Cooperation between Multiple Newsvendors with Warehouses

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ABSTRACT

This study considers a supply chain that consists of n retailers, each of them facing a news-vendor problem, w warehouses and a supplier. Each retailer is associated with a warehouse, where the ordered amount of goods of this retailer becomes available after some lead time at its associated warehouse. At the time that the goods arrive at the warehouses, demand realizations become known by the retailers. For this setting, we consider the associated cooperative game between the retailers, in which cooperating retailers can coordinate their orders and they are allowed to make reallocations to increase their expected joint profit. We analyze the characteristics of the associated cooperative game (like non-emptiness of the core, etc.). Furthermore, we establish relations with other models in the literature. Finally, we study some variants of the model above.