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Corporate social responsibility and inventory policy ☆

Lucía Barcos *, Alicia Barroso [1], Jordi Surroca [2], Josep A. Tribó [3]

Universidad Carlos III de Madrid, Department of Business Administration, Calle Madrid, 126, Getafe (Madrid) 28903, Spain

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ABSTRACT

In this article, we study the impact of implementing corporate social responsible (CSR) practices on firms' inventory policy. We propose that there is an inverted U-shaped relationship between firms' CSR and their inventory levels. Two elements explain such a proposal. First, stakeholders have different interests regarding the outcome of the inventory system. Specifically, we hypothesize that customers put pressure on firms to increase inventories; employees have conflicting views regarding inventories, and for this reason they do not put pressure on firms in a particular direction; and environmental activists force firms to reduce inventories. The second element to explain the previous relationship is that there is a different level of stakeholder proactiveness contingent on the intensity in the implementation of social responsible policies. While employee demands are a priority for every firm, we posit that there is variation in the relative importance attached to customers and the natural environment: for low levels of CSR, customers are more relevant; and for higher levels of CSR, the natural environment gains importance.

We test this theoretical prediction using a database that contains financial information from COMPUSTAT and CSR data from the KLD database. Our final sample includes 1881 US companies (9269 observations) for the period 1996–2006. Results provide support to our theoretical contentions.

Our findings will be helpful to strategic and tactical decision-making processes on inventory management and will allow researchers to offer concrete advice on the likely outcomes of various stakeholder relationship practices in order to improve the effectiveness of inventory systems.

1. Introduction

In recent years, there has been increasing interest among researchers and managers in the strategic and operational implications of corporate social responsibility (CSR). CSR is conceptualized as being the broad array of discretionary actions that a company develops in its efforts to deal with and create close relationships with its numerous stakeholders, including employees, communities, customers, suppliers, shareholders, and the natural environment (McWilliams and Siegel, 2001). CSR appears in situations where the company engages in practices that go beyond compliance, such as incorporating social characteristics into products and manufacturing processes, adopting progressive human resource management programs, achieving higher levels of environmental performance through recycling and pollution abatement, and supporting local businesses (McWilliams et al., 2006).

In examining the role of CSR in corporations, most scholars have focused on the influence of CSR on firm strategy at all levels of the organization: corporate, business, and functional level. At corporate level, CSR has been seen to be related to strategies of internationalization (Gardberg and Fombrun, 2006) and diversification (McWilliams and Siegel, 2001). Research has also shown that engaging in CSR activities is a form of strategic investment upon which firms build their business strategies, whether through product differentiation, when CSR is used to establish a strong reputation and to differentiate its products from those of its competitors, or cost leadership, since CSR activities entail lower costs because of the reduction in raw materials, waste disposal, and in the firms' compliance and liability costs (Hart, 1995). At a functional level, CSR positively influences innovation and shapes the job design, the recruitment and training of employees, the degree of hierarchy, the structure of managers' compensation schemes, the corporate

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* Corresponding author. Tel.: +34 91 624 9572; fax: +34 91 624 9607.
E-mail addresses: lbarcos@emp.uc3m.es (L. Barcos), abludena@emp.uc3m.es (A. Barroso), jsurroca@emp.uc3m.es (J. Surroca), joatribo@emp.uc3m.es (J.A. Tribó).
[1] Tel.: +34 91 624 8687; fax: +34 91 624 9607.
[2] Tel.: +34 91 624 8640; fax: +34 91 624 9607.
[3] Tel.: +34 91 624 9321; fax: +34 91 624 9607.

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culture and the operational design (Russo and Fouts, 1997; Russo and Harrison, 2005).

Remarkably, research on the operational consequences of CSR is still embryonic. Most of the studies in this area are based on case studies that show how the adoption of CSR principles influences operational issues such as lean manufacturing practices, manufacturing quality, supply chain management, product design, and total quality management (e.g., Dechant and Altman, 1994; Handfield et al., 1997; Porter and Van Der Linde, 1995; Shrivastava, 1995). Despite these advances, however, rigorous empirical evidence documenting the operational consequences of CSR is scarce and only focuses on the effect of environmental performance—a dimension of CSR—on measures of manufacturing performance such as productivity, costs or defects (Pil and Rothenberg, 2003). Thus, the purpose of this study is to investigate the relationship between these discretionary actions directed toward stakeholders and firms' inventory investment.

To articulate arguments linking CSR to inventories we rely on the literature on the strategic and operational consequences of CSR and especially on recent case-based studies that analyze the influence stakeholders can have on the design and implementation of an inventory management system (De Vries, 2005, 2009). According to these case-based studies, inventory systems are not always the result of a pre-determined approach, but the outcome of a political process in which different organizational members take part. These organizational members, or stakeholders, differ in their perceptions, interests and capacity to shape corporate decisions. Thus, stakeholders can use their influence to shape key dimensions of the inventory system in order to affect the features of the system that are more adequate and interesting according to their own private interests. In this line, this paper addresses the issue of the effect of CSR improvements connected to employees, customers, and the natural environment on a firm's relative inventory level.

We develop a set of theoretical contentions that we later test using a database of 1881 different US companies (9269 observations) for the period 1996–2006. It includes financial data from COMPUSTAT and data on social responsibility from the KLD database.

The main finding of this study is that CSR and inventory-to-sales ratio are not linearly related. Specifically, we have found increases in firms' inventory-to-sales ratio for low levels of social responsibility and decreases in this ratio for high levels of proactivity toward stakeholders. Two elements explain this relationship. First, stakeholders have different interests regarding the outcome of the inventory system, and each stakeholder tries to exercise its influence on a firm's inventory policy in a different manner. In particular, customers put pressure on increasing a firm's inventory level in order to avoid stock-outs. Environmentalists, in turn, pressure firms in the opposite direction in order to avoid wasteful inventory accumulation that may potentially damage the environment. Second, the relative influence of each stakeholder varies with the intensity in the implementation of a CSR policy. Employee demands are a priority for every firm. However, there is variation in the relative importance of customers and the natural environment: firms in the initial stages of the implementation of CSR policies prioritize customers over the environment, while the environment is prioritized in firms whose CSR policy is fully developed. Altogether, both elements are shown to justify an inverted U-shaped relationship between CSR and firm inventory level.

Such finding will be helpful to decision-making processes on inventory management and will allow researchers to offer concrete advice on the likely operational outcomes of integrating different stakeholder in a firm's decision process. Additionally, a clear understanding of the relationship between CSR and inventories may also be beneficial for improving the effectiveness of inventory systems in a setting where firms are more open to satisfy the demands of different interest groups.

The remainder of the paper is organized as follows: Section 2 develops the theoretical underpinnings and presents the hypotheses to be tested. In Section 3, we carry out the empirical analysis. The paper concludes with some final remarks.

2. Theoretical background and hypotheses

2.1. Key stakeholders and inventories

In a recent study, De Vries (2009) has shown that stakeholders influence the design and the implementation of inventory systems in different ways. Different stakeholders have different interests regarding the outcome of such systems, and sometimes they have the power to shape a firm's decision-making processes to select inventory projects that benefit themselves. Building on this work, in this section we develop arguments linking three different types of stakeholders—customers, employees, and the natural environment—and the inventory level of a firm.

Customers/product safety. Through their purchasing power, customers increasingly pressure companies to accept and manage their responsibilities. Product and service quality are two of the most important characteristics demanded by customers (Waddock et al., 2002). High product/service quality is intrinsically related to shorter and more reliable lead times and fewer shortages. Firms may respond to these demands for higher quality through inventory management. One of the functions of inventories is the immediate provision of products to minimize the occurrence of stock-outs, which may lead to customer dissatisfaction. Inventories act as buffers against variations in demand: they allow meeting customer requirements when the final demand cannot be known in advance with precision. Stock availability has a direct effect on total order cycle time and the lack of stocks may force firms to move products out of the established distribution channel with corresponding costs. The availability of inventories to customers avoids these costs and allows the maintenance of sales (Ballou, 2004). Thus, firms that try to attend to customers' demands as a goal and not only as a means to increase profits will increase inventory levels in the supply chain. Such policy will normally result in better customer service, measured in terms of ability to respond to customer demands within a certain time (Ballou, 2004; Neale et al., 2003).

Firms can also address customers' demands by supplying them with a widespread offer of products and services. Typically, a wider assortment of products results in higher levels of inventories (Cachon and Olivares, 2010; Fisher et al., 1995). Therefore, firms will increase their inventory level when trying to meet customers' demands as a goal.[4] Thus, we propose:

Hypothesis 1a. *A firm's social responsible behavior toward customers will have a positive impact on inventory investment.*

Employees. Investing in employee CSR activities such as the provision of a clean and safe working environment, health and education benefits, and profit-sharing payment schemes can have a positive impact on employees' motivation and morale, thereby reducing absenteeism and staff turnover (Branco and Rodrigues,

[4] Some researchers have pointed out that production systems such as lean manufacturing may work with low inventory levels while attending customer requirements (Lieberman et al., 1999). However, as explained in the next subsection, these systems take place in companies that also attach high importance to other stakeholders such as workers and the environment.