

Full Length Article

Reexamining the relationship between inventory management and firm performance: An organizational life cycle perspective

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Abstract

Existing evidence regarding inventory-performance relationship is inconclusive. A perspective that this paper stresses in considering this relationship is that it might depend on organizational life cycle stage. The underlying assumptions of this argument are that organization's strategies and relationships vary with its life cycle stage, organizations develop their own strategies to fit between inventory system and organizational settings, and design of inventory system is not a linear process, rather it is a dynamic process that emerges and evolves in response to the power and interests of the stakeholders. Econometric analysis provides support for this argument. Specifically, the results show that while inventory to sales ratio affects organization performance negatively in the initial growth stage and the maturity stage, it exerts a positive and significant coefficient on performance in either the rapid growth stage or the revival stage. An implication of these findings is that existing perspectives might need to be treated as complementary viewpoints, each of which comprises a part of the whole picture because depending on just one single perspective is likely to result in misleading conclusions about the whole structure.

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1. Introduction

Notwithstanding academicians and practitioners believe that inventory is a costly activity, they disagree on its necessity (Elsayed, *in press*). One research area that has grown considerably, in the operations management literature, and provided mixed findings is inventory-performance relationship. Specifically, while the positive effect of inventory reduction on organization performance has been reported in various studies that are based on either survey (Claycomb, Germain, & Dröge, 1999; Fullerton & McWatters, 2001; Fullerton, McWatters, & Fawson, 2003) or archival data (Boute, Lambrecht, Lambrechts, & Sterckx, 2006; Capkun, Hameri, & Weiss, 2009; Chen, Frank, & Wu, 2005; Elsayed, 2015a; Huson & Nanda, 1995; Koumanakos, 2008; Lieberman & Demeester, 1999; Shah & Shin, 2007; Swamidass, 2007; Voulgaris, Doumpos, & Zopounidis, 2000), other studies (e.g., Balakrishnan,

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Linsmeier, & Venkatachalam, 1996; Cannon, 2008; Demeter, 2003; Tunc & Gupta, 1993; Vastag & Clay Whybark, 2005) found no clear evidence for this relationship.

Critical examination of prior work indicates that the influence of organizational life cycle issues on the relationship between inventory and organization performance has not been examined. In fact, considering the effect of organizational life cycle on the relationship between inventory and performance recognizes that managing inventory not only cannot be isolated from other organizational settings, but also is subject to the power and interests of stakeholders (De Vries, 2011). This is a realistic theme as different studies demonstrated that inventory decision-making is a dynamic process that entails different stakeholders with conflicting interests (De Vries, 2009). Thus, taking into account the effect of life cycle stage on inventory-performance relationship explains how internal and external variables may collaborate or interact with inventory decisions to affect organization performance. Such interaction may signify that the inventory-performance relationship is a non-monotonic one. For instance, to hypothesis that any reduction in inventory can only be attained by increasing investment in another type of resource is not always the case. Organizations with higher bargaining power, for example, often enforce their suppliers to take some actions to reduce inventory (Poirier, 1999). Moreover, benefits of increasing investment in information technology to reduce inventory in many cases are found to accrue to the supplier and not the buyer (Kim, 2012). In addition, to assume that increasing inventory is always evidence for inefficiency is a shortsighted view as it overlooks the relationship between competition and inventory holding. For instance, as Rotemberg and Saloner (1989) argued, “firms hold greater inventories as a strategic threat to maintain collusive pricing arrangements. Higher inventories allow firms punish price deviations of cheaters more strongly by flooding the market with product, which has similarly been reduced in price” (Blazenko & Vandezande, 2003, p. 257).

Consequently, a perspective that this paper stresses in considering inventory-performance relationship is that it might depend on organizational life cycle stage. The underlying assumptions of this argument are that organization’s strategies and relationships vary with its life cycle stage (Jawahar & McLaughlin, 2001), organizations develop their own strategies to fit between inventory system and organizational settings (De Vries, 2005), and design of inventory system is not a linear process, rather it is a dynamic process that emerges and evolves in response to the power and interests of the stakeholders (De Vries, 2011).

The next part of the paper presents existing theoretical and empirical evidence regarding inventory-performance relationship. The third part introduces organizational life cycle perspective. The fourth part sets up the theoretical mechanisms by which organizational life cycle may exert a moderating effect on the relationship between inventory and organization performance and develops some specific hypotheses. The fifth part covers the Egyptian sample and variables measurement, whereas the sixth part introduces the key findings of empirical analysis. The final part deals with discussions and conclusion.

2. Inventory and organizational performance

In this section, we review literature exploring the relationship between inventory management and organizational performance. Presenting this literature in a chronological way may make it is very hard to follow. A more helpful way is to present literature review in a thematic approach. This should give the readers a fuller and clearer picture of the accumulated research evidence. Accordingly, literature review was grouped into three themes: positive relationship, negative or no relationship, and moderators/mediators to the relationship (we would like to thank the first anonymous reviewer for this suggestion).

2.1. Positive relationship

Huson and Nanda (1995) provided evidence that those firms that adopted JIT system were able to improve their earnings per share as a result of inventory turnover improvement. Afterward, Lieberman and Demeester (1999) observed a positive relationship between inventory reduction and productivity growth. Specifically, their findings showed that 10% reduction in inventory is responsibility for 1% gain in labor productivity. They concluded that inventory reduction can be considered as an important driver of process improvement. In addition, the results of Claycomb et al. (1999) and Fullerton and McWatters (2001) supported the positive effect of inventory reduction on organization performance in a JIT context. Particularly, while the findings of Claycomb et al indicate that inventory reduction improves three measures of organization performance (return on investment, profits, and return on sales),

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