WILL RUSSIAN NATURAL GAS LONG-TERM CONTRACT PRICES REMAIN OIL PRICE DETERMINED AFTER THE END OF OIL-INDEXATION?

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Overview

Until the end of the 2000s natural gas trading in continental Europe had been built on long-term gas sales and purchase contracts (LTC) between major outside gas suppliers and European buyers. The dominant pricing scheme of LTCs was oil price indexation. In the last couple of years however the structure and pricing of LTCs have changed through re-negotiations and recontracting. We expect mid-term (3-10 years) gas commodity contracts to remain part of the EU's gas wholesale trading structure up to at least the mid 2030's. We argue that LTC pricing will remain location and contract dependent and adjust to the closest competitive threat for the seller (liquid hub for more interconnected regions; LNG or competing pipeline for more isolated regions).This transition in LTC pricing is strongly related to increasing supply competition.

The objective of the paper is to identify the most important determinants of Russian LTC pricing strategy under the current market conditions. We investigate to what extent Gazprom long term contract prices are determined by strategic considerations, its market position and to what extent oil price can be expected to remain a significant LTC price determinant.

Methods

We used a wide variety of methods to understand recent Russian LTC pricing strategy. We presented several case studies for countries being heavily dependent on Russia supplies but decided to diversify by investing into new infrastructure which allowed access to alternative gas sources. We wanted to the capture the pricing response of Gazprom to these kinds of competitive threats.

We also tested the hypothesis that Gazprom's LTC prices are adjusted to the closest competitive price (HUB price or LNG) plus transportation cost to the investigated country based on 2016 data. In a time-series comparison between 2010 and 2016 we also related the evolution of European LNG prices, and Russian LTC prices relative to each other, to show that they are heavily interlinked.

Additionally, we also conducted a panel regression analysis to measure more factors of price determination simultaneously. For the regression we constructed, a new measure called the the Exposure-index (E-index) which decribes the extent of an otside being pivotal to supply a certain contry/region. Our hypothesis was that countries with higher exposure would face higher prices after we control for all other relevant factor.

For LTC and LNG price data we used the Eurostat international trade database and the European Commission's Quarterly Natural Gas Reports. The transportation tariffs were based on own calculation.

Results

Our preliminary result can be summarized in two important findings. First, we showed that Gazprom indeed follows strategic pricing to some extent. Several case studies suggest that Gazprom reacted with drastic price cuts in those countries where the completion of a new infrastructure (LNG regas terminal or cross-border pipeline connection) created a credible threat to undermine its market position. We also showed that LNG prices and Russian LTC prices are strongly correlating, as LNG is one of the most important competitor of LTCs. There is week evidence, that in western European countries Gazprom pricing its long-term contracts a little below the price of the closest competitive LNG source plus transportation cost from this terminal.

It is important to note however that strategic pricing was only observableto a limited extent. We also tried to explain Russian LTC prices but with the E-index with limited success, even when different subsets of countries were examined. These findings imply that while Gazprom reacts to strategic threats the pricing mechanism of Russia is not dominated by its local market power.

From the panel regression we also concluded that Brent oil price remained an important determinant of Russian LTC pricing even most recently. This result is somewhat surprising as the European gas market is in a transition from oil indexed prices toward hub based pricing. The result is even more surprising in the light of the fact that the impact of market power (E-index) on LTC pricing was not significant. We suggest the explanation is an indirect one by presenting evidence on the strong correlation between European hub prices and Japanese LNG prices, ltter being heavily dependent on oil price.

Conclusions

Our research presents evidence that the pricing of the Russian LTC contracts and the related EU gas wholesale pricing is transforming. However we also showed that the role of Brent remained a very important price determinant of Russian LTCs through two channels. First, on less liquid EU markets LTC oil-indexation remains a significant determinant of the pricing mechanism (direct channel). On some other markets LNG puts a significant competitive pressure on Russian natural gas. Since, however, European LNG prices are heavily dependent on the LNG price in Japan, which is strongly linked with oil prices, oil price also has a strong influence on Russian pricing through this indirect channel.

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