Robust strategies for rig procurement

by

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(1) Overview

Scarcity of rigs on the Norwegian continental shelf has led to a number of interesting changes in rig procurement and the relation between oil and rig companies. Small oil companies have joined to establish a rig consortium; there are examples of change in the sharing of risk between oil and rig companies; there has been vertical integration where oil companies own rigs and where rig companies apply for and are granted petroleum licenses; and joint ventures between oil companies and drilling companies are being discussed. The paper describes and analyses these trends, with the perspective of an optimal procurement strategy for an oil company. Trade-offs in rig procurement is analysed. A robust supply of rig capacity is called for to satisfy drilling commitment towards governments and to fulfil time critical production and injection wells. These benefits need to be traded off against a temporary decline in accounting returns and credit rating resulting from a potential oversupply or mismatch of rig capacity at falling rig rates.

(2) Methods

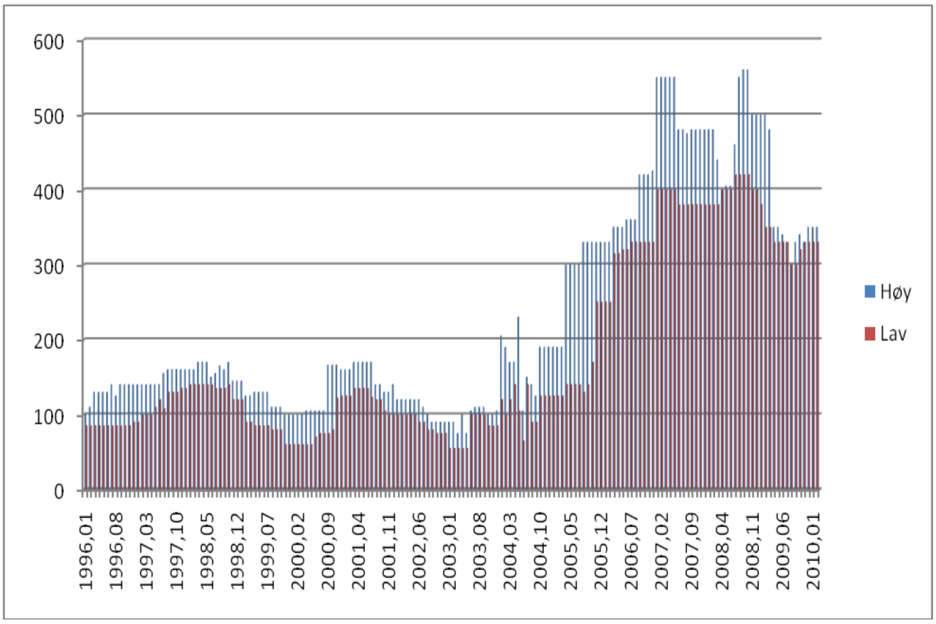
The empirical background is a study of organizational patterns and contract structure in the rig sector on the Norwegian continental shelf, based on news reports and conversations with a number of specialists in rig companies, oil service companies, oil companies, the civil service and the academic community. The analysis benefits from general theory of procurement, economic organisation, contracts and incentives, as well as research on the rig sector.

(3) Results

Organisational and contractual arrangements often follow a conventional pattern in the rig sector, e.g., the rig is owned and operated by the rig company, operational risk is carried by the rig companies whereas oil companies carry reservoir and oil price risk. From the perspective of large oil companies it might be interesting to discuss other types of ownership or risk sharing in which the risk exposure of the rig companies is reduced, if this causes a reduction in the rig rate. New and small oil companies, with a lower ability to carry risk, on the other hand, might want the rig companies to carry even more risk. Thus, more diversity in organisational and contractual arrangements is called for.

(4) Conclusions

A more diverse contractual and organisational structure is called for in drilling, as this may secure a better risk sharing and a better incentive structure in a context with heterogeneous oil companies. In particular, different oil companies have different abilities to carry risk. Contract and organisational design, however, is subject to several constraints. First, accounting rules and the practice of credit rating companies restrict the financial risk exposure of oil companies. Second, with the rig companies' decision of locating rigs in tax havens, governments of oil producing countries might want to restrict the potential for joint ventures between oil and rig companies, as this may undermine their revenue from oil taxation. Third, to obtain clear and objective responsibilities of contracting parties, insurance contracts often presupposes a clear division of risk.



Lowest and highest day rate for each month – for high-spec semi rigs at NCS (new contracts), from January 1996 to February 2010, measured in thousand dollar per day. Data source: RS Platou.

References

Bajari, P. and S. Tadelis (2001), "Incentives versus Transaction Costs: A Theory of Procurement Contracts, RAND Journal of Economics, Vol. 32, No. 3, 387-407.

Bolton, P. and M. Dewatripoint, (2005) Contract Theory, MIT Press.

Corts, K., 2000, "Turnkey Contracts as a Response to Incentive Problems: Evidence from the Offshore Drilling Industry," working paper, Harvard University.

Corts, K.S., and J. Singh (2004), "The Effect of Repeated Interaction on Contract Choice: Evidence from Offshore Drilling", Journal of Law, Economics, and Organization 20 (1), 2004, 230-260.

Hart, O. (1995), Firms, Contract, and Financial Structure, University Press

Hillier, B., 1997, The Economics of Asymmetric Information, MacMillan Press Ltd., London.

Laffont, J.-J. and J. Tirole, 1993, A Theory of Incentives in Procurement and Regulation, MIT Press.

Milgrom, P. and J. Roberts, 1992, Economics, Organization, and Management, Prentice Hall, Englewood Cliffs, N.J.

Moomjian, C.A. (1999),"Contractual insurance and risk allocation in the offshore drilling industry", Drilling Contractor, January/February, pg. 19-21.

Olsen, T. og P. Osmundsen (2005), "Sharing of Endogenous Risk in Offshore Construction", Journal of Economic Behavior and Organization, 58, 4, 511-526.

Osmundsen, P., Aven, T. and J.E. Vinnem (2008), "Safety, Economic Incentives and Insurance", Reliability Engineering & System Safety 93, 1, 137-143.

Osmundsen, P., Toft, A., and K.A. Dragvik (2006), "Design of Drilling Contracts – Economic Incentives and Safety Issues", Energy Policy 34, 2324-2329.

Osmundsen, P., T. Sørenes, and A. Toft (2010), "Offshore Oil Service Contracts - New Incentive Schemes to Promote Drilling Efficiency", Journal of Petroleum Science and Engineering 72, 220-228.