



Energy management systems and market value: Is there a link?



Thi Hong Hanh Pham*

LEMNA, Institute of Economics and Management of Nantes, University of Nantes, Chemin de la Censive du Tertre, BP 52231, 44322 Nantes Cedex 3, France

ARTICLE INFO

Article history:

Accepted 24 December 2014

Available online xxxx

Keywords:

Energy management systems

ISO 50001

Market value

Event study

ABSTRACT

This paper aims to advance in the knowledge of the economic impacts of ISO 50001 certification on firms' performance. Our main research hypothesis is that ISO 50001 is associated with improvements in market value of firms. To test this hypothesis, we employ an event study methodology for a sample of 120 companies listed on different stock exchanges, and use market reaction to the announcement of ISO 50001 as a proxy for changes in firm performance. We reveal that market reaction to the adoption of ISO 50001 is negative but statistically insignificant. This result is not suggesting that getting ISO 50001 is a bad investment, but rather that inflated expectations of financial performance improvement due to the adoption of ISO 50001 are still unfounded.

© 2014 Elsevier B.V. All rights reserved.

1. Introduction

In recent years, commitment to the natural environment has become an important variable, which is strongly affecting purchase decisions of customers. The new consumption tendency is fuelling private and institutional investment decisions towards socially and environmentally responsible investing. This has been also illustrated by the introduction of several international environmental management systems (EMSs) to the manufacturing industry. Among the popular EMSs introduced to the manufacturing industry, ISO 14001, which is developed by International Organization of Standardization (ISO), is known as a generic management system standard being relevant to any firm seeking to improve its environmental performance. By implementing ISO 14001 an organization would improve environmental performance, but does not have to specify its procedure as a requirement. Together with ISO 14001, in June 2011 ISO released an Energy Management System (EnMS), ISO 50001, which is also suitable for any organization – whatever its size, sector or geographical location. The main objective of ISO 50001, which is modeled after the ISO 9001 (Quality Management System) and the ISO 14001, is to improve energy-related performance and energy efficiency continuously and to identify energy reduction opportunities. Until May 30th 2014, ISO 50001 has been adopted by 3520 companies around the world.¹

Following the development in EMSs, a number of empirical studies have tended to investigate whether environmental investments penalize or reward firm performance. Methodologically, these studies use either common micro-econometric approaches (Ziegler et al., 2008) or event study approach (e.g. Cañón-de-Francia and Garcés-Ayerbe, 2009; Oberndorfer et al., 2011), and measure firm's economic

performance by either the financial performance (notably profitability, cost efficiency and sales performance) or the market value. Despite the growing number of empirical studies, there are contradicting results regarding the relationship between firms' environmental management practice and their economic performance (e.g. Cañón-de-Francia and Garcés-Ayerbe, 2009; Filbeck and Gorman, 2004 and Ziegler et al., 2008). On the other hand, to the best of our knowledge, most recent quantitative researches have only focused on the benefits of adopting ISO 14001, but ignored the impacts of ISO 50001 certification that presents the latest international best practice in energy management. More importantly, despite being closely aligned to ISO 14001, ISO 50001 places more emphasis on the continual improvement of energy performance and is more appropriate than ISO 14001 in an organization where energy is a significant cost. In order to fill this research gap, we explore the shareholder value effects of energy performance by investigating the stock market reaction (abnormal returns) associated with the adoption of ISO 50001. In other words, by applying event study technique, this paper is the first to resolve the question of whether ISO 50001 certification affects firms' market value. We find that adopting ISO 50001 cannot generate positive abnormal returns in firms' market value. Specifically, our empirical result indicates that the market reaction to ISO 50001 adoption is marginally negative but statistically insignificant.

The remainder of this paper is organized as follows. Section 2 provides a literature review considering environmental management, certification and economic performance. This is followed by a description of our sample and research methodology. Section 4 presents and discusses the main findings. Concluding remarks are in the last section.

2. Environmental performance versus economic performance

In the literature, either theoretical or empirical, the relationship between environmental and financial performance has highly attracted

* Tel.: +33 2 40 14 17 33; fax: +33 2 40 14 16 50.

E-mail address: thi-hong-hanh.pham@univ-nantes.fr.

¹ Data collected by Reinhard Peglau – German Federal Environment Agency.

academic interest. From a theoretical perspective, Walley and Whitehead (1994) initially suggest that instances where environmental efforts can improve firm performance are rare. Likely, Jaffe et al. (1995) question the optimism of environmental requirements and assume that environmental practices and initiatives involve costs and have few financial benefits. By contrast, according to Hart (1995), firms' related efforts in order to improve environmental performance can create more valuable resources and be a source of competitive advantage. In other works, the Porter Hypothesis initiated by Porter and Van der Linde (1995) and subsequently considered by Xepapadeas and Zeeuw (1999) stresses the "free-lunch" aspect in the possible relationship between firms' proactive environmental and financial. The "free-lunch" argument is that environmental regulation in the form of economic incentives can trigger innovation, which can eventually stimulate a firm's competitiveness and outweigh the short-run costs associated with this regulation (Xepapadeas and Zeeuw, 1999). In other words, according to these authors, responding to new environmental advocates by applying innovations allows firms to improve their overall operations and then to decrease their production costs or to increase their productivity. In the same vein, Elkington (1994) shows that improving environmental performance could result in a rise in demand from "green" customers, who appreciate the ecological products. Moreover, for any firm, pointing out good environmental initiatives allows making new opportunities for acquiring a high ecological reputation and benefiting from premium pricing and increased sales (Miles and Covin, 2000). On the other hand, firms may reduce costs and increase revenues through environmental management (Ambec and Lanoie, 2008). Ambec and Lanoie also point out four opportunities to reduce costs (risk management and relations with external stakeholders; cost of material, energy, and services; capital cost; and labor cost) and three opportunities to increase revenues (better access to certain markets; differentiating products; and selling pollution-control technology). Indeed, showing circumstances that it pays to be green, makes opportunities for reducing costs and for increasing revenues. Despite the inconclusiveness in theoretical results, the studies finding evidence that good environment performance results in improved financial performance are predominant.

Regarding empirical works, the results seem to be more inconclusive and even contradictory, highlighting such a complex relationship between environmental and financial performance (Corbett and Klassen, 2006). A large number of studies have replaced the traditional assumption about a trade-off relationship between environmental and financial performance by the novel hypothesis "It pays to be green". These studies confirm the existence of a positive effect of environmental performance on economic performance, which is measured by a set of indicators, such as returns on assets, sales and equity (e.g. Hart and Ahuja, 1996; Russo and Fouts, 1997) or by the intangible asset (e.g. Konar and Cohen, 2001). Other studies (e.g. Klassen and McLaughlin, 1996; Konar and Cohen, 1997) find evidence that the positive impacts of green performance result from positive market reaction to firms' improved environmental responsibility. Unlike these listed studies, the relationship between environmental and financial performances is inconclusive or even negative in other empirical works. According to Telle (2006), the positive impact of environmental performance on economic performance, which is concluded in the studies using pooled regression, become statistically insignificant in the studies applying panel econometric techniques, in which the data heterogeneity is controlled. Lately, Ziegler et al. (2008) consider a two-dimensional sustainability performance: the average sustainability performance of the industry in which a corporation operates; and the relative sustainability performance of a corporation within a given industry. They find that whereas the industry's average environmental performance positively affects the stock performance, the average social performance of the industry has a significantly negative influence. A negative relationship between environmental and stock performance of a firm is also previously concluded in Filbeck and Gorman (2004).

Complementary to the studies exploring economic benefits of environmental performance, there are several researches looking for the relationship running from financial performance to environmental performance. For instance, Wagner et al. (2002) support the positive influence of financial performance on firms' environmental management. Accordingly, a good financial performance allows a firm to allocate more resources to prevention-oriented technologies and initiatives. Using Japanese data, Nakao et al. (2007) also reveal that firms' financial performance has a positive impact on firms' environmental performance.

Together with a large number of researches studying the possible impact of environmental performance on economic performance, there are few empirical studies examining the relationship between EMSs captured by the adoption of ISO 14001, and financial performance of a firm. For instance, Watson et al. (2004) tend to resolve the question of whether there is a difference in financial performance between firms that had introduced a certified EMS and firms that had not. To do so, the authors use a database of ten pairs of firms, covering a range of U.S. industries. They find no significant difference between them across different economic sectors. In the same light, Cañón-de-Francia and Garcés-Ayerbe (2009) analyze whether the ISO 14001 certification is interpreted by the capital market as a sign of environmental responsibility by using a sample of 80 large Spanish firms from 1996 to 2002. They find that adopting ISO 14001 has a negative effect on the market value of certain firms. This negative effect seems to be confirmed only in the case of less polluting and less internationalized firms. However, in the case of more polluting and more internationalized firms, there is no clear evidence supporting this negative relationship. Unlike the previous studies, Jacobs et al. (2010) conclude that attainment of ISO 14001 certification results in statistically significant positive market reaction for a sample of 50 American industrial firms. Similarly, de Jong et al. (2014) assess the short-term and long-term impacts of the ISO 14001 certification on financial performance by using a comprehensive database including 1346 publicly traded firms that were certified during the period 1996–2005 in the United States. The authors provide clear evidence that the ISO 14001 certification process can help firms develop firm-specific capabilities, which will have a significant impact on the profitability of the certified firms. Differentiating from the above cited studies Inaki et al. (2011) try to explore the possible bi-directional relationship between ISO 14001 certification and financial performance for a data sample of 268 ISO 14001 certified companies. Employing a multivariate panel data analysis, the authors find that firms with better average performance have a greater propensity to pursue accreditation but there is no evidence that improvements in performance follow certification.

2.1. Research hypothesis

Released 15 years after the introduction of ISO 14001, ISO 50001 has considered as the latest international best practice in energy management. Whereas ISO 14001 helps an organization to systematically identify and manage all environmental impacts in the broadest sense, ISO 50001 helps an organization to specify, develop and implement energy management system requirements in order to form an energy policy. Specifically, ISO 50001 allows an organization to identify its objectives, targets, and action plans related to significant energy use, which are intended to lead to reductions in greenhouse gas emissions, energy costs, and other related environmental impacts through systematic management of energy consumption. In fact, ISO 50001 can either be used in conjunction with ISO 14001, to help an organization to point out further opportunities for energy savings, or as a stand-alone management system standard for any organization in which energy use is a significant consideration from either an environmental or cost perspective. Despite several advantageous points (as displayed in Fig. 1), ISO 50001 has not really attracted much attention of either firms or academic field. For instance, after 4 years of release, ISO 50001 has been adopted by only 3520 companies around the world,

Download English Version:

<https://daneshyari.com/en/article/5053771>

Download Persian Version:

<https://daneshyari.com/article/5053771>

[Daneshyari.com](https://daneshyari.com)