

Consumption in Economic Models Related to Large Games

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The paper contains a review of basic concepts associated with consumer's demand in the setup appropriate to apply in economic models related to large games. In the economic literature there is some ambiguity about the behavior of consumers in the case of prices of some commodities equal to 0. For the reasons of technical convenience, often an unrealistic assumption saying that demand for a good increases up to infinity as its unit price goes down to 0 is adopted (this behavior is observed e.g. for demand functions derived from Cobb-Douglas utilities). However demand functions defined in the case of (some) zero prices are necessary while dealing with models related to large games, especially in the context of search for equilibria. In the paper we study demand functions which are well defined also if some prices are zero, and their relations to utility functions and indifference surfaces. The demand functions under concern are of three types.

The first type – specific demand functions – are given by some direct formulas and are continuous and income-monotone functions. They are not explicitly derived from any particular preference-indifference relations or utilities, however, once they are defined, one may wonder about utilities or preferences generating them.

The second type of considered demand functions is induced by modified (truncated) Cobb-Douglas utilities. We describe a procedure allowing to modify any arbitrary preference-indifference relation (or a respective utility function) to one which is regular which implies that the demand induced by these preferences is continuous and well defined on the whole simplex. We apply this procedure to Cobb-Douglas utilities in case of two commodities.

The demand of last type is derived from elliptic utility. We give the "geometric" description of construction of such utility and the way of obtaining the demand function induced by elliptic utility.

The last two types of utilities and demand apparently have not been considered so far in the literature.