

Visiting the Corporate Social Performance-Financial Performance Link in Europe

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Abstract :

Our study aims to visit the link between Corporate Social Performance (CSP) and Corporate Financial Performance in Europe. We used a new set of data from the leading European social rating agency VIGEO. Our sample is composed of 591 European firms over 1405 firm-year observations from 2008 to 2011 on 36 industrial sectors. We computed an absolute CSR score and two industry-adjusted CSR scores as well as six sub-scores on six CSR dimension. We used pooled regression methodology and preceded to several robustness checks including panel regression models and Instrumental Variables regressions. Our results demonstrate a strong link between CSR performance and market-based CFP but more contrasted results between CSR performance and accounting-based CFP. Moreover we show no evidence of any link between CSR performance and firm's risk computed as the standard deviation of ROA.

Keywords : Corporate Social Performance; Corporate Financial Performance; European firms; Reputational theory; Stakeholder theory; Substantive theory

INTRODUCTION

What is the social role of a firm? This central question has been debated for years between academics and is of great importance for economic policy makers and managers. Since the work of Friedman (1970) there is an ongoing debate between a so called orthodox point of view where the only social responsibility of a firm is to make profit for its shareholders and the corporate social responsibility (CSR) school of thought according to which the social responsibility of a firm goes beyond its legal obligations (Jones, 1980) and the sole shareholder value maximization principle (Jensen, 2002). In this view, a firm has to take into account all its stakeholders and the positive and negative externalities generated by its activity, being responsible for its social and environmental impact (Freeman, 1984 ; Wartick and Cochran, 1985 ; Wood, 1991).

Defining and measuring CSR performance has been a real challenge (Barnett, 2007; McWilliams, Siegel and Wright, 2006). One way has been to understand and measure how a firm is taking into account its primary and secondary stakeholders (Campbell, 2007; Clarkson, 1995). The rationale being this view is that a firm cannot survive and perform in the long term without the support of its shareholders (Berman, Wicks, Kotha and Jones, 1999). Another way has been to define the CSR performance as a multi-dimensional construct including a large range of variables designed in order to measure global performance indexes including several dimension of an enlarged corporate social responsibility such as its environmental impact, human resources management, customer/supplier relationship, human rights respects on the entire industrial value system or community involvement among others (Bowen, 1953 ; Carroll, 1979; Sharfman, 1996; Veld et al., 2005; Cavaco and Crifo, 2010). This way has been popularized by the creation of social rating agencies and the use of external-party audit methodologies such as KLD in the US or VIGEO in Europe.

The question of a link between the CSR performance and the corporate financial performance (CFP) is one of the most discussed topics in the management literature (Margolis, Elfenbein and Walsh, 2009; Wu, 2006). Whereas for some authors like Drucker (1984) there is a strong incompatibility between profit maximization and CSR, others academics have developed the idea that firms who adopt socially responsible behaviors would be rewarded by some economic profits (Porter and Kramer, 2002). CSR subsequently becomes a source of debate insofar as it reflects divergent and sometimes conflicting stakeholders' expectations. There is no evidence to date that a socially responsible company would obtain consistently better results in the long term. For half a century, authors have sought to understand the interactions between the implementation of CSR practices and the financial results of the companies. The findings of these studies are contrasted.

The empirical link between corporate social responsibility and financial performance has been extensively studied during the last decades since the seminal article of Bragdon and Marlin (1972). Margolis, Elfenbein and Walsh (2007) have identified 167 articles most of them on US firms. If the overall results tend to acknowledge a small or non-significant link between social and financial performance, few studies have been realized on large samples using longitudinal third party data. Moreover, to the best of our knowledge, there is no study examining the link on large panel of European firms (Cavaco and Crifo, 2010). Moreover, few studies are analyzing the specific dimensions underlying CSR Performance (Margolis, Elfenbein and Walsh, 2007). Studying the relationship between CSP and CFP in Europe is of a great importance as it could allow comparisons with US studies and allow some generalization about the impact of CSR on shareholder value.

The purpose of this paper is to fill this gap by visiting the link between CSR performance and financial performance on European firms, using a new set of data from the leading European social rating agency VIGEO. Our sample is composed of 591 European firms rated by

VIGEO on a four year period (2008-2011) leading to 1405 firm-year observations on 17 European countries and on 36 industrial sectors. We used several measures of CSR performance using the VIGEO scores. We used an absolute CSR score and two industry-adjusted CSR scores as well as six sub-scores on six CSR dimension used by VIGEO: human resources management (HR) environment (ENV), Customer/Supplier relationship (CS), corporate governance (CG), community involvement (CIN) and human rights respect (HRt). We assess firms' financial performance by using market-based measures (tobin's q), accounting based measures (return on assets - ROA) and a firm's risk measure (standard deviation of ROA).

We used pooled regression methodology and preceded to several robustness checks including panel regression models and Instrumental Variables regressions. Our results demonstrate a strong link between CSR performance and market-based CFP but more contrasted results between CSR performance and accounting-based CFP. Moreover we show no evidence of any link between CSR performance and firm's risk.

Our paper is related to the literature on the measure of CSR performance by providing new indicators (absolute/relative) of CSR Performance based the VIGEO database (source : <http://www.vigeo.com/csr-rating-agency/fr/methodologie>). To develop comparable measures is crucial to allow comparisons between studies and to allow scientific evidences accumulation on this topic (Griffin and Mahon, 1997). The question of "measures" is also important in term of results robustness. For Sharfman (1996) the internal and external validity of third-party audit measures using standardized indexes such as KLD or VIGEO offer the strongest robustness among all other available measures.

Our first section presents a synthesis of evidences concerning the CSP and CFP relationship which allow us to develop our hypotheses in the European context. Section 2 details our data

and statistical methods. Section 3 exhibits our main results. Section 4 discusses these results and provides us with some implications for practices and for future researches.

CSR PERFORMANCE AND FINANCIAL PERFORMANCE

The potential relationships between CSP and CFP have been conceptualized by Preston and O'Bannon (1997). CSP and CFP could be seen as synchronous with a positive association (positive synergy effect) or a negative association (negative synergy effect). CFP could be thought as preceding CSP with a positive effect (organizational slack hypothesis) or a negative effect (managerial opportunism hypothesis). Finally, CSP could be seen as preceding CFP where a positive impact could be related to a better management of the firm's stakeholder's objectives and a negative impact could be associated with the stakeholder's conflict hypothesis (Barnea and Rubin, 2005).

Several authors (Preston and O'Bannon, 1997; Margolis, Elfenbein and Walsh, 2007; 2009; Allouche and Laroche, 2005) question the value creation mechanisms which could explain a positive link between CSP and CFP. The substantive mechanism theory (Kanter, 1999) seeks to explain the link by exploring how CSP has a positive effect on costs savings, risk reduction and revenue enhancement. The reputational effect theory (Fombrun and Shanley, 1990; Backhaus, Stone and Heiner, 2002; Campbell, 2007) posits that the appearance of behaving in socially responsible way is enough to attract customers, shareholders and employees and then generate a positive financial performance. According to Margolis, Elfenbein and Walsh (2007) both mechanisms (substantive and reputational) could be at work simultaneously. Other authors have shown the existence of neutral interactions (Mc Williams and Siegel, 2001; Gond, 2001) or even more complex links (Barnett and Salomon, 2006; 2012). The impact of social practices on financial performance could depend on the degree of complementarity or substitutability between responsible practices and other firm specific strategic issues (Cavaco and Crifo, 2010).

Since the work of Bragdon and Marlin (1972), hundreds of empirical studies have investigated the link between CSP and CFP. Most of these researches have been summarized in five recent comprehensive literature reviews (Margolis and Walsh, 2003; Orlitzky, Schmidt and Rynes, 2003; Allouche et Laroche, 2005; Wu, 2006; Margolis, Elfenbein and Walsh, 2007). Margolis and Walsh (2003) show that the relationship between CSR and CSP is strictly positive in 51 cases on the 122 studies identified and strictly negative in 7 cases (it is neutral or mixed in other cases). Orlitzky, Schmidt, and Rynes (2003) show through a meta-analysis methodology that the financial CSR-CFP relationship is positive in a variety of sectors of activity, but with a high residual variance (over 75%), suggesting the influence of many moderating variables. They also highlight that social performance measures are most strongly correlated with the accounting and financial indicators and that indices of social reputation (better than social performance metrics) are more strongly correlated with financial performance.

Margolis, Elfenbein and Walsh (2007) found a non-significant relationship between CSR and CFP in 58% of the studies included in their review (192 studies), a positive relationship in 27% of the cases and a negative relationship in 2%. Their qualitative results hold for both measure of CFP, accounting based measures and market-based measures even though the association seems strongest for accounting based measures than for market-based measures. The strong variation of the results among these studies also pleads for the importance control variable. It is necessary to control several factors likely to influence CFP, such as size, measured by total assets or total sales (Hillman and Keim, 2001), financial risk, measured by debt (Waddock and Graves, 1997) or even immaterial investments such as R&D or intangible assets (Mc Williams and Siegel, 2000).

Considering these arguments, we can state the two following hypotheses to be tested on European firms using third-party audit measures of CSR and two type of CFP. We privileged

Tobin's q and the return on assets (ROA). Despite their limitations (Griffin and Mahon, 1997; MC Guire et al., 1986) they have been retained in the most recent studies (Margolis et al., 2007).

Hypothesis 1: European listed firms show a positive relationship between Corporate Social Performance and market-based Corporate Financial Performance.

Hypothesis 2: European listed firms show positive relationship between Corporate Social Performance and accounting-based Corporate Financial Performance.

According to the capital asset pricing model (Sharpe, 1964), corporate financial performance should always be assessed by taking into account both expected return and risk. While Tobin's q incorporate a risk component as the market value of asset is associated with both future cash flow and systematic risk (firm's beta), accounting-based measures can be completed by a systematic direct measure of firm's risk. Surprisingly, few studies aim to directly assess the link between CSR and firm's risk (Richardson, Welker and Hutchinson, 1999; Orlitzky and Benjamin, 2001).

From a theoretical point of view, the relationship between CSR and firm risk has been analyzed with two main perspectives. According to the stakeholder theory point of view (Donalson and Preston, 1995), we should observe a negative relationship between CSR and firm risk as it minimizes the risk of future uncertain claims by anticipating these potential implicit claims in their strategic decision making process from the beginning (Orlitzky and Benjamin, 2001; McGuire, Sundgren and Schneeweis, 1988). According to the risk management point of view, we can analyse CSR investments as insurance mechanisms (Godfrey, Merrill and Hansen, 2009) which mitigate the impact of bad news or crisis via some long term reputation building (Schnietz and Epstein, 2005) or moral capital accumulation (Godfrey, 2005). Orlitzky and Benjamin (2001) meta-analytic review suggests a negative

relationship between firm risk and CSR. While most studies addressed the question of the impact of CSR on market-based risk measures in presence of a negative event few studies directly measures the relationship between CSR and firm's business risk measures as standard deviation of ROA or ROE (O'Neil, Saunders and McCarthy, 1989).

Considering these arguments we propose the following:

Hypothesis 3: European listed firms show a negative relationship between Corporate Social Performance and accounting-based firm risk.

METHODS

Sample construction

Our sample includes all European firms listed on a stock exchange and evaluated by the European social rating agency Vigeo over the period 2008-2011. The sample consists of 591 companies and 1405 firm-year observations. Each observation consist of a social rating including a general CSR Score and six subscores on six CSR dimensions measures by VIGEO¹. Firms in our sample belong to 36 different sectors (Vigeo nomenclature) and are registered in 17 different European countries. Table 1 exhibits our sample distribution by year, sector and country. On average, a firm is evaluated by VIGEO once every two or three years. The predominant sector is the banking sector which represents 8.8% of our 591 firms.

¹ **1. Human Resources:** Continuous improvement of professional relations, labor relations and working conditions. **2. Environment:** Protection, safeguarding, prevention of damage to the environment, implementation of an adequate management strategy, eco-design, protection of biodiversity and co-ordinated management of environmental impacts on the entire lifecycle of products or services. **3. Corporate Governance:** Effectiveness and integrity, guarantee of independence and efficiency of the Board of Directors, effectiveness and efficiency of auditing and control mechanisms, in particular the inclusion of social responsibility risks, respect for the rights of shareholders, particularly minority shareholders, transparency and rationale for the remuneration of directors. **4. Community Involvement:** Effectiveness, managerial commitment to community involvement, contribution to the economic and social development of territories / societies within which the company operates, positive commitment to manage the social impacts linked to products or services and overt contribution and participation in causes of public or general interest. **5. Business Behavior (Customers/Suppliers):** Consideration of the rights and interests of clients, integration of social and environmental standards in the selection of suppliers and on the entire supply chain, effective prevention of corruption and respect for competitive practices. **6. Human Rights at the Workplace:** Respect for freedom of association, the right to collective bargaining, non-discrimination and promotion of equality, elimination of illegal working practices such as child or forced labour, prevention of inhumane or degrading treatment such as sexual harassment, protection of privacy and personal data.

The less important sector is Tobacco representing 0.5% of our sample. Other sectors are quite uniformly distributed (on average a sector represents 2.78% of the sample; 2.7% for the median weight). Country distribution is more asymmetric with firms registered in the UK representing 25.7% of our sample. This distribution reflects the economic and financial importance of each country within the European financial market.

Insert Table 1 about here

We used COMPUSTAT to supplement these social rating data with financial data from 2008 to 2011. We extracted security data from Bloomberg to compute firm's beta. All these information allow us to build an unbalanced data set of 1405 firm-years observations.

Dependent variables

We used Tobin's q as a measure of market-based CFP, the return on assets (ROA) as a measure of accounting-based CFP and the standard deviation of the ROA as a measure of firm's risk. We used the same definition of Tobin's q than Gompers and al (2003). The ROA is measured as the ratio of operating profits on total assets (book value). Firm's risk is measured according to the same methodology than Faccio et al. (2011), i.e. by estimating the standard deviation of ROA over the last 5 years. For the year 2008, the standard deviation is estimated taking into account the years 2008, 2007, 2006, 2005 and 2004. The standard deviation is calculated if and only if we had at least 3 ROA on each period of 5 years. The accounting data are extracted from the COMPUSTAT database and are systematically reported in fiscal years. Table 2 presents the detailed definition and description.

Insert Table 2 about here

For each dependent variable (Tobin's q, ROA, firm's risk), we computed an industry-adjusted variable. We thus determined industry-adjusted Tobin's q by subtracting the industry median Tobin's q to each firm's Tobin's q. Industry median has been computed at a two digit SIC level. We repeated this procedure to compute an industry-adjusted ROA. We used industry-

adjusted ROA to calculate industry adjusted firm's risk by computing the standard deviation of the last five years industry-adjusted ROA.

Independent variables

CSP measures are obtained from VIGEO. We have retained the "CSR Score" determined by Vigeo for each company. The score ranges from 0 to 100. We used a direct and simple scale by dividing the score by 100 to get orders of magnitude identical to our dependent variables. For each undertaking, the VIGEO provides 6 sub-scores, all rated from 0 to 100. Each sub-score measures a particular dimension of the social performance: HR (human resources), ENV (environment), CS (Customer & Supplier relationship), CG (Corporate Governance), CIN (Community Involment), HRt (Human Rights).

In order to take into account difficulties associated with CSP measurements we have retained two alternative measures. We have then calculated a second CSR score, called "Standardized CSR Score" calculated as the "CSR Score" less the average CSR score within the same sector in a given year and divided by the standard deviation of CSR scores within the same sector for a given year. We then calculated a third CSR score called "Industry-adjusted CSR Score" calculated as the "CSR Score" less the median score in the same sector for the same year.

Control variables

McWilliams and Siegel (2000) stressed the importance of taking into account R&D investments as a control variable. They showed that its omission bias results when estimating the impact of CSR on CFP. Their results confirm that CSR and R&D are strongly correlated. Furthermore, many studies demonstrate the very close link between R&D and CFP. We used the ratio of total intangible on total assets as a proxy of investment in R&D. We do not used a direct R&D investment measure as this data is not systematically reported for European firms. The size is likely to be another relevant control variable insofar as small businesses have fewer obligations on CSR or may lack of resources to invest on CSR (Mc Elroy and Siegfried,

1985). As companies grow, they seem to pay more attention to the demands of their stakeholders by devoting more resources to their social programs (Lerner 1991). Financial risk has been identified as factors affecting the social and financial performance (Ullman, 1985). The aversion to risk managers influence investment in socially responsible actions (Waddock and Graves, 1997). As proxy we will use the level of debt to market capitalization and firm's beta. We also used two more control variable, i.e. CAPEX ratio and firm's growth. CAPEX ratio is likely to drive part of firm's performance as their investment policy should clearly be linked to its future performance (Capon et al., 1990). Surroca et al. (2010) provide evidences on the impact of growth on the links between CSR performance and financial performance. Finally we used the following set of control variables: the size of the firm (Size), measured according to the logarithm of total asset; debt ratio (Debt), measured as total debt on firm's market capitalization; intangibles assets ratio (Intangible) computed as total intangibles on total assets, firm's investment ratio (CAPEX) measured as capital expenditure on total assets, Sales growth of the last three years (Growth3Y) calculated as the geometric average of the last three years annual growth and firm's market beta (Beta). Three dummy variables have been incorporated to take into account the temporal dimension (Year Dummy), belonging to a given sector (Sector Dummy) and belonging to a country of origin (Country Dummy). Figure 1 illustrates our conceptual model.

Insert Figure 1 about here

Statistical methods

We used pooled regression models for each dependent variable (Tobin's q, ROA and Firm Risk) on each of CSR score (one global score and six subscores), i.e 21 regressions in total. We systematically carried out a Breusch-Pragan / Cook-Weisberg test for each regression. The tests indicate the presence of heteroskedasticity in our data ($\chi^2 = 936.67$; $p\text{-value} = 0.00$ for the regression of Tobin'q on the overall score, $\chi^2 = 232.4$; $p\text{-value} = 0.00$ for the

regression of the ROA on the overall score and $\chi^2 = 306.12$; $p\text{-value} = 0.00$ for the regression of the Firm's Risk on the overall score). Therefore all our results have been derived using heteroskedasticity-consistent standard deviation. More precisely, to take account of the lack of independence of the term of error between various observations belonging to the same company we always used cluster-robust standard errors.

Following Barber and Lyon (1996), we used a winsorization procedure at the 1% threshold to reduce the effect of possibly spurious outliers. The following variables have been winsorized : Tobin's q, ROA, Intangible, Size, Debt and CAPEX. The winsorization procedure was made by taking into account a broader sample of 2875 European firms of comparable size (listed firm with a capitalization greater than 150 million euros).

Finally, we precede to several robustness checks. First, we used alternative econometric models and in particular panel regression models. Panel regression is perfectly suited for our study and allows taking into account the existence of individual and temporal effects. We conducted both fixed and random effects regressions. Second, we controlled for the potential existence of an endogeneity problem in our data by running two stages panel regressions with two instrumental variables: the number of year since initial public offering (IPO) and total sales.

RESULTS

Table 3 (panel A) presents descriptive statistics. The average Tobin's q is 1.473 and the average ROA is 7.7%. Average firm's risk, representing the average standard deviation of ROA on a five year period, is 2.3%. The average CSR score in our sample is 40.5%. Correlations among independent and dependent variables are moderate (<0.5). Correlations among CSR score and CSR dimensions are substantial as correlations between Tobin's q and ROA (63.9%). The moderate correlations among our variables tend to exclude any problem of multicollinearity in our data. We calculated the variance inflation factor for each independent

variable in all our models. The threshold of 5 has never been reached (Chatterjee, Hadi and Price; 2000) which lead us to consider that multicollinearity is not a problem in our study. Table 3 (panel B) presents detailed correlations between Tobin's q and CSR score. The overall correlation between Tobin's q (or ROA) and CSR score is negative (as opposed to most findings on US firms) with a correlation of -7.5%. Table 3 (panel B) also exhibits a very strong size effect. For smaller size firms, the correlation is low to negative (from -0.06% for firms whose size is under our sample median size to 1.12% for firms belonging to the first quartile) whereas for larger firm CSR score and Tobin's q correlation tend to be strongly positive (20.36% for firms whose size is above the third quartile). Results are qualitatively similar when analyzing correlations between ROA and CSR score whereas results for firm's risk are more contrasted.

Insert Table 3 about here

Multivariate results

Table 4 exhibits regressions of Tobin's q, ROA and firm's risk on CSR Score. Model 1 to 4 present results of regressions of Tobin's q on CSR Score. Model 1 (full model) shows a strong relationship between CFP and CSP ($\beta=0.911$; $t=2.883$) statistically significant at a 1% level. The overall model is highly significant ($F=8.629$; $R^2=41.6\%$). Four control variables are significant at a 1% level (Size, Intangible, Growth and Beta). For comparison purpose, we set forth three alternative specifications.

Insert Table 4 about here

Model 2 and Model 3 duplicate models previously studied on US data by incorporating Size, Intangible and Risk (Waddock and Grave, 1997; McWilliams and Siegel, 2000). The differences between Model 2 and Model 3 is based on the variable used to specify firm risk. Whereas initial studies used debt ratio as a proxy for risk, most recent studies used the market model beta as a proxy for risk (Hillman and Keim, 2001; Surroca, Tribo and Waddock, 2010).

Model 4 take into account both effect. Model 1 (full model) take into account two other control variables that are highly related with CFP or CSP, i.e. Growth and CAPEX. Model 1 to 4 show an overall strong relationship that give strong support to our Hypothesis 1. Models 5 to 10 show some contrasted results about the relationship between ROA and CSR score. Models 5 to 8 duplicate models 1 to 4 for the regressions of ROA on CSR score. We find no evidence of any relationship between ROA and CSR score. In models 9 to 10 there is a weak relationship between ROA and CSR score (significant at a 10% level). In these models we take into account CAPEX as a control variable but not Beta. These evidences do not provide support for Hypothesis 2 even if we are not able to reject it. These findings are different with most finding in the US (Barnett and Salomon, 2012). Models 11 to 14 expose the results of the regression of firm's risk on CSR score. Even if coefficients of all regressions are negatives, the relationship is not statistically significant. We re-run several other regressions with different specifications and we do not find any significant relationship (available upon request). These findings allow us to reject Hypothesis 3.

Matched firms analysis and alternative measures of CSR Score

We present complementary results integrating alternative measures of CSR performance ("standardized CSR score" and "Industry-adjusted CSR score") and CPF (industry-adjusted Tobin's q and industry-adjusted ROA). We also regressed alternative firm's risk measure on alternatives CSR scores. Our findings not reported here (available upon request) confirm the absence of significant relationship between firm's risk and CSR scores. Table 5 shows the results of our twelve regressions (Four CFP measures x Three CSP measures).

Insert Table 5 about here

Model 1 to 3 exhibit results with Tobin's q as a dependent variable. The three models show a positive a statistically significant relationship (at a one percent level) between Tobin's q and CSR score measures. Model 7 to 9 expose our findings with Industry-adjusted Tobin's q. The

results show again a strong and positive relationship between our market-orientated financial performance measure and our three alternative CSR score measures (for model 7: $F=5.46$; $\beta=0.764$ and $t=2.29$; for model 8: $F=5.48$; $\beta=0.08$ and $t=2.29$ and for model 9: $F=5.52$; $\beta=0.76$ and $t=2.49$). All these results give a very strong support for Hypothesis 1.

Models 4 to 6 and models 11 to 12 explore the relationship between ROA and Industry-adjusted ROA and our three alternative CSR scores. Only one regression (model 12) show a positive and significant relationship between our accounting-based financial performance measure and the Industry-Median-Adjusted CSR score ($F=5.6$; $\beta=0.0464$ and $t=1.865$). These results do not provide a strong support for Hypothesis 2.

CSR dimensions analysis

Table 6 explores the relationship between CSR dimensions and Tobin's q. First, the relationship is positive for all models (model 2 to 7). Significant control variables are the same for every regression (Size, Intangible, Growth and Beta). Every model is significant with an F statistic between 8.3 and 8.8. Our results show that only few CSR dimensions are significantly associated with firm's financial performance. Three dimensions are positively and significantly associated with Tobin's q, i.e. Environment "ENV" ($\beta=0.562$; $t=2.65$), Community Involvement "CIN" ($\beta=0.516$; $t=3.07$) and Humain Rights "HRt" ($\beta=0.54$; $t=2.63$). For the three other dimensions, i.e. Human Resources "HR", Customer & Supplier "C&S" and Corporate Governance "CG", we found no significant relationship.

Insert Table 6 about here.

ROBUSTNESS CHECKS

We seek to ensure the robustness of our results namely the existence of a positive relationship between the CSR performance and Tobin'q (Hypothesis 1), ROA (Hypothesis 2) and Firm's Risk (Hypothesis 3).

Panel regressions

Table 7 presents panel regression results. Panel regressions allow taking into account both potential individual and temporal effects. We present results with fixed and random effects specifications. Table 7 presents results with Tobin's q, ROA and Firm's Risk as dependent variables. We only report the estimation of the regression coefficient of the "CSR score", the "Standardized CSR score" and the "Industry-Adjusted CSR score" for each econometric specification (OLS, fixed effects or random effects). We used our full model (model 1) for all the regressions. We then split our full sample into two sub-sample to isolate the specific effects of firms from financial or utilities sectors. All regressions are run with cluster-robust standard deviations. Random effect Panel Regressions are estimated with a Generalized Least Square specifications. Fixed effect Panel Regressions took into account both individual and temporal effects. Table 7 present a synthesis of the resulting 81 regressions.

Insert Table 7 about here

Regressions from the full sample show a positive and highly significant relationship between Tobin's q and CSR performance (for the three measures of CSR) and for most econometric specifications (for example, the relationship with a fixed effect specification is positive with $\beta=1.085$ and $t=3.29$ meaning that the relationship is significant at a 1% level). These results provide a very strong support to Hypothesis 1. These results hold for the sub-sample n°1 comprising no financial firms and no utilities (for example, the relationship with a fixed effect specification is positive with $\beta=1.302$ and $t=3.34$ meaning that the relationship is significant at a 1% level). However, our results do not hold for European financial firms and utilities when considering panel regressions (sub-sample n°2).

Table 7 presents more mixed results concerning the relationship between ROA and CSR performance. The observed relationships are not always positive and most of the results are not significant. Modeling with random effect shows a statistically significant relationship

while modeling with fixed effect is never statistically significant. To determine if the random model or the fixed effect model must be retained we conducted a test of overidentifying restrictions by using the Stata routine `xtoverid`. Unlike the Hausman test, the test of overidentifying restriction extends to cluster-robust panel regressions. The test allows us to opt for the fixed effect model and reject the random effects model (Sargan-Hansen statistic = 48.44; p-value = 0.0000). This brings us to reject our hypothesis 2.

Table 7 shows no statistical link between CSR performance and Firm's Risk whatever econometric specification is used. This brings us to reject our hypothesis 3.

Table 8 details fixed effect panel regressions when considering CSR dimensions. Results are quite different from Table 4 indicating a strong individual and temporal effect. Four sub-scores are statically significant when considering fixed effect, i.e. HR (Human Resources, significant at a 10% level), CS (Customer/Supplier relationship, significant at a 1% level), CIN (Community Involvement, significant at a 5% level) and HRts (Human Rights respect, significant at a 1% level) whereas two sub-scores are not significant: ENV (Environment) and CG (Corporate Governance).

Insert Table 8 about here

Instrumental Variables Panel Regressions

We used Instrumental variable panel regression models to deal with some potential endogeneity problems. Endogeneity can be present in our data if we consider that CSP can explain CFP but that the CSP could also be explained by CFP. For example, better financial performance can allow firms to invest in CSR where a firm with financial difficulties could not be in capacity to make CSR investment. We controlled the potential existence of a problem of endogeneity in our model using a two stages regression model with two instrumental variables: the number of years since IPO and total sales. These two instruments have been chosen considering the following arguments. The level of CSR investment is a

function of the size of the firm resources which could be estimated by the total sales as a proxy (Wu, 2006). Moreover, especially in Europe, there are specific binding obligations in terms of shareholder information for listed company related to CSR practices². As a result, the observed level of CSR investment should be a function of the period time since the firm has been listed for the first time (IPO).

The logic behind IV regression is to estimate the potential endogenous variable (the CSR score) from a first equation including instrumental variables and control instruments. The second regression is to estimate the initial model using estimates of the potential endogenous variable. The instruments to be valid must respect two conditions: to be correlated with the endogenous variable and do not to be correlated with the second regression error term. We used the `xtivreg2` routine of Stata to estimate our models. Table 9 presents our results for three IV panel regressions (first and second stages) for Tobin's q on CSR (full sample and sub-sample n°1) and for Industry-adjusted Tobin's q on CSR (sub-sample n°1).

Insert Table 9 about here

We display results concerning our regressions estimations and the validity of our instruments. Identification test allows us to estimate the acceptability of our instruments that is to determine if they are correlated with the potentially endogenous variable (the CSR score). The value of the Kleibergen-Paap rk LM test is 11.45 (p -value = 0.0032) and leads us to reject the hypothesis of an under identification (Kleibergen and Paap, 2006). Our instruments are therefore acceptable. A test of over-identification allows us to ensure that our instruments are

² European law makes the following requirement on companies (European Directive 2003/51/EC): "To the extent necessary for an understanding of the company's development, performance or position, the analysis [in the annual review] shall include both financial and, where appropriate, non-financial key performance indicators relevant to the particular business, including information relating to environmental and employee matters. [...]. The information should not be restricted to the financial aspects of the company's business. It is expected that, where appropriate, this should lead to an analysis of environmental and social aspects necessary for an understanding of the company's development, performance or position. This is consistent also with Commission Recommendation 2001/453/EC of 30 May 2001 on the recognition, measurement and disclosure of environmental issues in the annual accounts and annual reports of companies". (Source: http://ec.europa.eu/enterprise/policies/sustainable-business/corporate-social-responsibility/reporting-disclosure/index_en.htm#h2-6).

“valid” that is uncorrelated with the second regression error term. Hansen J statistic has a value of 0.989 and a p-value of 0.3199 which does not allow us to reject the assumption of validity of our instruments³. Moreover, the Kleibergen-Paap F statistic is 9.07 which allow us to accept the overall IV panel regression. Our results exhibit a strong link between Tobin's q and CSR score in Europe with a regression coefficient of 8.79 significant at a 5% level (t=4.224). We duplicate our IV regression on our sub-sample n°1. Our results still hold with a coefficient of regression of 12.40 significant at the 5% level for Tobin's q (for Industry-adjusted Tobin's q, the coefficient is 8.18 significant at the 10% level). These results give stronger support to our Hypothesis 1.

DISCUSSIONS

This study has attempted to address whether there is a link in Europe between Corporate Social Performance and Corporate Financial Performance. We used a new set of data provided by VIGEO the leading European social rating agency. We then try to validate in Europe some previous results gained mainly in the US where a positive link between the two has been mostly documented. Our results tend then to accredit the fact that there is no absolute incompatibility in Europe between CSR performance and CFP performance. First, we document a very strong size effect in Europe where the overall correlation between CSR and Tobin's q is negative (-7.5%) but where the correlation for the largest firm is strongly positive (+20.36%). Second, our results corroborate Hypothesis 1 which posits that European Firms show a positive relationship between Corporate Social Performance and market-based Corporate Financial Performance. This result holds for several measures of CSP and several measures of CFP. We used Panel Regressions and standard IV methodology to proceed to systematic robustness checks which allow us to take into account individual/temporal effect

³ No statistical method can allow us to conclude that a specific instrument is valid (Roberts and Whited, 2013). Over-identification tests allow us to reject an instrument but not to definitively accept it. Our result should then be interpreted with caution. We do not use the classical Sargan-Hansen test as it is only consistent when the disturbance is homoskedastic. In this study we relied on the Hansen J statistic to test for over-identification as it is consistent with the presence of heteroskedasticity and with the use of cluster robust standard deviation.

and to rule out endogeneity problems in our data. We also show that these results hold for industrial and commercial firms but not for financial firms or utilities. Third, we do not find however any support for Hypothesis 2 and Hypothesis 3 suggesting that the positive relationship between CSR and shareholder value is not associated with a better operational performance or a better firm's risk management.

To explain the positive link between CSR performance and shareholder value in Europe three set of explanations can be mobilized. The first one is related to the reputational effect theory (Campbell, 2007) where CSR is seen as a lever to develop firm image and reputation and generate a positive effect on shareholders, customers and employees. The second explanation is related to the stakeholder theory where firm's performance depends on the intensity of its stakeholders support (Berman, Wicks, Khota and Jones, 1999). Our findings suggest that there is a positive link in Europe between corporate shareholder value and firms' stakeholder management. Indeed, we find a positive and significant relationship between CFP and CSR dimensions only for those dimensions who are directly related to the firm's stakeholders (employees, customers, suppliers and community). A third explanation could be linked with the potential relationship between CSR performance and firm's strategic growth options (Husted, 2005). In this sense, CSR investment could be considered as a way to develop new business opportunities which directly indirectly enhance corporate market value. This explanation is compatible with the reputational theory, the substantive theory and the absence of links between CSR performance and the firm's accounting performance.

The absence of link between CSR, ROA and firm's risk associated with the existence of a strong relationship between CSR and Tobin's q do not support in Europe the substantive mechanism theory (Kanter, 1999). Surprisingly, these results are quite different from the US where accounting-based performance measures are more often associated to CSR performance than market-orientated measures (Margolis et al., 2007). Two series of non-

exclusive arguments can be mobilized to explain the lack of relationship between CSP and ROA. The first refers to the neutrality hypothesis of McWilliams and Siegel (2001).

According to these authors, the benefits and costs generated by CSR practices would balance due to competitive market forces so that the overall economic effect would be neutral.

However, this hypothesis is not compatible with a simultaneous positive and significant relationship between CSP and market-orientated CFP.

The second argument is related to the historical, political and cultural context of our sample (European firms). The absence of relationship could be explained by the way CSR has historically been inducted in most European countries. For a long time, CSR has been seen in Europe as a communication tool (like what prevailed with the concept of “corporate citizenship”) or as a set of new normative or societal constraints that were to be taken into account. CSR has rarely been directly associated with considerations of efficiency or profitability. To generate a positive impact on ROA or equivalent accounting-based financial performance measures, CSR practices should be integrated into the strategy of the company and have a real impact on his value chain, and more generally on his system of values. This reality can take different forms: cost savings, technical efficiency, improving internal logistics and productivity, improved service to stakeholders... To create financial performance, CSR cannot ignore firms’ operational and strategic realities. This suggests that errors of the European approach is cultural, having originally institutionalized an attractive concept while obscuring its operational and strategic consequences.

Implications for practice

First, our findings provide arguments for European managers who are willing to pursue pro-CSR agenda as CSR activities is not incompatible with shareholder wealth creation in Europe. However, our results suggest that European firms do not systematically link CSR practices with their operational activities as we do not find any link in terms of

accounting returns or operational risk reductions. Our findings suggest that European firms should address more systematically the linkage between their CSR practices and their operational activities e.g. in terms of revenue increases, costs savings, operational processes efficiencies, ... Whereas European firms put a strong emphasis on stakeholders issues, they do not systematically address these questions in terms of internal performance enhancement. Political issues in the sense of acceptability of the firm's activity within its local communities is a long tradition in Europe (particularly in continental Europe) where firm's role has usually been dedicated to its solely economic activities but where the accountability for its direct impact of its productive activities has often been an issue (environmental impact, social impact, economic impact,...). CSR in Europe is then more seen as a corporate response to new binding requirements in terms of environmental impact, health or social issues than a broader question about the role of the firm in its environment. European managers could then be encouraged to think about CSR not only as a way to fulfill new requirements but also has a way to address strategic issues both in terms of stakeholders management and in terms of operational efficiencies.

Implications for research

Our results demonstrate that there is no absolute incompatibility between CSP and CFP in Europe but do not explore the causality question. Although we used instrumental variable to rule out endogeneity, meaning that our results are robust to reverse causality, we do not explicitly study the direction of causality in the CFP-CSP relationship (Waddock and Grave, 1997). Further research should address this question in the European context. However, the VIGEO database do not assessed firm every year. Further research should then address this issue using unbalanced panel methodology.

One intriguing issue resulting from our study is the absence of link between CSR performance and accounting-based financial performance measures (ROA and standard

deviation of ROA). Further research should address question first to challenge this result and second to develop some deeper understanding of this phenomena. Our result can be interpreted as a neutral relationship (McWilliams and Siegel, 2001) which would not need for further understanding. However, this finding could also be the result of more complex mechanism such as a non-linear relationship between ROA and CSR performance (Barnett and Salomon, 2012).

Moreover, we do not explore the implication of different cultural, legal and institutional environment in Europe. As noted by previous studies (Maignan et Ralston, 2002), CSR practices strongly differ across European countries. For example, these differences could be related to the perceived role of firms within the community, legal origins of the law within a specific country (common law versus civil law countries). These different environments could have a strong implication on the relationship between firm's financial performance and CSR performance as institutional environments have implications on both CSR activities (incentives, binding obligations, CSR reporting requirements) and firm's performance determinants (ownership structure, corporate governance, level of minorities interests protection,...). Further research should address this question by taking into account cross European countries institutional, cultural and legal differences

Conclusion

We also acknowledge specific limitations to our study. Even if used alternative measures for both CSR and financial performance our proxies still have limitations. Limitations put forward by Surroca, Tribo and Waddock (2010) concerning their data hold exactly in the same way for VIGEO measures. Our financial measures are also imperfect and could be subject to some refinement (for example we do not take into account for differences in cash holding across firms when computing Tobin's q or ROA). One important severe limitation concerning large sample of European firms is the absence systematic reporting of

R&D expenses or advertising expenses which do not allow us to explore in details the links between intangible investment, CSR and financial performance⁴. Finally, our results hold for a specific and special period that is to say the 2008 financial crisis. We need to gain generality by studying the link between CSP and CFP in Europe in broader economic periods.

In this paper we explore the relationship between CSP and CFP in Europe. We find a strong and positive relationship between CSR performance and shareholder value but no links with ROA and firm's risk. Our results suggest that European firms should address more systematically the linkage between their CSR activities and their operational processes in light of enhancing their operational performance. Our results also suggest some new avenues for research especially by recognizing the need to clearly take into account cross European institutional, cultural and legal differences.

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REFERENCES

- Allouche J, Laroche P. 2005. A meta-analytical investigation of the relationship between corporate social and financial performance. *Revue de Gestion des Ressources Humaines* **57**: 18–41.
- Backhaus DB, Stone BA, Heiner K. 2002 Exploring the relationship between corporate social performance and employer attractiveness. *Business and Society* **41**: 293–318.
- Barber BM, Lyon JD. 1996. Detecting abnormal operating performance: The empirical power and specification of test statistics. *Journal of Financial Economics* **41**: 359–399
- Barnea A, Rubin A. 2005. Corporate social responsibility as a conflict between shareholders. *Journal of Business Ethics* **97**(1): 71–86.
- Barnett ML, Salomon RM. 2012. Does it pay to be *really* good? Addressing the shape of the relationship between social and financial performance. *Strategic Management Journal* **33**(11): 1304–1320.

⁴ We have replicated the results by taking into account available R&D expenses in COMPUSTAT. R&D expenses were available for only 25% of our 1405 firm-year observations. Following Barnett and Salomon (2012) we assigned zero value for those observations that were missing. Our results are qualitatively similar especially when using fixed effect panel regression models. One notable exception is the occurrence of a positive and significant relationship between ROA and CSR Score (full model) when considering pooled regression model (significant at a 5% level). However when considering fixed effect regressions, we do not find any support for any relationship between ROA and CSR score.

- Barnett ML, Salomon R. 2006. Beyond dichotomy: The curvilinear relationship between social responsibility and financial performance. *Strategic Management Journal* **27**: 1101–1122.
- Barnett ML. 2007. Stakeholder influence capacity and the variability of financial returns to corporate social responsibility. *Academy of Management Review* **32**: 794–816.
- Berman SL, Wicks AC, Kotha S, Jones TM. 1999. Does stakeholder orientation matter? The relationship between stakeholder management models and firm financial performance. *Academy of Management Journal* **42**: 488–506.
- Bowen HR. 1953. *Social Responsibilities of the Businessman*. New York: Harpet & Row.
- Bragdon JH, Marlin JAT. 1972. Is pollution profitable? *Risk Management* **19**(4):9–18.
- Campbell JL. 2007. Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility. *Academy of Management Review* **32**: 946–967.
- Capon N, Farley JU, Hoenig S. 1990. Determinants of financial performance: a meta-analysis. *Management Science* **36**(10): 1143–1159.
- Caroll AB. 1979. A Three Dimensional Conceptual Model of Corporate Social Performance. *Academy of Management Review* **4**: 497–505.
- Cavaco S, Crifo P. 2010. The CSR-Firm Performance Missing Link: Complementarity Between Environmental, Social and Business Behavior Criteria? *Ecole Polytechnique, CNRS, Département d’Economie, Cahier 19*, 38p.
- Chatterjee S, Hadi AS, Price B. 2000. *Regression analysis by example*. John wiley & Sons.
- Clarkson MBE. 1995. A stakeholder framework for analyzing and evaluating corporate social performance. *Academy of Management Review* **20**: 92-117.
- Donalson T, Preston LE. 1995. The stakeholder theory of the corporations: Concepts, evidence, and implications. *Academy of Management Review* **20**: 65–91.
- Drucker P. 1984. The New Meaning of Corporate Social Responsibility. *California Management Review* **26**(2): 53–63.
- Faccio M, Marchica MT, Mura R. 2011. Large shareholder diversification and corporate risk-taking. *Review of Financial Studies* **24**(11): 3601–3641.
- Fombrun C, Shanley M. 1990. What’s in a name? Reputation building and corporate strategy. *Academy of Management Journal* **33**: 233-258.
- Freeman E. 1984. *Strategic Management: A Stakeholder Approach*. Boston : Pitman (Harper & Row).
- Friedman M. 1970. The Social Responsibility of Business Is to Increase its Profits. *New York Times Magazine* **13**: 32-33, 122,124,126.
- Godfrey PC. 2005. The relationship between corporate philanthropy and shareholder wealth: a risk management perspective. *Academy of Management Review* **30**(4): 777–798.
- Godfrey PC, Merrill CB, Hansen JM. 2009. The relationship between corporate social responsibility and shareholder value: an empirical test of the risk management hypothesis. *Strategic Management Journal* **30**: 425–445.
- Gompers PA, Ishii JL, Metrick A. 2003. Corporate governance and Equity Prices. *Quarterly Journal of Economics* **118**: 107–155.

- Gond JP. 2001. L'éthique est-elle profitable ? *Revue Française de Gestion*. **136**: 77-85.
- Griffin JJ, Mahon JF. 1997. The Corporate Social Performance and Corporate Financial Performance Debate : Twenty-five Years of Incomparable Research. *Business and Society* **36**: 5-31.
- Husted BW. 2005. Risk Management, Real Options, and Corporate Social Responsibility. *Journal of Business Ethics* **60**: 175-183.
- Hillman AJ, Keim GD. 2001. Shareholder Value, Stakeholder Management, and Social Issues : What's the Bottom Line ? *Strategic Management Journal* **22**: 125-139.
- Hillman AJ, Keim GD. 2001. Shareholder value, stakeholder management, and social issues: What's the bottom line? *Strategic Management Journal* **22**: 125–139.
- Jensen MJ. 2002. Value maximization, stakeholder theory, and the corporate objective function. *Business Ethics Quarterly* **12**: 235–256.
- Jones TM. 1980. Corporate Social Responsibility Revisited, Redefined. *California Management Review* **12**(2): 59-67.
- Kanter RM. 1999. From spare change to real change: The social sector as beta site for business innovation. *Harvard Business Review* **77**(3): 123–132.
- Kleibergen F, Paap R. 2006. Generalized reduced rank tests using the singular value decomposition. *Journal of Econometrics* **127**: 97–126.
- Lerner LD. 1991. *A Stakeholder Analysis of Corporate Social Performance: CEO Stakeholder Orientation, Industry Categorization, Past Financial Performance and Firm Size as Predictors of Corporate Social Performance*. University of Tennessee, Knoxville, 506 p.
- Maignan I, Ralston DA. 2002. Corporate Social Responsibility in Europe and the U.S.: Insights from Business' Self-presentations. *Journal of International Business Studies* **33**: 497–514.
- Margolis JD, Walsh JP. 2003. Misery Loves Companies: Rethinking Social Initiatives by Business. *Administrative Science Quarterly* **48**: 268–305.
- Margolis JD, Elfenbein HA, Walsh JP. 2007. Does it pay to be good? A meta-analysis and redirection of research on the relationship between corporate social and financial performance. *Working Paper*, 77p.
- Margolis JD, Elfenbein HA, Walsh JP. 2009. Does it pay to be good ... and does it matter? A meta-analysis of the relationship between corporate social and financial performance. *Working Paper*, 68p.
- Mc Elroy K, Siegfried J. 1985. The Effect of Firm Size on Corporate Philanthropy. *Quarterly Review of Economics and Business* **25**(2): 18–26.
- Mc Guire J, Schneeweis T, Hill J. 1986. An Analysis of Alternative Measures of Strategic Performance. *Advances in Strategic Management* **4**: 107–153.
- Mc Williams A, Siegel D. 2000. Corporate Social Responsibility and Financial Performance: Correlation or Misspecification? *Strategic Management Journal* **21**:603–609.
- Mc Williams A, Siegel D. 2001. Corporate Social Responsibility: A theory of the Firm Perspective. *Academy of Management Review* **26**: 117-127.
- McGuire JB, Sundgren A, Schneeweis T. 1988. Corporate and social responsibility and firm financial performance. *Academy of Management Journal* **31**: 854–872.

- McWilliams A, Siegel D, Wright PM. 2006. Corporate social responsibility: Strategic implications. *Journal of Management Studies* **43**: 1–18.
- Myers SC. 1977. Determinants of corporate borrowing. *Journal of Financial Economics* **5**: 147–175
- O’Neil HM, Saunders CB, McCarthy AD. 1989. Board members, corporate social responsiveness and profitability: Are tradeoff necessary? *Journal of Business Ethics* **8**: 353–357.
- Orlitzky M, Benjamin JD. 2001. Corporate Social Performance and Firm Risk : A meta-analytic review. *Business and Society* **40**(4): 369–396.
- Orlitzky M, Schmidt FL, Rynes S. 2003. Corporate Social and Financial Performance: A Meta-analysis. *Organization Studies* **24**(3): 403–441.
- Porter ME, Kramer MR. 2002. The competitive Advantage of Corporate Philanthropy. *Harvard Business Review* **80**(2): 57–68.
- Preston LE, O’Bannon DP. 1997. The Corporate Social-Financial Performance Relationship: a typology and analysis. *Business and Society* **36**: 419–429.
- Richardson AJ, Welker M, Hutchinson IR. 1999. Managing capital market reactions to corporate social responsibility. *International Journal of Management Reviews* **1**: 17–43.
- Roberts MR, Whited TM. Endogeneity in empirical corporate finance. In: Constantides G, Harris M, Stulz R. (Eds). *Handbook of the Economics of Finance*. Elsevier, Amsterdam, Netherlands: 493-572.
- Schnietz KE, Epstein MC. 2005. Exploring the financial value of a reputation for corporate social responsibility during a crisis. *Corporate Reputation Review* **7**: 327–345.
- Sharfman M. 1996. The Construct Validity of the Kinder, Lydenberg & Domini Social Performance Rating Data. *Journal of Business Ethics* **15**(3): 287–296.
- Sharpe WF. 1964. Capital Asset Prices: A theory of market equilibrium under conditions of risk. *Journal of Finance* **19**(3): 425–442
- Surroca J, Tribo JA, Waddock S. 2010. Corporate responsibility and financial performance: the role of intangible resources. *Strategic Management Journal* **31**: 463–490.
- Ullman AH. 1985. Data in Search of– a Theory: A Critical Examination of the Relationships Among Social Performance, Social Disclosure, and Economic Performance of U.S. Firms. *Academy of Management Review* **10**(3): 540–557.
- Van de Velde E, Veirmer W, Corten F. 2005. Financing and Accounting: Corporate Social Responsibility and Financial Performance. *Corporate Governance* **5**(3): 129–138.
- Waddock SA, Graves SB. 1997. The Corporate Social Performance-Financial Performance Link. *Strategic Management Journal* **18**(4): 303–319.
- Wartick S, Cochran P. 1985. The evolution of the Corporate Social Performance Model. *Academy of Management Review* **10**: 758-769
- Wood DJ. 1991. Corporate Social Performance Revisited. *Academy of Management Review* **16**: 691-718
- Wu ML. 2006. Corporate social performance, corporate financial performance, and firm size: A meta-analysis. *Journal of American Academy of Business* **8**(1): 163-171.

Figure 1 Conceptual model

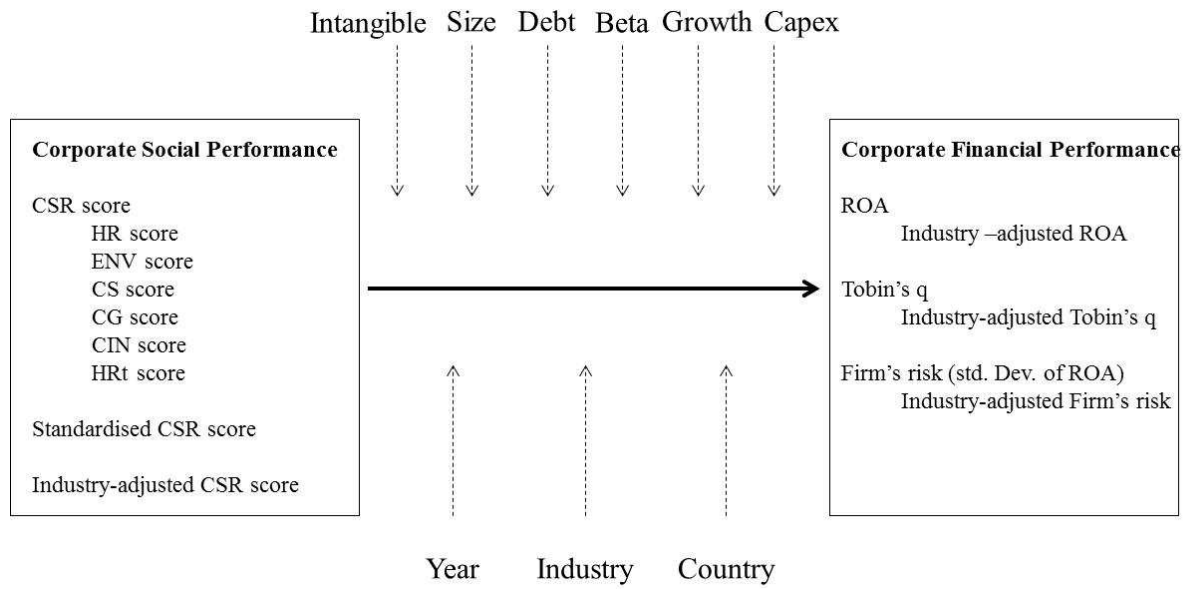


Table 1 Sample distribution

Industry description	Firms	%	Nb. of observations				Country description	Firms	%	Nb. of observations			
			2008	2009	2010	2011				2008	2009	2010	2011
1 Aerospace	13	2,2%	10	13	5	13	1 Austria	13	2,2%	3	11	6	11
2 Automobiles	18	3,0%	18	16	5	17	2 Belgium	15	2,5%	3	13	10	6
3 Banks	52	8,8%	10	49	13	51	3 Denmark	23	3,9%	8	14	8	20
4 Beverage	9	1,5%	1	9	0	9	4 Finland	21	3,6%	9	16	15	8
5 Broadcasting & Advertising	17	2,9%	1	17	17	2	5 France	87	14,7%	43	62	66	55
6 Building Materials	16	2,7%	1	16	6	15	6 Germany	62	10,5%	28	44	42	36
7 Business Support Services	27	4,6%	23	3	26	0	7 Greece	10	1,7%	2	10	0	10
8 Chemicals	20	3,4%	2	20	20	5	8 Ireland	11	1,9%	5	6	5	7
9 Electric & Gas Utilities	26	4,4%	1	25	2	25	9 Italy	33	5,6%	16	25	16	26
10 Electric Components & Equipment	14	2,4%	13	3	14	2	10 Luxembourg	4	0,7%	2	3	3	3
11 Energy	17	2,9%	14	5	17	2	11 Norway	16	2,7%	8	8	9	10
12 Financial Services - General	16	2,7%	0	15	16	0	12 Portugal	10	1,7%	2	9	3	7
13 Financial Services - Real Estate	6	1,0%	0	5	6	6	13 Spain	28	4,7%	7	24	13	18
14 Food	18	3,0%	15	2	18	17	14 Sweden	33	5,6%	15	20	22	20
15 Forest Products & Paper	6	1,0%	6	2	6	0	15 Switzerland	44	7,4%	20	26	32	29
16 Health Care Equipment & Services	15	2,5%	11	0	14	15	16 The Netherlands	29	4,9%	14	18	20	15
17 Heavy Construction	15	2,5%	0	15	15	4	17 United Kingdom	152	25,7%	82	90	103	85
18 Home Construction	5	0,8%	5	1	5	5	Total	591	100%	267	399	373	366
19 Hotel, Leisure Goods & Services	16	2,7%	16	15	4	15							
20 Industrial Goods & Services	12	2,0%	0	10	12	2							
21 Insurance	28	4,7%	25	0	28	1							
22 Luxury Goods & Cosmetics	13	2,2%	11	0	12	13							
23 Mechanical Components & Equip.	20	3,4%	0	19	20	1							
24 Mining & Metals	26	4,4%	19	3	25	26							
25 Oil Equipment & Services	16	2,7%	0	15	2	15							
26 Pharmaceuticals & Biotechnology	21	3,6%	16	20	6	21							
27 Publishing	12	2,0%	0	12	0	12							
28 Software & IT Services	15	2,5%	0	12	15	0							
29 Specialised Retail	17	2,9%	3	15	0	17							
30 Supermarkets	11	1,9%	2	11	11	5							
31 Technology-Hardware	18	3,0%	17	2	17	1							
32 Telecommunications	23	3,9%	19	21	3	23							
33 Tobacco	3	0,5%	3	0	3	3							
34 Transport & Logistics	17	2,9%	0	15	1	17							
35 Travel & Tourism	8	1,4%	1	8	8	1							
36 Waste & Water Utilities	5	0,8%	4	5	1	5							
Total	591	100%	267	399	373	366							
			<i>19%</i>	<i>29%</i>	<i>27%</i>	<i>26%</i>							

Table 2 Variable definitions

	Variable	Description
1	Tobin's q	Tobin's q is the ratio of the firm's market value to replacement value and is estimated as follows : the market value of assets divided by the book value of total asset. The market value of asset is calculated as book value of total assets plus the market value of common stock less the book value of common stock less the book value of deferred taxes. (Source : Compustat).
2	Industry-adjusted Tobin's q	Estimated as Tobin's q minus Industry q median calculated at a 2 digit SIC level. (Source:Compustat).
3	Return on assets (ROA)	Return of assets (ROA) is the ratio of the firm's earnings before interests and taxes (EBIT) to the firm book value of total assets. (Source : Compustat).
4	Industry-adjusted ROA	Estimated as ROA minus Industry ROA median calculated at a 2 digit SIC level. (Source:Compustat).
5	Firm's Risk	Estimated as the standard deviation of the last 5 years ROA. The calculation is made if at least 3 ROA are available for the last 5 years. (Source : Compustat).
6	Industry-adjusted Firm's Risk	Estimated as the standard deviation of the last 5 years Industry-adjusted ROA. The calculation is made if at least 3 industry adjusted ROA are available for the last 5 years. (Source : Compustat).
7	CSR Score	CSR score provided by VIGEO (Score = 0 to 100) divided by 100.
8	Standardized CSR Score	Defined as the CSR score of a firm minus the CSR average score of its sector for a given year and then divided by the standard deviation of the CSR score of its sector for a given year (Source: VIGEO).
9	Industry-adjusted CSR score	Estimated as CSR Score minus Industry CSR score median (Source : VIGEO).
10	HR Score	CSR subscore for "Human Ressources" provided by VIGEO (Score = 0 to 100) divided by 100.
11	ENV Score	CSR subscore for "Environment" provided by VIGEO (Score = 0 to 100) divided by 100.
12	CS Score	CSR subscore for "Customer&Supplier" provided by VIGEO (Score = 0 to 100) divided by 100.
13	CG Score	CSR subscore for "Corporate Governance" provided by VIGEO (Score = 0 to 100) divided by 100.
14	CIN Score	CSR subscore for "Community Involvement" provided by VIGEO (Score = 0 to 100) divided by 100.
15	HRt Score	CSR subscore for "Human Rights" provided by VIGEO (Score = 0 to 100) divided by 100.
16	CAPEX	CAPEX is the ratio of the firm's capital expenditure to the book value of total assets. (Source : Compustat).
17	Size	Size is the natural logarithm of book value of total assets (Source : Compustat).
18	Debt	Debt is the ratio of total debt (book value) to market value of common stock (Source : Compustat & Capital IQ).
19	Intangible	Intangible is the ratio of Total Intangible Asset to the firm book value of total asset. (Source : Compustat).
20	Growth3Y	Geometric average of the last three annual sales growth (Source : Compustat).

Table 2 (continued)

	Variable	Description
21	Beta	Estimate from market model in which the firm's weekly returns over the past two years are regressed on the Euro Stoxx Index weekly returns. (Source: Bloomberg).
22	Age	Age is natural logarithm of one plus the number of years since listing (Source : Capital IQ).
23	Sales	Sales is the Total Sales in book value. (Source : Compustat).
24	Year Dummy	Year Dummy = 1 for 2011, 2010, 2009 and 2008 if the firm was scored by VIGEO in year 2011, 2010, 2009 or 2008. (Source : VIGEO).
25	Sector Dummy	Sector Dummy = 1 if the firm belong to sector i (with i=1 to 36). (Source : VIGEO).
26	Country Dummy	Country Dummy =1 if the firm is registred in country j (with j=1 to 17). (Source : VIGEO).

Table 3 Descriptive statistics**Panel A. Means, standard deviations and product moment correlations**

	Mean	S.D.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. Tobin's q	1.473	0.854	1,000															
2. ROA	0.077	0.071	0.639	1,000														
3. Firm's risk	0.023	0.022	0.153	0.191	1,000													
4. CSR score	0.405	0.116	-0.075	-0.038	-0.13	1,000												
5. HR Score	0.347	0.162	-0.158	-0.13	-0.12	0.804	1,000											
6. ENV Score	0.349	0.169	-0.084	-0.04	-0.106	0.867	0.677	1,000										
7. CS Score	0.424	0.131	-0.033	-0.073	-0.177	0.801	0.609	0.606	1,000									
8. CG Score	0.502	0.153	0.032	0.132	0.006	0.478	0.077	0.271	0.263	1,000								
9. CIN Score	0.412	0.183	-0.06	-0.019	-0.065	0.678	0.494	0.581	0.546	0.239	1,000							
10. HRts Score	0.429	0.148	-0.05	-0.065	-0.102	0.788	0.725	0.609	0.657	0.201	0.514	1,000						
11. CAPEX	0.039	0.039	0.073	0.259	0.24	0.015	0.047	0.047	-0.075	0.006	0.067	0.019	1,000					
12. Size	9.261	1.776	-0.389	-0.363	-0.332	0.413	0.426	0.392	0.359	0.044	0.299	0.348	-0.187	1,000				
13. Intangible	0.208	0.195	0.063	0.187	-0.044	-0.034	-0.132	-0.068	0.015	0.079	0.016	-0.04	-0.135	-0.227	1,000			
14. Debt	1.981	5.338	-0.204	-0.323	-0.188	0.083	0.162	0.072	0.063	-0.064	0.032	0.072	-0.239	0.456	-0.238	1,000		
15. GROWTH3Y	0.041	0.188	0.181	0.171	0.033	-0.119	-0.119	-0.13	-0.072	-0.045	-0.049	-0.07	0.122	-0.183	0.116	-0.146	1,000	
16. BETA	0.963	0.411	-0.268	-0.292	0.146	0.061	0.099	0.035	0.033	0.019	0.03	0.067	-0.076	0.276	-0.273	0.363	-0.184	1,000

Panel B. Size effect and correlation between CSR Score and CFP measures

	Tobin's q	ROA	Std. Dev. ROA
Full sample	-7,45%	-3,80%	-12,97%
Distribution around median size			
Firm size <= Median size	-0,06%	-2,08%	-1,92%
Firm size > Median size	13,03%	15,81%	-6,03%
Distribution by quartile size			
Firm size <= Q1	1,12%	-1,06%	-4,65%
Q1 < Firm size <= Q2	9,34%	4,81%	5,62%
Q2 < Firm size <= Q3	15,09%	11,47%	-3,63%
Firm size > Q3	20,36%	30,50%	-2,88%

Table 4 Regressions of Tobin's q, ROA and Firm's Risk on CSR Score

Variables	Tobin's q				Return on Assets						Firm's risk (Std. Dev of ROA)			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14
CSR Score	0.911*** (2.883)	0.927*** (2.896)	0.861*** (2.738)	0.860*** (2.735)	0.0450 (1.579)	0.0470 (1.573)	0.0432 (1.471)	0.0408 (1.391)	0.0489* (1.686)	0.0510* (1.768)	-0.000999 (-0.135)	-0.00275 (-0.359)	-0.000586 (-0.0790)	-0.00317 (-0.418)
CAPEX	0.206 (0.206)				0.271*** (2.955)				0.292*** (3.203)	0.275*** (2.962)	0.0208 (0.830)			0.0194 (0.735)
Size	-0.150*** (-6.244)	-0.168*** (-6.901)	-0.156*** (-6.542)	-0.156*** (-6.557)	-0.00334 (-1.099)	-0.00515* (-1.664)	-0.00441 (-1.457)	-0.00408 (-1.325)	-0.00460 (-1.506)	-0.00425 (-1.393)	-0.00400*** (-5.593)	-0.00362*** (-5.011)	-0.00397*** (-5.722)	-0.00367*** (-5.043)
Intangible	-1.093*** (-4.267)	-1.063*** (-4.264)	-1.090*** (-4.400)	-1.089*** (-4.390)	-0.0189 (-0.926)	-0.0327* (-1.721)	-0.0332* (-1.777)	-0.0351* (-1.868)	-0.0146 (-0.725)	-0.0167 (-0.808)	-0.00181 (-0.328)	-0.00408 (-0.756)	-0.00328 (-0.625)	-0.00261 (-0.462)
Debt	0.000576 (0.137)	-0.00506 (-1.256)		0.00117 (0.289)	-0.000937** (-2.576)	-0.00151*** (-3.955)		-0.000935** (-2.443)	-0.00147*** (-3.872)	-0.00146*** (-4.093)	3.65e-05 (0.279)	0.000223* (1.774)		0.000225* (1.848)
GROWTH3Y	0.500*** (2.704)				0.0224* (1.870)					0.0270** (2.255)	-0.00483* (-1.790)			-0.00647** (-2.355)
BETA	-0.248*** (-3.367)		-0.277*** (-3.862)	-0.280*** (-3.806)	-0.0238*** (-3.822)		-0.0282*** (-4.635)	-0.0259*** (-4.186)			0.00850*** (4.302)		0.00887*** (4.751)	
Constant	2.381*** (8.564)	2.371*** (9.724)	2.505*** (9.848)	2.511*** (9.771)	0.0920*** (3.625)	0.109*** (4.603)	0.123*** (5.499)	0.121*** (5.310)	0.0825*** (3.133)	0.0789*** (3.009)	0.0366*** (5.440)	0.0418*** (6.413)	0.0372*** (6.227)	0.0413*** (5.880)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,405	1,405	1,405	1,405	1,405	1,405	1,410	1,405	1,405	1,405	1,405	1,405	1,407	1,405
R-squared	0.416	0.396	0.406	0.406	0.394	0.367	0.375	0.379	0.379	0.383	0.411	0.395	0.409	0.398
R2	0.390	0.370	0.380	0.380	0.366	0.339	0.348	0.352	0.352	0.356	0.384	0.369	0.384	0.371
F	8.629	8.941	8.880	8.777	15.05	14.36	15.79	14.66	14.72	14.56	12.82	12.33	13.19	12.17

Robust t-statistics in parentheses

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

Table 5 Regressions of Tobin's q, industry-adjusted Tobin's q, ROA and Industry-adjusted ROA on alternative CSR scores

Variable	Tobin's q			ROA			Industry-adjusted Tobin's q			Industry-adjusted ROA		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
CSR Score	0.911*** (2.883)			0.0450 (1.579)			0.764** (2.292)			0.0214 (0.834)		
Standardized CSR Score		0.0768** (2.220)			0.00174 (0.623)			0.0807** (2.296)			0.00302 (1.142)	
Industry-adjusted CSR Score			0.879*** (2.803)			0.0396 (1.446)			0.769** (2.492)			0.0464* (1.865)
CAPEX	0.206 (0.206)	0.210 (0.209)	0.188 (0.188)	0.271*** (2.955)	0.264*** (2.870)	0.270*** (2.943)	-0.709 (-0.828)	-0.551 (-0.658)	-0.546 (-0.649)	0.201*** (2.940)	0.203*** (2.978)	0.204*** (3.005)
Size	-0.150*** (-6.244)	-0.141*** (-6.140)	-0.147*** (-6.217)	-0.00334 (-1.099)	-0.00210 (-0.713)	-0.00305 (-1.018)	-0.154*** (-6.439)	-0.149*** (-6.949)	-0.146*** (-6.700)	-0.00375* (-1.684)	-0.00378* (-1.802)	-0.00406** (-1.971)
Intangible	-1.093*** (-4.267)	-1.119*** (-4.330)	-1.096*** (-4.277)	-0.0189 (-0.926)	-0.0216 (-1.053)	-0.0193 (-0.946)	-0.613*** (-3.335)	-0.637*** (-3.413)	-0.628*** (-3.386)	-0.0175 (-1.283)	-0.0186 (-1.358)	-0.0186 (-1.369)
Debt	0.000576 (0.137)	0.000892 (0.211)	0.000488 (0.115)	-0.000937** (-2.576)	-0.000935** (-2.566)	-0.000940*** (-2.588)	0.00656* (1.736)	0.00648* (1.722)	0.00637* (1.681)	-0.000366 (-1.006)	-0.000378 (-1.035)	-0.000345 (-0.954)
GROWTH3Y	0.500*** (2.704)	0.485*** (2.634)	0.495*** (2.683)	0.0224* (1.870)	0.0214* (1.804)	0.0220* (1.850)	0.532** (2.083)	0.506** (1.997)	0.511** (2.013)	0.0294** (2.556)	0.0286** (2.499)	0.0291** (2.540)
BETA	-0.248*** (-3.367)	-0.262*** (-3.525)	-0.251*** (-3.403)	-0.0238*** (-3.822)	-0.0245*** (-3.915)	-0.0240*** (-3.869)	-0.306*** (-4.828)	-0.309*** (-4.864)	-0.307*** (-4.847)	-0.0190*** (-3.545)	-0.0188*** (-3.491)	-0.0187*** (-3.509)
Constant	2.381*** (8.564)	2.718*** (10.24)	2.796*** (10.02)	0.0920*** (3.625)	0.102*** (3.564)	0.111*** (3.801)	1.867*** (7.064)	2.137*** (7.966)	2.109*** (7.787)	0.0785*** (3.662)	0.0873*** (3.887)	0.0894*** (4.037)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector Dummy	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No
Country Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,405	1,394	1,405	1,405	1,394	1,405	1,405	1,394	1,405	1,405	1,394	1,405
R-squared	0.416	0.413	0.416	0.394	0.391	0.393	0.208	0.207	0.208	0.154	0.155	0.158
R2-Adjust.	0.390	0.386	0.389	0.366	0.363	0.366	0.193	0.192	0.193	0.138	0.139	0.143
F	8.629	8.635	8.635	15.05	15.09	15.07	5.462	5.482	5.529	5.565	5.546	5.601

Robust t-statistics in parentheses

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

Table 6 Regressions of Tobin's q on CSR scores

Variable	Tobin's q						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
CSR Score	0.911*** (2.883)						
HR Score		0.350 (1.578)					
ENV Score			0.562*** (2.651)				
CS Score				0.450 (1.583)			
CG Score					0.333 (1.385)		
CIN Score						0.516*** (3.070)	
HRts Score							0.540*** (2.631)
CAPEX	0.206 (0.206)	0.180 (0.179)	0.0862 (0.0859)	0.225 (0.223)	0.191 (0.189)	0.244 (0.244)	0.256 (0.254)
Size	-0.150*** (-6.244)	-0.128*** (-5.366)	-0.148*** (-6.123)	-0.132*** (-5.900)	-0.119*** (-5.240)	-0.141*** (-5.928)	-0.134*** (-5.910)
Intangible	-1.093*** (-4.267)	-1.112*** (-4.217)	-1.082*** (-4.263)	-1.136*** (-4.373)	-1.144*** (-4.389)	-1.116*** (-4.350)	-1.113*** (-4.308)
Debt	0.000576 (0.137)	0.000200 (0.0467)	0.000441 (0.105)	0.00116 (0.279)	0.00114 (0.268)	0.00103 (0.234)	0.000102 (0.0240)
GROWTH3Y	0.500*** (2.704)	0.493*** (2.633)	0.500*** (2.712)	0.479*** (2.600)	0.491*** (2.603)	0.458** (2.493)	0.479** (2.571)
BETA	-0.248*** (-3.367)	-0.258*** (-3.522)	-0.244*** (-3.337)	-0.256*** (-3.484)	-0.270*** (-3.699)	-0.251*** (-3.486)	-0.258*** (-3.511)
Constant	2.381*** (8.564)	2.484*** (9.152)	2.566*** (9.421)	2.423*** (8.513)	2.323*** (7.465)	2.428*** (8.856)	2.454*** (8.957)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Dumm	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,405	1,405	1,405	1,405	1,405	1,405	1,405
R-squared	0.416	0.410	0.415	0.411	0.409	0.415	0.414
R2-Adjust.	0.390	0.383	0.388	0.384	0.383	0.389	0.387
F	8.629	8.446	8.477	8.764	8.838	8.331	8.599

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

Table 7 Results of OLS and alternative Panel regressions

Panel regressions of Tobin's q, ROA and Firm's Risk on alternative CSR score measures

Variable	Tobin's q			ROA			Firm's Risk (Std. Dev of ROA)		
	Overall Score	Stand. Score	Median Ajust. Score	Overall Score	Stand. Score	Median Ajust. Score	Overall Score	Stand. Score	Median Ajust. Score
Full sample (1405 observations)									
OLS Multivariate	0.911*** (2.883)	0.0768** (2.220)	0.879*** (2.803)	0.0450 (1.579)	0.00174 (0.623)	0.0396 (1.446)	-0.001 (-0.135)	-0.000 (-0.155)	0.000 (0.010)
Random Effect	1.000*** (4.287)	0.0709*** (3.047)	0.642*** (3.129)	0.0385** (1.970)	0.00329* (1.699)	0.0490*** (2.814)	0.005 (0.654)	0.000 (0.275)	0.003 (0.418)
Fixed Effect	1.085*** (3.290)	0.0506* (1.767)	0.435 (1.538)	-0.00853 (-0.292)	-0.00144 (-0.565)	0.00873 (0.383)	0.009 (0.726)	0.000 (0.454)	0.006 (0.633)
Sub-sample n°1: no financial firms and no utilities (1112 observations)									
OLS Multivariate	0.827** (2.222)	0.0611 (1.599)	0.799** (2.169)	0.0256 (0.720)	-0.000886 (-0.272)	0.0189 (0.560)	-0.001 (-0.093)	0.000 (0.036)	0.001 (0.110)
Random Effect	1.054*** (3.629)	0.0680** (2.449)	0.652*** (2.604)	0.0206 (0.832)	0.00167 (0.733)	0.0386* (1.816)	-0.002 (-0.256)	-0.000 (-0.618)	-0.005 (-0.587)
Fixed Effect	1.302*** (3.341)	0.0595* (1.821)	0.492 (1.494)	0.00549 (0.164)	-0.000650 (-0.230)	0.0182 (0.705)	0.008 (0.537)	0.000 (0.329)	0.005 (0.491)
Sub-sample n°2 : financial firms and utilities only (293 observations)									
OLS Multivariate	0.356* (1.966)	0.0481** (2.345)	0.356* (1.961)	0.0283 (1.367)	0.00290 (1.217)	0.0265 (1.290)	-0.003 (-0.331)	-0.001 (-0.505)	-0.003 (-0.331)
Random Effect	0.0580 (0.440)	0.00415 (0.315)	0.0781 (0.669)	0.0499*** (3.012)	0.00455*** (2.709)	0.0391*** (2.593)	0.002 (0.253)	0.000 (0.453)	0.004 (0.678)
Fixed Effect	-0.312 (-1.572)	-0.0112 (-0.736)	-0.164 (-1.071)	-0.0165 (-0.509)	-0.000925 (-0.306)	-0.0256 (-0.818)	0.002 (0.173)	0.000 (0.277)	0.000 (0.050)

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

Table 8 Fixed effect regressions of Tobin'q on CSR scores (sub-sample n°1)

Variable	Tobin's q						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
CSR Score	1.302*** (3.341)						
HR Score		0.412* (1.778)					
ENV Score			0.329 (1.224)				
CS Score				0.647*** (3.207)			
CG Score					0.0561 (0.233)		
CIN Score						0.436** (2.166)	
HRts Score							0.640*** (3.700)
CAPEX	-1.482 (-1.560)	-1.635* (-1.691)	-1.564 (-1.617)	-1.401 (-1.459)	-1.562 (-1.610)	-1.691* (-1.755)	-1.443 (-1.496)
Size	0.172 (1.065)	0.178 (1.072)	0.192 (1.174)	0.225 (1.455)	0.213 (1.338)	0.220 (1.410)	0.225 (1.433)
Intangible	-1.800** (-2.236)	-1.779** (-2.192)	-1.795** (-2.228)	-1.797** (-2.258)	-1.818** (-2.253)	-1.826** (-2.246)	-1.932** (-2.404)
Debt	-0.0334*** (-2.790)	-0.0350*** (-3.062)	-0.0360*** (-3.213)	-0.0336*** (-2.925)	-0.0351*** (-3.155)	-0.0349*** (-2.793)	-0.0324*** (-2.858)
GROWTH3Y	0.254 (1.117)	0.203 (0.891)	0.192 (0.841)	0.198 (0.883)	0.166 (0.737)	0.152 (0.691)	0.188 (0.835)
BETA	-0.0648 (-0.772)	-0.0678 (-0.806)	-0.0763 (-0.896)	-0.0850 (-0.998)	-0.0788 (-0.925)	-0.0659 (-0.772)	-0.0703 (-0.836)
Constant	0.145 (0.114)	0.483 (0.363)	0.394 (0.301)	-0.0551 (-0.0435)	0.305 (0.237)	0.0862 (0.0674)	-0.0384 (-0.0295)
Observations	1,112	1,112	1,112	1,112	1,112	1,112	1,112
R-squared	0.067	0.053	0.051	0.060	0.048	0.061	0.062
R2-Adjust.	0.0606	0.0469	0.0445	0.0539	0.0418	0.0546	0.0565
F	4.409	3.493	2.989	4.168	2.842	3.247	4.371

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

Table 9 Results of Instrumental Variable Panel Regressions

Variable	First Stage		Second Stage	
	Full Sample	No Fin. No Util.	Full Sample	No Fin. No Util.
	CSR score			
CAPEX	-0.077123 (-0.91)	-0.03389 (-0.38)		
Size	0.01447 (1.39)	0.02097 (1.6)		
Intangible	-0.0109485 (-0.25)	-0.017577 (0.707)		
Debt	-0.0003134 (-0.80)	-0.00099 (0.594)		
Growth3Y	-0.0195521* (-1.92)	-0.0539*** (-2.89)		
Beta	-0.0091186 (-1.23)	-0.0108 (-1.22)		
Sales	-3.3e-07*** (-3.34)	-2.57e-07** (-2.29)		
Age	0.0419687*** (2.94)	0.0422** (2.50)		
Observations	1365	1082		
F-Test of excl. Instr. (p-value)	9.07 0.0001	5.56 0.0041		
			Tobin's q	Industry-adjusted Tobin's q
CSR score			8.790** (4.224)	12.40** (6.010)
CAPEX			-0.251 (1.191)	-0.649 (1.366)
Size			-0.139 (0.184)	-0.256 (0.247)
Intangible			-1.398* (0.821)	-1.617* (0.956)
Debt			-0.00330 (0.00411)	-0.0177 (0.0286)
GROWTH3Y			0.298* (0.179)	1.044** (0.530)
BETA			0.0318 (0.0842)	0.0567 (0.136)
Observations			1,365	1,082
Kleinbergen-Paap LM test (p-value)			11.45 (0.0032)	8.015 (0.0182)
Hansen J. statistic (p-value)			0.989 (0.3199)	0.328 (0.5667)

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