LNG SHIPPING: A DESCRIPTIVE ANALYSIS

Susanna Dorigoni, IEFE Research Director, Phone +39 02 58363806, E-mail: susanna.dorigoni@unibocconi.it
Luigi Mazzei, IEFE Researcher, Phone +39 02 58363819 E-mail: luigi.mazzei@unibocconi.it
Federico Pontoni, IEFE Researcher, Phone +39 02 58363817 E-mail: federico.pontoni@unibocconi.it
Antonio Sileo, IEFE Researcher, Phone +39 02 58362343 E-mail: antonio.sileo@unibocconi.it

Overview

At present, throughout the world LNG investments are abounding. In particular, US and Europe are trying to facilitate their security of natural gas supply. Both the European Council and the US government have identified a list of instruments that could strengthen the security of supply, LNG import being one of those.
Indeed, import through LNG chain, that is, through the employment of LNG tankers for gas transportation, does not imply, for the importer, such investments as to determine, once they are sustained, an indissoluble physical tie between the producer and the buyer, as it happens for the transport via pipeline (Chernyavs'ka and Dorigoni, 2002). LNG, in fact, enables the importers to extend their gas suppliers portfolio, considering that some producing countries (i.e. stranded gas) can be reached only via sea transport.
LNG will thus increase the possibility of choice for importers; at the same time it can widen the group of exporting countries and enhance the construction of a global gas market. Thanks to the possibility of redirecting cargoes, depending on single countries' supply-demand balance, LNG would contribute decisively to security of supply, market globalization and competition (between importers) in the industry (IEA, 2004).
In the LNG value chain one can identify three elements: liquefaction, shipping and regasification. While the first and the last element of the value chain have been deeply studied, too little attention has been paid to shipping. Being the link between the producing/exporting country and the importing one, it is particularly interesting to analyze it in order to understand how it is linked to the other elements of the value chain. Besides, shipping has been undergoing through major changes in these recent years, thus it is worthwhile to understand the evolutionary trajectory of this segment. On can expect that, in the future, the number of operative ships will be one of the key variables for the increase of spot market and, consequently, for a greater market liquidity.

The paper is organized as follows: in the first section LNG market will be introduced, with particular reference to the evolution of regasification and export capacity; section 2 and 3 will be dedicated to an analysis of shipping, both in current and in perspective terms. Then, in section 4 the proprietary and contractual situation will be addressed; section 5, finally, will present some concluding remarks.

Methods

Descriptive statistics; multivariate analysis.

Results

First, we found that expected transport capacity (net of load limits) is sufficient for the quantity of natural gas that is likely to be liquefied in the foreseeable future.

Second, we found that tankers' dimension is hugely affected both by regasification terminal capacity (for this reason there are 200,000 cm ships as well less than 50,000 ships) and by their scope (i.e. peak-shaving).

Third, we found that some countries (Qatar and Japan) and some regional areas (Pacific Basin) clarly emerge as major players in the industry.

Forth, we found that more than a half of the world fleet belongs to a small number of carriers and most of the LNG tankers are tied to long-term contracts (even if their average duration is decreasing). By 2010, though, almost one third of LNG tankers will be uncontracted, leaving space for spot trade.

Conclusions

Shipping is not likely to represent a bottleneck in the foreseeable future, at least for what concerns transport capacity. Moreover, thanks to economies of scale, bigger tankers are likely to be built, making investments in the sector more attractive. Most of the ships are bound to long-term contracts (even if their duration is decreasing

recently) and are part of bigger projects ranging from the construction of liquefaction terminals to that of regasification ones. In fact, most of the ships are bound to certain routes. Thus, shipping seems tightly bound to natural gas industry dynamics.

References

Chernyavs'ka, L. and S. Dorigoni. 2002. Modalità di trasporto del gas naturale e liberalizzazione ei mercati in Europa: pipelines o GNL?, *Economia delle Fonti di Energia e dell'ambiente*, 2/03.

Council of European Energy Regulators (CEER). 2006. Annual Report, Brussels.

European Commission. 2007. Energy Sector Inquiry. Brussels.

Global Insight. 2007. The LNG Market – Globally now to 2025 and the Implications for the UK, Report for the Department for Business, Enterprise and Regulatory Reform, London.

Hallouche, H. 2006. The Gas Exporting Countries Forum: Is it really a Gas OPEC in the Making?, Oxford Institute for Energy Studies, Oxford.

Hubbard G., and Robert Weiner. 1992. Long-Term Contracting and Multiple-Price Systems, *Journal of Business*, 65: 177-198.

IEA. 2004. Security of Gas Supply in Open Markets – LNG and Power at a Turning Point, OECD, Paris.

IEA. 2006. World Energy Outlook, OECD, Paris.

IEFE. 2008. Il Potenziale Ruolo del GNL nell'Incremento della Concorrenzialità dei Mercati Europei e nella Sicurezza dell'Approvvigionamento Energetico, Work in progress.

Jensen J.T. 2006. The Development of a Global LNG Market, Oxford Institute for Energy Studies.

Oil&Gas Journal. 2006. various issues. New York.

Percebois, J. 2003. Ouverture à la Concurrence et Régulation des Industries de Réseaux: Le Cas du Gaz et de l'Electricité, *Cahiers de recherche*, CREDEN, 03.11.40

Williamson, O. E. 1985. The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting, New York: The Free Press.

World Gas Intelligence, various issues, New York.