A core-allocation family for holding cost games

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ABSTRACT

Inventory situations (Meca et al., 2003), study how a collective of firms can minimize its joint inventory cost by means of cooperation. Depending on the information revealed by the individual firms, they analyze two related cooperative TU games: ordering cost games and holding cost games, and focus on proportional division mechanisms to share the joint cost. It turns out that holding cost games are permutationally concave. Moreover, the proportional rule leads to a core allocation of the corresponding game that even can be sustained as a population monotonic allocation scheme (Sprumont, 1990). In this paper, we focus on the study of the core structure for holding cost games. We introduce a core-mailallocation family which is called N-rational solutions family. It is proved that there exists a particular relation of inclusion between the former and the core. In addition, a new proportional rule called minimum square proportional rule which is an N-rational solution, is studied.

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