

# Examining the Curvilinear Relationship Between Energy Efficiency and Inventory Leanness

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## Abstract

In this paper, we empirically analyze the curvilinear relationship between energy efficiency and inventory leanness for a sample of South Korean steel companies from 2012 to 2017. We use the concept of energy efficiency based on a distance function and production theory, and we rely on the inventory leanness as measured by empirical leanness indicator (ELI). To estimate energy efficiency and its association with inventory leanness, we employ the stochastic frontier analysis (SFA). Our finding reveals that inventory leanness has an inverted U-shape relationship with energy efficiency, suggesting an optimal inventory leanness level beyond which the energy efficiency of steel company degrades

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