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Swapping inventory between competing firms

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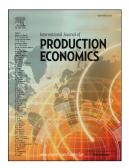
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Abstract: In this study, we investigate how competing firms swap inventory. We consider two

firms located in two different markets that produce the same type of product. Each firm sells in

the two markets. The selling price in each market is determined by the selling quantities of the

two firms. We first show that the optimal swapping quantity is zero when firms decide to swap

inventory without a sophisticated method. That is, they would not swap inventory. However, under

our proposed inventory swapping method, competing firms swap a positive amount of inventory,

enabling a higher profit for both firms. We also find that the swapped quantity increases as

transportation costs decrease, and swapping inventory may not be beneficial if the transportation

cost is either too low or too high. In addition, we investigate how to implement the swapping

inventory agreement when the value of the swapped inventory differs by market. We show that

firms may prefer to return the physical products to pay the value difference, especially if they are

risk-averse.

Keywords: inventory swapping; competition; cooperation

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