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Long-term Market Forecasting of Korean Shipbuilding Industry and Implication

For policy implication, the forecasting research is one of fundamental project to understand the impact of policy. Because of existence of business cycle as a characteristic of shipbuilding industry, forecasting shipbuilding industry has been one of the important research topic. However, like Martin Stopford's opinion, forecasting shipping and shipbuilding industries are almost impossible. Even the forecasting report of Clarkson is criticized because of accuracy. After 2008 financial crisis, the long term expanded period was finished and down term has been continued. Korean shipbuilding industry also keeps to work out for survival. In order to restructure and reinforce industry, the long term forecasting is needed. In most cases, worldwide market research company reports are used but there is a limitation to apply forecasting value of worldwide reports on Korean shipbuilding industry. For this reasons, this research focused on the mid and long term forecasting Korean shipbuilding industry to compose industrial policies.

In this research, we mainly focused on four types of ships in this research: tanker, bulk carrier, container ship and LPG carries. For three types of ship (tanker, bulk carrier, container ship), the statistical analysis is conducted based on empirical economics methodologies. The monthly times series data and individual vessel data are compounded for statistical approach. The regression model is used for set a function of order-construction time difference. The hazard model analysis is conducted for estimating probability of scrapping. LPG carries, however, has limited observation for statical

analysis so we set a forecasting model based on project analysis.

Shipping industry, the upstream industry of shipbuilding industry, is influenced by global economic status. Since ship order needs enormous funds, financial status situation is also important to decide ship order. Governmental policy, international trade treaty, advanced technology and environmental policy are necessary factors of shipbuilding industry analysis. There are enormous factors which need to be consider for forecasting model. But, only few variables are able to apply on forecasting model because of the measurement limitation and difficulty of calculating correlation.

We consider several variables, shipping volume per fleet, average speed, change of vessel size and environmental policy, to estimate shipping volume of each type of vessels. From this analysis, demand of ship by increased shipping volume is calculated. Replacement demand is calculated from scrapping probability model. The new ship construction is calculated from the time difference formula of time difference between order and construction. LNG carrier shipbuilding forecast is calculated by shipping volume and distance based on final investment decision of LNG projects. ISFEM market forecast is used for other type ships. The result shows that forecasting shipbuilding decreases after 6 years increases to 12 years from 6 years. The amount of recent 5 year construction amount is 34.5 million CGT per year. The forecasting amount until 2025 is 29.0 million CGT per year and the amount form 2026 to 2031 is 32.2 million CGT.

Recently, the market share of Korean companies increases as 32.5%. By using a recent 5-year market share, we calculate amount of ship construction during after 10 years. The average ship construction amount is forecast as 9.71 million CGT. This amount is similar with suitable amount of ship construction in Korea, which is considered as 9.2~10.5 million CGT. The assumption of this forecasting is that everything is constant as current situation including technology improvement and environmental restrictions.

We suggest several implications based on our results. First, stabilization of

economic ecology with suitable size is necessary. Second, supporting projects to improve products value and shipbuilding technology is needed to be well-designed. In last, the regular forecasting project and training experts for response to upcoming uncertainty.