

SECTION 8. MATHEMATICAL METHODS, MODELS
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TO MODELING OF THE EUROPE'S MARKET FOR NATURAL GAS

Support of decision making by a seller requires the economic analysis of markets from the viewpoint of competition and price formation. A particular behaviour of seller (for instance, the behaviour on markets of perfect and imperfect competition) on spatial market results in a particular price (price discrimination). If suppliers have market power, different locations and costs for supply to individual market segments, then price patterns will depend on the behaviour of suppliers. The price pattern on imperfect market results from the behaviour of a firm-seller. The case of Europe's market on natural gas gives the understanding how to support a decision of firm sales combining the parameters of behaviour and market segments. While that market is viewed as a non-competitive one, the behaviour of firm as a price taker on this market should be investigated as well. The studies of real international commodity markets use numerical rather than analytical models: numerical models allow for various asymmetries and details of industries. Despite its wide presence in analytical models, the paradigm of spatial competitive equilibrium has significant drawbacks, including the drawbacks of explaining trade patterns. The computer experiments are giving equilibrium prices under various assumptions about behaviour of suppliers and showing another deficiency of that paradigm – the deficiency of explaining price patterns. At the aggregate level, the Europe's market for natural gas is determined by demand and supply. Performance of this market is also determined by its features – the nature of products, the number of sellers and buyers, the transaction costs, the degree of scale economies in production and distribution, the temporal and spatial parameters, the uncertainties in long term development, and so on.

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