

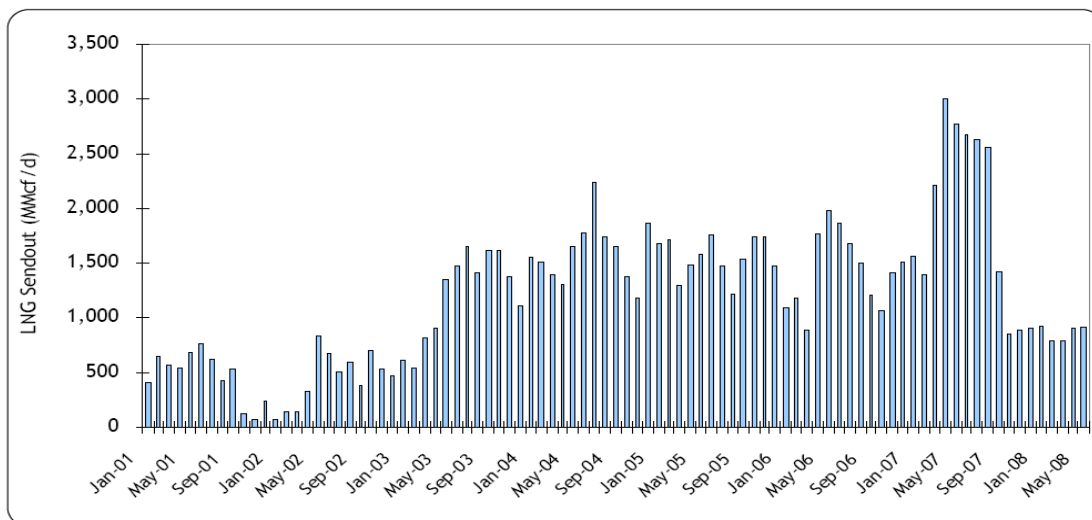
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A Comment on LNG Regasification Optionality *By Mariano Gurfinkel¹ & Michelle Michot Foss²*

Liquefied natural gas (LNG) regasification capacity utilization has increased in the United States during the last decade. In recent years it has also showed marked variations throughout the year. The ratio between the highest observed natural gas sendout and the lowest surpassed 5 in 2007. This short note attempts to provide a first order explanation to the variation in capacity utilization.

In its most simple form, LNG imports to the US can be categorized into two groups. The first group, which we will call “base load” for the purposes of this discussion, includes imports that have prescribed volumes of LNG delivered to specific locations in the US. The second group is composed of LNG imports that have more flexible terms associated with them; for example they may have sought better prices for the LNG cargo at other ports. The first group, by contract, is delivered to US-based regasification facilities. The volume associated with this set of contracts is not necessarily constant throughout the year but should be predictable based on a mostly prescribed schedule. On the other hand, suppliers of the second group are free to seek better pricing of those LNG cargos. Some contracts incorporate clauses that impose penalties when cargo destinations are changed. The imposition, or potential imposition, of penalties results in what we can call “stickiness” of volumes since the price incentive for a new destination is basically reduced by this penalty clause. Differences in transportation costs can serve as an additional source of “stickiness” but can also reduce stickiness depending upon tanker routes. A test of this hypothesis is to use the US/UK price differential of natural gas prices to determine whether it serves as a proxy for LNG cargo destination flexibility.

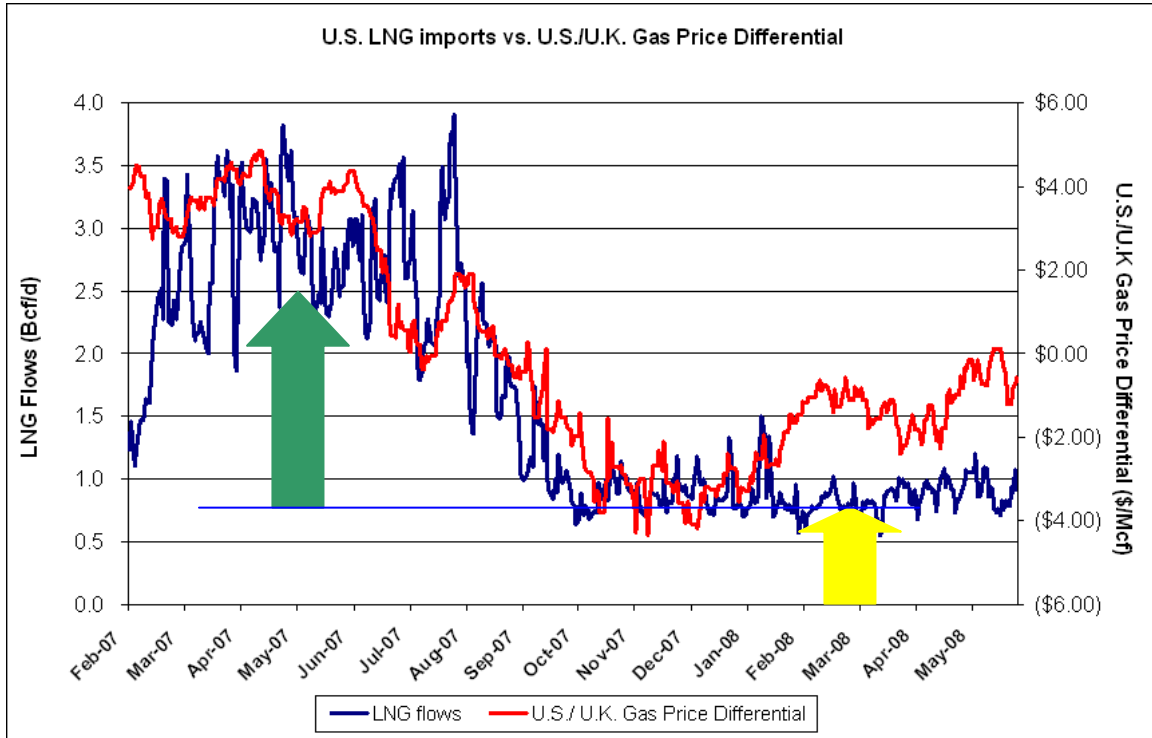
The figures show LNG imports to the US paired with the US/UK natural gas premium as



Source: Tudor, Pickering & Holt

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reflected by the difference between Henry Hub and National Balancing Point natural gas spot prices. During the period in question, when the premium is sufficiently high, LNG imports are the highest. When the premium is small, LNG imports are the smallest. These two observations are loose positive tests of the hypothesis, at least to first order. To better complete validation of the hypothesis, volumes associated with what we are calling base load need to be separated throughout the year. This would leave purely “optional” volumes which are be the sum of all the volumes that were able to achieve higher value for their cargoes in the US after considering differences in transportation costs and any penalties paid for changing destinations. The stickiness of the LNG cargoes creates a price band around which cargoes would change destinations in the Atlantic Basin.



Source: Tudor, Pickering & Holt

It should be clear to the reader that only considering HH and NBP spot prices leaves out other competing markets which may have independent price effects. For example, suppliers of “optional” cargoes may consider even longer tanker routes to serve much higher paying, premium markets such as Japan or Korea when the circumstances warrant.

The hypothesis as we have posed it here has interesting ramifications and questions. A few of these are:

- Does variation in utilization over a time period have direct implications for the commercial success of currently operating and recently completed regasification facilities in North America?
- Will low utilization of infrastructure influence stakeholder perceptions with respect to economic/community benefits associated with LNG, given that benefits are usually assumed to be associated with reasonable utilization of infrastructure?

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- What is the value of having infrastructure capacity available, albeit nearly idle for prolonged periods, when considering issues such as energy security and reliability associated with natural gas and LNG? How should the capacity “option” be priced?
- Can the hypothesis be used to understand price disconnects and price convergence of global LNG markets and to estimate the role of LNG in US natural gas supply as a mid-cost or as a high cost source of natural gas?

These are not only questions of curiosity, but ones with considerable relevance for both regulatory and public acceptance of new LNG receiving and regasification terminals in the United States. CEE has embarked on an exploration of LNG arbitrage modeling to address the hypothesis and corollary issues posed here. Forthcoming issues of CEE Research Quarterly as well as separate reports and publications will track progress.