

## The Relationship between Abnormal Returns and Social and Environmental Responsibility: An Empirical Study of Companies Traded on the Bovespa from 1999 to 2006

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**ABSTRACT:** This article investigates the relationship between abnormal returns and the social and environmental performance of companies listed for trading on the São Paulo Stock Exchange (Bovespa) that regularly publish a social balance sheet according to the model proposed by the Brazilian Institute of Social and Economic Analysis (IBASE). We measured the social and environmental performance based on internal and external social and environmental responsibility indicators taken from the social balance sheets of companies that publish such a report, drawn from among the 100 largest companies by market value, between 1999 and 2006. To calculate abnormal returns we used the share price and beta, available in the Economática and Ipeadata databases. The hypothesis was tested by regression analysis with fixed-effect panel data, adjusted by the robustness tool, applying the Hausman test. The results show that the external social responsibility indicator, the internal social responsibility indicator and the environmental responsibility indicator do not have any relationship with the firms' abnormal returns.

**Keywords:** abnormal returns, efficiency, social responsibility, environmental responsibility.

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Received in 03/30/2009; revised in 04/03/2009; accept in 05/08/2009.

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**Editor's note:** This paper was accepted by Antonio Lopo Martinez

## 1. INTRODUCTION

**C**lassical economics defends the idea that organizations exist to maximize value for shareholders – shareholders' expectations (Friedman, 1970). In contrast, the stakeholder theory (Freeman, 1984) argues that organizations exist to meet the demands of a wider group than just shareholders, also including customers, suppliers, employees, governments, and in the final analysis, society at large.

From the stakeholder perspective, corporate social responsibility is defined by Ashley (2005, pp. 6-7) as the commitment a given organization assumes to society. This commitment can be measured by acts that positively affect a specific community or society at large.

From the stakeholder perspective, corporate social responsibility is defined by Ashley (2005, pp. 6-7) as the commitment a given organization assumes to society. This commitment can be measured by acts that positively affect a specific community or society at large.

This study is based on agency theory, which according to Jensen and Meckling (1976) and Akerlof (1970) applies in business settings where the shareholders (principals) contract the managers (agents) and both can exploit the company to serve their personal interests in detriment to the interests of the company itself.

For Wood (1991, p. 695), the basic idea behind corporate social responsibility is that organizations and society are interdependent and non-distinct systems, that is, there is a relationship of interaction between them in which organizations draw on various inputs from the environment. These inputs are transformed, by means of productive and managerial processes, into saleable products and services that return to meet the expectations of society in the broadest sense.

According to Cesar and Silva Junior (2008), when an organization obtains a positive financial return, it should seek to act in a socially responsible way to build a better society. Therefore, a circular causality relationship is formed between the organization and society, in which one contributes to better the other constantly and interdependently and where profits enable social responsibility, which in turn spurs profits.

With respect to signaling theory, Spence (1973) argued firms can send neutral, positive or negative signals to interested parties. This scenario can lead to a positive signal to the capital market, according to the strategies assumed by managers.

Based on these observations, this work examines the relationship between social and environmental investment and abnormal returns of companies, since according to Friedman (1970), organizations exist to maximize value for shareholders – shareholder expectations.

Therefore, we ask whether this circular causality works in practice, that is, whether there is a relationship between social/environmental responsibility and abnormal returns. The central problem rests in identifying and analyzing the consequences of directing earnings not just to the shareholders, but to all stakeholders. Starting from this identification, it is important to find empirical evidence to support the theoretical argument prevailing among authors who advocate the practice of social responsibility, in the sense that corporate social investment improves the firm's performance and position in the market (Ashley, 2005; Wood, 1991; Wood; Jones, 1996; Carroll, 1979; 1991; 1999).

The existence of a positive relationship between abnormal returns and social/environmental investment, from a financial perspective, allows measuring in monetary terms how positively shareholders view the firm's investment of resources in the social/environmental area.

Based on these issues and observations, the research problem addressed here is: **What is the relationship between abnormal returns and the social and environmental**

### **performance of companies traded on the Bovespa that publish a social balance sheet based on the IBASE model?**

Therefore, our aim is to investigate the relationship between abnormal returns and the social and environmental performance of companies listed on the Bovespa (São Paulo Stock Exchange). The relevance of this study is that shareholders can interfere in management decisions on whether or not to invest in the social and environmental area, so knowledge of the effects of such investments on company returns is important for shareholders to make informed decisions in this respect.

To meet this aim we measured the social and environmental performance from internal and external social indicators and environmental indicators, taken from the social balance sheets published by companies based on the IBASE model. Abnormal return was measured by using information available in the Economática and Ipeadata databases. These aspects are described in the research methodology topic.

According to the view that social and environmental performance can be negatively, neutrally or positively related to abnormal returns, we formed the following null hypothesis to shed light on this subject, based on a review of the literature:

H<sub>0</sub>: There is a relationship between the abnormal returns of the firms that compose the sample and their social and environmental performance.

One of the main limitations of this study is the fact that social information – based on company disclosures – for the most part are not subject to any independent auditing process. And as normally occurs with empirical studies, the results here depend on the sample chosen and are based on the presupposition that the information disclosed by the sample companies is reliable.

## **2. SOCIAL/ENVIRONMENTAL PERFORMANCE AND STOCK RETURNS**

Social responsibility has been the subject of several recent studies using statistical tools more intensely, seeking to show quantitative evidence of a relationship between corporate social responsibility (CSR) and the financial performance or share price of firms.

Studies of the relationship between environmental and social performance and financial performance focus on scenarios in which, according to Jensen and Meckling (1976) and Akerlof (1970), the shareholders (principals) contract managers (agents) in a context in which both sides can exploit the company to meet their personal interests, in detriment to those of the company itself. The existence of information asymmetry between managers and investors can put the latter at a disadvantage in relation to the former, since managers have access to information not available to shareholders.

The decision to invest in one or another social/environmental project is at the discretion of management. Hence the shareholders do not have access to information on whether this project can be a positive signal for the company in the stock market.

On the matter of signaling theory, Spence (1973) stressed that firms can send neutral, positive or negative signals to interested parties. For Cochran and Wood (1984), the majority of performance metrics fall into two general categories: return to investors and accounting return (profit). Moskowitz (1972), Vance (1975) and Alexander and Bulchholz (1978) all studied the relationship between social investment and shareholder returns. Cochran and Wood (1984, p. 45) argued that “this measurement is clearly fails. The change in price per share is only one element of the return of investor.”

Social performance is defined by Wood (1991) as a configuration of principles of observable social responsibility, policies, programs and impacts, and how they apply in the

firm's social relationships. Because of its breadth, its measurement and evaluation are complex and subject to operational difficulties.

In Brazil there are some organizations that focus on social and/or environmental performance of firms. Among these three stand out: the Ethos Institute, founded in 1999, the Brazilian Institute for Social and Economic Analysis, (IBASE), created in 1997, and the Akatu Institute, set up in 2001.

In 2005, the Bovespa, together with various institutions – ABRAPP, ANBID, APIMEC, IBGC, IFC, Ethos Institute and the Ministry of the Environment – decided to join forces to create a stock index to serve as a reference for socially responsible investments, the Business Sustainability Index (*Índice de Sustentabilidade Empresarial* – ISE). The purpose of the ISE is to reflect the returns of a portfolio composed of the shares of companies with recognized commitment to social responsibility and business sustainability, and to promote good practices among Brazilian companies (Bovespa, 2007).

A company's social balance sheet aims to demonstrate the level of social responsibility assumed by it and to render accounts to society with respect to its use of the public patrimony, consisting of natural and human resources, and its right to coexist and enjoy the benefits of the society in which it acts (Iudícibus; Martins and Gelbcke, 2003).

According to IBASE (2007), the social balance sheet is

a statement published annually by the company gathering a set of information on social products, benefits and actions, intended for employees, investors, market analysts, shareholders and the community. It is also a strategic instrument to evaluate and multiply the exercise of corporate social responsibility (IBASE, 2007).

Nossa and Carvalho (2003, p. 3) had the following comment on environmental information:

Many empirical studies have examined the behavior and disclosure of environmental information. Generally the subject of environmental disclosure is treated together with social disclosure. The majority of these studies have used the content analysis technique to collect and evaluate the data (Nossa; Carvalho, 2003, p. 3).

Many studies over the past four decades have tried to find a relationship between social and environmental performance on the one hand and financial performance/stock returns on the other, but conflicting results have prevented a clear consensus on the theme. Another pertinent critique is the wide variety of performance measurement methods, mainly referring to social and environmental performance.

Ullmann (1985, pp. 554-555) characterized the results of these studies as information in search of a suitable theory, and urged future research focusing on the “relationships between social performance and economic performance.” Aupperle, Carrol and Hatfield (1985) corroborated the observation of Ullmann (1985), but called attention to the quality of studies on the theme of social responsibility and pointed out that some reflect varied methodologies and different levels of rigor. However, well-formulated surveys and studies using content analysis of annual reports have provided a useful initial base.

### **3. RESULTS OF EMPIRICAL STUDIES – NEGATIVE, POSITIVE AND NEUTRAL RELATIONSHIP BETWEEN SOCIAL AND FINANCIAL PERFORMANCE**

The view that there is a positive relationship between social and financial performance was first expressed by Moskowitz (1972), who tried to validate it empirically. According to him, socially aware and concerned managers also have the necessary skills to run a superior

company in the traditional sense of financial performance, thus making their firm an attractive investment.

Moskowitz (1972) chose 14 firms that had or that he believed had a good social responsibility track record, and then calculated the rate of return of their common stocks for the first six months of 1972. He observed that these 14 stocks had appreciated 7.28%, while the main market index, the Dow-Jones Industrial, had only gone up 4.4%. He saw this as support for his view.

Using the comparison of the means test, Vance (1975) conducted a study of companies listed on the NYSE of the relationship between firms' social responsibility and stock returns, and found a negative relationship.

Alexsander and Bulchhols (1978) replicated this study applying regression analysis with some adjustments in the stock return calculation, to include risk. To classify social responsibility, they used the methodology proposed by Vance (1975) and Moskowitz (1972). The result suggested there was no relationship between social responsibility and stock returns, exactly the opposite of the results found by Vance (1975) and Moskowitz (1972).

Aupperle and Hatfield (1985) also did not find any relationship between social responsibility and financial performance. They stressed that a limitation of research into social responsibility could be the difficulty and possible bias of the methods for measuring social responsibility.

In Brazil, Borba (2005) carried out an empirical study and found results indicating that in the majority of periods analyzed the relationships were predominantly nil, using market or accounting financial performance and social performance indicators, with or without a lag. However, he observed that when significant relations occurred between these variables, they were generally positive, particularly when using accounting financial indicators. In his work, he used two financial performance variables according to market values: Tobin's  $q$  and firm value, calculated according to the approximation proposed by Economática. He also used three variables to represent the financial performance according to accounting numbers: operating profit before financial revenues and expenses over total assets, earnings before interest, taxes, depreciation and amortization (EBITDA) and net operating profit over total assets. For the corporate social performance variable, he constructed an indicator based on the data available in the social balance sheets of the firms studied, prepared according to the IBASE model. He also considered two control variables – one according to the firm's sector and the other the logarithm of the firm's net operating revenue.

Also in Brazil, Farias (2008) investigated the interrelationship of environmental disclosure, environmental performance and financial performance of a sample of 87 listed Brazilian companies, by means of a simultaneous equations model. The results indicated that while environmental disclosure is influenced by environmental performance and financial performance affects environmental performance, there is no significant relationship between environmental disclosure and financial performance.

Cochran and Wood (1984) employed the corporate social responsibility (CSR) variable according to the reputation scale of Moskowitz. Their results indicated there is no relationship between the social performance (CSR) and financial performance of companies.

In contrast, the studies of Waddock and Graves (1997) and McGuire, Sundgren and Schneeweis (1988) found a positive relationship between corporate social performance and financial performance. The social performance measure used by Waddock and Graves (1997, p. 307) followed the proposal of Ullmann (1985), based on eight social performance attributes of the firms studied.

The financial performance yardsticks applied in the tests of McGuire, Sundgren and Schneeweis (1988, p. 861) were market performance measured by risk-adjusted return (alpha) and total return. The control variable was the beta, representing the market risk.

#### 4. RESEARCH METHODOLOGY

##### 4.1 Type of Study

This study can be classified as empirical-analytical according to the definition of Martins (2000). We obtained our data from articles, books and other materials that had not yet received analytical treatment, or that could be reformulated according to our research purposes.

On the empirical aspect, we followed the orientation of Lopes (2004, p. 13), who observed that “the empirical focus of studies should rest on the understanding that ‘good’ research in economics, administration and accounting must serve to explain real behavior, not to subject it to normatization.”

To respond to the research question, we obtained data from the social balance sheets published by selected firms. We chose our sample of firms according to the ranking of the “Best and Biggest for 2007”, put out by the business magazine *Exame*, among the 100 largest listed Brazilian companies by market value.

Of these 100 companies, we included only those that published social balance sheets or other social-environmental disclosures based on the IBASE model. We disregarded firms with other types of disclosures. Therefore, the number of firms in the sample over the study period was distributed as follows: 15 in 1999; 27 in 2000; 31 in 2001; 38 in 2002; 39 in 2003; 22 in 2004; 44 in 2005; and 28 in 2006, for a total of 244 observations. The descriptive statistics of the variables are shown in Appendix A.

The theoretical underpinnings of this study are those of signaling, agency and stakeholder theory.

For Stence (1973), according to the theory of signaling when companies adopt strategies they can signal this in neutral, positive or negative form to interested parties.

Freeman (1984) advocated, by means of stakeholder theory, that organizations exist to meet the demands of a larger and broader group of social actors. Among these are shareholders, managers, employees, suppliers, customers and governments, among others. Therefore, from a stakeholder perspective, corporate social responsibility is defined by Ashley (2005, pp. 6-7) as the commitment a determined firm must make to society. This commitment can be measured by the acts that affect society positively, as a whole or in a specific community.

With respect to agency theory in the organizational context, Jensen and Meckling (1976) and Akerlof (1970) argued that agency theory applies to businesses because the shareholders (principals) contract the managers (agents), and both can exploit the company to meet their own personal interests, in detriment to those of the firm. Thus, the choices made by managers between one project and another can reflect the managers’ interests more than those of the company. In this context, due to the existence of information asymmetry between managers and investors, projects can be chosen that put investors at a disadvantage in relation to managers, since the latter have access to information that the shareholders do not.

To analyze the data, we used panel regression with fixed effects, adjusted by the robustness tool, according to Greene (1997, p. 635), to correct for possible statistical problems caused by the existence of heteroskedasticity. We also applied the Shapiro-Wilk test of the

normality of the residuals and the Hausman test to choose between the fixed effects and random effects model in the panel regression analysis. On this matter, Gujarati (2006) wrote:

The answer to this question [of which model is better] hinges around the assumption one makes about the likely correlation between the individual, or cross-section specific, error component  $\varepsilon_i$  and the X regressors. If it is assumed that  $\varepsilon_i$  and the X's are *uncorrelated*, ECM may be appropriate, whereas if  $\varepsilon_i$  and the X's are *correlated*, FEM may be appropriate (Gujarati; 2006, pp. 523-524).

Further according to Gujarati (2006, p. 524), Hausman developed a test in 1978 to formalize the best model choice between fixed effects and random effects, arguing that:

The null hypothesis underlying the Hausman test is that the FEM and ECM estimators do not differ substantially. The test statistic developed by Hausman has an asymptotic  $\chi^2$ . If the null hypothesis is rejected, the conclusion is that ECM is not appropriate and that we may be better off using FEM, in which case statistical inferences will be conditional on the  $\varepsilon_i$  in the sample (Gujarati, 2006, pp. 524-525).

The use of panel data benefits the sample size and the power of the test statistics, as shown by Wooldridge (2006 p. 403): "One reason for using independently pooled cross sections is to increase the sample size. By pooling random samples drawn from the same population, but at different points in time, we can get more precise estimators and test statistics with more power." Wooldridge (2006 p. 403) also pointed out that "[p]ooling is only helpful in this regard if the relationship between the dependent variable and at least one of the independent variables remains constant over time."

## 4.2 Dependent Variable

Borba (2005) argued that the use of financial performance variables taken from accounting statements is more indicated for this type of study since they present more coherent results than do market financial performance variables. Despite these arguments, we decided to study abnormal return, that is, the performance of the stock prices of companies that invest resources in the social/environmental area, to verify, according to signaling theory if investment in social and environmental responsibility sends positive, neutral or negative signals to the Brazilian capital market.

Abnormal return ( $AR_{it}$ ), according to Sarlo Neto (2004), is the difference between the stock's rate of return (Equation 1) and its expected return (Equation 2).

$$R_{it} = (p_{it} - p_{it-1}) \div p_{it-1} \quad (1)$$

Where:

$R_{it}$  = rate of return of asset  $i$  and  $t$  = year of the social investment;

$p_{it}$  = share price of company  $i$  on the last trading day of the year of the social investment;

$p_{it-1}$  = share price of company  $i$  on the last trading day of the year before that of the social investment.

We calculated the expected return (Equation 2) according to the proposal of Mellagi Filho and Ishikawa (2000). In the Brazilian market, the interest rate paid on government guaranteed passbook savings accounts is often used as a proxy for the risk-free rate of return (Sant'Anna, 2004). We calculated the capital asset pricing model (CAPM) from the Bovespa Index (Ibovespa) on the last trading day of the year for each firm. We obtained both the

Ibovespa and the average annual savings account rate from the site of Ipeadata (BRASIL, 2007), and the beta for each firm from the Economática database (Equation 2).

$$E(R_{it}) = R_F + \beta_{it} [E(R_M) - R_F] \quad (2)$$

Where:

$E(R_{it})$  = expected rate of return of asset  $i$  and  $t$  = the year of the social investment;

$R_F$  = risk-free rate of return, represented here by the rate paid on passbook savings accounts;

$\beta_{it}$  = measure of each stock's return versus market returns; and

$E(R_M)$  = expected market returns.

### 4.3 Independent Variables

We considered the following social and environmental performance variables for each firm: internal social indicator; external social indicator; and environmental indicator. All of these were taken from the respective social balance sheet of each company.

The internal social indicator, according to IBASE (2007), includes all resources expended by the company on social actions within the organization, such as social charges on payroll, profit sharing, meal assistance, complementary pension plan, health benefits, training, daycare and others.

Also according to IBASE (2007), the external social indicator is given by the sum of the social investments the company makes regularly, along with taxes but not including social charges on payroll.

Finally, IBASE (2007) defines the environmental indicator as all the resources expended by the company on the environment. In this article, we used the total invested, but the IBASE model accounts for the following environmental indicators separately: (1) investments related to the company's production/operation; (2) investments in external programs/projects; and (3) annual targets. We did not use this last category, because few companies report it. Besides this, for the purpose of this work, the annual target indicator would be out of place since it is not calculated based on net revenue, and is subjective in any event.

From these three indicators, we calculated a single index by adding the total investments in the social (internal and external) and environmental areas, divided by net revenue (NR), defined as the gross revenue excluding taxes and other fiscal levies, returns, abatements and commercial discounts, multiplied by 100.

### 4.4 Control Variables

Control variables are used to account for the already known influences on the dependent variable from past studies. In this work we considered the following control variables: a) company size, defined as the logarithm of net assets; and b) indebtedness, calculated by the quotient of total liabilities and total assets (debt/assets) and also by the quotient of the total liabilities and stockholders' equity (debt/equity), since these were used in other studies, such as those by Mahoney and Roberts (2004) and Waddock and Graves (1997) in efforts to explain companies' returns.

In their studies, Dalmácio et al. (2005), Gupta (1980), Sutton (1997), Kalecki (1945) and Hall (1987) all found evidence that firm size is related to profitability.



In this respect, Porter (1991, p. 144) pointed out that "...firms that have relatively small shares will have lower profit potential" in comparison with those with greater market shares. He further stressed that these companies "enjoy differing degrees of bargaining power with suppliers or customers." In other words, since larger companies sell more, they can produce more cheaply than their smaller rivals. Therefore, a company's size can influence its performance, and as a consequence, its stock price.

D'Arcimoles and Trebucq (2002) also paid attention to this control variable:

(...)Size is a relevant variable because social and environmental expenses and the ability to communicate may differ between small and large firms. A firm's size is measured by three alternative variables: total sales, total assets and the number of employees. Financial efforts towards employees or environmental protection also depend upon the management's room for manoeuvre. As a proxy for management's risk tolerance, we use the debt to total capital ratio. (D'Arcimoles and Trebucq, 2002, pp. 7-8).

Here we used the indicator of financial dependence (debt/assets), without separating long-term debt. According to Assaf Neto (2001, p. 147), this indicates how much of "the amount invested in assets, [...] comes from outside parties." We also use another indebtedness index, given by the ratio between debt and equity. According to Matarazzo (2003, pp. 295-297), "the debt/equity ratio calls the attention of analysts and investors to the increases in the company's indebtedness," showing great sensitivity in this type of disclosure, making it that author's preferred indicator.

Companies can obtain resources from various sources, such as debt (bank loans, bond issues, credit from suppliers, etc.), equity (money raised by selling shares) and retained earnings (reinvestment of profits). Each of these options has a specific funding cost for the firm (Schroeder et al., 2005).

The funding cost represents the return expected by the owners of the capital. The overall cost of capital is related to the choices the firm makes regarding the way of obtaining resources, which can occur in various form with distinct rates of return, as pointed out by Myers (1984). Modigliani and Miller (1958) created the M&M theorem regarding firms' capital structure. Among other aspects, this theorem addresses the cost versus benefit relation of debt, which can influence firms' performance. This performance can be a signal to shareholders and have an influence on the stock price. A justification for the use of the size and indebtedness variables is that they are good control variables to minimize the error term of the regression.

#### 4.5 Statistical Model

Based on the variables previously selected, our model for the relationship between abnormal returns and the social and environmental performance of Brazilian companies is given by Equation (3).

$$AR_t = \beta_0 + \beta_1 \text{IntSocInd}_t + \beta_2 \text{ExSocInd}_t + \beta_3 \text{EnvInd}_t + \beta_4 \text{size}_t + \beta_5 \text{Debt / Equity}_t + \xi_t \quad (3)$$

Where:

$AR_t$  – Abnormal return at  $t$ . (market performance variable);

$B_0$  – intercept;

$\text{IntSocInd}_t$  – Internal social indicator at  $t$  (social charges, profit sharing, pension plan, meal benefits, health benefits, training, daycare and others);

$ExtSocInd_t$  – External social indicator at  $t$ ; (total contributions to society, given by the sum of social investments regularly made by the company and taxes, excluding social charges);

$EnvInd_t$  – Environmental indicator, given by the total amount invested in environmental measures at  $t$ ;

$Size_t$  – Given by the logarithm of total assets;

$Debt/Equity_t$  –  $(CL_t + NCL_t / SE_{t-1})$ , that is, current liabilities at  $t$  + non-current liabilities at  $t$  divided by stockholders' equity one year beforehand;

$Debt/Assets_t$  –  $(CL_t + NCL_t / NA_{t-1})$ , that is, current liabilities at  $t$  + non-current liabilities at  $t$  divided by net assets one year beforehand; and

$\xi_{it}$  – stochastic error term of the panel regression.

## 5. ANÁLISIS AND DISCUSSION OF THE RESULTS

The results obtained for the dependent variable (AR) and the independent variables (external social indicator, internal social indicator and environmental indicator) estimated by the panel method with fixed effect, as well as the control variables, are presented in Table 1, which also describes the beta coefficients ( $\beta$ ), t-statistic (between parentheses), levels of significance (p-value), significance by the F-test and the Hausman test. The Hausman test (0.00), at a 1% level of significance, indicates according to Table 1 that there is no significant difference between the coefficients by applying the panel regression with fixed or random effects. Therefore, we opted for panel regression with fixed effects.

**Table 1: Result of the panel regression analysis with Equation 3**

$$RA_{it} = \beta_0 + \beta_1.IndSInterno_{it} + \beta_2.IndSExterno_{it} + \beta_3.IndSAmbiental_{it} + \beta_4.tamanho_{it} + \beta_5.Divida / PL_{it} + \xi_{it}$$

<b>Betas</b>	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$	$\beta_4$	$\beta_5$	<b>F</b>	<b>Hausman</b>
Coefficients	1.71	0.00	-0.01	-0.02	-0.09	0.00	0.00	0,00
t-statistic	(2.60)*	(0.22)	(0.57)	(-0.05)	(-2.39)**	(0.23)		

Note: \*, \*\* significant at 1% and 5%, respectively (t-statistic in parentheses). The data are for the period from 1999 to 2005.

It can be seen there is no significant relationship between abnormal return and the internal social indicator ( $\beta_1$ ), external social indicator ( $\beta_2$ ) and environmental indicator ( $\beta_3$ ). These findings corroborate those of Alexander and Bulchholz (1978) but run counter to those of Vance (1975) and Moskowitz (1975), both of whom found a relationship between stock returns and social responsibility.

The results indicating there is no relationship between external social responsibility ( $\beta_2$ ) and abnormal return do not corroborate studies that evaluated the relationship between financial performance and social responsibility. Among these works, we can cite Mahoney and Roberts (2004), where a positive relationship was found between ROA and social performance in the international dimension; Waddock and Graves (1997) and McGuire, Sundgren and Schneeweis (1988), where a positive relationship was found between the financial performance and social performance variables analyzed; and also Cochran and Wood (1984), where although the authors found no relationship between the performances, they did find from their tests a positive relationship between age of the asset of the firms studied and their corporate social responsibility.

Although it was not significant, the coefficient of internal social responsibility was positively related to abnormal return.

For the environmental performance indicator ( $\beta_3$ ), although its relationship with abnormal returns was not statistically significant in the model, the coefficient was negative. This is opposite the finding of Mahoney and Roberts (2004), where a significant positive relationship was found.

Although from these findings we cannot affirm that the external social indicator ( $\beta_2$ ) and the environmental indicator ( $\beta_3$ ) are different than zero, we did observe a negative coefficient for both these betas. In this sense, the abnormal returns tend to diminish, and vice versa. According to the stockholder theory, there is a reduction in stock returns when the social responsibility indicators are high, thus generating a negative relationship between companies' social and financial performance. This phenomenon can be an indication of impairment of the financial health of the company, to the point of driving shareholders away, generating a negative relationship between abnormal returns and internal social investments/environmental investments.

However, analysis of the internal social indicator ( $\beta_1$ ) reveals a certain degree of management efficiency based on the stakeholder theory, since the higher the investment was in social performance, the higher the level of abnormal return was also. But we must stress that it is impossible to say this coefficient is different from zero at a 10% level of significance.

According to Jensen (2001), stakeholder theory is a prescription for destruction of firm value and reduction of social welfare. Nevertheless, Jensen (2001, p. 9) tried to conciliate the two theories, by preparing an "enlightened" value maximization approach, according to which a company cannot maximize its value if it ignores the interests of its stakeholders.

We found from the negative sign of the external social performance coefficient that greater spending in this respect sacrifices assets without a corresponding return, while the positive sign of the internal social performance coefficient indicates the opposite. Internal social investments are aimed at the employees, such as meal benefits, private pension plans, health insurance, training and daycare. In contrast, external social investments go to the community, such as support for daycare, schools and leisure and cultural activities.

This study helps explain the (rational) spontaneity of external social investments and sounds an alarm about the value of the internal social investments a firm assumes, from the standpoint of stock returns.

But in the final analysis, all three variables – internal and external social performance ( $\beta_1$  and  $\beta_2$ ) and environmental performance ( $\beta_3$ ) – were not statistically significant at a 10% level in the period from 1999 to 2006.

## 6. CONCLUSIONS

The aim of this study was to investigate the relationship of abnormal returns with the social-environmental performance of companies. We drew our data from a sample of firms that prepare a social balance sheet according to the IBASE model. These statements, chosen because they provide quantitative evidence of firms' social and environmental investments, are available in a time series and are in harmony with the methodology chosen. Therefore, we can say that in Brazil it is possible to find data to evaluate the social performance of companies using a positive research approach (Theóphilo and Iudícibus, 2005, pp. 9-10), although there are still some limitations.

The results of this study, with application of panel data analysis, show that the abnormal returns of the companies considered are not subject to the influence of their internal and external social indicators or environmental indicators.

Based on these results, limited to the sample analyzed, the null hypothesis that there is a relationship between abnormal returns and social performance variables was rejected.

This work contributes to the academic and professional debate on the value of corporate social responsibility and the relationship between stock returns and social and environmental performance.

Future studies can perform statistical tests considering all the companies listed on the Bovespa that also publish a social balance sheet and compare them to the results found here. We also recommend formulating other tests to verify if firms that invest more in social responsibility (internal and external) and environmental responsibility also obtain higher profits. It would also be interesting to investigate if social and environmental investments are stable for companies that suffer losses and for those that obtain profits. Other social performance indicators can also be tested, such as the number of employees and/or number of job-related accidents (both of which are available in the social balance sheets), besides the use of variables as proxies from other sustainability reporting models, such as that of the GRI – Global Reporting Initiative.

Finally, we must point out an important limitation of this study, namely that we drew our sample of firms only from the 100 largest companies that publish a social balance sheet according to the IBASE model.

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