

# ***A WHOLE NEW WORLD: A MODEL OF EUROPEAN-RUSSIAN NATURAL GAS PRICING***

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## **Overview**

In October 2014, Lithuania essentially effected its second declaration of independence from Russia in modern times. The tiny, former Soviet state had invested 128 million US dollars to assert its independence from its sole provider of natural gas, Gazprom; Russia's natural gas monopolist with close political ties to the Kremlin. With the realization of the appropriately named Independence, a Liquefied Natural Gas Import terminal, situated at Klaipeda, Lithuania, the country was able to secure, for the first time in its history, an alternate energy source for natural gas. This year, Lithuania negotiated a 23% price decrease for natural gas from Russia, in line with lower prices charged to it by Scandinavian countries lacking pipeline access to the Baltic states.

For most of recent history, Russia has been the dominant supplier in the European natural gas markets. It possesses the largest proven reserves in the world, and exploration continues, particularly in the promising Arctic regions. Surprisingly, most former Soviet Republics pay prices significantly higher than European Union countries. Macedonia, for example, paid approximately 80 percent more for their Russian supplied gas than the United Kingdom. The majority of European countries have long term contracts with Gazprom, ranging in duration from 10 to 25 years, which dictate the price and quantity of natural gas during the length of the contracts. The problem then inevitably becomes one of bargaining and how the gains are distributed among the parties. Due to its massive reserves, Russia and Gazprom have traditionally maintained a dominant position in the negotiation stage and have been able to extract most of the rents.

The existing bargaining landscape can only change by way of a fundamental power shift between bargainer and bargainee, as evidenced by the Lithuanian case. With the advent of LNG technology, the fundamental pricing paradigm is changing. The relevance of LNG is in its ability to provide fresh options to importers and exporters of natural gas. With the advent of LNG technology, these countries, as well as any other consumer, have the potential to access natural gas from new alternative energy exporters, such as Norway. As evidenced by the Lithuanian experiment, this investment clearly had an impact on negotiated prices.

It is precisely the drastic differences in cross country negotiated prices, as well as the drastic decrease in Lithuania's post investment price, which motivates me to explore two questions: 1) exactly how this price discrepancy can be explained and 2) what will be the impact of continued investment in LNG import terminals on subsequent negotiations between European customers and Russia, through Gazprom.

## **Methods**

In order to answer my two motivating questions, I model the bargaining process through asymmetric Nash Bargaining. Ultimately, I believe the fundamental explanation for the European price discrepancies can be explained by access to alternate sources of natural gas. Essentially, the country level heterogeneity stems from the ability to procure natural gas from independent sources such as domestic gas reserves or LNG imports. I use data obtained from the IEA and Izvestia.

## **Results**

My model determines that when the price a country must pay for alternative gas supply increases, negotiated Russian prices increase as well. This supports the claim that a country that is able to procure alternate supplies of natural gas at cheaper rates will also experience lower prices from Gazprom. In other words, access to non-Russian natural gas supply does help the country in the bargaining process in this setting.

### **Conclusions**

Pricing and delivery of natural gas is a concern that particularly interests and affects all those living in temperate climates and those interested in the effects of global warming. In Europe, where energy security from Russia is an open and sustained concern, this matter is of pivotal importance. Modeling and estimating the bargaining procedure between these countries, with an emphasis on the access to alternative options, is to date an unexplored exercise which is valuable both at the theoretical and the policy level. With the advent of LNG technology, this issue is more pressing than ever.