

## **The Relationship between Firm Level Corporate Governance and the Performance of Financial Analysts**

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### **Abstract**

*Present study investigates the relationship between firm level corporate governance and the performance of financial analysts. By using a comprehensive database the analysis integrates several dimensions of firm level corporate governance as well as the dimension legal context. The result show support for a positive relationship between corporate governance and financial analyst performance. However, based on the fact that the sample is divided into companies belonging to civil law and common law countries, this conclusion must be nuanced. We can conclude that there is just support for a positive relation between firm-level corporate governance and forecast accuracy in civil law countries, and only support for a negative relation between firm-level corporate governance and forecast dispersion in common law countries. However, all firms with strong corporate governance in the two different contexts have a greater analyst following. Furthermore, we find that the variables related to the board seem to matter independently of the context concerning the improved performance of the analyst. In addition, in both civil and common law countries, the higher improved function of the board and ownership increases the demand for analysts, while improved audit function as well as improved takeover regulation lessen the demand for analysts.*

**Keywords:** financial analysts, corporate governance, civil law, common law

### **1. Introduction**

The purpose of this study is to investigate the relationship between firm-level corporate governance (FCG) and the performance of financial analysts. Earlier research has demonstrated that the analyst's role and performance depends on the conditions they encounter. The relation between corporate governance and financial analyst performance has been the focus of several earlier studies. The large majority of these studies address country-level corporate governance (CCG). Within this line of research, there are several studies indicating support of a significant positive relationship between CCG and financial analyst performance (e.g., Alford et al. 1993, Ali et al. 2003, Ashbaugh and Pincus 2001, Ball et al. 2000, Barniv et al. 2005, Barniv and Myring 2006, Chang et al. 2000, Hail and Leuz 2006, Hope 2003a,b, Hung 2000, Leuz et al. 2003, Sun 2009, von Koch et al. 2013a, von Koch et al. 2014a,b). This is not surprising since a general explanation for how CCG impact the financial market is that it is an important determinant of high-quality financial statements and greater financial transparency (see Ball et al. 2000, Bushman et al. 2004, Daske et al. 2008, Francis and Wang 2008, La Porta et al. 1998, 2000, 2006, Leuz et al. 2003, Nabar and Boonlert-U-Thai 2007). A more specific explanation based on the above is that strong CCG increases the predictability of earnings because it leads to a more extensive use of accrual-basis accounting (matching principle) and/or a reduction in earnings management (Leuz et al. 2003, Sun 2009). Both explanations implicitly indicate that CCG affects the factors normally associated with how governance at the firm-level is organised, i.e., FCG. It is therefore surprising that there are so few studies with a focus on the relation between FCG and financial analyst performance, and in fact, these studies give an unclear view of the relation. It is also surprising that both levels of corporate governance have not been integrated in a more rigorous manner than is demonstrated.

However, there are several examples of studies that focus on aspects of FCG, i.e., single corporate governance components and analyst performance. Lang et al. (2004) and Moyer et al. (1989) report a negative relation between family or management ownership and the analyst following.

Lang et al. (2004) provide conditional analysis suggesting that the negative relation with the analyst following is stronger for firms with relatively weaker minority investor protection. Their overall interpretation is that less analyst coverage among these firms is symptomatic of manager entrenchment. Behn et al. (2008) studied the relation between audit quality and analyst forecast accuracy and found that there exists a positive relationship. The use of the Big 5 auditors and industry specialist auditors was associated with better forecasting performance by the analysts. Kanagaretnam et al. (2012) found that analyst earnings forecast accuracy decreases and forecast optimism increases as the level of CEO stock options increases. Together, these examples indicate that there is ground for assuming that FCG affects the performance of analysts in some way, but at the same time, it is obvious that the relationship is unclear if FCG is considered with a more comprehensive approach than a single component.

However, there are a few studies that go beyond the focus of a single component. Byard et al. (2006) use four mechanisms, board independence, audit committee independence, board size, and CEO duality, as a proxy for FCG. They study companies in the US and conclude that there exists a positive relationship between FCG and financial analyst forecast accuracy. The results indicate that analyst forecast accuracy increases with the independence of the board, decreases with board size, and decreases when the CEO also serves as a chairman of the board. Beekes and Brown (2006) uses the Howarth corporate governance ranking as a proxy for FCG. This measure contains the corporate governance rankings for top 250 companies (by market capitalisation) in Australia and is based on information about the board and its principal committees. They conclude that there exists a positive relationship between FCG and the informativeness of disclosure, but the results also indicate that the positive relationship is not unconditional in regard to the different measures containing the financial analyst properties. Asare et al. (2011) perform an experiment with 19 analysts from the US and 17 from the UK in which they were asked to perform an analysis of fictive companies in several stages (first, without any information about the FCG and later with additional information of the company's FCG ratings). From this experiment, Asare et al. (2011) conclude that analysts rely on FCG ratings when forecasting earnings because the results indicate that information about a below (above) average corporate governance rating decreases (increases) analyst certainty. It is interesting to note that they discuss the difference between common and civil law countries and accordingly address the relevance of CCG. From the results, they conclude that there is a difference between the reactions of the US and UK analysts. UK analysts react more strongly to a rating that is inconsistent with their a priori presumption of FCG quality than do the US analysts. Beekes et al. (2012) analyses the relation between FCG and information disclosure in addition to timeliness and market participant expectation using a sample of Canadian firms for the period from 2002 to 2007. They use both the aggregated and underlying measures of FCG for the analysis. They find that the aggregate measure of FCG is associated with greater forecast accuracy, lower dispersion in forecasts and greater analyst following, i.e., a general positive relation between FCG and analyst performance. Analysing the specific dimensions indicates that the results are not consistent in all aspects. An interesting aspect is that Beekes et al. (2012) discuss the results in relation to Beekes and Brown (2006) and realise that the results are inconsistent between the two studies. They attribute the differences to better data and the use of more robust estimating methods in the latest study.

What we find from the earlier research is a few studies analysing the relationship with a more comprehensive approach to FCG than one that uses single components. Among these, there is only one that integrates the possible effect of institutional settings in the empirical study. Although this is emphasised as a possible underlying factor for financial analyst performance in several of the other articles, this study analyses whether there is a different interpretation on the part of analysts in two countries belonging to firms with the same legal origin. Accordingly, it overlooks the possibility of studying the different legal origin which would have been more logical based on the discussion of the possible effect of this in the article (as the authors themselves acknowledge the choice of countries is based more on the access to data than on the optimal countries to compare). Additionally, only one of these studies takes into account more than the board dimension and integrates an additional dimension of FCG, the family ownership structure. In this study, the authors argue for the use of a more sophisticated measure of FCG than prior studies and the use of data that allows a more thorough analysis of FCG. However, there are several other dimensions that could be relevant, particularly if they offer the possibility to consider how the different parts of FCG may interact.

Based on the above, we can conclude that there are several reasons to analyse the relation between FCG and analyst performance further.

First, there are reasons to analyse FCG (with the same comprehensiveness as CCG) in relation to analyst performance, i.e., a higher quality of financial statements and a higher level of financial transparency might be more directly related to FCG than CCG. Second, based on the results of prior studies regarding the relationship between CCG and analyst performance and the studies indicating that there is an interaction between the CCG and FCG (e.g., von Koch et al. 2013b), the relevance of considering both levels in the same analysis is obvious. Third, by studying the relation between FCG and analyst performance, we would also be more able to express an opinion on the firm's information environment because analyst forecast accuracy and dispersion are used to indicate the quality of the firm information environment just as the level of the analyst following is used as a proxy for the richness of the information environment. Fourth, there has been extensive research relating FCG to, for example, firm value (Brown and Caylor 2006, Gomers et al. 2003) and future profitability (e.g., Brown and Caylor 2006, Durnev and Kim 2005, Gompers et al. 2003, Klapper and Love 2003). Because a firm's future performance is associated with its FCG and the analyst following is an important determinant of valuation (see Lang et al. 2004), we see reason to analyse this relation. Therefore, we expect the accuracy of analyst earnings forecasts to be higher for companies with a higher level of FCG. Fifth, because the financial analysts can be regarded as sophisticated users of accounting information (Schipper 1991, Revsine et al. 2004) and a means to reduce information asymmetry between the firm and the investors (Krshnaswami and Subramaniam 1999), in addition to the fact that the forecast accuracy and dispersion represent the quality of the information environment and the analyst following indicates the quantity of the information environment, these findings are consistent with companies benefiting from less asymmetric information.

We extend the extensive research on analyst performance by performing a more comprehensive analysis of how corporate governance impacts their performance. We use a multi-country design over several years that integrates both the country- and firm-level corporate governance as well as using a more comprehensive measurement of firm-level corporate governance than earlier research. We use a dataset from the Institutional Shareholder Services (ISS) that provides us with a unique opportunity to investigate a comprehensive set of FCG characteristics for a large sample of companies from a cross-section of countries over time. The sample consists of 13,289 observations in eleven countries during the period from 2002 - 2009 divided into a group of civil law countries and another group of common law countries. In line with both the CCG research (cf. Ashbaugh and Pincus 2001, Chang et al. 2000, Barniv et al. 2005, Barniv and Myring 2006, DeFond and Hung 2007, Hope 2003a,b, Sun 2009, von Koch et al. 2013a) and the few studies on FCG (Asare et al. 2011, Beekes et al. 2012, Beekes and Brown 2006, Byard et al. 2006), we find support for a positive relationship between corporate governance and financial analyst performance. Strong corporate governance means more accurate and less dispersed earnings forecasts. It also leads to a greater analyst following. However, based on the fact that the sample is divided into companies belonging to civil law and common law countries, this conclusion must be nuanced. We can conclude that there is just support for a positive relation between firm-level corporate governance and forecast accuracy in civil law countries, i.e., strong positive corporate governance leads to more accurate forecasts and only support for a negative relation between firm-level corporate governance and forecast dispersion in common law countries, i.e., strong corporate governance leads to less dispersed forecasts. However, all firms with strong corporate governance in the two different contexts have a greater analyst following. These results have interesting implications for the information environment between civil and common law countries. Under the assumption that strengthened FCG improves the quality of accounting reports, analysts in civil law countries can thereby forecast more accurately, while common law countries reduce uncertainty in the forecasts of analysts. Furthermore, we find that the FCG variables related to the board seem to matter independently of the context concerning the improved performance of the analyst. In addition, in both civil and common law countries, the higher improved function of the board and ownership increases the demand for analysts, while improved audit function as well as improved takeover regulation lessen the demand for analysts.

This study has several contributions. It adds to the literature on how corporate governance is associated with financial analyst performance, integrating both country-level and firm-level corporate governance. It also contributes to the development of the method and analysis compared to prior studies analysing the relationship between firm-level corporate governance and financial analyst performance; the study implements an extensive measure of firm-level corporate governance, with possibilities for analysing different components of corporate governance together, as well as conducting both longitudinal and cross-sectional analysis.

The study also gives valuable insight to regulators and policy makers in regard to the effect that different decisions of corporate governance regulations could have on the information environment and offers the possibility of accomplishing greater efficiency in the financial markets.

## **2. Review of the Literature**

### **2.1 Analyst Forecast Properties and Corporate Governance**

Analysts and their forecast properties have been used extensively to analyse various aspects in the accounting literature. The subject has also received attention in the corporate governance literature. The reason for this is that financial analysts are regarded as one of the most sophisticated users of accounting information (Schipper 1991, Revsine et al. 2004); one relevant corporate governance mechanism for reducing information asymmetry between the corporation and the investors (Krshnaswami and Subramaniam 1999). Jensen and Meckling (1976) suggests that analysts can serve as effective monitors of manager behaviour through their information-gathering activities, thereby reducing the agency costs arising from the separation of ownership and control. Analyst earnings forecasts have been used as an interpretation of the market expectations of firm performance because investor expectations are unobservable, and their performance has been a proxy for determining the efficiency in financial markets.

Generally, there are five types of studies relating the financial analyst to corporate governance. These five types can be further divided into those who examine the relation between CCG and the financial analyst and those who examine FCG and the financial analyst. First, there is research that examines CCG and financial analysts (for example, Hope et al. 2009). Second, there is research that examines the disclosure of CCG and financial analysts (for example, Bushman et al. 2004). Third, there is research at the firm level that examines FCG and the financial analyst (for example, Byard et al. 2006). Fourth, there is research that examines FCG disclosure and financial analysts (for example, Yu 2010). Fifth, there is research that examines parts of FCG and financial analysts (for example, Lang and Lundholm 1996). The studies that examine the relation between CCG and financial analysts are discussed in section 2.2, and the studies that examine the relation between FCG and financial analysts are discussed in section 2.3.

### **2.2 CCG and Financial Analyst**

Studies regarding the first and second type indicate several explanations of how CCG could affect financial analyst properties. Within the line of research from a country-level perspective, there has been a part of comparative governance literature (initiated by the work of La Porta et al. 1998, 1999) focused on how economies, capital markets and firms perform under different legal regimes. To begin with, one explanation is that CCG will influence the role that accounting information has in the market. In countries with strong CCG, investors can rely more on accounting information because it is perceived as more trustworthy (e.g., Hope et al. 2009), which also means that earnings forecasts are seen as more trustworthy and therefore have greater usefulness in these countries (Ashbaugh and Pincus 2001, Barniv et al. 2005, Barniv and Myring 2006, Chang et al. 2000, DeFond and Hung 2007, Hope 2003a,b). Another explanation is that a strong CCG influences analysts to perform better because there is a higher demand for high-quality earnings reports. Countries with strong CCG are expected to have highly developed capital markets in which earnings information is considered to have more value relevant to less refined markets (e.g., Barniv et al 2005, DeFond and Hung 2007). These explanations are supported by several empirical studies that also indicate the assumed relation between CCG and legal origin. Chang et al. (2000), for example, found that analyst forecasts are more accurate and forecast dispersion is lower in common law countries. Their explanation is that common law countries in general can be characterised by more effective CCG. This is supported empirically by Barniv et al. (2005) who found that analysts in common law countries performed better than their peers in civil law countries, which, according to them, is evidence of the existence of an association between legal and financial reporting environments and analyst forecast behaviour. The eventually existence of this association depends on the enforcement and compliance of the law and regulations. Prior research has demonstrated that common law countries have stronger enforcement of accounting standards than civil law countries (Francis et al. 2003, Hope 2003a). Hope (2003a) argues that strong enforcement of accounting standards encourages (or forces) managers to follow the accounting rules that are in place (thereby reducing analysts' "accounting uncertainty"). Greater compliance with rules and regulations should reduce analyst uncertainty about financial reports and, in turn, make the task of forecasting earnings relatively easier (Bhat et al., 2006).

All of the researchers cited here support their findings by referring to other research that demonstrates reported earnings to be more useful to analysts in stronger rather than weaker CCG countries (e.g., Alford et al. 1993, Ali et al. 2003, Ball et al. 2000, Hung 2000, Hail and Leuz 2006, Leuz et al. 2003). To the extent that reported earnings are more useful in strong CCG countries, investors demand earnings-related information, thereby giving analysts an incentive to provide superior earnings forecasts. These studies suggest an association between legal and financial reporting environments and the forecast behaviour of analysts. The main argument of these studies is that strengthening CCG improves firm public information, which can lead to a decreased need for analysts to gain private information. If more information is known by an outsider, an insider would have less private information, which would affect analyst behaviour with regard to gaining private information.

Another type of study related to the present one is those that do not examine CCG directly but rather the disclosure of CCG. One of the few of these studies is Bushman et al. (2004) who argue, for example, that corporate transparency varies systematically with a country's legal/judicial environment. Also according to the Bushman and Smith (2001), one of the reasons for this higher demand for transparency is that, in strong CCG countries, the effectiveness of accounting limiting expropriation of minority investors are likely to be greater. If CCG disclosure affects the quality of accounting reports and that the quality of these reports is linked to the degree to which the reported figures (e.g. earnings) will persist into the future, analysts will be able to issue more accurate forecasts by learning about the governance of the company from disclosure. For example, if analysts have knowledge of the effects of weak governance from disclosure then the analysts becomes less dependent on the reported financial figures in a company with weak governance and instead use other sources of information (e.g. direct communication with managers) to generate more accurate predictions. However, they can be more likely to use accounting information when formulating forecasts for companies that seem to have strong governance mechanisms in place. Thus, we could reasonably expect that analysts in a weak legal environment using less accounting information than in a strong legal environment.

Thereby, based on prior research, it seems that it is plausible to assume that analyst performance increases when CCG is strengthened. At the same time, it is also reasonable to assume that there is a substitution effect between the CCG and financial analysts. With increased CCG, the performance of the analysts' increases, but at the same time, due to the increased quality of information, the demand of the financial analysts' service will be decreased. This implies that there is a basis for a more refined analysis of the relationship, especially because the results are in line with those of Heflin et al. (2003) and Irani and Karamanou (2003), who argue that if analysts seek to gain an advantage by gathering private information in response to an increase in public information, this improvement of public information may improve accuracy while simultaneously increasing dispersion.

### **2.3 FCG and Financial Analyst**

Earlier studies of CCG build upon the implicit assumption that FCG does not differ between firms within a country (Ashbaugh and Pincus 2001, Barniv et al. 2005, Barniv and Myring 2006, Chang et al. 2000, Dardas 2012, DeFond and Hung 2007, Fidrmuc et al. 2013, Hope 2003a,b). However, this assumption is not supported by the studies that examine the relation between CCG and FCG and demonstrate that firms in strong CCG countries do not necessarily have strong FCG; instead, FCG varies greatly within a given country (Aggarwal et al. 2009, Bruno and Claessens 2010, Chhaochharia and Laeven 2009, von Koch et al. 2013b). Markets throughout the world are becoming increasingly integrated, and several companies are currently cross-listed in exchanges in two or more countries. As also previously explained, this conclusion means that FCG would have a more profound impact on the transparency and trustworthiness of management action and therefore may have a more direct impact on the effects of forecast properties. There are also several examples that analyse whether and how FCG affects the information environment as well as the impact of dealing with problems with asymmetric information, which could be directly translated to the problems between management and the analyst (the insider and outsider). Within the line of research from a firm-level corporate governance perspective, there are many studies that examine the value and relevance of FCG without incorporating the financial analyst. These studies typically find that higher standards of FCG are associated with increased firm value, decreased costs of capital, greater access to external financing, and other beneficial aspects of firm value (Bebchuk et al. 2004, Bebhuk and Cohen 2005, Brown and Caylor 2006, Chhaochharia and Grinstein 2007, Core et al. 2006, Dittmar and Mahrt-Smith 2007, Doidge et al. 2007, Durnev and Kim 2005, Francis et al. 2005, Gompers et al. 2003).

However, the prior studies analysing the relationship between FCG and forecast properties indicate a more scattered picture. There are a few studies that focus on more than the single corporate governance mechanism. Byard et al. (2006) use four variables, board independence, audit committee independence, board size, and CEO duality, as a proxy for FCG. They study companies in the US and conclude that there exists a positive relationship between FCG and financial analyst forecast accuracy. The results demonstrated that analyst forecast accuracy increases with the independence of the board, decreases with board size, and decreases when the CEO also serves as a chairman of the board. Beekes and Brown (2006) uses the Howarth corporate governance ranking as a proxy for FCG. This measure contains corporate governance rankings for the top 250 companies (by market capitalisation) in Australia and is based on information about the board and its principal committees. The main focus is the question as to whether high quality FCG is related to high informative disclosure measured among several other indicators, such as financial analyst forecast accuracy, forecast bias, level of disagreement and number of analysts following a firm. They conclude that a positive relationship exists between FCG and the informativeness of disclosure, but the results also indicate that the positive relationship is not unconditional in regard to the different measures containing the financial analyst properties. Australian firms with a higher ranking of FCG have a greater of analyst following, and there is less bias and greater accuracy with a higher ranking. However, at the same time, a higher ranking means greater disagreement (dispersion in analyst forecasts) in the forecasts.

Asare et al. (2011) perform an experiment with 19 analysts from the US and 17 from the UK in which they were asked to perform an analysis of fictive companies in several stages. First, with no information is provided about the company's corporate governance; at a later time, additional information of the company's corporate governance is provided. The latter was presented in the form of a corporate governance rating given by a fictive rating agency and presented as above or below average with respect to industry peers and other leading companies. The reaction of the analysts to the new information was an indication of the influence of corporate governance on their analysis. From this experiment Asare et al. (2011) conclude that analysts rely on corporate governance ratings when forecasting earnings because the results indicate that information about a below (above) average corporate governance rating decreases (increases) analyst certainty. Of note is that they discuss the difference between common and civil law countries and accordingly address the relevance of CCG. Their reason for choosing and comparing two common law countries is that they would like to answer the question as to whether analysts respond similarly to corporate governance ratings within countries with the same legal origin or if a difference in response can be observed. From the results, they conclude that there is a difference between the US and UK analyst reactions. The UK analysts react more strongly to a rating that is inconsistency with their a priori presumption of CCG quality than the US analysts.

Beekes et al. (2012) analyse the relation between FCG and information disclosure and between timeliness and market participant expectation using a sample of Canadian firms for the period from 2002 to 2007. They use both the aggregated and underlying measures of CCG for the analysis. FCG is measured by the rating in the Board Shareholder Confidence Index Report (BSCI), which contains the corporate governance ratings for firms on an annual basis. BSCI rates corporate governance with respect to several dimensions. In addition to the more ordinary variables, such as the level of board and committee independence and the separation of the CEO and chairman of the board, it also controls for family ownership structures and different holding and voting rights as a consequence of this. The five underlying dimension they use in addition to the total rating of corporate governance is the director independence, the director stock ownership, the board and committee structure and share voting rights, the individual and full board evaluation system, and the board decision output. They find that the aggregate measure of corporate governance is associated with greater forecast accuracy, lower dispersion in forecasts and a greater analyst following, i.e., a general positive relation between the FCG and analyst performance. Analysing the specific dimensions indicates that the results are not consistent in all aspects. For example, there is the question of whether forecast bias increases with better board decision output, i.e., analysts make more optimistic forecasts in firms characterised by better output. In addition, in regard to the number of analysts following, there is no significance observing the dimensions alone. Notably, Beekes et al. discuss the results in relation to Beekes and Brown (2006) and realise that the results are inconsistent between the two articles. They attribute the differences to better data and the use of more robust estimating methods.

The fourth type of research related to the present study uses the ideas in Bushman et al. (2004) and focuses on FGC disclosure.

Yu (2010) does not study FCG and analyst performance directly. Instead, she studies the relation between FCG disclosure and analyst performance. Yu (2010) uses a global setting and indicates that FCG disclosure improves forecast accuracy, reduces forecast dispersion and increases the number of analysts following a firm. However, Yu (2010) uses a static measure of FCG disclosure, namely, the Standard & Poor's Transparency & Disclosure ranking score. This measure is based on how much FCG information is provided in the firm annual reports. Yu (2010) argues that firms with better FCG disclosure will have more reliable information, which in turn should reduce analyst forecast errors. Therefore, forecasts should be more accurate, analyst followings should increase, and there should be fewer disagreements among analysts, which she also finds.

There are, however, several examples of studies that focus on parts of the FCG mechanisms and analyst performance. Lang et al. (2004) and Moyer et al. (1989) report a negative relation between family or management ownership and the analyst following. Lang et al. (2004) provide conditional analysis suggesting that the negative relation with the analyst following is stronger for firms that have relatively weaker minority investor protection. Their overall interpretation is that less analyst coverage among these firms is symptomatic of manager entrenchment. Behn et al. (2008) studied the relation between audit quality and analyst forecast accuracy and found that there is a positive relationship. The use of the Big 5 auditors and industry specialist auditors was associated with better forecasting performance by the analysts. Kanagaretnam et al. (2012) found that analyst earnings forecast accuracy decreases and forecast optimism increases as the level of CEO stock options increases. Based on the above, it would be logical to assume that a more developed FCG will lead to an overall improvement of the analyst performance because all of the above positive effects could be interpreted as a sign of a highly developed information environment (Brown et al. 2011, Lang and Lundholm 1996). Together, these examples indicate that there is ground for assuming that the FCG affects the performance of analysts in some way, but at the same time, it is obvious that the relationship is unclear if FCG is considered with a more comprehensive approach than the single components of corporate governance.

To conclude, research on both the firm-level and the country-level indicates that strengthening corporate governance (on both levels) improves the availability of public information relative to the availability of private information. We have argued, however, that FCG might be more important than CCG to improve the availability of correct public information. We therefore support the results reported by Acharya et al. (2009), which indicate that FCG effectively mitigates the potential agency conflicts between managers and investors (analysts) even without the country-level governance mechanisms. Because, for example, forecast accuracy can be viewed as an agency problem between management and analysts, it can be argued that these agency problems may be handled more effectively with FCG rather than CCG.

### ***3. Hypotheses Development***

#### **3.1 Analyst Forecast Accuracy, Dispersion and Firm-Level Corporate Governance**

The most common measure of analyst performance is forecast accuracy. There are several examples indicating evidence that analyst forecast accuracy relates positively to disclosure practice and CCG and accordingly varies around the world (e.g., Ashbaugh and Pincus 2001, Basu et al. 1998, Hope 2003a,b) and several examples of studies discussing this variation on basis of CCG (e.g., Barniv et al. 2005, Bhat et al. 2006, Chang et al. 2000, Hope 2003a). Chang et al. (2000) emphasise the differences between common and civil law countries in terms of the difference in CCG. They studied the extent and accuracy of analyst activity across 47 countries around the world and found forecast accuracy to be lower in civil law countries than in common law countries. Barniv et al. (2005) argue that analysts may have greater encouragement to forecast accurately in well-developed capital markets (strong CCG countries), where the demand for superior earnings forecasts may be greater. In civil law countries, several factors, among them lower quality accounting systems, serve to deteriorate the economic incentives for superior analysts to outperform their peers; good forecasts are not as highly rewarded, so analysts are not as motivated to produce them (Barniv et al. 2005). In a sample of 22 countries, Hope (2003a) analysed the relationship between analyst earnings forecast accuracy and the extent of annual report disclosure as well as the relationship between forecast accuracy and the degree of enforcement of accounting standards. He suggests that when accounting standards are enforced, analysts perform better in countries with strong CCG than in countries with weak CCG.

Applying Bushman et al.'s (2004) index, which link corporate governance with corporate transparency, and quantifying this measure on the basis of three dimensions (reports from companies, acquisition of private information, and dissemination of information), Bhat et al. (2006) found that country corporate governance affects analyst forecast accuracy.

In summary, previous studies suggest that institutional differences among countries in terms of corporate governance may influence analyst forecast accuracy. In addition, the few studies examining the relation between FCG and forecast accuracy (Asare et al. 2011, Beekes et al. 2012, Byard et al. 2006) find a positive relation. Therefore, we propose our first hypothesis as follows:

**H1:** Analyst forecast accuracy is positively associated with firm-level corporate governance strength in both civil and common law countries.

The second performance measure commonly used within the literature of analyst performance is forecast dispersion (measured as the standard deviation in analyst forecasts). This indicates analyst disagreement about a firm's upcoming earnings and is used as a proxy for investor uncertainty prior to the release of vital information (Ramnath et al. 2008). The forecast dispersion is therefore also a measure of information asymmetry. Krishnaswami and Subramaniam (1999) argue that when information asymmetry between a firm and its market is high, it is hard for the market to evaluate or predict the firm's performance. This increases uncertainty about the firm, decreasing its credibility in the market. Therefore, as the market knows little about the firm, investors are less confident about investing in a new project of the firm, increasing that project's financing costs. This happens because firms may depend more on stock sales than on bank loans or reserved cash for financing a project, and the burden of this financing increases to the degree that the firms themselves must persuade investors first-hand (Myers and Majluf 1984). Voluntary disclosure, such as investor relations, thus becomes a type of corporate strategy designed to reduce financing costs by mitigating information asymmetry (Barry and Brown 1985, Glosten and Milgrom 1985, Lang and Lundholm 1996, Merton 1987). In a similar way, one would expect increased disclosure forced by FCG to decrease information asymmetry and forecast dispersion. There exist also empirically evidence between disclosure and decreased information asymmetry that. Firms with more informative disclosure policies have a greater analyst following, more accurate earnings forecasts, less dispersion among forecasts, and less volatility in forecast revisions (Lang and Lundholm, 1996). Firms that provide firm-specific information, in particular, have more accurate earnings forecasts and less forecast dispersion. Diether et al. (2002) found that forecast dispersion could be a proxy for investor disagreement, not as a proxy for risk. Forecast dispersion is negatively related to returns; if dispersion were a proxy for risk, it should be positively related to future returns. Comparing the few studies examine the relation using FCG indicates uncertainty based on in some cases contradicting results. For example, Beekes et al. (2012) find lower dispersion in forecasts, while Beekes and Brown (2006) find no such effect.

However, it is not fully clear how either CCG or FCG might influence forecast dispersion because it might be subject to whether analysts use more public or private information. If public information is the primary source, there should be less dispersion because that information is available to all. However, if analysts seek to gain advantage by gathering private information in response to an increase in public information, policies designed to protect shareholders may have the effect of increasing dispersion. It could also be the case that analysts choose to "herd" when earnings are more uncertain, leading to less forecast dispersion for firms with less predictable earnings. Although the directional effect of FCG on forecast dispersion is not yet completely understood, we state the following hypothesis:

**H2:** Analyst forecast dispersion is negatively associated with firm-level corporate governance strength in both civil and common law countries.

### **3.2 Analyst Following and Firm-Level Corporate Governance**

Analyst services have both a demand and a supply side. On the one hand, expanded disclosure due to FCG potentially permits analysts to create valuable new information and, hence, increases the demand for analyst services. On the other hand, disclosure could pre-empt the ability of analysts to distribute the private information of managers to investors, leading to a decline in the demand for their services (Healy and Palepu 2001, Hope 2003a). The net effect of these forces is theoretically unclear.



Lang and Lundholm (1996) argue on the basis of Bhushan's (1989) model that the number of analysts following a firm depends on whether the analysts are *information intermediaries* or *information providers*. If they are information intermediaries, the main flow of information comes from the firm through the analysts to the investors. An increase in information means that the analysts have more information to sell, which leads to a higher demand for their services. On the other hand, if analysts are seen as the providers of information that competes with firm-provided information that is given directly to investors, the increased information coming from a higher level of FCG would substitute for the analysts' services, leading to a decline in the number of analysts in a given context.

According to Knyazeva (2007), the number of analysts following a firm could be a substitute for other governance mechanisms. Empirical studies relating CCG to the number of analysts seem to support this substitution effect. Chang et al. (2000) found that the number of analysts is lower in common law countries than in civil law countries, which suggests that analyst coverage may be more important in countries with weak CCG. Sun (2009) also supports the notion of a substitution effect between analyst number and CCG, arguing that analysts have a much more important role in countries with weak CCG. However, studies at the firm-level indicate that the number of analysts increases with a higher level of FCG (Beekes et al. 2012). Because of the possibility of a substitution effect, the level of the analyst following is uncertain and is an empirical question. In light of these later empirical studies, we test the following in this non-directional hypothesis:

**H3:** The level of the analyst following is unrelated with firm-level corporate governance strength in both civil and common law countries.

#### **4. Research Methods**

##### **4.1 A Firm-Level Measure of Corporate Governance**

Similar to the examples that we gave in the introduction, many early studies of FCG focus on one or a few particular governance components, such as the proportion of non-executive directors and the board size. There were also examples of studies using more comprehensive measures but for the most part focusing on one dimension of FCG. However, large corporate governance databases have recently been created. Credit Lyonnais Securities Asia (referred as CLSA) calculated an index with corporate governance rankings for 495 firms across 25 emerging markets and 18 sectors (Klapper and Love 2003). Additionally, large corporate governance databases such as the ISS and Investor Responsibility Research Center (IRRC) and the Standard & Poor's Corporate Governance Score (CGS) provide comprehensive measures that are used in research. These datasets are much more comprehensive than, for example, the CLSA. One of these widely used comprehensive measures is the G-index (Gompers et al. 2003). It contains data from the IRRC with 24 individual shareholder rights practices and the index adds one point for every practice that reduces shareholder rights, so firms with a lower G-index have stronger shareholder rights. Another comprehensive measure is the Gov-Score (Brown and Caylor 2006). This is the equally weighted sum of 51 governance practices compiled by the ISS. This dataset provides us with a unique opportunity to investigate a comprehensive set of corporate governance characteristics for a large sample of companies from a cross-section of countries. In addition, some of these indexes constitute a deficiency in that they do not take into consideration the fact that CCG and FCG change over time (see, for example, Martynova and Renneboog 2011). The consequence of this is especially striking in the studies using these indexes at the same time as they use forecast data over a period of time. In other words, several studies do not take into account that changes might have occurred during the period of time during which the forecast data were collected. The ISS dataset solves this problem because it is constructed as a time-series, which is another reason why we choose this dataset to measure FCG.

Aggarwal et al. (2009), Bruno and Claessens (2010), and Chhaochharia and Laeven (2009) all use the ISS data. ISS began collecting data for US firms in 2002 and for non US firms in 2003; in total, ISS collects firm-level data for samples of firms from 30 countries. Several of the variables within the dataset are created from data gathered through the other included variables, and accordingly, several of the variables are highly intercorrelated, which could explain why prior studies have chosen to use only part of the dataset. One step is therefore to decide which variables to choose, and the above mentioned studies are all examples of this. However, the parts of the index that they use differ. Chhaochharia and Laeven use 17 of the dataset attributes to create their governance index; Bruno and Claessens use 18 to create six different indices; and Aggarwal et al. use 44. As a starting point for our analysis, we choose the same 44 attributes selected by Aggarwal et al.

This gives us an opportunity to perform the most comprehensive firm-level analysis with respect to the problem of directly intercorrelated attributes. Following the methodology of Aggarwal et al., we then construct four subcategories of firm-level governance metrics: (1) Board (25 attributes); (2) Audit (3 attributes); (3) Anti-takeover (6 attributes); and (4) Compensation and Ownership (10 attributes). Table 1 lists the 44 specific attributes that are used in this study, classified according to these four subgroups.

**Table 1: Forty-Four Firm-Level Corporate Governance Attributes**

**BOARD**

1. All of the directors attended 75% of the board meetings or had a valid excuse.
2. The CEO serves on the boards of two or fewer public companies.
3. The board is controlled by more than 50% independent outside directors.
4. The board size is greater than five but less than sixteen.
5. The CEO is not listed as having a related-party transaction.
6. No former CEO is on the board.
7. The compensation committee is composed solely of independent outsiders.
8. The chairman and CEO are separate or there is a lead director.
9. The nominating committee is composed solely of independent outsiders.
10. A governance committee exists and met in the past year
11. Shareholders vote on directors that are selected to fill vacancies.
12. The governance guidelines are publicly disclosed.
13. The board is annually elected (no staggered board).
14. A policy exists regarding outside directorships (four or fewer boards is the limit).
15. Shareholders have cumulative voting rights.
16. Shareholder approval is required to increase/decrease board size.
17. There is a majority vote requirement to amend the charter/bylaws (not necessarily a supermajority).
18. The board has the express authority to hire its own advisors.
19. The performance of the board is reviewed regularly.
20. A board-approved succession plan is in place for the CEO.
21. The outside directors meet without the CEO and disclose the number of times that they meet.
22. The directors are required to submit their resignation upon a change in job.
23. The board cannot amend the bylaws without shareholder approval or can do so only under limited circumstances.
24. The board does not ignore shareholder proposals.
25. The board qualifies for combination points in proxy contest defences.

**AUDIT**

26. The consulting fees paid to auditors are less than the audit fees paid to auditors.
27. The audit committee is composed solely of independent outsiders.
28. Auditors are ratified at the most recent annual meeting.

**ANTI-TAKEOVER**

29. Single class, common
30. There is a majority vote requirement to approve mergers (not necessarily a supermajority).
31. Shareholders may call special meetings.
32. Shareholders may act by written consent.
33. The company either has no poison pill or has a pill that was shareholder approved.
34. The company is not authorised to issue blank check preferred stock.

**COMPENSATION & OWNERSHIP**

35. The directors are subject to stock ownership requirements.
36. The executives are subject to stock ownership guidelines.
37. There are no interlocks among compensation committee members.
38. The directors receive all or a portion of their fees in stock.
39. All stock incentive plans are adopted with shareholder approval.
40. Options grants align with company performance and demonstrate a reasonable burn rate.
41. The company expenses stock options.
42. All of the directors with more than one year of service own stock.
43. Officers' and directors' stock ownership is at least 1% but not over 30% of the total shares outstanding.
44. Repricing is prohibited.

Note: The table presents how we, following the approach used by Aggarwal et al. (2009), construct four subcategories of firm-level governance attributes: (1) Board (twenty-five attributes); (2) Audit (three attributes); (3) Anti-takeover (six attributes); and (4) Compensation and Ownership (ten attributes). The table presents the forty-four attributes that are considered in this study, divided into these four subgroups.

## 4.2 Models and Estimation Techniques

We estimate the following equation:

$$Q_{\theta}(\text{accuracy, dispersion, number of analysts}_{it}) = \alpha + \beta_1 \text{FCG}_{it} + \beta_2 \text{Market value}_{it} + \beta_3 \text{Trading volume}_{it} + \beta_4 \text{Profit/Loss}_{it} + \beta_5 \text{Earnings surprise}_{it} + \beta_6 \text{StdROE}_{it} + \beta + \varepsilon_{it}$$

where the variable *Market value* is the market value measured as the company's market value at the beginning of the fiscal year. *Trading volume* refers to the company's absolute daily trading volume during the first month of the fiscal year. *Profit/Loss* is a dummy variable that takes the value of 1 if the company reported a loss and 0 otherwise. *Earnings surprise* is the absolute value of the year's earnings per share minus the previous year's earnings per share scaled by the share price at the beginning of the fiscal year. *StdROE* is the company's standard deviation of the return on equity over the previous three years. All of the continuous variables are Winsorised at the 1st and 99th percentiles, and we take the logarithm transformation for our analysis. All of these variables are regressed with the independent variables accuracy, dispersion and number of analysts.

Following Lang and Lundholm (1996), the first dependent variable, forecast accuracy, is calculated as the negative of the absolute value of the actual earnings minus the analyst earnings forecast, scaled by the stock price at the beginning of the year, and forecasted EPS<sub>t</sub> is the mean analyst forecast of the earnings per share in period t.

$$\text{Forecast Accuracy} = \frac{-|\text{Actual EPS}_t - \text{Forecasted EPS}_t|}{\text{Beginning of the fiscal year stock price}}$$

The second dependent variable, standard deviation of forecasts, is the inter-analyst standard deviation of forecasts scaled by the stock price at the beginning of the year, which is also in line with Lang and Lundholm (1996). The third dependent variable is the number of analysts who are following the company and providing annual earnings forecasts.

Analysts usually forecast the earnings per share (EPS) of a particular fiscal year several times before the actual figures are released. The frequency of the forecasts differs in accordance with the analyst. The Institutional Brokers' Estimate System (I/B/E/S) collects forecast data from individual analysts around the world once a month and uses those data to calculate statistics such as the mean, median, and standard deviation. Only the final estimates of the analysts are included in the monthly calculation. Thus, the I/B/E/S database provides calculated statistics of analysts' EPS forecasts once per month. In this study, we utilise the general methodology for collecting forecast data (see, for example, Lang and Lundholm 1996) using the final calculated mean of an analyst's EPS forecasts before the first quarterly EPS report is released. For example, for a firm with a fiscal year end of December 31, 2009, we use the mean forecast calculated in March 2009 as the forecast data for the actual EPS on December 31, 2009.

The five control variables (see Table 2), selected on the basis of prior research into the factors that normally affect analyst performance (Lang and Lundholm 1996), are as follows: market value, trading volume, earnings surprise, profit/loss, and standard deviation of return on equity (std ROE).

**Table 2: Control Variables**

Variable	Explanation	Predicted sign of the dependent variables (accuracy)
Market value	Market value is measured as the company's market value at the beginning of the fiscal year.	+
Trading volume	Trading volume refers to the company's absolute daily trading volume during the first month of the fiscal year.	+
Profit/Loss	Loss is a dummy variable that takes the value of 1 if the company reported a loss and 0 otherwise.	-
Earnings surprise	The absolute value of the year's earnings per share minus the previous year's earnings per share, scaled by the share price at the beginning of the fiscal year. $EPS_t$ is the earnings per share during period t (of a given year), and $EPS_{t-1}$ is the earnings per share in period t-1 (the previous year).	-
Std ROE	The company's standard deviation of the return on equity over the previous three years.	-

Notes: This table displays the explanations of the independent variables and their predicted signs.

We control for firm size using market value and trading volume. Firm size is used in the literature as a proxy for several factors. Size should reflect information availability and therefore be positively related to forecast accuracy. Brennan and Hughes (1991) also found empirical evidence of a relation between firm size and analysts following a firm, and Lang and Lundholm (1993) found that firm size and performance variability likely correlate with disclosure policy. Market value is measured as the company's market value at the beginning of the fiscal year and is commonly used to control for size. However, we also utilise trading volume as a control for size because it may be more indicative of the number of analysts following a firm, as analysts are often paid indirectly through trading activity. Trading volume refers to the company's absolute daily trading volume during the first month of the fiscal year. Earnings surprise, which is the variation in a firm's results from one year to another, is calculated as the absolute value of the year's earnings per share minus the previous year's earnings per share, scaled by the share price at the beginning of the fiscal year.  $EPS_t$  is the earnings per share during period t (of a given year) and  $EPS_{t-1}$  is the earnings per share during period t-1 (the previous year).

$$\text{Earnings Surprise} = \frac{|EPS_t - EPS_{t-1}|}{\text{Stock price at the beginning of the fiscal year}}$$

According to Lang and Lundholm (1996), earnings surprise controls for the likely effect that major events, such as a firm's introduction of a new product, have on forecasts. In these circumstances, realised earnings are most likely to deviate from expected earnings, and it is likely that analysts will not be able to make accurate forecasts.

Hope (2003a,b) suggests that it is much more difficult to predict future earnings for firms with negative earnings. We therefore use the control variable loss, a dummy variable that has a value of 1 if the company reported a loss and of 0 otherwise. King et al. (1990) found that the number of analysts following firms is likely to be related to variations in return. Fewer analysts follow firms that experience significant fluctuations in profitability. In other words, a negative relationship exists between the number of analysts and variations in profitability. Thus, standard deviation of return on equity is the final control variable in our regressions and it is measured as the company's return on equity over the previous three years.

### 5. Data, Sample and Descriptive Statistics

As mentioned earlier, the ISS began collecting data for US firms in 2002 and for non US firms in 2003. We match these ISS data with the forecast data from the I/B/E/S database. Our sample consists of firms from eleven countries with both ISS and forecast data between the years 2002 to 2009. Table 3 displays the descriptive statistics for these variables for the eleven countries divided into civil law countries (France, Germany, Italy, Japan, Netherlands, Spain, Sweden, and Switzerland) and common law countries (Canada, the UK, and the US).

Our sample consists of a total of 13,289 observations (1,827 observations from civil law countries and 11,462 observations from common law countries). On average, the forecast error is much smaller for the analysts for the firms in civil law countries (-0.04) compared to those in common law countries (-0.12). On the other hand, Table 3 also indicates that the dispersion in forecast (a measure of uncertainty) among analysts is much higher in civil law countries (0.42) than in common law countries (0.163). On average, more analysts follow the average firm in civil law countries (13.3) compared to the common law countries (7.4).

**Table 3: Descriptive Statistics**

Country	Accuracy	Dispersion	Analysts	FCG	Audit	Board	Ownership	Takeover	N
France	-0.029	0.355	16.8	18.79	1.20	8.30	5.83	3.46	333
Germany	-0.172	0.291	14.8	17.75	1.02	9.65	3.09	3.99	298
Italy	-0.059	0.125	10.8	17.06	1.16	8.53	3.37	3.99	247
Japan	-0.021	1.399	7.4	17.22	1.05	8.10	4.13	3.94	136
Netherlands	-0.031	0.156	17.8	17.80	0.96	9.68	3.39	3.77	203
Spain	-0.031	0.121	13.2	16.79	1.08	9.33	2.44	3.94	208
Sweden	-0.032	0.692	11.6	17.19	0.94	9.39	3.36	3.50	167
Switzerland	-0.045	0.754	10.1	20.34	1.55	9.18	5.59	4.03	235
<i>Civil law</i>	<i>-0.040</i>	<i>0.420</i>	<i>13.3</i>	<i>17.98</i>	<i>1.13</i>	<i>9.02</i>	<i>4.01</i>	<i>3.82</i>	<i>1,827</i>
Canada	-0.035	0.203	9.9	26.19	1.27	15.21	6.04	3.68	472
UK	-0.030	0.872	8.9	21.50	1.30	11.64	4.59	3.97	705
US	-0.169	0.108	7.2	24.30	2.32	13.52	5.62	2.84	10,285
<i>Common law</i>	<i>-0.120</i>	<i>0.163</i>	<i>7.4</i>	<i>24.20</i>	<i>2.22</i>	<i>13.48</i>	<i>5.57</i>	<i>2.94</i>	<i>11,462</i>

Notes: The table reports the descriptive statistics for our sample divided into countries as well as civil and common law countries.

Our measurement of FCG indicates that corporate governance is on average lower for firms in civil law countries (17.98) compared to those in common law countries (24.20). Note that no civil law country has a higher score than the lowest among the common law countries. However, the four subcategories indicate that the firms in the two groups seem to prioritise different aspects of the methods to strengthen FCG. Firms in common law countries have on average higher scores for audit, board, and ownership, while the firms in civil law countries have higher scores for takeover.

## 6. Results

Table 4 and 5 display the results from our 12 regressions. Table 4 exhibits the results from the relation between FCG and the performance of analysts, while Table 5 presents the results from the four subcategories (audit, board, ownership and takeover) and the performance of analysts. Each regression therefore examines how analyst performance is affected by different aspects of firm corporate governance.

To begin with, in regard to the results in Table 4 concerning our main variables of interest, a significant positive relationship is demonstrated between FCG and forecast accuracy in civil law countries ( $t=3.80$ ,  $p<.001$ ), but no significance is demonstrated in regard to this relation in common law countries. A significant negative relationship is demonstrated between FCG and forecast dispersion in common law countries ( $t=-7.97$ ,  $p<.001$ ), but in this case, there is no significance in civil law countries. These results are very interesting, indicating that in a civil law context, strengthened FCG improves the firm information environment to the extent that analysts can make better forecasts (Barniv et al. 2005). On the other hand, in a common law context, a higher level of FCG does not improve accuracy but decreases forecast dispersion among analysts, making them more certain in their forecasts, i.e., another positive effect that indicates a strengthened FCG improves the firm information environment, which is in line with, for example, Beekes et al. (2012). Thus, when a firm improves its FCG, the analysts in common law countries become more certain in their forecasts regarding the firm earnings, while in civil law countries, they can make more accurate forecasts of the firm's earnings. Our first two hypotheses predicted both improved accuracy and lower dispersion. Because we found improved accuracy in civil law countries and lower dispersion in common law countries, the hypotheses cannot be rejected, but the findings demonstrate that the hypothesis cannot be accepted without reservation for the effect of the legal context.

The signs for the control variables of the regression models for accuracy are as expected. Analyst accuracy is better for large firms and worse for firms with high earnings surprises as well as loss-making firms and firms with great variation in profitability. Overall, the signs for the control variables of the regression models for dispersion are as expected. The uncertainty among analysts increases for firms with high earnings surprises and firms making a loss.

**Table 4: OLS Regressions**

Variable	ACCURACY		DISPERSION		NUMBER OF ANALYST	
	COMMON	CIVIL	COMMON	CIVIL	COMMON	CIVIL
FCG	-0.000 (-0.68)	0.002*** (3.80)	-0.005*** (-7.97)	0.000 (0.09)	0.199*** (18.29)	0.599*** (12.98)
Market value	0.000** (2.40)	0.000*** (1.01)	0.000 (0.09)	0.000*** (12.48)	0.000*** (29.78)	-0.000 (-0.26)
Volume	0.000 (1.88)	0.000 (1.25)	0.000*** (13.36)	-0.000*** (-5.94)	0.000*** (28.73)	0.000*** (13.79)
Earnings surprise	-0.066*** (-9.04)	-0.052*** (-12.71)	0.033** (3.15)	0.097*** (3.44)	-1.142*** (-6.99)	-2.249*** (-5.32)
Loss	-0.064*** (-10.04)	-0.127*** (-17.53)	0.049*** (5.38)	0.094* (2.00)	-1.957*** (-13.76)	-4.182*** (-5.62)
Std ROE	-0.000** (-2.72)	-0.000*** (-3.85)	0.000* (2.82)	0.000 (0.29)	-0.000 (-1.95)	0.008 (1.14)
Constant	-0.096*** (-7.94)	-0.053*** (-6.31)	0.271** (15.83)	0.394*** (7.43)	2.167*** (8.01)	2.241 (2.61)
N	11,462	1,827	9,811	1,759	11,337	1,827
R-squared	0.02	0.27	0.03	0.10	0.28	0.21
F-statistics	47.81***	112.88***	56.14***	33.09***	733.78***	80.34***

\*\*\* p < 0.001. \*\* p < 0.01. \* p < 0.05.

Notes: The table reports the regression results for accuracy, dispersion and analyst following. The regressions are divided into common and civil law samples. All time-varying variables are Winsorised at the 1% and 99% levels. The values of the t-statistics are reported in parentheses.

We also had a non-directional hypothesis that stated that the level of the analyst following is unrelated to FCG. Table 4 demonstrates that in both civil and common law countries, firms with better FCG attract more analysts ( $t=18.29$ ,  $p<.001$  and  $t=12.98$ ,  $p<.001$ , respectively). These results could be interpreted as support for the Lang and Lundholm (1996) idea that analysts are information intermediaries and that the principal flow of information goes from the firm through the analysts to the investors. An increase in information as a consequence of better FCG means that the analysts have more information to sell, which leads to a higher demand for their services. However, these results contradict the earlier research regarding the relation between CCG and the analyst following, which documented a substitution effect (Chang et al. 2000, von Koch et al. 2014). Therefore, our results indicate that strengthened corporate governance at the two different levels (the firm-level and country-level) have different impacts on the number of analysts following. The results indicating that firms with stronger FCG are easier to forecast and therefore attract more analysts could be seen in light of the significant negative relation between loss-making firms and firms with a higher level of earnings surprise and the analyst following. The later results are in line with Hope (2003a,b), who suggests that it is much more difficult to predict future earnings for firms with negative earnings, and with King et al. (1990), who found that the number of analysts following firms is likely to be related to variations in return. Fewer analysts follow firms that experience significant fluctuations in profitability. In sum, analysts prefer firms with earnings that are easy to forecast, firms with higher levels of FCG and not loss-making firms and firms with variability in earnings.

**Table 5: OLS Regressions**

Variable	ACCURACY		DISPERSION		NUMBER OF ANALYST	
	COMMON	CIVIL	COMMON	CIVIL	COMMON	CIVIL
Audit	-0.006 (-1.93)	0.004 (1.72)	-0.066*** (-16.79)	0.004 (0.28)	-0.249*** (-3.89)	-0.501* (-2.05)
Board	0.000 (0.17)	0.002* (2.13)	-0.003** (-3.16)	-0.033*** (-5.87)	0.272*** (15.42)	1.077*** (11.46)
Ownership	-0.001 (-0.36)	0.001 (1.16)	-0.002 (-0.88)	0.028*** (5.22)	0.418*** (10.57)	0.627*** (7.19)
Takeover	0.002 (0.93)	-0.003 (0.87)	0.027*** (10.85)	0.023 (1.03)	-0.422*** (-10.62)	-1.525*** (-4.31)
Market value	0.000* (2.48)	0.000 (1.15)	0.000 (0.73)	0.000*** (12.12)	0.000*** (28.71)	-0.000 (-0.07)
Volume	0.000 (1.70)	0.000 (1.27)	0.000*** (11.97)	-0.000*** (5.71)	0.000*** (28.91)	0.000*** (13.77)
Earnings surprise	-0.067*** (-9.17)	-0.052*** (-12.62)	0.023* (2.23)	0.093*** (3.34)	-1.088*** (-6.74)	-2.053*** (-4.94)
Loss	-0.063*** (-9.69)	-0.127*** (-17.43)	0.067*** (7.42)	0.110* (2.37)	-1.744*** (-12.27)	-4.035*** (-5.50)
Std ROE	-0.000** (-2.66)	-0.000*** (-3.88)	0.000*** (3.48)	0.000 (0.53)	-0.000* (-1.98)	0.005 (0.74)
Constant	-0.095*** (-7.66)	-0.037* (-2.49)	0.265*** (15.57)	0.499*** (5.35)	2.742*** (10.05)	7.178*** (4.77)
N	11,462	1,827	9,811	1,759	11,337	1,827
R-squared	0.03	0.27	0.08	0.13	0.30	0.24
F-statistics	32.48***	75.57***	88.31***	28.76***	540.30***	63.48***

\*\*\* p < 0.001. \*\* p < 0.01. \* p < 0.05

Notes: The table reports the regression results for accuracy, dispersion and analyst following. The regressions are divided into common and civil law samples, and FCG is broken down to audit, board, ownership and takeover. All time-varying variables are Winsorised at the 1% and 99% levels. The values of the t-statistics are reported in parentheses.

Table 5 displays the regressions for the four subcategories of the FCG, and we can thereby analyse in greater detail the FCG aspects that further explain the results from Table 4. Table 5 indicates that only board explains the improved forecast accuracy for analysts in civil law countries, while the lower dispersion in common law countries could either be attributed to audit or board (or both). Therefore, it seems likely that FCG related to board is the most important subcategory for improving analyst performance. Because our third hypothesis was a non-directional hypothesis, it is especially interesting to observe the results in Table 5 in regard to the model pertaining to the number of analysts following. The results from the regression concerning the number of analysts indicate that the different subcategories of FCG work in different ways. Independent of the legal context, the higher level of FCG related to board and ownership attracts more analysts, while the higher level of FCG related to audit and takeover attracts less analysts. In regard to the first, the results can be interpreted as high FCG creates a better information environment and attracts more analysts. For example, an improved board function could be an important determinant of high-quality financial statements and greater financial transparency and thus lead to higher demand for analyst service. This is because the board impacts the other two performance variables - improves accuracy (civil) and reduces dispersion (common).

The latter are more confusing but could be an indication of the existence of a substitution effect between audit and takeover as corporate governance mechanisms and the demand of analysts, which is in line with what prior studies have found between the CCG and analyst following; in addition, this supports the Jensen and Meckling (1976) suggestion that the different roles of the corporate governance mechanisms in monitoring will depend on each other as substitutes.

## 6.1 Endogeneity

We argue that a higher level of FCG leads to a better analyst performance. However, we note that the directions of causality could be reversed. For example, a higher level of analyst following may put pressure on firms, causing them to improve their FCG. Brown et al. (2011) address the endogeneity problem in corporate governance research. They discuss two commonly used methods, the fixed effects estimation and an instrumental variables (IV) approach, to handle the endogeneity problem. We use the latter and identify the causal effects by estimating with an instrumental variable (IV) regression using the prior-year FCG scores and the average industry level of FCG to stand in for FCG. The results are reported in Table 6. The effects of FCG on the analyst performance variables are somewhat weaker than those found earlier using the OLS method. For analyst dispersion in common law countries, the coefficients of FCG are not significant. Although they are less significant than previously found, the effects of FCG remain significant for the accuracy of the civil law countries at the 5% level. For the analyst following, the estimates are still significant at the 0.1% level.

**Table 6: Two-Stage Least Squares (2SLS)**

Variable	ACCURACY		DISPERSION		NUMBER OF ANALYST	
	COMMON	CIVIL	COMMON	CIVIL	COMMON	CIVIL
FCG	0.000 (0.09)	0.001* (2.12)	-0.000 (-0.17)	-0.005 (-1.06)	0.314*** (17.61)	0.895*** (12.04)
Market value	0.000 (1.94)	0.000 (0.79)	-0.000 (-0.59)	0.000*** (10.96)	0.000*** (23.98)	-0.000 (-0.65)
Volume	0.000 (1.74)	0.000* (2.24)	0.000*** (11.11)	-0.000*** (-5.29)	0.000*** (23.72)	0.000*** (12.01)
Earnings surprise	-0.071*** (-7.22)	-0.076*** (-13.84)	0.042** (2.85)	0.170*** (3.39)	-0.934*** (-4.07)	-2.646*** (-3.95)
Loss	-0.062*** (-7.53)	-0.099*** (-12.28)	0.052*** (4.38)	0.027 (0.46)	-2.053*** (-10.92)	-4.659*** (-4.72)
Std ROE	-0.000** (-2.18)	-0.000 (-1.48)	0.000*** (5.57)	-0.000 (-0.68)	-0.000 (-0.99)	0.009 (1.06)
Constant	-0.107*** (-5.29)	-0.043*** (-3.65)	0.142*** (4.94)	0.482*** (5.58)	-0.554 (-1.20)	-3.116* (-2.15)
N	8,087	1,332	6,719	1,268	7,963	1,332
R-squared	0.02	0.27	0.03	0.11	0.27	0.20
Wald-statistics	180.43***	499.48***	215.97***	155.75***	3096.32***	385.85***

\*\*\* p < 0.001. \*\* p < 0.01. \* p < 0.05.

Notes: The table reports the instrumental variables (IV) results for accuracy, dispersion and analyst following. The regressions are divided into common and civil law samples. All time-varying variables are Winsorised at the 1% and 99% levels. The values of the t-statistics are reported in parentheses.

## 7. Conclusions

We extend the extensive research on analyst performance by performing a more comprehensive analysis of how corporate governance impacts their performance. We use a multi-country design over several years that integrates both country- and firm-level corporate governance and use a more comprehensive measurement of firm-level corporate governance than that of the earlier research. As a main conclusion, we assert that there is support for a positive relation between corporate governance and financial analyst performance.

This is in line with both the CCG research (cf. Alford et al. 1993, Ali et al. 2003, Ashbaugh and Pincus 2001, Ball et al. 2000, Barniv et al. 2005, Barniv and Myring 2006, Chang et al. 2000, Hail and Leuz 2006, Hope 2003a,b, Hung 2000, Leuz et al. 2003, Sun 2009, von Koch et al. 2013a, von Koch et al. 2014a,b) and the few studies on FCG (Asare et al. 2011, Beekes and Brown 2006, Beekes et al. 2012, Byard et al. 2006). However, compared to the prior studies, we were able to analyse the relationship more thoroughly and also integrate both the country as well as the firm level in our analysis.



Based on the fact that the sample is divided into companies belonging to civil law and common law countries, the main conclusion must be nuanced. From the results, we can state that there is just support for a positive relation between firm-level corporate governance and forecast accuracy in civil law countries, i.e., strong positive corporate governance leads to more accurate forecasts, and only support for a negative relation between firm-level corporate governance and forecast dispersion in common law countries, i.e., strong corporate governance leads to less dispersed forecasts. However, all firms with strong corporate governance in the two different contexts have more analysts following. These results have interesting implications for the information environment of the civil and common law countries. Under the assumption that strengthened FCG improves the quality of accounting reports, analysts in civil law countries can thereby forecast more accurately, while the analysts in common law countries reduce their uncertainty. Further, we find that the FCG variables related to board seem to matter independently of the context concerning the improved performance of analysts. In addition, in both civil and common law countries, a higher improved function of the board and ownership increase the demand for analysts, while improved audit function as well as improved take-over regulation lessen the demand for analysts.

This study contributes to the research in several ways. It adds to the literature that addresses how corporate governance is associated with financial analyst performance, integrating both country-level and firm-level corporate governance. It also represents a development in the methods and analysis compared to the prior studies analysing the relationship between firm-level corporate governance and financial analyst performance, implementing an extensive measure of firm-level corporate governance, with the possibility of analysing the different components of corporate governance jointly, as well as conducting both longitudinal and cross-sectional analysis. The study also provides valuable insight to regulators and policy makers in regard to the effect that different decisions of corporate governance regulations could have on the information environment and offers the possibility of accomplishing greater efficiency in the financial markets.

This study has certain limitations. Most importantly, the firms in our sample (because we use the ISS data) are chosen by the ISS. We have no knowledge regarding how this sample of firms was created.

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