

Do container ships cruising between East Asia and North America cruise through the Japan Sea or the Pacific Ocean?

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1. Introduction

In recent years, the rapid growth of the Asian economies has increased the number of container ships traveling between East Asia and North America. Japan is located on this shipping route, but the circumstances governing whether they travel on the Japan Sea side or Pacific Ocean side of Japan have not been analyzed. So we combined Lloyd's ship movement data with AIS data to analyze the passage of these ships.

2. Analyzed data

Past analysis of the movement of ships has been done using Lloyd's ship movement data, but these data are ships' port clearance data, which can not clarify ocean waters where ships cruise. So for this research, we performed analysis combining Lloyd's data with AIS data obtained at the Hakodate and Moji receiving stations. AIS stands for Automatic Identification System which, since the 9/11 terrorist incident, all ships above a certain size are obligated to carry.

3. Analysis of ocean areas used by the shipping

Figure 1 shows the results of analysis of the passage data for the single year, 2009.

Overall, 3,140 ships traveled eastward and 2,972 ships traveled westward, almost identical quantities traveling in the two directions, but when the results are viewed by ocean area cruised by the ships, eastbound, 1/3 used the Tsugaru Strait and 2/3 cruised offshore from Osumi Peninsula, while westbound, more than 70% of the ships cruised in the water offshore from Osumi Peninsula. These numbers reflect the fact that in many cases, container ships stopped at ports on the Pacific side of Japan.

4. Change of numbers of ships over time

Assuming that judgment standards for selecting passage through each ocean area are constant, 1999 and 2004 were estimated based on the results obtained for 2009. In the Tsugaru Strait (Sea of Japan), eastbound ships have doubled, while westbound ships have declined in number slightly since 2004.

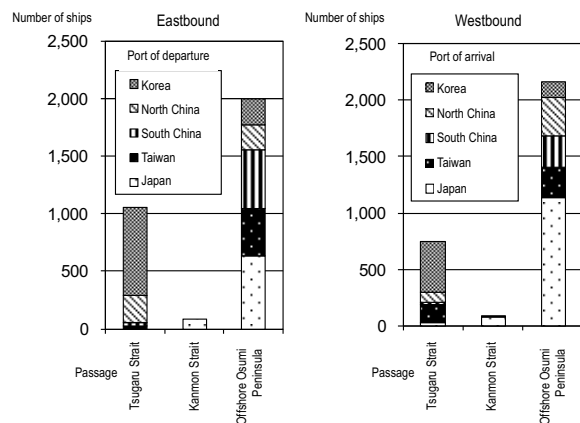


Figure 1. Number of Ships by Ocean Area

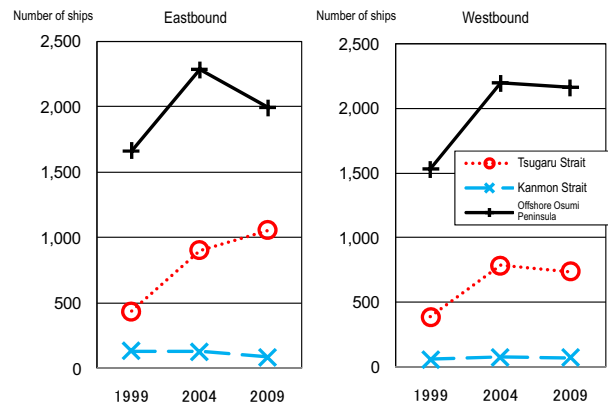


Figure 2. Time Series Change (Estimated) of Ship Numbers

5. Conclusion

These results will be basic materials for the study of port facilities including ports on the Japan Sea side, and we wish to continue this analysis.

[References]

NILIM document NO. 610 <http://www.nilim.go.jp/>