

Order Placement Strategy Based on Trend Forecast of Bulk Shipping Hire Rate Methods

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Abstract

In this talk, we introduce a data-driven methodology to optimize chartering strategy within the steel industry, with a specific focus on Taiwan's bulk carrier imports from Australia. A high charter rate means the steel industry needs to incur higher costs to rent the bulk carrier. To reduce these costs, we propose a strategy that aims to place orders when the charter rate is relatively low, and consists of two steps: (1) predicting the trend of charter rates for the upcoming month using an ARX model, and (2) determining the optimal time to charter a vessel based on the predicted trend from step (1). Through our research, we identify several key factors that influence charter rates, including fuel prices, demand fluctuations, and geopolitical events. Our findings demonstrate a substantial cost reduction ratio (CRR) of 0.10, representing a 10% cost reduction, leading to significant savings compared to alternative strategies. This study provides valuable insights to enhance supply chain management and improve the efficiency of raw material imports in the steel industry.

Keywords: Maritime Transport, Bulker Charter Rate, Forecasting, Order Placement, Strategy Design.