



Effect of shipping aid policies on the competitive advantage of national flagged fleets: Comparison of Taiwan, Korea and Japan



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ABSTRACT

The purpose of this paper is to perform a comparative analysis of the competitive advantages of the national fleets of Taiwan, Korea, and Japan, and explore the effect of shipping aid policies on a national fleet's competitive advantage, employing gray relational analysis (GRA). We found that the factors best able to assess the competitive advantage of a national merchant fleet include number of vessels, gross tonnage and deadweight tonnage of the fleet, number of seamen, and cargo volume transported by the fleet. We further discovered that Korean national merchant fleet has the greatest competitive advantage, followed by the fleets of Taiwan and Japan in that order, and found that aggressive shipping aid policies are a more effective way to ensure good performance than passive shipping aid policies.

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1. Introduction

The issue of flagging out has attracted much attention and discussion from academic researchers and practical workers over the past two decades; the current extent of flagging out may be attributed to the lack of concrete and sustainable maritime policies promoting the development of the shipping industry in Taiwan after shipping subsidy measures were abolished in 1988. Due to a deteriorating business environment and decreasing government assistance, Taiwan's shipping companies have consequently largely adopted a "flagging out" model by placing vessels under flags of convenience, which has provided cost savings by reducing tax payments. According to the "2012 Review of Maritime Transport," which was published by UNCTAD (2013), 10.44% of Taiwan-owned vessels were registered in Taiwan, while 89.56% flew a foreign flag; it represented that the size of Taiwan's national flagged fleet has also fallen steadily in recent years. Apart from a sharply diminishing number of vessels, gross tonnage, and deadweight tonnage, this trend has also entailed a rising unemployment rate among Taiwan's seamen.

Japan and Korea both have remarkable accomplishments in the areas of shipbuilding and shipping, and the fact that their governments have implemented many shipping aid measures reveals the emphasis they have placed on development of shipping and ports. These measures included ship construction funds offered by Korea starting in 1975, international ship registration measures adopted by Japan (1996) and Korea (1997), tonnage taxes enacted by Korea

(2005) and Japan (2008), and the establishment of an investment company providing shipping finance services by Korea in 2002.

Furthermore, the European Community has recognized the need for improvements in member state's fiscal climates in the wake of many ship-owners flagging out their vessels and considering corporate relocation to countries with fiscal situations more attractive than in their home countries. The EC has therefore instituted tax relief measures, as well as a tonnage tax, in order to support maritime transport interests. The basic principle of European state aid to maritime transport is to achieve gains from maritime clusters that outweigh the reduction in tax revenues from shipping following tax relaxation (European Institute of Public Administration, 2012). O'Neil (2004) regarded maritime subsidies as a strategic measure for accessing new markets and satisfying rapidly changing customer expectations.

Some countries have implemented ship investment incentive measures in order to induce shipowners to register their newly-constructed or leased vessels under the national fleet, so as to improve the national fleet's transportation capability. However, does growth in the number of vessels in the national fleet and the number of domestic seafarers have a positive impact on the shipping industry and local economy? And do shipping aid policies have any impact on the competitive advantage of a national flag fleet? These questions, which have remained controversial for over a decade, form the main motivation of this article.

The gray system theory developed by Deng in 1982 has been shown to be useful for handling questions on the basis of poor-quality, incomplete, or uncertain information (Deng, 1988). Gray relational analysis (GRA), which is based on the gray system theory, can be used to resolve the complicated relationships

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among multiple performance characteristics (Chang et al., 2000). Gray relational analysis is a means of measuring the degree of correlation among various influencing dimensions (Kung, 2005). A search for recent maritime literature employing GRA turned up only a small number of relevant articles. For instance, Teng et al. (2004) clarified the characteristics of a port's competitiveness using the GRA method, and employed eight East Asian container ports as examples. Liu et al. (2006) applied GRA to analysis of marine accident records for each of Taiwan's commercial ports.

Gray relational analysis can be used to effectively determine the complicated interrelationships among multiple performance characteristics (Wang et al., 1996), which is accomplished by transforming optimization of complex multiple performance characteristics to optimization of a single gray relational grade. Due to the availability of only small data sets and incomplete information obtained from government authorities, this paper adopts gray relational analysis to calculate the relative rank of the three countries Taiwan, Korea and Japan in terms of the competitive advantage of their national fleets.

In summary, the purpose of this paper is to explore criteria for the assessment of the competitive advantage of national-flag fleets, and GRA methodology is used to identify the ranking order of Taiwan, Korea and Japan in terms of the competitive advantage of their fleets based on the assessment criteria. Furthermore, to confirm the effect of shipping aid policies on the competitive advantages of national fleets, this paper reviews the shipping aid policies of the three countries, and determines the impact of these policies on shipping competitiveness in view of their comparative number of foreign flagged vessels as a percentage of their total fleets. Finally, this paper gives the government of Taiwan appropriate suggestions for enhancing the competitive strength of its national merchant fleet in the global maritime environment.

2. Literature review

2.1. Shipping aid policies for national-flag fleets

With regard to the question "does growth in the number of vessels in the national fleet and the number of domestic seafarers have a positive impact on the shipping industry and local economy?," the answer to this question may be found in an investigative report sponsored by the Japanese government. This report by the *Nittsu Research Institute and Normura Research Institute* (2006) identifies the contributions of the Japanese national fleet in peacetime and wartime. With regard to the former, the Japanese fleet provides an infrastructure link between other countries and Japan, has a close relationship with Japanese maritime clusters, boosts GDP, generates employment opportunities, promotes technical cooperation between different industrial sectors, and contributes to shipper's globalized supply chains. With regard to the latter, the Japanese fleet ensures the safe transport of essential commodities needed by the Japanese economy. Furthermore, it is in the Japanese national interest for the domestic merchant fleet and domestic shipping companies to maintain the vigor of the Japanese merchant fleet and domestic shipping. Lewarn and Francis (2009) noted that the overall contribution of a national flag fleet to the national economy is recognized in most coastal OECD and EU member states, and these states' national-flag fleets are consequently supported through a range of measures including cabotage, second registers, accelerated depreciation, and tonnage taxes.

With regard to shipping aid measures, Oda (1997) claimed that shipping aid policies can be classified as restrictions and subsidies, where the former consist of overall restrictions and specific restrictions, and the latter consist of direct subsidies and indirect

subsidies. Direct subsidies include shipping subsidies, route subsidies, indirect construction subsidies, interest subsidies, and low interest loans; indirect subsidies encompass a variety of tax incentives.

Hiroshi (1998) argued that the purpose of direct subsidies should be to ease the loan burden of shipping companies during the shipbuilding period, while that of indirect subsidies should be to provide carriers a variety of tax incentives easing corporate taxes, income taxes, fixed asset taxes, etc.

Furthermore, Baik (1993) recognized that every country has adopted a series of protective and subsidy measures to strengthen the competitiveness of its national fleet. These protective measures consist of internal measures and external measures, where internal measures comprise both direct and indirect subsidies.

Yang (2003) divided shipping aid measures for Taiwan's shipping industry into administrative aid and fiscal aid measures. The former include direct sailing routes across the Taiwan Strait, simplified application procedures for ship construction, simplified issuance ship inspection certificates, elimination of pre-reporting requirements when acquiring ships, relaxation of age limitations in the transaction of second-hand ships, and implementation of coordination measure between ship and cargo. The latter include shipbuilding financing, shipping subsidies, tax relief measures, bilateral government agreements concerning mutual exemption from shipping income tax, improvement of tax reduction ratios for shipping industry investments, and military mobilization subsidies.

To review the recent shipping aid policies of the three countries, the government of Taiwan has adopted a series of evolving assistance policies in order to foster the development of the national fleet and shipbuilding industry. These policies have sought to encourage the public and private sectors to participate in shipping industry activities through legal and administrative measures. The former have included the Shipbuilding Promotion Act of 1936, the Investment Promotion Act of 1960 (revoked in 1990), the Trade, Shipping, and Shipbuilding Cooperation Promotion Program of 1977 (revoked in 1987), the Shipping Act of 1981, the Industry Upgrading Enforcement Act of 1991, the Act for Promotion of Private Participation in Infrastructure Projects of 1994, and various amendments to the Shipping Act and other relevant laws and regulations between 1995 and 1999. The latter have included annual shipbuilding programs constituting parts of the four-year economic development plans from 1953 to 1985, provision of vessel construction loans to domestic shipbuilding companies starting in 1985, the Long-Term Plan for Expansion and Renovation of the National Fleet in 1986 (revoked in 1987), and the national fleet development program in 1999. Direct sailing routes across the Taiwan Strait have been opened since 2008, and a tonnage tax scheme was implemented in 2011.

After Korea received international assistance loans from the International Monetary Fund in the wake of the Asian Financial Crisis, it directed domestic shipping companies to sell off 23 vessels (780,000 dwt). Korea has implemented a series of preferential measures for enhancing the competitive advantage of its national fleet, including financing for ship construction from 1975, an international ship registration measure in 1998, a ship registration measure for the Jeju Island Special Zone in April 2002, a shipping finance investment company measure in May 2002, and a tonnage tax measure in January 2005. These national fleet aid policies are considered to have been of great assistance in reducing the operating burden of shipping companies, encouraging flagging-in, and increasing job opportunities for seafarers. According to a press release from the Korea Shipowners' Association, Korea expects to meet its goal of becoming the third most important maritime country in the world by 2020, at which time it will possess 100 million tons of shipping, and its fleet will be worth 1000 billion Korean won (Korea Shipowners' Association, 2012).

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