Essays on Firms' Environmental Information Disclosure, Financial Performance and Behavior Change

by

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ABSTRACT

This thesis investigates the relationship among firms' environmental information disclosure, financial performance, and behavior change. Three papers are written aiming to answering three questions: 1) how do environmental ratings affect accounting profitability, and vice versa; 2) do environmental news events impact firms' stock returns; 3) does informal environmental information release change firms' environmental behavior?

The three papers are interconnected but distinct studies in environmental economics and corporate finance. As the trend of environmental information disclosure programs continues to grow in the US and globally, a lot of research effort has been spent to understand whether information disclosure can be used as a supplement or alternative to conventional environmental regulation. This line of inquiry has provided many insights on the consequences of mandatory information disclosure. However, little evidence has been documented on how informal information disclosure impact firms' financial performance and behavior. It is my intention to fill the gap in the literature by providing empirical evidence. The first two papers come together to answer the question whether firms' informal environmental information disclosure impacts their financial performance. The third paper, from an information economics perspective, examines whether informal environmental information disclosure creates incentives through investors and lead to firms' subsequent behavior change. Brief introduction of each paper is provided in the following.

The first paper tests the long-run relationship between firms' financial and environmental performance in both directions by linking firms' accounting profitability from Campustat database and environmental performance ratings (SOCRATES database) published by social investing advisory KLD Inc. In recent years, an increasing number of firms across different industries have voluntarily complied or even over-complied with environmental regulation. In the financial market, we have seen soaring number of green funds in the past decade. The change in firms' practice and investor' investing habits raise questions on whether these new behaviors are caused by a positive link between firms' environmental and financial performance. Methodologically, this paper employs both static and dynamic (including Arellano-Bond and Panel VAR) panel

data econometrics. The latter allows us to understand the dynamic causal relationship and has not been previously conducted in the literature. Main findings in this study can be summarized as: 1) environmental effort reduces future profitability, while environmental concerns do not affect future profitability; 2) profitable firms tend to increase environmental effort, reduce environmental concerns.

The second paper examines stock market reaction following announcements of environmental events during 25 years from 1982-2007. Of the data collected for negative and positive events, 34 % exhibits ARCH effects. For these events with Autoregressive Conditional Heteroskedasticity (ARCH) effects, abnormal return and variance of the disturbance are estimated with a modified event study method, which allows for Exponential Generalized Autoregressive Conditional Heteroskedasticity (EGARCH) modeling, while the remaining events are estimated with the standard market model using OLS. Environmental events are collected from major U.S. newspapers (source: Lexis-Nexis Academic) and stock returns data are from the Center for Research in Security Prices (CRSP). The results show that firms with negative environmental events experience a significant decline in stock return, while firms with positive events have experienced no significant change. This result extends the empirical literature related to the effectiveness of information disclosure as regulatory instruments, and confirms the theory that informal release of information provides an incentive to firms to self regulate when it comes to environmental issues.

The third paper examines whether the firm specific informal environmental information disclosure can lead to the firms' behavior change. There are two types of informal environmental information examined in this paper: firms' environmental news reported in the media and firms' environmental performance rating provided by investment advisories. This paper uses environmental rating and news data from 1991 to 2003 and found that both negative environmental performance ratings and negative environmental news lead to improvement of firms' environmental effort. The result is consistent with the hypothesis that informal environmental information disclosure does create some incentive through investors and lead to firms' behavior change.