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An Analysis of Korea-ASEAN Trade and its Implications for the Shipping Industry in Korea*

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ABSTRACT

The shipping industry is an import economic player in Korea, and demand for shipping closely intertwines with the global trade climate. Understanding how movements of income and price influence freight volume measured in TEU is critical for improving shipping companies' fleet deployment and scheduling. This paper estimated within the framework of a vector error correction model in a time series analysis for the period of 2000Q1 to 2015Q2 trade elasticities of income and real exchange rate of Korea's exports to and imports from ASEAN-5 (Indonesia, Malaysia, the Philippines, Singapore and Thailand). We found that trade elasticity of income exerts a significant, positive influence on the volume of Korea's exports to and imports from ASEAN-5 and that during the same period the real exchange rate exerts asymmetric influence over Korea's trade with them. Surprisingly, we failed to find the Korea-ASEAN FTA to further facilitate trade volume between Korea and ASEAN-5, when measured in TEU.

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1. Introduction

The shipping industry is undoubtedly an important player in the global economy, connecting producers and consumers across countries, and over 95% of the world cargo is transported by ships. The importance of the shipping industry in the Republic of Korea (henceforth, Korea) is more prominently acknowledged due to its high trade orientedness. In 2012, the ocean going shipping industry accounted for more than 2.7% of Korea GDP (Ministry of Oceans and Fisheries, 2014), and 99.7% of Korea's

total external trade in 2014 was carried by ships.¹

Demand for shipping is a derived demand since it is believed that shipping demand occurs from seaborne trade which embeds demands for transporting physical commodities from one place to another. Five major

¹ External trade is measured in weight (Ton).

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determinants primarily affect demand for sea transportation: political factors, the development of the world economy, seaborne commodity trade, average haul and transport costs (Lun, Lai and Chung, 2010). Among these determinants, the state of the world economy is a particularly significant factor affecting shipping demand. As an important player in the world economy, the shipping industry's ups and downs are closely coupled with global economic development. Consequently, the relationship between growth of sea trade and world output can be expediently explained by the concept of trade elasticity of income as measured in the ratio of the percentage growth of sea trade to the percentage change in world economic output.

Korea's remarkable economic growth since the early 1960s was fueled by serious export promotions and also by maintaining sound macroeconomic policies and a free trade regime (World Bank, 1993; Krugman, 1994; Stiglitz, 1996). In 2014, Korea stood at the 7th largest trading country, and ASEAN represents an important contemporary trading partner for Korea. Korea's total trade volume with ASEAN in 2014 amounted to \$138 billion USD, making ASEAN Korea's second largest trading partner, after China at \$235.4 billion USD. Out of Korea's total 2014 trade volume of \$1,098.2 billion USD, ASEAN's share was 12.6%, only after China at 21.4%. As seen in Table 1, ASEAN surpassed Korea's other traditional major trading partners such as US (10.5%), Japan (10.4%) and Japan (7.8%).

Table 1

Korea's commodity trade in 2014

| | Trading Partners | China | USA | ASEAN | EU | Japan | Total |
|---------|-----------------------|---------|---------|---------|---------|--------|-----------|
| Exports | Value (US million \$) | 145,288 | 70,285 | 84,577 | 51,658 | 32,184 | 572,665 |
| | (%) | 25.4% | 12.3% | 14.8% | 9.0% | 5.6% | 100.0% |
| Imports | Value (US million \$) | 90,082 | 45,283 | 53,418 | 62,394 | 53,768 | 525,515 |
| | (%) | 17.1% | 8.6% | 10.2% | 11.9% | 10.2% | 100.0% |
| Total | Value (US million \$) | 235,370 | 115,568 | 137,995 | 114,052 | 85,952 | 1,098,180 |
| | (%) | 21.4% | 10.5% | 12.6% | 10.4% | 7.8% | 100.0% |

Source: The original data was obtained from KITA.net, and then calculated by the authors.

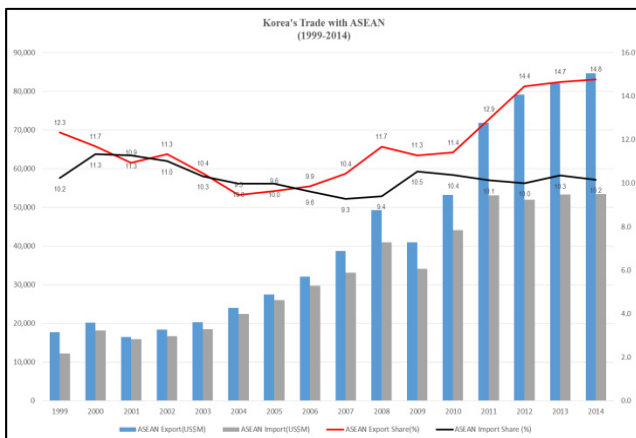


Fig. 1. Development of Korea's trade with ASEAN, 1999-2014

Source: KITA.net

Figure 1 shows the development of Korea's trade with ASEAN over time for the period 1999-2014². During this period, Korea's exports to ASEAN grew by the annual average of 12.2%, exceeding Korea's overall export growth rate of 10.3%. The ASEAN growth rate is second fastest after China at nearly 18% over the corresponding period. Imports from ASEAN grew even faster than exports, recording an annual average growth rate of 12.9% during the period, second after China at 20%. Consequently, ASEAN's market share in both exports and imports in Korea made notable changes over time.

Some major features in Figure 1 deserve mention. The first feature is Korea's trade balance with ASEAN consistently remained in surplus throughout the period 1999-2014. The other is the presence of movements in ASEAN's market share in Korea's exports and imports, with a rising trend since the mid-2000s. ASEAN's market share in Korea's exports almost consistently declined until 2004 when it reached 9.5%. In the post global financial crisis (GFC) period, however, ASEAN's market share in Korea's exports quickly recovered and rose to 14.8% by 2014. The declining trend of ASEAN's market share in the Korea's imports was sustained for a slightly longer period until 2008 when GFC imparted its negative impact more seriously on a global scale. From 2008, the GFC spread more widely to the global economy and caused sluggish global economic performances, causing global resources prices to drop, yet ASEAN retained its market share in the Korean imports around a 10% mark, *i.e.* a 10.2% of the market share in Korea's 2014 total import.

In the case of the Korea's shipping industry, 20.1% of Korea's total trade volume in weight was transported to ASEAN in 2014, and the proportion of the commodities transported by ships was marginally higher in weight at 20.2%. However, in the same year ASEAN's share of the Korea's total imports in weight was lower with 12.6%, of which the portion of commodities, measured in weight and transported by ships also stood. As for the number of containers transported in 2014, Korea exported in total 10,368 thousand TEU (Twenty foot Equivalent Unit) globally. Out of this figure, those bound for ASEAN were approximately to 1,281 thousand TEU, accounting for 12.4% of the total export units. Regarding imports, the ASEAN share is markedly lower, such that only 11.7% of the containers originated from ASEAN out of the total number of import containers constituting 9,464 thousand TEU. Comparing those two statistics, expressed in weight and also in volume, Korea's import from ASEAN was relatively more resource oriented, thus cargo being of bulk type.

In spite of the general importance of ASEAN as major trading partner for Korea, little effort has so far been made in order to estimate the trade elasticity, particularly in the context of income trade elasticity between ASEAN and Korea. Certainly, the estimation of the trade elasticity will help Korean shipping companies plan their fleet deployment and scheduling, efficiently manage routes, and provide essential insight into the projected growth rates of trading partners. The present study makes a contribution by filling this vacuum in the literature by directly estimating long run trade elasticities of income for Korea's bilateral trade with ASEAN.

The remainder of the paper is structured as follows. In section 2, the concepts of trade elasticity of income and price are briefly introduced. Literature on trade elasticities is quite extensive in the international trade

² 1999 is when Cambodia joined ASEAN, forming the incumbent 10 member country association, although the history of ASEAN commenced in 1967 when Indonesia, Malaysia, the Philippines, Singapore and Thailand initially formed the association.

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