Do Good and Do Well: An Empirical Study of the MSCI World

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Abstract

The purpose of our study is to examine the effect of Corporate Social Responsibility on Corporate Financial Performance. We initially perform a multiple linear regression using Ordinary Least Square on an academically recurring model, and then apply cross sectional fixed effect to account for heterogeneity. Our panel data is composed of approximatively 1500 companies over a five year span, totalizing more than 10000 observations. A primary contribution that we make to the question is introducing country law regime as a control variable, based on Liang & Renneboog (2017) predicator model of CSR. We use Sustainalytics ratings to proxy for CSR as their analyses fulfill the latest academic requirement on the question. Mixed evidence of the effect of CSR on CFP is found, and we also confirm the significance of country law regime as a predicator.

Acknowledgment

Contents

1. Introduction

Following the 2008 financial crisis, CSR has gained popularity on a global level. As the world economy was shaken by the crisis aftermath (rising unemployment, loss of purchasing power, etc.), the public pressure for corporation to reduce their externalities increased, leading governments and NGOs to enforce or press for more regulations. Governance measures such as code of business conducts and anti-corruption policies increased in occurrences (Jacob, 2012). Corporate executives were pushed to "*contemplate a boarder strategy beyond a focus on stock-holders' wealth maximization*" (Becchetti, Ciciretti, Hasan, & Kobeissi, 2012, p.1628), and consequently, companies devoted more resources to CSR to the point where today, many have specific business units for it. In addition, even if a firm's environmental and/or social impact is considered negligible, it is rare to find one that does not at least mention CSR in any type of information vector such as website or statement.

In order to apprehend the relationship between Corporate Financial Performance (CFP) and Corporate Social Relationship (CSR), we define the later as follow:

"*Corporate Social Responsibility is the continuing commitment by business to contribute to economic development while improving the quality of life of the workforce and their families as well as of the community and society at large.*" (World Business Council for Sustainable Development)

In practice, there are hundreds of CSR measures that a company can undergo to match the above definition. Those measures range from water and energy smart system, to decent salaries and safe work place, or independence between the CEO and the board of directors.

As implied in the above non-exhaustive list, one way to approach CSR is to divide its contribution into 3 categories: Environment, Social, and Governance (ESG). Those are usually the three pillars that constitute the framework of the CSR analysis within ESG rating companies' uses (Sustainalystics, KLD, and RobeccoSAM).

Analyzing a company's CSR implication is based on quantitative and qualitative methods, and similarly to CFP analysis, it relies on the information that the firm is willing to disclose. Consequently, transparency is rewarded with better score than non-disclosure. Another element to be taken into account is that companies CSR is measured in comparison to its industry peers in order to have meaningful interpretation. For instance, services providers

have on average far lower energy consumption than product manufacturers. Incrementally, we can assume that the increase of CSR disclosure during the last decade has improved the quality of CSR analysis and thus the precision from the statistical studies of the CFP–CSR relationship.

Defining CSR is fundamental to the understanding of the CFP–CSR relationship because the proxy required for the later must at least be comparable across firms of the same industry. While CFP is an older and more concrete concept benefiting from international standards upon which all financial actors of the market agree upon, CSR is young enough that one cannot exclude a future change in its core definition upon which not all actors agree today. Today, the CFP–CSR relationship benefits from ESG analysis ratings to proxy for the CSR variable, however, such is not always the case.

In 1972, Bragdon and Marlin were the first to statistically investigate the CFP-CSR relationship by researching the correlation between company expenditures on pollution control with financial performance using a multiple linear regression (as cited in Margolis, Elfenbein, & Walsh, 2007). By doing so, they started a flow of consecutive academic researches on the CSR-CFP link that would be conducted using two methods: Multiple linear regression analysis, and event studies[1].

During the last 45 years, the regression model has been constantly improved by subsequent academic work. Improvements ranged from new control variable in the equation, to better understanding of what are the necessary characteristics of a good sample. Several model innovations became academic consensus, and thus stepping stone for further researches.

Today, several interrogations remain in this type of analysis. The complete understanding of how CSR may or may not impact CFP is not fully grasped. While a majority of studies point in the direction of positive evidence (Malik, 2015), there remains a thorn in the side of researchers in the form of endogeneity and possible hidden variable, leading for instance to unsatisfactory explanation regarding variation from one country to another (Liang & Renneboog, 2017), or findings of CSR negative impact on CFP (López, Garcia, & Rodriguez, 2007).

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[1]See Becchetti, Ciciretti, & Hasan, 2009; Flammer, 2013; Krüger, 2015 for more on the event studies methodology.

Our contribution to the "Does it pay to be good?" question is based on a recent study by Liang & Renneboog (2017), that has the potential to become academic consensus. They bring a new perspective on the relation between CSR and CFP. According to their work, a country legal origin is the strongest predicator of CSR adoption, against other variable, including CFP. But as one may overlook, in their study, CSR is the dependent variable, whereas in our line of research as well as the main research trend mentioned previously, CSR is the independent one. This stems the question of whether law regime is important in explaining the effect of CSR on CFP. Therefore, our study uses the later innovation by comparing law regime subsample with the hope to explain more precisely the cross-country variation. Intuitively, in country law regime where CSR is highly regarded, we expect to find positive evidence of its impact on CFP.

In our contribution, we test the effect of CSR on CFP using a panel sample of approximately 15000 company observations over 5 years that we derive into several smaller subsamples based on different industries and country law regime. We mainly use panel fixed effect regressions, measuring CFP as a function of CSR and the following control variables: Firm size, financial risk, capital expenditure, turnover, and sales growth.

Our main finding is that the effects of CSR on CFP are associated with country legal origin. The overall evidence is mixed, but there is a thread over the four country law regime groups under consideration. CSR tends to have a neutral or positive impact on CFP for firms from civil law countries, while negatively affect CFP for firms from common law countries. As for ESG analysis, it is interesting to find that the coefficient of governance pillar appears to be significantly negative more often than the other two pillars.

The remainder of this thesis is built as follows. Section 2 describes the relevant literature that makes it into academic consensus and provides the theoretical background to interpret evidences from our model. Section 3 describes the full spectrum of our methods. Section 4 presents our results and interpretations, and Section 5 provides a conclusion.

2. Literature review

2.1 Theoretical Background

A fair share of the early literature following Bragdon and Marlin (1972) first empirical research of the CFP-CSR relationship predicted a negative impact of CSR over CFP. They backed their negative evidences with the idea that CSR was the product of an agency conflict between shareholder and manager (Jensen & Meckling, 1976), or that the manager would "illicitly" spend the principal's money or impose a tax and would not possess the ability or the right to solve social and environmental issue instead of the government (Friedman, 1970). In essence, advocate of CSR negative impact stipulated that there was a wealth transfer from shareholders to stakeholders by going against the shareholder prime interest of profit maximization: The shareholder theory. This theory is prone to era (the 80s) where deregulation and neoliberalism are at a pic under the rule of its strong advocates: the UK Prime Minister M. Thatcher and the US president R. Reagan. And so, at the time, there is no clear consensus on whether CSR has a positive effect or not on CFP. Evidences are overall mixed and, given different model specification, can point in any direction. For instance, in 1975, Vance innovated by extending the sample observation period to three years, and found that there was a negative relationship between CSR and CFP.

On top of the overall mixed evidences, the lack of interpretative perspectives was preventing clear explanation of positive results, while negative ones were backed by the shareholder theory implied previously. However, in 1984, Freeman develops the stakeholder theory that will give, the CFP-CSR positive relationship, what Ruf, Muralidhar, Brown, Janney, & Paul, (2001) refer to as "*the theoretical foundation*". This theory define Stakeholders as "*any group or individual who can affect or is affected by the achievement of the organization's objectives*", and the best interest of the firm is to take into account those very same individuals (Freeman, 1984, p.46). And then, Jones (1995), as well as Donaldson & Preston (1995) will refine this theory into the instrumental stakeholder theory, which is a modern recurring academic justification of CSR positive impact on CFP. Essentially, the instrumental stakeholder theory states that CSR action taken in the interest of stakeholders ultimately benefit shareholders. I.e. CSR is instrumental (Flammer, 2015). In other words, the stakeholder theory is linked to shareholder value maximization through the impact of the firm CSR activities on its value.

Concretely, there are many ways for CSR to enhance firm value. The following table categorizes them into 7 possible sources (Malik, 2015), which can be referred as stakeholders:

Table 1 Source of CSR enhancing value capabilities and their typical concrete application. (Adapted from: Malik, 2015)

Stakeholder	Firm typical CSR activities	Source of value Enhancing Capabilities of CSR
Customers	Product differentiation oriented on sustainability After sale and maintenance services	Create brand value Expand customer loyalty
Suppliers	Operational health and safety standard Pay decent price	Reduce operational risk Build corporate reputation
Regulators	Comply to voluntary standards Comply regulatory requirement	Influence policy development by raising the field of standard regulation Reduce litigation risk
Employee	Meeting labor demand Professional Training and education Offering higher than average wages	Improve productivity Build employer reputation Attract better and talented personnel
Environment	Water & energy smart system Reduce environmental externalities	Long term cost reduction Build corporate reputation and avoid regulatory fine
Investors	Improve reporting quality Commit to governance best practices	Increase market return Reduce risk & cost of capital Reduce information asymmetry
Community	Contributing disaster relief Giving NGO supports	Get favorable media coverage Convey positive managerial signal

By defining firm value as a function of profit maximization and idiosyncratic risk, it is easy to understand the above relationships. For instance, profit maximization can often be achieved through customer and employee CSR related activities such as sustainable product differentiation and improved employment conditions. Product differentiation opens new market segment and can be associated with a "sustainability" premium, while attracting

talents has always been a key component of corporate strategy for long term profitability. In addition, it is also evident that profit maximization is affected by cost reduction measures such as smart water and energy system, as well as, environmental policies. The later measures are not always considered by manager as harvesting and witnessing their benefits require a long-term perspective.

On the other hand, the idiosyncratic risk is typically affected by operational and reputational risk. Both concepts can have dedicated business unit (risk management and marketing). This overlap highlights the broadness of the CSR definition.

2.2 Review of empirical literature

With the stakeholder theory, studies of CFP-CSR relationship finding positive evidence have a theoretical foundation from the mid-80s onward. However, some issues remain in the form of a lack of comprehensive CSR measure and methodological rigor (Ruf et al., 2001). Model misspecification and "*the lack of understanding about the channels through which CSR affects firm value*" (Servaes & Tamayo, 2013, p.1045), as well as methodological concerns (Margolis & Walsh, 2001), are additional reasons behind the lack of clear academic consensus, and consequently the constant stream of new research on the subject.

Model misspecification is best embodied by a recurring constraint in the literature: Endogeneity. It is a limitation to results interpretation and might be present in the form of omitted variables, selection bias, measurement error, as well as simultaneity between CFP and CSR. The later can be interpreted as follows: Firm that performs well might have a greater tendency to invest in CSR, rather than CSR inducing good financial performance.

Recently, Flammer (2015) proposes an innovative regression discontinuity methodology to deal with the model misspecification issue. He uses close call shareholder proposals on CSR to render randomized CSR adoption of firm, and thus the variation in CSR becomes exogenous. Apart from implying that CSR increases firm value, it is further explained that the passage of close call CSR proposals benefits firm through improved job satisfaction and attracting customers with high eco consciousness.

As for methodological concern, it has also been constantly improving. In 2000, McWilliams & Siegel introduced a new methodological "best practice" by controlling for R&D and advertising expenditure. Considered as omitted control variables, the intuition behind this

novelty was that R&D lead to productivity enhancing innovation and advertising expenditure is a proxy for industry entry barriers that are considered as a shared asset across firms in an industry.

In addition, Margolis et al. (2007) define in their meta-analysis four standards to improve research on the link between CFP and CSR, named the *"Well-Worn Path of Refinement"*: Quantifiable CSR data must be clear and open to validation; control of at least industry, risk and size, R&D spending, as well as advertising expenditure (McWilliams & Siegel, 2000); assessment of the relation at different time period; articulation and test of the relation between CFP and CSR.

In parallel, faced with imperfections of the studies, a number of researchers decide to look at the correlation of single component of CSR and CFP. Russo & Fouts (1997) draw on the resource-based view and find that environmental performance is positively linked with economic performance (p.534). Bauer, Guenster & Otten (2004) analyze the impact of corporate governance on stock returns and obtain some evidence on the positive side. Recently, Schreck (2011) concludes that it pays to perform social responsibility along the two CSR dimensions *Environmental Management* and *Corporate Governance* by allowing for differences in the importance of single components of CSR between industries (p.183). The review of past studies shows that positive impact of CSR on CFP, for at least one single component, is evident.

Eventually, in 2007, Margolis, Elfenbein & Walsh meta-analysis on the CFP-CSR relationship counted 167 studies solely using event studies and multiple linear regression. Considering that the global financial crisis was just around the corner of the year 2007 and had for consequence to increase the amount CSR research overall, one can linearly extrapolate that, today, the number CFP-CSR relationship studies is beyond 200.

Amidst this stream of research, there is no satisfactory explanation for the fact that if CSR theoretically increases CFP, why evidences can differ across diverse countries. In other words, if CSR brings value, why do companies in some countries orient their strategies toward it, while others do not?

As highlighted in the introduction, Liang & Renneboog (2017) bring light to this interrogation by testing for the country legal origin as the main predicator of CSR.

La Porta, Lopez-de-Silanes, Shleifer & Vishny (1998) first came up with the concept of legal origin as related with the laws governing investor protection, the quality of enforcement of these laws, and the ownership concentration. They identify five possible categories: Civil ones, stemming from French, German, and Scandinavian tradition; Socialist ones, stemming from current and former socialist countries, and the English common law.[2]

Drawing on this classification, Liang & Renneboog (2017) use comprehensive CSR ESG ratings data as a proxy for approximately 23000 companies over a timespan of fifteen years, to perform a pooled regression, random effects generalized square (GLS), and random effects ordered probit models on a specification that sets CSR proxy as the dependent variable over several explanatory variables, including legal origin, as well as several firm-level financial and governance variables, including Tobin's Q. In addition, the study also controls for country-level variables such as economic development or the World Bank proxy for a country regulatory quality[3]. Once again, it is important to note that in this specification, from a traditional "does it pay to be good" model perspective, the CFP–CSR relationship is reversed because Tobin's Q is not the dependent variable.

The pair obtains conclusive significant results across all models; where civil law countries firms (Scandinavian, English and French) have positive and significant coefficient, with Scandinavian ones having the highest CSR scores, and common law (English) based firms having on average lower scores.[4]. The authors explain those differences with three arguments.

First, common law countries have a strong political orientation toward the shareholder theory. This does not come as a surprise, as the political tradition from major common law protagonist has always been highly inclined toward neo liberalism (see section 2.1). By considering a country legal origin as "*the style of control behind its economic life*" (as cited in Liang & Renneboog, 2017, p.5), one can explain lower CSR scores. Getting to the full extent of the pseudo schism between the shareholder and stakeholder theory, civil law countries are on the other hand more inclined to possess stronger unions, and more regulations on the product and labor markets, that ultimately lead to a stakeholder oriented style of control.

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[2] Using those origins, La Porta et al. demonstrate that legal underpinnings of corporate finance differ markedly around the world.

[3] http://info.worldbank.org/governance/wgi/#home

[4] On a side not, the pair remove socialist countries from their model due to their situation of "transition and not equilibrium" (as cited in Liang & Renneboog, 2017, p.16)

Then, Liang & Renneboog (2017) introduce an equilibrium between demand and supply for CSR as the second and third theory, respectively. Essentially, the demand side is driven by consumer predilection for company "*good behavior*", while supply is provided by firm and "*arise as an alternative response to market failures due to inefficient regulations*" (as cited in Liang & Renneboog, 2017, p.5). This equilibrium defines the relation between CSR and legal origin. If demand is more important than supply, it indicates that stakeholders have stronger social preference (like in civil law countries), and vice versa.

Based on those theories, the authors extend their study to investigate if systematic differences across legal origin are due to change in the demand for CSR. Beyond the scope of our study, they perform three quasi-natural experiments of shocks to CSR demand, which at the same time allow them to control for country fixed effects. Those shocks are health and environmental major controversies such as the Deep-water Horizon oil spill. The authors conclude that such argument is not a valid channel for explaining the impact of legal origin over CSR. Nevertheless, they continue their investigation of possible underlying factor, and ultimately find that low shareholder litigation risk is associated with firm effort to go beyond CSR law requirement.

Ultimately, Liang & Renneboog (2017) latest development indirectly offers new perspectives on the traditional CFP–CSR relationship that we exploit in our analysis.

3. Methods

3.1 Sample and data on corporate social performance

The previous empirical research in CSR field extensively used proprietary data from Kinder, Lydenberg, Domini (KLD), which provides a reasonably good measurement of companies' overall corporate social performance (Chatterji, Levine, & Toffel, 2009; Ding, Ferreira, & Wongchoti, 2016; McWilliams & Siegel, 2000) and is recognized as the *de facto* research standard at the moment (Waddock, 2003). Its dataset is designed as a binary system through rating companies on seven attributes: community, environment, human rights, employee relationships, product, diversity, and governance. With respect to each attributes, a company scores a "1" for strength and scores a "0" for weakness (Ding et al., 2016). In this paper, we propose an alternative source of ESG data, from Sustainalytics, an independent rating agency that evaluates the sustainability of about 7000 publicly traded companies around the world,

covering all major industries. Like most agencies' rating process, Sustainalytics follows a comprehensive indicator-based method on the following three pillars: environmental, social and governance (Nitsche & Schröder, 2015). Each pillar is then subdivided into different categories, which are summarized in table 2. All described categories, depending on the industry in which the firm operates, are assessed relative to peer groups based on a total of approximately 60 to 100 indicators (Nitsche & Schröder, 2015). Each peer group has its own weighting of ESG, and then the companies' total ESG scores are calculated.

Table 2 Corporate Rating Criteria. (Adapted from: Nitsche & Schröder, 2015)

Environmental			Social				Governance		
Operations	Products & Services	Supply Chain	Employees	Supply Chain	Community & Philanthropy	Customers	Corporate Governance	Business Ethics	Public Policy

For clarity purpose, we pooled the original CSR proxy data, which has more than 50 peer groups, into 11 big ones, by referring to the Industry Benchmark Classification (IBC). The summary statistics described in table 3 (in appendix) demonstrate the ESG score differences across industries in detail.

One of the motivations using Sustainalytics dataset instead of KLD's is that Sustainalytics ESG ratings point scores between 0 and 100, which could definitely capture more differentiation compared to the 14 dichotomous variables of "strength" and "concern" employed by KLD. In line with Ding et al., (2016), if the range of possible CSR scores is confined to only several integers, ranking CSR scores across firms proves difficult (p.88). From a methodological implementation perspective, including each strength and concern dummy variable into the econometric models would also be problematic. If simply aggregating KLD dummies, which is the widely-used approach, all the dimensions of concern and strength are erroneously assumed equally important and perfectly opposite (Burbano, 2014). Such noisy aggregate measures of a firm's true CSR levels might obscure information and make interpretation of results difficult (Ding et al., 2016; Schreck, 2011).

The accessible Sustainalytics ESG rating data is over the period 2012-2017 with unevenly spaced time intervals. Our sample comprise 1500 companies all included in the MSCI world index. Therefore, we are able to set up an unbalanced panel data consisting of more than 10000 firm-time observations, with each firm rated by ESG scores around every half-year. A small number of firms in Sustainalytics original dataset are removed due to missing ESG data for too many time points. Moreover, this study assumes testing the long-term benefits of CSR adoption on firm value.

3.2 Corporate financial performance

In this study, a market-based measure is employed to assess whether corporate social performance has any significant impact on financial performance. This is always critically compared with an accounting-based measure. Whilst many scholars chose accounting-based measures such as return on assets to proxy for corporate financial performance in their empirical studies on CFP-CSR relationship, Ding et al., (2016) and Pan, Sha, Zhang, & Ke, (2014) argue that the market-based indicator of financial performance is superior to traditional performance measures in recognizing the long-term impact of CSR. Moreover, the accounting indicators are also backward-looking and are subject to the risk of being manipulated.

We use Tobin's Q as the CFP proxy as it is the most frequently applied market-based measure of corporate financial performance. The basic principle of Tobin's Q involves calculating the market value of a firm divided by the replacement cost of the firm's assets. This ratio is useful for the valuation of a company in the long run. We derive the data of Tobin's Q for all the sample firms from Bloomberg database.

3.3 Control variables

In order to avoid omitted-variable bias and credibly make a causal interpretation between CSR adoption and firm value, control variables must be added in the regression model.

3.3.1 Firm-level control variables

Standard firm-level characteristics that jointly influence both CSR implementation and firm value are firm size and risk. Servaes & Tamayo (2013) point out that advertising expense intensity increase customers' awareness about the firm's CSR involvement, which in turn makes it more likely that customers will reward the firm for its CSR efforts. Recent studies have also shown a significant correlation between R&D resource and CSR, thereby R&D

expense intensity must be included in the analysis to avoid results giving an upwardly biased estimate of the CSR variable (Padget & Galan, 2010). Other possible controls consist of capital expenditure, sales growth and turnover. In a nutshell, these financial variables can be defined as follows: firm size = the natural log of total assets; risk = total debt over total assets; R&D intensity = R&D spending over total sales; advertising intensity = advertising expense over total sales; capital expenditure = Capital expenditure over total assets; sales growth = changes in sales at time t over sales at time t-1. Turnover = total amount traded in the security's currency. The data for all the above variables could be obtained (and calculated) from Bloomberg database. (Refer to the appendix for details of all those financial variables' definitions and computational formulas).

Table 4 Financial characteristics
This table shows the descriptive statistics of the financial characteristics of the pooled sample spanning 2012-2017.

	TOBIN_Q_RATIO	SALES_GROWTH	TURNOVER	RISK
Mean	1.812	7.722	1.458E+08	0.613
Standard Error	0.011	1.605	1.070E+07	0.002
Median	1.384	2.942	3.223E+07	0.610
Standard Deviation	1.335	195.855	1.291E+09	0.223
Minimum	0.486	-392.308	13548.730	0.003
Maximum	22.920	16186.343	7.328E+10	2.032
	CAPEX/Total Assets	SIZE	R&D expense/sales	Advertising expense/sales
Mean	0.014	9.796	0.382	0.153
Standard Error	0.000	0.012	0.003	0.003
Median	0.009	9.576	0.315	0.115
Standard Deviation	0.019	1.477	0.236	0.136
Minimum	0.000	2.020	-0.184	-0.328
Maximum	0.486	14.850	1.818	0.881

3.3.2 Industry-level control variables

It is believed that stakeholders of different industries may vary in the interests, concerns, and the degree of scrutiny (Palmer, 2012). Some industries are intrinsically regarded more "dirty" than others, and constrained by more restrictive rules and regulations, such as heavy manufacturing or chemicals; and some industries face stronger competitive intensity (Margolis et al., 2007; McWilliams & Siegel, 2000). As can be seen from table 3, the average ESG score differs across industries. Therefore, the industry dummy variables must be included in the econometric model to control for some industry-level variation.

3.3.3 Country-level control variables

A difference compared to past studies is that country-level factors are considered in our study to make CSR adoption as good as random across countries. Once again, this is based on the up-to-date finding of Liang and Renneboog (2017), which brings evidence that a firm's social responsibility practice is strongly correlated with the country's legal origin (common or civil). Following this previous research, we come up with five categories of country law regime: Scandinavian civil law, German civil law, French civil law, English common law, and socialist law; and we sort which legal origin the company pertains to according to the country where the company is headquartered. Due to the very limited CSR proxy data of companies from socialist law tradition, we only add the other four country-level controls.

Table 7 Sustainalytics ESG descriptive statistics by country law regime
This table describes the ESG scores for the four country law regime: English, French, German and Scandinavian. On average, companies from Scandinavian legal regime obtain the highest ESG scores than companies from others. The results are in consistence with Liang and Renneboog (2017), i.e., firms from common law countries have lower ESG scores than firms from civil law countries

		ESG	Governance	Social	Environment			ESG	Governance	Social	Environment
ENGLISH	Mean	59.177	65.210	57.914	56.550	**FRENCH**		68.259	69.566	68.763	67.146
	SE	0.106	0.110	0.124	0.151			0.292	0.312	0.337	0.369
	Median	58.540	65.300	57.140	55.615			69.180	69.400	69.370	68.690
	SDev	9.230	9.616	10.787	13.190			10.198	10.889	11.778	12.899
	Minimum	35.950	29.930	23.060	24.220			42.800	37.960	37.070	31.670
	Maximum	89.530	95.320	92.060	97.190			93.680	93.570	100.000	96.670
		ESG	Governance	Social	Environment			ESG	Governance	Social	Environment
GERMAN	Mean	61.435	60.789	59.415	64.345	**SCANDINAVIAN**		70.896	72.100	70.732	70.364
	SE	0.245	0.233	0.290	0.339			0.430	0.446	0.472	0.605
	Median	61.435	59.505	58.365	65.780			71.660	72.750	71.870	71.580
	SDev	10.169	9.673	12.046	14.052			8.714	9.052	9.573	12.271
	Minimum	37.250	39.400	30.500	28.030			47.550	45.040	44.530	35.630
	Maximum	87.920	87.250	93.660	98.330			88.820	96.000	91.980	94.630

3.4 Estimated models

In the light of earlier discussion, we construct the initial model as:

$$\text{Tobin's Q}_{i,t} = \alpha + \beta'_1 \text{Environment}_{i,t} + \beta'_2 \text{Social}_{i,t} + \beta'_3 \text{Governance}_{i,t} + \beta'_4 X_{i,t} + \beta'_5 \text{CLR}_i + \beta'_6 \text{Industry}_i + \varepsilon_{i,t} \quad (1)$$

where $Environment_{i,t}$, $Social_{i,t}$, and $Governance_{i,t}$ are the vectors of the single pillar component scores of the CSR measure; $X_{i,t}$ is a group of the vectors of firm-level control variables (when testing the model, we get rid of the advertising expense intensity and R&D expense intensity variables because only about 20% of our 1500 companies report those data); CLR_i is the vector of dummy variables indicating country law regime groups; and Industry_i is the vector of dummy variables indicating industry groups. It could be reasonably assumed that Country law regime and industry variables are time-invariant.

The regression coefficients of Eq.(1) on the full sample are estimated by OLS. As the BPG (Breusch-Pagan-Godfrey) test for heteroscedasticity of error terms rejected the null hypothesis of homoscedasticity at the 1% significance level (see appendix), the heteroscedasticity-robust standard errors should be used.

Obviously, the regression coefficients estimated from Eq.(1) would be suspicious due to the issue of endogeneity. As has been mentioned in the literature review, endogeneity might be caused by omitted variable bias and simultaneity between CSR and CFP. Therefore, we further include the fixed effects and the lagged effects in order to improve robustness of the results. The random effects do not provide a solution to endogeneity because in the RE case, the covariance between error term and predictor is zero; in other words, endogeneity by definition is not a concern.

Specifically, the ideal solution that we suppose is running the following lagged model with fixed effects:

$$\text{Tobin's Q}_{i,t} = \alpha + \beta'_1 \text{Environment}_{i,t-1} + \beta'_2 \text{Social}_{i,t-1} + \beta'_3 \text{Governance}_{i,t-1} + \beta'_4 X_{i,t} + \varepsilon_{i,t} \quad (2)$$

Above all, the financial benefits of CSR implementation reflected in firm value cannot be immediate due to factors such as information asymmetry. The lagged CSR variable acts like instrumental variable as it fulfils the prerequisites of relevance and exogeneity (Schreck,

2011). We lag the CSR proxy measures by one period in order to address potential simultaneity. This equation does not include CLR_i and $Industry_i$ since the fixed effects will ultimately remove all the dummies.

4. Results

4.1 Results analysis on the full sample

We start by a simple pooled OLS regression by running Eq.(1) on the full sample. In order to avoid the dummy variable trap, we drop one of the categorical variables *Scandinavian* and *Consumer discretionary* in the country law regime dummy group and industry dummy group, respectively. Model 1 of table 5 presents the results of Tobin's Q as a function of current environment, social and governance component scores, controlling for firm characteristics, industry and country law regime. Notably, none of the three pillars of ESG is significant.

The simple pooled regression assumes that there is no heterogeneity in the cross-sectional dimension as well as in the time dimension; however, it is clearly not the case. The joint significance test of fixed effects dummies (cross-section) shows that FE dummies are statistically significant at the 1% significance level. Therefore, we model the same relationship without CLR_i and $Industry_i$ and add firm-level FE to control for unobservable cross-sectional heterogeneity, including management talent, corporate culture and so on. Interestingly, the coefficient of the three CSR variables all change sign, although only the coefficient of *governance* becomes significantly negative, as provided in model 2 of table 5. Moreover, the adjusted R squared increases by approximately 60% once the unobservable firm-specific characteristics is controlled for, indicating most of the variation in Tobin's Q are cross-sectional and absorbed by FE. Both the substantial increase in adjusted R squared and the sheer fact that the coefficients change in sign and significance manifest heterogeneity is a major issue, and at least $governance_i$, is correlated with certain unobservable heterogeneity that influences CFP.

Apart from omitted variable bias, there is another issue of simultaneity, i.e., not only the firm's corporate social performance will affect firm value, but also the firm's financial performance will have an impact on its CSR involvement. The reasoning behind this reverse cycle is conceivable: a firm's CSR spending depends on its access to the discretionary funds, which in turn is largely determined by the firm's financial outcomes. Confronted with this

issue, we decide to use the one-period lagged CSR explanatory variables. Models 3 and 4 in table 5 both employ Eq.(2), which captures the lagged effects and utilize a FE approach, except that in model 4 additional control variables R&D expense intensity and advertising expense intensity are included. Theoretically, model 4 is the best possible model, but it is only applicable on the full sample since we do not have sufficient observations of R&D expense intensity and advertising expense intensity on the sub-samples. The distinct difference, in comparison, is that model 3 has a significant coefficient of *governance* while this coefficient is insignificant in model 4.

Model 5 of table 5 employs period FE approach on Eq.(2) in consideration of certain period-specific shocks that affect all firms in a similar way. The period FE dummies joint significance test confirms that heterogeneity exists in the time dimension as well. Contrasted with the aforementioned models, there are several obvious changes, for instance, *social* becomes significantly negative and *governance* changes to be insignificant. Notably, the adjusted R squared drops to 21% once we use the period FE, which illuminates the low explanatory power of the period FE model. Since country legal origin and industry variables are assumed time-invariant in our estimated model (due to relatively short sample period), and firm-specific characteristics heterogeneity proves to be our major concern (as explained before), we only use the one-way error component model, i.e., cross-section FE model, throughout our analysis.

Overall, the pooled regression results appear to suggest that CSR does not have a positive impact on CFP, and particularly good rating on *governance* even affects firm value negatively, which contradicts with some previous studies that offer insights for a positive correlation between them (Bauer et al., 2004; Schreck, 2011). By virtue of huge sample data, we proceed to investigate the CFP-CSR relationship focusing on the individual subsamples, grouped according to country law regime and industry separately. The results are analyzed in the next section.

Table 5 Relationship between CSR and CFP (Pooled)

This table reports the regression coefficients for the relationship between CSR and CFP over 2012-2017. All models are run using the full sample. Model 1 presents the OLS results, while model 2-4 present the cross-section FE results and model 5 shows the period FE results. In model 3, 4 and 5, *environment*, *social* and *governance* are all lagged for one period. Model 4 is proposed to be the ideal model, in which we additionally control for advertising intensity and R&D intensity.

Variables	1 (POOLED DUMMIES)	2 (POOLED FE)	3 (LAG POOLED FE)	4 (LAG POOLED FE IDEAL)	5 (PERIOD FIX EFFECT)
ENVIRONMENT	-0.0002	0.001	-0.002	0.001	0.003
	(0.87)	(0.6205)	(0.1657)	(0.8280)	(0.1222)
SOCIAL	-4.61E-05	7.50E-05	0.000	0.002	-0.009
	(0.975)	(0.9668)	(0.9420)	(0.2841)	(0.0107)**
GOVERNANCE	0.0016	-0.003	-0.004	-0.003	0.004
	(0.315)	(0.0049)*	(0.0000)*	(0.3936)	(0.2547)
SIZE	-0.4573	-0.563	-0.578	-1.018	-0.485
	(0.0000)*	(0.0000)*	(0.0000)*	(0.0000)*	(0.0000)*
RISK	0.370	0.240	0.182	0.941	0.502
	(0.000)*	(0.1968)	(0.2477)	(0.0106)**	(0.0169)**
CAPEX_TOTAL_ASSETS	2.167	0.819	0.649	4.083	-3.184
	(0.0016)*	(0.1957)	(0.1938)	(0.2552)	(0.0161)**
TURNOVER	1.14E-11	-2.12E-13	-1.29E-12	-2.54E-11	2.46E-11
	(0.1599)	(0.8974)	(0.5355)	(0.1344)	(0.0386)**
SALES_GROWTH	0.0001	3.18E-05	3.55E-05	0.009	6.65E-05
	(0.0408)**	(0.0457)**	(0.1580)	(0.0000)*	(0.2708)
ADVERTISING_EXPENSE_SALE				-3.126	
				(0.0013)*	
R_D_EXPENSE_SALES				5.086	
				(0.0757)***	
CLR="English"	-0.164				
	(0.0086)*				
CLR="French"	-0.259				
	(0.0001)*				
CLR="German"	-0.525				
	(0.0000)*				
IND.="Consumer Staples"	-0.015657				
	(0.7676)				
IND.="Energy"	-0.635574				
	(0.0000)*				
IND.="Financials"	-0.125				
	(0.0125)**				
IND.="Health Care"	0.659				
	(0.0000)*				
IND.="Industrials"	-0.467				
	(0.0000)*				
IND.="Information Technology"	0.196				
	(0.0000)*				
IND.="Materials"	-0.584				
	(0.0000)*				
IND.="Real Estate"	-0.849				
	(0.0000)*				
IND.="Telecommunication Services"	-0.298				
	(0.0000)*				
IND.="Utilities"	-0.649				
	(0.0000)*				
Intercept	6.45	7.417	7.823	11.563	6.469
	(0.0000)*	(0.0000)*	(0.0000)*	(0.0000)*	(0.0000)*
Adj. R squared	0.299	0.903	0.924	0.904	0.215
N	10964	10964	9686	992	9686

* Indicate significance at the 1% level; **Indicate significance at the 5% level; ***Indicate significance at the 10% level

4.2 Results analysis on the subsample

When conducting analysis on the subsamples, all models in table 6 employ Eq.(2) and cross-section fixed effects as this model has been proved to be a relatively better one that addresses endogeneity (although it could not completely eliminate endogeneity bias).

4.2.1 Results comparison among country law region groups

The results of model 7 (French civil law) in table 6 are very similar to those of the pooled model, i.e., only the coefficient of *governance* is negative and significant. In the French civil law countries, firm ownership is extremely concentrated (La Porta et al., 1998). Accordingly, more CSR spending on the governance issue might be not meaningful as the agency conflicts are less outstanding in firms with highly concentrated ownership.

However, for the English common law group, the coefficient of *environment* is also significantly negative in addition to *governance*. These indicate that corporate social practice inversely affects firm value, particularly for the English common law group. In general, shareholders and creditors in common-law countries, relatively speaking, are given the strongest protections (La Porta et al., 1998). Therefore, it is highly likely that Friedman's view of CSR, namely, the social responsibility of business is to increase its profits, will be more prevalent in English common law group. This is because that, especially in the short term, CSR spending will directly reduce firm earnings by an amount that should have been distributed to shareholders and creditors, while its benefits are relatively unpredictable. CSR adoption, from shareholder and creditor's perspectives, may be not worth the candle.

Further, since both model 6 and 7 report negative coefficient of *governance*, and the absolute coefficient value in the French civil law group is almost three times larger than it in the English common law group, we wonder if the difference between the coefficients estimated from the two groups is significant or not.

In order to test the null hypothesis that the coefficients of *governance* estimated from these two groups are equal, denoted as b(F) and b(E), respectively, we use a simple formula $\frac{b(F)-b(E)}{\sqrt{SE(F)^2+SE(E)^2}}$, in which SE (standard error) is an approximation and based on the assumption that the tested coefficients are independent. The calculated test statistics has an absolute value of 2.77, meaning it is significant at the conventional levels. Actually, if both coefficients are

significant, the difference will necessarily be significant, so the test result confirms our regression results.

Then we apply the same formula to other pairs of coefficients, where at least one of them is significant. The test statistics are summarized in a table presented in the appendix. We are particularly interested in the pairs that one of them is significant and the other one is insignificant. We can see that, for example, there are actually significant differences between Scandinavian group and French group, also Scandinavian group and German group in terms of the coefficients of *environment*. However, test statistics show that the difference of *governance* coefficient is insignificant between English group and German group, as well as for the English and Scandinavian group. Consequently, there may be a possibility that the negative effect of *governance* in the English group is overestimated.

Furthermore, model 8 of table 6 displays that there is no significant coefficient of *environment*, *social* or *governance*, meaning the impact of CSR on CFP is neutral in the German civil law group. The positive and significant coefficient of *environment* in model 9 suggests that higher ranking of CSR, specifically in the aspect of environment, is beneficial for firms from Scandinavian countries. In essence, CSR reflects social preferences for good corporate behaviour and a stakeholder orientation (Liang & Renneboog, 2017). Therefore, the positive evidence is not surprising as environmental-friendly products or services are highly valued in Scandinavian countries, which are known to be global leader in sustainability (Strand, Freeman & Hockerts, 2015). In accordance with La Porta et al. (1998), the quality of law enforcement is the highest in Scandinavian and German civil law countries. To put it simple, more CSR adoption means better relation with government, which is definitely in favor of business development.

To summarize, results are mixed if we shed light on the role of law tradition in deriving financial outcomes, however, it is certain that legal origin could explain somehow the differences between groups. Generally speaking, the CFP-CSR relationship appears to be more negative in common law countries, while neutral or positive in civil law countries. What is more, *social* component of CSR ranking does not tend to influence firm value regardless of the country legal origin.

Table 6 Relationship between CSR and CFP (CLR sub-sample)

This table reports the regression coefficients for the relationship between CSR and CFP in the country law regime sub-samples. Models 6, 7, 8 and 9 present the lagged, cross-section FE results for English, French, German and Scandinavian, respectively.

Variables	6 LAG ENGLISH FE CLR	7 LAG FRENCH FE CLR	8 LAG GERMAN FE CLR	9 LAG SCANDINAVIAN FE CLR
LAG_ENVIRONMENT	-0.003	-0.0013	-0.001	0.012
	(0.0348)**	(0.4504)	(0.4521)	(0.0000)*
LAG_SOCIAL	-0.001	0.003	0.002	-0.004
	(0.8326)	(0.1442)	(0.1004)	(0.5376)
LAG_GOVERNANCE	-0.003	-0.011	-0.001	0.002
	(0.0114)**	(0.0000)*	(0.6940)	(0.7150)
SIZE	-0.599	-0.424	-0.288	-0.905
	(0.0000)*	(0.0021)*	(0.0193)**	(0.0000)*
RISK	0.401	-2.145	-0.354	1.788
	(0.0214)**	(0.0018)*	(0.1939)	(0.0019)*
CAPEX_TOTAL_ASSETS	1.801	-6.004	0.878	0.406
	(0.0120)**	(0.0057)*	(0.1738)	(0.7923)
TURNOVER	1.45E-12	-6.65E-13	-7.36E-12	-3.02E-12
	(0.5579)	(0.9816)	(0.0150)**	(0.2297)
SALES_GROWTH	1.82E-05	0.003	0.001	0.0026
	(0.3026)	(0.0000)*	(0.1805)	(0.0002)*
Intercept	7.932	8.091	4.676	9.087
	(0.0000)*	(0.0000)*	(0.0003)*	(0.0000)*
Adj. R squared	0.918	0.912	0.95	0.957
N	6722	1083	1515	366

* Indicate significance at the 1% level; **Indicate significance at the 5% level; ***Indicate significance at the 10% level

4.2.2 Results comparison among industry groups

As shown in table 7, the industry-by-industry results are more varied if we divide the full sample into 11 pooled peer groups and run Eq.(2) on each of them. It is a little bit difficult to discover some distinct patterns, but there are some possible insights that we could give at least to some extent.

The coefficient of *environment* is significant in four industry groups, among which it is negative in industries of Energy, Financials and Utilities while positive in Healthcare industry group. The positive evidence is easily interpretable. At first glance, initiatives aimed at minimizing the negative impacts of healthcare provision on the environment as well as contributions to enhance sustainability would earn firm a good reputation, which is of crucial importance in the Healthcare industry where consumers care a lot about "clean" or "dirty". Although Energy, Financial and Utilities are some kind of environmental sensitive industries, the negative evidence indicates the costs of social practice tend to exceed its benefits, which probably requires further research on it.

In addition, the results reported in table 7 illustrate that there are not many significant relationships between *social* and *Tobin's Q*. The only coefficient of *social* that is significantly negative at the 5% significance level is in Real estate industry group. In contrast, significant relationship is more and consistent for *governance*, i.e., in industries of Consumer discretionary, Energy, Industrials and Materials, we all obtain negative evidence.

Furthermore, we find that in Consumer staples, Information technology and Telecommunication services groups, there are no significant results whichever the lagged ESG pillar concerned. Such neutral evidence about CFP-CSR relationship may be related to the nature of industry to some extent. It is likely that Information technology and Telecommunication services companies do not have much stakeholder pressure for CSR, because the common belief might be that they have little impact on the environment. Yet such argument cannot be applied to Consumer staples, but the large diversity of products in this category coupled with the absence of advertising expense control variable might influence the results in that direction. This limitation is discussed in the next section.

Table 7 (part 1) Relationship between CSR and CFP (Industry sub-sample)
This table presents the regression coefficients for the relationship between CSR and CFP in each of the 11 classified industry sub-samples, with the lagged effects and cross-section FE.

Variables	Consumer discretionary	Consumer staples	Energy	Financials	Healthcare	Industrials
LAG_ENVIRONMENT	0.000	-0.003	-0.007	-0.002	0.011	-0.002
	(0.9505)	(0.1243)	(0.0001)*	(0.0015)*	(0.0171)**	(0.2696)
LAG_SOCIAL	0.004	0.000	-0.007	0.000	0.001	0.002
	(0.3002)	(0.9958)	(0.0573)***	(0.9003)	(0.9192)	(0.0588)***
LAG_GOVERNANCE	-0.013	-0.003	-0.010	0.002	-0.005	-0.002
	(0.0000)*	(0.1838)	(0.0000)*	(0.3965)	(0.2398)	(0.0281)**
SIZE	-0.863	-0.839	-0.580	-0.130	-0.662	-0.597
	(0.0019)*	(0.0000)*	(0.0000)*	(0.0040)*	(0.0076)*	(0.0000)*
RISK	0.703	1.028	-1.502	-0.130	0.570	0.290
	(0.0091)*	(0.0000)*	(0.0001)*	(0.6797)	(0.1295)	(0.1060)
CAPEX_TOTAL_ASSETS	-10.444	6.246	2.534	3.504	17.370	1.291
	(0.0000)*	(0.0000)*	(0.0002)*	(0.8084)	(0.0013)*	(0.1617)
SALES_GROWTH	0.005	-0.002	0.001	0.000	0.004	0.002
	(0.0003)*	(0.1329)	(0.0351)**	(0.0045)*	(0.0950)***	(0.0000)*
TURNOVER	0.000	0.000	0.000	0.000	0.000	0.000
	(0.3923)	(0.0017)*	(0.9394)	(0.5874)	(0.4625)	(0.5653)
Intercept	10.719	9.948	9.393	2.920	8.230	7.329
	(0.0011)*	(0.0000)*	(0.0000)*	(0.0000)*	(0.0024)*	(0.0000)*
Adj. R squared	0.900	0.930	0.916	0.965	0.910	0.926
N	1638.000	605.000	759.000	1273.000	783.000	1368.000

Table 7 (part 2)

Variables	Information technology	Materials	Real estate	Telecommunication services	Utilities
LAG_ENVIRONMENT	0.004	0.002	-0.001	-0.006	-0.002
	(0.1675)	(0.3507)	(0.7141)	(0.2192)	(0.0008)*
LAG_SOCIAL	0.004	-0.003	-0.003	-0.005	0.000
	(0.2282)	(0.2896)	(0.0172)**	(0.1733)	(0.8089)
LAG_GOVERNANCE	0.004	-0.009	0.002	0.002	0.001
	(0.3192)	(0.0410)	(0.0854)***	(0.3779)	(0.5160)
SIZE	-0.835	-0.577	-0.233	-0.499	-0.211
	(0.0000)*	(0.0000)	(0.0000)*	(0.0008)*	(0.0036)*
RISK	0.712	-1.085	-0.070	0.420	-1.866
	(0.0367)**	(0.0379)	(0.7923)	(0.0271)**	(0.0000)*
CAPEX_TOTAL_ASSETS	16.839	2.135	-0.691	0.796	0.772
	(0.0251)**	(0.0950)	(0.0005)*	(0.4913)	(0.0029)*
SALES_GROWTH	0.003	0.001	0.000	-0.002	0.000
	(0.0000)*	(0.0009)	(0.2117)	(0.3554)	(0.5307)
TURNOVER	0.000	0.000	0.000	0.000	0.000
	(0.1731)	(0.3591)	(0.0063)*	(0.3420)	(0.1278)
Intercept	8.907	8.319	3.661	7.002	4.802472
	(0.0000)*	(0.0000)	(0.0000)*	(0.0002)*	(0.0000)*
Adj. R squared	0.913	0.879	0.953	0.936	0.951
N	1003.000	755.000	630.000	285.000	584.000

* Indicate significance at the 1% level **Indicate significance at the 5% level ***Indicate significance at the 10% level

4.3 Limitations of results interpretation

Our findings suggest a mixed correlation between CSR and CFP, but the above analysis of results has several limitations. Firstly, as it was mentioned before, sample data of R&D expense and advertising expense is not available for many companies, which poses restrictions on our empirical analysis. Consequently, running regression without these two controls might give an upwardly biased estimate of CSR variables.

Secondly, fixed effects normalize all variables to have the same mean across firms, so the results do not explain variation over the cross section. Nevertheless, there is really not much to be done about that. Also, although fixed effects address endogeneity concerns from omitted variable bias, it is based on the assumption that unobservable firm-specific characteristics that correlate with CSR movements and affects firm value simultaneously are time-invariant. To allow variation both cross-sectional and over time, the difference-in-difference methodology should be used but we find it difficult to implement it in practice on account of the limited time period to find a valid treatment. In addition, we do not believe all endogeneity concerns could be effectively eliminated by combining a lagged variable approach and a cross-section FE approach. At least, there will undoubtedly be certain measurement error when quantifying the abstract or qualitative CSR no matter how comprehensive the approach that Sustainalytics follows. In line with Ding et al. (2016), this will ultimately lead to a correlation between the error term and the CSR variable

Moreover, there lies 2 issues linked with the CSR rating proxy variable. The size of subsample is uneven, i.e., some subsamples like *Scandinavian* when dividing by country legal origin and *Telecommunication services* when dividing by industry have only more than 200 observations, which might influence the accuracy of regression estimates. And, initially, Sustainalytics uses more industry peer groups than the 11 categories of the GICS. Those peer groups were forced into those category in order to obtain bigger subsample, but what we gain in observation, is lost in analysis precision. This is due to the fact that qualitative and quantitative criteria within ESG pillar might have different weights. Of course, with more than a 100 criteria, the impact of such difference remains limited.

Finally, past empirical evidence indicates the CSR-CSF relationship might not be strictly linear. Barnett and Salomon (2012) find that firms with low CSR have higher CFP than firms with moderate CSR, but firms with high CSR have the highest CFP. In contrast to their proposal of the U-shaped CFP-CSR relationship, Flammer (2015) argues the relationship between CSR and CFP is concave as the CSR source exhibits diminishing marginal returns. However, this study does not take the potential curvature of the CFP-CSR relationship into consideration since we do not capture the quadratic nature of CSR in our model equation.

5. Conclusion and implication

Our study demonstrates that given the right circumstance, CSR has an impact on CFP, but evidence is mostly mixed. The results on the country law regime subsample indicate that the legal origin of country where the firm is headquartered is indispensable to understand the relationship between CSR and CFP. Overall, it seems that CSR are more valued in civil law countries than common law countries. We also find that CSR's impacts on CFP change sign and significance across industries, depending on factors like industry nature. Therefore, the CLR-specific relationship and the industry-specific relationship should be considered individually and carefully. Moreover, our finding suggests that with respect to the three pillars of ESG, it is more often to find significantly negative coefficient of governance, while the results of the other two pillars are more varied. Our study uses dataset from Sustainalytics, which probably can contribute to the CFP-CSR research field on the comparison of different alternative comprehensive CSR datasets.

Regarding the methodology, we believe that the constant improvement of CSR reporting practices, standardization of rating methods, and the very simple fact that the amount of historical data is increasing, will positively affect both comparison between industry peers as well as the precision of CFP-CSR regression study. In addition, CSR historical data growth is also increasing the likeliness of "recording" a good valid treatment in order to use the difference-in-difference methodology that is in this case a superior one when it comes to dealing with endogeneity.

Lastly, rising social and environmental challenges will lead modern societies, and hence most of their stakeholders, to demand greater accountability from firms for their potential impact and responsibility in facing those challenges is ever so important and undeniable. The global pressure on their agent, as well as principal, to do good, is increasing to the extent that one could say: time is an unfortunate ally of CSR.

That being established, shedding light on the relation between CSR and CFP is also a way to conciliate the shareholders and stakeholders interests, one being tied to the present while the other usually lies a little bit more in the future. Thus research on the CFP-CSR relationship is of public utility, and while we can conclude that "doing well" and "doing good" do not necessarily overlap, it is also a certitude that they are not mutually exclusives either. In any case, in tomorrow's world, it is a necessity for managers to stretch between CFP and CSR, or as Margolis et al. (2007, p.28) put it: "*to learn how companies can navigate a world that demands a firm do good and do well*".

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Appendix

Table 3 Sustainalytics ESG descriptive statistics by industry
This table presents descriptive statistics of the overall ESG score as well as each of the ESG pillar for the 11 pooled peer groups.

		Total ESG score	Environment	Social	Governance			Total ESG score	Environment	Social	Governance
Consumer Discretionary	Mean	59.74983836	64.94481681	59.01678879	57.0247306	Information Technology	Mean	61.21049601	64.35868025	58.53521701	61.88687334
	Standard Error	0.237473864	0.191155684	0.275770159	0.338496975		Standard Error	0.311130409	0.217545572	0.352864915	0.446996479
	Median	59.28	65.29	57.815	55.665		Median	61.3	64	58.1	62.7
	Count	1856	1856	1856	1856		Count	1129	1129	1129	1129
	Largest(1)	91.04	88.25	93.66	95.71		Largest(1)	87.23	87.29	92.06	96.67
	Smallest(1)	39.06	38.05	35.44	33.71		Smallest(1)	39.74	41	35.71	36.66
Consumer Staples	Mean	62.62578102	68.12537226	58.99575182	62.85763504	Materials	Mean	64.7879021	71.17832168	64.65481352	60.82131702
	Standard Error	0.318370606	0.308418323	0.399966128	0.400979858		Standard Error	0.300410352	0.354184432	0.359538206	0.37954124
	Median	63.06	68.25	59.86	64.1		Median	65.19	70.35	64.49	62.005
	Count	685	685	685	685		Count	858	858	858	858
	Largest(1)	79.58	91.04	83.5	87		Largest(1)	88.82	96	92.72	85.38
	Smallest(1)	38.87	46.42	35.46	31.35		Smallest(1)	37.3	39.4	38.28	24.65
Energy	Mean	61.25207701	66.90990665	63.74183197	54.46731622	Real Estate	Mean	59.23977622	58.76899301	56.4439021	61.69517483
	Standard Error	0.320369301	0.311467139	0.400897952	0.378003995		Standard Error	0.445399904	0.437811012	0.457853728	0.556472508
	Median	59.46	65.4	61.44	53.5		Median	56.57	56.46	53.75	59.77
	Count	857	857	857	857		Count	715	715	715	715
	Largest(1)	88.45	95.44	94.37	84.88		Largest(1)	93.68	93.57	94.41	97.19
	Smallest(1)	37.25	45.38	30.5	24.22		Smallest(1)	40.47	38.33	36.65	37.5
Financials	Mean	58.00074461	58.59105776	61.51753653	53.25096033	Telecommunication Services	Mean	62.51869969	65.96885449	55.74226006	65.96885449
	Standard Error	0.277710208	0.294631398	0.241128173	0.404826598		Standard Error	0.620910436	0.855437918	0.676574609	0.855437918
	Median	56.07	56.02	59.42	51.66		Median	63.23	68.06	55.3	68.06
	Count	857	857	857	857		Count	323	323	323	323
	Largest(1)	88.45	95.44	94.37	84.88		Largest(1)	85.76	93.79	81.75	90.96
	Smallest(1)	37.25	45.38	30.5	24.22		Smallest(1)	41.49	49.5	31.23	36.66
Healthcare	Mean	59.13866142	63.10701912	53.15571429	65.14965129	Utilities	Mean	65.91206897	73.54991004	68.43407796	60.19787106
	Standard Error	0.316703889	0.30133744	0.390548572	0.440307054		Standard Error	0.311696442	0.322110638	0.409322892	0.422385696
	Median	57.49	63.42	50.99	64.6		Median	64.76	74.35	68.12	59.28
	Count	1548	1548	1548	1548		Count	667	667	667	667
	Largest(1)	87.29	92.24	100	94.68		Largest(1)	89.29	92.74	97.16	89.61
	Smallest(1)	40.75	44	35.7	32.41		Smallest(1)	48	48.9	42	39.12
Industrials	Mean	61.49251292	66.58385013	58.31200904	60.98186047						
	Standard Error	0.235115548	0.207923566	0.282903047	0.330235112						
	Median	61.435	66.205	56.93	61.25						
	Count	1548	1548	1548	1548						
	Largest(1)	87.29	92.24	100	94.68						
	Smallest(1)	40.75	44	35.7	32.41						

Table 8 Bloomberg LP financial variable description and notes

VARIABLE DESCRIPTION (from bloomberg LP):
TOBIN_Q_RATIO
Ratio of the market value of a firm to the replacement cost of the firm's assets. The Q ratio is useful for the valuation of a company. It is based in the hypothesis that in the long run the market value of a company should roughly equal the cost of replacing the company's assets. The ratio is computed as follows: (Market Cap + Total Liabilities + Preferred Equity + Minority Interest) / Total Assets   Where: Market Cap is RR250, HISTORICAL_MARKET_CAP for historical periods and RR902, CUR_MKT_CAP for daily ratio   Total Liabilities is RR005, BS_TOT_LIAB2   Preferred Equity is BS061, BS_PFD_EQY   Minority Interest is BS062, MINORITY_NONCONTROLLING_INTEREST   Total Assets is BS035, BS_TOT_ASSET
BS_TOT_LIAB2

Sum of all current and non current liabilities. Figure is reported in millions; the Scaling Format Override (DY339, SCALING_FORMAT) can be used to change the display units for the field.
 INDUSTRIAL & UTILITIES
 Calculated as:
 Current Liabilities + Long Term Borrowings + Other Long Term Liabilities
 Where:
   Current Liabilities is BS050, BS_CUR_LIAB
   Long Term Borrowings is BS051, BS_LT_BORROW
   Other Long Term Liablities is BS052, BS_OTHER_LT_LIABILITIES

BS_TOT_ASSET   INDUSTRIALS   Total Assets: The total of all short and long-term assets as reported on the Balance Sheet.   BANKS   Total Assets: This is the sum of Cash & bank balances, Fed funds sold & resale agreements, Investments for Trade and Sale, Net loans, Investments held to maturity, Net fixed assets,   Other assets, Customers' Acceptances and Liabilities.   FINANCIALS   Total Assets: Total assets is equal to the sum of Cash & near cash items, Short-term investments & securities inventory, Net receivables, Total Long-Term Investments, Net fixed assets, and Other assets.   INSURANCES   Total Assets: Total assets is the sum of Cash & Near Cash Items, Net Receivables, Total Investments, Net Fixed Assets, Deferred Policy Acquisition Costs, and Other Assets   UTILITIES   Total Assets: This account will generally equal Total Assets in the annual report, except when Utility plant is net of deferred income taxes. Deferred income taxes is presented on the credit or liability side of the balance sheet.   This item is balancing both the debit (assets) and credit (liabilities and shareholders' equity) sides.   REITS   Total Assets: Total Assets is the sum of Net Real Estate Investments, Cash and Equivalents, Other Investments, Receivables, Other Assets and Restricted Assets.
SALES_REV_TURN   INDUSTRIALS   Sales/Revenue/Turnover: Total of operating revenues less various adjustments to Gross Sales.   Adjustments: Returns, discounts, allowances, excise taxes, insurance charges, sales taxes, and value added taxes (VAT).   Includes revenues from financial subsidiaries in industrial companies if the consolidation includes those subsidiaries throughout the report.   Excludes inter-company revenue.   Excludes revenues from discontinued operations.   Includes subsidies from federal or local government in certain industries (i.e. transportation or utilities).   BANKS   Sales/Revenue/Turnover: Gross revenue from any operating activity.   Total revenue is defined as the sum of total interest income, investment income, trading profit (loss), commissions and fees earned and other operating income.   Excludes revenue from discontinued operations.   Revenue may be negative due to large trading account losses.   For Net Revenue, please refer to RR209, NET_REV.   Japan: Please see IS297 for Total Operating Revenue (Japan) reported in the summary of company earnings report (Kessan Tanshin).   FINANCIALS   Sales/Revenue/Turnover: Total of interest income, trading account profits (losses), investment income, commissions and fees earned, and other operating income

(losses).

Excludes revenue from discontinued operations.

Revenue may be negative due to large trading account losses.

For Net Revenue, please refer to RR209, NET_REV.

INSURANCES

Sales/Revenue/Turnover

All revenues from any operating activities.

The sum of net premiums earned, realized investment gain (loss), investment income, real estate operations, and other income.

Excludes revenue from discontinued operations.

UTILITIES

Total Revenue:

Includes revenues from electric, gas, water and other operating revenue.

All revenues from any operating activity (principal activities).

Gross revenues less adjustments.

Excludes internal or inter-company revenues, except for privately held companies (utility subsidiaries).

Excludes revenue from discontinued operations.

REITS

Sales/Revenue/Turnover:

Revenues from real estate operating activities. Total of rental income, real estate sales (for Real Estate Operating companies), management and advisory fees, mortgage and note income and other operating income.

Excludes equity in income from unconsolidated entities.

Excludes gain/(loss) on sale of rental properties.

IS_RD_EXPEND

Total research and development expenditures incurred which includes R&D in profit and loss account and capitalized R&D during the period. In the case where total R&D expenditure is not disclosed, this field may return profit and loss account only.

This figure may or may not be gross of government grants, subsidies, tax credits as this depends on the company disclosure. For Jordan, Kuwait, and Oman, this field includes University Fees and Personnel Training Expenses.

Available for industrial and utilities format.

Please reference R&D Expense Adjusted (IM008, IS_OPEX_R&D) for the adjusted value that excludes the impact of abnormal items

ARD_SALES_MKT_ADVERTISING_EXP

Expenses related to a company's marketing and advertising for sales. This expense may include marketing research and public relations. The value is as reported by the company. The account title may be standardized and slightly different from the original account title in the company's financial statement. Figure is reported in millions; the Scaling Format Override (DY339, SCALING_FORMAT) can be used to change the display units for the field.

CAPEX_ABSOLUTE_VALUE

Absolute value of the amount of fixed assets purchased during the fiscal period which is also known as capital expenditures. Unit in millions.

Calculated as:

Capital Expenditures * -1

Where:

Capital Expenditures is RR014, CAPITAL_EXPEND

The Scaling Format Override (DY339, SCALING_FORMAT) can be used to change the display units for the field.

TURNOVER

Total amount traded in the security's currency. This value represents all trade prices, multiplied by the number of shares relating to each price. This value is then summed.

Equity Index:

Total amount traded in the index's currency. This value represents all trade prices for each security that belongs to the index, multiplied by the number of shares relating to each price. This value is then summed for each security and then totaled for the index. The value is scaled by a factor of 1000.

SALES_GROWTH

A percentage increase or decrease of sales revenue by comparing current period with same period prior year. Calculated as:

(Revenue from Current Period - Revenue from Same Period Prior Year) * 100 / Revenue from Same Period Prior Year

Where:

Revenue is IS010, SALES_REV_TURN

Revenue Growth is not computed if Revenue changes signs from prior year to current period.

Please reference Revenue Growth Adjusted Year over Year (F1139, REVENUE_GROWTH_ADJUSTED_YOY) for the adjusted value that excludes the impact of abnormal items.

Table 9 T-stat between countries ESG pillar

		EN			FR			GER		
		E	S	G	E	S	G	E	S	G
FR	E	0.6426	-	-	-	-	-	-	-	-
	S	-	N/A	-	-	-	-	-	-	-
	G	-	-	-2.76538	-	-	-	-	-	-
GER	E	0.8375	-	-	N/A	-	-	-	-	-
	S	-	N/A	-	-	N/A	-	-	-	-
	G	-	-	0.630323	-	-	-2.521	-	-	-
SCAN	E	4.6618	-	-	3.9386	-	-	-4.047	-	-
	S	-	N/A	-	-	N/A	-	-	N/A	-
	G	-	-	0.867993	-	-	1.9888	-	-	N/A

Table 10 T-stat significance level in accordance with the degree of freedom N-2

T-table	EN	FR	GER	SCAN
EN	-	1.9603	1.9603	1.960299
FR	-	-	1.9609	1.961605
GER	-	-	-	1.961227
SCAN	-	-	-	-

Figure 1 BPG test for heteroscedasticity

Dependent Variable: SQUARED_RESIDUALS
Method: Panel Least Squares
Date: 05/13/17   Time: 14:46
Sample: 11/30/2012 1/31/2017
Periods included: 9
Cross-sections included: 1421
Total panel (unbalanced) observations: 10964

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.58865	0.826033	18.87170	0.0000
ENVIRONMENT	3.72E-05	0.007525	0.004937	0.9961
SOCIAL	-0.013571	0.009124	-1.487327	0.1370
GOVERNANCE	-0.010500	0.009570	-1.097156	0.2726
SIZE	-1.156003	0.065210	-17.72749	0.0000
RISK	-0.159524	0.389288	-0.409783	0.6820
CAPEX_TOTAL_ASSETS	-2.519543	4.245044	-0.593526	0.5528
SALES_GROWTH	0.000721	0.000416	1.733065	0.0831
TURNOVER	2.97E-11	5.02E-11	0.591174	0.5544
COUNTRY_LAW_REGIME="English"	-1.703787	0.385722	-4.417137	0.0000
COUNTRY_LAW_REGIME="French"	-1.061917	0.420555	-2.525039	0.0116
COUNTRY_LAW_REGIME="German"	-1.701988	0.417710	-4.074570	0.0000
GICS_INDUSTRY="Consumer Staples"	-0.021490	0.327772	-0.065562	0.9477
GICS_INDUSTRY="Energy"	-0.094792	0.316314	-0.299677	0.7644
GICS_INDUSTRY="Financials"	1.744492	0.309496	5.636552	0.0000
GICS_INDUSTRY="Health Care"	3.012422	0.314689	9.572694	0.0000
GICS_INDUSTRY="Industrials"	-1.112367	0.252630	-4.403143	0.0000
GICS_INDUSTRY="Information Technology"	0.672950	0.281932	2.386923	0.0170
GICS_INDUSTRY="Materials"	-0.877470	0.305453	-2.872685	0.0041
GICS_INDUSTRY="Real Estate"	-1.074867	0.333453	-3.223446	0.0013
GICS_INDUSTRY="Telecommunication Services"	-0.260340	0.453496	-0.574074	0.5659
GICS_INDUSTRY="Utilities"	0.047039	0.341107	0.137902	0.8903

R-squared	0.065370	Mean dependent var		1.367706
Adjusted R-squared	0.063576	S.D. dependent var		7.484104
S.E. of regression	7.242293	Akaike info criterion		6.799757
Sum squared resid	573916.7	Schwarz criterion		6.814410
Log likelihood	-37254.27	Hannan-Quinn criter.		6.804694
F-statistic	36.44299	Durbin-Watson stat		0.338042
Prob(F-statistic)	0.000000			

Figure 2 Test for cross-section FE dummies joint significance

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	55.865112	(1420,9535)	0.0000
Cross-section Chi-square	24473.092817	1420	0.0000

Cross-section fixed effects test equation:
Dependent Variable: TOBIN_Q_RATIO
Method: Panel Least Squares
Date: 05/12/17   Time: 12:53
Sample: 11/30/2012 1/31/2017
Periods included: 9
Cross-sections included: 1421
Total panel (unbalanced) observations: 10964
White cross-section standard errors & covariance (d.f. corrected)
WARNING: estimated coefficient covariance matrix is of reduced rank

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.456252	0.276034	23.38938	0.0000
ENVIRONMENT	0.003939	0.001025	3.843938	0.0001
SOCIAL	-0.008730	0.001198	-7.288051	0.0000
GOVERNANCE	0.003164	0.001442	2.194676	0.0282
SIZE	-0.483401	0.020953	-23.07117	0.0000
RISK	0.459778	0.088942	5.169397	0.0000
CAPEX_TOTAL_ASSETS	-2.909067	0.653855	-4.449103	0.0000
TURNOVER	2.33E-11	6.06E-12	3.843370	0.0001
SALES_GROWTH	0.000117	7.50E-05	1.560991	0.1186

R-squared	0.217486	Mean dependent var	1.904468
Adjusted R-squared	0.216914	S.D. dependent var	1.396806
S.E. of regression	1.236064	Akaike info criterion	3.262562
Sum squared resid	16737.64	Schwarz criterion	3.268556
Log likelihood	-17876.36	Hannan-Quinn criter.	3.264581
F-statistic	380.5928	Durbin-Watson stat	0.254710
Prob(F-statistic)	0.000000		

Figure 3 Test for period FE dummies joint significance

Redundant Fixed Effects Tests
Equation: Untitled
Test period fixed effects

Effects Test	Statistic	d.f.	Prob.
Period F	5.001660	(8,9669)	0.0000
Period Chi-square	40.000922	8	0.0000

Period fixed effects test equation:
Dependent Variable: TOBIN_Q_RATIO
Method: Panel Least Squares
Date: 05/22/17   Time: 15:57
Sample (adjusted): 3/07/2013 1/31/2017
Periods included: 9
Cross-sections included: 1406
Total panel (unbalanced) observations: 9686

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.455463	0.118777	54.34944	0.0000
LAG_ENVIRONMENT	0.004063	0.001152	3.525388	0.0004
LAG_SOCIAL	-0.009156	0.001459	-6.273314	0.0000
LAG_GOVERNANCE	0.003765	0.001530	2.460892	0.0139
SIZE	-0.486409	0.010678	-45.55377	0.0000
RISK	0.507803	0.066546	7.630854	0.0000
TURNOVER	2.56E-11	9.99E-12	2.560864	0.0105
CAPEX_TOTAL_ASSETS	-3.336382	0.740283	-4.506899	0.0000
SALES_GROWTH	6.53E-05	5.34E-05	1.221242	0.2220

R-squared	0.213024	Mean dependent var	1.913322
Adjusted R-squared	0.212373	S.D. dependent var	1.408937
S.E. of regression	1.250408	Akaike info criterion	3.285746
Sum squared resid	15130.19	Schwarz criterion	3.292416
Log likelihood	-15903.87	Hannan-Quinn criter.	3.288007
F-statistic	327.4287	Durbin-Watson stat	0.088305
Prob(F-statistic)	0.000000		