

**Research Article**

**Time Varying Causality Between Cost and Price: An Empirical  
Analysis on Dry Bulk Shipping Market**

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**Abstract**

Fluctuations of freight income and volatility of bunker prices are together having an important impact on shipping profits because oil, which is the main source of bunker fuel, constitutes substantial operational expense to shipping firms, and it accounts for 34-44% of the whole operation costs. However, as the freight rates in live market conditions are determined by demand, the determinative characteristics of bunker price loses its importance. In this respect, it is not wrong to say that the relationship between bunker prices and freight rates changes according to time. Therefore, with the aim of filling the gap in the related literature, the relationship between these two variables is examined by time-variance causality analysis. The data set used in the study consists of 318 observations on a monthly basis covering the period January 1992 to June 2018. As a result of the study 24 causality periods with lengths ranging from 1 month to 13 months are determined. Also, it is spotted that they are intersected with BDI in the declining regions of the index in general and this result confirms that the causality between the freight rates and the bunker prices is realized in the stagnant market conditions.

**Keywords:** Bunker Price, Freight Rates, Dry Bulk Shipping, Time Varying Causality

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