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THE RESOURCE-BASED VIEW OR STAKEHOLDER THEORY: WHICH BETTER EXPLAINS THE RELATIONSHIP BETWEEN CORPORATE SOCIAL RESPONSIBILITY AND FINANCIAL PERFORMANCE?

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Abstract

Stakeholder behavior and reputation are held to be the two main factors explaining the positive correlation between corporate social responsibility and financial performance. To date, however, researchers have not determined which of these factors is of greater significance. The results of this study indicate that the relative effects of stakeholder behavior and reputation are affected by market conditions. During a crisis, the former factor plays a greater role, while the latter becomes more prominent during the period of market recovery in the wake of a crisis. These findings have important practical ramifications as they provide guidance to companies on how to allocate their CSR budgets depending on the state of the economy to maximize their effect on the bottom line.

Keywords: Corporate Financial Performance (CFP), Corporate Social Responsibility (CSR), Ethical Mutual Funds, Reputation, Resource-based View (RBV), Socially Responsible Investments (SRI), Stakeholders Theory

1. Introduction

The relationship between corporate social responsibility (CSR) and financial performance has figured prominently in the literature for many years now. While the results of existing studies provide somewhat mixed evidence, it is generally thought that corporate social responsibility has a beneficial effect on the companies' bottom lines. One of the reasons why the results are heterogeneous is that positive returns on CSR investment are of specific rather than universal nature, which means that they are not always achieved, and not by every company. Whether or not CSR will translate into profits depends on many factors determining the firm's operations. It is therefore little wonder that a favorable effect of corporate social responsibility on financial

performance has not been corroborated by all the measures applied, which were based on very different datasets (Barnett, 2007).

Given the above, instead of investigating whether corporate social responsibility improves financial performance, it seems more interesting to identify those situations in which such improvement occurs and to elucidate the underlying mechanisms. Indeed, this avenue of research would afford a better understanding of the determinants of the relationship between these two variables. Furthermore, as CSR does not seem to affect financial performance directly, it is also necessary to uncover the mediating elements. Based on the resource-based view and stakeholder theory, two such elements have been proposed: reputation as a component of intangible assets and stakeholder behavior motivated by corporate social responsibility. The objective of this study was to determine which of them is more significant.

To the best of our knowledge, this is the first study that addresses the issue outlined above. In previous theoretical research it has been assumed that both elements influence the relationship between CSR and financial performance, but it has not been empirically established which of them exerts a greater effect. Therefore, settling the question of whether corporate value is affected to a greater degree by intangible assets in the form of reputation or by favorable stakeholder behavior can be a salient contribution to this field of research.

The paper is organized as follows. The first section offers a review of existing studies addressing the influence of corporate social responsibility on financial performance and corporate value. The explanations of this phenomenon proposed in the literature are presented here with a focus on reputation and stakeholder behavior as elements potentially constituting the mediating mechanism of the relationship between CSR and financial performance. The subsequent section outlines possible ways of establishing which of them, reputation or stakeholder behavior, exerts a greater effect on corporate value. That is followed by a discussion of research methodology, a description of data collection and analysis involving linear regression and comparison of means, and a presentation of results showing that corporate value tends to be enhanced by both reputation and stakeholder behavior. Which of these factors is more significant at a given time depends on the state of the economy as the former plays a greater role at a time of crisis, while the latter becomes more prominent during the period of market recovery in the wake of a crisis. The discussion section sets forth possible explanations for the causes of this phenomenon and indicates directions for further research. The paper ends with conclusions.

2. Theoretical Background and Research Hypotheses

The debate over the relationship between corporate social responsibility and financial performance concerns the existence, nature, and direction of correlation between these variables. Margolis and Walsh (2003) identified 127 empirical studies on the subject published between 1972 and 2002. In 109 of them corporate social responsibility was treated as an independent variable affecting financial performance, in 22 it was a dependent variable, while four papers analyzed both cases. Most studies were devoted to the influence of CSR on financial performance. As many as 54 papers reported a positive effect of corporate social responsibility, while 7 papers arrived at the opposite results. Furthermore, in 28 works that influence was not significant, and another 20 authors stated that their findings were inconclusive. As can be seen, the results of empirical studies have not provided definitive answers, although both in literature reviews (Orlitzky *et al.* 2003) and in the latest empirical studies (Brammer and Millington, 2008; Lev *et al.* 2010; Barnett and Salomon, 2012; Ramchander *et al.* 2012; Demetriades and Auret, 2014), the prevailing view is that corporate social responsibility exerts a beneficial effect on the bottom line. Despite some criticism leveled at the research methodology used in the above studies (McWilliams and Siegel, 2000), the objections articulated by the opponents of the CSR concept (Friedman, 1962; Friedman, 1970; Jensen, 2001) concerning the negative consequences of its implementation seem to be rather poorly corroborated by empirical research.

The underlying causes of the relationship between corporate social responsibility and financial performance remain unclear, as this relationship is not direct and its mediating

mechanisms are evasive. Although no satisfactory explanations of the problem have been proposed to date, many possible avenues of investigations have been suggested. According to Brammer and Millington (2008), corporate social responsibility may be the foundation for the development of the company's differentiation strategy. This may in turn lead to the company's gaining an enduring competitive advantage and achieving above-average outcomes in the long-term (Porter, 1985). Corporate social responsibility also implies new business opportunities which open additional vistas for the company's growth (Porter and Kramer, 2011). However, in the context of financial performance, CSR is most often associated with its role in generating reputation and stakeholder behavior (Neville *et al.* 2005).

2.1. Reputation and Stakeholder Behavior as Mechanisms Mediating between Corporate Social Responsibility and Financial Performance

In the literature it is widely believed that corporate social responsibility is a major pillar of corporate reputation (Fombrun and Shanley, 1990; Brammer and Pavelin, 2004; Schnietz and Epstein, 2005; Siltaoja, 2006; de Quevedo-Puente *et al.* 2007; Bertels and Peloza, 2008; Soppe *et al.* 2011). If this is true, then explanations for the relationship between corporate social responsibility and financial performance should be explored from the perspective of the resource-based view (Surroca *et al.* 2010) as reputation may be conceptualized as a resource having certain properties deployable by the company to achieve a sustainable competitive advantage (Hall, 1992; 1993). Thus, CSR expenditures may be considered an investment meant to create within the company a resource that cannot be purchased in the market, but which can, thanks to its features (Barney, 1991), lead to a competitive advantage reflected in improved financial performance. According to the concept of asset stock accumulation (Dierickx and Cool, 1989), the production of this resource requires choosing appropriate time paths of flows, which in this case means consistent investment over a period of time prior to the formation of the company's reputation. This would explain not only the lag between CSR expenses and financial performance improvement, but also the often seen initial decline in profits at the outset of a company's involvement in CSR. The association between corporate social responsibility and reputation makes it also possible to account for the impact of CSR on the market value of the company, as the latter also reflects the value of intangible assets. As reputation is a component of those assets, it affects their overall value and, by the same token, the value of the company as a whole (Srivastava *et al.* 1997; Brown, 1998; Black *et al.* 2000).

In their endeavors to elucidate the mechanisms mediating between corporate social responsibility and financial performance, many researchers also draw on stakeholder theory (Freeman, 1984; Jones, 1995) arguing that in the case of companies with higher CSR standards, stakeholders are ready to provide the resources they control on more favorable terms and are less likely to undertake detrimental actions (Fombrun *et al.* 2000). As a result, such companies report better financial performance and carry fewer risks. In this context, the most frequently cited example is customer behavior. It has been shown that customers' corporate associations concerning the degree of corporate social responsibility exhibited by a given company affect their perceptions of its products (Brown and Dacin, 1997), purchase intentions (Sen and Bhattacharya, 2001), acceptable prices (Obermiller *et al.* 2009), satisfaction (Luo and Bhattacharya, 2006), trust (Pivato *et al.* 2008), and identification with the company (Perez, 2009; Peloza and Papania, 2008). All of these factors have a direct (e.g., purchase intentions or price) or less direct (product evaluation, satisfaction, trust, and identification) effect on the company's performance.

Nevertheless, it is difficult to establish how exactly the mechanisms mediating between CSR and financial performance operate as it is not known to what extent they are influenced by other factors. In other words, it is unclear whether returns on investment in corporate social responsibility are more strongly affected by resource gains in the form of reputation (higher value of intangible assets) or by the favorable behavior of stakeholders motivated by the company's CSR policy. This question is not only of academic, but also of practical, value as in the former case it would be more effective to orient CSR activity towards strengthening

reputation as a component of intangible assets, while in the latter case it would be more beneficial to shift emphasis to stakeholder relations.

2.2. Ways to Identify the Explanatory Power of the Various Mediating Mechanisms

Due to their fragmentary nature, the results of existing research have not provided clear answers in this area. Previous studies have been based on a range of very different premises. Some of them examined relationships between several isolated variables representing different dimensions of a company's CSR policy and financial performance (e.g., the correlation between charitable contributions and future revenues, see Lev *et al.* 2010), but without a comprehensive treatment of individual CSR dimensions. While in other studies corporate social responsibility was measured by independent organizations specialized in monitoring this area of corporate activity, thanks to which CSR was more fully reflected in the data, the applied financial metrics were limited to either the market or accounting context, without integrating both (Ramchander *et al.* 2012; Barnett and Salomon, 2012; Brzeszczynski and McIntosh, 2014). None of those approaches has provided a viable platform for investigations aimed at revealing the strongest determinants of the relationship between corporate social responsibility and financial performance. Indeed, such research has to address the overall CSR policy of a company as its various aspects may differently affect reputation and stakeholder relations. Furthermore, measures incorporating both the market and accounting contexts should be employed because the former reflects reputation and the latter is more closely linked to stakeholder relations. The above research prerequisites are best fulfilled by studies in which both corporate social responsibility and financial performance are gauged by independent organizations, such as ethical investment funds, which not only specialize in CSR and financial assessment, but are vitally interested in its accuracy.

Ethical funds differ from other funds in that the composition of their portfolios is guided not only by economic criteria, but also by non-economic factors linked to environmental, social, and corporate governance (ESG) (Cowton, 1999; Taylor, 2001). Nonetheless, the financial returns of both ethical and non-ethical funds primarily depend on changes in the market value of companies included in their portfolios. It has been suggested that higher stock prices of socially responsible companies would allow ethical funds to outperform non-ethical ones (Renneboog *et al.* 2008a). Thus, a comparison of the mean rates of return achieved over a given period of time by ethical and non-ethical funds would provide an indirect measure of the effect of CSR factors on their value. This study presents measurements from three periods: the year 2007 as the baseline, the year 2008 as a time of crisis, and the years 2009-2013 as a period of market recovery following the crisis. As each of these periods corresponds to different market conditions, it is possible to check what external conditions amplify or attenuate the effect of CSR on the bottom line. Furthermore, a separate treatment of periods of crisis and market recovery is helpful in elucidating which factor (reputation as an intangible asset or stakeholder behavior) plays a more prominent role in shaping the relationship between corporate social responsibility and financial performance.

This relationship can be measured because even if companies do not modify their CSR policies, the value of their reputation fluctuates with the business cycle, pursuant to a certain pattern, exerting a systematic effect on their market value. In turn, stakeholder behavior motivated by corporate social responsibility tends to remain unchanged and does not affect that value. According to Fombrun and van Riel (2004), the value of reputation decreases during a crisis (bear market) and increases its aftermath. They observed that "higher reputation companies attract investors in bull markets but are also more vulnerable to market downturns, during which they can underperform lower reputation companies" (Fombrun and van Riel, 2004, p.82). This has been corroborated by Dabrowski's study (2010), which showed that the MV/BV ratio in companies with the best reputation (ten top firms in Fortune's AMAC ranking) declined more markedly during economic downturns than that of DJIA companies, while it also grew more dynamically in the wake of crises, when the economy was recovering. This phenomenon may be explained by a shift in investors' attitude to risk -during a downturn their appetite for risk diminishes, and consequently they attach lower value to intangible assets (especially such as

reputation, which are difficult to precisely appraise), while after the economy rebounds they become more optimistic and are likely to evaluate intangible assets in a less conservative way. Furthermore, investors tend to behave in line with the words of the former FED chairman, Alan Greenspan, who stated in 2002 that “a firm is inherently fragile if its value added emanates more from conceptual as distinct from physical assets” (Ip, 2002).

The above considerations are believed to affect the value of companies in the portfolios of ethical funds, and by the same token, the bottom line of those funds. Therefore, the following research hypotheses were formulated for the presented study:

H1: During a crisis the mean rate of return on ethical funds declines more rapidly than that on non-ethical funds.

H2: In the aftermath of a crisis the mean rate of return on ethical funds increases more rapidly than that on non-ethical funds.

If the results confirm the above hypotheses, this will mean that reputation has a stronger effect on the relationship between corporate social responsibility and financial performance. If the opposite is true, then stakeholder behavior will be shown to play a more significant role in that respect.

3. Methodology

Previous research into the investment attractiveness of socially responsible companies has often been based on direct investment models: authors constructed portfolios of SRI stocks (e.g., Derwall *et al.* 2005) or adopted a long-short strategy, taking long positions in stocks that met the CSR criteria and short positions in stocks that did not (Kempf and Osthoff, 2007). Returns on socially responsible companies have also been studied indirectly by comparing the performance of ethical funds to that of non-ethical ones (used as a benchmark). Such studies have usually focused on individual countries; for instance, US funds were investigated by Goldreyer and Diltz (1999) and Bello (2005), Dutch funds by Scholtens (2005), and Australian funds by Humphrey and Lee (2011). In terms of international research, Plantinga and Scholtens (2001) analyzed funds from three European countries (Belgium, France, and the Netherlands), Cortez *et al.* (2009) covered seven European countries, Bauer *et al.* (2005) studied funds from three countries on two continents (USA, UK, Germany), while Renneboog *et al.* (2008a) included in their analysis as many as 17 countries from Europe, Asia, and North America.

Socially responsible investment has also been evaluated, both on a local and international scale, using ethical indexes (Ruiz-Palomino *et al.* 2015). Statman (2000) compared the performance of the Domini Social Index (the first measure of this kind) with S&P 500, a broad stock market index. Three years before that, a similar study was conducted by Sauer (1997). In turn, Schroder (2007) analyzed as many as 29 different SRI indexes in relation to conventional indexes.

However, due to considerable methodological differences in terms of methods of portfolio construction, temporal and geographic ranges, and measures of fund performance, the results of existing studies present a rather incoherent picture. These studies can be grouped into four basic categories: those reporting underperformance of ethical funds as compared to non-ethical ones (Renneboog *et al.* 2008b), those indicating outperformance of ethical funds (Minor, 2007), those not reporting significant differences between the two types of funds (Kurtz, 1997), and those returning mixed results (Climent and Soriano, 2011).

In addition, several authors have conducted meta-analyses aimed at elucidating the underlying causes of the above discrepancies in reported results. In the latest paper of this kind, Rathner (2013) reviewed 25 studies comparing ethical and non-ethical funds and identified two statistically significant sources of performance differences: survivorship bias (exclusion of funds that did not survive the study period) and geographic differences. He also noted that market conditions may have led to under- or overrating of the performance of ethical funds, but was unable to account for that. In the present study, an explanation for this phenomenon is sought

neither in the funds themselves nor in investor behavior, as it was done in previous publications, but in terms of changes in the value of portfolio companies.

The existing literature has analyzed the returns on investment and financial performance of ethical and non-ethical funds, but the fundamental factor of changes in the value of portfolio companies has been largely left out. To incorporate this factor, a different method of gauging fund performance is needed. The Treynor, Jensen, Sharpe, and Fama ratios, as well as Carhart's APT, which were used in previous studies, represent different measures of risk inherent in market volatility (systemic risk) or of changes in the returns of individual funds (specific risk). Thus, they primarily reflect short-term market phenomena. In contrast, to emphasize the role of fundamental changes in the portfolio companies, this study excluded variability other than that influencing ex post annual performance.

3.1. Sample and data

The first step in the study involved a preliminary analysis of the market of ethical funds. In 2013 in Europe there were 922 retail ethical funds, out of which 435 were equity funds (Vigeo, 2013). In order to ensure the greatest possible homogeneity, it was decided that both ethical funds and non-ethical funds (control group) should be drawn from one market only. The greatest number of retail ethical funds was found in Great Britain. According to Vigeo, "[the UK] is the oldest SRI market in Europe [...] that continues to be the second largest market after France. Equity is the most common asset class for the UK responsible investors" (2013, p.25).

Data on investment funds operating in the British market were obtained from many sources. Information on the number and type of ethical funds was taken from the Vigeo's report (2013). As there was no comprehensive database of funds specifying their net assets, age, annual rates of return, investment policies, etc., several data sources were tapped (Bloomberg, Reuters, and Sedol databases as well as The Financial Times and Morningstar information services), from which the necessary information was extracted using the ISIN identifiers of the funds' shares.

Analysis of a preliminary list of 72 ethical equity funds operating in Great Britain revealed that some of them did not fulfill the criteria imposed on the study population. Ten were pension or life insurance funds, and as such they did not meet the prerequisite of being a retail investment fund. Another 14 funds were rejected for being domiciled outside Great Britain (as indicated by their ISIN). The other 48 entities were British investment funds. Further selection involved the fund's age -it had to be established before the year 2007 to fit the temporal framework of analysis, in which the point of reference was the period preceding the crisis. That criterion was not met by another 11 funds. Finally, taking into consideration all these boundary conditions, 37 ethical funds qualified for the study group. A similar procedure for dataset homogenization can be found, e.g., in Plantinga and Scholtens (2001) and Sanchez and Sotorrio (2009).

The qualification procedure for non-ethical funds was different. The sampling frame was defined as Reuters' list of retail investment funds containing 14,237 records, out of which 37 funds with characteristics similar to the previously selected ethical funds were chosen. This method of selection of non-ethical funds was previously applied by Statman (2000), Bello (2005), and Sanchez and Sotorrio (2009). Each of the selected funds was checked for conformity with the boundary conditions concerning domicile (Great Britain), type (equity fund), and age (established prior to 2007). The control group was equal in size to the study group.

Thus, the study population consisted of a total of 74 funds (37 ethical funds and 37 non-ethical funds). Statistical analysis involved the years 2007-2013, which were subdivided into three periods depending on the situation in the global stock markets: the year 2007 (pre-crisis period), 2008 (time of crisis), and 2009-2013 (period of market recovery).

3.2. Analysis

Analysis was conducted in two steps. First, linear regression was used to determine whether the rates of return on the funds depended on whether or not their portfolios were composed of

socially responsible companies. Subsequently, comparison of means was employed to test for statistically significant differences between the mean rates of return on the funds over the studied periods representing different market conditions.

3.2.1. Regression analysis

The dependent variable in the regression model was the financial performance of the studied funds in 2013 (the last year analyzed). The independent variable was the fund category (ethical or non-ethical). The model also incorporated a number of control variables, such as fund size and age, and geographic differentiation of investment. Fund size is important in that it can facilitate investing in desired assets (Barnett and Salomon, 2006) or lead to diseconomies of scale in management (Chen *et al.* 2004). As a result, size would be negatively correlated with the financial performance of funds. In turn, fund age is associated with the learning curve effect (Argote, 1999). Thanks to their knowledge and experience, older funds should be able to allocate their capital more efficiently, thus enhancing their bottom line. In turn, the geographic diversification policy may play an important role due to differences in the state of different economies. Funds with highly geographically diversified portfolios should be able to invest some of the capital they manage in markets characterized by better economic conditions, which could have a beneficial effect on their financial performance.

3.2.1.1. Measures

Appropriate measures were adopted for each of the variables included in the model. The financial performance of both ethical and non-ethical funds was represented by the annual rate of return. Fund size was operationalized as net assets at the end of 2013 and fund age as the number of years since its inception to the end of the study period, that is, December 31, 2013. Geographic diversification policy was measured by classifying the funds into four subsets: those investing only locally in Great Britain, those investing in Europe, those investing globally, and other funds with different geographic targets, which invested in local markets other than Great Britain or Europe. Obviously, the funds were also categorized into ethical and non-ethical funds. A summary of the variables and measures used is given in Table 1.

Table 1. Dependent, independent and control variables used in regression analysis and their measures

Variable	Measure	Symbol
Constant		<i>const</i>
Fund performance	Annual rate of return [%]	R_i
Fund size	Net assets of the fund at the end of 2013 [GBP million]	VAN_i
Fund age	Number of years since the establishment of the fund to the end of 2013 [in years]	$time_i$
Investment policy in terms of geographic diversification	Dummy variables: Indicator "UK": 1 – the fund invests in the UK; 0 – otherwise Indicator "EU": 1 – the fund invests exclusively in Europe; 0 – otherwise Indicator "global": 1 – the fund invests globally; 0 – otherwise Indicator "other": 1 – the fund invests in a region that is different from those specified above; 0 – the fund invests in the UK, Europe, or globally	ind_UK_i ind_EU_i ind_glob_i
Fund category	Binary variable: 1 – ethical fund 0 – non-ethical fund	E_i

Notes: where: i designates the number assigned to the fund ($i=1, 2, \dots, 74$).

Regression was estimated by means of the least squares method as a linear function in the form of:

$$R_i = const + \beta_1 \cdot VAN_i + \beta_2 \cdot time_i + \beta_3 \cdot ind_UK_i + \beta_4 \cdot ind_EU_i + \beta_5 \cdot ind_glob_i + \beta_6 \cdot E_i + \varepsilon_i \quad (\text{Model 1})$$

where: β_n – parameters of variables (n=1, 2, ..., 6),
 ε – random effects,
 other designations are as in Table 1.

3.2.1.2. Results

Table 2 presents the values and standard errors of indicators, as well as Student *t*-tests and *p*-values for each independent variable.

Table 2. Model 1: Least squares estimation for observations 1–74
 Dependent variable (Y): R_i

	Indicator	Standard err.	Student <i>t</i>	<i>p</i> -Value	
const	0.144651	0.0442013	3.2726	0.00169	***
VAN	7.8813e-05	5.06569e-05	1.5558	0.12446	
time	-0.000330567	0.00112063	-0.2950	0.76892	
ind_UK	0.0658556	0.0404971	1.6262	0.10861	
ind_EU	0.0843113	0.047731	1.7664	0.08189	*
ind_glob	0.0294863	0.0433032	0.6809	0.49826	
E	0.053523	0.0202815	2.6390	0.01033	**

Notes: *** statistical significance at the 1% level, ** statistical significance at the 5 % level and * statistical significance at the 10% level.

As can be seen from Table 2, fund age (the time variable) had a negligible impact on the rate of return (R_i) with a directional indicator of $|\beta_2| < 0.001$. Additionally, this variable returned a very high *p*-value, which means that it was not correlated with the rate of return. Therefore, fund age was excluded from further analysis. Model 2 was constructed as the following regression equation:

$$R_i = const + \beta_1 \cdot VAN_i + \beta_2 \cdot ind_UK_i + \beta_3 \cdot ind_EU_i + \beta_4 \cdot ind_glob_i + \beta_5 \cdot E_i + \varepsilon_i \quad (\text{Model 2})$$

Table 3 presents the obtained values and standard errors of indicators, as well as Student *t*-tests and *p*-values for each independent variable, as estimated by multiple regression analysis according to the specification of Model 2.

Table 3. Model 2: Least squares estimation for observations 1–74
 Dependent variable (Y): R_i

	Indicator	Standard err.	Student <i>t</i>	<i>p</i> -Value	
Const	0.139278	0.0400027	3.4817	0.00088	***
VAN	7.69984e-05	4.99434e-05	1.5417	0.12778	
ind_UK	0.0647901	0.040064	1.6172	0.11047	
ind_EU	0.083908	0.04739	1.7706	0.08111	*
ind_global	0.0294937	0.0430115	0.6857	0.49522	
E	0.0545589	0.0198407	2.7499	0.00763	***

Notes: *** statistical significance at the 1% level and * statistical significance at the 10% level.

Results from Table 3 show that neither fund size nor geographic diversification policy had an effect on the rates of return of the funds. In contrast, the influence of ESG criteria was

found to be statistically significant at $p < 0.01$ (along with the constant, it was the only significant variable).

To verify these results, the model was tested using analysis of variance, coefficient of determination, Ramsey's regression equation specification error test (RESET), White's test for heteroskedasticity, as well as VIF and tolerance values for individual independent variables.

The results of the F test conducted as part of analysis of variance (ANOVA) confirmed that the model fit the source data ($F_{5,68}=3.332$; at $p < 0.01$) and should therefore be deemed statistically significant. The determination coefficient $R^2=0.1968$ indicated that only 20% of the variance of the dependent variable was explained by the predictors. This means that there exist some factors not included in the model that influence the rates of return on the funds. On the other hand, this does not affect the validity of the detected relationship between corporate social responsibility and financial performance.

The RESET test verifying the linear form of the model yielded $F_{2,66}=1.37291$ at $p > 0.25$, supporting the hypothesis that the model was correct. Furthermore, the application of the least squares method for the estimation of the model's parameters also required testing for heteroskedasticity of residuals. White's test ($LM=11.8157$ at $p > 0.5$) demonstrated the absence of heteroskedasticity, proving that the model was also valid in that respect.

To test for collinearity of predictors, the variance inflation factor (VIF) and tolerance values were calculated for all explanatory variables in Model 2 (data presented in Table 4). The obtained VIF values did not exceed the threshold of 10, and individual tolerance levels were not lower than 0.1, ranging from 0.247 and 0.981. These results indicate that the predictors were not correlated in a way that could interfere with their explanatory power. Thus, Model 2 was valid also from the point of view of collinearity analysis.

Table 4. Model 2: Collinearity statistics
Dependent variable (Y): Ri

	Tolerance	VIF
Const		
VAN	0.966	1.035
ind_UK	0.247	4.048
ind_EU	0.402	2.486
ind_global	0.295	3.392
E	0.981	1.020

The above analysis shows that Model 2 was constructed correctly, and thus corporate social responsibility had a statistically significant effect on the funds' bottom lines. In contrast, the other variables (fund size, age, and geographic diversification policy) were not statistically significant, which was an unexpected result lacking a simple explanation. However, it would be beyond the scope of this paper to attempt to determine why those correlations were absent. In light of the primary objective of this study, the key finding was that the performance of funds did depend on whether or not their managers were guided by ethical criteria in selecting portfolios. Indeed, this conclusion provided a point of departure for the next step of the study, which consisted of examining whether the financial performance of ethical and non-ethical funds differed between the three periods representing an economic boom, crisis, and market recovery. Comparison of means was used to that end.

The next step of the study consisted of examining whether the financial performance of ethical and non-ethical funds differed between the three periods representing an economic boom, crisis, and market recovery. Comparison of means was used to that end.

3.2.2. Comparison of means

Comparison of means is a parametric test (*t*-test). It was conducted for both categories of funds, separately for each period, to determine whether or not the financial performance achieved by

ethical funds in a given period was equal to the financial performance of non-ethical funds. For each period (2007, 2008, and 2009-2013), the null hypothesis posited that the mean financial performance of the two categories of funds was equal, while the alternative hypothesis held that it was unequal (a two-way test).

3.2.2.1. Measures

The financial performance of funds was measured in terms of annual rates of return. The comparison included the performance of the same 74 funds (37 ethical and 37 non-ethical) used in linear regression analysis of factors affecting rates of return. Nominal rates of return were adopted for the first two studied periods, which were calendar years. As the third period (market recovery) spanned several years, geometric means of annual nominal rates of return were used in both groups of funds as a measure of their financial performance. The variables and their measures are presented in Table 5.

Table 5. Variables used in comparison of means and their measures

Value	Measure (R _{it})
Financial performance of ethical funds in 2007 and 2008	Nominal annual rate of return [%]
Financial performance of non-ethical funds in 2007 and 2008	Nominal annual rate of return [%]
Financial performance of ethical funds in 2009–2013	Geometric mean of annual rates of return [%]
Financial performance of non-ethical funds in 2009–2013	Geometric mean of annual rates of return [%]

Notes: where: *i* designates fund number (*i*=1, 2, ...,37), and *t* designates period: *t*=1 for 2007, *t*=2 for 2008, and *t*=3 for 2009-2013.

3.2.2.2. Results

The *t*-test for equality of means was conducted using the annual nominal rates of return (or geometric means of those rates) of both ethical and non-ethical funds. The results of that test are given in Table 6.

Table 6. t-Test for equality of means of the two categories of funds over three periods

Period	<i>t</i> -Test	Degrees of freedom (df)	Significance (two-way)	Mean for non-ethical funds	Mean for ethical funds	Difference of means	Standard error of difference
2007	-1.231	72	0.223	0.044019	0.071181	-0.0271622	0.0220736
2008	-0.034	72	0.973	-0.271827	-0.270984	-0.0008432	0.0251520
2009-2013	1.384	72	0.171	0.136118	0.124943	0.0111730	0.0080741

The results of the *t*-test given in Table 6 show that at $\alpha=0.25$ the null hypothesis is not rejected only for the second period, while it should be rejected for the first and third periods. This means that prior to the crisis (in 2007) the financial performance of ethical funds differed from that of non-ethical funds ($t_{72}=-1.23$ at $p<0.25$, difference of means=-2.72 percentage points). During the crisis (in 2008) the financial performance of ethical and non-ethical funds was similar ($t_{72}=-0.03$ at $p>0.9$), while in the market recovery period (in the years 2009–2013) the performance of ethical funds again differed from that of other funds ($t_{72}=1.384$ at $p<0.2$, difference of means=1.12 percentage points).

The results of the *t*-test do not permit a conclusive verification of the research hypotheses as they only indicate the presence or absence or differences in the rates of return achieved by the two groups of funds in the analyzed periods. Consequently, they do not provide information as to whether the mean rates of return on ethical funds were higher or lower than

those of non-ethical ones. However, that can be inferred based on positive or negative differences of means in the first and third periods. As can be seen from Table 6, in the first period the differences were negative, which suggests that non-ethical funds outperformed ethical ones. In contrast, in the third period, the differences of means were positive, which implies that it was ethical funds that outdistanced non-ethical funds at that time. Given the fact that in the second period the mean financial performance of the two categories of funds was equal, the rates of return on ethical funds must have declined less rapidly at the time of crisis and rebounded more vigorously in its aftermath (in the years 2009-2013) than those of their non-ethical counterparts. Based on the above considerations, the hypothesis positing that during a crisis the mean rate of return on ethical funds declines more rapidly than that on non-ethical funds (**H1**) should be rejected. At the same time, these findings support the hypothesis that in the aftermath of a crisis the mean rate of return on ethical funds increases more rapidly than that on non-ethical funds (**H2**).

4. Discussion

The ongoing debate over the influence of corporate social responsibility on financial performance remains unresolved. In the absence of study results that would consistently support a positive or negative effect of CSR, researchers tend to abandon attempts at vindicating one or the other position in favor of identifying the conditions under which companies may obtain a positive return on investment in CSR and explaining the factors that enable it. The study presented in this paper was undertaken in that vein. The rates of return on ethical and non-ethical funds were used as a variable reflecting the market value of companies held in the portfolios of those funds. The choice of ethical funds was dictated by the fact that in their investment decisions they are guided not only by economic criteria, but also by the degree of social responsibility of companies, which makes them perfectly suited for investigating the potential effects of corporate social responsibility on financial performance. And indeed, it was found that the application of CSR criteria by those funds affects their rates of return. This implies that there exists a relationship between the degree of CSR involvement of the companies in the funds' portfolios and the market value of the latter.

The results for three study periods characterized by divergent market conditions demonstrate that the situation in the capital markets affects the rate of return on investment in CSR. At the time of crisis, the effect of corporate social responsibility on corporate value was positive in the sense that it mitigated its decline. In the aftermath of the crisis, this effect persisted, stimulating recovery processes. Thus, corporate social responsibility bolstered corporate value under both sets of market conditions. The question arises as to the mediating mechanisms that helped transform CSR expenditures into concrete outcomes such as value protection or stimulation. Drawing on the resource-based view and stakeholder theory, it was assumed that those mediating elements may be CSR-based reputation (as a component of intangible assets) and stakeholder behavior motivated by corporate social responsibility.

The verification of the research hypotheses did not provide a direct answer as to which of these two elements exerted a stronger influence on the relationship between corporate social responsibility and financial performance. During the crisis the mean rate of return on ethical funds decreased less rapidly than that on non-ethical funds, which implies that companies exhibiting higher CSR standards did not lose as much value. Subsequently, following the crisis the mean rate of return on ethical funds increased more rapidly than that on non-ethical ones, which shows that the former recovered their value more quickly. Therefore, it may be inferred from the financial performance of socially responsible companies that while at the time of crisis their bottom line was more strongly affected by stakeholder behavior, reputation gained in importance in the wake of the crisis.

The obtained results imply that both stakeholder behavior motivated by corporate social responsibility and CSR-based reputation exerted a beneficial effect on corporate value. However, the relative power of these mechanisms varied over the studied periods. At the time of crisis it was stakeholder behavior that played a more prominent part as it limited the loss of value. The lesser effect of reputation in that period may be explained by its status as a

component of intangible assets. As such, it was appraised by the investors and its value fluctuated in line with changes in market sentiment. Consequently, during the crisis the value of reputation declined and could not protect the value of the company. On the other hand, stakeholder behavior motivated by corporate social responsibility remained unaffected by the crisis and bolstered corporate value, alleviating its decline. This situation changed in the wake of the crisis, with the emergence of market recovery processes. Under the new circumstances, the role of CSR-based reputation became more pronounced. Stakeholder behavior clearly did not account for the increase in value, as it was unchanged. However, the value of reputation as a component of intangible assets started to grow, accelerating the appreciation of corporate value. This shows why, following the crisis, socially responsible companies in the portfolios of ethical funds recovered their value more dynamically than non-ethical entities.

The findings presented in this paper provide a significant contribution to existing knowledge about the factors influencing the relationship between corporate social responsibility and financial performance and afford a better understanding of the mechanisms mediating that relationship. Besides their theoretical relevance, these findings also have some important practical ramifications. At a time of crisis managers often face the question of how to allocate the limited resources their companies designate for CSR policies. According to the uncovered mediating mechanisms, the best results may be achieved if CSR expenditures are concentrated on stakeholder relations during a crisis, and on boosting reputation during a period of market recovery. By changing CSR resource allocation, managers may optimize such investments to maximize the effect of corporate social responsibility on financial performance.

Further research should seek to identify new elements mediating between corporate social responsibility and financial performance and elucidate the nature of relationships between those elements. Another promising avenue would be to investigate how exactly different factors affect the way in which CSR influences financial performance (the direction and strength of its impact). This paper analyzed only the role of market conditions, ignoring such variables as economic sectors or the degree to which individual stakeholder groups accept different types of CSR activity.

5. Conclusions

The existence of a relationship between corporate social responsibility and financial performance has been reported by numerous studies, but the nature of that relationship remains elusive. Despite the fact that most authors confirm a positive effect of corporate social responsibility on the bottom line, previous research has not addressed the issue of the mediating mechanisms that translate expenditures on CSR into financial performance. Drawing on stakeholder theory and the resource-based view, this paper indicates two elements that may play the role of such mechanisms, namely, favorable stakeholder behavior motivated by the company's corporate social responsibility policy and CSR-based reputation as a component of intangible assets. It has been found that the significance and relative impact of these factors depend on market conditions. In a crisis, stakeholder behavior exerts a greater influence while during a period of market recovery following a crisis reputation becomes more prominent.

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