The Value Relevance of Social Report

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Abstract: We test whether the publication of a social report influences stock price directly and/or indirectly. We use the value relevance model and a sample of 178 Italian companies that were listed on Milan Stock Exchange from 2002-2008. The estimates demonstrate a significant negative correlation between publication of a social report and stock price. Furthermore, all other factors being equal, book value per share accounting information is more relevant for companies that publish a social report, whereas the relevance of earnings per share does not change for these companies in relation to stock price.

Key Words: Corporate social responsibility, social report, value relevance, stock price, accounting.

1. INTRODUCTION

Although Corporate Social Responsibility (CSR) is by no means a new topic in management and accountability studies, it has attracted particular attention from researchers and company management in recent years. The serious financial and behavioural scandals involving large multinationals are one reason for its renewed importance. In some cases, while declaring their social commitments in advertising campaigns and community initiatives, companies have actually violated the classic principles of CSR.

In our opinion, this non-compliant behaviour may be partly amplified by the absence of mandatory CSR reporting. In practice, social reporting is voluntary, and unlike financial accounting, it is not intended to provide detailed information content. Therefore, social reporting may not constrain companies enough for CSR to be a discriminating factor in the choices of stock traders.

To investigate this issue, we analysed listed Italian companies to establish whether stock prices are influenced by the publication of a CSR report.

The present paper seeks to contribute to a continuing debate on the relationship between the stock market and corporate social reporting. More specifically, this paper seeks to present evidence on the relationship between companies' publication of social reports and the share prices of those companies. To the best of our knowledge, this paper is the first application of value relevance analysis to the issue of social reporting.

Furthermore, value relevance analysis allows us to highlight the financial dynamics between stock prices and social information, which have never been analysed for the entire set of listed Italian companies.

The results do not provide an unequivocal answer. The publication of a social report seems to have an unfavourable effect on stock price. Estimates indicate a negative correlation between the publication of a social report and the stock price. The study also demonstrates significant positive correlations between book value per share (BPS) and stock price and between earnings per share (EPS) and stock price, as well as a positive correlation between stock price and the interaction between BPS and publication of a social report. Finally, we found a positive (but not significant) correlation between stock price and the interaction between EPS and publication of a social report.

The rest of the paper is organised as follows. Section 2 contains a brief analysis of the research conducted on CSR and the applications of value relevance. Section 3 develops testable research hypotheses. Section 4 explains the methodology (research model, sample selection and data). Section 5 discusses the empirical results (descriptive statistics and regression analysis). Finally, the concluding section reveals the paper's limitations and provides suggestions for future research.

2. LITERATURE REVIEW

Research conducted over the years on CSR, and on reporting and disclosures in particular, has focused on the following lines of study (Deegan, 2002): which companies report (Milner and Adler, 1999), (Gao et al., 2005), (Solomon and Solomon, 2006); what motivates managers to make particular social reports (O'Dwyer, 2002) (Adams and McNicholas., 2007); how particular stakeholders react to social and environmental disclosures (Belkaoui, 1976), (Epstain and Freedman, 1994), (Freedman and Patten, 2004); and the relationship between social disclosures and corporate characteristics (Ullmann, 1985), (Mathews, 1987), (Murray et al., 2006). Gray et al. (2001) offer an interesting perspective on why previous studies produced inconsistent or contradictory results. They found that the distinction between mandatory and voluntary disclosures in different countries was rarely considered; subjects and volumes of voluntary disclosures also varied.

Another important area of research explores the relationship between CSR and business performance. This set of studies uses various statistical methods to examine the nature of the relationship between Corporate Social Performance (CSP), which is used to measure CSR (De Bakker et al., 2005), (Barnett, 2007), and economic performance (Spicer, 1978), (Aupperle et al., 1985), (Jaggi and Freedman, 1992), (Margolis and Walsh, 2001), (Slapničar, 2006), and the link between CSP and Corporate Financial Performance (CFP) (McGuire et al., 1988), (Cochran and Wood, 1984), (Griffin and Mahon, 1997), (Waddock and Graves, 1997), (Belkaoui, 1999), (Richardson et al., 1999), (Orlitzky, 2001), (Orlitzky and Benjamin, 2001), (Roberts and Dowling, 2002), (Orlitzky et al., 2003), (Mahoney and Roberts, 2007), (Surroca and Tribò, 2008).

In the set of studies focusing on the link between CSR and CFP, one group of researchers has used event study methodology. The results of these studies are controversial, and sometimes researchers present a critical analysis of the use of this methodology to investigate CSR

and CFP (Worrell et al., 1991), (Davidson et al., 1994), (McWilliams and Siegel, 1997), (McWilliams et al., 1999), (Posnikoff, 1999), (McWilliams and Siegel, 2000). However, as previously stated, the purpose of this paper is to investigate whether stock prices are influenced by the publication of a social report, and we consider value relevance to be the most suitable method of analysis for this purpose.

The concept of relevant value (an accounting value is defined as value-relevant if it has a predicted association with equity market values) is not new in the literature (Miller and Modigliani, 1966), use of the term "value-relevance" is relatively recent (Amir et al., 1993). The best-known conceptual model of value relevance analysis is the one proposed by Ohlson (1995), which has been used by various researchers over the years. There are numerous applications of value relevance to individual accounting variables (Biddle et al., 1997), (Collins et al., 1997), (Barth et al., 2001), (Holthausen and Watts, 2001), (Hung, 2000), (Aboody et al., 2002), (Zhao, 2002), (Cazavan and Jeanjean, 2003), (Brown and Sivakumar, 2003), (Graham et al., 2003), (Lapointe Antunes et al., 2006) and other non-financial variables (Amir and Lev, 1996), (Lev and Sougiannis, 1996), (Hughes, 2000), (Hirschey et al., 2001), (Xu et al., 2007).

Some interesting applications of value relevance to non-financial variables are proposed by Sinkin et al. (2008) and Hassel et al. (2005), among others. Sinkin et al. (2008) examine the relationship between adoption of eco-efficient business strategies and firm value using the Ohlson model, modified to include an indicator variable for eco-efficiency. They posit that the adoption of eco-efficient business strategies is positively related to firm value. The results of their analysis of 431 firms indicate that eco-efficient firms have consistently higher market values than non-eco-efficient firms.

Hassel et al. (2005) also propose applying value relevance to environmental performance. In this paper, they use an accounting based valuation model developed by Ohlson in which the market value of equity is a function of book value, accounting earnings and environmental

performance. Their results indicate a significant negative relationship between the market value of listed Swedish companies and their environmental performance.

These two briefly analysed studies provide some important points to consider in our research. However, environmental performance is just one of the many dimensions of corporate social and ethical reporting, the subject of our investigation (Cooper and Owen, 2007), (Belkaoui, 1999), (Carroll, 1999).

Analysis of earlier studies did not enable us to identify a consolidated scientific background or empirical analyses conducted along these lines of research. In fact, to the best of our knowledge, no studies have investigated the value relevance of CSR reports.

3. Research Proposition

The purpose of our research is to identify the relevance of the publication of a company's social report to the stock price formation process. The aim is therefore to establish whether the price at which an investor is willing to buy stock is influenced by the publication of the social report.

The publication of a social report may impact stock prices directly, by acting as a relevant variable, or indirectly, by interacting with the other accounting variables that form the basis of the model and modifying the effects of book value and earnings. Our study was consequently designed to test two hypotheses:

H1: The publication of a social report directly influences the stock price because investors believe the report predicts stock value.

H2: The publication of a social report indirectly influences stock price because investors believe the report modifies the relevance of other accounting variables that explain the stock price.

4. METHODOLOGY

(i) Research model

In order to verify our research hypotheses, we use value relevance analysis. The basic model of value relevance analysis can be expressed as follows:

$$P_{itq} = \beta_0 + \beta_1 BPS_{itq} + \beta_2 EPS_{itq} + u_{itq} \quad [1]$$

where:

P_{itq} = market value, or stock price, of firm i at year t, quarter q;

BPS_{itq} = book value per share of firm i at year t, quarter q;

EPS_{itq} = earnings per share of firm i at year t, quarter q;

u_{itq} = error term;

i = 1,…,i firms in the sample;

t = 1,...,t years of observation;

q = 1,...,4 quarters in each year:

β_0 = intercept;

β_1, β_2 = parameter estimates that relate BPS and EPS to the market value of the firm.

Value relevance analysis assumes that information is value-relevant if it provides information about the market value of the firm. Since we wished to test whether publishing a social report influences market price, we modified the basic expression. We adapted [1] to include a dummy variable, d_SR, which is equal to 1 if the company published a social report and 0 if it did not. We also allowed the dummy to interact with the variables BPS and EPS (Wooldridge, 2006) in order to determine whether the publication of a social report could affect the impact of accounting information (BPS and EPS) on the stock price. Thus, we considered the following model:

$$P_{itq} = \beta_0 + \delta_0 d\_SR_{itq} + \beta_1 BPS_{itq} + \delta_1 BPS_{itq} * d\_SR_{itq} + \beta_2 EPS_{itq} + \delta_2 EPS_{itq} * d\_SR_{itq} + u_{itq} \quad [2]$$

where:

P_{itq} = market value, or stock price, of firm i at year t, quarter q;

d_SR_{itq} = dummy variable of firm i at year t, quarter q;

BPS_{itq} = book value per share of firm i at year t, quarter q;

EPS_{itq} = earnings per share of firm i at year t, quarter q;

u_{itq} = error term;

i = 1,…,178 firms in our sample;

t = 2002,…,2008 years of observation;

q = 1,...,4 quarters in each year:

β_0 = intercept;

β_1 β_2 = parameter estimates that relate BPS and EPS to the market value of the firm;

δ_1 δ_2 = parameter estimates that relate the market value of the firm to the interaction of the dummy variable with BPS and EPS.

The proposed model can indicate various analysis levels. Firstly, all other factors being equal, we can establish the difference in stock price, δ_0, associated solely with the publication of a social report. Moreover, δ_1 and δ_2 represent the differences in the effects of book value per share and earnings per share on stock price, respectively, between companies that do and do not publish a social report. In addition, we tested whether the coefficients of the dummy and the interaction variables are jointly significant. If this is the case, then we can conclude that the value relevance models of companies that publish their social reports and companies that do not are significantly different.

(ii) Sample selection

The reference sample consisted of all Italian companies listed on the Milan Stock Exchange for the period from 2002 to 2008[1]. The panel included only companies that were listed

[1] The data currently available enabled us to include only the first two quarters of 2008 in the analysis.

for the entirety of the reference period; companies suspended from the listing for various reasons were therefore excluded. The final sample consisted of 178 companies.

The information that emerged from our survey, which was conducted by administering a questionnaire and conducting telephone interviews, indicated that 32 companies published a social report during the period in question[2].

The responses to this survey determined the date fieldwork began. We concluded that the essential factors in the development process of social accounting in Italy were (i) the formalisation of the EU's position on CSR issues in general and social accounting in particular, and (ii) the actual availability of CSR reporting guidelines and models. Regarding the guiding role of the EU, the publication of COM 2001 366 and COM 2002 347 (as amended) represented a crucial stage in the process of making companies aware of CSR reporting. Regarding the availability of models and guidelines, our study indicated that the majority of companies in the sample used versions of the reporting models proposed by GRI (2000), GBS (2001) and ABI-IBS (2001), as amended.

(iii) Data

The application of models [1] and [2] required several different kinds of data that were obtained in different ways. The values related to book value per share (BPS), earnings per share (EPS) and stock price (P) were extrapolated from the DATASTREAM database. The BPS and EPS data come from quarterly reports supplied by the sample companies. The values of P are the official stock market values recorded ten days after the quarterly reports of the accounting values. To test robustness, we used the official stock market values of P recorded 30 days after the quarterly reports of the accounting values were released. The values assigned to

[2] The results of the survey were published in our paper "The CSR in Italian Listed Companies", in press.

the dummy variable d_SR in the various reference periods were obtained in the above-mentioned survey.

Overall, there were 4094 observations. However, the number of observations used in the regression analysis was reduced to 3121 because a few companies failed to report some accounting data. In a further verification of the regression analysis excluding outliers, the number of observations dropped to 2609.

5. Empirical analysis and results

(i) Descriptive Statistics

Table 1 shows some descriptive statistics for the variables used in the empirical analysis for the entire sample. Firstly, the sample mean (median) of the stock prices 10 days after the publication of accounting information is almost equal to the mean (median) after 30 days, i.e., € 7.9 (€ 4.3). The mean (median) of BPS is € 4.77 (€ 2.62), and the mean (median) of EPS is € 0.09 (€ 0.05). The variation in stock price is quite large. The stock price 10 days after each quarter varies from nearly zero to € 103.71, and the stock price 30 days after each quarter varies from nearly zero to € 99.36. BPS ranges from - € 1.43 to 174.03, and EPS from - € 9.62 and € 10.51[3]. The coefficient of variation shows that EPS has higher variability from the mean, whereas BPS and stock price both have lower variability from the mean.

In order to better analyse the results, we split the entire sample into companies that publish a social report and companies that do not.

Tables 2 and 3 clearly show that both stock price and accounting values are higher for companies that publish a social report. In particular, the mean (median) stock price after 10 days is € 10.7 (€ 7.65) for companies that publish a social report and € 7.44 (€ 3.94) for com-

[3] The negative BPS values are the result of particular consolidation techniques used in the financial reporting of three companies in the sample.

panies that do not. Similarly, the means of BPS and EPS are significantly higher for companies that publish a social report (€ 5.47 and € 0.19, respectively) than for companies that do not (€ 4.63 and € 0.08, respectively). Furthermore, the variability from the mean of stock prices and accounting values is higher for companies that do not publish a social report than for companies that do.

Thus, this descriptive analysis indicates that companies that publish a social report have higher values of BPS, EPS and stock prices.

(ii) Regression Analysis

In view of the limitations of OLS estimators[4], we developed our analysis using the Least Square Dummy Variable model (LSDV), which includes a dummy variable specific to each company to estimate fixed effects[5].

In order to test whether the fixed effect model (FE) is more appropriate than OLS for the pooled data, we ran the poolability test, which is a test of the joint significance of fixed effects. If the fixed effects are jointly significant, pooled OLS could yield biased estimates.

Our estimates are reported in Table 4. The Hausman test confirms that we can accept the hypothesis in favour of using the fixed effect model (p-value ≤ 0.01), and the F-test of the joint significance of fixed effects implies that the fixed-effect model is more appropriate than Pooled OLS (p-value <0.01).

First of all, if we consider stock prices after 10 days, the coefficients β_1 and β_2 of the basic model (0.32 and 1.36, respectively) do not substantially differ from those of our adapted

[4] OLS in the pooled sample disregards a likely source of bias, which is the heterogeneity of companies. In fact, stock prices are likely to be affected by variables specific to each company that are often unobservable. If these specific effects are not properly taken into account, the resulting estimates could be biased (Wooldridge, 2006).

[5] Another model that should be considered when using panel data is the random effects model. In the random effects model, the specific effects are not treated as parameters to be estimated, as in the fixed effects model but rather as part of the error term. The most relevant difference between fixed effects and random effects models concerns the hypothesis of correlation between individual effects and explanatory variables; if the individual effects and explanatory variables are not correlated, then both fixed effects and random effects estimators are consistent, but the fixed effect estimator is not efficient. If the individual effects and explanatory variables are correlated, only the fixed effects estimator is consistent. This hypothesis could be

model (0.31 and 1.26). Thus, our model seems to fit the data well. When we include fixed effects, we obtain a higher R-squared value, with an adjusted R-squared of about 0.87[6]. In all regressions, the F-tests show that the coefficients are jointly significant at the 1% level with p-values always lower than 0.01. Furthermore, in these estimates, the F-tests of the joint significance of the coefficients of the dummy and the interaction variables show that there is a significant difference in the value-relevance equation between the group of companies that publish a social report and those that do not.

The coefficient on the dummy d_SR is negative and significant (-2.50, p-value <0.01). This means that, all other factors being equal, the stock price of a company that publishes a social report is € 2.5 lower than that of a company that does not.

The estimates of the interaction variables show that the impact of BPS on the stock price is higher for companies that publish a report; the coefficient of interaction for BPS * d_SR is positive and significant (0.42, p-value <0.01). This means that if BPS increases by € 10, stock price increases by € 7.3 (i.e., €(0.31+0.42)*10) for companies that publish a social report and by € 3.1 for companies that do not.

The coefficient of interaction for EPS * d_SR is positive (2.06), but not significant (p-value >0.1). We can conclude that if EPS increases by € 10, stock price increases by € 12.6 both for companies that publish a social report and for those that do not.

To check the reliability of the results, we estimate both models using the stock price 30 days after the end of each quarter (robustness test). The new estimates (Table 5) are not substantially different from those obtained using the stock price 10 days after the end of each quarter.

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verified by the Hausman test, where the null hypothesis is the absence of correlation between individual effects and explanatory variables.

[6] As Woodridge (2006, p.446) pointed out, referring to the LSDV model: "We should not get too excited about this large *R*-squared: it is not surprising that we can explain much of the variation in the independent variable including a dummy variable for each cross-sectional unit".

In particular, the coefficient on the dummy d_SR is negative and significant (-2.46); β_1 remains unchanged (0.30), and β_2 increases slightly (from 1.26 to 1.39). The coefficients of the interaction variables also remain substantially unchanged; the coefficient of interaction for BPS * d_SR is positive and significant (0.41, p-value <0.01), and the coefficient of interaction for EPS * d_SR is positive (2.25) but not significant (p-value >0.1).

Next, we ran estimations after excluding outliers, as the estimates could be affected by very high or low book values per share or earnings per share. We therefore eliminated observations with a BPS or EPS lower than Q1-1.5*IQR and higher than Q3+1.5*IQR, where Q1 is the first quartile, Q3 is the third quartile and IQR is the interquartile range (table 6).

Once again, the Hausman test confirms that we can accept the hypothesis in favour of using the fixed effects model (p-value <0.01), and the F-test of the joint significance of the fixed effects implies that the fixed effects model is more appropriate than Pooled OLS (p-value <0.01). The adjusted R-squared is about 0.84, and in all regressions, the F-tests show that the coefficients are jointly significant at 1% level. Furthermore, in these estimates, F-tests of the joint significance of the coefficients for the dummy and the interaction variables again show that the value-relevance equations of companies that do publish social information and those that do not are significant (p-value <0.01).

Once again, if we consider stock prices after 10 days, the coefficients β_1 and β_2 of the basic model (0.80 and 5.01, respectively) do not substantially differ from those of our model (0.67 and 4.49). In both models, therefore, β_1 and β_2 are positive and significant (p-value <0.01). However, when outliers are excluded, the estimated coefficients change. In estimates with outliers, β_1 is equal to 0.31, whereas in the absence of outliers, β_1 equals 0.67. The coefficient β_2 undergoes a major change, from 1.26 in estimates with outliers to 4.49 in those without outliers. Removing outliers therefore increases the impact of BPS and EPS on the stock price.

The coefficient for the dummy d_SR is negative and significant (-2.30, p-value <0.01) and does not change substantially compared to LSDV estimates with outliers (-2.50, p-value <0.01). This means that, all other factors being equal, even when the outliers are eliminated, the stock prices of companies that publish a social report are lower than those of companies that do not.

The estimates of the interaction variables show that the impact of BPS on stock price is higher for companies that publish a social report, as the coefficient of interaction for BPS * d_SR is positive and significant (0.50, p-value <0.01). If BPS increases by € 10, the stock price increases by € 11.7 (i.e., €(0.67+0.50)*10) for companies that publish a social report and by € 6.7 for companies that do not. Again, as with the coefficients β_1 and β_2, we see that the coefficient of interaction changes from 0.42 to 0.50 when outliers are removed, thus increasing the impact of BPS on the stock price, all other factors being equal.

The coefficient of interaction for EPS * d_SR is positive (3.72), but not significant (p-value >0.1). This means that if EPS increases by € 10, stock price increases by € 44.9, both for companies that publish a social report and for those that do not. Since EPS * d_SR is also not significant in LSDV estimates with outliers (2.06, p-value >0.1), removing outliers does not affect either the sign or the significance of the estimated effect of the interaction between EPS and d_SR on stock price.

Even in this last case, to check the reliability of the results, we estimate both models using the stock price 30 days after the end of each quarter (robustness test). We see that when we use the stock price after 30 days (Table 7), the results do not change substantially. In particular, the coefficient of the dummy d_SR remains unchanged and is negative and significant (-2.29), β_1 remains almost unchanged (from 0.80 to 0.77 in the basic model and 0.67 to 0.63 in our model), and β_2 changes slightly (from 5.01 to 5.47 in the basic model and 4.49 to 5.00 in our model). However, in LSDV estimates with outliers using the stock price after 30 days, β_1

and β_2 are positive and significant in both models (p-value <0.01) but much lower (0.31 and 1.50, respectively, in the basic model and 0.30 and 1.39 in our model).

The coefficient of interaction for BPS * d_SR is positive and significant (0.53, p-value <0.01) and remains unchanged (0.50, p-value <0.01), while the coefficient of interaction EPS * d_SR, though reduced (from 3.72 to 3.10), is positive, but once again not significant (p-value >0.01). This means that if BPS increases by € 10, stock price increases by € 11.6 (€(0.63+0.53)*10) for companies that publish a social report and by € 6.3 for companies that do not; if EPS increases by € 10, stock price increases by € 50 for both companies that publish a social report and those that do not.

We can conclude that, all other factors being equal, removing outliers increases the impact of BPS on stock price but does not change the estimated sign or significance of the effect of the interaction between EPS and d_SR on the stock price.

6. CONCLUSIONS

This study examined two research hypotheses. The first hypothesis involved testing whether publishing a social report directly influences stock price. The second hypothesis concerned the indirect influence of publishing a social report on stock price when it modifies the relevance of the other explanatory accounting variables (BPS and EPS).

Two research models were used: a basic model of value-relevance and our model, which included the variable "publication of a social report" whose value-relevance was to be tested. That variable is modelled by a dummy variable. The sample selected consisted of 178 companies, 32 of which published a social report, that were observed at quarterly intervals during the reference period.

The results give rise to a number of considerations. Firstly, the estimates demonstrate a significant negative correlation between publication of a social report and stock price. It can therefore be stated that, all other factors being equal, the market does not appreciate the social commitment of the firm described in the report. The nature of the information contained in social reports suggests that the allocation of resources (financial and human) to social activities not closely associated with core business operations is interpreted by investors as diverting resources to other purposes that are not equally remunerative. However, the market recognises the publication of a social report as value-relevant for the stock price.

Regarding accounting variables, the estimates confirm the value-relevance of BPS and EPS to the stock price in the two models tested. In both cases, BPS and EPS both show a significant positive correlation with stock price. The coefficients of BPS and EPS are slightly larger in our model than the estimates made using the basic model. Investors consequently continue to place great importance on BPS and EPS accounting information. However, the results obtained with both models tested assign a higher weighting to EPS than to BPS. This means that EPS accounting information continues to play a crucial role and has a highly relevant value, whether or not a social report is published.

If we consider the interaction between our dummy variable and the accounting variables contained in the model, there is clearly a significant positive correlation between stock price and the interaction between BPS and the dummy variable. In fact, all other factors being equal, BPS accounting information is more relevant for companies that publish a social report. This result seems to be in line with the contents of a social report, which contains information regarding specific existing and planned investments and existing and potential debts payable in addition to the information detailed in the annual accounts. We consider that the publication of a social report offers investors more information about the composition and fu-

ture trends of BPS, thus increasing the value-relevance of BPS for companies that publish a social report.

However, we obtained different results for the interaction between our dummy variable and EPS. Our estimates indicate a positive but not significant correlation between stock price and the interaction between EPS and the dummy variable. We conclude that, all other factors being equal, EPS accounting information is not more relevant for companies that publish a social report. In other words, the social report does not seem to be perceived as a source of information about the trend and composition of EPS beyond the information contained in the annual accounts. In practice, a positive coefficient of correlation indicates that the market pays attention to the information contained in the social report but that information does not alter the value-relevance assigned to EPS in relation to stock price.

This study represents our first attempt to establish whether social information constitutes a relevant variable for the stock market and, in particular, whether it influences stock prices. In future studies, value-relevance analysis could focus on more exhaustive topics. For example, social information could be explained by a different variable that takes into account the specific contents of the social and ethical report. Other studies could present interesting cross-country comparisons since the regulations governing accounting and voluntary information often differ across countries.

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Table 1 – Descriptive statistics for total sample

	Mean	Median	Min	Max	*Standard Deviation*	*Coefficient of variation*
Stock price after 10 days	7.91	4.33	0.009	103.71	*9.85*	*1.24*
Stock price after 30 days	7.91	4.34	0.008	99.36	*9.88*	*1.25*
BPS	4.77	2.62	-1.43	174.03	*9.11*	*1.91*
EPS	0.09	0.05	-9.62	10.51	*0.42*	*4.53*
Observations				4094		

Notes: Table 1 presents descriptive statistics of the variables used in the empirical analysis for the total sample. The sample consists of 4.094 firm/quarter observations listed on the Italian Stock Exchange during 2002-2008 (from the last quarter of 2002 to the first two quarters of 2008).
The values relating to book value per share (BPS), earnings per share (EPS) and stock price (P) were extrapolated from the DATASTREAM database. In particular, the BPS and EPS data are from quarterly reports supplied by the companies in the sample. The values of P are the official stock market values recorded 10 days after quarterly reports of the accounting values. For robustness tests, we used the official stock market values of P recorded 30 days after quarterly reports of the accounting values.

Table 2 – Descriptive statistics for companies that publish a social report

	Mean	Median	Min	Max	*Standard Deviation*	*Coefficient of variation*
Stock price after 10 days	10.70	7.65	0.45	57.70	*9.87*	*0.92*
Stock price after 30 days	10.68	7.56	0.45	55.87	*9.86*	*0.92*
BPS	5.47	3.46	0.52	26.03	*4.77*	*0.87*
EPS	0.19	0.11	-0.58	1.85	*0.25*	*1.31*
Observations				600		

Notes: Table 2 presents descriptive statistics of the variables used in the empirical analysis for companies that publish a social report. The sample consists of 600 firm/quarter observations listed on the Italian Stock Exchange during 2002-2008 (from the last quarter of 2002 to the first two quarters of 2008).
The values relating to book value per share (BPS), earnings per share (EPS) and stock price (P) were extrapolated from the DATASTREAM database. In particular, the BPS and EPS data are from quarterly reports supplied by the companies in the sample. The values of P are the official stock market values recorded 10 days after quarterly reports of the accounting values. For robustness tests, we used the official stock market values of P recorded 30 days after quarterly reports of the accounting values.

Table 3 – Descriptive statistics for companies that do not publish a social report

	Mean	Median	Min	Max	*Standard Deviation*	*Coefficient of variation*
Stock price after 10 days	7.44	3.94	0.009	103.71	*9.77*	*1.31*
Stock price after 30 days	7.44	3.94	0.008	99.36	*9.80*	*1.32*
BPS	4.63	2.45	-1.43	174.03	*9.73*	*2.10*
EPS	0.08	0.04	-9.62	10.51	*0.44*	*5.91*
Observations				3494		

Notes: Table 3 presents descriptive statistics of the variables used in the empirical analysis for companies that do not publish a social report. The sample consists of 3.494 firm/quarter observations listed on the Italian Stock Exchange during t 2002-2008 (the last quarter of 2002 to the first two quarters of 2008).
The values relating to book value per share (BPS), earnings per share (EPS) and stock price (P) were extrapolated from the DATASTREAM database. In particular, the BPS and EPS data are from quarterly reports supplied by the companies in the sample. The values of P are the official stock market values recorded 10 days after quarterly reports of the accounting values. For robustness tests, we used the official stock market values of P recorded 30 days after quarterly reports of the accounting values.

Table 4 Least Square Dummy Variable estimates with stock price after 10 days

	Basic Model			Our Model		
	Coefficient	**Student's t-test**	***p-value***	**Coefficient**	**Student's t-test**	***p-value***
d_SR				-2.50	-3.23	*0.001*
				(0.77)		
BPS	0.32	6.79	*0.000*	0.31	6.64	*0.000*
	(0.05)			*(0.05)*		
BPS*d_SR				0.42	2.85	*0.004*
				(0.15)		
EPS	1.36	3.04	*0.002*	1.26	2.93	*0.003*
	(0.45)			*(0.43)*		
EPS*d_SR				2.06	1.23	*0.220*
				(1.68)		
Intercept	4.31	12.56	*0.000*	4.43	13.46	*0.000*
	(0.34)			*(0.33)*		
No. of Obs		3121			3121	
R-Squared		0.8787			0.8806	
Adj. R-squared		0.8710			0.8729	
F-test		93.49			72.83	
p-value		*0.000*			*0.000*	
F-test on coefficients of dummy and interaction variables					3.820	
p-value					*0.010*	
Poolability test: F-test on joint significance of fixed effects		*46.66*			*42.69*	
p-value		*0.000*			*0.000*	
Hausman test (chi-squared)		*159.52*			*167.55*	
p-value		*0.000*			*0.000*	

Notes: This table presents the Least Square Dummy Variable estimates. The two models are based on the following equations:
Basic model $P_{itq} = \beta_0 + \beta_1 BPS_{itq} + \beta_2 EPS_{itq} + u_{itq}$
Our model $P_{itq} = \beta_0 + \delta_0 d\_SR_{itq} + \beta_1 BPS_{itq} + \delta_1 BPS_{itq} * d\_SR_{itq} + \beta_2 EPS_{itq} + \delta_2 EPS_{itq} * d\_SR_{itq} + u_{itq}$
P is the official stock market value recorded 10 days after quarterly reports of accounting values; BPS is the book value per share from quarterly reports supplied by the companies in the sample; EPS is the earnings per share from quarterly reports supplied by the companies in the sample; d_SR is a dummy variable equal to 1 if the company publishes a social report and 0 if it does not (our survey); BPS_ d_SR is the interaction of the dummy variable with BPS; and EPS_ d_SR is the interaction of the dummy variable with EPS. All regressions include standard errors in parentheses (heteroskedasticity-robust). A total of 4094 observations were made, but the regression analysis includes 3121 due to missing accounting data.

Table 5 Least Square Dummy Variable estimates with stock price after 30 days

	Basic Model			Our Model		
	Coefficient	**Student's t-test**	***p-value***	**Coefficient**	**Student's t-test**	***p-value***
d_SR				-2.46	-3.23	*0.001*
				(0.76)		
BPS	0.31	6.41	*0.000*	0.30	6.64	*0.000*
	(0.05)			*(0.05)*		
BPS*d_SR				0.41	2.85	*0.008*
				(0.15)		
EPS	1.50	3.31	*0.001*	1.39	2.93	*0.001*
	(0.45)			*(0.43)*		
EPS*d_SR				2.25	1.23	*0.191*
				(1.72)		
Intercept	4.07	11.36	*0.000*	4.19	13.46	*0.000*
	(0.36)			*(0.35)*		
No. of Obs		3121			3121	
R-Squared		0.8800			0.8819	
Adj. R-squared		0.8724			0.8744	
F-test		93.71			73.61	
p-value		*0.000*			*0.000*	
F-test on coefficients of dummy and interaction variables					4.010	
p-value					*0.007*	
Poolability test: F-test on joint significance of fixed effects		*47.45*			*43.38*	
p-value		*0.000*			*0.000*	
Hausman test (chi-squared)		*164.21*			*173.26*	
p-value		*0.000*			*0.000*	

Notes: This table presents the Least Square Dummy Variable estimates. The two models are based on the following equations:
Basic model $P_{itq} = \beta_0 + \beta_1 BPS_{itq} + \beta_2 EPS_{itq} + u_{itq}$
Our model $P_{itq} = \beta_0 + \delta_0 d\_SR_{itq} + \beta_1 BPS_{itq} + \delta_1 BPS_{itq} * d\_SR_{itq} + \beta_2 EPS_{itq} + \delta_2 EPS_{itq} * d\_SR_{itq} + u_{itq}$
P is the official stock market value recorded 30 days after quarterly reports of accounting values; BPS is the book value per share from quarterly reports supplied by the companies in the sample; EPS is the earnings per share from quarterly reports supplied by the companies in the sample; d_SR is a dummy variable equal to 1 if the company publishes a social report and 0 if it does not (our survey); BPS_ d_SR is the interaction of the dummy variable with BPS; EPS_ d_SR is the interaction of the dummy variable with EPS. All regressions include yearly dummies; standard errors are in parentheses (heteroskedasticity-robust). A total of 4094 observations were made, but the regression analysis includes 3121 due to missing accounting data.

Table 6 Least Square Dummy Variable estimates with stock price after 10 days without outliers

	Basic Model			Our Model		
	Coefficient	**Student's t-test**	***p-value***	**Coefficient**	**Student's t-test**	***p-value***
d_SR				-2.30	-4.57	*0.000*
				(0.50)		
BPS	0.80	7.59	*0.000*	0.67	6.60	*0.000*
	(0.11)			*(0.10)*		
BPS*d_SR				0.50	4.47	*0.000*
				(0.11)		
EPS	5.01	6.07	*0.000*	4.49	5.18	*0.000*
	(0.83)			*(0.87)*		
EPS*d_SR				3.72	1.54	*0.125*
				(2.42)		
Intercept	1.47	4.96	*0.000*	1.91	6.72	*0.000*
	(0.30)			*(0.28)*		
No. of Obs		2609			2609	
R-Squared		0.8551			0.8582	
Adj. R-squared		0.8446			0.8487	
F-test		122.26			94.92	
p-value		*0.000*			*0.000*	
F-test on coefficients of dummy and interaction variables					9.420	
p-value					*0.000*	
Poolability test: F-test on joint significance of fixed effects		*28.94*			*28.82*	
p-value		*0.000*			*0.000*	
Hausman test (chi-squared)		*48.18*			*66.76*	
p-value		*0.000*			*0.000*	

Notes: This table presents the Least Square Dummy Variable estimates obtained after eliminating outliers from the data. We eliminated data with a book value per share or earnings per share lower than Q1-1.5*IQR and higher than Q3+1.5*IQR, where Q1 is the first quartile, Q3 is the third quartile and IQR is the interquartile range. After cleaning the data of outliers, the total number of observations dropped to 2609 in the regression analysis. The two models estimated are based on the following equations:

Basic model $P_{it} = \beta_0 + \beta_1 BPS_{itq} + \beta_2 EPS_{itq} + u_{itq}$

Our model $P_{itq} = \beta_0 + \delta_0 d\_SR_{itq} + \beta_1 BPS_{itq} + \delta_1 BPS_{itq} * d\_SR_{itq} + \beta_2 EPS_{itq} + \delta_2 EPS_{itq} * d\_SR_{itq} + u_{itq}$

P is the official stock market value recorded 10 days after quarterly reports of accounting values; BPS is the book value per share from quarterly reports supplied by the companies in the sample; EPS is the earnings per share from quarterly reports supplied by the companies in the sample; d_SR is a dummy variable equal to 1 if the company publishes the social report and 0 if it does not (our survey); BPS_ d_SR is the interaction of the dummy variable with BPS; EPS_ d_SR is the interaction of the dummy variable with EPS. All regressions include standard errors in parentheses (heteroscedasticity-robust).

Table 7 Least Square Dummy Variable estimates with stock price after 30 days without outliers

	Basic Model			Our Model		
	Coefficient	**Student's t-test**	***p-value***	**Coefficient**	**Student's t-test**	***p-value***
d_SR				-2.29	-4.51	*0.000*
				(0.51)		
BPS	0.77	7.36	*0.000*	0.63	6.35	*0.000*
	(0.10)			*(0.10)*		
BPS*d_SR				0.53	4.85	*0.000*
				(0.11)		
EPS	5.47	6.55	*0.000*	5.00	5.71	*0.000*
	(0.83)			*(0.88)*		
EPS*d_SR				3.10	1.31	*0.190*
				(2.36)		
Intercept	1.33	4.37	*0.000*	1.79	6.19	*0.000*
	(0.31)			*(0.29)*		
No. of Obs		2609			2609	
R-Squared		0.8570			0.8603	
Adj. R-squared		0.8467			0.8500	
F-test		117.97			92.27	
p-value		*0.000*			*0.000*	
F-test on coefficients of dummy and interaction variables					9.870	
p-value					*0.000*	
Poolability test: F-test on joint significance of fixed effects		*29.33*			*29.37*	
p-value		*0.000*			*0.000*	
Hausman test (chi-squared)		*48.38*			*69.11*	
p-value		*0.000*			*0.000*	

Notes: This table presents the Least Square Dummy Variable estimates obtained after eliminating outliers from the data. We eliminated data with a book value per share and/or earnings per share lower than Q1-1.5*IQR and higher than Q3+1.5*IQR, where Q1 is the first quartile, Q3 is the third quartile and IQR is the interquartile range. After cleaning the data of outliers, the total number of observations dropped to 2609 in the regression analysis. The two models estimated are based on the following equations:

Basic model $P_{itq} = \beta_0 + \beta_1 BPS_{itq} + \beta_2 EPS_{itq} + u_{itq}$

Our model $P_{itq} = \beta_0 + \delta_0 d\_SR_{itq} + \beta_1 BPS_{itq} + \delta_1 BPS_{itq} * d\_SR_{itq} + \beta_2 EPS_{itq} + \delta_2 EPS_{itq} * d\_SR_{itq} + u_{itq}$

P is the official stock market value recorded 30 days after quarterly reports of accounting values; BPS is the book value per share from quarterly reports supplied by the companies in the sample; EPS is the earnings per share from quarterly reports supplied by the companies in the sample; d_SR is a dummy variable equal to 1 if the company publishes the social report and 0 if it does not (our survey); BPS_ d_SR is the interaction of the dummy variable with BPS; EPS_ d_SR is the interaction of the dummy variable with EPS. All regressions include standard errors in parentheses (heteroscedasticity-robust).