

Natural Gas Price Fluctuations

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Introduction

Natural gas is considered to be an important resource in modern world because it is one of the most environmental friendly sources of energy. The prices of natural gas has significant impact on all commercial and non-commercial activities and therefore it is important for economic policy makers to understand the factors that affect gas prices and plan ahead to handle fluctuations (Arezki, et al., 2014). This essay analyses changes in the prices of natural gas and identifies the factors that cause these fluctuations.

Discussion

According to the latest report from the US Energy Information Administration (EIA), the causes that have contributed to the price of natural gas prices below two dollars in recent months are the low demand for gas natural in the country as a result of an atypical winter warmer than usual and the increase in production levels. The EIA expects the price to rise gradually from the summer, when the demand of the industrial sector increases, although all forecasts indicate that the price will be lower than last summer (Shafiee and Topal, 2009).

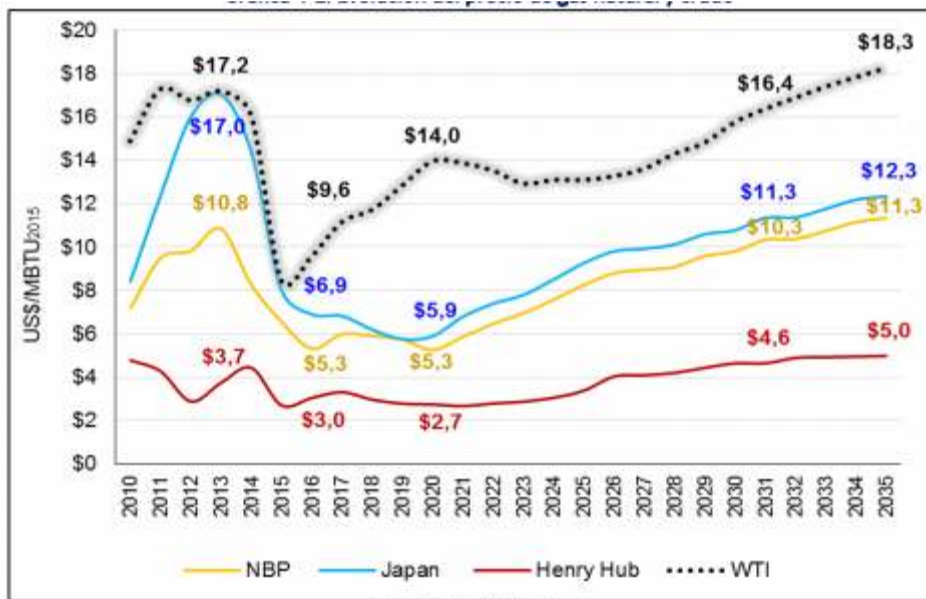
One of the reasons that justifies the decrease in the price of gas is the surplus of this fuel due to the boom in hydraulic fracturing (fracking), which has been favored by the granting of loans at zero interest rates by the Federal Reserve and that now they will be severely restricted in the coming years due to the high risk of default, valued at 50 percent of the loans. Only in the first quarter of the year, more than 50 oil and gas producers in North America have declared bankruptcy (Considine and Larson, 2001).

Although the EIA foresees a slowdown in the growth of natural gas production projects in 2016, this will not prevent gas production in this country from rising 0.9 percent at the end of the year compared to 79,000 million cubic feet. per day (Bcf / d) reached in 2015 and 2.2 percent in 2017 due to the expected rise in the price of natural gas, the increase in demand and the increase in exports of Liquefied Natural Gas (LNG) (Ramberg and Parsons, 2012).

While the oil market is essentially global, in the case of natural gas the market is segmented into three major markets: the United States, Europe and Asia, which have important differences in the case of prices, since they present an important divergence in magnitude and trend. The prices of natural gas in the United States are based on local supply and demand, while

in Asia and Europe they are partially referenced to the behavior of the price of oil and its derivatives and the performance of the international market. As Figure 4-1 shows, the prices of crude oil and gas in the different markets show differences and there is a correlation between crude oil and gas in Japan, basically because the natural gas prices of the latter are referenced to a basket of oil prices, otherwise there is no reciprocity between the price of WTI crude oil and the Henry Hub (markers in North America), since the beginning of the exploitation of shale gas in the United States, arriving in 2012 at a difference of five times in favor of crude, contrary to what happened in the past where there was a clear correlation, which was maintained for decades (Nick and Thoenes, 2014).

The same graph indicates that in the short term it begins to present a difference between the prices of oil and gas that increases considerably, becoming in 2016 the price of crude oil three times that of gas until 2020 where this difference it happens to be almost seven times in favor of crude oil¹. Already in this period the correlation of WTI and the spot price of gas in Japan dissipates, which may be due to the change of indexer or the market scheme (Lin and Wesseh, 2013).



During 2015, the price of the Henry Hub has presented fluctuations with a slight upward trend, whose average value at the end of December 2015 stood at US \$ 1.9 / MBTU, despite reaching prices close to US \$ 4.4 / MBTU in 2014, probably due to weather effects in that

region. However, for the United States Department of Energy, prices will remain practically constant in the short term, reaching US \$ 2.7 / MBTU in 2020 in real terms, in response to new increases in production and a period with temperature moderate that reduces the gas needs for heating (van Goor and Scholtens, 2014).

The North American Agency estimates that the average price of the Henry Hub during the whole year 2016 will be US \$ 2.70 / MBTU and for 2017 at US \$ 3.04 / MBTU, quite lower figures compared to 2014, when it was expected that the average for this same year was close to US \$ 5 / MBTU. One of the reasons for this behavior refers to a lower demand by 5% than expected, which is increasing the storage of gas, compared to previous years. It should be borne in mind that the Henry Hub is the most economical gas index of those presented in Figure 4-1, since this price refers to the price at the wellhead and does not include the prices of liquefaction, maritime transport and regasification . In the following chapters, each of these components will be analyzed to determine a final cost in the Colombian market (Hulshof, van der Maat, and Mulder, 2016).

Likewise, Figure 4-1, in addition to presenting the Henry Hub in the United States, shows a comparison of this with the other international gas indices, such as the NBP in the United Kingdom and the JKM in Japan. For the case of Japan and Korea, the same graph indicates an almost cyclical behavior with a maximum value of US \$ 6.9 / MBTU in 2016 and US \$ 5.9 / MBTU for 2020, showing a significant reduction compared to the last years, where I reach to settle at US \$ 17 / MBTU. It is to remember that the price of this marker fell from 12.14 dollars per million BTU in June 2014 to US \$ 5.79 MBTU in February 2016, showing a reduction of 52%. According to experts, the reduction presented in the price of gas in Japan in this period, is due to the incursion of low prices of coal, the reduction of the price of liquid fuels and crude oil due to high levels of production, oversupply of LNG in the Pacific Ocean area (Australia) as well as a moderate behavior of the economy, which in general terms implies a lower demand for final energy, but more than that, to the replacement of LNG by the nuclear resource for the generation of electricity (Gilje and Taillard, 2016).

In the case of the UK NBP price, a trend somewhat similar to that of Japan's JKM is shown with values of US \$ 5.3 / MBTU in 2016 and US \$ 5.3 / MBTU by 2020, maintaining price stability with some oscillations in the intermediate. Gas prices in Europe are established based on

the relationship between supply and demand. Like the JKM price, the price of the NPB was drastically reduced from US \$ 6.68 / MBTU in June 2014 to US \$ 4.61 / MBTU in January 2016 registering a fall of 31% which is mainly due to an oversupply of gas in the market and in the Atlantic Ocean area, including the recent contribution of shale gas from the United States. Thanks to this price reduction, countries such as Argentina, Brazil and Chile are accessing cheap LNG through regasification terminals. The lowest price, before finishing this document, occurred on February 25, 2016, reaching US \$ 4.40 / MBTU². On the other hand, exports of LNG from the United States begin to reach the markets of the Atlantic basin, but with profitability problems due to low existing prices. With its arrival in Europe there is strong competition with Russian gas. Likewise, this gas has already arrived in Brazil with very competitive spot prices (Aloui, et al., 2014).

Conclusions

The trend of prices observed recently between NBP and JKM, seems to indicate some convergence, without this meaning that they are equated, modifying in this way the behavior achieved in recent years, that is, the segmentation that today have gas markets will decrease gradually thanks to two events: the first related to the increase in shale gas production mainly in the United States, generating higher exports and, on the other hand, the expansion of LNG that thanks to its portability as an export mechanism has been reducing little to little the dependency that has the world-wide market of the systems of gas pipelines for transport.

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