

AN ECONOMETRIC ANALYSIS OF THE RELATIONSHIP BETWEEN TRANSPORTATION COSTS AND RETAIL INVENTORIES IN THE U.S.

*William A. Muir, Eli Broad College of Business, Michigan State University, 632 Bogue Street,
East Lansing, MI 48824, 517-432-6446, muir@broad.msu.edu*

*Stanley E. Griffis, Eli Broad College of Business, Michigan State University, 632 Bogue Street,
East Lansing, MI 48824, 517-432-4320, griffis@broad.msu.edu*

ABSTRACT

Transportation costs accounted for more than 65 percent of U.S. business logistics costs in 2015. Increasingly, these costs are of strategic and operational significance to supply chain managers due to recent trends such as oil price swings, distribution center consolidations, highway congestion, globalization and increased volatility in the freight market. This study examines the relationship between changes in U.S. transportation costs for freight shipments and inventory holdings in the retail sector, using empirical macro-level data. Econometric methods are used to identify both magnitude and timing of transportation costs' effects on aggregate inventories. Alternative lag specifications are estimated and compared. Implications are drawn for theory and managers.