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**Article**

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## **Consequences of financial reporting quality on corporate performance. Evidence at the international level\***

### ***Consecuencias de la calidad de la información financiera en el rendimiento financiero. Evidencia para el ámbito internacional***

JENNIFER MARTÍNEZ-FERRERO\*\*

#### **Abstract**

*This paper examines the consequences of Financial Reporting Quality (FRQ) on Corporate Performance, using three proxies of FRQ: (i) earnings quality; (ii) conservatism; and (iii) accruals quality. Our purpose is to analyze the effect of a good FRQ on financial performance (FP) measured by the market to book ratio. To this end, the proposed hypotheses are tested on an unbalanced sample of 1,960 international non-financial listed companies from 25 countries and the special administrative region of Hong-Kong for the period 2002-2010. The use of simultaneous equations for the panel data, via the GMM estimator proposed by Arellano and Bond (1991), highlights the positive effect of financial reporting quality (FRQ) on financial performance. This result is robust according to the different measurements of FRQ (earnings quality, accruals quality and accounting conservatism) and for an aggregated measure for the previous three proxies of FRQ. The empirical evidence shows that this relationship is moderated by the level of corruption perception in the country of origin of the company, the adoption of IFRS, the accounting system used in the country and the influence of the economic cycle.*

*Key words: Financial Reporting Quality (FRQ); Financial Performance (FP), Accruals Quality (AQ), Earnings Quality (EQ), Accounting Conservatism.*

JEL Classification: M41

#### **Resumen**

*Este trabajo examina las consecuencias de la Calidad de Información Financiera (FRQ) en el desempeño empresarial, con tres alternativas de FRQ: (i) earnings quality, (ii) conservadurismo, y (iii) accruals quality. Nuestro objetivo es analizar el efecto de la FRQ en el rendimiento financiero (FP) medido por el valor de mercado. A tal efecto, las hipótesis propuestas son testadas para*

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*una muestra de 1.960 empresas internacionales, no financieras de 24 países y una Región Administrativa para el período 2002-2010. El uso de ecuaciones simultáneas para datos de panel, a través del estimador GMM propuesto por Arellano y Bond (1991), pone de manifiesto el efecto positivo de la FRQ sobre el resultado financiero. Este resultado es robusto, de acuerdo con las diferentes medidas de FRQ y para una medida agregada que contemple las tres proxies anteriores. La evidencia empírica obtenida muestra cómo dicha relación se ve moderada por el nivel de percepción de la corrupción en el país de origen de la compañía, la adopción de las IFRS, el sistema contable característico del país y, por último, la influencia del ciclo económico.*

Palabras clave: *Calidad de la Información Financiera, Rendimiento Financiero, Conservadurismo.*

Clasificación JEL: *M41*

## **1. INTRODUCTION**

Due to the markets and business globalization, geographical expansion and the greater demand for information and transparency among investors, stakeholders and society in general, market agents find their toehold in the quality of their financial reporting and their main source of knowledge on company strategy.

For Jonas and Blanchet (2000), financial reporting is not only a final output; the quality of this process depends on each part, including disclosure of the company's transactions, information about the selection and application of accounting policies and knowledge of the judgments made. Financial information issued by a company has become an essential resource for any market participant, since it provides a reduced amount of information asymmetries between managers, investors, regulatory agencies, society and other stakeholders. Therefore, one of the main questions that arises about the quality of financial reporting is its effect on subsequent performance of a company, i.e. how the market values this higher perceived quality.

According to previous evidence, those companies with better quality of financial information are associated with subsequent higher performance, due to the fact that the market positively assesses those companies which are more committed to the issuance of good information for shareholders and other stakeholders, aiming to reduce or avoid information asymmetries between market participants (García-Lara *et al.*, 2010; Ahmed and Duellmand, 2011; Bushman and Smith, 2001; Bens *et al.*, 2002; Gunny, 2005).

Furthermore, the manager's decision and his discretionary behaviour have an influence on corporate performance through the strategic management process. Thus, it is necessary to know the manager's actions, decisions and behaviour, corporate strategy and accounting policies among others, to highlight and determine the causes of firm's company performance.

In view of the above arguments, this paper examines the consequences of Financial Reporting Quality (FRQ) on Corporate Performance, using three proxies of FRQ: (i) earnings quality; (ii) accounting conservatism; and (iii) accruals

quality. Our first purpose is to analyze the effect of a good FRQ on financial performance (FP) measured by the market to book ratio.

For this, the hypotheses proposed are tested on an unbalanced sample of 1,960 international non-financial listed companies from 25 countries and an Administrative Region for the period 2002-2010. The use of simultaneous equations for panel data, via the GMM estimator proposed by Arellano and Bond (1991), highlight the positive effect of FRQ on Financial Performance.

On the other hand, companies are economic units operating in contexts formed by institutions that affect their behaviour and impose their expectations on them (Campbell and Lindberg, 1991; Roe, 1991; Campbell, 2007). Assuming this relationship is accepting that companies operating in institutionally similar contexts adopt homogeneous behaviours (La Porta *et al.*, 1998; Claessens and Fan, 2002). For this reason, owing to the use of an international database, with the subsequent divergence of information and accounting aspects as well as institutional and cultural differences among countries, I analyse the proposed relationship based on a variety of moderating factors. These factors are (i) the perception of corruption in the country of origin of the company; (ii) the adoption or not of the standards established by International Financial Reporting Standards (IFRS), (iii) the accounting system in which the company carries out its activity and finally (iv) the variability of results depending on the economic cycle.

The results show that companies that report financial statements with better information quality (associated to better earnings quality, accounting conservatism and better accruals quality) enjoy higher FP, measured by market measures which are more adequate in order to observe if investors are able to identify the CSR entrenchment practices. Along with the rest of market measures, reflect the trust that stakeholders have not only in the company at present, but also in the past and future.

Regarding the moderating factors of such a relationship, the results highlight that the direct relationship between financial reporting quality (FRQ) and financial performance is moderated by the level of corruption perception and the adoption of IFRS in the country of origin of the company, the international accounting system to which it belongs and the economic cycle.

The rest of this paper is structured as follows. In the next section, I clarify the concept of financial reporting quality and summarise the most significant literature on this question, and propose our main hypothesis. I then describe the methodology employed, with full details of the sample examined, the variables included and the empirical model proposed to test the hypothesis. Then, I examine and discuss the results of the analysis. Finally, I highlight the principal conclusions drawn, outline some limitations of this study and suggest possible future lines of research.

## **2. THEORETICAL FRAMEWORK**

### **2.1. Financial Reporting Quality (FRQ)**

For Jonas and Blanchet (2000), financial reporting is not only a final output; the quality of this process depends on each of its parts, including disclosure of

the company's transactions, information about the selection and application of accounting policies and knowledge of the judgments made.

In relation to FRQ, let us first note that the goal of financial reporting is to provide useful information for decision making. However, even though companies may generate financial statements in accordance with generally accepted accounting principles, these statements may present differing levels of quality (Choi and Pae, 2011). FRQ can be defined as the faithfulness of the information conveyed by the financial reporting process.

According to the leading authorities on the evaluation of financial reporting (such as the FASB, the SEC or the Jenkins committee), the main characteristics required are relevance, reliability, transparency and clarity (Jonas and Blanchet, 2000; Lu *et al.*, 2011). It has been asserted that high quality accounting information is a valuable means of counteracting information asymmetry (Chen *et al.*, 2011).

FRQ requires companies to voluntarily expand the scope and quality of the information they report, to ensure that market participants are fully informed in order to make well-grounded decisions on investment, credit, etc. This high quality information facilitates greater transparency and this greater transparency reduces the information asymmetries and satisfies investors and stakeholders' needs.

Numerous advantages of providing high-quality information have been cited: FRQ reduces information risk and liquidity (Lambert *et al.*, 2007), prevents managers from using discretionary power for their own benefit and helps them make efficient investment decisions (Chen *et al.*, 2011). Specifically, one of the main benefits of better FRQ is based on the minimisation of asymmetric information problems that arise from conflicting agency (Rajgopal and Venkatachalam, 2011). Companies that report higher quality financial information give to the various markets' agents better information on it, allowing them to act in the market with better conditions and a higher level of information (Jo and Kim, 2007).

Lambert *et al.* (2007) obtained empirical evidence that the quality of accounting information can influence the cost of capital, both directly, by affecting market participants' perceptions about the distribution of future cash flows, and indirectly, by affecting real decisions that alter the distribution of future cash flows. Chen *et al.* (2011) found that FRQ positively affects private firms investment efficiency in emerging markets and that this effect enhances bank financing and decreases incentives to minimise earnings for tax avoidance purposes.

The external indicators of FRQ are: (i) SEC Accounting and Auditing Enforcement Releases (AAERs); (ii) Restatements; and finally, (iii) internal controls. The two last indicators are the most important because they show information about the quality of the financial statements as a whole and not just as earnings. The main consequences of these alternatives are their effect on the cost of capital (market reaction to announcements of restatements and/or AAERs is negative). Francis *et al.* (2005), supporting this point of view, reported that firms with a higher earning quality have a lower cost of debt.

Among the opportunities to assess FRQ, the most employed proxies of this concept in literature are: (i) earnings quality; (ii) accounting conservatism; and (iii) accruals quality. Illustrating this theory, Dechow *et al.* (2010) defined three categories of earnings quality proxies, on the grounds that "higher earnings quality shows the features of the firm's earnings process that are relevant to a specific decision made by a specific decision-maker". These proxies are: properties of earnings, earnings response coefficients and external indicators of FRQ. These authors considered the determinants of earnings quality to be firm

characteristics, financial reporting practices, governance and controls, auditors, capital market incentives, external factors and the level of institutional factors in the country of the company. The second measure of FRQ that I consider is the degree of accounting conservatism, which implies a more timely incorporation of economic losses into accounting earnings than of economic gains (Ball *et al.*, 2000). Finally, accruals quality is based on mapping past, current and future cash flow operations with accruals (Garrett *et al.* 2012).

FRQ has been studied in different areas, and several authors have referred to its advantages, such as its positive effects from the financial point of view, by contributing to reducing information risk and enhancing liquidity (Lambert *et al.*, 2007). On the other hand, information in financial statements is particularly fundamental in debt contracting (Costello and Wittenberg-Moerman, 2011).

In this paper, I focus on the economic and financial benefits of companies with higher levels of FRQ.

## **2.2. Research Hypothesis: The link between FRQ and Financial Performance**

Financial information issued by a company has become an essential resource for any market participant, since it provides a reduced amount of information asymmetries between managers, investors, regulatory agencies, society and other stakeholders. Therefore, one of the main questions that arises about the quality of financial reporting is its effect on subsequent performance of a company, i.e. how the market values this higher perceived quality.

Furthermore, the discretionary manager behaviour has an influence on corporate performance through the strategic management process. Thus, it is necessary to know not only the manager's actions, decisions and behaviour, but also the corporate strategy and accounting policies among others, to highlight the causes of a firm's performance. According to Lee *et al.* (2006), corporate performance and growth determine the quality of financial information reported by companies.

In a first approximation of the effect of FRQ on financial results, it is necessary to highlight the work of McDermott (2011) who shows how higher quality financial statements improve the efficiency of investments in CSR because FRQ mitigates moral hazard problems. This leads to a CSR investment that benefits not only stakeholders but also investors, a key factor that determines future improved performance. Along the same line, Bushman and Smith (2001) document that financial and accounting information influences future economic performance and predict that better FRQ leads to an improvement in the efficiency of various investments.

Within a relationship of FRQ and financial performance focused on different measures and proxies of FRQ, it is necessary to limit this study to the three universally accepted FRQ measures: earnings quality (EQ), accounting conservatism and accruals quality (AQ).

On the one hand, Earnings Quality is one of the most employed proxies of FRQ in research about this concept. It is necessary to take into account that EQ is negatively associated with earnings management, which is considered to be the inverse of FRQ (Dechow and Dichev, 2002); a higher degree of EM is associated with lower quality of information. Earnings management is used to distort the true performance of firms and analysts serve as external monitors to managers. One of the managers' incentives to carry out these unethical practices

could be increasing financial performance, which can only occur in the short term, due to the fact that in the long term the market penalizes those manipulative companies and they enjoy lower corporate performance (Rangan, 1998).

According to earnings management research, earnings releases of analysts reflect the earnings management practices, thus those companies that enjoy better Earnings Quality are associated with better and higher earnings releases (Louis, 2004). This author finds a positive link between EQ and subsequent profitability. This result supports the previous evidence of Rangan (1998) who shows that initially the market overvalues and expects a higher return from companies that manipulate their outcome, but in the long-term their profitability and their corporate performance is reduced by identifying such unethical practices. So, when the market identifies unethical practices, it penalizes manipulative companies with subsequent poor stock price performance. In the same way, Bens *et al.* (2002) shows that companies with better quality of their earnings (firms that do not practice real earnings management through the reduction of R&D expenses) enjoy higher subsequent profitability.

Meanwhile, Jo and Kim (2007) analyse the link between information disclosure, earnings management (EM) and subsequent performance and obtain evidence of how higher levels of EM are associated with lower disclosure (and therefore a lower quality of the same) and lower future performance. Therefore, when statements reported by the company contain a greater volume of information, the trend towards EM is lower and the performance achieved by the company higher, which is consistent with the argument of Tu (2012), who argues that when information transparency is greater (one of the qualities required for better FRQ), the tendency to manage earnings is lower.

In his research, Gunny (2005) examines the positive effect of EQ on future performance through the analysis of the economic consequences of four types of real earnings management. He finds that EQ affects subsequent return on assets, i.e. operating performance and cash flows, because earnings management affects the future of current income.

In addition, one of the widely explored aspects in previous literature is the effect of FRQ on external financing. In this line, several studies have considered that earnings quality is associated with a decrease of information asymmetries, which affect the cost of capital (Francis *et al.*, 2005, 2008; Bhattacharya *et al.*, 2003). Therefore, companies with better FRQ enjoy lower cost of capital, which may also affect the firm's performance.

Regarding the degree of accounting conservatism, which implies a more timely incorporation of economic losses into accounting earnings than of economic gains (Ball *et al.*, 2000), some authors such as García-Lara *et al.* (2010) and Ahmed and Duellmand (2011) obtained empirical evidence of the positive association between accounting conservatism and future profitability because of improvements in investment efficiency. As well as FRQ, accounting conservatism has become an incentive to managers to promote better performing projects that increase future performance since these economic or financial projects are more profitable. Meanwhile, Ahmed and Duellmand (2011) show that conservative companies enjoy better future profitability due to their investment in more efficient projects.

Bushman and Smith (2001) also report that companies with higher FRQ are bound to promote profitable investment decisions and thus, these companies could view increases in their corporate performance. In this line, Rajgopal and Venkatachalam (2011), making use of Dechow and Dichev's (2002) model to

estimate EQ, obtain empirical evidence of the positive link between the changes in FRQ in recent decades and rising idiosyncratic return volatility. This evidence confirms the previous results of Francis *et al.* (2005), who, making use of EQ as an FRQ proxy, show that EQ is linked with expected returns.

Meanwhile, Accruals quality is achieved when the information reported to investors and to the market is credible and free of error and bias, intentional or otherwise (Lu *et al.*, 2012), thus expanding the scope and quality of reported information and ensuring that market participants are fully informed (Hope *et al.*, 2012). Just as with the alternative FRQ measures, I expect that companies that report more credible information, free of error and bias, enjoy better corporate performance, making the market able to identify these companies and positively assess their ethical practices.

In addition, a widely explored aspect in previous literature is the effect of FRQ on external financing. Thus, several researchers have considered that earnings quality is associated with a decrease of information asymmetries, which affect the cost of capital (Francis *et al.*, 2005, 2008; Bhattacharya *et al.*, 2003). Therefore, companies with better FRQ enjoy of lower cost of capital, which also may affect the firm's performance.

In short, throughout the literature several researchers have considered that the FRQ is associated with a decrease of information asymmetries, which affect corporate performance. Our main objective is to determine whether higher corporate performance is a consequence of better quality of financial information. Thus, in view of the above arguments, I propose the next hypothesis:

***H1: The increase of Corporate Performance is a consequence of higher Financial Reporting Quality.***

### **2.3. Moderating factors in the relationship between FRQ and financial performance**

Companies are economic units operating in contexts formed by institutions that affect their behaviour and impose their expectations on them (Campbell and Lindberg, 1991; Roe, 1991; Campbell, 2007). Assuming this relationship is accepting that companies operating in institutionally similar contexts adopt homogeneous behaviours (La Porta *et al.*, 1998; Claessens and Fan, 2002). In this sense, institutional theory must be considered to be a theoretical model that can explain corporate isomorphism.

Organisations operating in countries with a similar institutional structure will adopt homogeneous forms of behaviour (La Porta *et al.*, 1998; Claessens and Fang, 2002; Campbell, 2007). DiMaggio and Powell (1983) name this process 'isomorphism' and argue that it enhances firm stability and survival, facilitating political power and institutional legitimacy. These isomorphic practices emanate from the organisation's decision to resemble others (mimetic isomorphism), to do the professionally correct thing (normative isomorphism) or to comply with the rules applied by external forces (coercive isomorphism) (Perez-Batres *et al.*, 2011).

For this reason, based on institutional theory and non-business aspects that affect behaviour, I analyse a variety of moderating factors for the relationship here analysed. Specifically, owing to the use of an international sample, with the subsequent divergence of information and accounting aspects as well as institutional and cultural differences among countries, I analyse the proposed



relationship based on a variety of moderating factors. These include (i) the perception of corruption in the country of origin of the company; (ii) the adoption or not of the standards established by IFRS, (iii) the accounting system in which the company carries out its activity and finally (iv) the variability of results depending on the economic cycle.

### *2.3.1. Level of corruption perception*

The present study is based on an analysis of the effect of the quality of financial information reported by companies on financial performance. However, as mentioned previously, we must not forget that businesses carry out their activities within an institutional environment that determines their behaviour in some way.

Specifically, one of the problems that generate higher global debate is the level of corruption perception in each country, which is considered to be a factor, among many, that affect and determine business behaviour. As noted by Transparency International, “*Governments should incorporate actions against corruption in all public decisions. Among the priorities are more effective rules on lobbying and political funding, greater transparency in government procurement and public expenditure, and greater accountability of public bodies to the population.*”

Specifically, we understand corruption as an abuse of power for self-benefit (Transparency International). It is for this reason that according to the definition of EM (the inverse of FRQ) proposed by Garcia-Osma *et al.* (2005), which can be defined as “any practice carried out intentionally by company managers, for opportunistic and/or information purposes, to report accounting results that do not correspond to those really achieved”, a similar aspect is found between EM and corruption, since both decisions are based on obtaining self-benefit. For this, I expect a certain link between both.

In this line, it is expected that companies that carry out their activities in environments characterised by a strong corruption perception report financial statements of lower quality, since there are no public or private institutions to ensure greater transparency. Therefore, firms report lower quality information, even when it can influence their financial performance. For those companies that report more quality information and operate in countries with a higher level of corruption perception, financial performance is lower than those operating in more “sanitised countries” of corruption.

In view of above arguments, the following hypothesis is formulated considering that the level of corruption perception in the country of origin of the company exerts a moderating effect on the financial consequences of FRQ.

***H2: The level of corruption perception in the country of origin moderates the effect of FRQ on corporate performance.***

### *2.3.2. Adoption of IFRS*

IFRS are the accounting rules adopted by the International Accounting Standards Board (IASB), a private institution based in London. They are international standards or rules in developing accounting activity and pose an accounting manual, since in them accounting is acceptable in the world. These rules are responsible of the development of accounting in a homogenised form and pursuing international accounting harmonisation.

For this extensive relationship with the quality of financial and accounting information reported by companies in countries that have adopted such standards, I consider its moderating role in the FRQ-financial performance relationship.

In this line, there are contradictory arguments of the effect of IFRS on FRQ. On one hand, authors such as Ball *et al.* (2003) argue that IFRS do not necessarily produce high quality accounting information. These authors think that FRQ is determined by political and economic factors and the institutional environment itself not only by a set of rules themselves. In this sense, other macroeconomic factors may affect the issuance of financial and accounting information quality; for example, some countries have introduced a more efficient control mechanism or corporate governance rules (Chen *et al.*, 2010). This argument is supported by the evidence obtained by Van Tendeloo and Vanstraelen (2005), who in their study of the voluntary adoption of IFRS by German companies, obtain evidence of the positive effect of the adoption of these international standards on the level of EM and the lower cash flow from operations, although the effect is reduced when companies are audited by one of the Big 4/5 auditors.

Furthermore, according to Chen *et al.* (2010), in their analysis of countries belonging to the European Union, a large number of accounting quality indicators improve once they have adopted IFRS. Specifically, following the adoption of these standards, there are fewer tendencies towards EM, a lower magnitude of discretionary accruals and higher AQ. However, they also obtain evidence of a lower degree of conservatism. In the same line, Barth *et al.* (2008) report better accounting quality after IFRS adoption. It is also necessary to note that based on previous studies, Lantto and Sahlstrom (2009) support the finding that the adoption of IFRS generates positive changes in profitability ratios, explained in part by the increase in revenues in the income statement.

Based on previous arguments, and in order to confirm the effect of IFRS on FRQ given these divergent results, it is expected that companies that conduct business in countries that have adopted IFRS report higher quality information that affects positively their financial results. Therefore,

***H3: The adoption of IFRS by the country of origin moderates the effect of FRQ on corporate performance.***

### 2.3.3. Accounting System

As reflected in many cases, the aim of this research is to determine the effect of FRQ on financial performance. However, the reporting requirements and quality control by the regulatory bodies of each of the countries of the companies included in the sample vary. That is why it is necessary to compare companies based on the different regulatory frameworks and enforcement requirements for compliance with reporting obligations to the market. To do this, I analyse the different international accounting systems to consider how the regulatory framework to which each country belongs affects the FRQ-financial performance relationship. Despite the adoption of IFRS as accounting standards, each country has rules and procedures to control FRQ, such as major or minor information controls and auditors, among others. In each country, there is a diversity of views and practices of accounting information derived from multiple and varied aspects such as the legal system, the opening to the capital market, cultural factors and pressure from stakeholders and society in general.

This generates the existence of different accounting treatments that have to be taken into account in this analysis.

Specifically, one of the aspects widely analysed in the literature is the difference among international accounting systems in terms of legal, cultural, economic and political aspects. The most obvious example of this is the difference between the accounting systems of the US and the UK compared with Europe (Nobes, 1998). Among some of the major differences, capital market orientation in a financial context is one of the most important aspects, regardless of the existence of different regulatory bodies, such as the International Accounting Standards Committee or IASB. For example, the US accounting system is more capital market-oriented than the European or British ones, but increasingly continental accounting systems are opting for greater guidance and rising the importance of capital market-oriented banking.

Following Nobes (1998) and Nair and Frank (1980), based on the characteristics of each country's accounting system, patterns of behaviour and characteristics, we can distinguish three international accounting systems: (i) US model (ii) continental model and (iii) British model. Leuz *et al.* (2003) analyse the different levels of EM through an international sample of countries and recognise that differences in accounting standards may limit the ability of management manipulation. It is therefore necessary to control for the accounting differences between countries that could potentially limit capacity and enhance the quality of financial statements.

The main characteristics of each of them can be summarised as follows, from the studies of Mora *et al.* (2004), Leuz *et al.* (2003) and Weimer and Pape (1999):

- US model: Instrumentalist conception of the company oriented to shareholders as the main stakeholders and the presence of a strong capital market as well as dispersed ownership, strong investor rights and legal controls. The tendency towards EM is lower, leading to greater FRQ.
- British model: Although lower than the US, the importance of the capital market is high. There is also higher litigation risk, which is extracted from a higher level of conservatism. As with the previous model, these countries are characterised by dispersed ownership, strong investor rights and legal controls.
- Continental model: Lower capital market participation but with an upward trend. Funding comes largely from financial institutions. Continental European countries show a similar conservatism to the UK, despite the absence of litigation risk and the effect of balance sheet conservatism.

Based on the existence of different accounting systems internationally, it is considered that the FRQ-financial performance relationship may be moderated by such systems depending on the accounting system of the country where the company operates. Therefore, the following hypothesis is formulated:

***H4: The accounting system of the country of origin moderates the effect of FRQ on corporate performance.***

#### 2.3.4. Economic cycle

Another problem arising from the analysis of FRQ-financial performance is the time period analysed. Since 2008, the deep economic and financial crisis

experienced by international markets has generated a wave of economic, financial, cultural, legal and institutional change. This is why it is necessary to consider the economic cycle to be a moderating factor. From the economic standpoint, the financial and economic crisis has created a deep mistrust in the markets, not only for investors but also for customers, suppliers, financial institutions and society in general.

Within the scope of the study, there is a clear relationship between the level of FRQ and the return obtained by the companies and their economic cycles. It is necessary to note that the FRQ issued by a company varies depending on whether the economic situation is in an expansion phase (higher growth rates of economic productivity) or in a recession stage (reduced levels of economic productivity). As maintained by Klein and Marquardt (2006), firms invest more during periods of greatest macroeconomic productivity. On this basis, companies choose to invest more in ways that improve their financial reporting stages of economic and financial growth.

In this sense, one might expect that firms in the expansion stage have the incentive to promote greater quality in their financial statements and performance, which in general terms, because of the growth situation, is increasing. By contrast, for companies located in countries within a period of recession or economic downturn, the tendency to improve the quality of financial information is lower, which serves as a detriment to business performance.

Based on these arguments, the variability of the economic cycle is considered to be another factor that moderates the FRQ-financial performance analysis. Therefore, in order to test the moderating effect of the economic cycle, the following hypothesis is formulated:

***H5: The economic cycle moderates the effect of FRQ on corporate performance.***

### **3. EMPIRICAL RESEARCH**

#### **3.1. Sample**

The sample used to test the proposed hypotheses is constituted of 1960 international listed non-financial companies for the period 2002-2010. The sample is unbalanced, consisting of a total of 14844 observations obtained from 25 countries and an administrative region (USA, United Kingdom, Ireland, Canada, Australia, Germany, Netherlands, Luxemburg, Austria, Denmark, Norway, Finland, Sweden, Switzerland, France, Italy, Spain, Belgium, Portugal, Greece, Japan, China, Singapore, New Zeland, Korea and Hong-Kong, as administrative region). This sample was obtained from the fusion of information available in Thomson One Analytic, for accounting and financial data.

#### **3.2. Measures of Financial Reporting Quality**

Taking previous literature into account, I used various measurements of FRQ (Choi and Pae, 2011; Hong and Andersen, 2011; Lu et al, 2011), as there is no universally accepted way of measurement (Dechow *et al.*, 2010). The first measurement used is the degree of earnings management using accruals, while the second is the degree of accounting conservatism and the third, accruals quality.

### 3.2.1. Earnings Management (EM) through accruals

EM is considered to be the inverse of FRQ (Dechow and Dichev, 2002); a higher degree of EM is associated with lower quality of information and lower earnings quality (Raman *et al.*, 2012). Thus, the first measurement of FRQ is management discretion over accruals (Choi and Pae, 2011).

The discretionary component of accruals adjustment could be used as a measurement of discretionary management, and therefore of accounting manipulation. As observed by Garcia-Osma *et al.* (2005), accruals are not all discretionary; hence it is necessary to separate the discretionary component from the non-discretionary one in order to determine the presence and extent of EM. The discretionary accruals adjustment (DAA) is obtained by subtracting the non-discretionary accruals adjustment (NDAA) from the total accruals adjustment (TAA). The DAA represents the abnormal accruals that constitute the variable taken as a measure of EM.

In this study, I use the Kothari model (Kothari *et al.*, 2005) to separate the non-discretionary component of accruals from the discretionary one. This model is explained in Appendix 1. To obtain a proxy of FRQ, I employ the absolute value of the DAA estimated by this model because EM may involve either income-increasing or income-decreasing accruals (Warfield *et al.*, 1995; Klein, 2002):

$$(1) \quad FRQ_{KOTHARI} = ABS\_DAA\_KOTHARI$$

Here, ABS\_DAA\_KOTHARI is the absolute value of the DAA calculated by the Kothari model. Thus, the lowest values of FRQ\_KOTHARI represent the lowest level of earning management practices that are associated with the highest FRQ.

### 3.2.2. Accounting conservatism

The second measure of FRQ that I consider is the degree of accounting conservatism, which implies a more timely incorporation of economic losses into accounting earnings than of economic gains (Ball *et al.*, 2000). According to Basu (1997), conservative accounting reflects bad news for the company more rapidly than good news because this approach tends to reduce litigation risks (Kothari *et al.*, 1989; Skinner, 1994; Ball *et al.*, 2008). Following Choi and Pae (2011) and García-Lara *et al.* (2009), I use a variation of the Basu (1997) model proposed by Khan and Watts (2009). These authors employ a two-step procedure.

First, I estimate the following cross-sectional regression for each year:

$$(2) \quad \begin{aligned} \frac{E_{it}}{P_{i,t-1}} = & \alpha_0 + \alpha_0 DR_{it} + \beta_{1t} SizeMVE_{it} + \beta_{2t} MTB_{it} + \beta_{3t} LEV_{it} + \\ & + DR_{it} (\delta_0 + \delta_{1t} SizeMVE_{it} + \delta_{2t} MTB_{it} + \delta_{3t} LEV_{it}) + \\ & + R_{it} (\gamma_0 + \gamma_{1t} SizeMVE_{it} + \gamma_{2t} MTB_{it} + \gamma_{3t} LEV_{it}) + \\ & + R_{it} * DR_{it} (\mu_0 + \mu_{1t} SizeMVE_{it} + \mu_{2t} MTB_{it} + \mu_{3t} LEV_{it}) + \varepsilon_{3t} \end{aligned}$$

where  $\frac{E_{it}}{P_{i,t-1}}$  is the net income scaled by the lagged market value of equity;  $R_{it}$  is the annual stock return for the 12 months ending 3 months after the balance sheet date;  $DR_{it}$  is a dummy variable that takes the value 1 when  $R_{it} < 0$  and 0 otherwise;  $SizeMVE_{it}$  is the natural logarithm of the market value of equity;  $MTB_{it}$  is the market to book ratio;  $LEV_{it}$  is the leverage measured by dividing the sum of long term and short term debts by the market value of equity;  $i$  represents the companies and  $t$  the years.

In the second step, I use a firm-year specific measure of timelines of earnings (C\_SCORE), with the coefficient estimates from Equation 3.

$$(3) \quad C_{Score} = \hat{\mu}_0 + \hat{\mu}_{1t}SizeMVE_{it} + \hat{\mu}_{2t}MTB_{it} + \hat{\mu}_{3t}LEV_{it}$$

An alternative measure has been proposed, taking into account the timelines of reported earnings with respect to bad news, since stakeholders are more influenced by bad news rather than good news. This measure is called B\_SCORE and it is calculated as follows:

$$(4) \quad B_{Score} = \hat{\gamma}_0 + \hat{\gamma}_{1t}SizeMVE_{it} + \hat{\gamma}_{2t}MTB_{it} + \hat{\gamma}_{3t}LEV_{it} + \hat{\mu}_0 + \hat{\mu}_{1t}SizeMVE_{it} + \hat{\mu}_{2t}MTB_{it} + \hat{\mu}_{3t}LEV_{it}$$

### 3.2.3. Accruals Quality

Another measurement of FRQ that has been used in several papers (Choi and Pae, 2011; Hong and Andersen, 2011; Francis *et al.*, 2005) is the accruals quality (AQ). In this paper, AQ is measured through the Ball and Shivakumar model (2006).

The model proposed by Ball and Shivakumar (2006) to obtain another measurement of AQ suggests that nonlinear accrual models that incorporate the timely recognition of losses perform better than linear models. Hence, I add a current-year cash flow dummy and its interaction with cash flow levels into the previous Dechow and Dichev model (2002).

$$(5) \quad \Delta WC_{it} = \beta_0 + \beta_1 OCF_{i,t-1} + \beta_2 OCF_{it} + \beta_3 OCF_{i,t+1} + \beta_4 \Delta REV_{it} + \beta_5 PPE_{it} + \beta_6 DOCF_{it} + \beta_7 OCF_{it} * DOCF_{it} + \varepsilon_{7t}$$

where the change in working capital accruals from year  $t-1$  to  $t$  is:  $\Delta WC = \Delta Accounts\ Receivable + \Delta Inventory - \Delta Accounts\ Payable - \Delta Taxes\ Payable + \Delta Other\ Assets$ ;  $OCF$  is the operating cash flow;  $\Delta Revenues$  is the change in revenues;  $DOCF$  is an variable indicator for the negative cash flows. It takes the value 1 if there are negative  $OCF$  and 0 otherwise  $i$  indicates the company and  $t$  refers to the time period. All the variables (excepted  $DOCF$ ) are scaled by the total assets.

I use the absolute value of the residuals from this model as a proxy for AQ: the lower the degree of this proxy, the higher the degree of AQ.

### 3.2.4. Aggregated measures of FRQ

In order to obtain robust results, one of the goals of this paper is to generate an aggregate measure of FRQ, called **AFRQ**. This variable is the sum of the four dummy variables detailed above, and therefore takes values between 0 (absence of quality of information) and 4 (strong level of quality). For this, I create four dummies **DEQ**, **DC\_Score**, **DB\_Score** and **DAQ**, corresponding to the measures explained.

**DEQ** takes the value of 1 if a company has a level of FRQKOTHARI under the average for the corresponding sector, year and country, and 0 otherwise. It is necessary to take into account that lower levels of this variable represent a lower tendency towards EM and thus higher FRQ. **DC\_Score** takes the value of 1 if a company has a level of C\_SCORE above the average for the corresponding sector, year and country, and 0 otherwise. In the same way, **DB\_Score** takes the value of 1 if a company has a level of B\_SCORE above the average for the corresponding sector, year and country, and 0 otherwise. Finally, **DAQ** takes the value of 1 if a company has a level of BALLSHIVAKUMAR under the average for the corresponding sector, year and country, and 0 otherwise. In the same way as EQ, lower levels of BALLSHIVAKUMAR reflect higher FRQ.

After obtaining the value of the four previous dummies, we proceed to calculate AFRQ as the sum of the *DEQ*, *DC\_Score*, *DB\_Score* and *DAQ* dummies:

$$(6) \quad AFRQ = DEQ + DC\_Score + DB\_Score + DAQ$$

### 3.3. Measures of Financial Performance

Among the numerous means of evaluating the FP, in our present research I employ the Market to Book (MTOB) as the market to book value ratio (Seifert *et al.*, 2003). This variable identifies market measures of FP according to previous evidence from Hillman and Keim (2001). These authors argue in their study that accounting actions are less successful than market actions due to the fact that they are not able to capture the long-term value of the company, focused on past performance and are subject to the possibility of manager's manipulation. Moreover, market measures are more adequate in order to observe if investors are able to identify the CSR entrenchment practices. These variables, as the other market measures, reflect the trust that stakeholders have not only in the company at present, but also in the past and future.

### 3.4. Moderating factors

In order to achieve more robust results that reflect the characteristics of each country from different points of view, I include a set of moderating factors to contemplate the effect of FRQ on financial performance according to different perspectives.

First, to reflect the moderating role of corruption perception in the country of origin of the company, the **CORRUPTION** variable is created. This variable represents the index of corruption perception in the country provided by Transparency International every year. This organisation creates the Corruption

Perception Index, which takes values from 0 (highly corrupt) to 10 (absence of corruption perception) in order to measure levels of corruption perception in the public sector of a given country; it is a composite index based on different experts and business surveys. The organisation defines corruption as “the abuse of entrusted power for private gain”.

With respect to the adoption of IFRS by the country of origin of the company, I create a dummy variable (**IFRS**), which takes the value of 1 if the country of origin of the companies has fully or partially adopted IFRS and 0 otherwise.

Thirdly, and to account for the differences between accounting systems, following the classification proposed by Nobes (1989) and Nair and Frank (1980), accounting systems differ between US, continental Europe and British. I define three dummy variables representing these three international accounting systems (**US**, **CONTINENTAL** and **BRITISH**). The countries included in the US model are Canada, the United States and Japan. CONTINENTAL includes Germany, France, Belgium, Italy, Spain, Sweden, Switzerland, Austria, Portugal, Greece, Luxembourg, Denmark, Norway and Finland. Finally, the BRITISH accounting system includes the United Kingdom, Ireland, Australia, the Netherlands, Korea, Singapore, Hong Kong, New Zealand and China.

Finally, in order to consider in the analysis the economic cycle, specifically the effect of the economic and financial crisis in the relationship analysed in this research, the  $\Delta$ GDP variable is created following the previous research of Klein and Marquardt (2006). This variable includes variation in the GDP of each country to consider the economic cycle as a moderator in the FRQ-financial performance relationship. GDP per capita is GDP divided by midyear population. GDP at purchaser prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. This is calculated without making deductions for the depreciation of fabricated assets or the depletion and degradation of natural resources. These dates are obtained from the World Bank national accounts data and OECD National Accounts data files.

### 3.5. Control variables

To avoid biased results, I included several control variables, whose effect on FP, EM and CSR is well established by previous studies. Concretely, in our analysis I defined firm size, leverage, risk, operating liquidity, industry and R&D intensity as following:

- **Firm Size (SIZE)**  
Company size is measured by the logarithm of its total assets. It is common practice to use firm size as a determinant variable of economic and financial performance and as a determinant of FRQ. Larger firms are incentive to show a positive effect on FP (Prior *et al.*, 2008; Surroca *et al.*, 2010). Furthermore, the size of the firm has been used in several research projects about FRQ, but this effect is uncertain.
- **Leverage (DEBT)**  
*DEBT* is the risk of debt or default and it is calculated as the ratio of debt to equity. Another variable widely used in previous studies is the level of



firm leverage (DEBT). It represents the debt or non-compliance risk (Prior *et al.*, 2008; Mahoney *et al.*, 2008). As with size of the firm, no consensus exists regarding the effect of the leverage level on FRQ. However, Tu (2012) found that debt ratios are the major determinants of EM changes.

- **Risk (RISK)**  
It represents the level of systematic risk and is measured by the beta of the market model. According to Waddock and Graves (1997), risk is one of the items that affect FP. Companies with a higher risk have a greater probability and incentive to manipulate the accounting result in order to reduce this perception or the cost of capital, and therefore, lower level of FRQ (Warfield *et al.*, 1995).
- **Operating Liquidity (WORKING CAPITAL)**  
*WORKING CAPITAL* is defined as the difference between current assets and current liabilities. It reflects liquidity, i.e. a company's ability to continue the normal development of its activities in the short term. This variable, which is widely associated with the accounting result, allows companies to enjoy a higher liquidity when better financial performance is achieved.
- **Industry (INDUSTRY)**  
According to Margolis and Walsh (2003) and Waddock and Graves (1997), in the analysis of FP is necessary to consider the effect of the industry in which the company operates, due to different characteristics of each economic activity. To represent the company's sector of activity, I use a multinomial variable (INDUSTRY) based on the corresponding COMPUSTAT economic code sector. The companies in the sample belong to the following sectors: basic materials, consumer discretionary and staples, health care, energy, financial activities, industrial activities, information technology, telecommunication services and utilities.
- **R&D intensity (R&D INTENSITY)**  
*R&D INTENSITY* measures the ratio of R&D expenditure to total revenue. Some studies, like Baber *et al.* (1991) and Dechow and Sloan (1991) have found that the companies that invest the most in R&D have greater incentives towards EM, in order to achieve their established goals or project targets.

### 3.6. Model and Analysis Technique

To test the hypotheses proposed, I estimated simultaneous equations for panel data using the estimator proposed by Arellano and Bond (1991). This methodology has been used in several studies, such as De Miguel *et al.* (2005), to determine the relationships among different control mechanisms in the Spanish corporate governance system.

Using panel data enables companies' performance in the sample to be assessed over time, by analysing observations from several consecutive years for the same companies. In contrast to using time series or cross-sectional data, this methodology makes it possible to detect unobserved heterogeneity or the differences between individuals that are potentially correlated with the explanatory

variables (also called individual specific effects), which are invariant over time and directly influence corporate decisions (entrepreneurial capacity, favourable managerial attitude toward corporate transparency, etc.). Moreover, the study is enriched by considering the temporal dimension of data, particularly in periods of great change. Thus, the panel data enables us to control the effects that may affect sustainable practices each year.

Moreover, by using the GMM estimator I can control problems of endogeneity between the independent and dependent variables by means of lags and thus control unobserved effects in each country. This method provides consistent estimators for the multiple regression models and corroborates the independence of the exogenous variables in the model under study. It does not require the assumption of normality and produces estimates with a higher level of confidence, by using orthogonality conditions or moments to achieve more efficient estimates. The models estimated are as follow:

In our model, FP is the dependent variable and FRQ is an independent one to determine the effect of good quality information on firm performance. FP is measured through market to book (MTOB).

I estimate four regressions with the different measures of financial reporting quality as explanatory variables (EQ, C\_Score, B\_Score, AQ and DFRQ):

$$[1] \quad FP_{it} = \phi + \phi_1 FRQ_{it} + \phi_2 Size_{it} + \phi_3 Debt_{it} + \phi_4 Risk_{it} + \phi_5 Working\_capital_{it} + \phi_6 Industry_{it} + \phi_7 R\&DIntensity_{it} + \eta_i + \mu_{it}.$$

To consider the moderating role of the factors previously described, four new models are estimated for each of them, where again FRQ is measured by its three proxies: EQ, AQ and conservatism:

$$[2] \quad FP_{it} = \phi + \phi_1 FRQ_{it} + \phi_2 CORRUPTION_{it} + \phi_3 CORRUPTION\_FRQ_{it} + \phi_4 Size_{it} + \phi_5 Debt_{it} + \phi_6 Risk_{it} + \phi_7 Working\_capital_{it} + \phi_8 Industry_{it} + \phi_9 R\&DIntensity_{it} + \eta_i + \mu_{it}.$$

$$[3] \quad FP_{it} = \phi + \phi_1 FRQ_{it} + \phi_2 IFRS_{it} + \phi_3 IFRS\_FRQ_{it} + \phi_4 Size_{it} + \phi_5 Debt_{it} + \phi_6 Risk_{it} + \phi_7 Working\_capital_{it} + \phi_8 Industry_{it} + \phi_9 R\&DIntensity_{it} + \eta_i + \mu_{it}.$$

$$[4] \quad FP_{it} = \phi + \phi_1 FRQ_{it} + \phi_2 US_{it} + \phi_3 CONTINENTAL_{it} + \phi_4 BRITISH_{it} + \phi_5 USA\_FRQ_{it} + \phi_6 CONTINENTAL\_FRQ_{it} + \phi_7 BRITISH\_FRQ_{it} + \phi_8 Size_{it} + \phi_9 Debt_{it} + \phi_{10} Risk_{it} + \phi_{11} Working\_capital_{it} + \phi_{12} Industry_{it} + \phi_{13} R\&DIntensity_{it} + \eta_i + \mu_{it}.$$

$$[5] \quad FP_{it} = \phi + \phi_1 FRQ_{it} + \phi_2 \Delta GDP_{it} + \phi_3 \Delta GDP\_FRQ_{it} + \phi_4 Size_{it} + \phi_5 Debt_{it} + \phi_6 Risk_{it} + \phi_7 Working\_capital_{it} + \phi_8 Industry_{it} + \phi_9 R\&DIntensity_{it} + \eta_i + \mu_{it}.$$

where:

$i$  indicates the municipality and  $t$  refers to the time period,

$\phi$  are the parameters to be estimated,

$\varepsilon_i$  represents the persistent unobserved heterogeneity

$\mu_{it}$  represents the classical disturbance term.

$FP_i$  is a numerical variable measured by the Market to Book ratio.

$FRQ_t$  is a numerical variable that represents the quality of financial reporting.

This variable is measured by EQ (FRQKOTHARI), conservatism (C\_SCORE and B\_SCORE) and AQ (BALLSHIVAKUMAR). Additionally, with the aim of achieving robust results, it is used as an aggregated measure of FRQ, AFRQ.  $CORRUPTION_{it}$  is a index variable that takes values in the range 0 to 10 to represent the level of corruption perception (0, very corrupt, 10, absence of corruption).

$IFRS_{it}$  is a dummy variable that takes the value of 1 if the country of origin of the company has adopted IFRS, and 0 otherwise.

$US$ ,  $CONTINENTAL$  and  $BRITISH$  are dummy variables that represent the different international accounting systems.

$\Delta GDP_{it}$  is a numerical variable that represents the economic cycle through the change in the GDP of each country.

$Size_{it}$  is a numerical variable that represents the size of company  $i$  for period  $t$  as the logarithm of total assets.

$Debt_{it}$  is a numerical variable that reflects the debt of company  $i$  for period  $t$ .

$Risks_{it}$  is a numerical variable that represents the risk faced by company  $i$  for period  $t$ , measured by the beta.

$Working\_Capital_{it}$  is a numerical variable that represents liquidity, i.e. the company's capacity to continue the normal development of its activities in the short term, measured as the difference between current assets and current liabilities.

$Industry_{it}$  is a multinomial variable that represents the activity sector.

$R\&DIntensity_{it}$  is a numerical variable that represents the ratio of R&D expenditure to total sales by company  $i$  for period  $t$ .

## 4. EMPIRICAL EVIDENCE AND DISCUSSION OF RESULTS

### 4.1. Descriptive Statistics

Table 1 shows the descriptive statistics of the variables used in this study. The mean value of MTOB is 1.880233 and its standard deviation,  $\pm 100.4183$ , meaning that, in general, the companies examined are positively assessed for the market, they have a higher assessment than their book value and they have growth opportunities in view of their current assets. Regarding the FRQ measures, the mean value of FRQKOTHARI is 49.33612 with a standard deviation of  $\pm 1449.245$ , the mean value of C\_SCORE and B\_SCORE are 1.758795 and  $-222.152$ , respectively. Finally, BALL-SHIVAKUMAR that represents the accruals quality has a mean value of 305.2815 and a standard deviation of  $\pm 10477.9$ .

Furthermore, Table 1 summarises the descriptive statistics for the control variables, expressed in millions of Euros. For example, the average size of the companies analysed is 7.8744 with a standard deviation of  $\pm 1.97945$  and the average debt stands at 0.6758 with a standard deviation of  $\pm 110.19017$ .

With respect to the variable CORRUPTION, Table 2 shows the index of mean corruption perception for the countries in the sample. At the top are placed Denmark and Finland, which have been able to achieve this lack of perception of corruption owing, in part, to strong systems that have access to information and rules governing the conduct of public office holders. By contrast, China, Greece and Korea are at the lower end of the index. In Korea, the absence of effective public institutions and leaders accountable for their performance

TABLE 1  
DESCRIPTIVE STATISTICS

	Mean	Std. Dev.	Min	Max
<i>MTOB</i>	1.880233	100.4183	-11980.85	1081.475
<i>FRQKOTHARI</i>	49.33612	1449.245	0.006576	75152.02
<i>C_SCORE</i>	1.758795	45.53327	9.48E-06	3556.409
<i>B_SCORE</i>	-222.152	11440.87	-531936.8	467200.5
<i>BALL-SHIVAKUMAR</i>	305.2815	10477.9	-533699.9	461530.1
<i>SIZE</i>	7.874393	1.979449	-7.144209	13.38014
<i>DEBT</i>	0.6757981	110.1902	-13201	616.0333
<i>RISK</i>	1.212173	8.264746	-3.11677	428.8075
<i>WORKING_CAPITAL</i>	627.4492	2840.651	-31035	143270
<i>INDUSTRY</i>	2.919092	1.696143	0	8
<i>R&amp;DINTENSITY</i>	0.1788567	4.909281	0	350.9103

highlights the need to adopt a much stronger stance against corruption. This index has experienced unsatisfactory results for those eurozone nations that have been most affected by the economic and financial crisis, such as Spain, Portugal, Greece and Italy.

Table 3 shows the percentage of countries in the sample that have adopted fully or partially (for all or for some of the companies registered in the country) IFRS accounting standards. Of the countries analysed in the sample, only the US, Switzerland and Singapore do not allow IFRS or are in the process of adapting to them. In the case of the US, the SEC allows foreign private issuers' financial statements prepared using IFRS as reported by the IASB, without having to include a reconciliation of the IFRS figures to US GAAP. It is noteworthy that since 2002 there has also been a rapprochement between the IASB and Financial Accounting Standards Board, responsible for the development of accounting standards in the United States, to try to harmonise international standards with those of the US. In Switzerland, meanwhile, IFRS are not permitted. Finally, Singapore has adopted most IFRS but there have been significant changes to them. All local businesses have begun to adapt to IFRS from 2012. Because our time period is between 2002 and 2010, the value taken in this case is 0.

Table 4 shows the descriptive statistics of the accounting systems and the variable representing business cycle analysis. Regarding the accounting systems, 50.86% of the sample belongs to a North American accounting system (US variable), representing for half of the sample, because of the high percentage of American companies analysed. A total of 31.54% of the analysed companies belong to the British system, while, despite encompassing a larger number of countries, the continental system represents 13.82% of the sample.

For its part, the variable cycle  $\Delta$ GDP representative of the average rate of change in GDP is around 1%, while its standard deviation is  $\pm 2.644332$ . On average the countries analysed in the sample for the period 2002-2010 enjoy positive annual GDP growth.

Table 5 shows the bivariate correlations. Neither the coefficients between the dependent and independent variables nor those between the different independent variables are very high.

**TABLE 2**  
**INDEX OF MEAN CORRUPTION PERCEPTION FOR THE COUNTRIES**  
**IN THE SAMPLE (2002-2010)**

	Mean
US	7.41
United Kingdom	8.29
Ireland	7.54
Canada	8.68
Australia	8.71
Germany	7.94
Netherlands	8.81
Luxemburg	8.32
Austria	8.17
<b>Denmark</b>	<b>9.36</b>
Norway	8.63
<b>Finland</b>	<b>9.42</b>
Sweden	9.24
Switzerland	8.92
France	7.01
Italy	4.82
Spain	6.7
Belgium	7.25
Portugal	6.53
Greece	4.23
Japan	7.36
<b>China</b>	<b>3.78</b>
Singapore	9.31
Korea	5
Hong-Kong	8.2

#### 4.2. Results of dependency models

Focusing on the main object of analysis in this study, Table 6 highlights the effect of FRQ on FP measured by the market to book ratio. FRQ is measured using the Kothari *et al.* (2005) model for earnings quality, variation of the Basu (1997) model proposed by Khan and Watts (2009) for accounting conservatism and the Ball-Shivakumar (2006) model for accruals quality.

In the first model, earnings quality is used as a proxy of FRQ. FRQKOTHARI is statistically significant at a 95% confidence level and it has a negative effect on FP (coef.  $-0.000047$ ). This means that a higher level of earnings management practices (a higher level of FRQKOTHARI) is associated with a lower FRQ, and thus, lower level of MTOB ratio (FP). These empirical results are in accordance with the hypothesis H1 that supports a positive relationship, since companies with a high quality level of financial information tend to have higher financial performance.

Therefore, this result supports the previous evidence of Louis (2004), Gunny (2005) and Rangan (1998), who find that earnings releases of analysts reflect the

TABLE 3  
ADOPTION OF IFRS FOR THE COUNTRIES IN THE SAMPLE (2002-2010)\*

US	0
United Kingdom	1
Ireland	1
Canada	1
Australia	1
Germany	1
Netherlands	1
Luxemburg	1
Austria	1
Denmark	1
Norway	1
Finland	1
Sweden	1
Switzerland	0
France	1
Italy	1
Spain	1
Portugal	1
Greece	1
Japan	1
China	1
Singapore	0
Korea	1
Hong-Kong	1

\*  $IFRS_{it}$  is a dummy variable that takes the value of 1 if the country of origin of the company has adopted IFRS, and 0 otherwise.

TABLE 4  
DESCRIPTIVE STATISTICS OF MODERATING FACTORS

	Mean	Std. Dev.
$\Delta GDP$	1.021187	2.644332
	Frequencies	
	Absolute	Relative (%)
US	7549	50.86
CONTINENTAL	2052	17.6
BRITISH	4682	31.54

earnings management practices, which implies that those companies that enjoy better Earnings Quality are associated with better and higher earnings releases. Thus, the authors find a positive link between EQ and subsequent profitability, also affecting the subsequent return on assets.

The second measure of FRQ used in this study is related to the level of accounting conservatism. For this, I created the C\_Score and B\_Score parameters

TABLE 5  
BIVARIATE CORRELATIONS

	MTOB	FROKOTHARI	C_Score	B_Score	BALLSHIVAKUMAR	Corruption	IFRS	US	CONTINENTAL	BRITISH	ΔGDP	Size	Debt
MTOB	1												
FROKOTHARI	-0.002	1											
C_Score	0.1838	0.0018	1										
B_Score	-0.3306	-0.0017	-0.7468	1									
BALLSHIVAKUMAR	-0.0037	0.4765	0.0023	-0.0024	1								
Corruption	0.0141	-0.0028	0.0018	0.0005	0.0053	1							
IFRS	-0.0207	-0.015	0.0487	0.0094	0.0605	0.0605	1						
US	-0.014	0.0029	-0.0455	0.006	-0.0222	-0.269	-0.4472	1					
CONTINENTAL	0.0141	-0.0088	0.0085	-0.007	-0.0105	-0.0472	0.1491	-0.4131	1				
BRITISH	0.0096	-0.0074	0.0396	-0.0009	-0.0024	0.3005	0.3172	-0.6816	-0.2706	1			
ΔGDP	0.0272	-0.0037	0.15	-0.103	-0.0002	0.187	0.0968	-0.24	0.0472	0.2275	1		
Size	-0.0208	-0.0007	-0.0489	0.0049	0.0108	-0.1576	-0.217	0.3032	0.1252	-0.4332	-0.0491	1	
Debt	0.503	0.0046	0.3992	-0.477	-0.0003	-0.0056	0.0033	-0.0054	0.018	-0.0077	-0.0023	0.0431	1
Risk	-0.0017	0.0031	0.0032	-0.0009	0.0007	0.0143	0.0005	-0.0192	0.0471	-0.0121	0.0089	0.0002	0.0053
Working_capital	-0.0021	0.0009	-0.0416	0.0144	0.007	-0.0011	-0.0758	0.0561	-0.0055	-0.0988	-0.0343	0.1685	-0.0148
Industry	0.0365	0.0069	0.0188	-0.0113	0.0033	-0.014	-0.0628	0.0091	-0.0595	0.0368	-0.014	-0.1448	0.0134
R&Dintensity	-0.0005	-0.0001	0.0052	0.0004	0.0013	0.007	0.0118	-0.0268	0.0114	0.0222	-0.0035	-0.0469	-0.0015
Risk		Working_capital	Industry										
Working_capital		1											
Industry		-0.0001	1										
R&Dintensity		-0.0301	-0.0057	0.0311	1								

FROKOTHARI represents an earnings management measure with the Kothari *et al.* (2005) model; C\_SCORE and B\_SCORE are measures for accounting conservatism proposed by Khan and Watts (2009); BALLSHIVAKUMAR is measured for accruals quality with the Ball and Shivakumar (2006) model; SIZE is the logarithm of total assets; DEBT is the ratio of debt to equity; RISK represents the risk faced measured by the beta; WORKING\_CAPITAL represents liquidity, measured as the difference between current assets and current liabilities; INDUSTRY represents the different activity sectors; R&DINTENSITY represents the ratio of R&D expenditure to total sales. CORRUPTION is a numerical variable that represents the level of corruption in each country. IFRS is a dummy variable that takes the value 1 if the country of the company has adopted the IFRS and 0 otherwise. US, CONTINENTAL and BRITISH are dummy variables that represent the accounting system. ΔGDP is a numerical variable that represents the economic cycle measured by the growth rate of Gross Domestic Product.

TABLE 6  
THE EFFECT OF FRQ ON FINANCIAL PERFORMANCE: MODEL 1

Dependent variable: MTOB					
	Coef.	Std. Err.	Coef.	Std. Err.	Std. Err.
FRQKOTHARI	-0.000047**	0.0000203	0.0001001*	1.21E-06	0.0000141
C_SCORE					
B_SCORE					
BALL-SHIVAKUMAR					
SIZE	0.1710696*	0.0426937	0.1888574*	0.0554148	0.0803475
DEBT	0.5832017*	0.0254153	0.6932984*	0.0144923	0.0152252
RISK	0.0004941	0.0007067	0.0022563*	0.0006101	0.0006054
WORKING_CAPITAL	0.0001135*	8.48E-06	-0.0000775*	4.76E-06	4.80E-06
INDUSTRY	17.02897*	3.582352	24.06869*	6.208397	6.670763
R&DINTENSITY	-0.0058467*	0.0005157	-0.0056203*	0.0006187	0.0008794
Z	2488.00		49514.65		1855.08
m <sub>1</sub>	-2.50		-1.22		-2.18
m <sub>2</sub>	-0.68		-0.40		-0.61
Hansen	305.36		360.31		257.28

# In order to avoid endogeneity problems, for all numerical variables, including interaction variables, their lags t-1 to t-2 are used as instruments.

Notes:

i) Heteroskedasticity consistent asymptotic standard error in parentheses.

ii) \*, \*\* and \*\*\* indicate significance at the 1%, 5% and 10% level, respectively.

iii) z is a Wald test of the joint significance of the reported coefficients, asymptotically distributed as  $\chi^2$  under the null hypothesis of no relationship, degrees of freedom and significance in parentheses.

iv)  $m_1$  ( $m_1$  and  $m_2$ ) is a serial correlation test of order  $i$  using residuals in first differences, asymptotically distributed as  $N(0,1)$  under the null hypothesis of no serial correlation.

v) Hansen is a test of over-identifying restrictions, asymptotically distributed as  $\chi^2$  under the null hypothesis of non-correlation between the instruments and the error term; degrees of freedom and significance in parentheses.

FRQKOTHARI represents an earnings management measure with the Kothari *et al.* (2005) model; C\_SCORE and B\_SCORE are measures for accounting conservatism proposed by Khan and Watts (2009); BALL-SHIVAKUMAR is measured for accruals quality with the Ball and Shivakumar (2006) model; SIZE is the logarithm of total assets; DEBT is the ratio of debt to equity; RISK represents the risk faced measured by the beta; WORKING\_CAPITAL represents liquidity, measured as the difference between current assets and current liabilities; INDUSTRY represents the different activity sectors; R&DINTENSITY represents the ratio of R&D expenditure to total sales.



shown in the second and third models respectively. In the first model, the effect of *C\_Score* on the dependent variable is positive (coef.  $-0.0001001$ ) and significant at a 99% confidence level. This means that more conservative companies, in relation to the difference in the timelines of disclosing good and bad earnings news, enjoy a better FP. This shows a positive effect of the FRQ on corporate performance (hypothesis H1). However, if I consider the second measure of accounting conservatism (*B\_Score*), these results are not in accordance with the previous models, showing a negative relationship. This variable shows a negative effect on the dependent variable (coef.  $-0.000254$ ) and it is significant at 99% confidence level. It considers the earnings disclosure timelines with respect to bad news and it also includes the definition of *C\_Score* (see equations 3 and 4). Therefore, it represents accounting conservatism in a broader way. In consequence, conservative companies, i.e. those which recognize bad economic news more promptly, tend to present a higher level of financial information quality and enjoy better market valuation. Our results are in accordance with previous evidence obtained by García-Lara *et al.* (2010), who obtained empirical evidence of the positive association between accounting conservatism and future profitability. This accounting conservatism has become an incentive to managers to promote better performing projects to increase future performance because these economic or financial projects are more profitable. Meanwhile, Ahmed and Duellmand (2011) show that conservative companies enjoy greater profitability in the future because they allocate their financial and economic resources in more efficient projects.

Our empirical evidence coincides with the findings of authors such as García-Lara *et al.* (2010) and Ahmed and Duellmand (2011), who show the positive association between accounting conservatism and future profitability because of improvements in investment efficiency. As in Earnings Quality, accounting conservatism has become an incentive to managers to promote better performing projects that increase future performance because these economic or financial projects are more profitable.

The last measure of FRQ, associated with the level of accruals quality, is measured following the model proposed by Ball and Shivakumar (2006). The results show that the *BALLSHIVAKUMAR* variable has a negative effect on FP (coef.  $-0.0014946$ ) at a 99% confidence level. This result is in accordance with our hypothesis H1 that supports a positive relationship, since a higher level of *BALLSHIVAKUMAR* represents a lower level of accruals quality and consequently, a lower level of FP. Thus, accruals quality impacts positively on FP, thereby companies which report poor quality financial information have better market to book ratio as a FP measure.

As the other alternative measures of FRQ, I expect that companies which report more credible, error-free and unbiased information enjoy a better corporate performance, due to the fact that the market identifies these companies and positively assesses these ethical practices (Lu *et al.*, 2012; Hope *et al.*, 2012).

In conclusion, the results obtained support a positive relationship between the FRQ and Financial Performance level, as proposed in hypothesis H1. Therefore, companies characterized by their earnings quality, their accounting conservatism and their accruals quality are associated with higher levels of corporate performance measured by market to book ratio. The market perception for companies with better FRQ is higher than other companies. Our results support the previous

evidence of García-Lara *et al.* (2010), Ahmed and Duellmand (2011), Gunny (2005) and Gong *et al.* (2008) who obtained empirical evidence of the positive association between FRQ and corporate performance where higher corporate performance is a consequence of better quality financial reporting.

In regard to the control variables, the results are very similar in all the models. Firm size and leverage level positively affect corporate performance, and it is statistically significant at 99% confidence level. Therefore, larger and indebted companies enjoy higher FP. Meanwhile, R&DINTENSITY shows a negative effect on Financial Performance, so, companies with more R&D projects have lower FP, having to allocate more resources to this strategy. On the other hand, the effects and significance of RISK and WORKING\_CAPITAL on FP vary in relation to the FRQ measure considered in the model. In the case of INDUSTRY, the general effect is significant and positive at 99% confidence level in all models. This means that companies from sectors such as information technology, telecommunication services and utilities tend to have better FP. The change in the sign of some of them (e.g. working capital) is due to their relation to the measure of FRQ used, remembering that the different measures used in the research have a different effect on FRQ. That is, on one hand BALLSHIVAKUMAR and FRQKOTHARI (measures of EQ and AQ, respectively) negatively affect FRQ (i.e. lower levels of them improve FRQ). However, accounting conservatism positively affects FRQ. Financial statements reported more conservatively from an accounting point of view are associated with better FRQ. This variability of results concerning the control variables does not affect the robustness of the results obtained in the different models used for the different measures of FRQ.

### 4.3. Results of model dependence with moderating factors

With the aim of capturing robust results and considering the use of an international database and information divergence, four factors are incorporated as moderators of the FRQ-financial performance relation, as evidenced above.

Table 7 shows the moderating effect of corruption perception in the country of origin of the company, which allows us to observe the effect of national corruption on the quality of information and, consequently, corporate performance. In the same way as previously, four models of FRQ are considered. For the different measures of FRQ, the evidence obtained shows that for those companies that carry out their activities in institutional contexts characterised by a higher perception of corruption and report high quality financial statements, the positive effect of such quality on financial performance is reduced. This result holds for different measures. Individually, the effect of FRQKOTHARI ( $-0.0018766$ ) shows the positive link between FRQ and financial performance. However, its interaction with CORRUPTION ( $0.002576$ ) shows how the effect on financial performance is moderated and reduced ( $-0.00178766+0.002576=-0.0006994$ ). Similarly, this occurs with BALLSHIVAKUMAR with a coefficient of  $-0.2652551$ , but its interaction with the level of corruption reduces the positive effect of FRQ on financial performance ( $-0.2652551+0.00335955=-0.231596$ ). Finally, the two variables that measure accounting conservatism show the same evidence as previously. They hold a positive coefficient that reflects the positive link between FRQ and financial performance ( $0.0009831$  and  $0.0038229$ , respectively), but these effects also are reduced in those countries with a strong corruption perception

(0.0009831–0.0001102=–0.0008729 and 0.00038229–0.0005261=–0.0032968, respectively).

The evidence obtained and reflected in Table 7 shows the moderating role of the level of national corruption perception in the FRQ-financial performance relationship, allowing us to accept H2. Companies that report high quality financial statements in countries with a high corruption perception enjoy lower financial performance due to FRQ than those operating in environments perceived as less corrupt.

Table 8 shows the effect of FRQ on financial performance by considering the moderating effect of the adoption of IFRS. With regard to AQ, measured by the FRQKOTHARI variable, the evidence obtained shows the positive influence of AQ on the market to book value (coef.–7.69e-06) at the 99% confidence level. As discussed above, a higher value of this variable is associated with lower AQ and therefore lower FRQ. Stopping at the interaction between FRQ and IFRS (FRQ\_IFRS), the result shows how the positive effect on financial performance increases for companies that are located in countries that have adopted IFRS as accounting standards and present higher FRQ (coef. – 7.693-06 –0.0001537 = –0.00016139). This effect remains similar if we consider the BALLSHIVAKUMAR variable as a measure of FRQ. Those companies that report proper financial statements to IFRS and have higher EQ enjoy higher financial performance (coef. BALLSHIVAKUMAR\*IFRS: –0.0064992). If we consider the level of conservatism, both the B\_Score and the C\_Score are positive (0.0004542 and 0.0003067, respectively), which allows us to state that the higher the level of conservatism and FRQ, the better financial performance. This effect disappears for firms located in countries adopting IFRS, i.e. a higher level of conservatism in countries adopting IFRS is associated with lower financial performance. In short, this evidence makes it possible to partially accept H3, since the adoption of IFRS moderates the effect of FRQ on financial performance, although the effect varies depending on the extent of FRQ considered.

Table 9 shows the effect of FRQ on financial performance by considering the moderating effect of international accounting systems: American, Continental and British. The positive effect of FRQ on financial performance is maintained for the different proxies (AQ, conservatism and EQ). However, if I analyse in detail each of the alternative measures of FRQ, I find that in companies based on the British accounting system the effect of FRQ on the market to book value increases (coef. –0.000049 – 0.0011066 = –0.0011556), whereas in the case of those located in the US system, this effect is reduced (coef. –0.000049 – 0.0000447 = –0.0000937). This same evidence is found when considering EQ (BALLSHIVAKUMAR) as a measure of quality. However, the evidence varies if conservatism is used as the FRQ proxy, i.e. more conservative companies located in countries that adopt the continental and US systems enjoy better market valuations and greater financial performance than those located in countries that adopt the British accounting system. Again, the evidence permits us to accept H4, although the results vary depending on the measure of FRQ used.

Table 10 reflects the effect of FRQ on financial performance by considering the moderating effect of the economic cycle. The result of the interaction between FRQ measures and GDP growth rate shows that the impact of FRQ on corporate performance is higher in expansion periods, i.e., positive GDP growth rates. On an individual basis, FRQKOTHARI maintains a negative



TABLE 8  
THE EFFECT OF FRQ ON FINANCIAL PERFORMANCE: MODEL 3 (IFRS AS MODERATING FACTOR)

Dependent variable: MTOB							
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Std. Err.
FRQKOTHARI							
C_SCORE	-7.69E-06*	2.29E-06	0.0004542*	0.0000708			
B_SCORE							
BALL-SHIVAKUMAR							
IFRS	0.1062132	11.57207	-1.316495	2.054954	0.0003067*	0.0000839	0.0021546
SIZE	-0.0001537*	4.75E-06	-0.0006535*	0.0000724	0.1892525	22.96567	11.30202
FRQ_IFRS	0.0709172*	0.0153767	0.1586541**	0.0732017	-0.0006134*	0.0000852	0.0024112
DEBT	0.5817627*	0.0097805	0.7338539*	0.0122151	0.2504357*	0.0710485	0.0663151
RISK	-0.0044872*	0.0004307	-0.0041766*	0.0008016	0.6450519*	0.0143903	0.0410322
WORKING_CAPITAL	0.0000728*	5.07E-06	-0.0001204*	5.86E-06	-0.0035022*	0.0005625	0.0006262
INDUSTRY	4.418393*	0.1709482	12.90785*	3.20055	-0.0000884*	5.39E-06	9.59E-06
R&DINTENSITY	-0.0069166*	0.0002018	-0.006121*	0.0007918	31.39669*	3.646916	3.70719
Z	268407.57		6670.77		-0.0052773*	0.0007791	0.0007671
m <sub>1</sub>	-2.50		-1.24		4539.06		3448.71
m <sub>2</sub>	-0.74		-0.4		-1.20		-2.18
Hansen	558.70		391.03		-0.35		-0.68
					423.84		313.68

# In order to avoid endogeneity problems, for all numerical variables, including interaction variables, their lags t-1 to t-2 are used as instruments.

Notes:

- i) Heteroskedasticity consistent asymptotic standard error in parentheses.
  - ii) \*, \*\* and \*\*\* indicate significance at the 1%, 5% and 10% level, respectively.
  - iii) z is a Wald test of the joint significance of the reported coefficients, asymptotically distributed as  $\chi^2$  under the null hypothesis of no relationships, degrees of freedom and significance in parentheses.
  - iv)  $m_j$  ( $m_j$  and  $m_{j2}$ ) is a serial correlation test of order  $j$  using residuals in first differences, asymptotically distributed as  $N(0,1)$  under the null hypothesis of no serial correlation.
  - v) Hansen is a test of over-identifying restrictions, asymptotically distributed as  $\chi^2$  under the null hypothesis of non-correlation between the instruments and the error term; degrees of freedom and significance in parentheses.
- FRQKOTHARI represents an earnings management measure with the Kothari *et al.* (2005) model; C\_SCORE and B\_SCORE are measures for accounting conservatism proposed by Khan and Watts (2009); BALLSHIVAKUMAR is measured for accruals quality with the Ball and Shivakumar (2006) model; SIZE is the logarithm of total assets; DEBT is the ratio of debt to equity; RISK represents the risk faced measured by the beta; WORKING\_CAPITAL represents liquidity, measured as the difference between current assets and current liabilities; INDUSTRY represents the different activity sectors; R&DINTENSITY represents the ratio of R&D expenditure to total sales. IFRS is a dummy variable that takes the value 1 if the country of the company has adopted the IFRS and 0 otherwise.

TABLE 9  
THE EFFECT OF FRQ ON FINANCIAL PERFORMANCE: MODEL 4 ( ACCOUNTING SYSTEMS AS MODERATING FACTOR)

		Dependent variable: MTOB						
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
FRQKOTHARI	-0.000049**	0.0000227	0.0000756*	2.67E-06	0.0000824*	6.27E-06	-0.0000856	-0.0000856
C_SCORE							-0.4380196	-0.4380196
B_SCORE							-0.431067	-0.431067
BALL-SHIVAKUMAR							dropped	dropped
US	-3.129715	2.448602	0.5439654	1.222787	3.113721	3.035108	0.0000168	0.0000168
CONTINENTAL	-2.515712	2.448004	1.920427*	0.6364733	2.345094	2.179808	-0.0766601	-0.0766601
BRITISH	0.2268997	1.092947	0.3734449	0.390856	0.2134274	0.9459489	-0.0966719*	-0.0966719*
FRQ_US	0.0000447***	0.0000229	0.0003823*	0.0000175	0.0002214*	0.0000395	0.3502605*	0.3502605*
FRQ_CONTINENTAL	-0.0004198	0.0005486	0.0001778*	2.87E-06	-9.57E-06	6.47E-06	0.5878379*	0.5878379*
FRQ_BRITISH	-0.0011066*	0.0000343	-0.0001563*	0.0000178	-0.0003491*	0.0000351	-0.0016524*	-0.0016524*
SIZE	0.1140097*	0.0144606	0.083637*	0.0315009	0.2660409*	0.0305264	0.000039*	0.000039*
DEBT	0.5756575*	0.0084448	0.7324162*	0.0082282	0.6502659*	0.0086681	3.947612**	3.947612**
RISK	-0.0048084*	0.0004085	-0.0002255	0.0003676	-0.000607***	0.0003842	-0.0031539*	-0.0031539*
WORKING_CAPITAL	0.0000692*	4.77E-06	-0.0000811*	3.59E-06	-0.0000928*	4.02E-06	4291.25	4291.25
INDUSTRY	4.491602*	0.1304384	5.042026*	0.9918291	10.31948*	1.667796	-2.19	-2.19
R&DINTENSITY	-0.0067124*	0.0001893	-0.0060267*	0.0003399	-0.0022523*	0.0003406	-0.67	-0.67
Z	75987.21		35917.89		29830.55		525.23	525.23
m <sub>1</sub>	-2.50		-1.23		-1.20			
m <sub>2</sub>	-0.74		-0.25		-0.40			
Hansen	598.61		686.50		789.97			

# In order to avoid endogeneity problems, for all numerical variables, including interaction variables, their lags t-1 to t-2 are used as instruments.

Notes:

- i) Heteroskedasticity consistent asymptotic standard error in parentheses.
  - ii) \*, \*\* and \*\*\* indicate significance at the 1%, 5% and 10% level, respectively.
  - iii) z is a Wald test of the joint significance of the reported coefficients, asymptotically distributed as  $\chi^2$  under the null hypothesis of no relationship, degrees of freedom and significance in parentheses.
  - iv)  $m_i$  ( $m_i$  and  $m_j$ ) is a serial correlation test of order  $i$  using residuals in first differences, asymptotically distributed as  $N(0,1)$  under the null hypothesis of no serial correlation.
  - v) Hansen is a test of over-identifying restrictions, asymptotically distributed as  $\chi^2$  under the null hypothesis of non-correlation between the instruments and the error term; degrees of freedom and significance in parentheses.
- FRQKOTHARI represents an earnings management measure with the Kothari et al. (2005) model; C\_SCORE and B\_SCORE are measures for accounting conservatism proposed by Khan and Watts (2009); BALL-SHIVAKUMAR is measured for accruals quality with the Ball and Shivakumar (2006) model; SIZE is the logarithm of total assets; DEBT is the ratio of debt to equity; RISK represents the risk faced measured by the beta; WORKING\_CAPITAL represents liquidity, measured as the difference between current assets and current liabilities; INDUSTRY represents the different activity sectors; R&DINTENSITY represents the ratio of R&D expenditure to total sales. US, CONTINENTAL and BRITISH are dummy variables that represent the accounting system.

**TABLE 10**  
**THE EFFECT OF FRQ ON FINANCIAL PERFORMANCE: MODEL 5 (ECONOMIC CYCLE AS MODERATING FACTOR)**

	Dependent variable: MTOB					
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
FRQKOTHARI	-0.0000999*	0.0000123				
C_SCORE			0.0000613*	3.82E-06		
B_SCORE						
BALL-SHIVAKUMAR			0.0002691*	0.0000145		
AGDP	0.1366347*	0.0018286	0.1033084*	0.0057424		
FRQ_AGDP	-0.0000394*	7.78E-06	7.21E-06*	1.67E-06	0.0695888*	0.009422
SIZE	0.0101127	0.0200149	0.0087831	0.0320124	0.0001546*	8.24E-06
DEBT	0.603517*	0.0090953	0.6989436*	0.0084413	0.1313358*	0.0340723
RISK	-0.0043813*	0.0004713	-0.0008036**	0.0003866	0.6479173*	0.0088315
WORKING_CAPITAL	0.0000708*	4.55E-06	-0.000114*	3.96E-06	-0.0022837*	0.0004669
INDUSTRY	8.36685*	0.6767414	5.29291*	1.48327	0.0001114*	4.56E-06
R&DINTENSITY	-0.0059832*	0.0002487	-0.0068971*	0.0003433	12.27813**	2.233784
Z	241521.94		56532.14		-0.00065394*	0.0003703
m <sub>1</sub>	-2.51		-1.22		16271.53	
m <sub>2</sub>	-0.65		-0.47		-1.20	
Hansen	566.95		601.19		-0.28	
					574.25	
					-2.21	
					-0.67	
					365.44	

# In order to avoid endogeneity problems, for all numerical variables, including interaction variables, their lags t-1 to t-2 are used as instruments.

Notes:

i) Heteroskedasticity consistent asymptotic standard error in parentheses.

ii) \*, \*\* and \*\*\* indicate significance at the 1%, 5% and 10% level, respectively.

iii)  $\chi^2$  is a Wald test of the joint significance of the reported coefficients, asymptotically distributed as  $\chi^2$  under the null hypothesis of no relationships, degrees of freedom and significance in parentheses.

iv)  $m_i$  ( $m_i$  and  $m_i^2$ ) is a serial correlation test of order  $i$  using residuals in first differences, asymptotically distributed as  $N(0,1)$  under the null hypothesis of no serial correlation.

v) Hansen is a test of over-identifying restrictions, asymptotically distributed as  $\chi^2$  under the null hypothesis of non-correlation between the instruments and the error term; degrees of freedom and significance in parentheses.

FRQKOTHARI represents an earnings management measure with the Kothari *et al.* (2005) model; C\_SCORE and B\_SCORE are measures for accounting conservatism proposed by Khan and Watts (2009); BALL-SHIVAKUMAR is measured for accruals quality with the Ball and Shivakumar (2006) model; SIZE is the logarithm of total assets; DEBT is the ratio of debt to equity; RISK represents the risk faced measured by the beta; WORKING\_CAPITAL represents liquidity, measured as the difference between current assets and current liabilities; INDUSTRY represents the different activity sectors; R&DINTENSITY represents the ratio of R&D expenditure to total sales. AGDP is a numerical variable that represents the economic cycle measured by the growth rate of Gross Domestic Product..

impact (coef.  $-0.0000999$ ) on the market to book ratio in this model as previously (higher FRQ leads to greater financial performance). Furthermore, from the interaction between this measure and the variable  $\Delta\text{GDP}$ , we see that the economic cycle positively moderates the FRQ-financial performance relationship ( $-0.0000999 - 0.0000394 = -0.00013939$ ). The same result is observed by using BALLSHIVAKUMAR, with a negative impact on financial performance (coef.  $-0.0704641$ ) and an even more negative interaction ( $-0.0704641 - 0.05317 = -0.1236341$ ), allowing us to claim that companies that report financial statements with greater AQ in periods of economic expansion enjoy better market valuations and consequently better financial performance compared with in periods of economic recession (negative GDP growth rates). In the same way, we see that the positive effect of accounting conservatism on financial performance (coef.  $0.0000613$  and  $0.0002691$ , respectively) is increased during periods of positive GDP growth (coef.  $0.0000613 + 7.21 \text{ e-}09 = 0.0000613072$  and  $0.0002691 + 0.0001546 = 0.00034237$ , respectively). Based on these arguments, the results provide the evidence needed to accept H5. Therefore, times of recession mean that the positive effect on corporate performance of FRQ is reduced by the economic and financial difficulties being experienced by the markets.

In summary, regarding the moderating factors analysed in this study, the positive effect of FRQ on financial performance is increased in countries with a lower corruption perception, in those countries that have adopted IFRS, in those belonging to a continental and British accounting system (as a rule) and in periods of economic expansion with positive GDP growth rates.

#### 4.4. Results of an aggregated measure of FRQ

With the goal in mind to achieve robust results of the FRQ measures employed (EQ, accounting conservatism and AQ), I create an aggregate measure of FRQ. This variable is the sum of four dummy variables; therefore, it takes values between 0 (no quality of information) and 4 (strong level of quality). To do this, I create four dummies, **DEQ**, **DC\_Score**, **DB\_Score** and **DAQ**, depending on the variables FRQKOTHARI, C\_Score, B\_Score and BALLSHIVAKUMAR.

The results for the dependency model that incorporates and analyses the effect of an aggregated measure of FRQ on financial performance, specifically on the market to book ratio, are shown in Table 11. Clearly, they show the positive effect on financial performance as consequence of AFRQ, which is statistically significant at the 99% confidence level with a coefficient of  $0.0844362$ . Therefore, higher levels of AFRQ (especially those who are at the right index limit) lead to better financial performance.

This result allows us to see that the evidence previously obtained (for the different FRQ proxies) is robust for this aggregated measure, which contains three aspects considered in the literature (EQ, accounting conservatism and AQ). Therefore, companies that report more quality information on all three counts enjoy better valuation and perception from investors and society at large, allowing them to improve financial performance.



**TABLE 11**  
THE EFFECT OF FRQ ON FINANCIAL PERFORMANCE

	Dependent variable: MTOB	
	<i>Coef.</i>	<i>Std. Err.</i>
AFRQ	0.0844362*	0.0169715
SIZE	0.1215256*	0.0455434
DEBT	0.6156292*	0.0173749
RISK	0.0025467*	0.0007382
WORKING_CAPITAL	0.0000925*	6.91E-06
INDUSTRY	17.94227*	4.949925
R&DINTENSITY	-0.0043797*	0.0005541
Z	2869.74	
m <sub>1</sub>	-1.28	
m <sub>2</sub>	-0.49	
Hansen	384.62	

# In order to avoid endogeneity problems, for all numerical variables, including interaction variables, their lags t-1 to t-2 are used as instruments.

Notes:

- i) Heteroskedasticity consistent asymptotic standard error in parentheses.
- ii) \*, \*\* and \*\*\* indicate significance at the 1%, 5% and 10% level, respectively.
- iii) z is a Wald test of the joint significance of the reported coefficients, asymptotically distributed as  $\chi^2$  under the null hypothesis of no relationship, degrees of freedom and significance in parentheses.
- iv)  $m_i$  ( $m_1$  and  $m_2$ ) is a serial correlation test of order  $i$  using residuals in first differences, asymptotically distributed as  $N(0, 1)$  under the null hypothesis of no serial correlation.
- v) Hansen is a test of over-identifying restrictions, asymptotically distributed as  $\chi^2$  under the null hypothesis of non-correlation between the instruments and the error term; degrees of freedom and significance in parentheses.

AFRQ represents an aggregated measure of FRQ based in EQ, AQ and accounting conservatism; SIZE is the logarithm of total assets; DEBT is the ratio of debt to equity; RISK represents the risk faced measured by the beta; WORKING\_CAPITAL represents liquidity, measured as the difference between current assets and current liabilities; INDUSTRY represents the different activity sectors; R&DINTENSITY represents the ratio of R&D expenditure to total sales.

#### 4.5. Variance decomposition

Variance decomposition is a complementary study to the cause/effect analysis that reports the percentage of variability for a variable as a result of its connivance with others. That is, it indicates the proportion of the effect that all perturbations of the variables have on the other. This test does nothing but compare a hypothesis about the measures. For this, it makes a decomposition of the total variability of two components: experimental variance and error variance.

The experimental variance is due to the effects of the independent variables and reflects differences among the groups regarding the independent variable. For its part, the error variable is one whose origin cannot be identified. Usually, this is because of the individual differences within each sample and not the effect of the independent variable.

Therefore, analysis of variance (ANOVA) is based on comparing the experimental variance (intergroup variance) with the error variance (intragroup variance). If intergroup variability significantly exceeds that observed within

groups, it is found that the effects of the independent variable are significant and, therefore, that there are significant differences between them.

To carry out the comparison of inter- and intragroup variance, the ANOVA technique was used in SPSS software (Table 12). This program or any other statistical program performs a decomposition of the total variability in the variability explained by the regression and the residual or unexplained by the regression. The ANOVA technique, which contrasts the significance of the set model, thus takes into account the variability explained by the regression regarding unexplained (whose distribution is a model F-Snedecor).

$$H_0: \beta_i = 0 \forall i$$

$$H_1: \text{some } \beta_i \neq 0$$

The p-values associated with each contrast of nullity indicate that the only significant variables are R&D intensity, Risk, Industry, FRQKOTHARI, C\_Score and B\_Score with a significance of 0.000. For the other coefficients, I cannot reject the null hypothesis at this level of significance. It therefore seems that these variables do not explain the dependent variable (market to book ratio).

TABLE 12  
ANOVA FOR A FACTOR (MTOB)

		Sum of squares	Df	RMS	F	Sig.
SIZE	Intergroup	48,751.016	13,574	3.591	.493	1.000
	Intragrupo	6,862.547	942	7.285		
	Total	55,613.562	14,516			
LEVERAGE	Intergroup	2,169,930.808	13,574	159.859	.001	1.000
	Intragrupo	174,081,498.426	942	184,799.892		
	Total	176,251,429.233	14,516			
WORKING_ CAPITAL	Intergroup	95,561,135,019.065	13,574	7,040,012.894	.276	1.000
	Intragrupo	24,064,284,543.983	942	25,545,949.622		
	Total	119,625,419,563.048	14,516			
R&DINTENSITY	Intergroup	348,806.408	13,403	26.025	888.135	.000
	Intragrupo	25.083	856	.029		
	Total	348,831.491	14,259			
RISK	Intergroup	933,246.264	13,114	71.164	1.399	.000
	Intragrupo	46,912.226	922	50.881		
	Total	980,158.490	14,036			
INDUSTRY	Intergroup	39,949.157	13,574	2.943	1.436	.000
	Intragrupo	1,931.195	942	2.050		
	Total	41,880.352	14,516			
FRQKOTHARI	Intergroup	26,878,911,416.425	12,147	2,212,802.455	8.517	.000
	Intragrupo	116,655,399.464	449	259,811.580		
	Total	26,995,566,815.890	12,596			
BALLSHIVAKUMAR	Intergroup	19,878,656.288	10,281	1,933.533	.269	1.000
	Intragrupo	2,734,221.730	380	7,195.320		
	Total	22,612,878.018	10,661			
C_Score	Intergroup	1,689,495,125,550.275	12,714	132,884,625.260	124.414	.000
	Intragrupo	208,277,108.746	195	1,068,087.737		
	Total	1,689,703,402,659.021	12,909			
B_Score	Intergroup	1,417,196,597,798.322	12,714	111,467,405.836	616.741	.000
	Intragrupo	35,243,565.921	195	180,736.235		
	Total	1,417,231,841,364.243	12,909			

## 5. CONCLUDING REMARKS

Numerous advantages of providing high-quality information have been cited: FRQ reduces information risk and liquidity (Lambert *et al.*, 2007), prevents managers from using discretionary powers for their own benefit and helps them make efficient investment decisions (Chen *et al.*, 2010). Lambert *et al.* (2007) obtained empirical evidence that the quality of accounting information can influence the cost of capital, both directly, by affecting market participants' perceptions about the distribution of future cash flows, and indirectly, by affecting real decisions that alter the distribution of future cash flows. Chen *et al.* (2010) found that FRQ positively affects the investment efficiency of private firms in emerging markets and this effect enhances bank financing and decreases incentives to minimise earnings for tax avoidance purposes.

Financial information issued by a company has become an essential resource for any participant in the market, because it permits a reduced amount of information asymmetries between managers, investors, regulatory agencies, society and other stakeholders. Therefore, one of the main questions that arises about the quality of financial reporting is its effect on the subsequent performance of a company, i.e. how this higher perceived quality is valued by the market.

This paper examines the consequences of Financial Reporting Quality (FRQ) on Corporate Performance, using three proxies of FRQ: (i) earnings quality; (ii) accounting conservatism; and (iii) accruals quality. Our first purpose is to analyze the effect of good FRQ on financial performance (FP) measured by the market to book ratio. Owing to the use of an international sample, with the subsequent divergence of information and accounting aspects as well as institutional and cultural differences among countries, I analyse the proposed relationship based on a variety of moderating factors: the perception of corruption in the country of origin of the company, the adoption or not of the standards established by IFRS, the accounting system in which the company carries out its activity and the variability of results depending on the economic cycle

To that end, the hypotheses proposed are tested on an unbalanced sample of 1,960 international non-financial listed companies from 25 countries and an Administrative Region in the period 2002-2010. The use of simultaneous equations for panel data, via the GMM estimator proposed by Arellano and Bond (1991), highlights the positive effect of FRQ on Financial Performance. The results show that companies which report financial statements with better quality information (associated to better earnings quality, accounting conservatism and better accruals quality) enjoy a higher FP, measured by market measures which reflect the trust that stakeholders have not only in the company at present, but also in the past and future.

The results here presented are robust to different measures of FRQ, especially an aggregate measure that considers the different aspects of quality measured. Furthermore, the relationship analysed here is moderated by a set of factors such as the level of corruption and the adaptation of IFRS in the country of origin of the company, the accounting system and the business cycle in which the economy operates. For those firms located in areas with a lower corruption perception, in countries that have adopted IFRS and in business cycle expansion, information quality has a positive influence on financial

performance. However, it should be noted that the moderating effect varies depending on the extent of FRQ considered. This effect also varies according to the international accounting system used.

The study makes several contributions. I contribute to the emerging literature on FRQ, specifically on accounting conservatism, EM and AQ. This research contributes to the literature by explaining financial performance determinants and the causes of good FRQ. The quality of financial information is a relevant issue in the current state of the global financial and economic crisis and one of the factors to take into account when current and future investors are granting external financing to companies. The relevance of the research is based upon controlling for the main determinants of profitability (size, industry, risk, etc.) so that the quality of information plays an essential role in explaining the differences in companies' results.

Furthermore, this paper presents evidence of the relationship between FRQ and the level of financial performance, using the GMM estimator of Arellano and Bond (1991) for panel data that permits solving the endogeneity problem between both variables. Although this estimator has been used previously in studies such as de Miguel *et al.* (2005), its application to the accounting science field is absent, which gives a special research innovation. In addition, the use of this methodology allows us to capture unobservable heterogeneity and provide deeper insights into the study. Our results are consistent with the idea that greater FRQ is associated with better financial performance. An added contribution of this work is the creation of an aggregate measure of FRQ that includes the three aspects previously employed in the literature (EQ, accounting conservatism and AQ), which adds a newness to research on FRQ.

These findings mean practical implications for managers, investors and stakeholders in general. These results may be of interest to managers, enabling them to assess the impact their quality of information has on the outcome and practices that improve market value. Moreover, investors have a greater volume of information at their disposal and thereby, a decreasing amount of information asymmetry. Because of this, investors and stakeholders value these companies in the market in a positive way. However, this paper has certain limitations, such as the use of an international database, with the consequent heterogeneity of information on accounting issues. This limitation aims to be exceeded with the addition of a variety of moderating factors, such as adoption or not of the IFRS, accounting systems and the level of corruption in the country, and the business cycle. It is true that a potential limitation of the use of the corruption index provided by Transparency International is that it is based on surveys, so the results are more subjective and less reliable in countries where fewer sources are extracted. In addition, what is legally defined (or perceived) as corruption differs by jurisdiction. Furthermore, financial performance is measured through market to book ratio, a market measure, and I do not consider other accounting measures. Thus, future research should aim to analyze whether the relationships found here are still met for accounting measures (ROA or ROE for example) in order to confirm the results.

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**APPENDIX 1**  
**Measure of Earnings Management through Discretionary Accruals**  
*Kothari model (Kothari et al., 2005)*

Following Jones (1991) and Dechow *et al.* (1995), total accrual adjustments (TAA) are defined as:

$$(a.1) \quad TAA_{it} = [(\Delta CA_{it}) - (\Delta CASH_{it})] - [(\Delta CL_{it}) - (\Delta RLTTP_{it})] - DA_{it},$$

where  $\Delta CA_{it}$  represents the change in current assets;  $\Delta CASH_{it}$  reflects the change in cash held and short term financial investments;  $\Delta CL_{it}$  is the change in current liabilities;  $RLTTP_{it}$  is the change in reclassified long term obligations;  $DA_{it}$  is the depreciation and amortization;  $i$  represents each company and  $t$  represents the year.

On the basis of equation (a.1), accruals are calculated using an explanatory model. The difference between actual and expected accrual adjustments (taking into account growth, company assets and the accounting result) represents the discretionary or unexplained component of accrual adjustments (DAA) and acts as a measure of management discretion in the reporting of results. The standard Jones model uses the following procedure to separate the discretionary from the non-discretionary component.

The Kothari *et al.* (2005) model uses the following procedure to separate the discretionary from the non-discretionary component. The model proposed by Kothari *et al.* (2005) is characterised by the incorporation of a non-deflated constant and the return on assets, or financial profitability. All variables (except the constant) are deflated by the total assets for the previous period and are calculated by cross estimation. This model provides increased reliability and higher quality results, by resolving the question of whether differences in DAA may derive from differences in performance.

$$(a.4) \quad \frac{TAA_{it}}{A_{i,t-1}} = \alpha_{1,t} \left( \frac{1}{A_{i,t-1}} \right) + \alpha_{2,t} \left( \frac{\Delta(Sales - A^*R)_{it}}{A_{i,t-1}} \right) + \alpha_{3,t} \left( \frac{PPE_{it}}{A_{i,t-1}} \right) + \alpha_{4,t} \left( \frac{ROA_{it}}{A_{i,t-1}} \right) + \varepsilon_t,$$

where  $\frac{TAA_{it}}{A_{i,t-1}}$  are the total accrual adjustments;  $A_{i,t-1}$  represents total assets of firm  $i$  in period  $t-1$  and this is used as a deflator to correct possible problems of heteroskedasticity;  $PPE_{it}$  represents the property, plant and equipment of firm  $i$  in period  $t$ ;  $\Delta Sales_{it}$  is the change in sales for firm  $i$  in period  $t$ ;  $A^*R$  represents accounts receivable and  $ROA$  represents the return on assets and the rest of the variables are as explained before.

The non-discretionary accrual adjustments (NDAA) is,  $\alpha_0 + \alpha_{1,t} \left( \frac{1}{A_{i,t-1}} \right) + \alpha_{2,t} \left( \frac{\Delta Sales_{it}}{A_{i,t-1}} \right) + \alpha_{3,t} \left( \frac{PPE_{it}}{A_{i,t-1}} \right) + \alpha_{4,t} \left( \frac{ROA_{it}}{A_{i,t-1}} \right)$  are the non-discretionary accruals (NDAA) and  $\varepsilon_t$  represents the unexpected component of accruals (DAA). NDAA are calculated by replacing the coefficients in equation (a.2) with the values obtained by Ordinary Least Squares and DAA are the residuals of this calculation.