One of the primary energy sources, natural gas is widely used. In the next decade, gas is expected to be the fastest-growing energy resource consumed. Two types of supplies: pipeline and liquefied (LNG), recently have faced an intra-industrial competition. Physical nature of gas and associated transportation costs historically made the process of free trade and competition development much longer compared to other energy resources.

After decades of technical innovations, cost curve improvement in the LNG sector and shale boom in the USA, increasing global consumption, demand for supply diversification and cleaner global energy system challenge started to change the role of gas in the world energy balance.

The lowest rate of CO$_2$ produced when burned, and higher energy content makes natural gas more clean and efficient fuel among other fossil fuels. Thus, natural gas has the potential to decrease CO$_2$ emissions of mainly coal-based electricity generation and to fuel vehicles in liquefied or compressed forms (LNG or CNG).

In 2018 LNG (liquefied natural gas) market volume reached 314 mln. ton p.a. (mtpa) with 50% of LNG sold on the spot. The biggest market driver is the growing demand from China with however restrictions currently for the US.

Increasing global supply makes regional gas markets more connected and reduces the price differential (arbitrage) between the EU and Asia, which could be observed at the end of 2018. After the shale revolution, the US becomes one of the leading players on the global scene in hydrocarbons production and now changing the position of the net gas importer to the net exporter. The US producers are expected to deliver 80 mtpa by 2025 if all launched projects are implemented. However, there are many concerns about how gas producers on the US will create this demand for their as in the ongoing energy transition, which already created some negative consequences after the California case. Another challenge that still exists for the US gas business models is the pipeline constraints and a big uncertainty about the three main pipeline construction from the Permian basin.

From another side, deregulated LNG supplies with more flexibility on contract terms together with the gradual development of pricing hubs on EU and Asian markets increase the amount of data available for traders, allowing LNG value chain parts to adapt their business models.

This paper provides gas market players a comprehensive approach where we analyze three main components of the business model: pricing and trading flows, two potential consuming markets (EU and Asia), value-adding opportunities and risks.

We show legal, pricing, and institutional differences between gas markets of EU and Asia. With a data-driven approach, we analyze contracting, reverse trading, and spot deliveries information to compare business models competitiveness and trading. Finally, we propose an analysis of the impact of new players on gas markets. Both authorities and industry specialists may use the results of the analysis to increase the value of export projects and decrease the probability of business failure on the two analyzed markets.

The methodology used includes data collection from the target market and the US market and affected export prices in the business models as the dependent variable. Here we estimate the price convergence in the EU and Asian market. The main features and contributions include the factor of recent price contingency and, therefore, then we after test the cointegration and futures curve, a transport tariff together with increasing reexport and spot in the arbitrage.

Our results will be applicable for both market players and for policymakers to make valid estimations of their business models and policy. We also improved the related previous empirical researches about spatial arbitrage in international gas markets in the frame of increasing trade and enriched it with a cointegration approach.


