A STUDY ON AN APPROPRIATE NATURAL GAS PRICING FORMULA FOR THE NORTHEAST ASIAN COUNTRIES

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Overview

The Northeast Asian supply chain for Russian natural gas starts with far east development plan of Russia. The Russian-Chinese pipeline construction is recently signed $400 billion supply contract with 'Power of Siberia'of Russia designed to supply natural gas to China after more than a decade of negotiations. Russia has been proceeded negotiations with Korea and Japan under consideration of North Korea as transit country. With highly possible supply contract of Russian gas, the Northeast Asian countries need to prepare the pricing formulas to suggest.

Gas pricing principles of pipeline gas sales into Europe is well established. European long-term pipeline gas contract have been dominated by the oil product indexation, especially 92% of Russian gas contract. As market fundamental have changed in Europe with higher portion of gas spot market in more liberalized market circumstance than they did in the past, alternative way on indexation such as gas spot price is suggested. Also oil-indexed pricing have to be considered under situation of low oil price from supply quantity increasing.

This comprehensive study on the natural gas pricing formula for Northeast Asian countries, in light of the recent opportunity of supplying Russian gas through pipeline, is organized into three phases. The first stage is an overview of factors that could influence the pricing decision of European countries that have entered into various contracts with multiple suppliers. The next phase identifies the causal relationship between the aforementioned pricing decision and the influence of fundamental factors. The last phase evaluates the appropriate pricing formula for Northeast Asian countries by assessing how the changes in the linked indexation affect the actual pricing formula. This paper is a discussion of the first phase mentioned above, which includes the overview of the supply characteristic, contract characteristic and demand characteristic found in European countries.

Methods

Through the basic investigation of the first phase, the characteristics of gas supply contracts in European countries are determined, which would lay a ground work for identifying the factors that influence pricing.

Results

Out of the importing countries represented in this study, the Dutch gas and Algerian gas had relatively high average prices. Belgium, Germany and Italy, in particular, were paying high prices for the gas from the Netherlands, compared to other suppliers. This confirms the general understanding of the "Dutch premium," which places high emphasis on flexible control of the supply.

On the other hand, Spain was paying the highest average price for gas among the countries in this study, while the UK was paying the lowest. This discrepancy might be attributable to the fact that Spain was using the oil-indexed pricing in its contracts with Norway and Algeria, while the UK was using the UK NBP spot price index in its contracts with Norway and Qatar.

In case of Russian gas, the contract price for France proved much higher than that of Germany, which could be the result of using 100% oil-indexed pricing formula when France entered into a contract with Gazprom and Eni. The two countries attempted to negotiate for a better term in the recent revision of the pricing formula, by decreasing the PO by 10%, but when entering into contract with E.ON, they took a different approach by incorporating 15% spot-indexed.

Italy showed the highest reliance on oil-index, the pricing formula that was used in its contract with Russia and Norway, was almost 100% oil-indexed. Its amount of import from Russia was more than 50% of the total import amount, which means Italy was most dependent on Russian gas, and the effect that the sheer volume of the amount had on the pricing kept Russian gas in the lower price range compared to Norwegian gas, despite the fact that the formula was 100% oil-indexed.

Conclusions

The first phase of this study, as mentioned in the introduction, identified the type of index that was used in pricing formula by European countries that have well-established pricing formula, and examined the factors that induced discrepancy in contract pricing among various countries. In particular, the factors such as the reliance on the spot-indexed pricing, the amount contracted, the ratio of import from a certain country in respect to the total import amount, have been deemed highly influential in determining the contract price. This investigation as a qualitative analysis would be useful as a form of identified variable in quantitative approach to analyzing price determining factors through the organization of supply characteristic, demand characteristic and contract characteristic for the next phase of the study. The exploration of the causal relationship between identified variable and the level of pricing would prove useful in estimating leverage and determining the contract price for East Asian countries for the future gas supply negotiations with Russia.

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