

Application of the model with quasilinear utility function of demand in strategic decision making

DISSERTATION THESIS

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Abstract

This thesis defines the model with quasilinear utility function of demand as the model suitable for the analysis of the outputs of strategic decisions of a company operating on the real market of substitute products.

The model with quasilinear utility function of demand is based on the model with linear utility function of demand, which is standardly used for market analysis of perfectly substitute products. The model with quasilinear utility function of demand introduces the element of the complementarity of the substitute products what makes the assumption of the perfect substitution of the products weaker. But this modification leads to the outputs that can be observed on real markets.

We use game theory tools to identify the outputs of the models. In the case of the model with linear utility function we provide two proofs of the outputs, one by modeling the rational thinking of producers and the other by the game theory tools, what creates a bridge of ideas between these two approaches.

This theses has four main parts. In the first part, we present the models currently used for the analysis of competitive markets. In the second part, we deal with the model with linear utility function of demand, while identifying its output, which is in contradiction with the observations on real markets. In the third part, we deal with the model with quasilinear utility function of demand, as a modification of the model with linear utility function of demand, while enriching it with the element of the complementarity of substitute products in the utility function of demand. We identify the output of the model with quasilinear utility function of demand on the example of a duopoly, which, unlike the model with a linear utility function of demand, does not contradict the observations on real markets. Subsequently, we indicate the output of the oligopoly model with quasilinear utility function of demand in the general solution, specifically on the example of a triopoly. In the fourth part, the theses discusses the outputs of the model with quasilinear utility function of demand and its application in the strategic decision making of the company on the real market of substitute products. In this part, we also discuss the advantages of applying the model with quasilinear utility function of demand in terms of suitability of the model and conditions of its real application, computational complexity, comprehensibility of the parameters and application of the development in parameters (internal and external, implicit and explicit) over time.

Keywords: quasilinear utility function, linear utility function, oligopoly, duopoly, substitute products, strategic decision making