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The long and short of it: the impact of long-term contracts as a commercial tool

A range of industries, from the energy sector to airports, use long-term contracts to stabilise revenues or costs and to mitigate risks associated with market dynamics. This can encourage investments that might not otherwise be capable of being financed efficiently. However, long-term contracts can also have an adverse effect on competition where market concentration is high, by locking in consumers and reducing the size of the potential market, thus making entry less likely

The European Commission recently closed the investigation under Article 82 of the EC Treaty into Distrigas' long-term contracts for gas supply, and formally adopted the company's commitments to open the Belgian gas market.[1] Under these voluntary commitments, Distrigas will limit the length of its contracts to five years, and return to the market an average of 70% of the gas that it has contracted to supply by opening agreements to tenders from competing suppliers.

The Commission launched the inquiry in response to concerns about the lack of effective competition in the Belgian gas market, and investigated two types of potential anti-competitive practice: long-term supply contracts, and restrictions on the use of gas delivered by Distrigas to its customers. However, the Commission stated that, although long-term contracts may give rise to competition concerns, they may also bring about efficiencies and other beneficial effects on investments, and should therefore be assessed in the general context in which they occur.[2] It follows, then, that long-term contracts are incompatible with EC competition law only when they are likely to generate negative effects arising from vertical foreclosure, and when these effects outweigh the efficiency benefits derived.

Table 1 Examples of long-term contracts

Sector	Features of long-term contracts	Potential effects of long-term contracts
Airlines and airports	Commitment to a number of landing slots for a fixed price over a period of time	– Both airport and airline reduce their exposure to landing rights, prices and passenger numbers – Risk reduction when assessing profitability of routes – Increased demand certainty may allow for long-term infrastructure planning for the airport – Given capacity constraints, and the long period for additional capacity to be operative, contracts may prevent entry from new airlines – Increased volatility on the prices of the 'free' slots as a consequence of demand fluctuations
Car industry	Part suppliers and car manufacturers sign contracts specifying volumes, prices and quality for key components	– Transaction costs are minimised – Suppliers may invest to adapt their facilities and processes to the required business operations, and benefit from a known source of demand – Manufacturers in turn may carry out long-term planning of production, with a known source of supply of inputs at known prices for long production cycles
Forestry industry	Contracts on prices and volumes of logs to be supplied to timber mills over a number of years	– Exogenous factors (eg, a fire) may affect the output available in a given year, and the adjustment in volume would occur at the expense of the open market, thus increasing volatility
	No flexibility clauses on volume intake	– This may lead to increased volatility in the spot market

Source: Oxera.

Long-term contracts can provide certainty and risk-mitigation mechanisms for the parties engaging in them. However, although they may bring about beneficial effects in terms of investments and long-term planning decisions, in sectors where a high proportion of output is sold through such contracts, the reduced depth of the market may result in a lack of liquidity and in clearing prices that do not necessarily reflect market dynamics. Under these conditions, long-term contracts may hamper competition and market entry, leading to market foreclosure.

As Table 1 above shows, long-term contracts are a common feature across a range of markets.

The role of long-term contracts

The issue of long-term contracts as an intermediate organisational form between vertical integration and short-term market trade has been a hotly debated topic in industrial economics. The potentially positive and negative effects of such contracts on the economy are summarised in Table 2. The positive features relate to risk- or uncertainty-mitigation characteristics, whereas the main negative effects are derived from the reduction in the size of the market and thus in the potential for new entry (lock-in effect). The implications of these features are outlined below.

Risk mitigation and risk sharing

Long-term contracts may favour investments by providing a more stable flow of returns, thereby reducing the risk premium that would have to be paid to investors in order to raise the required funds for a given project. This may be particularly the case in industries where operators' investments are sunk—that is, where the prospects are limited for recouping the value of the investment from a sale for use other than that which was originally intended (ie, asset specificity). The terms set out in long-term contracts allocate various risks between the parties, and in a market framework with many buyers and sellers, allow for the efficient allocation of risks to investors. For example, empirical evidence from the Ras Gas Project, a liquified natural gas (LNG) facility built in Qatar under a 25-year contract with Korea Gas Corporation, shows that risk shifting actually took place, with Ras Gas bond spreads moving contemporaneously with Kepco (owner of Korea Gas Corporation) credit spreads, thus effectively sharing the risk between both contracting parties.[3]

Security of supply and long-term investment decisions

The presence of long-term agreements can provide security of supply to both buyers and sellers. By removing uncertainty in volumes and prices, buyers and sellers can benefit from optimising their business processes, ensure that they have secure access to necessary production inputs, and therefore take investment decisions with a long-term horizon, leading to efficient allocations.

Buyer-to-buyer externality

A key concern about long-term contracts is the 'lock-in' of buyers to particular suppliers, since this may deter entry by firms that can no longer compete for those buyers. By locking itself into a long-term contract, a buyer decreases the size of a potential entrant's market, thereby reducing the probability of entry. Such contracts may therefore impose a negative externality on other buyers (buyer-to-buyer externality[4]), since they reduce the likelihood of other buyers facing a competitive alternative, and allow the incumbent to extract rents from this externality, favouring market concentration and foreclosure.

Market shrinking, price signals and volatility

By reducing the size of traded markets, long-term contracts may induce greater volatility and clearing prices that do not respond to supply and demand fundamentals. Contracts reflect market conditions prevailing at the point at which they are signed, but if these market conditions deviate substantially over the duration of the contract, the contractual terms may not correspond to current market reality. In addition, an absence of price renegotiation clauses may lead to significant price differentials between the spot market and the price negotiated through long-term contracts.

Table 2 Long-term contracts: potentially positive and negative effects

Positive effects (risk mitigation)	Negative effects (market shrinking)
Financial risk mitigation	Favours market concentration
Security of supply	Can result in vertical foreclosure
Enables risk sharing	Can reduce ex ante competition
Increases contractual completeness	Can reduce market size; price signals do not correspond to market fundamentals if market conditions change
Favours long-term planning and optimal allocation of risk	Buyer-to-buyer externality
May encourage investment where operators face significant sunk costs	May discourage third-party investment

Source: Oxera.

Long-term contracts in the gas sector

The effect of long-term contracts on competition in the European gas market was highlighted by the European Commission's sector inquiry, which investigated whether these contracts could have a detrimental effect on competition under certain circumstances.[5]

The wholesale European gas market is characterised by a high degree of market concentration, and a relatively low volume of gas being sold through traded markets. Most gas imported into Europe is sold by a few producers to a few incumbent wholesale suppliers, and existing import contracts cover almost all production from fields that can be produced domestically or gas transported to Europe on commercially viable terms.[6] For example, around 40% of European gas supplies are delivered under long-term contracts with the national gas companies of Russia and Algeria (Gazprom and Sonatrach), and in several European countries, the incumbent's share of imports is above the 90% threshold (see Table 3). This vertical relationship between producers and suppliers resulting from long-term contracts, together with highly concentrated markets, may have prevented the emergence of liquid wholesale markets.

Illiquid wholesale markets may not provide confidence to buyers about gas availability or prices reflecting market dynamics, thereby increasing the reliance on long-term import contracts, and exacerbating the problem of low volumes sold through traded markets. This lack of liquidity is heightened by clauses in the supply contracts that offer buyers a substantial degree of flexibility in terms of offtake (usually in the range of ±20%), thus avoiding situations of excess or shortage of gas, but further reducing the need for buying and selling gas on national wholesale markets. The sector inquiry found that some contractual restrictions could prevent the development of liquid markets—for example, use restrictions may prevent large industrial users from reselling gas to the market, thereby impeding arbitrage should the wholesale price rise above its contract price.

The presence of incumbents with long-term purchase contracts, which dominate the highly concentrated upstream market, may also lead to vertical foreclosure in the downstream market, since they may be able to leverage their upstream market power into the downstream market. Where downstream customers have met their entire demand with incumbent suppliers holding long-term contracts, they are no longer present in the market, which may discourage entry. New entry may also be restricted by the difficulty in gaining access to gas transportation and distribution facilities. Other conditions of long-term contracts, including exclusivity provisions, termination notices, and restrictions on the use of the gas, may further hinder arbitrage and entry opportunities. Since power generators, distribution networks and large industrial customers receive large volumes of gas, removing these restrictions would increase their ability to trade, and could contribute to hub liquidity, and potentially bring more gas to the wholesale market.

The discussion about long-term contracts in the energy sector has gained momentum as a result of the recent political impetus towards market liberalisation. However, limits to effective competition in the European gas market may not be a consequence only of the existence of such contracts, but also of the concentration of contracts with a single supplier upstream, and the

Table 3 Energy sector inquiry: first phase, 2004 (gas)

	Total imports (bcm)	Incumbent share of imports (%)	Total domestic production (bcm)	Incumbent share of domestic production (%)
Austria	9	40–90	2	–
Belgium	16	90–100	0	–
Czech Republic	9	90–100	<1	–
Denmark	0	n/a	10	80–90
France	49	90–100	1	–
Great Britain	13	20–30	105	40–50
Germany	88	90–100	18	80–90
Hungary	11	90–100	3	90–100
Italy	67	60–70	13	80–90
Netherlands	18	50–60	73	90–100
Poland	10	90–100	5	90–100
Slovakia	7	90–100	<1	–

Note: 'Total imports' refers to gas imported for use in domestic consumption and does not include transit gas or imports that are subsequently exported. Percentages are presented in ranges due to differences in reporting methodologies across countries.
Sources: European Commission (2007), 'DG Competition Report on Energy Sector Inquiry', January 10th; Eurostat; and national regulatory authorities.

relationship between supplier and buyers. Nevertheless, long-term contracts may have intensified market concentration, with contractual clauses further hindering the development of traded markets. With relatively few suppliers in Western Europe,[7] the dominant suppliers and buying parties have been able to manage the market and keep supply and demand more or less in balance, and it has therefore been difficult to promote effective competition. The main exception to this pattern appears to be the UK, which accounts for 85% of all European hub trading.[8]

Long-term contracts in a liberalised market environment

Research on the US and UK natural gas markets shows that, after liberalisation, contract length tended to decrease, and that the duration of contracts has been positively related to asset specificity.[9] However, recent changes in the gas market could see long-term contract conditions being modified.

- Decreasing capital intensity and unit costs for newly built facilities as a result of scale economies may reduce dependence on long-term contracts for investments.

- Growth in the production of LNG—which is transported in large gas vessels and does not rely on a pipeline network—and lower shipping costs may increase liquidity and promote a global gas market, reducing the incentives to sign long-term contracts. In addition, entry into the market of new suppliers such as Qatar, Nigeria and Egypt may increase liquidity.

- Development of spot markets—liberalised markets should lead to increasing liquidity in the short-term markets.

- The development of spot markets could lead to pressure to renegotiate price indexation by current contract holders if prices fall below the contracted price. Long-term contract holders may therefore try to renegotiate their contracts such that they are not disadvantaged compared with those market players buying gas at the spot market price. Greater liquidity may also ensure security of supply, thus reducing the length of contracts. Competition authorities are eliminating restrictive destination and final-use clauses, which may remove some of the undesirable effects of long-term contracts that have prevented the emergence hub gas trading, as in the case of Distrigas in the Belgian market, discussed above.[10]

Further to market liberalisation in Europe, only the UK has witnessed the development of competition at the wholesale level and has successfully generated liquid markets. Here, legacy long-term contracts remained unchanged, but new contracts have become shorter in length and are usually indexed against traded markets. Furthermore, much of the new infrastructure has been funded without assured gas supply contracts.

Conclusion

Under certain circumstances, long-term contracts may have undesirable effects on competition since they can reduce the size of the market and lead to information asymmetries and erroneous price signals, and may potentially result in deadweight losses through inefficient allocations of gas between customers with very different opportunity costs. However, they are critical for a number of sectors where asset specificity and investment requirements are significant. By removing uncertainty, they may have beneficial effects on investment, financing, and long-term investment decisions, thus enhancing economic welfare.

Long-term contracts per se are not to blame for the lack of effective competition in certain sectors, however. Their effects depend on a number of factors, such as the share of output that is withdrawn from the trading market, the degree to which there are supply constraints, and the type of flexibility clauses embedded within them. By focusing policy efforts on alleviating the factors that may undermine competition in the presence of long-term contracts, such as restricting certain anti-competitive contractual conditions, a desirable outcome could be achieved while maintaining these contracts and the advantages associated with them. The Distrigas case is an example of striking this balance between the positive and negative effects of long-term contracts. Releasing contracted gas into the market provides scope for new entrants, and restricting anti-competitive clauses such as use restrictions provides an opportunity for arbitrage and spot trading arising from price differentials, thereby increasing liquidity in the gas market.

[1] European Commission (2007), 'Antitrust: Commission Opens Belgian Gas Market to Competition', press release, IP/07/1487, October 11th. Distrigas is a member of the Suez Group, which includes a number of companies active in the Belgian energy markets.
[2] Ibid.
[3] See, for example, Dailami, M. and Hauswald, R. (2000), 'Risk Shifting and Long Term Contracts: Evidence from the Ras Gas Project', Policy Research Working Paper 2469, The World Bank.
[4] See Aghion, P. and Bolton, P. (1987), 'Contracts as a Barrier to Entry', *American Economic Review*, **77**:3, pp. 388–400.
[5] European Commission (2007), 'DG Competition Report on Energy Sector Inquiry', January 10th.
[6] New 'free' sources may be developed in the future as LNG shipments become an economically viable alternative to pipeline transportation, and as new fields are being explored and developed within Europe and Russia.
[7] 90% of LNG imports originate from Russia, Norway, and Algeria. See European Commission (2007), 'DG Competition Report on Energy Sector Inquiry', January 10th, p. 25, Figure 4.
[8] European Commission (2007), 'DG Competition Report on Energy Sector Inquiry', January 10th, p. 34, footnote 53.
[9] See, for example, Neumann, A. and von Hirschhausen, C. (2006), 'Long-term Contracts and Asset Specificity Revisited', Center for Energy and Environmental Policy Research; and *Gas Matters* (2006), 'How Long Can Long Term Gas Contracts Survive in Europe?', September, p. 23.
[10] For example, the European Commission's dealings with Gazprom, Nigeria LNG, Sonatrach, and Statoil have in the past focused on removing territorial restrictions and other anti-competitive contract clauses (see press releases IP/02/1084, IP/02/1869, IP/03/1345, IP/07/1074).

If you have any questions regarding the issues raised in this article, please contact the editor, Derek Holt: tel +44 (0) 1865 253 000 or email d_holt@oxera.com

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