[Estimating Oil/Natural Gas Trade Competitiveness and Cooperation Potential of Main OROB Countries: Perspective of Industry Chains]

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Overview

"The Belt and Road" (OROB) has been defined as one of three major national strategies to optimize China's spatial pattern of economic development. In the document "Vision and Proposed Actions on Jointly Building Silk Road Economic Belt and the 21st-century Maritime Silk Road" issued by China's National Development and Reform Commission et al (2015), energy and resource industry chain cooperation, particularly for the oil and gas industry, is emphasized. At the same time, the main oil and gas countries along OROB are also trying to reduce oil and gas export dependence, and to extend their industrial chain to promote economic growth. The oil/Natural gas industrial chain cooperation, including refining industry, has become the most important direction of OROB cooperation. But very few literatures empirically study issue on OROB's oil and gas trade competitiveness and cooperation potential from the perspective of industry chain since OROB initiative is put forward in 2013.

Methods

In this paper, the trade competitiveness index (TC index), revealed comparative advantage index (RCA index), international market share (MOR index), industry concentration ratio (CRn), and Herfindahl-Hirschman index (HHI) , as well as China's trade share to major OROB countries(TS_{China}), is utilized to measure and compare the oil and gas industry chain competitiveness, and we analyze the cooperation potential by using ccompetitiveness trend and the trade interaction. 2001-2015 annual HS2012 trade data is used to carry out the empirical research. The research covers the whole oil/natural gas industry chain, including crude oil and refined oil, organic chemicals, three synthetic materials.

13 major OROB countries were selected as sample by the following criteria: oil and gas resources, population and economic size, location, bilateral relations with China, oil and gas cooperation basis and its political stability. We divided the sample OROB countries into four subgroups: the first is China and India with strong oil and gas import demand; the second includes major oil and gas exporters such as Russia, Saudi Arabia, Iran and Kazakhstan; the third subgroup is major oil/gas channel countries like Turkey, Pakistan, and Myanmar with less oil and gas resources; the fourth is the countries with middle-sized economy and oil/gas production, such as Malaysia, Thailand, Egypt and Indonesia.

Results

China and India's chain competitiveness is mainly reflected in the synthetic fibre and other downstream sectors, while main oil and gas exporting countries hold crude oil and gas trade competitiveness, but lack it in synthetic fibre and other downstream sectors, and channel state are very weak in chains competitiveness, and competitiveness and comparative advantage of middle-sized oil/gas countries is not prominent. China's cooperation status is highest in crude oil/gas import and is also high in synthetic fiber and synthetic resin export with the main OROB countries, but the cooperation status within OROB's organic chemicals and synthetic rubber is weak. The emphasis to further OROB oil/gas cooperation should be paid to embed mutual competitiveness and match the comparative advantage of each other.

This paper also evaluates trade concentration and cooperation potential of different oil/gas industry chain links between China and major OROB countries. It is found that China's position in the whole oil and gas industry chain has generally improved over the past 15 years. In OROB oil/gas industry chain, the importance of OROB countries for China is the highest for crude oil and natural gas sector, but is significantly lower for organic chemicals and three synthetic materials. However, from perspective of other OROB major countries, the importance of China in its export trade was mainly reflected in crude oil and natural gas sector, and for import trade, synthetic fibre and synthetic resin are the key sectors. As to the organic chemicals and synthetic rubber, with the exception of very few countries, the competitiveness of main OROB countries were generally weak, their mutual trade is of less importance.

Conclusions

OROB oil/gas industry chain cooperation should pay more attention to the embedding of competitiveness and the matching of comparative advantage, which include refining and petrochemical industry between China and other OROB countries. Because of strong internal economies of scale in refining and petrochemical industry, and external economics of scale in synthetic industry, petrochemical industrial parks and industrial agglomeration is efficient. With the different market capacities of different OROB countries, it is necessary to match China's large market size, the existed diversified technology with different size of economies of scale, and capital advantage with the competitiveness and market potential of other OROB countries, and this will be helpful to promote oil/gas industry chain Cooperation and the realization of OROB strategy.

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