DO INVESTORS APPRECIATE CORPORATE SOCIAL RESPONSABILITY? EVIDENCE FROM THE EUROPEAN UNION

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Abstract

The aim of this paper is to determine if investors appreciate companies that actively engage in their community through corporate social responsibility. We use a correlation test, a Vector Error Correction Model (VECM) and a Granger Causality test in order to compare if the price movement of social responsible companies follows a different trend compared to the evolution of the whole market. For our analysis we use European Thomson Reuters Corporate Social Responsibility Indexes as a proxy for social responsible companies and the STOXX-600 Index as a proxy for the EU market between 2008-2015. Our results indicate that on average CSR companies tend to underperform the market. While the results for the VECM test indicate a lack of cointegration between the price movement of the market and the price of CSR companies, the Granger Causality test indicates a weak relationship. These results are valid both for all CSR companies, as well as companies involved in environmental protection, social responsibility or corporate governance. This implies that investors don't necessarily appreciate the companies that are more involved in CSR, but rather they tend to use other means or methods to asses and evaluate corporate performance.

Key words: Corporate Social Responsibility, European companies, price movement, CSR Indexes

The concept of Corporate Social Responsibility in its current dimension has emerged in the 50' when Bowen wrote on the "Social Responsibilities of a Businessman" book. (Carroll A.B., 1999) Today, social responsibility is aspiring to be a fact rather than just a simple an idea. For example, countries such as Indonesia have attempted to make CSR mandatory, while in the EU, legislation permits voluntariness and discretion of corporations to pick and choose what would constitute their social responsibility initiatives (Andrews N., 2016). Concealing the truth about a company's social actions, it will make "so unreliable that no one will want to play" (Handy, 2002). The markets will empty and share prices will collapse, as ordinary people will find other places to invest their money.

Even if CSR is not a binding mechanism, neglecting its importance may harm not only the company's perception on the market, but its strategic market approach also (Crisan-Mitra C., Borza A., 2015). According to some authors, owners and managers have to consciously assumed the responsibility for the common wellness and to restrain their own interests and authority (Drunker P.F., 1999). In fact, over 95% of the 250 largest companies in the world now report on their corporate social activities.

Although there exists a large literature on the relationship between social performance and financial performance, Margolis and Walsh (2001) offers an excellent overview of the numerous empirical studies, but in the end we still have a lot of miss-matching results. In general, literature provides conflicting evidence in the relationship between CSR practice and firm financial reporting, with some studies indicating a positive relationship (Waddock S.A., Graves S.B., 1997; Wang H., Choi J., 2010; Uadiale O.M., Fagbemi T.O., 2012; Karanovic N., 2014), while others find a negative relationship (McWilliams A., Siegel D., 2000; Aragon-Correa J.A., Rubio-Lopez E.A., 2007).

According to a KMPG analysis from 2011, the financial value of companies comes from two key sources: direct costs saving and an enhanced reputation on the stock market. Thus, companies are increasing their efforts in reporting CSR as a mean to reach high financial and market value, fact also confirmed in 2012 by Flammer's analysis, who has shown that companies experience a significant stock price increase upon the announcement of eco-friendly incentives. Also, according to Karagiorgos T. (2010), companies that adopt CSR strategies and practices may obtain higher stock values due to the fact that in general, stakeholders (shareholders) evaluate positively these activities. This statement is also valid for merger performance and supports the stakeholder

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value maximization view of the stakeholder theory (Den X., Kang J., Sin Low B., 2013). Authors such as Soloman and Hanson for example, have stated in this regard since 1985 the fact that investments in CSR have a big return in terms of image and overall, financial results. So, as shown by some papers, Corporate Social Performance (CSP) is strongly related to Corporate Financial Performance (CFP) (Allouche J., Laroche P., 2005).

But, as L. Dagiliene (2013) proved for the Lithuanian market, companies with high market and book value are far from socially accountable. Also, as some authors suggest, there is a possibility that financial analysts perceive CSR as an agency cost, due to the prevalence of an agency logic, producing pessimistic recommendations for firms with high CSR ratings in front of the possible investors. (Ioannou I, Serafeim G., 2014).

Another dimension, revealed by some authors, indicates that while CSR does not have a huge positive impact on a firm's short-term financial performance or market value, it may offer a remarkable long-term fiscal advantage, fact that may be of great interest for current and future investors and that it may conduct to an increase in share prices. But, there will always be authors as M. Friedman (1962) who, in particular, doubted corporate social responsibility, arguing that the only social responsibility of a firm is to maximize a company's profits.

Also, modern theoretical and empirical analyses indicate that companies can strategically engage in socially responsible activities in order to increase private profits. As stated by Hernandez-Murillo and Martinek (2009), stake-holders may value the company's social efforts, thus the company may benefit from a better reputation on the market and attract new investors that might influence the shares price go up. As Karanovic (2014) stated, businesses increasingly incorporate social issues into their strategies, in order to reflect their actual business goals, improving their degree of transparency, with overall positive effects. This kind of strategies will have a direct positive impact on cost savings or revenues in the short to medium term, while making a significant contribution a firm's value. (Rangan *et. al*, 2012)

While most of studies that evaluate the relationship between CSR practices and price movement of listed companies focus their attention on specific markets as US stock market or other countries, our analysis is focused on the European Union's stock market, due to the specifics characteristics of the common market. We believe, this is important because investors use CSR a mean to evaluate a company, and future price movements should reflect this behavior, and the price movement of CSR companies should differ from the price movement of the market. If investors don't necessary, use solely CSR as a mean to evaluate corporate performance we won't see any differences between the price movement of CSR companies and the whole market.

In order to determine if investors appreciate companies engaged in corporate social activities we use a correlation test, a Johansen cointegration test and a Granger Causality test. Our database is made up from the prices for the STOXX-600 Index and the European Thomson Reuters Corporate Social Responsibility Indexes, between the designated timeline 2008 to 2015.

Our basic hypothesis is that engaging in corporate social activities influences the companies value, thus price movement of STOXX-600 Index will differ with regards to our chosen CSR Indexes. We believe, that our novel approach, sample, methodology and results, marks another dimension in the existent literature that deals with the influence of CSR on a company's stock prices and market value.

MATERIAL AND METHOD

In order to asses if the price movement of companies that actively engage in their community through corporate social responsibility differs from the price movement of the whole market we will use the Thomson Reuters Corporate Social Responsibility Indexes as a proxy for CSR companies and the STOXX-600 Index as a measure for the whole market. Our period of analysis is between 1 January 2008 to 30 November 2015, due to the maximum availability of the four CSR indices. The source of the data is Thomson One Database.

Thomson Reuters Corporate Social Responsibility Indexes are composite indexes, that are made up of selected companies with superior ratings in Environmental and Governance Practices. Individually the four Thomson Reuters Corporate Social Responsibility Indexes are made up from: actively engaged companies in CSR in all its dimensions (social, environmental and corporate governance pillars) for *Thomson Reuters CRI Europe ESG* - **TRSGEU**, environmental friendly companies for *Thomson Reuters CRI Europe Environmental* - **TRENVEU** corporate governance principles for *Thomson Reuters CRI Europe Governance* - **TRCGVEU** social responsible companies for *Thomson Reuters CRI Europe Social* – **TRSCEU**.

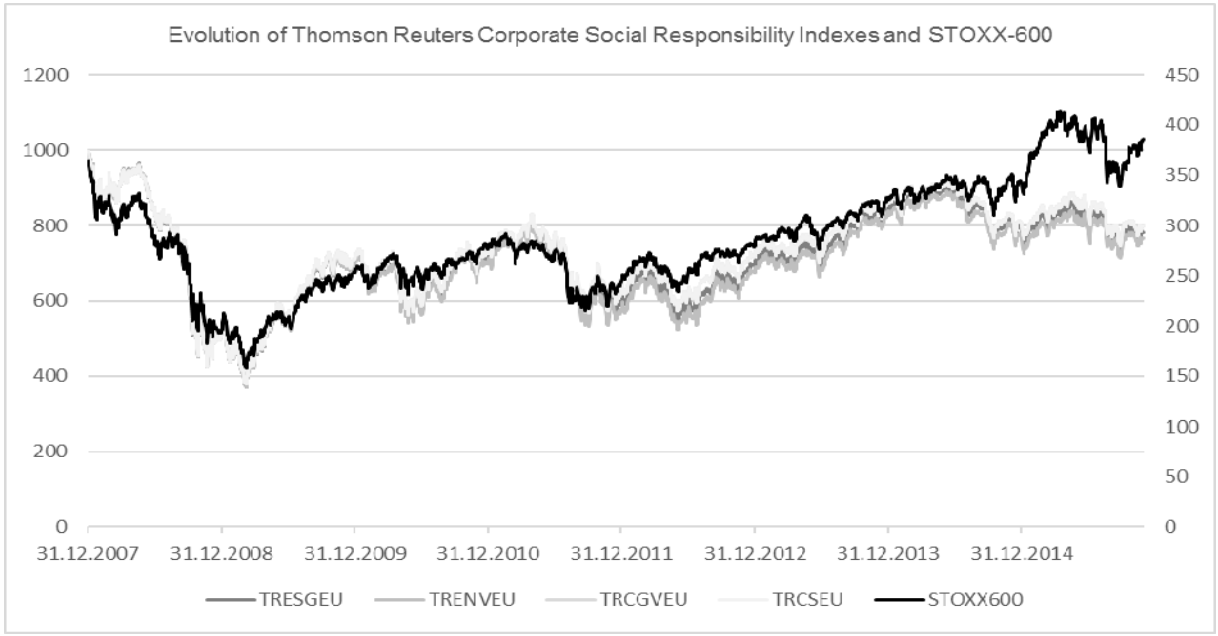

Figure 1 **The evolution of Thomson Reuters Corporate Social Responsibility Indexes and The STOXX-600 Index between January 2008 to November 2015**

Meanwhile the STOXX-600 Index is a composite index, that it's made up from 600 companies from 18 countries in Europe varying from all sizes, large medium or small spanning in all the major economy components such as financial, healthcare, consumer durables, energy, technology etc. The STOXX-600 Index emulates the evolution of the western European capital markets.

Figure 1 depicts the evolution of the four Thomson Reuters Corporate Social Responsibility Indexes for the European market in contrast with the evolution of the whole Western European capital markets depicted by the STOXX-600 Index.

The data from figure 1 reveals that despite having 4 distinct TRCSR Indexes, which emulate all the pillars of corporate social responsibility, the price movement (depicted in the left axis) doesn't vary in between these types of companies. This could indicate that most CSR companies engage in all types of social and environmental behavior, and there isn't a significant difference in composition with respect to each individual Index.

In contrast we can observe that for most of our analysis period the price movement of STOXX-600 (depicted in the right axis) differs from the TRCSR Indexes. While the difference in price movement between TRCSR Indexes and STOXX-600 is marginal between 2008-2014, in the year 2015 there is an obvious change in price movement. This indicates that whole market experienced higher average daily returns in contrast to lower average returns for TRCSR Indexes. Further analysis is required.

In order to compare the price movement of the CSR companies and the price movement for the whole market: we will compare the daily returns of the indexes computed as in (*equation 1*):

$$R_t = \ln\left(\frac{P_t}{P_{t-1}}\right) \qquad (1)$$

Where: R_t – is the daily return, P_t and P_{t-1} – are the prices at the time t and $t-1$.

Table 1 presents the descriptive statistics of the data that we will use in our analysis. We can observe that on average between January 2008 and November 2015 the companies in all our four TRCSR Indexes experienced underperformance with respect to the evolution of the whole market. While the average daily return for the whole western European market was 0.2686%, the environmental friendly companies TRENVEU underperformed by -1.2875%, corporate governance companies TRCGVEU by -1.0926%, social responsible companies TRSCEU by -1.4161% and the active CSR companies TRSGEU by -1.1905%. This might suggest, that the least beneficial aspect that investors appreciate is the social involvement, while corporate governance condition matters the most.

With respect to the price movement of CSR companies in the past year, we can observe that only environmental friendly companies achieved positive results, while companies with higher levels of CSR practices achieved average negatives returns, while the whole market was under a bull sign. The difference in price movement between CSR companies and the market is still obvious.

Table 1

Descriptive Statistics and Preliminary Analysis of the Data

	STOXX-600	TRCGVEU	TRCSEU	TRENVEU	TRESGEU
Mean	0.002686	-0.010926	-0.014161	-0.012875	-0.011905
Median	0.025165	0.004465	0.000000	0.000000	0.001478
Maximum	9.409957	11.91302	11.42033	11.48844	11.62800
Minimum	-7.929709	-9.951881	-9.850347	-9.818244	-10.05973
Std. Dev.	1.341532	1.598157	1.631350	1.637634	1.624243
Skewness	-0.095344	-0.010076	-0.011051	0.005992	-0.008253
Kurtosis	9.220379	10.26942	9.182091	9.413526	9.807562
Jarque-Bera	3330.735	4544.662	3286.811	3537.477	3985.513
Probability	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	5.544903	-22.55024	-29.22885	-26.57301	-24.57102
Sum Sq. Dev.	3712.797	5269.121	5490.270	5532.647	5442.538
Observations	2064	2064	2064	2064	2064
Average Daily Return – Whole Sample	0.2686%	-1.0926%	-1.4161%	-1.2875%	-1.1905%
Average Daily Return – 2015	0.4977%	-0.2934%	-0.4208%	0.0728%	-0.1790%

In order to test if the price movement of CSR companies is different from the price movement of the whole market, we will employ a classical set of test for measuring relationships between two stock markets. First we will use a simple correlation relationship in order to see if the average price movement of the whole Western European market (depicted by STOXX-600) differs from the price movement of the CSR companies (depicted by TRCSR Indexes).

After the initial correlation test, the analysis we will test for stationarity and cointegration, using the Agumented Dickey Fuller test (Dickey, Fuller, 1981) and the Johansen (1991) test for cointegration.

In order to test for stationarity, we will use the ADF test with a constant and trend as in *equation (2)*. If the corresponding critical value from the ADF test is smaller than the value of the test, then residuals from the cointegration test are stationary and there is cointegration with a single breaking point.

$$\Delta y_t = \varphi y_{t-1} + \beta + \gamma t + \sum_{i=1}^{p} \delta_i \Delta y_{t-i} + \varepsilon_t \quad (2)$$

Where: Δy_t is the current value of one of our Indexes and φy_{t-1}.

Furthermore, to better understand if there is a difference between the price movement of the whole market and CSR companies we will use a VAR model proposed by Johansen (1991) that tries to capture the long term influence of one variable against the other. The VAR model is selected after an initial phase of testing after the unit roots testing. The best model we obtain is the Vector Error Correction Model, a restricted and simpler model of VAR. We will use in our test the following VECM specifications from (*equations 7 and 8)*:

$$\Delta Y_t = \beta_{10} + \beta_{11}\Delta Y_{t-1} + \cdots + \beta_{1p}\Delta Y_{t-p} + \cdots + \gamma_{1p}\Delta X_{t-1} + \alpha_1(Y_{t-1} - \theta X_{t-1}) + u_{1t} \quad (3)$$

$$\Delta Y_t = \beta_{20} + \beta_{21}\Delta Y_{t-1} + \cdots + \beta_{2p}\Delta Y_{t-p} + \cdots + \gamma_{2p}\Delta X_{t-1} + \alpha_2(Y_{t-1} - \theta X_{t-1}) + u_{2t} \quad (4)$$

The two VECM specification from *equation (7) and (8)* use in the estimation formula two stationary time series data with zero mean: Y_t which is the daily market return for the STOXX-600 Index and X_t is the daily return of one of the four TRCSR Indexes. The model uses *p* as the number of lags, while $(Y_{t-1} - \theta X_{t-1})$ is the error correction term that helps improve the estimation in the equation.

The final step in our analysis is an assessment of the Granger (1968) causality test, to see if the current prices of CSR companies is influenced by the price movement of the whole market, or the price changes are due to other factors. Using the estimates obtain after the VECM estimation we can test what is the direction of causality between the price movement of the whole market compared to the price movement of CSR companies.

$$X_t = \sum_{j=1}^{m} a_j X_{t-1} + \sum_{j=1}^{m} b_j Y_{t-1} + \varepsilon_t \quad (5)$$

$$Y_t = \sum_{j=1}^{m} c_j X_{t-1} + \sum_{j=1}^{m} d_j Y_{t-1} + \eta_t \quad (6)$$

Where: ε_t and η_t are two distinct uncorrelated white noise with the following individual characteristics *E[E,E]=0=E[y,y],* for every single $s \neq t$. The Granger causality test will allow us to examine if the price movement of CSR companies can influence the price movement of the whole market, or the relationship involves only a link between the whole market to the CSR companies.

RESULTS AND DISCUSIONS

The results from table 2 of the Pearson Correlation test between the price movement of the four TRCSR Indexes and the average price movement of the whole western capital marked proxied by the STOXX-600 Index point to some interesting remarks.

Because the correlation coefficient between all four TRCSR Indexes is at least 0.982 we can conclude that the price movement of our four CSR indexes is similar, which can be attributed to a similar composition of companies. This could indicate that there isn't a significant difference between companies that are more involved in all the pillars of CSR TRSGEU, or in companies that are environmental friendly TRENVEU, or respect solid corporate governance principles TRCGVEU or are actively engaged in social activities TRSCEU. This results confirm the previous remarks from figure 1.

With respects to the similarities between the price movement of our four CSR indexes and the movement of the whole market, we can observe a highly synchronous price movement with Pearson correlation coefficient above 0.805. On a particular note the price movement of companies that respect all the CSR principles follows more closely the evolution of the market, while the price movement of community and socially involved companies differs the most from the market.

In order to test if the two series are cointegrated we must first test the indexes for the presence of stationarity in the logarithmic index prices, of the fist log difference.

Results from table 3 indicate that the null hypothesis of unit root is accepted for the indices, with an assumed risk of 5%. Furthermore, when testing the stationarity of the log difference values, the null hypothesis is rejected, which means that our series are integrated in the order of 1 I(1).

Because we want to asses, if there is a relationship between the price movement of the whole market and the price movement of CSR companies we will use VAR models. An important part of our estimation is to determine what is the optimum number of lags we use in our estimation. We use the AIC (Akaike Info Criterion) as a mean of selecting optimum lag length. For all the TRCSR Indexes the optimum lag indicated in our estimates is lag 2.

The Johansen test of cointegration can be used to observe if there any of our TRCSR Indexes price movement is cointegrated with the evolution of the market. The null hypothesis of the Johansen is that our indexes are not cointegrated with the whole market against the alternative of at least one cointegrated vectors.

Table 2

Correlation coefficients

	TRESGEU	TRENVEU	TRCGVEU	TRCSEU	STOXX600
TRSGEU	1				
TRENVEU	0.998	1			
TRCGVEU	0.997	0.991	1		
TRCSEU	0.992	0.998	0.982	1	
STOXX600	0.851	0.827	0.869	0.805	1

Table 3

Unit root tests for the daily stock market indices in log form

	Index in the log value		Index in the first log difference	
	Constant	Trend	Constant	Trend
TRSGEU	-2.494	-3.202	-45.60	-45.62
	(0.1169)	(0.084)	(0.000)	(0.000)
TRENVEU	-2.719	-3.334	-45.48	-45.50
	(0.070)	(0.061)	(0.000)	(0.000)
TRCGVEU	-2.570	-3.420	-45.50	-45.52
	(0.099)	(0.058)	(0.000)	(0.000)
TRCSEU	-2.837	-3.334	-45.32	-45.35
	(0.053)	(0.061)	(0.000)	(0.000)
STOXX600	-1.292	-3.321	-45.71	-45.78
	(0.635)	(0.059)	(0.000)	(0.000)

First row is the result of the ADF test. The second row in parenthesis is the probability

Table 4

Test for the number of Cointegration vectors

STOXX-600 and TRCSR Indexes		λ_{trace}	Critical value 5%	λ_{max}	Critical value 5%
TRSGEU	r=0	8.091	15.49	0.003	14.26
	r≤1	0.027	3.841	0.001	3.841
		(0.867)		(0.867)	
TRENVEU	r=0	0.003	15.49	0.003	14.26
	r≤1	0.0004	3.841	0.0004	3.841
		(0.925)		(0.925)	
TRCGVEU	r=0	0.003	15.49	0.003	14.26
	r≤1	0.0004	3.841	0.0004	3.841
		(0.977)		(0.977)	
TRCSEU	r=0	0.004	15.49	0.004	14.26
	r≤1	0.00038	3.841	0.00038	3.841
		(0.928)		(0.928)	

Note: First row is the coefficient the second row is the probability

Our estimates on the Johansen test depicted in table 4 indicated that neither of our CSR Indexes are not cointegrated with the market, according to the critical values of λ_{trace} and λ_{max} from table 4. This indicates that the price movement of TRCSR Indexes is different compared to the whole market proxied by STOXX-600 Index. Our results, suggest that investors might take into consideration CSR aspects when assessing price level for companies, and future price movement of either of our four types of CSR companies reflects this behavior.

A further analysis into the relationship between aspects governing CSR and the perception of investors is done via Granger (1969) causality test, which allows to qualify what is the predictability power of X if it's the cause of Y, or X explain Y. The Granger causality test involves qualifying how much from the current level of the dependent variable Y can be predicted based on historical prices of Y and the inclusion in the formula of power predictability of another variable independent variable X.

Based upon the result from the Granger causality test from table 5 we cannot reject the hypothesis that the market doesn't influence the price movement of all our TRESGEU and TRCGVEU at the 10% level. Meanwhile we reject that there isn't any causality between the price movement of the market and TRENVEU or TRCSEU at the 5% level.

This intricate results suggests that the price movement of actively engaged companies in CSR (TRSGEU) and environmental friendly companies (TRCGVEU) it's quite different from the whole market. This could imply that investors take into consideration not only financial aspects related to companies but also take into consideration CSR aspects. Meanwhile, in the case of companies that respect corporate governance principles (TRGVEU) or companies that are actively involved in the community (TRSCEU), their price movement it's quite similar to the market.

On a general note, neither of our TRCSR Indexes influence the market, suggesting that indeed the constituents of the Indexes are selected upon certain criteria's that differentiate them from the market.

In the end our empirical results provide intriguing aspects when assessing the price movement of CSR companies against the whole market. While our initial assessment based upon the trend of the Indexes indicated an obvious shift in the year 2015 for the market, this was further supported by the results from the correlation analysis. But the most important clue that investors appreciate CSR came from the result of the Johansen test of cointegration or VECM test, that revealed that neither of our four Indexes is cointegrated with the whole market, thus the price movement of CSR companies differs from the market.

Table 5

Granger Causality: STOXX-600 and TRCSR Indexes

Granger test Hypothesis: **STOXX-600 and TRCSR Indexes**	F-Statistic	Probability
STOXX-600 does not cause TRSGEU	2.771*	0.062
TRSGEU does not cause STOXX-600	0.896	0.402
STOXX-600 does not cause TRENVEU	3.036**	0.048
TRENVEU does not cause STOXX-600	0.947	0.3880
STOXX-600 does not cause TRCGVEU	2.409*	0.090
TRCGVEU does not cause STOXX-600	0.802	0.448
STOXX-600 does not cause TRCSEU	3.366**	0.034
TRCSEU does not cause STOXX-600	1.016	0.361

Note: ***, **, * means statistical significant at 1%, 5% and 10%.

Further proof for the existence of a different price movement came from the Granger causality test that revealed a slightly different price movement between the market and all the TRCSR Indexes.

In terms of the influence of different aspects of CSR on price movement, our results suggest that actively engaged companies in CSR, and environmentally friendly companies are perceived better by investors while corporate governance and social responsibility seem to less influential in investors decisions. Despite the potential increase in visibility that CSR implies on investors, overall all our Indexes underperformed the market when considering only asset price movement. Thus, investors don't necessarily use only CSR aspects when considering investment opportunities, or price movement.

CONCLUSIONS

The aim of this paper was to determine if investors appreciate companies that actively engage in their community through corporate social responsibility.

We used a correlation test, a Vector Error Correction Model (VECM) and a Granger causality test in order to compare if the price movement of CSR companies differs from trend of the whole market. For our analysis we used European Thomson Reuters Corporate Social Responsibility Indexes as a proxy for social responsible companies and the STOXX-600 Index as a proxy for the EU market between 2008-2015.

Our results indicate that the price movement of CSR companies follows a different path that the whole market. The VECM results indicate the lack of a cointegration between TRCSR Indexes and the whole market, while the Granger causality test indicate a weak relationship. Furthermore, our results suggest that investors appreciate more actively engaged companies in CSR, and environmentally friendly companies while corporate governance and social responsibility seem to less influential in investors decisions. Despite, the growing importance of CSR in the past years, this hasn't translated into a genuine increase in price performance of CSR companies, who tend to underperform the market according to our results. This is true, for all types of CSR companies.

This implies that investors don't necessarily appreciate the companies that are on average more involved in CSR, but rather they tend to use other means or methods to asses and evaluate corporate performance.

Despite our best efforts, our results have some limits due the relative small period of analysis, inherent issues when comparing different Indexes built on different methodologies, and the lack of a deeper analysis into the real constituents of the indexes. This leaves room for further research.

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