by most researchers is that management decisions appear to be influenced by compensation to a large extent. Jensen and Murphy (1990) and Mehran (1995), among others, have provided evidence supporting a strong impact of management compensation practices on performance. We believe that the compensation (*COMPENS*) category within *QUICKSCORE*, based on the analysis of a great deal of compensation attributes, should constitute a valid proxy to examine the relationship between this important area of governance and performance. Accordingly, we hypothesize:

Hypothesis 1.2. Higher governance risk related to poor compensation practices (*COMPENS*) is negatively and significantly associated with performance.

The importance of shareholders' protection for the future of the company has been widely documented in the literature. According to Gompers *et al.* (2003), firms characterized by stronger shareholders' rights exhibit a superior performance. In addition, Bebchuk *et al.* (2009) also concluded that there is a negative and significant relationship between the level of management entrenchment and both firm valuation and market returns. We rely on the shareholder rights (*SHRIGHTS*) category within *QUICKSCORE* as a broad representation of the level of protection of shareholders' rights, and as such, we study its impact on performance. Accordingly, we hypothesize:

Hypothesis 1.3. Higher governance risk related to poor shareholder rights practices (*SHRIGHTS*) is negatively and significantly associated with performance.

Regarding the last category, prior studies have documented an increasing importance of audit and accounting practices on performance, even though no conclusive evidence has been found. We highlight the works of Brown and Caylor (2005) and Bowen *et al.* (2008) on this subject. As the audit (*AUDIT*) category within *QUICKSCORE* covers the most important attributes of accounting and auditing practices stressed in the literature, we use it as a proxy to analyze the relationship between this governance category and performance. Accordingly, we hypothesize:

Hypothesis 1.4. Higher governance risk related to poor Audit practices (*AUDIT*) is negatively and significantly associated with performance.

2.4.2. Research design

In order to highlight the relationship between CGR and performance, we estimate the model given by Equation (1) below with ordinary least squares.

$$TOBINQ/ROA/ROE_i = \alpha + \beta CGR_i + \gamma Z_i + \varepsilon_i \qquad (1)$$

Where we use *TOBINQ, ROA* and *ROE* (all adjusted at the sector level), as proxies of performance. Our main variable of interest (*CGR*) is the *QUICKSCORE*, although we also test the four partial pillars of the index: *BOARDST*, *COMPENS, SHRIGHTS* and *AUDIT*.

Finally, we also include the usual control variables (Z) used in prior research (Yermack, 1996; Klapper and Love, 2004).

2.4.2.1. Proxies for Performance

Empirical research on governance uses either market-based measures or accounting ratios to assess the relationship with performance. As pointed out by Dalton *et al*. (2003) in a meta-analysis of corporate governance literature, there is a lack of consensus about the best measure of performance to investigate this relationship. However, following Bhagat and Bolton (2008), we focus on accounting-based metrics. Contrary to stock market metrics, accounting ones are not tainted by possible anticipation from investors. To test the proposed hypotheses, Equation *(1)* is taken as a starting point for the assessment of the models. We use the *TOBINQ* (our main proxy of performance) as the dependent variable. However, we also use *ROA* and *ROE* as alternative measurements of performance.

As certain characteristics of the industry may play a critical role in the scores of governance indexes (Bauer *et al*., 2003; Gompers *et al.*, 2003), we adjust our performance variables by the industry medians, to filter out the potential industry-specific effects. We follow Eisenberg *et al.*'s (1998) approach for this calculation and define the sector-adjusted performance variables as the square-root transformation of the difference between the firm´s performance and the industry´s median for that metric.

TOBINQ

We test whether poorly governed firms according to *QUICKSCORE*, ceteris paribus tend to have weaker performance. A pure Tobin's Q measures the quotient of the market value of assets divided by the replacement value of these same assets. We follow a simplification of this measure commonly used in the finance literature (Kaplan and Zingales, 1997; La Porta *et al*., 2002; Gompers *et al*., 2003), to ensure maximum data availability. Hence, we measure *TOBINQ* as the sum of the book value of total assets plus the market value of common equity minus the sum of the book value of common equity and deferred taxes, over the book value of total assets. The market value of equity is the price of the share multiplied by the total common shares outstanding, while the replacement value of assets is represented by the book value of the total assets. All book values for fiscal year *t* are matched with the market values of common equity at the end of year t.

ROA

Return on assets is a measure of operating performance, which suggests the level of profitability that the company obtains from its assets. Similar to prior research (Larcker and Richardson, 2007; Bhagat and Bolton, 2008), we calculate *ROA* as operating income divided by the book value of total assets.

ROE

Return on equity is another usual measure of performance, which shows the level of profitability the company obtains from money invested by common shareholders. As is usual in the corporate governance literature (Brown and Caylor, 2005; Epps and Cereola, 2008), we calculate *ROE* as income before extraordinary items available for common equity divided by the book value of common equity.

2.4.2.2. Governance ratings: Quickscore and pillars

QUICKSCORE was launched in 2013, with the index now in its third version (Quickscore 3.0, as of 2015). This aggregate index rests on the analysis of four major governance pillars: (1) board structure (*BOARDST*), (2) compensation (*COMPENS*), (3) shareholder rights (*SHRIGHTS*), and (4) audit practices (*AUDIT*). Each pillar rating is based on ISS's ranking of the various subcategories underlying each pillar and their corresponding governance factors, based on an examination of the firm´s regulatory filings, annual reports, prospectuses, as well as company´s websites and press releases. Equation *(1)* includes five governance variables to account for the aggregate as well as for the four partial governance ratings listed above.

The ISS approach is to assign discrete weights to each attribute, acknowledging that some factors should have a heavier weight on the index than others. It also calibrates the weights assigned to corporate governance factors as a function of their correlations with firm's prior performance. To aggregate these weights, it transforms the scores into a numeric, decile-based scale from 1 to 10 for each pillar which indicates a firm's governance risk. The last step in the process is a combination of the four pillar scores into a single one with a score of 1 indicating low governance risk relative to their index, and conversely, a score of 10 indicating relatively high governance risk. While the factors used to produce a company's rating are public, there is a critical confidentiality component of the methodology used in

gathering, weighting, and analyzing information that is not revealed and is treated as intellectual property. Further information can be found in the brochures released by ISS.[3]

2.4.2.3. Control Variables

Both corporate governance and performance are likely to correlate with other critical firm metrics. One way to mitigate the problem of possible endogeneity is to add an appropriate set of control variables. Therefore, consistent with prior studies (Yermack, 1996; Klapper and Love, 2004; Aggarwal *et al*., 2007), we include the following control variables: size, age, growth and leverage.

Firm size (*SIZE*) is measured by the natural logarithm of total assets. According to Jensen and Meckling (1976), large firms are more prone to deal with greater agency problems on the back of larger free cash flows. However, they also tend to have easier access to capital markets joined by the cost-effective benefits of economies of scale, and as such, should show a better performance. We define firm age (*AGE*) as the number of years passed since the year of incorporation (logarithmic values). Consistent with Fama and French (2004), performance is likely to deteriorate at the margin in older firms, presumably due to a worsening of corporate governance features, among other factors. Furthermore, there is considerable literature emphasizing the positive effects of growth opportunities, as companies with solid growth prospects (*GROWTH)* usually hire better management teams and show higher performance (Core *et al*., 1999). We follow Klapper and Love (2004) and use the average annual sales growth over the past three years. Finally, we include financial leverage (*LEVER*), as debt service commitment should impose a higher degree of accountability to management teams, deterring managers from making poor investment decisions (Jensen and Meckling, 1976).

As a distinction from the bulk of prior related studies, and in order to increase the robustness of our results, we include ownership concentration as a control variable. We capture the ownership effect with a variable labeled (*OWNCONC*), which shows the portion of outstanding shares owned by top holding groups. A successful governance system relies on some combination of concentrated ownership and legal protection of investors (La Porta *et al*., 1998). However, there are both costs and benefits associated with ownership concentration. As stated by Shleifer and Vishny (1997, pg. 739), "concentrated ownership

[3] See ISS Quickscore 3.0, ISS, http://www.issgovernance.com/governance-solutions/investment-tools-data/quickscore/ (last visited February, 2018)

has its costs as well, which can be best described as potential expropriation by large investors of other investors and stakeholders in the firm". Furthermore, many economists that have investigated the impact of ownership structure on performance (Morck *et al*., 1988; Himmelberg *et al*., 1999; O'Connell and Cramer, 2010) adhere to this notion. Hence, consistent with this wealth expropriation hypothesis, we predict a negative relationship between ownership concentration and performance, as it becomes difficult to remove managers that act opportunistically in their own benefit or on behalf of controlling shareholders. We compile ownership information for the firms in the sample from S&P Capital IQ database for the year 2015.[4] We use Demsetz and Villalonga's (2001) proxy for this metric and add up the holdings of the five largest shareholders to determine the ownership concentration for each company. As a caveat, we make no distinction between inside and outside ownership, so a portion of these large shareholders could well be part of management, or affiliated management. We also ignore the identity of controlling shareholders.

For the estimation of each model, we also include the dependent variable one-year lagged as an independent variable. According to Daines *et al*. (2010), current performance significantly affects future performance. We use fiscal year information to compute all the performance and control variables. Similar to prior work, we winsorize control variables (at the top and bottom one percent) to neutralize the impact of possible spurious outliers. As stated by Gompers *et al.* (2003), the governance practices of a firm are rather endogenous, so it is difficult to infer causal direction. In addition, since our governance data is comprised of only one year, we cannot address the issue of causality.

Finally, after the main analysis conducted with the whole sample, we also perform segmented analyses to explore the validity of these hypotheses for our two distinctive European regions: the common-law or Anglo-Saxon region, and the civil-law or continental Europe region.

2.4.3. Dataset

To accomplish our goal, the study takes the data of 310 constituents of Standard and Poor´s Europe 350 Stock Market Index (SP350) for which *QUICKSCORE* was available. The index covers 350 large capitalization companies across 16 major European countries, comprising

[4] Ownership concentration information for years 2013-14 was not available in Capital IQ database. Given the low degree of historic changes in this indicator over short term periods, we use available 2015 data as a proxy.

approximately 70% of the market capitalization of the region. This study uses primary data (governance variables) released in 2013. All dependent variables in Equation *(1)* are moved forward one year (2014) to reduce endogeneity without significantly upsetting the explanatory power of regressions. As happens in practice, implementation of good governance recommendations may have some delayed effect on the performance of the company. Control variables refer to 2014, except the lagged performance control variables. Table 1 presents a summary of all the variable names, codes, brief descriptions, and sources of data.

Insert Table 1 around here

We analyze companies by industry, using the Industry Classification Benchmark prepared by FTSE that comprises 10 major industries. In line with academic consensus, banking and financial companies (60 companies), have been excluded from the sample based on their distinctive governance structures and accounting practices. A further 13 companies were dropped due to the lack of financial data. The final sample consists of 237 companies, corresponding to 76.5% of our initial set of companies. These firms operate in a variety of industries: Communications (24), Consumer Discretionary (44), Consumer Staples (32), Energy (14), Health Care (16), Industrials (44), Materials (31), Technology (14) and Utilities (18), as shown in Table 2.

We follow ISS´s regional break down for Europe, to allow comparison within markets where governance practices are similar. However, we are aware of the fact that the number of factors included by ISS to compute the scores vary among these sub-regions. As explained previously, we exploit this institutional diversity of our sample studying the impact of governance on performance through a comparison between the Anglo-Saxon (AS) and the continental Europe (CE) regions. As reflected in Table 2, out of the 237 companies, 68 (corresponding to 28.7%) are from the UK and Ireland, which are grouped in the AS region. The other 169 companies (corresponding to 71.3%), re-grouped in the CE region, are originally grouped as followed: 49 from the Germanic sub-region (Germany, Austria and Switzerland), 34 from the Nordic sub-region (Denmark, Finland, Norway and Sweden), 23 from the Southern sub-region (Italy, Spain and Greece), and 63 from the Western sub-region (Belgium, Luxemburg, Netherlands and France).

Insert Table 2 around here

Table 3 summarizes the descriptive statistics for the overall dataset while Tables 3.1 and Table 3.2 display these statistics for the AS and CE regions, respectively. The results

indicate that there is medium overall quality of governance practices among the large European companies in our dataset (corresponding to a mean *QUICKSCORE* of 5.04). *BOARDST*, *COMPENS*, and *SHRIGHTS* pillars have similar results with means in the 4.47-4.95 range. Companies do best in *AUDIT* practices with a median of 1 (highest quality) for the overall dataset and also for all the regions, highlighting the low clout of this governance category as a distinctive or informative variable. The average firm size is $9.7 billion and the average leverage ratio is 24.8%. Furthermore, the average *TOBINQ*, *ROA*, and *ROE* are 0.15, 0.66% and 1.28% respectively. On average the five largest shareholders control 34.3% of shares.

Insert Table 3 around here

The ratings by the two major regions reveal some degree of diversity. Companies in the AS region lead in terms of overall governance quality with a mean *QUICKSCORE* of 4.16 (5.39 for the CE region). We gain more insight into the diversity of corporate governance by examining the four governance pillars. Again, the AS region leads in all four pillars. Consistent with prior literature, these findings somehow confirm the established notion of certain leadership of the Anglo-American model of corporate governance as highlighted by La Porta *et al*. (1998).

The 0.405 *TOBINQ* for the AS region, exceeds the -0.031 *TOBINQ* for the CE region, reflecting a higher firm-value setting for the AS region. The average ROA reaches 1.77 for the AS region, showing the CE region again as a laggard with -0.033. Likewise, the AS region *ROE* leads by a large margin with 4.8, with the CE region once again lagging with a low -0.206 score. Overall, these metrics also reflect clear leadership for the AS region in terms of firm performance.

Tables 3.1 and 3.2 also show that ownership concentration varies by legal origin. The lowest average concentration measure corresponds to the AS region with 28.1 percent (35.9% in the CE region). This is consistent with La Porta *et al*. (2002), who argued that companies in common-law tradition countries tend to have a lower level of ownership concentration in response to stronger legal protection to investors. Overall, there is no large regional differences in terms of age or size. The AS region clearly leads in terms of growth potential and exhibits a 27.2% level of leverage (23.7% for the CE region).

Insert Tables 3.1 and 3.2 around here

Table 4 depicts the Pearson correlation matrix for the variables in our model. As expected, *QUICKSCORE* is correlated with the four main governance pillars (*BOARDST*, *COMPENS*,

SHRIGHTS and *AUDIT*). We also analyze the correlation between each pair of pillars to rule out any potential substitution effects between governance main features. No significant negative correlation is found, suggesting that the main four governance pillars are not substitutes. Overall, the correlations between the independent variables are relatively low, which suggests the absence of serious multicollinearity in the data. Nonetheless, we have calculated variance inflation factors (VIF), in order to rule out the negative potential effects of multicollinearity in the results. At a range of 1.14-1.18, VIF support our view that multicollinearity will not seriously affect the results.

We now focus on the correlations between our performance metrics with the governance variables. *QUICKSCORE* and most of the four pillars are uncorrelated with performance variables, with the exception of *SHRIGHTS* which reflects a negative significant correlation with *TOBINQ*, *ROA* and *ROE*. This means that higher scores (weaker shareholder rights' protection) should translate into lower firm performance. The *AUDIT* category also reflects a negative significant correlation with *ROA*, indicating that higher scores (weaker audit practices) would be consistent with lower performance as measured by *ROA*. On the other hand, not surprisingly, performance metrics are highly correlated among them.

Regarding the control variables, *QUICKSCORE* only shows a significant positive relationship with *GROWTH*. All four governance pillars (except *AUDIT*) reflect a positive significant relationship with *OWNCONC*. This is consistent with the agency theory, as firms with concentrated ownership should display relatively higher scores (weaker governance quality).

Insert Table 4 around here

2.5. Empirical results

In this section we present and discuss the results of the estimations of Equation *(1)*. To make *QUICKSCORE* comparable across companies, consistent with the methodology used by ISS, we have standardized the variable at the sub-region level, rescaling the scores to have a mean of zero and a standard deviation of one. As the Breusch-Pagan test suggests heteroscedasticity in our dataset,[5] we conduct significance tests with robust standard errors. In Model 1, we study the primary relationship between *QUICKSCORE* and our three proxies of performance. To evaluate the separate impact of each of the four main governance pillars,

[5] As a general rule, for the usual significant levels (0.01 or 0.05) we do not provide the specific mark.

in Models 2-5 we replace *QUICKSCORE* by each of the partial ratings (*BOARDST*, *COMPENS*, *SHRIGHTS* and *AUDIT*). In Model 6, we allow for the simultaneity of all four partial pillars as independent variables to measure their combined impact on firm performance metrics. Tables 5 through 7 report the results of the regressions of the six models.

2.5.1. Results of the main analysis

Table 5 displays the results of the estimation of Equation *(1)* with *TOBINQ* as the proxy for performance. The main result is the existence of a positive significant relationship between *QUICKSCORE* and *TOBINQ* (*p-value* < 0.10), as reflected in Model 1. This contradicts our Hypothesis 1, as it indicates that firms with a higher *QUICKSCORE* (weaker governance) exhibit higher performance. As for the partial ratings (Models 2-5), we report significant results for *BOARDST*, with positive sign. This relationship remains significant when all partial ratings are simultaneously included in Model 6. As the results for Model 1, this also contradicts our expectations from Hypothesis 1.1, as it indicates that firms with higher *BOARDST* scores (weaker board structures) exhibit higher performance.

As for control variables, we find a significantly inverse relationship between OWNCONC and performance in all models, except in Model 5 (*p-value* < 0.05 and < 0.10). This indicates that firms with higher ownership concentration (low minority shareholders power) exhibit lower performance as measured by *TOBINQ*. This is consistent with our prediction, based on the wealth expropriation hypothesis. Finally, we also observe the expected significant direct relationship with lagged performance (*TOBINQ2013*) in all six models.

Insert Table 5 around here

Table 6 depicts the results of the estimation of Equation *(1)* with *ROA* as the dependent variable. Model 1 shows a significant negative relationship (*p-value* < 0.10) between *QUICKSCORE* and *ROA*. This is consistent with Hypothesis 1, indicating that firms with higher *QUICKSCORE* (weaker governance) exhibit lower performance. As for the partial ratings, we report non-significant results in all cases but *SHRIGHTS*, for which we observe the expected negative significant relationship (*p-value* < 0.10). However, this relationship turns non-significant in Model 6. In terms of the control variables, we only report significant results for the influence of current performance (*ROA2013*) with the predicted positive sign.

Insert Table 6 around here

Table 7 displays the results of the estimation of Equation *(1)* with *ROE* as the dependent variable. According to the results for Model 1, the relationship between *QUICKSCORE* and *ROE* is non-significant. In addition, no significant relationship is shown between any of the partial ratings and *ROE*, with the only exception of *BOARDST* in Model 2 (*p-value* < 0.10) with a positive sign. Hence, firms with higher *BOARDST* scores (weaker board practices) exhibit stronger performance as measured by *ROE*. This relationship remains significant when we introduce the partial ratings altogether in Model 6. These results are again inconsistent with our Hypotheses, reflecting a lack of impact of all governance ratings on performance, and particularly contradictory in the case of the *BOARDST* (Hypothesis 1.1).

As for control variables, we confirm the significant direct influence of current year performance (*ROE2013*) on future performance. We also report a significant inverse relationship between *OWNCONC* and performance in all models (*p-value* < 0.05 and < 0.10). Consistent with our prediction, this indicates that firms with higher ownership concentration (low minority shareholders power) exhibit weaker performance as measured by ROE.

Insert Table 7 around here

In overall, these results do not suggest that CGR constitute reliable predictors of firm performance.

2.5.2. Additional results

After the analysis conducted with the whole sample we perform additional analyses at the region level. For the sake of simplicity, we focus on Model 1 (with *QUICKSCORE*) and Model 6 (with all four partial ratings). Hence, we carry out separate estimations of Models 1 and 6 for the AS and the CE regions. Results for the AS and CE regions are shown in Tables 8 and 9, respectively.

In Table 8, the results for Model 1 show a significant relationship between *QUICKSCORE* and performance as measured by *TOBINQ* and *ROE* in the AS region. However, in both cases the sign of the relationship is contrary to our expectations. Thus, results for Model 1 would not support Hypothesis 1. As for the estimation of Model 6, we find a positive significant coefficient for *BOARDST* when performance is proxied by *TOBINQ* and *ROE*, contradicting our Hypothesis 1.1. For *AUDIT*, we report a significant relationship with *TOBINQ* and *ROE*. The sign of this relationship follows our predictions from Hypothesis 1.4 in the model with *ROE*, although not in the model with *TOBINQ*.

Insert Table 8 around here

Focusing on the CE region, results for Model 1 in Table 9, show a negative and significant relationship between *QUICKSCORE* and performance as measured by *ROA*. This is consistent with Hypothesis 1, suggesting a negative influence of weaker governance practices (higher scores) on performance. However, when performance is measured by *TOBINQ* or *ROE* results are non-significant. As for the partial ratings covered in Model 6, we do not observe any significant results for any of the ratings in any of the estimations. This evidence also contradicts prior empirical research (Bauer et al., 2003), supporting that lower country governance standards (the CE in our case) tend to show stronger links between governance and performance.

In terms of the influence of the control variables, the analysis confirms the strong positive impact of current performance on future performance in both regions. We also highlight the significant negative coefficient of *OWNCONC* for the AS region on firm performance as measured by *ROE*, consistent with our predictions for this variable.

Insert Table 9 around here

Finally, we conduct a robustness check to rule out the notion that conditions necessary for a significant governance-performance relationship are conditioned to achieve a level of governance quality beyond a certain threshold. Hence, we rerun our base regressions across various subsamples. Consistent with the portfolio approach proposed by Gompers, *et al.* (2003), we classify our sample of 237 firms into three clusters, according to *QUICKSCORE*: "good" quality (low risk) of governance (*QUICKSCORE* from 1 to 3), "medium" quality (medium risk) of governance (*QUICKSCORE* from 4 to 7), and "poor" quality (high risk) of governance (*QUICKSCORE* from 8 to 10). Almost half of the firms (46%) are at the "medium" governance practices level. Exactly a third of the firms are at the "good" governance practices level, while firms with "poor" governance represent the remaining 21% of the sample. We then conduct sequential estimations of Equation *(1)* for the extreme "poor" and "good" quality of governance clusters. Results of this check are shown in Tables 10 and 11.

All the estimations fail to establish a significant relationship between *QUICKSCORE* and performance. Similarly, we do not observe any significant relationship between any of the partial ratings and performance. The only two exceptions occur in the model with *ROE* as the dependent variable, and in both cases the sign of the relationship is negative as predicted. Hence, in the estimation conducted with the sample of poorly governed firms, *SHRIGHTS*

presents a significant coefficient, and the same occurs for *AUDIT* (*p-value* < 0.10) in the estimation conducted with the sample of well-governed firms. As the small size of both subsamples might have affected the reported results, in a last robustness check (results not reported), we split the original sample into only two groups: "good" quality of governance (*QUICKSCORE* from 1 to 5), and "poor" quality of governance (*QUICKSCORE* from 6 to 10), obtaining similar results.[6] Overall, these robustness tests provide support to the results reported in the main analysis regarding a lack of a significant relationship between CGR and firm performance.

Insert Tables 10 and 11 around here

2.6. Concluding remarks

This investigation addresses the association between commercial governance ratings and firm performance. Unlike most studies on this subject, which are focused on US companies, we investigate the European setting. Although our main interest is on the aggregate scores of the ratings (*QUICKSCORE*), we also study the relationship between partial scores relative to board structure, compensation, shareholder rights and audit practices, and performance. Moreover, in order to provide sounder results our study considers several metrics of performance.

Overall, our results fail to support a consistent relationship between the tested ratings and firm performance for our Europe S&P350 sample. Although we report a few significant relationships for some of the ratings in some of the estimations, these results do not indicate that they are significantly associated with performance. In most cases, significance is only reported at marginal levels and the sign of the relationship is contrary to our predictions in around half of the cases. In addition, the governance quality-groups' robustness checks have yielded steady results, increasing our confidence in the absence of a significant relationship between the tested ratings and performance. Therefore, we should conclude that neither aggregate *QUICKSCORE* nor partial ratings seem to be able to explain differences in performance across firms.

In terms of the analysis at the region level, we find some unexpected results. For the CE region, only the relationship between *QUICKSCORE* and *ROA* was statistically validated, signaling the negative influence of weaker governance practices (higher ratings) on the

[6] For the sake of simplicity, results for this set of robustness checks are not reported in tables. However, they are available upon request from the authors.

company´s performance as measured by *ROA*. In the AS region, contrary to our expectations, the relationship between the overall quality of governance (*QUICKSCORE)* and performance (*TOBINQ* and *ROE*) was statistically validated, although the sign of this significant relationship stands surprisingly positive. This signals a direct influence of weaker governance practices (higher ratings) on performance. We also find sporadic and occasionally contradictory influences of certain governance pillars on performance.

With regards to corporate ownership, the findings also show that higher ownership concentration negatively affects firm performance, suggesting that ownership concentration may be a performance-restraining mechanism, reflecting entrenchment of the management team, and confirming our expectations. We believe that this finding underpins the importance of controlling for this interdependence between performance and ownership concentration.

In conclusion, similar to some recent papers in this field, our results call into question the usefulness of commercial governance ratings as they fail to establish a consistent relation between the *QUICKSCORE* and partial ratings and performance. Considering the increasing importance of these commercial ratings for companies and market participants, we believe that our empirical findings have a number of implications for corporate governance research and practice. First, our results question rating agencies' vindication of these ratings, as they do not seem to create value for market participants. Advocates of commercial ratings should cautiously note the weak relationship between these ratings and the future performance of the firm. Consequently, if their purpose is to help investors pick up best performers, then such efforts might have been misguided. For that reason, we recommend that investors should make decisions based on commercial ratings only with due reservations. On the other hand, we might also recommend the providers of these ratings to improve their design of the ratings in order to release more accurate indexes.

Second, our findings also have implications for corporate decision makers, as they increasingly feel pressured to change their corporate governance practices in reaction to rating agencies' qualifications. In addition, policy makers also need to be cautious when using these ratings to analyze governance practices and make recommendations. Lastly, the inferences of our study extend beyond the merits of tested commercial ratings. We provide additional evidence regarding the troubles faced by rating agencies at devising reliable measures of the quality of corporate governance. On that regard, the approach of building aggregate indexes based on a wide array of factors might be ill-advised, as pointed out by

Bebchuk and Hamdani (2009). Further investigation would be needed to determine which key factors are of real significance to enhance firm performance. Finally, as pointed out by Daines *et al*. (2010), the fact that results obtained using these more sophisticated commercial ratings remain controversial, also call into question conclusions reached by studies based on more simplistic academic corporate governance metrics.

The limitations of the current study are represented by the short time period analyzed and the nature of our sample data, consisted of major companies in terms of market capitalization for the European corporate landscape (relatively homogenous in terms of size and age). Another important limitation is the relatively small samples used in some of the additional analyses. As a future avenue of research, we look to establish a panel data approach, by extending the time series to a minimum period of three years, allowing to build more robust relationships among critical variables. In addition, we might also expand our sample data beyond the very large (and usually older) corporations included in this dataset, as well as to run similar analyses using other commercial governance ratings.

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Tables

Table 1. Description of variables

Variable	Code	Definition	Data Source
Corporate Governance Variables			
Quickscore	*QUICKSCORE*	2013 aggregate governance rating	ISS
Board Structure	*BOARDST*	2013 board structure pillar rating	ISS
Compensation	*COMPENS*	2013 compensation pillar rating	ISS
Shareholder Rights	*SHRIGHTS*	2013 shareholder rights pillar rating	ISS
Audit Practices	*AUDIT*	2013 audit practices pillar rating	ISS
Variables for Company Performance			
Adjusted Tobin´s Q (t+1)	*TOBINQ*	Quotient of the market value of assets (measured as the sum of the book value of total assets plus the market value of common equity minus the sum of book value of common equity and deferred taxes) divided by the replacement value of assets (book value of total assets) sector-adjusted for the year 2014.	S&P Capital IQ
Adjusted Return on Assets (t+1)	*ROA*	Division of the company´s operating income divided by total assets at book value sector-adjusted for the year 2014	S&P Capital IQ
Adjusted Return on Equity (t+1)	*ROE*	Division of the company´s income before extraordinary items available for common equity divided by the book value of common equity sector-adjusted for the year 2014	S&P Capital IQ
Control Variables			
Firm Size (t+1)	*SIZE*	Measured by the natural logarithm of total assets in 2014	S&P Capital IQ
Firm Age (t+1)	*AGE*	Defined as the number of years passed since the firm´s founding year until 2014 (natural logarithm)	S&P Capital IQ
Growth Opportunity (t+1)	*GROWTH*	Average Sales Growth in the last 3 years (2012-14)	S&P Capital IQ
Level of Leverage (t+1)	*LEVER*	[Long Term Debt / Market Value of Equity plus Long Term Debt] in 2014	S&P Capital IQ
Ownership Concentration (t+1)	*OWNCONC*	Log [S5/100 - S5)], where S5 represents the fraction of shares owned by the five largest shareholders (*)	S&P Capital IQ
Adjusted Tobin´s Q	*TOBINQ2013*	Sector-adjusted Tobin´s Q in 2013	S&P Capital IQ
Adjusted ROA	*ROA2013*	Sector-adjusted ROA in 2013	S&P Capital IQ
Adjusted ROE	*ROE2013*	Sector-adjusted ROE in 2013	S&P Capital IQ

(*) Latest data on shareholders (% owned) as of end-2015

Table 2. Dataset breakdown by main regions and sectors

Region	Sub-region	Country	Frequency	Percent
		UK	63	
		Ireland	5	
Anglo-Saxon (AS)			**68**	**28.69**
	Germanic	Austria	3	
		Germany	29	
		Switzerland	17	
	Nordic	Finland	8	
		Denmark	4	
		Sweden	17	
		Norway	5	
	Southern	Spain	13	
		Italy	9	
		Greece	1	
	Western	France	37	
		Luxembourg	4	
		Netherlands	15	
		Belgium	7	
Continental Europe (CE)			**169**	**71.31**
Total			**237**	**100.00**

Sectors	Frequency	Percent
Communications	24	10.13
Consumer Discretionary	44	18.57
Consumer Staples	32	13.50
Energy	14	5.91
Health Care	16	6.75
Industrials	44	18.57
Materials	31	13.08
Technology	14	5.91
Utilities	18	7.59
Total	**237**	**100.00**

Table 3. Descriptive statistics for the whole sample

Variables	N	Mean	Median	St. Dev.	Min	Max
Corporate Governance Variables						
QUICKSCORE	237	5.04	5	2.70	1	10
BOARDST	237	4.70	5	3.12	1	10
COMPENS	237	4.95	5	2.67	1	10
SHRIGHTS	237	4.47	3	2.81	1	10
AUDIT	237	1.34	1	1.72	1	10
Company Performance Variables						
TOBINQ	237	0.15	0	0.59	-0.58	1.38
ROA	237	0.66	0	3.58	-4.34	6.85
ROE	237	1.28	0	9.38	-11.40	20.20
Control Variables						
SIZE	237	9.70	9.56	1.19	7.26	12.80
AGE	237	4.28	4.51	0.82	1.61	6.48
GROWTH	237	3.99	3.85	7.89	-33.10	34.80
LEVER	237	24.80	23.90	14.00	0	61.20
OWNCONC	237	34.30	29.80	16.60	2.53	89.70
TOBINQ2013	237	1.98	1.55	1.38	0.38	9.73
ROA2013	237	9.21	8.13	6.15	-2.44	44.8
ROE2013	237	7.64	12.40	65.30	-744	178

Table 3.1. Descriptive statistics for the Anglo-Saxon (AS) region

Variables	N	Mean	Median	St. Dev.	Min	Max
Corporate Governance Variables						
QUICKSCORE	68	4.16	4	2.05	1	9
BOARDST	68	3.51	1	3.26	1	10
COMPENS	68	4.26	4	2.25	1	10
SHRIGHTS	68	3.12	3	1.09	1	9
AUDIT	68	1.26	1	1.53	1	10
Company Performance Variables						
TOBINQ	68	0.41	0.28	0.62	-0.58	1.38
ROA	68	1.77	1.19	3.84	-4.34	6.85
ROE	68	4.80	2.73	11.1	-11.4	20.20
Control Variables						
SIZE	68	9.37	9.16	1.19	7.27	12.40
AGE	68	4.16	4.42	0.91	1.61	5.61
GROWTH	68	5.91	5.14	7.55	-8.23	34.40
LEVER	68	27.20	27.30	13.90	0	61.20
OWNCONC	68	28.10	26.20	11.50	7.15	73.10
TOBINQ2013	68	2.30	1.89	1.45	0.98	9.59
ROA2013	68	11.40	10.90	6.27	-0.16	34.90
ROE2013	68	2.94	16.40	112	-744	178

Table 3.2. Descriptive statistics for the continental Europe (CE) region

Variables	N	Mean	Median	St. Dev.	Min	Max
Corporate Governance Variables						
QUICKSCORE	169	5.39	5	2.85	1	10
BOARDST	169	5.18	5	2.94	1	10
COMPENS	169	5.23	5	2.79	1	10
SHRIGHTS	169	5.01	4	3.10	1	10
AUDIT	169	1.37	1	1.80	1	10
Company Performance Variables						
TOBINQ	169	-0.03	-0.27	0.64	-0.76	1.18
ROA	169	-0.03	-0.59	1.67	-2.08	2.62
ROE	169	-0.21	-0.78	2.49	-3.38	4.50
Control Variables						
SIZE	169	9.81	9.76	1.02	8.22	11.40
AGE	169	4.30	4.50	0.70	2.94	5.08
GROWTH	169	1.80	2.21	4.74	-6.25	9.00
LEVER	169	23.70	22.90	11.70	7.25	44.30
OWNCONC	169	35.90	33.40	14.40	17.70	59.40
TQ2013	169	-0.02	-0.31	0.66	-0.76	1.16
ROA2013	169	-0.11	-0.60	1.75	-2.16	2.74
ROE2013	169	-0.22	-0.65	2.46	-3.52	3.68

Table 4. Pearson correlation coefficients

	QUICKSCORE	*BOARDST*	*COMPENS*	*SHRIGHTS*	*AUDIT*	*TOBINQ*	*ROA*	*ROE*	*SIZE*	*AGE*	*GROWTH*	*LEVER*	*OWNCONC*	*ROA2013*	*ROE2013*
BOARDST	0.67*	1.00													
	0.00														
COMPENS	0.49*	0.29*	1.00												
	0.00	0.00													
SHRIGHTS	0.54*	0.17*	-0.08	1.00											
	0.00	0.01	0.24												
AUDIT	0.22*	-0.02	-0.02	0.11	1.00										
	0.00	0.80	0.74	0.10											
TOBINQ	-0.10	-0.02	-0.04	-0.20*	-0.11	1.00									
	0.14	0.71	0.59	0.00	0.10										
ROA	-0.06	0.02	0.04	-0.20*	-0.15*	0.75*	1.00								
	0.38	0.77	0.49	0.00	0.03	0.00									
ROE	-0.08	0.01	-0.08	-0.13*	-0.11	0.63*	0.56*	1.00							
	0.25	0.89	0.23	0.04	0.10	0.00	0.00								
SIZE	0.09	0.11	-0.08	0.19*	0.05	-0.43*	-0.33*	-0.21*	1.00						
	0.19	0.09	0.20	0.00	0.46	0.00	0.00	0.00							
AGE	-0.11	-0.04	-0.10	0.03	0.05	0.02	-0.03	-0.03	0.01	1.00					
	0.10	0.56	0.12	0.63	0.43	0.82	0.60	0.66	0.84						
GROWTH	0.18*	0.13	0.10	0.00	0.06	0.14*	0.11	0.08	-0.02	-0.11	1.00				
	0.01	0.05	0.14	0.95	0.34	0.03	0.08	0.21	0.80	0.08					
LEVER	-0.04	-0.06	-0.01	-0.03	0.00	-0.12	-0.09	0.04	0.18*	-0.08	-0.05	1.00			
	0.55	0.33	0.85	0.60	0.99	0.07	0.15	0.54	0.01	0.24	0.42				
OWNCONC	0.34*	0.36*	0.24*	0.14*	0.01	-0.10	-0.05	-0.16*	0.02	-0.07	0.05	-0.02	1.00		
	0.00	0.00	0.00	0.03	0.88	0.14	0.44	0.04	0.71	0.31	0.42	0.70			
ROA2013	0.02	0.11	0.04	-0.14*	-0.16*	0.69*	0.81*	0.54*	-0.30*	0.03	0.19*	-0.11	-0.03	1.00	
	0.79	0.10	0.53	0.04	0.01	0.00	0.00	0.00	0.00	0.66	0.00	0.10	0.62		
ROE2013	0.06	0.12	0.03	0.04	-0.05	-0.04	-0.03	0.23*	0.00	0.10	0.10	-0.18*	0.04	0.05	1.00
	0.39	0.07	0.63	0.55	0.48	0.51	0.61	0.00	0.99	0.12	0.14	0.01	0.58	0.44	
TOBINQ2013	-0.02	0.03	-0.02	-0.07	-0.09	0.64*	0.42*	0.42*	-0.44*	0.04	0.12	-0.26*	-0.02	0.57*	0.06
	0.80	0.68	0.72	0.29	0.16	0.00	0.00	0.00	0.00	0.55	0.06	0.00	0.79	0.00	0.36

* p<0.05

Table 5. Results on the influence of ISS Quickscore governance ratings on performance as measured by Tobin's Q

VARIABLES	Model1	Model2	Model3	Model4	Model5	Model6
QUICKSCORE	0.040*					
	(1.671)					
BOARDST		0.048**				0.063**
		(2.087)				(2.305)
COMPENS			0.004			0.003
			(0.168)			(0.092)
SHRIGHTS				0.017		0.008
				(0.739)		(0.316)
AUDIT					0.010	0.012
					(0.540)	(0.671)
SIZE	-0.021	-0.027	-0.020	-0.022	-0.021	-0.029
	(-0.975)	(-1.215)	(-0.906)	(-1.004)	(-0.839)	(-1.153)
AGE	-0.013	-0.016	-0.017	-0.018	-0.009	-0.004
	(-0.460)	(-0.547)	(-0.600)	(-0.622)	(-0.274)	(-0.137)
GROWTH	0.001	0.001	0.003	0.003	0.002	0.000
	(0.235)	(0.247)	(0.564)	(0.579)	(0.398)	(0.048)
LEVER	-0.000	-0.000	-0.000	-0.000	0.000	0.000
	(-0.144)	(-0.193)	(-0.208)	(-0.157)	(0.160)	(0.188)
OWNCONC	-0.004**	-0.004**	-0.003*	-0.003*	-0.003	-0.005**
	(-2.163)	(-2.018)	(-1.700)	(-1.793)	(-1.549)	(-2.134)
TOBINQ2013	0.831***	0.823***	0.824***	0.825***	0.820***	0.827***
	(20.958)	(21.063)	(20.922)	(20.193)	(17.056)	(17.859)
Constant	0.399	0.475*	0.386	0.406*	0.345	0.461*
	(1.633)	(1.891)	(1.552)	(1.653)	(1.290)	(1.685)
Adjusted R2	0.748	0.750	0.745	0.746	0.722	0.726
F-Statistic	144.4***	143.9***	131.9***	122.7***	93.9***	87.3***
Companies (N)	237	237	237	237	203	203

Robust t-statistics in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 6. Results on the influence of ISS Quickscore governance ratings on performance as measured by ROA

VARIABLES	Model1	Model2	Model3	Model4	Model5	Model6
QUICKSCORE	-0.083*					
	(-1.753)					
BOARDST		-0.055				-0.058
		(-1.069)				(-0.915)
COMPENS			-0.003			0.005
			(-0.061)			(0.085)
SHRIGHTS				-0.083*		-0.075
				(-1.798)		(-1.480)
AUDIT					-0.028	-0.021
					(-1.237)	(-0.883)
SIZE	-0.064	-0.060	-0.069	-0.060	-0.068	-0.051
	(-1.380)	(-1.273)	(-1.487)	(-1.298)	(-1.297)	(-0.907)
AGE	-0.095	-0.087	-0.085	-0.085	-0.077	-0.085
	(-1.420)	(-1.324)	(-1.340)	(-1.294)	(-1.023)	(-1.141)
GROWTH	0.008	0.007	0.005	0.005	0.011	0.011
	(0.649)	(0.542)	(0.420)	(0.440)	(0.809)	(0.773)
LEVER	-0.007	-0.006	-0.006	-0.007	-0.007	-0.007
	(-1.614)	(-1.549)	(-1.524)	(-1.637)	(-1.405)	(-1.460)
OWNCONC	0.000	-0.000	-0.001	-0.001	-0.003	-0.001
	(0.027)	(-0.106)	(-0.439)	(-0.270)	(-0.902)	(-0.284)
ROA2013	0.862***	0.864***	0.862***	0.860***	0.846***	0.848***
	(39.530)	(39.729)	(38.366)	(38.447)	(30.926)	(31.198)
Constant	1.201**	1.148*	1.261**	1.169**	1.246*	1.049
	(2.121)	(1.964)	(2.275)	(2.119)	(1.936)	(1.621)
Adjusted R2	0.839	0.837	0.837	0.839	0.812	0.812
F-Statistic	350.9***	340.4***	336.9***	356.6***	230.7***	170.8***
Companies (N)	237	237	237	237	203	203

Robust t-statistics in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 7. Results on the influence of ISS Quickscore governance ratings on performance as measured by ROE

VARIABLES	Model1	Model2	Model3	Model4	Model5	Model6
QUICKSCORE	0.084					
	(0.555)					
BOARDST		0.290*				0.331*
		(1.927)				(1.850)
COMPENS			-0.092			-0.145
			(-0.668)			(-0.897)
SHRIGHTS				0.014		-0.015
				(0.070)		(-0.069)
AUDIT					-0.050	-0.046
					(-0.295)	(-0.263)
SIZE	-0.144	-0.175	-0.150	-0.142	-0.058	-0.122
	(-1.008)	(-1.206)	(-1.058)	(-1.005)	(-0.395)	(-0.800)
AGE	0.101	0.104	0.079	0.092	0.005	0.000
	(0.499)	(0.517)	(0.386)	(0.453)	(0.022)	(0.001)
GROWTH	-0.008	-0.015	-0.001	-0.004	-0.027	-0.033
	(-0.234)	(-0.469)	(-0.035)	(-0.131)	(-0.766)	(-0.902)
LEVER	0.016	0.016	0.016	0.016	0.015	0.015
	(1.407)	(1.376)	(1.399)	(1.416)	(1.240)	(1.289)
OWNCONC	-0.020**	-0.024**	-0.017*	-0.018*	-0.017*	-0.023**
	(-2.116)	(-2.450)	(-1.883)	(-1.942)	(-1.705)	(-2.029)
ROE2013	0.698***	0.695***	0.694***	0.696***	0.715***	0.716***
	(11.507)	(11.651)	(11.526)	(11.511)	(11.239)	(11.589)
Constant	1.348	1.813	1.405	1.318	0.840	1.679
	(0.878)	(1.166)	(0.914)	(0.848)	(0.509)	(0.958)
Adjusted R2	0.447	0.457	0.448	0.447	0.441	0.445
F-Statistic	33.8***	37.0***	32.1***	33.4***	27.1***	22.4***
Companies (N)	237	237	237	237	203	203

Robust t-statistics in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 8. Results on the influence of ISS Quickscore governance ratings on performance for the Anglo-Saxon (AS) region

VARIABLES	*TOBINQ* Model1	*TOBINQ* Model6	*ROA* Model1	*ROA* Model6	*ROE* Model1	*ROE* Model6
QUICKSCORE	0.117***		0.021		0.707**	
	(2.991)		(0.196)		(2.003)	
BOARDST		0.104**		-0.076		0.934***
		(2.555)		(-0.715)		(3.436)
COMPENS		0.027		0.196		-0.151
		(0.585)		(1.306)		(-0.459)
SHRIGHTS		0.039		-0.010		0.284
		(0.885)		(-0.083)		(0.709)
AUDIT		0.039**		0.023		-0.604***
		(2.540)		(0.508)		(-4.022)
SIZE	-0.032	-0.037	-0.033	-0.036	-0.473	-0.441
	(-0.728)	(-0.800)	(-0.320)	(-0.311)	(-1.392)	(-1.297)
AGE	-0.002	-0.012	-0.106	-0.075	0.001	0.110
	(-0.047)	(-0.268)	(-0.658)	(-0.475)	(0.002)	(0.270)
GROWTH	-0.001	0.003	0.039	0.029	-0.138*	-0.100
	(-0.101)	(0.278)	(1.169)	(0.727)	(-1.797)	(-1.210)
LEVER	0.002	0.003	-0.011	-0.011	0.012	0.011
	(0.771)	(1.096)	(-1.140)	(-1.027)	(0.504)	(0.482)
OWNCONC	-0.005	-0.005	-0.010	-0.014	-0.078**	-0.095**
	(-1.021)	(-0.899)	(-1.138)	(-1.314)	(-2.065)	(-2.216)
TOBINQ/ROA/ROE 2013	0.881***	0.880***	0.870***	0.862***	0.596***	0.593***
	(19.324)	(19.043)	(16.212)	(15.600)	(4.586)	(4.931)
Constant	0.446	0.511	1.194	1.226	7.197*	6.884*
	(0.782)	(0.840)	(0.764)	(0.722)	(1.763)	(1.731)
Adjusted R^2	0.792	0.790	0.737	0.735	0.303	0.368
F-Statistic	90.9***	84.8***	82.1***	62.5***	6.9***	8.1***
Companies (N)	68	68	68	68	68	68

Robust t-statistics in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 9. Results on the influence of ISS Quickscore governance ratings on performance for the continental Europe (CE) region

VARIABLES	*TOBINQ* Model1	*TOBINQ* Model6	*ROA* Model1	*ROA* Model6	*ROE* Model1	*ROE* Model6
QUICKSCORE	-0.003		-0.109**		-0.166	
	(-0.094)		(-1.985)		(-1.108)	
BOARDST		0.019		-0.012		-0.119
		(0.468)		(-0.138)		(-0.563)
COMPENS		-0.000		-0.091		-0.031
		(-0.009)		(-1.337)		(-0.181)
SHRIGHTS		-0.013		-0.081		-0.260
		(-0.327)		(-1.286)		(-1.373)
AUDIT		0.000		-0.020		0.223
		(0.004)		(-0.582)		(1.269)
SIZE	-0.013	-0.010	-0.075	-0.087	-0.104	0.183
	(-0.453)	(-0.229)	(-1.514)	(-1.136)	(-0.610)	(1.021)
AGE	-0.028	-0.014	-0.073	-0.077	0.180	0.043
	(-0.732)	(-0.279)	(-1.283)	(-1.090)	(0.767)	(0.151)
GROWTH	0.004	0.002	-0.006	-0.002	0.034	-0.008
	(0.543)	(0.231)	(-0.464)	(-0.137)	(0.886)	(-0.175)
LEVER	-0.003	-0.002	-0.004	-0.002	0.009	0.002
	(-1.135)	(-0.684)	(-0.932)	(-0.484)	(0.628)	(0.140)
OWNCONC	-0.002	-0.003	0.001	-0.001	-0.006	-0.002
	(-1.259)	(-1.134)	(0.226)	(-0.165)	(-0.641)	(-0.127)
TOBINQ/ROA/ROE 2013	0.783***	0.768***	0.879***	0.858***	0.712***	0.782***
	(13.662)	(10.135)	(47.095)	(33.670)	(10.056)	(10.082)
Constant	0.380	0.298	1.182**	1.298	0.144	-2.157
	(1.292)	(0.751)	(2.136)	(1.620)	(0.088)	(-1.216)
Adjusted R^2	0.705	0.640	0.876	0.836	0.520	0.532
F-Statistic	61.2***	27.7***	548.7***	278.6***	41.1***	26.1***
Companies (N)	169	135	169	135	169	135

Robust t-statistics in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 10. Results on the influence of ISS Quickscore governance ratings on performance for the poor-quality governance group

VARIABLES	***TOBINQ*** **Model1**	***TOBINQ*** **Model6**	***ROA*** **Model1**	***ROA*** **Model6**	***ROE*** **Model1**	***ROE*** **Model6**
QUICKSCORE	0.074		-0.311		0.172	
	(0.359)		(-1.184)		(0.205)	
BOARDST		0.056		-0.019		0.581
		(0.731)		(-0.131)		(1.397)
COMPENS		-0.008		-0.105		-0.367
		(-0.161)		(-0.762)		(-1.064)
SHRIGHTS		-0.023		0.027		-0.515**
		(-0.481)		(0.406)		(-2.149)
AUDIT		-0.003		-0.054		0.252
		(-0.070)		(-0.807)		(0.844)
SIZE	-0.065	-0.101	-0.156	-0.230	-0.467	-0.533
	(-1.053)	(-1.177)	(-1.309)	(-1.332)	(-1.319)	(-1.293)
AGE	0.062	0.033	0.047	0.103	0.580	0.284
	(0.849)	(0.244)	(0.354)	(0.467)	(1.003)	(0.475)
GROWTH	0.013	0.012	0.007	0.015	0.096*	-0.005
	(1.201)	(1.061)	(0.346)	(0.606)	(1.694)	(-0.065)
LEVER	0.005	0.006	-0.007	-0.002	0.017	0.055
	(0.910)	(1.136)	(-0.712)	(-0.183)	(0.527)	(1.626)
OWNCONC	-0.005	-0.003	-0.001	-0.003	-0.011	0.012
	(-1.035)	(-0.600)	(-0.103)	(-0.170)	(-0.455)	(0.552)
TOBINQ/ROA/ROE 2013	0.773***	0.655***	0.860***	0.830***	0.493***	0.409**
	(6.997)	(4.352)	(17.422)	(15.107)	(3.419)	(2.265)
Constant	0.373	0.779	1.898	1.939	1.434	1.793
	(0.493)	(0.957)	(1.161)	(1.141)	(0.411)	(0.431)
Adjusted R^2	0.697	0.524	0.844	0.772	0.322	0.176
F-Statistic	43.1***	13.3***	171.3***	62.3***	6.9***	4.4***
Companies (N)	50	41	50	41	50	41

Robust t-statistics in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 11. Results on the influence of ISS Quickscore governance ratings on performance for the good-quality governance group

	TOBINQ **Model1**	***TOBINQ*** **Model6**	***ROA*** **Model1**	***ROA*** **Model6**	***ROE*** **Model1**	***ROE*** **Model6**
QUICKSCORE	0.053		0.104		-1.315	
	(0.397)		(0.333)		(-1.610)	
BOARDST		-0.117		-0.082		-0.127
		(-1.363)		(-0.610)		(-0.287)
COMPENS		0.117		0.350		-0.150
		(1.064)		(1.359)		(-0.411)
SHRIGHTS		0.066		-0.109		-0.230
		(0.827)		(-0.614)		(-0.459)
AUDIT		0.734		-2.117		-9.277*
		(0.674)		(-0.818)		(-1.831)
SIZE	0.013	0.051	-0.043	-0.009	-0.204	-0.062
	(0.345)	(0.965)	(-0.622)	(-0.122)	(-0.835)	(-0.276)
AGE	-0.019	-0.041	-0.190	-0.152	0.475	0.574
	(-0.510)	(-0.780)	(-1.169)	(-0.973)	(1.453)	(1.626)
GROWTH	-0.009	-0.019	-0.014	-0.030	-0.084*	-0.128**
	(-0.823)	(-1.272)	(-0.563)	(-1.049)	(-1.702)	(-2.267)
LEVER	-0.003	-0.002	-0.008	-0.007	0.022	0.005
	(-0.667)	(-0.542)	(-1.134)	(-0.727)	(0.949)	(0.262)
OWNCONC	0.001	0.006	0.003	0.005	-0.012	-0.006
	(0.478)	(1.056)	(0.417)	(0.486)	(-0.607)	(-0.247)
TOBINQ/ROA/ROE 2013	0.889***	0.934***	0.834***	0.839***	0.794***	0.912***
	(18.307)	(18.933)	(17.223)	(14.089)	(8.141)	(13.296)
Constant	-0.007	-0.282	1.632	0.672	-1.692	-4.119
	(-0.020)	(-0.565)	(1.213)	(0.536)	(-0.577)	(-1.434)
Adjusted R^2	0.745	0.755	0.776	0.765	0.545	0.605
F-Statistic	72.3***	48.9***	93.4***	62.5***	34.2***	27.3***
Companies (N)	79	68	79	68	79	68

Robust t-statistics in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Chapter 3. Evaluating the impact of compliance with governance recommendations on firm performance: the case of Spain

3.1. Abstract

In this paper, we empirically examine whether higher levels of compliance with the recommendations included in the Spanish Unified Good Governance Code (UGGC) have an impact on firm performance using a unique hand-collected panel data set of 145 listed companies for the research period between 2007 and 2012. We find that, in spite of the increasing compliance trend, there is no conclusive evidence that adherence to the UGGC guidelines is a performance relevant factor. This result seems to be robust, as it holds in the main analysis as well as in all the additional analyses conducted. Therefore, our findings would further support the lack of consensus in this line of research regarding the true impact of compliance with the globally disseminated codes of best corporate governance practices on firm performance.

Keywords: corporate governance; compliance with governance codes; firm performance.

3.2. Introduction

Following the publication of the influential 1992 Cadbury Committee's Code of Best Governance Practices in the UK, many countries have followed suit. The shocking corporate governance failures at the beginning of this century reinforced the need for effective mechanisms that will protect investors over the potential autocratic power exerted by managers of public companies. These government actions have taken place either through a "hard approach" by the enactment of regulations, as in the case of the US with the 2002 Sarbanes-Oxley Act, or a "soft approach" related to a voluntary implementation of a series of corporate governance guidelines. This latter approach has been favored by most countries in adjusting to modern governance standards, as it provides firms with a higher degree of flexibility (Seidl *et al.*, 2013).

According to information from the European Corporate Governance Institute (ECGI),[7] currently more than 110 countries and international organizations have issued one or several codes of governance. These codes have symbolized a legitimization process while attempting to synthesize best business practices (Aguilera and Cuervo-Cazurra, 2009). Through adherence to this soft legislation, governments have sought to level the ground for governance practices as a way to overcome the weaknesses of the legal and institutional environment, as argued by López and Pereira (2006) in their study of governance codes across 29 countries. This global governance reform movement is pursuing to restore confidence and make companies more attractive for investors, particularly in those nations where investors have weaker legal protection (Klapper and Love, 2004).

The first Spanish code of corporate governance (known as the Olivencia Code) was issued in 1998, inspired by the Cadbury code's pioneering "comply or explain" approach. It was followed by the Aldama Code in 2002 (Aldama, 2002) and the 2006 Unified Good Governance Code (UGGC), also known as the Conthe Code (CNMV, 2013). The UGGC has 58 main recommendations and initial company reports started in 2007. The recommendations are grouped into five areas. The area 1 recommendations belong to Statutes and General Meeting (guidelines 1-6). The area 2 is associated to the Board of Directors (guidelines 7-26). The area 3 refers to recommendations on the Directors (guidelines 27-34). The area 4 (guidelines 35-41) relates to Remuneration practices, and lastly the area 5 gathers information related to the Committees (guidelines 42-58).

[7] See ECGI, http://www.ecgi.org/codes/all_codes.php (last visited September 30, 2017).

These codes are a set of critical governance guidelines or recommendations that should be followed by all Spanish listed companies regardless of their size and market capitalization (Fernández-Fernández, 1999). While compliance is not mandatory, in contrast to the US "rules-based" approach, listed Spanish companies must disclose in their annual governance reports the degree of adherence to these recommendations, or explain the reasons for noncompliance. Overall, repeated changes and updates in the UGGC (June 2013 and February 2015), have contributed to align Spanish companies' governance practices with OECD and European standards (García-Castro *et al*., 2012; Gutierrez and Surroca, 2014).

This article studies the effects on firm performance from compliance to such a set of non-binding governance standards. We build upon the investigation carried out by Rose (2016) for Danish firms and evaluate whether the results are maintained in the Spanish context. We hypothesize that an effective implementation of the UGGC enhances firm performance. To test this hypothesis, we use return on assets (ROA) and return on equity (ROE) as proxies of performance, following Rose's (2016) study for Denmark. Additionally, we use Tobin´s Q as an alternative measure of performance, which is customary for empirical corporate governance research.[8] Moreover, as Rose (2016), we do not only focus on the overall compliance with the governance code, but also study the relationship between compliance with recommendations in each governance area and performance.

The motivation of this study is justified by the practical importance of the subject: to improve corporate governance structures and practices. The growing use of different governance measures as proxies for quality of governance and the extended belief that such advantage will prove effective in enhancing firm performance has emerged as a meaningful line of research. So far, the study of this relationship has generated considerable interest through two predominant lines of research relying either on the use of academic governance indexes (Gompers *et al.*, 2003; Bebchuk *et al.*, 2009) or on commercial governance indexes (Brown and Caylor, 2006; Aggarwal *et al.*, 2007; Renders *et al.*, 2010; Núñez and Garcia-Blandon, 2017). Overall, these studies have yielded non-conclusive results about a systematic relation between the indexes and performance. Conversely, there is rather limited empirical literature on this topic's third line of research that examines the impact on firm performance from compliance with a complete set of official governance guidelines (Padgett and Shabbir, 2005). As pointed out by Aguilera and Cuervo-Cazurra (2009, pg. 377), "the

[8] Within this paper, we refer to TOBINQ, ROA and ROE as firm-level performance indicators.

current state of knowledge appears to be at an impasse as there is some conflicting evidence on the effectiveness of codes of good governance". This paper is intended to help fill this gap by shedding light on the very usefulness of codes of good governance to enable companies to improve their governance and performance.

This investigation intends to contribute to this area of research by analyzing the impact on performance from compliance with the Spanish governance code, following Rose's (2016) approach. As pointed out by Rose (2016), further country studies are needed to validate conclusions about this important issue. Hence, our study constitutes a natural extension of his research. There are strong reasons that suggest that results of country studies should not be generalized as they will likely depend on the country-specific legal regime (Jensen and Meckling, 1976; La Porta *et al*., 1998). Furthermore, the level of trustworthiness embedded in the self-evaluations provided by the companies regarding the level of compliance with recommendations might also be country dependent. Hence, country-specific issues such as culture and business ethics, as well as the level of disclosure and outsiders' difficulty to verify the information, could constitute a distinguishing factor and help to explain differences across countries. In this regard, Demirgüç-Kunt and Maksimovic (1998) rank Spain at the bottom of European countries in terms of its legal efficiency index. Overall, we believe that the Spanish market provides an interesting setting in which to conduct such a study.

It should also be noticed that, unlike Rose (2016) who conducts a cross-sectional estimation of the model for year 2013, we employ a unique hand-collected panel data set of 145 Spanish listed companies for the period between 2007 and 2012. The use of dynamic panel data model reduces the sources of endogeneity that can lead to purely spurious results (Schultz *et al*., 2010), as our sample includes the same firms in different situations of compliance and performance across the years. Supporting this view, in all models the coefficients of the lagged dependent variable are positive and significant, indicating that dynamics play a relevant role in this relationship.

The results of this study might have some practical implications, as they provide some indications of the ability of compliance with a governance code to predict performance for Spanish firms. From a more general point of view, it also contributes to the debate about the very usefulness of these governance codes.

In anticipation of our results, we do not observe a significant relationship between compliance with the UGGC and firm performance. This result seems robust as it holds in

the main analysis as well as in all the additional checks. Even for those companies with the highest level of compliance with the UGGC, we observe the same pattern of mixed results. Therefore, our findings cast some doubts about the real effectiveness of compliance with the codes of good governance as a suitable tool to boost performance. The comparison of our findings for Spain with Rose's (2016) for Denmark highlights the importance of the national context in corporate governance issues and, therefore, the difficulties of generalizing results. We structure the work as follows. First, we analyze previous literature on the relationship between compliance with governance codes and performance. Then, the paper continues with the description of hypotheses and develops the methodological proposal. Finally, we comment on the results of the empirical analysis and conclude with the main remarks and implications derived from these results.

3.3. Background and hypothesis development

Based on agency theory (Jensen and Meckling, 1976), the relation between quality of governance and firm performance is quite straightforward. Well-governed firms exhibit higher investors' confidence reflecting enhanced management's monitoring and disciplining. As a result, these firms should exhibit lower risk and enjoy a reduced cost of capital, which should translate into higher valuation and performance.

We find a limited number of studies evaluating whether compliance with governance codes has an effect on firm performance. In addition, it should be noted that these prior studies at the international level offer heterogeneous results. In one of the first studies on this subject, Weir and Laing (2000) investigated the relationship between compliance with UK Cadbury governance recommendations and performance for a sample of local listed companies in 1992 and 1995, finding no conclusive evidence of a significant relationship at the aggregate level. Conversely, in a later study for a sample of FTSE 350 companies between 2000 and 2003, Padgett and Shabbir (2005) showed a clear positive relationship between the level of compliance with the UK "Combined Code" and performance.

For continental European firms, the available empirical evidence is also mixed. In a multiple jurisdiction investigation using a large sample of European companies in 2000 and 2001, Bauer et al. (2004) reported the surprising result that firm performance (ROE and Net Profit Margin) is negatively related with accomplishment of governance standards. Moreover, in a study of German companies listed at the Frankfurt Stock Market, Stiglbauer and Velte (2014) found that compliance with the local governance code is not a value driver.

Conversely, Goncharov *et al.,* (2006), on another country study for Germany, found a positive significant relationship between their measure of compliance with a local governance code and stock market performance for large companies listed in DAX30 and MDAX.

In another single jurisdiction study, Alves and Mendez (2004), using a sample of Portuguese listed firms, reported a positive stock market performance effect connected to compliance with some of the corporate governance recommendations issued by the Portuguese Securities Market Commission (mainly with recommendations about structure and functioning of the board of directors). However, De Jong *et al*. (2005) found no relation between implementation of the governance guidelines embedded in the Peter Committee's self-regulations initiative and firm value for a sample of Dutch firms.

Lastly, regarding country studies in Europe, Rose (2016), in one of the few investigations on this subject identified in scientific journals for the last years (Michelberger, 2016), documented a positive statistically significant relationship between the level of compliance with local governance code and firm performance (ROA/ROE) for a sample of large Danish firms in 2010. However, this result was not too robust as significance for the model with ROE was only reported at marginal levels (*p-value* < 0.1). Moreover, the partial analyses conducted by Rose for each area of compliance showed mixed results: while a positive relationship between compliance and performance is reported for recommendations on board composition and remuneration policies, there is no impact on performance from increasing compliance with risk management and internal controls' guidelines.

In the developing world, Benavides-Franco and Mongrut-Montalván (2010) investigated this relationship in Colombia for a period of five years after the local governance code was first introduced in 2001. Results confirmed a positive relationship between compliance with governance guidelines and performance. Tariq and Abbas (2013) evaluated the efficacy of Pakistan's governance code using eight years of panel data and found a positive link between compliance with the code and performance.

As far as empirical research conducted within Spain, which is the focus of this paper, Del Brio *et al*. (2006), using a limited sample of local firms in 1999-2001, reported a positive relationship between some corporate governance related variables (i.e., the quality of audit reports and the magnitude of director remuneration) and the value of the firm. There are also some interesting investigations exploring the impact of reported governance compliance and market reaction. Fernández-Rodríguez *et al*. (2004), using event study methodology for a

limited sample of firms in 1998-2000, reported that compliance with the Olivencia Code in case of major restructuring of the board of directors caused a positive market reaction. No effect was reported in relation to announcements related to isolated recommendations. In a related study looking at the reaction of investors to the publication of corporate governance reports, Martinez-Blasco *et al.* (2017) reported a lack of significant market reaction to the release of corporate governance reports.

As discussed in the review of the literature, compliance with corporate governance codes is becoming an important tool for measuring the quality of governance. Since compliance with such codes involves significant implementation costs, companies and investors expect that such efforts will translate into better economic results (Aguilera *et al*., 2008). We address the significance of compliance with the Spanish UGGC by answering the question of whether differences in these compliance ratios can help to explain variations in performance that have not been captured by other relevant characteristics of the firm. Although the available evidence is rather mixed, we expect a positive relationship between compliance with the UGGC and performance. Therefore, the first hypothesis states:

Hypothesis 1. Compliance with the UGGC (*CompUGGC)*, is positively and significantly associated with performance.

Given that our UGGC is an aggregate set of rules based on five main corporate governance areas, the fact that Hypothesis 1 holds for the overall UGGC does not necessarily mean that it will hold true for each of these five areas and vice versa. We agree with the criteria for grouping all the code governance recommendations into these five main groups, as they represent the most critical areas in relation to successful corporate governance. Next, we develop specific hypotheses for each area within the UGGC.

The role of bylaws and the powers of shareholders' meeting for the future of the company is central to corporate governance. We rely on the compliance with this set of recommendations gathered in area 1 of the UGGC (*CompUGGC1*) as a broad representation of the quality of bylaws and shareholders' meeting, and as such, we study its impact on performance. Accordingly, we hypothesize:

Hypothesis 1.1. Compliance with area 1 of UGGC, referred to as bylaws and shareholders meeting' recommendations (*CompUGGC1*), is positively and significantly associated with performance.

In light of the prominent role and important transformations experienced by the board of directors within past decades, numerous studies have focused on the relation between several attributes of the board (competences, size, composition, practices) and firm performance (Yermack, 1996; Bhagat and Bolton, 2008). As areas 2 and 3 of the UGGC include the most relevant recommendations for board structure and directors covered in prior research, we believe that they should reveal the expected relationship between these governance areas and performance. Accordingly, we hypothesize:

Hypothesis 1.2. Compliance with area 2 of UGGC, referred to as board structure recommendations (*CompUGGC2*), is positively and significantly associated with performance.

Hypothesis 1.3. Compliance with area 3 of UGGC, referred to as director recommendations (*CompUGGC3*), is positively and significantly associated with performance.

An important insight shared by most researchers is that board decisions appear to be largely influenced by remuneration. Jensen and Murphy (1990) and Mehran (1995), among others, have provided evidence supporting a strong impact of remuneration practices on performance. Compliance with this area should constitute a valid proxy to examine the relationship between this important area of governance and performance. Accordingly, we hypothesize:

Hypothesis 1.4. Compliance with area 4 of UGGC, referred to as remuneration practices (*CompUGGC4*), is positively and significantly associated with performance.

Regarding the last category, prior studies have documented an increasing importance of board of directors' committees on performance, even though no conclusive evidence has been found. We highlight the works of Brown and Caylor (2009) and Bowen *et al.* (2008)

on this subject. As this area of the UGGC code covers the most important attributes of board committees stressed in the literature, we use it as a proxy to analyze the relationship between this governance area and performance. Accordingly, we hypothesize:

Hypothesis 1.5. Compliance with area 5 of UGGC, referred to as committee practices (*CompUGGC5*), is positively and significantly associated with performance.

3.3. Research design

In our analysis, we have followed Rose's (2016) approach, investigating the relevance of compliance with corporate governance recommendations in explaining firm performance. To provide a basis for comparison, we first estimate cross-sectional regressions for each of the six years in our dataset given by Equation (1).

$$ROA/ROE_i = \alpha + \beta(CompUGGC)_i + \gamma Z_i + \varepsilon_i \quad (1)$$

Our main independent variable is the firm-level degree of compliance with UGGC (*CompUGGC*). We also test the five partial compliance areas (*CompUGGC1, CompUGGC2, CompUGGC3, CompUGGC4, CompUGGC5*) as independent variables. To test the robustness of this relationship we add the control variables (Zi) used by Rose (2016), while ε_i is the error term associated with exogenous noise and unobservable features.

We then perform dynamic panel data estimations for the whole research period to minimize possible endogeneity, a common limitation in static models as the one used by Rose (2016). As happens in practice, implementation of good governance recommendations may have some delayed effect on the performance of the company. In addition, the dynamic dimension of a panel data distinguishes how observance to governance guidelines affects performance across time. However, including the lagged dependent variable as an explanatory variable will make fixed effect estimators biased and inconsistent (Nickell, 1981), particularly in the context of a short period. We overcome this limitation by using the Dynamic Panel Data (DPD) estimator developed by Arellano and Bond (1991) and implemented in Stata by Roodman (2009). All our models are estimated with the two-step system Generalised Method of Moments (GMM) estimator, which combines equations in differences of the variables with equations in levels of the variables (see Baum *et al*., 2007).

Finally, to further increase the robustness of our analysis, we add a third proxy for performance (*TOBINQ*). We also use a new set of control variables (Z_i) commonly identified in prior research (Yermack, 1996; Klapper and Love, 2004), including the lagged dependent variable as an explanatory variable. Our baseline model takes the following form:

$$TOBINQ_i/ROA_i/ROE_i = \alpha + \beta(CompUGGC)_i + \gamma Z_i + T_j + \varepsilon_i \qquad (2)$$

3.3.1. Compliance variables

We have assembled a complete hand-collected dataset that contains answers to the governance recommendations from annual corporate governance reports for the 145 Spanish listed firms analyzed. In general, we score the companies' compliance with the UGGC's guidelines as either 1) a full compliance with a recommendation (1.0 points) or 2) non-compliance or partial compliance with a recommendation (0 points). In order to quantify the level of compliance for a company we first sum up all the followed recommendations, then divide it by the total amount of recommendations that pertain to the company. Hence, we subtract those guidelines that are not applicable to a company from the total 58 recommendations. The maximum score a company can receive is therefore 1.0, equivalent to 100 percent of compliance with all considered recommendations. We also calculate partial compliance for each of five areas defined before using the same algorithm.

3.3.2. Proxies for performance

As Rose (2016), we use ROA and ROE as proxies for performance. In addition, we use Tobin´s Q as an alternative proxy, following the mainstream practice in corporate governance research, in our DPD estimations.

ROA

Return on Assets is a measure of operating performance, reflecting the level of profitability that the company obtains from its assets. Similar to prior research (see Larcker *et al*., 2007; Bhagat and Bolton, 2008), we calculate *ROA* as operating income divided by total assets at book value at the end of fiscal year. We use EBIT as our proxy for the companies' operating income.

ROE

Return on Equity is another measure of operating performance, which reflects the level of profitability that the company obtains from funds invested by common shareholders. For the current study, we use the definition of *ROE* followed by most researchers in this area (see

Brown and Caylor, 2009). We calculate *ROE* as the ratio of the company´s net income divided by the book value of common equity.

TOBINQ

A pure Tobin's Q measures the quotient of the market value of assets divided by the replacement value of the same assets. We follow a simplification of this measure commonly used in the finance literature (e.g. Kaplan and Zingales, 1997; La Porta *et al*., 2002), to ensure data availability for most of our sample. Hence, we measure Tobin´s Q as the sum of the book value of total assets plus the market value of common equity minus the sum of book value of common equity and deferred taxes, over book value of total assets. The market value of equity is the product of the company´s share price and the total common shares outstanding (or market capitalization) and the replacement value of assets is represented by the book value of the total assets. All book values for fiscal year *t* are matched with the market values of common equity at the end of year *t*.

3.3.3. Control variables

As in Rose (2016), control variables included in Equation *(1)* are firm size (*SIZE*), measured by the natural logarithm of the firm's market capitalization, a dummy variable (*OneShare*) to highlight proportionality between ownership and control ("one share – one vote") and industry dummies.

Control variables for our DPD models

Both corporate governance and performance are likely to be correlated with other critical firm metrics. Thus, to add robustness to our reported results and to mitigate the problem of possible endogeneity we add an appropriate set of control variables consistent with prior studies (Aggarwal *et al*., 2007; Klapper and Love, 2004; Yermack, 1996). We use the following set of control variables for the estimation of our dynamic models in Equation *(2)*. Firm size (*SIZE*) is measured by the natural logarithm of total assets, as suggested by Brown and Caylor (2006). According to Jensen and Meckling (1976), large firms are more prone to deal with greater agency problems on the back of larger free cash flows. In addition, they tend to be in matured industries with low returns and potential, so we expect a negative relationship with performance. Furthermore, there is considerable literature emphasizing the positive effects of growth opportunities, as companies with solid growth prospects (*GROWTH*) usually hire better management teams and show higher performance (Core *et al.*, 1999). We follow Klapper and Love (2004) and use the average annual sales growth

over the past three years. The interaction between size and growth (*SIZE x GROWTH*) is also included. We define firm age (*AGE*) as the number of years passed since the year of incorporation (natural logarithmic values). Consistent with Fama and French (2004), performance is likely to deteriorate at the margin in older firms, presumably due to a worsening of corporate governance features, among other factors. We also include the financial leverage (*LEVER*), defined as the firm's book value of long-term debt divided by the sum of market value of equity and book value of long term debt. We expect a positive relationship with performance. According to Jensen and Meckling (1976), debt service commitment should impose higher accountability for management teams, and also create value, deterring managers from making poor investment decisions. Finally, we include the dependent variable one-year and two-year lagged as control variables to reduce potential endogeneity between our governance variables and performance measures. According to Daines et al. (2010), current performance significantly affects a firm´s future level of profitability. Similar to prior work, we winsorize extreme (1st and 99th) percentiles of the pooled distribution of all control variables to neutralize the impact of possible spurious outliers.[9]

3.3.4. Dataset

Our sample consists of 149 listed companies on the *Mercado Continuo* at the Madrid Stock Exchange during the period between 2007 and 2012, for which data was available. We have selected 2007 as our starting year since it marks the beginning of compliance with the Spanish UGGC's public disclosures. We decided to end our research period in 2012 taking into consideration the changes made to the Spanish UGGC beginning in 2013. Table 1 presents a summary of variable names, codes, brief descriptions, and sources of data.

Insert Table 1 around here

Four companies were dropped due to the lack of financial data. Thus, our initial sample was reduced to 145 companies, and given the six-year research period, a potential 870 observations. However, for some years, information for at least one of our variables could not be obtained. Consequently, 766 firm-year observations are used.[10]

We analyze companies by industry, using the Industry Classification Benchmark prepared by FTSE that comprises 10 major industries. These firms operate in a variety of industries:

[9] We test the DPD models for interaction with industries for our aggregate measure as well as each area of compliance and found that compliance effects do not vary over industry.

[10] In Tables 6 and 7, for our contrast Rose (2016) models, our dataset is reduced to 755 firm-year observations.

Basic Materials (8), Consumer Goods (18), Consumer Services (18), Financials (37), Health Care (10), Industrials (31), Oil and Gas (9), Technology (4), Telecommunications (4), and Utilities (6), as shown in Table 2.

Insert Table 2 around here

Table 3 summarizes the descriptive statistics for the overall dataset. In general, the overall compliance with the UGGC during the period is remarkably high (a mean of 8.0 points out of 10) for the 145 large Spanish listed companies analyzed and even the 10th percentile reaches a value of 0.6. Companies do best in area 1 guidelines, referred to the statutes, with a mean of 0.88 for the overall dataset, while we report the weakest compliance (a mean of 0.71) for area 4 recommendations, referred to the remuneration practices. The average firm size is $7.16 billion, and the average leverage ratio is 34.7%. Furthermore, the average ROA is 3.57%, the ROE is 6.22% and the average Tobin's Q is 1.19. We also document an improving trend in the level of compliance during the period in Table 4, moving from a mean of 0.77 in 2007 to 0.84 in 2012, and with all 5 areas of compliance showing progresses. We have obtained the financial data from Standard and Poor's Capital IQ database.

Insert Tables 3 and 4 around here

Table 5 depicts the Pearson correlation matrix between the main variables used in our models for the entire sample of 766 initial observations. As expected, the *CompUGGC* index variable is correlated with the five major compliance areas. We also analyze the correlation between the five areas to rule out any potential substitution effects between governance main features. No significant negative correlation is found, suggesting that the areas are not substitutes or redundant. More importantly, the overall *CompUGGC* and most compliance areas are uncorrelated with the performance variables, except for area 3 recommendations, which reflects a negative significant correlation with *ROA*. This means that higher compliance with recommendations on directors should translate into lower firm performance. Also, the compliance with area 2 guidelines reflect a positive significant correlation with *TOBINQ*, indicating that higher compliance with recommendations on board structure would be consistent with higher firm performance measured by *TOBINQ*. The data also hint that, not surprisingly, performance metrics are highly intercorrelated.

Regarding the control variables, the aggregate *CompUGGC*, as well as most partial compliance ratios, show a significant relationship with size, age, and leverage. Overall, these results are meant to be descriptive and should be used as a guidance for the models' specification, which are covered in the next section. Overall, the correlations between the

independent variables are relatively low, which suggests the absence of serious multicollinearity in the data.

Insert Table 5 around here

3.4. Empirical results

Following the proposed methodology, in this section we address the effects of the compliance with the UGGC on the selected performance metrics.

3.4.1. Contrast with the model of Rose (2016)

Our model can be considered an extension of that developed by Rose (2016) to estimate the impact on performance caused by the level of governance compliance controlling for firm size and vote control. In his model, performance is proxied by ROA and ROE. Hence, our first model (Model 1) studies the primary relationship between compliance with the UGGC and ROA/ROE in a cross-sectional regression for each of the six years in our dataset given by Equation (1). Tables 6 and 7 display the results of our estimations with *ROA/ROE* as proxies for performance.

Contrary to Rose (2016), we do not find a positive significant relation between compliance with the Spanish UGGC code and *ROA/ROE*. On the contrary, our regression results mostly reflect a negative relationship that turns significant during some years of our time series.[11] This contradicts our Hypothesis 1, as it indicates that firms with a higher compliance with governance recommendations (*CompUGGC*) are associated with weaker performance.

As for control variables, we find a significantly positive relationship between *SIZE* and performance in all models, similar to Rose (2016). This indicates that larger firms exhibit higher performance as measured by *ROA/ROE*, contradicting our expectation. Finally, contrary to Rose (2016), we do not report any significant relationship with the one share – one vote (*OneShare*) control variable in any year. As for the partial ratings, we report similar results in almost all years.[12]

Insert Table 6 and Table 7 around here

[11] As a general rule, for the usual significant levels (0.01 or 0.05) we do not provide the specific mark.

[12] For the sake of simplicity, results for this set of robustness checks are not reported in tables. However, they are available upon request from the authors.

3.4.2. Results of our baseline GMM model

We continue our investigation by implementing a dynamic model where we explore the influence of the compliance with the UGGC recommendations on firm performance metrics, controlling for firm's prior performance. As in the former model, our premise is that compliance with the local governance recommendations should have a positive and significant impact on future performance.

Estimations are conducted using dynamic panel data (DPD) models given by Equation *(2)*, to take advantage of the time dimension of each observation. The reliability of our econometric methodology depends crucially on the validity of the instruments, which can be evaluated with the Hansen J test of overidentifying restrictions. We also present AR(2) statistics for second-order serial correlation in the error process. In each of our GMM models, the Hansen J statistic and the Arellano-Bond AR(2) tests show that our instruments are appropriate and no second order serial correlation is detected, respectively.

In Tables 8 through 10, we summarize the results of the estimation of our proposed six models. Our first model (Model 1) studies the primary relationship between compliance with the UGGC and our tested firm performance metrics. To evaluate the separate impact of each of the five UGGC guideline areas, we replace the aggregate compliance metric with each of the five UGGC areas (*CompUGGC1* through *CompUGGC5*) compliance metrics (Models 2-6).

Table 8 displays the results of the estimation of Equation *(2)* using *TOBINQ* as the performance measure. Contrary to Hypothesis 1, the main result is the lack of a significant relationship between the level of aggregate compliance with the UGGC *(CompUGGC*) and *TOBINQ*, as reflected in Model 1. This relationship remains non-significant when we analyze each of the five UGGC areas in Models 2-6.

In terms of the influence of the control variables, we observe the expected significant direct relationship with the first lagged performance ($TOBINQ_{(t-1)}$) in all six models. This positive relationship remains significant (*p-value* < 0.10) for second lagged variable ($TOBINQ_{(t-2)}$). We also find a significantly inverse relationship between *SIZE* and performance in all models. This indicates that larger firms exhibit weaker performance measured by *TOBINQ*, consistent with our prediction. There is also a significant negative relationship with *GROWTH*, signaling that firms with stronger growth opportunities exhibit weaker performance measured by *TOBINQ*, which contradicts our prediction. Our results also show that the interaction between *SIZE* and *GROWTH* (*SIZE x GROWTH*) is significant,

highlighting how the effect of growth is moderated by size, leading to bias in models that only consider these factors separately. We also find a direct relationship between *LEVER* and performance in all models. This indicates that firms with high level of financial leverage exhibit greater performance as measured by *TOBINQ*, confirming our expectation.

Insert Table 8 around here

Table 9 depicts the results of the estimation of Equation (2) with *ROA* as the dependent variable. The main result is the existence of a negative significant relationship between *CompUGGC* and *ROA*, as reflected in Model 1. This contradicts our Hypothesis 1, as it shows that firms with a higher level of compliance with UGGC exhibit weaker future performance. As for the partial compliance ratios, we report significant negative results in Models 3 (*p-value < 0.10*), 4, and 6. This contradicts our Hypotheses 1.2, 1.3 and 1.5, indicating that firms with high level of compliance with the UGGC recommendations on the board, the directors, and committees (area 2, area 3, and area 5) exhibit weaker performance as measured by *ROA*. These results are very similar to the ones reported for the static model using Rose's (2016) approach.

As for control variables, we only find a significant influence of lagged performance $ROA_{(t-1)}$ and $ROA_{(t-2)}$ with the predicted positive sign in all models.

Insert Table 9 around here

Table 10 displays the results of the estimation of Equation *(2)* with *ROE* as the dependent variable. Model 1 shows a non-significant positive relationship between the level of aggregate compliance (*CompUGGC*) and *ROE*. Similar results are observed for partial compliance ratios except for Model 2 referred to area 1 (*CompUGGC1*). This supports our Hypothesis 1.1, as it indicates that firms with a higher level of compliance with bylaws and shareholders meeting' recommendations should exhibit stronger future performance.

As for control variables, we confirm the significant direct influence of lagged performance $ROA_{(t-1)}$ and $ROA_{(t-2)}$ in all six models. We also find a direct relationship when we examine the interaction effects of size and growth (*SIZE x GROWTH*) on performance. This indicates that whatever the impact from growth it should be moderated by size.

Insert Table 10 around here

We run several additional tests (results untabulated) to check the robustness of our findings. Firstly, we conduct additional analyses for a subsample of firms excluding financials and utilities due to their distinctive corporate governance structures and accounting practices. In

general, the subsample results excluding this set of companies are qualitatively similar to those presented for the entire set of firms.

Secondly, we define a new variable for compliance with UGGC taking into account those recommendations with reported partial compliance (*CompUGGC_P*). Then, we score compliance with the UGGC's guidelines into the following three categories: 1) a full compliance with a recommendation (1.0 points), 2) a partial compliance with a recommendation (0.5 points) or 3) a breach of a recommendation (0 points). We then sum up all the recommendations that are fully or partially followed and then divide it by the total amount of recommendations that pertain to the company. As in the case of our main analysis, we run six models for our overall level of compliance and then for each of the five main areas the UGGC recommendations. In general, the estimation of the models with these new metrics for *CompUGGC_P* for the overall and five areas of partial compliance show similar results as the original model for the three performance measures analyzed.

Finally, we conduct a robustness check to rule out the notion that conditions necessary for a significant governance-performance relationship are subject to achieve a level of governance quality beyond a certain threshold. Consistent with the portfolio approach proposed by Gompers *et al.* (2003), we split the original sample into two groups: "good" quality of governance, consistent with the higher level of compliance, and "weaker" quality of governance, reflecting the lower half of companies according to *CompUGGC*.

We then conduct sequential estimations of Equation *(2)* for these "good" and "weaker" qualities of governance clusters. Contrary to our expectations, we do not find that higher compliant firms reflect a greater performance compared to lower compliant firms. All the estimations fail to establish a significant relationship between *CompUGGC* and performance. Similarly, we do not observe any significant relationship between any of the partial compliance ratings and performance. The only two exceptions occur in the estimations conducted with the sample of "weaker" governed firms for the models with *ROA and ROE* as the dependent variable, and in both cases, the sign of the relationship is negative, contradicting our expectations. Overall, these robustness tests provide support to the results reported in the main analysis regarding a lack of a significant relationship between compliance with corporate governance codes and firm performance. All the results of the robustness tests for the baseline model are presented in the Appendix.

Summing up, both our cross-sectional estimations following Rose's (2016) model and the estimations from panel data models using an expanded set of control variables, report the

lack of a positively significant relationship between compliance with UGGC recommendations and performance, regardless of how we measure it. We do find a significant relationship for ROA but with a negative sign, contradicting our expectations. We report a few significant relationships for some of the areas of compliance. However, in most cases, the sign of the relationship is contrary to our predictions.

Our results contradict the main outcome in Rose's (2016) of a positive and significant relationship between compliance and performance. It should be noted, however, that Rose's finding was not too robust, as significance at the usual statistical levels (*p-value* < 0.05) was observed in the model with ROA as the proxy for performance, but not in the model using ROE.

On the other hand, our results support some prior related studies, which have put into question the very usefulness not only of codes of good practices but also of the "comply-or-explain" approach behind these codes. Hence, Martinez-Blasco *et al*. (2017) did not observe a significant impact on short-term stock returns associated with the presentation of declarations of compliance with the UGGC. Bianchi *et al*. (2011) proposed a possible explanation for the lack of significant relationship between compliance and performance by questioning the very validity of the self-evaluation approach behind the "comply-or-explain" philosophy associated with codes of good practices. According to the authors, the companies' level of effective compliance with the Italian governance code's recommendations is considerably lower than their reported levels of formal compliance. In the same line, Van del Poel and Vanstraelen (2011) and Shrives and Brennan (2017), argued that companies release generic explanations for noncompliance or give no explanation at all, questioning the very effectiveness of the "comply-or-explain" philosophy.

3.5. Concluding remarks

In this paper, we empirically examine the association between compliance with Spanish UGGC and firm performance, as we believe it is important for investors to assess if such hypothesized positive economic impact does materialize. To carry out our investigation, we use UGGC compliance indexes over the period 2007-2012, a period of positive evolution in Spanish corporate governance. We first followed Rose's (2016) approach conducting cross-sectional estimations. We then implemented a dynamic framework to allow the adjustment of the firm's performance to changes in corporate governance as well as to incorporate the influence of past performance.

Overall, our GMM models strongly reject the static model. Hence, a lesson to be learned from this paper is that the effects of corporate governance on performance seem to be weak without considering the dynamics from lagged performance. We show that when these lagged dependent metrics and a set of significant control variables are included in the model, each has an important role to play, as do their interactions.

To summarize, there is no evidence from our models that compliance with the UGGC has any significant impact on performance. Neither the static models following Rose's (2016) approach, nor the DPD models, confirm such a positive significant relationship. We consider the results of this investigation to be strong, as all robustness checks have yielded steady results, increasing our confidence in the absence of a UGGC compliance and performance relation. Overall, our findings are in line with some prior evidence questioning the impact of compliance with UGGC on firm performance, and, in particular, with the recent study of Martinez-Blasco *et al.* (2017) for Spain that showed that the publications of declarations of compliance with the same UGGC do not have a significant impact on short-term stocks returns.

We believe that our study might have interesting implications at various levels. On the one hand, since our main conclusion somehow contradicts Rose's (2016), it clearly encourages further research on this issue. It also stresses the importance of country-specific issues (i.e., culture and business ethics, as well as the level of disclosure and outsiders' difficulty to verify the information) to understand the compliance with the governance code-performance relationship and thus, the difficulties of generalizing country-specific evidence. On the other hand, our results suggest that in order to strengthen investor confidence, local regulators should be more active in penalizing poor explanations and make sure that the mandatory corporate governance reports do not become a mechanical tick-the-box exercise, jeopardizing the effectiveness of the "comply or explain" approach.

The limitations of the current study lay in the nature of our sample data, represented by major companies in terms of market capitalization for the Spanish corporate landscape, which tend to be relatively homogenous in terms of size, age, and to a certain extent the generally high degree of compliance with local governance code. On this regard, expanding the sample data beyond the very large (and usually older) corporations included in this dataset should be welcomed in future research.

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Tables

Table 1. Description of variables

Variable	Code	Definition	Data Source
Corporate Governance Variables			
Compliance UGGC	*CompUGGC*	Level of compliance with overall UGGC 58 recommendations for 2007-12	CNMV reports
Compliance UGGC1	*CompUGGC1*	Level of compliance with UGGC Area 1 recommendations for 2007-12	CNMV reports
Compliance UGGC2	*CompUGGC2*	Level of compliance with UGGC Area 2 recommendations for 2007-12	CNMV reports
Compliance UGGC3	*CompUGGC3*	Level of compliance with UGGC Area 3 recommendations for 2007-12	CNMV reports
Compliance UGGC4	*CompUGGC4*	Level of compliance with UGGC Area 4 recommendations for 2007-12	CNMV reports
Compliance UGGC5	*CompUGGC5*	Level of compliance with UGGC Area 5 recommendations for 2007-12	CNMV reports
Variables for Company Performance			
Return on Assets	*ROA*	Ratio of company´s operating income over total assets at book value.	S&P Capital IQ
Return on Equity	*ROE*	Ratio of company´s income before extraordinary items available for common equity over book value of common equity.	S&P Capital IQ
Tobin´s Q	*TOBINQ*	Quotient of market value of assets (measured as the sum of book value of total assets plus the market value of common equity minus the sum of book value of common equity and deferred taxes) and the replacement value of assets (book value of total assets).	S&P Capital IQ
Control Variables			
One Share One Vote	*OneShare*	Dichotomous variable that takes the value of 1 if the company does not have dual class voting shares and 0 otherwise	CNMV reports
Firm Size	*SIZE*	Measured by natural logarithm of market capitalization (Rose, 2016) or natural logarithm of total assets (our DPD models)	S&P Capital IQ
Growth Opportunity	*GROWTH*	Average Sales Growth in the last 3 years	S&P Capital IQ
Firm Age	*AGE*	Defined as number of years passed since the firm´s founding year	S&P Capital IQ
Level of Leverage	*LEVER*	[Long Term Debt / Market Value of Equity plus Long Term Debt]	S&P Capital IQ
ROA $_{(t-1)}$	*ROA* $_{(t-1)}$	1-year lagged ROA	S&P Capital IQ
ROA $_{(t-2)}$	*ROA* $_{(t-2)}$	2-year lagged ROA	S&P Capital IQ
ROE $_{(t-1)}$	*ROE* $_{(t-1)}$	1-year lagged ROE	S&P Capital IQ
ROE $_{(t-2)}$	*ROE* $_{(t-2)}$	2-year lagged ROE	S&P Capital IQ
Tobin´s Q $_{(t-1)}$	*TOBINQ* $_{(t-1)}$	1-year lagged Tobin´s Q	S&P Capital IQ
Tobin´s Q $_{(t-2)}$	*TOBINQ* $_{(t-2)}$	2-year lagged Tobin´s Q	S&P Capital IQ

Table 2. Dataset breakdown by sectors

Sectors	Firms	Firm-years	Percent
Basic Materials	8	44	5.74
Consumer Goods	18	96	12.53
Consumer Services	18	88	11.49
Financials	37	186	24.28
Health Care	10	58	7.57
Industrials	31	173	22.58
Oil and Gas	9	51	6.66
Technology	4	21	2.74
Telecommunications	4	19	2.48
Utilities	6	30	3.92
Total	**145**	**766**	**100.00**

Table 3. Descriptive statistics

Variables	N	Mean	Median	St. Dev.	Min	Max	p10	p90
Corporate Governance Variables								
CompUGGC	766	0.80	0.84	0.14	0.34	1.00	0.60	0.95
CompUGGC1	766	0.88	1.00	0.16	0.20	1.00	0.67	1.00
CompUGGC2	766	0.79	0.80	0.15	0.33	1.00	0.58	0.95
CompUGGC3	766	0.81	0.86	0.21	0.00	1.00	0.50	1.00
CompUGGC4	766	0.71	0.71	0.25	0.00	1.00	0.33	1.00
CompUGGC5	766	0.83	0.87	0.15	0.18	1.00	0.63	1.00
Company Performance Variables								
ROA	766	3.57	3.60	4.99	-5.36	11.40	-5.15	11.40
ROE	766	6.22	8.37	19.10	-33.20	35.40	-31.40	33.50
TOBINQ	766	1.19	1.07	0.36	0.78	1.94	0.78	1.88
Control Variables								
SIZE	766	7.16	6.96	1.97	4.37	10.60	4.45	10.60
GROWTH	766	5.36	4.19	14.70	-18.50	29.60	-17.90	29.60
AGE	766	3.89	3.99	0.73	2.48	4.88	2.64	4.88
LEVER	766	34.70	33.70	18.90	6.05	66.30	7.00	65.40

Table 4. Variables' means over the sample period

	2007	2008	2009	2010	2011	2012
	N = 121	N = 127	N = 132	N = 129	N = 130	N = 127
Variables	**Mean**	**Mean**	**Mean**	**Mean**	**Mean**	**Mean**
Corporate Governance Variables						
CompUGGC	0.77	0.78	0.79	0.80	0.82	0.84
CompUGGC1	0.84	0.87	0.88	0.88	0.89	0.90
CompUGGC2	0.76	0.77	0.78	0.79	0.80	0.81
CompUGGC3	0.76	0.79	0.80	0.80	0.83	0.85
CompUGGC4	0.67	0.65	0.65	0.68	0.78	0.81
CompUGGC5	0.79	0.81	0.83	0.84	0.85	0.85
Company Performance Variables						
ROA	5.53	3.93	2.92	3.27	3.26	2.61
ROE	13.23	7.76	3.84	6.26	4.11	2.62
TOBINQ	1.40	1.16	1.18	1.17	1.12	1.12
Control Variables						
SIZE	7.25	7.21	7.18	7.17	7.12	7.05
GROWTH	15.90	12.66	4.21	-0.73	-0.37	1.27
AGE	3.87	3.88	3.89	3.89	3.89	3.90
LEVER	31.32	33.28	35.81	36.01	35.91	35.73

Table 5. Pearson correlation coefficients

	CompUGGC	*CompUGGC1*	*CompUGGC2*	*CompUGGC3*	*CompUGGC4*	*CompUGGC5*	*ROA*	*ROE*	*TOBINQ*	*SIZE*	*AGE*	*GROWTH*
CompUGGC1	0.50*	1.00										
	0.00											
CompUGGC2	0.90*	0.32*										
	0.00	0.00										
CompUGGC3	0.79*	0.43*	0.63*	1.00								
	0.00	0.00	0.00									
CompUGGC4	0.76*	0.34*	0.59*	0.59*	1.00							
	0.00	0.00	0.00	0.00								
CompUGGC5	0.81*	0.30*	0.66*	0.48*	0.48*	1.00						
	0.00	0.00	0.00	0.00	0.00							
ROA	(0.04)	(0.05)	(0.03)	(0.11)*	0.01	(0.01)	1.00					
	0.20	0.16	0.39	0.00	0.80	0.71						
ROE	0.00	(0.04)	0.02	(0.06)	0.05	0.01	0.52*	1.00				
	0.90	0.26	0.63	0.11	0.14	0.82	0.00					
TOBINQ	(0.04)	(0.06)	(0.07)*	(0.01)	0.06	(0.06)	0.39*	0.40*	1.00			
	0.25	0.11	0.04	0.80	0.08	0.11	0.00	0.00				
SIZE	0.36*	0.06	0.33*	0.28*	0.36*	0.28*	0.11*	0.22*	(0.08)*	1.00		
	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.02			
AGE	(0.15)*	(0.12)*	(0.12)*	(0.16)*	(0.09)*	(0.11)*	0.08*	0.01	(0.05)	0.13*	1.00	
	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.86	0.10	0.00		
GROWTH	0.04	0.10*	0.07*	0.03	(0.03)	(0.00)	0.28*	0.17*	0.08*	0.10*	(0.08)*	1.00
	0.30	0.01	0.05	0.34	0.40	0.91	0.00	0.00	0.02	0.00	0.02	
LEVER	0.07*	(0.07)*	0.00	0.11*	0.11*	0.09*	(0.32)*	(0.20)*	(0.05)	(0.08)*	(0.09)*	(0.19)*
	0.05	0.05	0.91	0.00	0.00	0.01	0.00	0.00	0.17	0.02	0.01	0.00

* p<0.05

Table 6. Model 1' results on the influence of Compliance with UGGC on ROA

VARIABLES	2007	2008	2009	2010	2011	2012
CompUGGC	-0.881	-0.737	-6.894	-6.995**	-7.472***	-4.720*
	(-0.269)	(-0.205)	(-1.509)	(-2.386)	(-2.671)	(-1.729)
SIZE	0.597**	1.032***	1.215***	1.455***	1.272***	1.299***
	(2.206)	(3.744)	(4.491)	(7.128)	(5.995)	(6.624)
OneShare	-1.057	-0.505	-0.673	0.093	-2.664	-0.243
	(-0.917)	(-0.637)	(-0.432)	(0.117)	(-0.945)	(-0.171)
Industry-control	Yes	Yes	Yes	Yes	Yes	Yes
Constant	8.393**	4.473	6.937	0.492	5.027	1.521
	(2.361)	(1.367)	(1.270)	(0.183)	(1.107)	(0.511)
Observations (N)	115	123	127	130	132	128
Adjusted R-2	0.209	0.252	0.239	0.390	0.336	0.372
F-Statistic	18.16***	15.01***	9.69***	12.45***	10.44***	8.95***

Robust t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 7. Model 1' results on the influence of Compliance with UGGC on ROE

VARIABLES	2007	2008	2009	2010	2011	2012
CompUGGC	3.754	9.358	-14.669	-22.131**	-6.199	-4.726
	(0.312)	(0.702)	(-0.879)	(-1.982)	(-0.409)	(-0.290)
SIZE	4.004***	4.561***	5.605***	5.350***	4.766***	2.927**
	(4.768)	(4.787)	(5.202)	(5.599)	(4.423)	(2.523)
OneShare	0.432	0.397	-8.642	-1.205	-6.766	-2.068
	(0.191)	(0.111)	(-1.387)	(-0.374)	(-1.225)	(-0.330)
Industry-control	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-1.585	-8.073	0.625	-10.824	-23.151	7.436
	(-0.135)	(-0.606)	(0.032)	(-1.077)	(-1.526)	(0.436)
Observations (N)	115	123	127	130	132	128
Adjusted R-2	0.252	0.282	0.262	0.200	0.158	0.037
F-Statistic	19.43***	9.255***	7.438***	4.045***	3.418***	1.985**

Robust t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 8: Robust two-step GMM estimates on the influence of Compliance with UGGC on performance as measured by Tobins' Q

	Model 1	Model2	Model3	Model4	Model5	Model6
CompUGGC(t-1)	-0.00383					
	(-0.057)					
CompUGGC1(t-1)		-0.0390				
		(-0.72)				
CompUGGC2(t-1)			-0.00155			
			(-0.023)			
CompUGGC3(t-1)				-0.0145		
				(-0.35)		
CompUGGC4(t-1)					0.0233	
					(0.58)	
CompUGGC5(t-1)						0.0117
						(0.20)
TOBINQ(t-1)	0.780***	0.782***	0.781***	0.781***	0.781***	0.782***
	(12.7)	(12.6)	(12.6)	(12.7)	(12.5)	(12.8)
TOBINQ(t-2)	0.109*	0.108*	0.109*	0.109*	0.106*	0.108*
	(1.77)	(1.75)	(1.77)	(1.77)	(1.72)	(1.75)
SIZE	-0.0112**	-0.0110**	-0.0113**	-0.0108**	-0.0123***	-0.0114**
	(-2.40)	(-2.51)	(-2.41)	(-2.39)	(-2.72)	(-2.45)
GROWTH	-0.00540**	-0.00531**	-0.00548**	-0.00533**	-0.00525**	-0.00537**
	(-2.19)	(-2.14)	(-2.22)	(-2.14)	(-2.13)	(-2.16)
SIZE x GROWTH	0.00069**	0.00069**	0.00071**	0.00069**	0.00068**	0.00069**
	(2.26)	(2.22)	(2.30)	(2.21)	(2.21)	(2.23)
AGE	-0.0205	-0.0216*	-0.0202	-0.0213*	-0.0195	-0.0202
	(-1.55)	(-1.73)	(-1.54)	(-1.68)	(-1.48)	(-1.56)
LEVER	0.00126**	0.00123**	0.00127**	0.00127**	0.00123**	0.00124**
	(2.46)	(2.41)	(2.48)	(2.47)	(2.40)	(2.43)
Constant	0.386***	0.420***	0.382***	0.394***	0.370***	0.373***
	(3.50)	(4.19)	(3.48)	(4.30)	(4.05)	(3.68)
Firm-years	602	602	602	602	602	602
Hansen J	23.15	23.05	23.12	23.09	23.23	23.21
J df	18	18	18	18	18	18
J pvalue	0.185	0.189	0.186	0.187	0.182	0.183
AR(2) pvalue	0.211	0.210	0.211	0.210	0.217	0.212

Notes: Time fixed effects and a constant term are included in all specifications. Two-step GMM-SYS estimates of CompUGGC are reported with robust t-statistics in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 9: Robust two-step GMM estimates on the influence of Compliance with UGGC on performance as measured by ROA

	Model 1	Model2	Model3	Model4	Model5	Model6
CompUGGC(t-1)	-2.858***					
	(-2.59)					
CompUGGC1(t-1)		0.180				
		(0.17)				
CompUGGC2(t-1)			-1.534*			
			(-1.67)			
CompUGGC3(t-1)				-1.961***		
				(-2.78)		
CompUGGC4(t-1)					-0.568	
					(-0.97)	
CompUGGC5(t-1)						-2.799***
						(-2.87)
ROA(t-1)	0.669***	0.679***	0.675***	0.664***	0.671***	0.666***
	(8.98)	(9.21)	(9.02)	(8.90)	(9.14)	(9.08)
ROA(t-2)	0.173***	0.171***	0.171***	0.171***	0.176***	0.179***
	(2.69)	(2.64)	(2.61)	(2.64)	(2.71)	(2.81)
SIZE	0.127*	0.0423	0.0837	0.111	0.0695	0.112
	(1.78)	(0.70)	(1.25)	(1.61)	(1.04)	(1.60)
GROWTH	-0.0248	-0.0169	-0.0224	-0.0282	-0.0201	-0.0169
	(-0.58)	(-0.37)	(-0.49)	(-0.67)	(-0.46)	(-0.38)
SIZE x GROWTH	0.00689	0.00574	0.00663	0.00730	0.00626	0.00586
	(1.37)	(1.08)	(1.26)	(1.44)	(1.23)	(1.14)
AGE	0.0216	0.127	0.0777	0.00178	0.102	0.0634
	(0.12)	(0.76)	(0.46)	(0.0098)	(0.60)	(0.35)
LEVER	-0.00890	-0.00842	-0.00900	-0.00776	-0.00823	-0.00800
	(-1.12)	(-1.04)	(-1.11)	(-1.00)	(-1.04)	(-0.97)
Constant	2.127*	-0.291	1.076	1.571	0.268	2.006*
	(1.79)	(-0.21)	(1.10)	(1.54)	(0.30)	(1.72)
Firm-years	602	602	602	602	602	602
Hansen J	21.44	22.36	22.50	21.16	21.75	22.00
J df	18	18	18	18	18	18
J pvalue	0.258	0.216	0.211	0.271	0.243	0.232
AR(2) pvalue	0.184	0.197	0.198	0.186	0.182	0.180

Notes: Time fixed effects and a constant term are included in all specifications. Two-step GMM-SYS estimates of CompUGGC are reported with robust t-statistics in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 10: Robust two-step GMM estimates on the influence of Compliance with UGGC on performance as measured by ROE

	Model 1	Model2	Model3	Model4	Model5	Model6
CompUGGC(t-1)	4.227					
	(0.71)					
CompUGGC1(t-1)		13.55***				
		(3.29)				
CompUGGC2(t-1)			2.728			
			(0.55)			
CompUGGC3(t-1)				-3.425		
				(-1.01)		
CompUGGC4(t-1)					3.665	
					(1.11)	
CompUGGC5(t-1)						2.182
						(0.39)
ROE(t-1)	0.564***	0.568***	0.563***	0.558***	0.565***	0.561***
	(9.30)	(9.42)	(9.30)	(9.13)	(9.29)	(9.21)
ROE(t-2)	0.134*	0.141**	0.135*	0.129*	0.127*	0.134**
	(1.95)	(2.18)	(1.95)	(1.87)	(1.87)	(1.97)
SIZE	0.238	0.177	0.288	0.540	0.169	0.307
	(0.52)	(0.46)	(0.65)	(1.19)	(0.40)	(0.71)
GROWTH	-0.485	-0.484	-0.486	-0.493	-0.482	-0.497*
	(-1.60)	(-1.55)	(-1.61)	(-1.64)	(-1.58)	(-1.65)
SIZE x GROWTH	0.0835**	0.0819*	0.0832**	0.0841**	0.0828*	0.0857**
	(1.98)	(1.92)	(1.99)	(1.99)	(1.96)	(2.02)
AGE	-1.504	-1.103	-1.595	-1.948*	-1.448	-1.563
	(-1.40)	(-1.07)	(-1.53)	(-1.90)	(-1.39)	(-1.44)
LEVER	-0.0157	-0.00743	-0.0133	-0.0145	-0.0186	-0.0162
	(-0.38)	(-0.17)	(-0.32)	(-0.35)	(-0.44)	(-0.39)
Constant	3.206	-7.009	4.484	9.266*	4.185	4.649
	(0.49)	(-1.25)	(0.78)	(1.94)	(0.85)	(0.69)
Firm-years	602	602	602	602	602	602
Hansen J	20.24	21.40	20.25	20.53	20.29	20.39
J df	18	18	18	18	18	18
J pvalue	0.319	0.260	0.319	0.304	0.317	0.311
AR(2) pvalue	0.615	0.617	0.611	0.615	0.619	0.610

Notes: Time fixed effects and a constant term are included in all specifications. Two-step GMM-SYS estimates of CompUGGC are reported with robust t-statistics in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Chapter 4. Commercial governance ratings as predictors of firm performance: Evidence from a global setting

4.1. Abstract

The swift globalization trend and cross-country investments have amplified the claim for common standards on corporate governance assessment. As a result, commercial ratings marketed by influential consultant companies, have become increasingly popular among participants in the capital markets as a proxy for governance. In this paper, we analyze the ability of these ratings to predict the performance of the firm. We base the empirical analysis on the constituents of the Standard & Poors' 1200 global index and utilize the latest edition of the leading commercial governance rating Quickscore released by Institutional Shareholders Service. The main result is the lack of a significant association between commercial governance ratings and firm performance. This suggests scarce information content on commercial governance ratings for investors. In addition, we have not obtained any indication that legal tradition plays a relevant role on this matter. This paper is expected to shed light on the discussion whether commercial governance ratings are a valid tool for corporate governance evaluation.

Keywords: corporate governance; commercial ratings; ISS Quickscore; performance; legal tradition.

4.2. Introduction

Corporate governance indicators are becoming increasingly important for investors when making investment decisions. Given the growing process of globalization and economic integration, shareholders and, in general, market participants need the best possible assessment of the actual governance quality of the firms in which they are investing or planning to invest. In addition, deterioration in firm's accountability caused by noticeable corporate scandals has enforced an international crusade for more rigorous corporate governance structures and practices. Investors are concerned with governance because weak governance can damage a firm's financial position and result in firms incurring higher cost of capital (Ashbaugh-Skaife *et al*., 2006).

This is why identifying the right metrics of investor's protection and governance quality that lead to better performance have become one of the main challenges of corporate governance (Aguilera and Jackson, 2010). It has also become a recognized field of investigation in contemporary financial economics. Numerous studies have investigated this relationship through well-established lines of research (Bozec and Bozec, 2012): 1) studies that use single governance provisions; 2) investigations using so-called academic corporate governance indexes; and 3) empirical research using commercial governance ratings.

While the first two lines of research have been extensively developed, only a limited attention has been given to the use of commercial ratings as a proxy for governance and predictors of firm-level performance. Remarkably, this is happening at a time when a growing acceptance of governance rating systems developed by a number of consultant agencies led by the Institutional Shareholders Service (ISS) is materializing.

In addition, most prior empirical research on this topic has a narrow scope, focusing on country-specific data, specifically on the US and few European countries (mostly UK and Germany). There are only few cross-country investigations. Overall, due to the relevance that some of these ratings have reached within the investors' community, together with the scarcity of previous research on this subject on a global setting, we believe that additional empirical evidence should be welcomed in order to draw sound conclusions regarding the ability of these ratings on predicting performance. While there are already some papers investigating this relationship using a global database (Klapper and Love, 2004; Durnev and Kim, 2005; Aggarwal *et al*., 2009; Chhaochharia and Laeven, 2009), they do so by testing this relationship using their self-constructed governance ratings.

We extend and refine the analysis in Núñez and García-Blandon (2017) assessing the relationship between corporate governance and firm performance focused on the European level, to the global scale. In addition, our work is closely related to Krafft *et al*. (2014) in their focus on the relationship between corporate governance and firm performance using a large sample of companies worldwide. In their study, Krafft *et al.* (2014) explore the effects of corporate governance on performance focusing on convergence of non-US firms to US best governance practices. This is, to our knowledge, the second study that documents the relationship between a commercial governance rating and firm performance in a global setting.

In this study, we investigate whether the quality of firm's governance as measured by commercial governance ratings is associated to firm's performance. Commercial governance ratings reflect an agency's view of a company's overall level of governance and its capacity to satisfy the country's recommendations or binding rules on this matter. Based on the proposition that well-governed companies should reflect a stronger level of performance, we test the hypotheses that the firm's governance quality (measured with a leading commercial rating) is positive and significantly related to an array of firm performance metrics. Contrary to most previous studies on this subject that handle relatively homogeneous US (e.g., Cremers and Nair, 2005; Epps and Cereola, 2008; Ertugrul and Hedge, 2009), or European (e.g., Bauer *et al*., 2004; Renders *et al*., 2010; Núñez and García-Blandon, 2017) companies' datasets, we use a worldwide sample of companies.

We provide new evidence obtained by using a sample of 1103 firms from the Standard and Poor's (S&P) 1200 Global Index. We proxy for governance risk by using the ISS Quickscore governance index (hereinafter *QScore*), as it currently stands as the leading commercial database in terms of firms and markets covered. Prior studies (Bebchuk *et al*., 2009) indicate that not all governance categories affect firm performance. Therefore, in addition to the aggregate governance rating (*QScore*), we also analyze what effect, if any, the four major pillars of governance: board structure, compensation, shareholders' rights and audit practices, have on firms' performance. We investigate the relationship between governance rating and firm performance using multivariate regression analysis. Our study also contributes to the debate over whether governance attributes are largely determined by country factors or by firm practices.

Our attention has been addressed to two relevant issues. First, to test how this relationship applies to our overall global standardized dataset, and secondly, to investigate if there is any influence from legal tradition that could partially explain this relationship. We exploit

the institutional diversity in our sample following Bauer *et al.*'s (2004) approach, based on the comparison between the common law and the civil law models.

As it has been extensively acknowledged in the corporate governance literature (Jensen and Meckling, 1976; La Porta et al., 1998), there is a major difference between the two main corporate law regimes: the civil law jurisdiction, where broader stakeholder's interests are shared and governance recommendations are mostly voluntary, and the common law or Anglo-Saxon model, with an active market for corporate control and a more rigid legislation. As pointed out by Cremers *et al*. (2007, pg. 1359), "In general, the Anglo-Saxon view of corporate governance has mainly focused on transparency and strengthening shareholder rights". Hence, as in Núñez and Garcia-Blandon (2017), since we cannot assume that the set of governance mechanisms to protect investors work equal in both systems, we should not accept a priori that the results obtained in countries whose legal tradition is based on the common law, like the US and the UK, can be directly extrapolated to other countries. We show, however, that the results are maintained across the main legal origin groups.

Another distinctive feature of this paper is that, compared to most prior research (Aggarwal *et al*., 2009; Chhaochharia and Laeven, 2009) that used a single indicator of performance, we use several metrics in order to report sounder results. In our study, the effects of the governance ratings on market and accounting metrics of performance are simultaneously investigated. We use Tobin's Q (TQ)[13], return on assets (ROA), and return on equity (ROE) as proxies of accounting performance. Additionally, a market driven measure, the Total Shareholders Return (TSR), is also used. It is anticipated that companies with higher governance quality (lower *QScore* ratings) reflect stronger performance, after accounting for the impact of control variables.

This paper contributes to the extant research on international corporate governance in different ways. First, we update and contrast the results found in Krafft *et al.* (2014) for companies belonging to the S&P Global Index. While our research shares some similarities with Krafft *et al*. (2014), unlike them, we explore this relationship including US companies in our analysis. We also use the latest available version of leading ISS governance ratings (Quickscore 3.0). In comparison, these late governance scores are built upon the analysis of more than 200 governance factors, four times more than the 2008-2013 ISS CGQ index used by Krafft *et al*. (2014) in their research. Since the

[13] We refer customarily to *TQ*, *ROA* and *ROE* as firm-level accounting performance indicators.

complexity and reporting of ISS governance ratings have significantly increased during the last decade, results reported by prior studies need to be updated.

We also refine Krafft *et al.*'s (2014) work by not only using an updated governance index and adding a large subset of companies, but also by considering the interaction of different governance mechanisms, thereby providing a more comprehensive analysis of the significance of corporate governance for firm performance. Hence, following Núñez and Garcia-Blandon (2017), we do not limit our study to the aggregate governance score but also address the scores of the four main governance sub-indexes (pillars). Such an approach should offer a more complete and precise picture of the relationship between the commercial governance ratings and performance. Finally, another main difference with Krafft *et al.* (2014) is that we control for past performance in our investigation. This reduces the sources of endogeneity that can yield spurious results (Schultz *et al*., 2010).

After controlling for sector, firm-specific attributes, and prior-performance, our empirical results indicate that corporate governance quality as measured by our governance proxy (*QScore*) is not an important element in shaping up the firm's performance. These results hold for the overall governance rating as well as for all four partial governance scores. They are also robust to various supplemental analyses, including segmenting and studying our sample based on its legal origin. Hence, our results are in line with the evidence reported by Núñez and Garcia-Blandon (2017) for the European setting and differ from the ones obtained by Krafft *et al.* (2014), who found a positive significant relationship between firm's governance ratings and different metrics of firm performance. This could be explained not only by the different dataset and updated commercial indexes used in our regressions, but also by our set of control variables, in particular the introduction of lagged performance metrics in our models.

The remainder of the paper will follow accordingly: in the next section, we review previous research on the relationship between governance ratings and performance and present several testable hypotheses. In section three, we develop the methodology where both the data sample and the research design are explained. Finally, we present and discuss the results as well as conclusions drawn from the study in sections four and five respectively.

4.3. Background and hypothesis development

We discuss one strand of academic literature that deals with the relationship between corporate governance and firm performance. The growing use of diverse governance measures as proxies for quality of governance, and the extended belief that such

advantage will act as a catalyst for enhanced firm performance has emerged as a meaningful line of investigation. Research has revealed that high quality of governance typically leads to enhanced performance.

Internal governance mechanisms have received most of attention in this line of research. A short list of papers dealing with the influence of particular governance provisions on performance should include: Lewellen *et al.* (1992) on executive compensation; Hermalin and Weisbach (1991) on board structure and incentives; Perez-Gonzalez (2006) on the impact of management selection, among others.

The study of this relationship has also generated considerable interest through two other distinctive lines of research differentiated by the nature of the governance index used: 1) studies which build their own ratings (so-called academic indexes), or 2) studies using governance ratings developed by rating agencies (commercial governance indexes). While the bulk of the first group of studies using academic indexes reveals a positive significant relationship between governance and firm performance, the second line of research has yielded non-conclusive results.

Among the papers focusing on scholar-built governance scores, we can mention the well-known paper of Gompers *et al.* (2003). They created a governance index (G-index) based on a combination of 24 governance attributes collected by a leading consultant company, the Investor Responsibility Research Center (IRRC), for a large US sample. They observed that companies with weak corporate governance schemes consistently underperformed in the stock market. Also for a US context, Bebchuk *et al.* (2009) established a significant inverse relationship between their entrenchment (E-index) level and firm valuation. Bai *et al*. (2004), developed their G-index for a large sample of Chinese companies and found out that their research governance index had a direct significant effect on market valuation.

We found only few studies addressing the association between governance and performance at a global scale, focused on academic governance ratings. Klapper and Love (2004) conducted research with a sample across 374 firms in 14 emerging markets. They built a GOV index using Credit Lyonnais Securities Asia (CLSA) governance reports from 2000. They found that quality of governance is associated with firm performance and stock return, particularly in countries with weak legal systems.

A year later, Durnev and Kim (2005) validated Klapper and Love (2004)'s results. They carried out their research, building a governance index (COMP) based on the same governance practices' scores released by CLSA from year 2000. They also contrasted those ratings by building a transparency index (TRAN) based on S&P corporate

disclosure ratings for 573 companies in 16 emerging markets and three developed economies in 2000. They found positive and statistically significant relationship between efficient governance practices and transparency and stock returns. As Klapper and Love (2004), they established that these relations are stronger in countries with poor legal environments.

Then, Aggarwal *et al.* (2009), created their GOV index using information on 44 governance attributes common to both US and foreign companies collected by ISS from 2005. They used it to compare the internal governance of foreign firms versus comparable U.S. firms. They concluded that there are positive implications of that comparison for the value of the foreign firms. Finally, Chhaochharia and Laeven (2009) addressed the governance-performance relationship using data on governance ratings from ISS for years 2003 through 2005 in a large cross-section of countries. They constructed a CG Index using 17 attributes of ISS governance scores, making a distinction between common governance attributes adopted to follow country standards and additional provisions embraced internally by firms. Their results indicated that improvements in corporate governance beyond country level are reflected in higher firm valuation (Tobin's Q).

Research on the interaction between governance proxied by commercial ratings and firm performance has been rather limited. However, more attention to this line of research has been taken place, because of growing reliance of investors and, in general, of market participants on these commercial ratings. Overall, the empirical evidence is mixed and inconclusive.

Prior studies using commercial governance ratings have been generally conducted with US samples. Cheng and Wu (2006) studied the association between ISS's CGQ ratings and TSR. They concluded that firms showing improvement in the overall quality of corporate governance exhibited stronger market returns. Ertugrul and Hedge (2009) examined the predictive power of three leading commercial governance ratings and arrived to inconclusive results. Daines *et al.* (2010) contrasted three leading commercial ratings, including ISS scores, and obtained consistent weak results about their association with several metrics of performance. Furthermore, Núñez and Garcia-Blandon (2017), in their study of a sample of large European firms, failed to validate a consistent association between the tested ISS commercial ratings and firm performance. Finally, in the only paper analyzing commercial governance ratings at a global scale, Krafft *et al.* (2014) revisited the link between these ratings and performance to find out that the convergence of non-US firms to US best governance practices was a positive performance factor.

Overall, despite the growing attention given to this line of research, prior studies have not arrived to a sound conclusion about the ability of commercial governance ratings to predict firm performance. Moreover, there is an obvious lack of research on this issue in a global context. Our investigation intends to contribute to fill this gap.

As discussed previously, commercial governance ratings are becoming a recurrent proxy for measuring the quality of governance. Based on agency theory (Jensen and Meckling, 1976), a direct association between quality of governance and firm performance should be observed. Well-governed firms exhibit higher investor's confidence on the back of higher management's monitoring and disciplining. As a result, they are supposed to carry lower risk and enjoy lower cost of capital, which should translate into higher valuation and performance.

We address the importance of commercial governance ratings by determining whether differences in these ratings are associated to variations in performance that have not been captured by other firm characteristics. Accordingly, the following null hypothesis has been posed:

> *Hypothesis 1.* Quality of governance, measured by *QScore*, is positively and significantly associated with firm performance.

Taking into consideration the combined nature of *QScore* rating, as Núñez and Garcia-Blandon (2017) we also test the main governance categories. We have no objection at the way ISS has pooled the wide array of governance attributes in these four main categories, as we also believe that they represent the most critical areas in relation to a successful corporate governance. This leads to our sub-group of testable hypotheses on the association between the four main governance category ratings and performance that we discuss below.

Regulators usually highlight the critical role of board of directors in supervising the firm decision-making process. Research has also been particularly rich at studying this important governance category. Monks (2001) argued that board overseeing could improve the managerial process and lead to stronger performance. Beiner *et al.* (2006) found a positive relation between board size and performance. If superior board oversight minimizes managerial entrenchment, reduces management misappropriation of resources and increases accountability, then we expect the firm to show higher performance. Accordingly, we pose *Hypothesis 1.1* as follows:

> *Hypothesis 1.1.* Quality of governance, measured by *BoardStructure*, is positively and significantly associated with firm performance.

Prior literature generally posits that good compensation practices provide support for stronger corporate performance. Based on past research (Morck *et al*., 1988), equity ownership and financial incentives align shareholders and managers' interests, having a positive impact on performance. Also, Mehran (1995), among others, have provided evidence supporting a strong impact of management compensation practices on performance. Accordingly, we pose *Hypothesis 1.2.* as follows:

> *Hypothesis 1.2.* Quality of governance, measured by *Compensation*, is positively and significantly associated with firm performance.

Similar to the compensation category, we expect the protection of minority shareholder rights provisions to relate to performance because they are directly link to shareholders' wealth. We, therefore, expect a positive association between shareholder rights and performance. The importance of shareholders' protection for the company's prospects has been broadly documented in the literature. According to Bebchuk *et al.* (2009), there is a negative and significant relationship between the level of management entrenchment and both firm valuation and market returns. Large managerial ownership could also encourage entrenchment, negatively affecting firm performance (Stulz, 1988). Accordingly, we pose *Hypothesis 1.3.* as follows:

> *Hypothesis 1.3.* Quality of governance, measured by *ShareRights*, is positively and significantly associated with firm performance.

While boards of directors are responsible for monitoring the firm decision-making process, this duty is usually delegated in the audit committee. The audit committee practices are critical at influencing the financial reporting process, enforcing transparency and financial disclosure to the different internal and external stakeholders. Brown and Caylor (2006) and Bowen *et al.* (2008) established a direct relationship between the composition and ability of the audit committee and firm performance. Hence, if audit practices play such a critical role in the firm's financial process, we can then anticipate that they should be also associated with stronger firm performance. Accordingly, we pose *Hypothesis 1.4.* as follows:

Hypothesis 1.4. Quality of governance, measured by *Audit,* is positively and significantly associated with firm performance.

4.4. Research Design

In order to highlight the relationship between the commercial governance ratings and performance, we estimate the model given by Equation (1) below, with ordinary least squares.

$$\boldsymbol{PERFORMANCE = \alpha + \beta\ QScore + \gamma\ Z\ + \varepsilon,} \qquad \boldsymbol{(1)}$$

where dependent variable *PERFORMANCE* stands for the four different performance proxies (*TQ, ROA, ROE* and *TSR*) that we utilize in our models. Our main independent variable is the *QScore*. We also test for the four main categories of the index: *BoardStructure*, *Compensation*, *ShareRights* and *Audit*. Finally, we also include the usual control variables (*Z*) used in prior research (Yermack, 1996; Klapper and Love, 2004). We also add the lagged dependent variable as an explanatory variable, which represents an important distinction from mainstream empirical studies on this subject.

4.4.1. Performance metrics

As stressed by Dalton *et al.* (2003) in a meta-analysis of these studies, there is no agreement about appropriate performance measures to use for testing this relationship. Studies on this line of research typically use either market –based performance ratios or accounting metrics to evaluate the association with performance.

Similar to previous work in the corporate governance literature (Kaplan and Zingales, 1997; La Porta *et al.*, 2002), we estimate *TQ* as the market value of assets (calculated as book value of assets minus book value of equity plus market value of equity) divided by the book value of assets. We measure *ROA* as the ratio of operating income to total assets (see Larcker and Richardson, 2007; Bhagat and Bolton, 2008). ROE is defined as net income divided by the book value of common equity. Following Hutchinson (2002), the one-year *TSR* comprises the capital gain (percentage change in share price), plus the dividend yield (calculated as the ratio of dividends per share and the initial share price).

4.4.2. Independent (governance) measures

As mentioned earlier, the corporate governance data are obtained from ISS, which produces governance ratings for thousands of firms internationally. This leading

consultant agency launched their first governance index in 2002 labeled the Corporate Governance Quotient (CGQ). Its newest version, the Quickscore, was first provided in 2013, with the index now in its third version (Quickscore 3.0, as of 2015). This aggregate index is a relative measure of a firm's governance risk and shows the relative governance quality of the company in relation to its industry peers. In constructing the governance ratings, ISS rates firms according to more than 200 different attributes, based on criteria that can be classified into four main categories: (1) board structure (*BoardStructure*), (2) compensation (*Compensation*), (3) shareholder rights (*ShareRights*), and (4) audit practices (*Audit*). Eq. *(1)* covers all five governance metrics to account for the composite *QScore* as well as for the four partial ratings.

ISS uses proprietary weights in their *QScore* calculation, acknowledging that some factors could weight more on the index than others. For each category and the aggregate index, ratings range from 1 to 10 scale with ones increments, with lower scores denoting lower governance risk relative to the index (better corporate governance). Further information can be found in the brochures released by ISS.[14]

4.4.3. Control variables

Both governance and performance are likely to be correlated with other firm characteristics. Thus, to add robustness to our results and to mitigate the problem of possible endogeneity we add an appropriate set of control variables consistent with prior studies (Yermack, 1996; Aggarwal *et al*., 2009; Núñez and Garcia-Blandon, 2017). We use the following set of control variables for the estimation of our models in Eq. *(1)*.

Firm age (*LOGAGE*) is measured as the natural logarithm of the number of years since the incorporation of the firm. We expect a negative association with performance. According to Fama and French (2004), performance is likely to deteriorate in older firms, seemingly due to a worsening of corporate governance quality, among other factors. Firm size (*ASSETS*), measured as the natural logarithm of total assets is expected to show an inverse relationship with performance. According to Jensen and Meckling (1976), large firms are more prone to deal with greater agency problems on the back of larger free cash flows. In addition, they tend to be in matured industries with low returns and potential.

Firm growth opportunities (*GROWTH*), is computed as the average annual sales growth over the past three years, as suggested by Klapper and Love (2004). Companies with solid growth prospects usually hire better management teams and show higher performance (Core *et al*., 1999). We also include financial leverage (*DEBT*) and expect a positive

[14] See ISS Quickscore 3.0, ISS, https://www.issgovernance.com/(last visited February, 2018)

association with performance. One of main benefits of debt pledges according to agency theory is to impose a higher degree of transparency, monitoring and accountability to management teams (Jensen and Meckling, 1976). Consistent with Bhagat and Bolton (2008), we calculate *DEBT* as the sum of firm's book value of long-term debt and the current portion of long-term debt divided by total assets.

Past performance is also added to further control for a possible endogeneity. Thus, in each estimation we include the corresponding one-year lagged independent variable among the control variables. We also use the S&P Global Index industry classification to group firms into 11 industry clusters to control for industry fixed effects in the regressions. Finally, we run the regressions with country dummies to control for the effects of country-specific characteristics. Similar to prior studies, we winsorize extreme (1st and 99th) percentiles of the pooled distribution of all variables in Eq. (1) to neutralize the impact of possible spurious outliers.

4.4.4. Dataset

This study uses primary data (governance variables) compiled and released in 2015 by the ISS. Our sample of companies includes the constituents of the Standard and Poor's Global 1200 Index that have been covered by ISS. We started with 1149 firms with non-missing accounting data, but 46 companies were dropped due to lack of information for at least one variable in Eq. *(1)*. As a result, our final sample consists of 1103 firms.

All dependent variables in Eq. *(1)* are moved forward one year (2016) to reduce the potential endogeneity of the model without significantly affecting the power of regressions. Realistically, implementation of good governance recommendations may have some delayed effect on firm performance. Table 1 presents a summary of all the variable names, codes, brief descriptions, and sources of data.

Insert Table 1 around here

As reflected in Table 2, the 1103 observations represent firms from 28 countries grouped in two main legal tradition blocks according to La Porta *el al*. (1998): 699 companies from 11 countries (corresponding to 63.37% of the sample) are grouped in the common law block (Common), while 404 companies from 17 countries (corresponding to 36.63%) in the civil law block (Civil).

Insert Table 2 around here

Table 3 provides a sector breakdown of the firms in our sample. The companies included in our research database operate in a diversity of industries: Consumer Discretionary (158), Consumer Staples (86), Energy (73), Financials (168), Healthcare (88), Industrials

(192), Information Technology (97), Materials (101), Real Estate (51), Telecommunication Services (28) and Utilities (61).

Insert Table 3 around here

Table 4 summarizes the descriptive statistics of our sample of companies (means, medians, standard deviations, and minimum and maximum values) for the variables included in Eq. *(1)*. The figures indicate that there is an overall medium quality of governance among companies in our dataset (corresponding to a mean *QScore* of 4.82). *BoardStructure, Compensation, and ShareRights* pillars have similar results with means in the 4.46-4.74 range. Companies perform best in *Audit* practices with a mean of 2.47 and median of 1.00 (highest quality) for the overall dataset. Firm size averages $10.0 billion while the leverage's mean is around 23.7%. Moreover, the average *TQ, ROA, ROE* and *TSR* are 1.71, 7.16%, 13.2% and 10.4% respectively.

Insert Table 4 around here

Table 5 displays the univariate analysis of mean and median differences of our research variables for the two main blocks according to segmentation by legal tradition. To measure the statistical level of significance of mean and median differences for both blocks, we conduct the *t-test* and the Mann-Whitney test respectively. The results reveal some degree of diversity.

Companies in the Civil block rank higher in terms of overall governance quality (lower *QScore* mean and median). These differences are statistically significant at the 10% significance level. We gain more insight into the variety of corporate governance by examining the four governance pillars. The Civil block also shows lower ratings (higher quality) in *BoardStructure* and *Compensation*. For the latter, the values are statistically significant. However, the Common block leads in the other two pillars (*ShareRights* and *Audit* practices), reflecting lower ratings (higher quality). The values for *Audit* are statistically significant. Contrary to prior literature, these findings somehow contradict the established notion of clear leadership of the Anglo-American (common law) model of corporate governance as highlighted by La Porta *et al.* (1998).

In terms of firm performance, the Common block shows a clear leadership, with the values for *TQ, ROA, ROE* and *TSR* higher and statistically significant. As for the control variables, firms in the Civil block appear to be older (higher *LOGAGE* values), larger (higher *ASSETS* values), and lead in terms of growth potential (larger *GROWTH* values). The Common region exhibits a higher level of leverage (higher *DEBT* values). All differences except *GROWTH* are statistically significant.

Insert Table 5 around here

Table 6 provides Pearson correlation coefficients with significance values for the variables in Eq. *(1)*. As expected, *QScore* correlates with the four main governance pillars (*BoardStructure, Compensation, ShareRights and Audit*). We also analyze the correlation between each pair of categories to rule out any potential substitution effect between governance main features. We find no significant negative correlation, suggesting that the main four governance pillars are not substitutes.

Regarding the correlation between our performance metrics and governance variables, we observe a significant positive correlation between our aggregate governance rating *QScore* and *TQ*. It also applies to the four main governance pillars, with the exception of the *Audit* category, for which we observe a significant but negative correlation. The positive correlations indicate that higher governance ratings (weaker governance quality) should translate into higher firm performance, which is inconsistent with our hypotheses. Only for the audit pillar, the negative sign is consistent with our expectations. Morevoer, no significant correlation is found between *QScore* and the remaining performance metrics. In another surprising result, the *BoardStructure* rating is positive and significantly correlated with all performance variables, except with the *TSR*, contradicting our *Hypothesis 1.1*. This means that higher scores (weaker board structures) should translate into higher firm performance. The *Audit* rating reflects the expected negative significant correlation with all performance variables, indicating that higher scores (weaker audit practices) are consistent with lower performance. On the other hand, not surprisingly, performance metrics by a large extent are highly correlated among them.

Regarding the control variables, *QScore* and the main categories (except *Audit*) show a significant negative correlation with *ASSETS* and *GROWTH*. As expected, a positive significant correlation between the governance ratings and lagged performance variables is also registered. The other correlations are generally much lower, not suggesting serious multicollinearity in our dataset.

Insert Table 6 around here

4.5. Results

In this section, we present and discuss the results of the estimations of Eq. *(1)*. We are aware of the fact that the number of factors included by ISS to compute the governance scores vary among sub-regions and countries. To make *QScore* equivalent across companies, we follow ISS's regional breakdown to allow for comparison within markets where governance practices are similar. Therefore, we have standardized these ratings at the sub-regional or country level, rescaling the scores to have a mean of zero and a

standard deviation of one. As the Breusch-Pagan test suggests heteroscedasticity in our dataset, we conduct significant tests with robust standard errors.[15]

For Eq. *(1)*, six models are estimated. In Model 1, we study the primary relationship between *QScore* and our four proxies of performance. To evaluate the separate impact of each of the four main governance categories, in Models 2-5 we replace *QScore* by each of the partial ratings (*BoardStructure, Compensation, ShareRights* and *Audit*). In Model 6, we test for the four pillars together as independent variables to measure their joint impact on firm performance metrics. Tables 7 through 10 report the results of the regressions of the six models for the four performance metrics.

Table 7 reports our first set of results of the estimation of Eq. *(1)* with *TQ* as the proxy for performance. All six models are globally significant with 92% adjusted *R-squared*. The main result is the absence of any significant relationship between *QScore* and *TQ*, as reflected in Model 1, as well as for all partial ratings (Models 2-5). This relationship remains non-significant when the four main categories are simultaneously tested in Model 6, similar to Klein *et al*. (2005), Daines *et al.* (2010), and Núñez and Garcia-Blandon (2017).

As for control variables, we find a significantly inverse relationship between *TQ* and *ASSETS* in all models. This indicates that larger firms exhibit lower performance as measured by *TQ*, consistent with our prediction. Similarly, there is negative significant relationship between TQ and *GROWTH* in our six models, contradicting our expectations. Finally, we also observe the expected significant direct relationship with lagged performance ($TQ_{(t-1)}$) in all six models.

Insert Table 7 around here

Table 8 depicts the results of the estimation of Eq. *(1)* with *ROA* as the dependent variable. As in the previous case, all four models are globally significant with high explanatory power (adjusted *R-squared* of 87%). Model 1 shows again a non-significant relationship between *QScore* and performance, this time proxied by *ROA*, similar to Epps and Cereola (2008). As for the partial ratings, we report a significant association with *Compensation*, for which we observe the expected negative sign, consistent with Hypothesis 1.2. Hence, firms with higher *Compensation* scores (weaker compensation practices) exhibit weaker performance as measured by *ROA*. This relationship remains significant in Model 6 when we analyze all governance categories combined. Also in Model 6, the relationship between *BoardStructure* and *ROA* turns significant at the 10% significance level.

[15] As a rule, we do not deliver the specific mark for the usual significant levels (0.01 or 0.05).

However, the positive sign of this association contradicts our Hypothesis 1.1, reflecting that firms with higher *BoardStructure* ratings (weaker board practices) exhibit stronger performance as measured by ROA. In terms of the control variables, *ASSETS* reflects again a significantly inverse relationship with performance (*ROA*), while the significant relationship for *GROWTH* turns positive this time, confirming our expectations in both cases. In addition, *LOGAGE* shows a positive significant association with *ROA* at the 10% significance level, contradicting our expectations. We report significant results for the influence of prior performance ($ROA_{(t-1)}$) with the predicted positive sign.

Insert Table 8 around here

Table 9 displays the results of the estimation of Eq. *(1)* with *ROE* as the dependent variable. All six models are globally significant, although the explanatory power of the models is considerably lower than in the estimations conducted with *TQ* or *ROA* as the proxies for performance (adjusted *R-squared* of 57%). According to the results for Model 1, the relationship between *QScore* and *ROE* is non-significant. In addition, no significant relationship is shown between any of the partial ratings and *ROE*, except for *BoardStructure* that reveals a positive association with performance (*ROE*) at the 10% significance level. This relationship remains significant at the 10% significance level with the unexpected positive sign when we introduce the partial ratings altogether in Model 6. This contradicts our Hypothesis 1.1, conveying that firms with higher *BoardStructure* scores (weaker board practices) exhibit stronger performance as measured by *ROE*.

As for control variables, we confirm the significant direct influence of past year performance ($ROE_{(t-1)}$) on current performance. We also report again a significantly inverse relationship between *ASSETS* and performance (*ROE*) in all models at the 10% significance level, as predicted.

Insert Table 9 around here

Table 10 displays the results of the estimation of Eq. *(1)* with *TSR* as the dependent variable. Although all six estimations are globally significant, the explanatory power of the proposed model is rather low (adjusted *R-squared* of 29%) if compared with the former estimations. According to the results for Model 1, the relationship between *QScore* and *TSR* is non-significant. In addition, no significant relationship is observed between any of the partial ratings and *TSR*.

As for control variables, we observe a significantly inverse relationship between the level of leverage (*DEBT*) and performance measured by *TSR*, contradicting our expectations. We also report a negative influence of lagged performance ($TSR_{(t-1)}$) on current

performance. This result could be explained by the overreactions of stock markets, which encourages the so-called contrary investment strategies (Chan, 1988).

Insert Table 10 around here

In summary, results show that commercial governance ratings are not good predictors for performance. In addition, the governance categories also show no significant impact on firm performance after controlling for other firm characteristics, past performance, and the sector effect. It should be noticed that, unlike Krafft *et al.* (2014), we control for past performance, and this could explain the different results we obtain compared to Krafft *et al.* (2014). In all models the coefficients of the lagged dependent variable are positive and significant, indicating that dynamics play a relevant role in this relationship.

We also conduct a battery of additional tests to evaluate the robustness of our conclusions (results untabulated).[16] Firstly, we run a similar analysis for a subsample of firms excluding Financials and Real Estate firms (219 companies) due to their distinctive corporate governance structures and accounting practices, resulting in a cluster consisting of 884 companies. In general, results using this non-financial subsample are qualitatively similar to those presented for the entire set of firms.

Following Núñez and Garcia-Blandon (2017), as a natural extension of this research, in another robustness check, we segregate the firms in the sample according to the quality of governance (*QScore*). We follow Gomper *et al.* (2003)'s portfolio approach and classify our sample of 1103 firms as being "good" quality (low risk) of governance (*QScore* from 1 to 3), "medium" quality (medium risk) of governance (*QScore* from 4 to 7), and "poor" quality (high risk) of governance (*QScore* from 8 to 10). Almost half of the companies (49%) are at the "medium" governance practices level, 29% of the firms are at the "good" governance practice level, while firms with "poor" governance represent the remaining 22% of the sample. This would enable to conduct sensitive sequential estimations for the extreme "poor" and "good" quality of governance clusters. All the estimations fail to validate a significant relationship between *QScore* and performance. We also do not observe a significant relationship between any of main four governance pillars and performance (results untabulated).

Similar to Krafft *et al.* (2014), we ran our models excluding the lagged performance metrics. In this test, the association between our major *QScore* rating turns significantly negative when we use *ROA* as a proxy for performance, signaling that high *QScore* ratings (lower governance quality) will have a negative impact on performance measured by

[16] Results for this set of robustness checks are not reported in tables. However, they are available upon request.

ROA. Similarly, we also find sporadic and occasionally contradictory influences of certain governance categories on performance when we exclude the lagged performance metrics. This highlights the importance of controlling for past performance when testing this governance quality-firm performance association. It could also contribute to explain the differences between our results and Krafft *et al.*'s (2014).

In the last check, we control for the fact that several countries are openly underrepresented in our sample. Accordingly, we rerun all models excluding countries with fewer than three firms. None of these arrangements changes the results. Overall, the robustness tests provide support to the results reported in the main analysis regarding the lack of association between commercial governance ratings and performance.

4.6. Additional analysis: the importance of a country's legal tradition

As previously stated, research points to a country's legal tradition as important determinant of corporate governance practices. Common law countries tend to protect and enforce investors' rights stronger than civil law countries (La Porta *et al.*, 1998). Hence, we cannot take for granted that the set of governance mechanisms work the same in both systems. Then, we should not accept that the results obtained in countries whose legal tradition is based on the common law (mostly Anglo-Saxon countries) can be directly extrapolated to civil law countries. Therefore, the influence of the legal tradition is not only a valid explanation for corporate governance differences but also for variances in firm performance across countries (Levine, 1999). Accordingly, following the analysis conducted with the whole sample, we perform additional analyses for the segmentation of our sample based on the firm's legal origin.

Table 11 shows the results for our Hypothesis 1 (Model 1) for the two legal origin blocks. In the case of the analysis for the Common block, the results for Model 1 show no significant relationship between *QScore* and performance as measured by any of our performance indicators. Thus, results for Model 1 would not support Hypothesis 1. As for the partial ratings covered in Model 2-6 (results untabulated), we also do not observe any significant results for any of the ratings in any of the estimations.

Focusing on the Civil block, as in the case of the Common block, results for the aggregate governance rating *QScore* in Model 1 show a non-significant relationship with any of the four performance metrics analyzed, inconsistent with Hypothesis 1. As for the partial ratings, we do not observe any significant results for any of the ratings, except for the *Compensation* category (Model 3) that reflects a significant relationship with all our performance metrics. This significant relationship between *Compensation* and

performance remains when we analyze the combined effect of all four pillars in Model 6. The negative sign of this relationship follows our predictions, meaning that firms with higher *Compensation* scores (weaker compensation practices) exhibit weaker performance. This is consistent with some empirical research examining this particular relationship for civil law countries. Basu *et al.* (2007), in a study of Japanese firms, found that excess pay and weaker compensation practices are negatively related to accounting performance.

These results at the region level, are globally consistent with the evidence reported by Núñez and Garcia-Blandon (2017) for the European setting. In general, results for Model 1 would not support a positive relationship between commercial ratings scores and performance (Hypothesis 1) in any of the two legal tradition blocks. However, the only of such positive relationship that was statistically validated in Núñez and Garcia-Blandon (2017)'s European study, observed between *QScore* and *ROA* for the Civil region, does not materialize for our broader sample.

Insert Table 11 around here

4.7. Summary and conclusion

The question of how corporate governance relates to firm performance has captured a considerable attention from scholars, regulators, and market participants alike. An increasing number of investors are incorporating commercial governance ratings in their decision-making process, as a proxy for corporate governance and predictors of firm-level performance. It thus seems logical to wonder whether market participants should rely on these ratings for such important task. In this investigation, we examine the association between quality of governance through the leading governance rating *Quickscore* and firm performance as well as the interaction with the country legal environment, in order to confirm if such assumed positive association does materialize.

While some papers have investigated this issue before, only in one case has been addressed it in a purely global setting. Using a large global database allows us to tackle the sample bias problem associated to majority of studies on this line of research we have further extended the analysis of commercial governance ratings as a contributing factor of firm performance carried out by Núñez and García-Blandón (2017) which look at the impact of governance on firm performance in a European setting. Similar to them, our analysis yields little evidence supporting the widespread hypothesis of a positive association between corporate governance and firm performance after controlling for other firm measures that prior research has shown to be related to performance.

Although our main interest is on the aggregate scores of the governance ratings, we also study the relationship between partial scores relative to board structure, compensation, shareholder rights and audit practices, and performance. Moreover, in order to provide sounder results, our research considers several metrics of performance. However, the lack of association detected between governance and performance generally survives all different performance measures and robustness tests. Only in one particular case was this relationship validated with the expected sign: the inverse association between *Compensation* and *ROA*, signaling the negative influence of low-quality compensation practices (higher ratings) on the company´s performance (Hypothesis 1.2). In the case of the association between *BoardStructure* and *ROA* or *ROE*, the positive sign of this relation contradicts our Hypothesis 1.1.

The literature suggests that quality of corporate governance could differ among, most notably, legal origin. We have performed segmented analyses with the two major groups of firms (Civil and Common) that have yielded steady results, increasing our confidence in the absence of a significant relationship between the tested ratings and performance. Only for the Civil region, we again find a significant negative relationship between the *Compensation* ratings and all metrics of performance, consistent with our prediction in Hypothesis 1.2.

We consider that our empirical findings have interesting implications for corporate governance research and practice. First, how governance is measured matters. While these commercial ratings constitute, in theory, a widely used proxy for the corporate governance quality, its tangible role remains subject to criticism. Our results also reveal that they are hardly relevant in predicting performance. Moreover, the similarities between our results and Núñez and García-Blandón's (2017) with a dated version of *Quickscore* might put into question the claimed improvements in the construction of the latest versions of commercial governance ratings.

Bohren and Odegaard (2006) question the benefits of gathering a large number of governance factors and highlighted that only a limited number of governance provisions matter to firm performance. Our findings somehow seem to point in this direction and highlight the challenges faced by rating agencies at developing reliable measures of corporate governance quality. We also believe that regulators and policy makers should enforce the design of more efficient tools to measure corporate governance, since these commercial ratings seem to have limited effectiveness. Moreover, investors and supporters of commercial governance ratings in general should cautiously take note of this weak association when trying to pick best performers.

In addition, since our main conclusion somehow contradicts Krafft *et al.*'s (2014) and the mostly positive effects reported in the literature, it clearly encourages further research on this issue. On the other hand, our results suggest that in order to strengthen the models, they should consider the dynamics from lagged performance. We show that when these lagged dependent metrics and a larger set of control variables are included in the model, each has an important role to play.

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Tables

Table 1. Description of variables used in the empirical research

Variable	Code	Definition	Data Source
Corporate Governance Variables			
Quickscore	*QScore*	Aggregate CG Score rating provided by ISS from 2015	ISS
Board Structure	*BoardStructure*	The Board Structure category rating as provided by ISS from 2015	ISS
Compensation	*Compensation*	The Compensation category rating as provided by ISS from 2015	ISS
Shareholders Rights	*ShareRights*	The Shareholders' rights category rating as provided by ISS from 2015	ISS
Audit Practices	*Audit*	The Auditing practices category rating as provided by ISS from 2015	ISS
Variables for Company Performance			
Tobin´s Q	*TQ*	Division of of the market value of assets (calculated as book value of assets minus book value of equity plus market value of equity) by the book value of assets in 2016.	S&P Capital IQ
Return on Assets	*ROA*	Ratio of operating income to total assets in 2016	S&P Capital IQ
Return on Equity	*ROE*	Quotient of net income divided by the book value of common equity in 2016	S&P Capital IQ
Total Shareholders Return	*TSR*	Quotient of the sum of company´s annual stock price change plus dividend payments all divided by stock price at the beginning of year 2016.	S&P Capital IQ
Control Variables			
Firm´s listing age	*LOGAGE*	Number of years passed since the firm´s founding year until 2016 (natural logarithm)	S&P Capital IQ
Firm Size	*ASSETS*	Natural logarithm of total assets in 2016	S&P Capital IQ
Growth Opportunity	*GROWTH*	Average Sales Growth in the last 3 years (2014-16)	S&P Capital IQ
Level of Leverage	*DEBT*	[Long Term Debt plus current portion of Long Term Debt/ Total Assets] in 2016	S&P Capital IQ
Tobin´s Q $_{(t-1)}$	$TQ_{(t-1)}$	Tobin´s Q in 2015	S&P Capital IQ
Return on Assets $_{(t-1)}$	$ROA_{(t-1)}$	ROA in 2015	S&P Capital IQ
Return on Equity $_{(t-1)}$	$ROE_{(t-1)}$	ROE in 2015	S&P Capital IQ
Total Shareholders Return $_{(t-1)}$	$TSR_{(t-1)}$	TSR in 2015	S&P Capital IQ

Table 2. Dataset break down by corporate governance legal origin blocks

Legal Origin Blocks	Country	Companies	Percent
	Australia	47	4.26
	Bermuda	2	0.18
	Canada	58	5.26
	Hong Kong	11	1.00
	Ireland	18	1.63
Common Law	Macau	1	0.09
	Papua New Guinea	1	0.09
	Singapore	4	0.36
	Taiwan	1	0.09
	United Kingdom	96	8.70
	United States	460	41.70
		699	**63.37**
	Austria	3	0.27
	Belgium	9	0.82
	Brazil	15	1.36
	Denmark	11	1.00
	Finland	9	0.82
	France	43	3.90
	Germany	38	3.45
	Italy	16	1.45
	Japan	141	12.78
Civil Law	Luxembourg	5	0.45
	Netherlands	19	1.72
	Norway	6	0.54
	Portugal	2	0.18
	South Korea	12	1.09
	Spain	19	1.72
	Sweden	22	1.99
	Switzerland	34	3.08
		404	**36.63**
		1,103	**100.00**

Table 3. Dataset breakdown by sectors

Sectors	Companies	Percent
Consumer Discretionary	158	14.32
Consumer Staples	86	7.8
Energy	73	6.62
Financials	168	15.23
Healthcare	88	7.98
Industrials	192	17.41
Information Technology	97	8.79
Materials	101	9.16
Real Estate	51	4.62
Telecommunication Services	28	2.54
Utilities	61	5.53
Total	**1103**	**100.00**

Table 4. Dataset descriptive statistics

Variables	N	Mean	Median	St. Dev.	Min	Max
Corporate Governance Variables						
QScore	1103	4.82	4	2.99	1	10
BoardStructure	1103	4.74	4	2.93	1	10
Compensation	1103	4.66	4	2.82	1	10
ShareRights	1103	4.46	4	3.22	1	10
Audit	1103	2.47	1	2.69	1	10
Company Performance Variables						
TQ	1103	1.71	1.46	0.72	0.99	3.16
ROA	1103	7.16	6.40	5.08	0.00	16.00
ROE	1103	13.20	11.60	10.00	-1.25	32.40
TSR	1103	10.40	9.44	17.00	-14.70	38.70
Control Variables						
LOGAGE	1103	4.21	4.39	0.68	3.04	5.07
ASSETS	1103	10.00	9.84	1.17	8.46	12.10
GROWTH	1103	3.38	3.02	7.39	-8.90	16.10
DEBT	1103	23.70	23.10	14.00	3.19	46.80
$TQ_{(t-1)}$	1103	1.70	1.43	0.73	0.98	3.17
$ROA_{(t-1)}$	1103	7.38	6.53	5.25	0.00	16.40
$ROE_{(t-1)}$	1103	12.90	11.60	10.20	-3.82	30.80
$TSR_{(t-1)}$	1103	3.41	3.76	19.40	-28.30	33.70

Table 5. Univariate analysis of mean and median differences of research variables by legal tradition

	Mean		Significance	Median		Significance
Variables	**Common**	**Civil**	***t-test***	**Common**	**Civil**	**MW**
Corporate Governance Variables						
QScore	4.94	4.61	*	5	4	*
BoardStructure	4.85	4.56		5	4	
Compensation	4.95	4.16	***	5	4	***
ShareRights	4.45	4.49		5	4	
Audit	2.09	3.12	***	1	1	***
Company Performance Variables						
TQ	1.83	1.49	***	1.61	1.23	***
ROA	7.68	6.27	***	7.11	5.80	***
ROE	14.30	11.30	***	12.80	10.10	***
TSR	13.10	5.86	***	12.90	1.39	***
Control Variables						
LOGAGE	4.15	4.33	***	4.26	4.52	***
ASSETS	9.91	10.20	***	9.75	10	***
GROWTH	3.16	3.76		2.48	3.54	*
DEBT	25.90	19.80	***	25.80	18.1	***

Levels of significance * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 6. Research variables correlation matrix

	QScore	*BoardSt*	*Compens*	*ShRights*	*Audit*	*TQ*	*ROA*	*ROE*	*TSR*	*ASSETS*	*LOGAGE*	*GROWTH*	*DEBT*	$TQ_{(t-1)}$	$ROA_{(t-1)}$	$ROE_{(t-1)}$
BoardSt	0.539*	1.00														
	0.00															
Compens	0.610*	0.276*	1.00													
	0.00	0.00														
ShRights	0.606*	0.249*	0.101*	1.00												
	0.00	0.00	0.00													
Audit	0.280*	0.067*	0.02	0.02	1.00											
	0.00	0.03	0.51	0.43												
TQ	0.094*	0.114*	0.130*	0.0604*	-0.124*	1.00										
	0.00	0.00	0.00	0.04	0.00											
ROA	0.04	0.118*	0.05	0.05	-0.109*	0.780*	1.00									
	0.14	0.00	0.09	0.10	0.00	0.00										
ROE	0.01	0.066*	0.01	0.04	-0.111*	0.524*	0.610*	1.00								
	0.69	0.03	0.70	0.23	0.00	0.00	0.00									
TSR	0.01	-0.02	0.085*	-0.04	-0.082*	0.03	-0.070*	-0.01	1.00							
	0.73	0.59	0.00	0.21	0.01	0.28	0.01	0.65								
ASSETS	-0.116*	-0.112*	-0.133*	-0.067*	0.136*	-0.528*	-0.560*	-0.220*	0.03	1.00						
	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.34							
LOGAGE	-0.077*	-0.106*	-0.140*	-0.02	0.04	-0.123*	-0.09*	-0.04	-0.01	0.184*	1.00					
	0.01	0.00	0.00	0.45	0.15	0.00	0.00	0.24	0.75	0.00						
GROWTH	0.02	0.070*	0.01	0.02	-0.01	0.105*	0.146*	0.154*	-0.180*	-0.02	-0.213*	1.00				
	0.57	0.02	0.65	0.50	0.69	0.00	0.00	0.00	0.00	0.59	0.00					
DEBT	-0.02	0.00	-0.01	0.01	-0.01	0.108*	0.106*	0.063*	-0.01	-0.135*	-0.161*	0.00	1.00			
	0.48	0.96	0.74	0.73	0.70	0.00	0.00	0.04	0.65	0.00	0.00	0.93				
$TQ_{(t-1)}$	0.081*	0.100*	0.115*	0.05	-0.108*	0.951*	0.779*	0.532*	-0.160*	-0.518*	-0.11*	0.188*	0.116*	1.00		
	0.01	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
$ROA_{(t-1)}$	0.05	0.102*	0.086*	0.04	-0.142*	0.755*	0.922*	0.550*	-0.110*	-0.550*	-0.097*	0.105*	0.105*	0.790*		
	0.10	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
$ROE_{(t-1)}$	0.00	0.03	0.02	0.02	-0.137*	0.484*	0.560*	0.730*	-0.080*	-0.205*	-0.03	0.153*	0.062*	0.522*	0.610*	1.00
	0.97	0.37	0.42	0.55	0.00	0.00	0.00	0.00	0.01	0.00	0.36	0.00	0.04	0.00	0.00	
$TSR_{(t-1)}$	-0.06	0.01	-0.091*	0.00	0.00	0.229*	0.214*	0.190*	-0.360*	-0.090*	0.00	0.227*	-0.084*	0.312*	0.165*	0.167*
	0.05	0.78	0.00	0.89	0.96	0.00	0.00	0.00	0.00	0.00	0.96	0.00	0.00	0.00	0.00	0.00

* $p<0.05$

Table 7. Results on the influence of ISS QScore governance ratings on performance as measured by Tobin's Q (TQ)

	Model1	Model2	Model3	Model4	Model5	Model6
QScore	0.0031					
	(0.60)					
BoardStructure		0.0088				0.0091
		(0.18)				(0.18)
Compensation			0.000024			-0.0017
			(1.00)			(0.81)
ShareRights				0.0034		0.0020
				(0.61)		(0.77)
Audit					-0.0052	-0.0055
					(0.43)	(0.41)
LOGAGE	-0.0039	-0.0035	-0.0043	-0.0043	-0.0044	-0.0038
	(0.71)	(0.74)	(0.68)	(0.69)	(0.68)	(0.72)
ASSETS	-0.027***	-0.026***	-0.027***	-0.027***	-0.026***	-0.026***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
GROWTH	-0.0042***	-0.0042***	-0.0042***	-0.0041***	-0.0042***	-0.0043***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
DEBT	-0.056	-0.055	-0.058	-0.057	-0.058	-0.054
	(0.37)	(0.38)	(0.35)	(0.36)	(0.35)	(0.38)
$TQ_{(t-1)}$	0.92***	0.92***	0.92***	0.92***	0.92***	0.92***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.39***	0.39***	0.39***	0.39***	0.39***	0.38***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Companies (N)	1103	1103	1103	1103	1103	1103
F-Statistic	280.6***	281.0***	280.5***	280.6***	280.7***	262.2***
Adjusted R2	0.92	0.92	0.92	0.92	0.92	0.92

Notes: Results are reported with robust t-statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 8. Results on the influence of ISS QScore governance ratings on performance as measured as measured by ROA

	Model1	Model2	Model3	Model4	Model5	Model6
QScore	-0.00050					
	(0.38)					
BoardStructure		0.00061				0.00097*
		(0.28)				(0.09)
Compensation			-0.0013**			-0.0016**
			(0.03)			(0.01)
ShareRights				-0.00016		-0.00020
				(0.80)		(0.76)
Audit					0.00035	0.00045
					(0.65)	(0.57)
LOGAGE	0.0017*	0.0018*	0.0015	0.0017*	0.0017*	0.0016*
	(0.07)	(0.06)	(0.11)	(0.07)	(0.07)	(0.10)
ASSETS	-0.0024***	-0.0023***	-0.0024***	-0.0024***	-0.0024***	-0.0025***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
GROWTH	0.00030***	0.00030***	0.00031***	0.00030***	0.00031***	0.00031***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
DEBT	0.00021	0.00083	-0.00030	0.00051	0.00056	-0.00026
	(0.97)	(0.87)	(0.95)	(0.92)	(0.92)	(0.96)
$ROA_{(t-1)}$	0.82***	0.82***	0.81***	0.82***	0.82***	0.82***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.025***	0.024**	0.026***	0.024**	0.024**	0.026***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Companies (N)	1103	1103	1103	1103	1103	1103
F-Statistic	162.4***	162.5***	163.1***	162.3***	162.4***	152.6***
Adjusted R2	0.87	0.87	0.87	0.87	0.87	0.87

Notes: Results are reported with robust t-statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 9. Results on the influence of ISS QScore governance ratings on performance as measured by ROE

	Model1	Model2	Model3	Model4	Model5	Model6
QScore	0.00053					
	(0.81)					
BoardStructure		0.0036*				0.0040*
		(0.09)				(0.07)
Compensation			-0.0017			-0.0028
			(0.41)			(0.20)
ShareRights				0.0017		0.0013
				(0.40)		(0.53)
Audit					0.00096	0.0010
					(0.67)	(0.65)
LOGAGE	0.00078	0.0010	0.00044	0.00075	0.00072	0.00063
	(0.83)	(0.78)	(0.91)	(0.84)	(0.84)	(0.86)
ASSETS	-0.0040*	-0.0039*	-0.0041*	-0.0039*	-0.0041*	-0.0040*
	(0.07)	(0.08)	(0.06)	(0.08)	(0.06)	(0.07)
GROWTH	0.00032	0.00029	0.00033	0.00033	0.00033	0.00032
	(0.42)	(0.46)	(0.40)	(0.41)	(0.41)	(0.42)
DEBT	0.015	0.016	0.014	0.016	0.015	0.015
	(0.46)	(0.43)	(0.51)	(0.44)	(0.47)	(0.47)
$ROE_{(t-1)}$	0.66***	0.66***	0.66***	0.66***	0.66***	0.66***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.073**	0.072**	0.075**	0.073**	0.075**	0.075**
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Companies (N)	1103	1103	1103	1103	1103	1103
F-Statistic	32.3***	32.5***	32.4***	32.4***	32.3***	30.4***
Adjusted R2	0.57	0.57	0.57	0.57	0.57	0.57

Notes: Results are reported with robust t-statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 10: Results on the influence of ISS QScore governance ratings on performance as measured by TSR

	Model1	Model2	Model3	Model4	Model5	Model6
QScore	-0.0031					
	(0.50)					
BoardStructure		-0.0022				-0.0010
		(0.64)				(0.83)
Compensation			-0.00033			0.00069
			(0.94)			(0.88)
ShareRights				-0.0069		-0.0068
				(0.12)		(0.14)
Audit					-0.0017	-0.0016
					(0.70)	(0.71)
LOGAGE	-0.0053	-0.0051	-0.0049	-0.0050	-0.0049	-0.0050
	(0.48)	(0.49)	(0.51)	(0.50)	(0.51)	(0.50)
ASSETS	0.0063	0.0064	0.0065	0.0061	0.0066	0.0063
	(0.20)	(0.19)	(0.19)	(0.22)	(0.18)	(0.21)
GROWTH	-0.0010	-0.0010	-0.0010	-0.0010	-0.0010	-0.0011
	(0.20)	(0.21)	(0.20)	(0.19)	(0.20)	(0.19)
DEBT	-0.096**	-0.094**	-0.093**	-0.097**	-0.093**	-0.097**
	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)	(0.01)
$TSR_{(t-1)}$	-0.19***	-0.19***	-0.19***	-0.19***	-0.19***	-0.19***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.077	0.074	0.074	0.077	0.072	0.075
	(0.23)	(0.25)	(0.25)	(0.23)	(0.26)	(0.24)
Companies (N)	1103	1103	1103	1103	1103	1103
F-Statistic	10.0***	10.0***	10.0***	10.1***	10.0***	9.42***
Adjusted R2	0.29	0.29	0.29	0.29	0.29	0.29

Notes: Results are reported with robust t-statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 11. Results on the influence of ISS QScore governance ratings on performance (segmented by legal tradition)

	TQ		***ROA***		***ROE***		***TSR***	
	Common	**Civil**	**Common**	**Civil**	**Common**	**Civil**	**Common**	**Civil**
QScore	0.005	-0.0071	-0.00051	-0.00065	-0.0005	0.0019	-0.00059	-0.011
	(0.545)	(0.363)	(0.481)	(0.482)	-0.857	(0.565)	(0.917)	(0.182)
LOGAGE	0.00052	-0.0045	0.0023*	0.0006	0.0064	-0.0084	-0.0031	-0.017
	(0.973)	(0.734)	(0.062)	(0.685)	(0.189)	(0.138)	(0.734)	(0.174)
ASSETS	-0.030***	-0.024*	-0.002**	-0.0025*	-0.0042	-0.0053	0.012*	-0.0031
	(0.001)	(0.052)	(0.010)	(0.051)	(0.127)	(0.117)	(0.055)	(0.727)
GROWTH	-0.005***	-0.001	0.0003**	0.0005**	0.00044	0.00054	-0.001	-0.00058
	(0.001)	(0.573)	(0.033)	(0.015)	(0.360)	(0.432)	(0.290)	(0.697)
DEBT	-0.019	-0.19**	0.0073	-0.017**	0.037	-0.047	-0.053	-0.1
	(0.816)	(0.032)	(0.318)	(0.040)	(0.160)	(0.145)	(0.259)	(0.158)
TQ/ROA/ROE/TSR	0.92***	0.90***	0.81***	0.80***	0.70***	0.53***	-0.20***	-0.18***
(t-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.39***	0.50***	0.019*	0.041**	0.037	0.19***	0.032	0.13
	(0.002)	(0.006)	(0.099)	(0.015)	(0.335)	(0.001)	(0.679)	(0.269)
Companies (N)	699	404	699	404	699	404	699	404
F-Statistic	258.6***	198.4***	172.5***	144.3***	37.0***	17.6***	9.75***	6.08***
Adjusted R^2	0.91	0.93	0.87	0.87	0.59	0.51	0.27	0.29

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Chapter 5. Conclusions

Chapters 2, 3 and 4 constitute the main body of this investigation. These chapters had initially been proposed as independent studies on different approaches to evaluate the relationship between the quality of corporate governance and firm performance. The objective pursued in this final chapter is to highlight the main conclusions derived from the joint consideration of aspects related to the corporate governance-performance association, which have been treated separately in each of the aforementioned chapters.

The main objective of this research has been to determine the impact on firm performance of the quality of corporate governance. The proposed models have been tested empirically for the Spanish, European and global setting. We have measured this quality of corporate governance through two of the main channels: commercial indexes widely used as a proxy for corporate governance, and the degree of compliance with the recommendations of a country's code. The results of this research must be associated, at least in part, with the fact that the proxies used constitute an imperfect representation of the corporate governance variable whose effect is to be measured.

Our findings can be summarized as follows. First of all, in both Chapters 2 and 4, we do not find a consistent significant relationship between CGR and firm performance for our sample of large European and global firms respectively. Second, the results obtained in Chapter 3 point to a weak impact on the performance of companies from the quality of corporate governance when measured through a compliance with local code recommendations. These results hold for the overall proxy of corporate governance as well as for the proxies that represent the main governance categories or areas of recommendations. Moreover, the lack of association detected between governance and performance generally survives all different performance measures and robustness tests.

In Chapter 4, we have extended and refined the analysis performed in Chapter 2 on the European level, to the global scale. In addition to the worldwide nature of our sample, which is a distinction in this line of research, another differentiating feature of this study is that we simultaneously investigate the effects of the CGR on market and accounting metrics of performance. We also use the latest available version of leading ISS governance ratings. After controlling for sector, firm-specific attributes, and prior-performance, our empirical

results indicate that corporate governance quality as measured by our governance CGR proxies is not an important element in shaping up the firm's performance. Therefore, our findings call into question the usefulness of CGR marketed by influential consultant companies as predictors of performance.

The literature suggests that quality of corporate governance could differ among, most notably, legal origin. After performing segmented analyses with the two major groups of firms (Civil and Common), we have found no empirical evidence of a significant relationship between governance and performance for any of these two regions. Our results at the region level, are globally consistent (Chapter 4) with the evidence reported for the European setting in Chapter 2.

Considering the growing importance of CGR for companies and market participants, we believe that our empirical findings have also implications for corporate governance research and practice. First, our results question rating agencies' vindication of these ratings, as they do not seem to create value for market participants. For that reason, we recommend that investors should make decisions based on CGR only with due reservations. Furthermore, our results should also encourage the providers of CGR to investigate on the causes of this lack of relationship in order to improve their design and to produce more accurate ratings.

The results of the study in Chapter 3 might also have some practical implications, as they provide some indications of the ability of compliance with a governance code to predict performance for Spanish firms. From a more general point of view, it also contributes to the debate about the very usefulness of these governance codes. In addition, it also stresses the importance of country-specific issues (i.e., culture and business ethics, as well as the level of disclosure and outsiders' difficulty to verify the information) to understand the compliance with the governance code-performance relationship and thus, the difficulties of generalizing country-specific evidence. On the other hand, our results suggest that in order to strengthen investor confidence, local regulators should be more active in penalizing poor explanations and make sure that the mandatory corporate governance reports do not become a mechanical tick-the-box exercise, jeopardizing the effectiveness of the "comply or explain" approach.

A lesson to be learned from this investigation is that the effects of our proxies of corporate governance on performance seem to be weak, even after considering the dynamics from lagged performance. We show that when these lagged dependent metrics and a set of

significant control variables are included in the model, each has an important role to play, as do their interactions.

The limitations of the current study are represented by two major constraints: 1) the static nature of our cross-sectional estimations in Chapters 2 and 4, and 2) the composition of our sample data, consisted of major companies in terms of market capitalization and relatively homogenous in terms of size and age, for all datasets used. As a future avenue of research, we look to establish a panel data approach, by extending the time series to a minimum period of three years for our analyses in Chapters 2 and 4, allowing to build more robust relationships among critical variables. It is also recommended to run similar analyses (for Chapters 2 and 4) using other CGR. We should also expand our sample data beyond the very large (and usually older) corporations included in these datasets.

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