

The Relationship between Corporate Environmental and Financial Performance: Evidence for Portuguese listed corporations

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Abstract

This study examines the relationship between the environmental performance and the financial performance of Portuguese stock corporations, based on a sample of 35 corporations listed in the Euronext Lisbon stock exchange, for the period from 2000 to 2004. Corporate environmental performance is measured by an evaluation of the environmental information disclosed in 2003 corporate annual financial reports. Stock market-based measures, such as return, risk and risk-adjusted-return measures, are used to evaluate corporate financial performance, for the five-year observation period. We use the portfolio studies and contingency tables methodology to evaluate the relationship between corporate environmental disclosures and corporate stock market performance.

The empirical results suggest that companies that do not disclose environmental information have a superior financial performance – in terms of return, risk and risk-adjusted return – than those that disclose environmental information. In particular, companies with better environmental reporting, which disclose qualitative and quantitative environmental information, are those with worse financial performance. Yet, the differences found in financial performance are not statistically significant. These results are robust to both methodologies used (portfolio studies and contingency tables) and to different time horizons used for the computation of returns (daily and monthly).

These results are not consistent with the contemporary view of environmental performance as a differentiation and competitiveness factor, which may be due to the still relatively small importance of environmental issues to corporations and investors.

Keywords: Environmental Report, Financial Performance, Capital Markets.

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EXTENDED ABSTRACT

The relationship between corporate environmental and financial performance has been, since the last decades, subject of intense theoretical and empirical debate. At the theoretical level, traditionalist and contemporary arguments have been commonly distinguished. While the former view environmental performance as a cost factor that tends to deteriorate financial performance (Friedman, 1962; Walley and Whitehead, 1994), the latter view environmental performance as a differentiation and competitiveness factor that may ultimately contribute to enhance financial performance (Porter, 1991; Porter and Van der Linde, 1995; Esty and Porter, 1998). At the empirical level, the majority of most recent studies tend to support the contemporary perspective, suggesting the existence of a positive relationship between corporate environmental and financial performance (v.g.: Russo and Fouts, 1997; Gottsman and Kessler, 1998; Konar and Cohen, 2001). Nevertheless, there are also studies that suggest the existence of a negative relationship (v.g. Cordeiro and Sarkis, 1997; Derwall, Guenster, Bauer and Koedijk, 2005) or even the absence of a statistically significant relationship between those two variables (v.g. Yamashita, Sen and Roberts, 1999; Rennings, Schroder and Ziegler, 2003).

The discrepancy on empirical results has usually been attributed to the use of different methodologies, as well as to the use of different measures of environmental and financial performance. In relation to methodological issues, empirical studies on the relationship between corporate environmental and financial performance can be classified into three groups (Wagner, Schaltegger and Wehemeyer, 2002): event studies, portfolio studies and multivariate regression studies. With respect to environmental performance measures, empirical studies either use measures compiled and disclosed by competent and independent entities, such as TRI emissions and environmental performance indexes, or measures constructed by the researcher, through the content analysis of corporate documents. These report events such as discharges or chemical leaks, lawsuits and environmental fines for non-compliance, environmental liabilities, environmental awards, environmental management systems implementation and/or certification. Also, annual reports and financial statements or other corporate documents allow for an analysis of the type of environmental information

reported by corporations. In relation to financial performance measures, empirical studies typically use accounting-based measures, such as return on sales, return on assets, return on equity and Tobin's q , and/or market-based measures, such as return and risk-adjusted measures. These divergences in methodologies and in the measures used as proxies for environmental and financial performance have made comparability between studies a difficult task, implying some caution in terms of the generalisation of empirical results (Ullmann, 1985; Griffin and Mahon, 1997). Thus, the relationship between corporate environmental and financial performance remains a controversial issue. Furthermore, empirical evidence in this area, extensively focused in the American market, is limited in Europe and inexistent in Portugal.

In this context, we aim to test empirically the relationship between corporate environmental and financial performance, using a sample of 35 non-financial corporations listed in the Official Market of Euronext Lisbon stock exchange, for a 5-year period (January 2000 to December 2004). Given the absence of independent and public environmental performance indexes in Portugal, corporate environmental performance is measured through content analysis of environmental information disclosed in the 2003 corporate annual financial reports. The aim is to split the sample according to the disclosure of environmental information (corporations that do not disclosure environmental information *vs* corporations that do disclosure environmental information) and to the type of environmental information disclosed (corporations that do not disclosure environmental information *vs* corporations that do disclosure qualitative environmental information *vs* corporations that do disclosure both qualitative and quantitative environmental information). Given the limitations of accounting-based measures (Ullmann, 1985), corporate financial performance is evaluated by stock market-based measures of return, risk and risk-adjusted return. Stock returns and excess returns relative to the risk-free asset (proxied by annualized 1-month Euribor rate), to the market portfolio (proxied by PSI Geral index) and to the FTSE sector portfolio (FTSE indexes) are used as return measures. Total risk (as measured by standard deviation of returns) and systematic risk (based on the well-established Capital Asset Pricing Model) are used as measures of risk. Treynor (1965), Sharpe (1966) and Jensen (1968)'s measures of performance are used as risk-adjusted return measures. These financial performance measures are calculated on a daily and monthly basis for the 5 year observation period (1255 and 60 observations, respectively), in order to evaluate the sensitivity of the results to the use of different time-horizons in the computation of financial performance measures.

Two distinct methodologies are used to test empirically the relationship between corporate environmental and financial performance: the portfolio studies and the

contingency tables methodologies. The portfolio studies methodology involves: (1) the construction of k stock portfolios, according to the k categories of the environmental variable; (2) the evaluation of the financial performance of each portfolio; (3) the comparison of the financial performance of the portfolios, throughout the construction of a “difference” portfolio; and (4) running one-sample t-test to evaluate the statistical significance of the differences found in portfolio financial performance. Additionally, the contingency tables methodology is used to test the independence of the environmental and financial performance variables. This methodology implies that quantitative financial performance measures are converted into qualitative or nominal variables (environmental performance variables are already qualitative). Accordingly, corporations with financial performance above (below) the median are considered good (poor) financial performers. The independence of the nominal environmental and financial performance variables is then tested throughout the construction of contingency tables and the use of Pearson chi-square and likelihood or odds ratio independence tests.

The empirical results suggest that companies that do not disclose environmental information have a superior financial performance – in terms of return, risk and risk-adjusted return – than those that disclose environmental information. In particular, companies with better environmental reporting, which disclose qualitative and quantitative environmental information, are those with worse financial performance. Yet, the differences found in financial performance are not statistically significant. These results are robust to both methodologies used (portfolio studies and contingency tables) and to different time horizons used for the computation of returns (daily and monthly).

These results are not consistent with the contemporary view of environmental performance as a differentiation and competitiveness factor, which may be due to the still relatively small importance of environmental issues to corporations and investors.

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