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## Consumer demand for durable goods under asymmetric information

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### Abstract

In the paper study the peculiarities of the formation the consumer demand for durable goods, the so-called «experience goods» in markets with asymmetric information.

In the known literature sources studying of the demand is based on the assumption that at the moment of the purchase of goods and services people know exactly what price they are willing to pay for them and what utility they are going to obtain using those goods and services.

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**Key words:** consumer demand, durable goods, costs

### 1. Introduction

We study the peculiarities of the formation the consumer demand for durable goods, the so-called «experience goods» in markets with asymmetric information.

Under the durable goods we mean goods which have a long service life and which can not be used immediately, like, for instance, food. Durable goods have some characteristics of capital goods due to their property to create a flow of services during the period of their service, and not to provide an only service during a single act of consumption. That's why, in practice, it is advisable, in our opinion, though conditionally, but to split- nondurable goods, durable goods, and capital goods [2,3].

There is well known an existence of many consumer markets, the characteristics of the goods on which consumers found out only after their purchase and consumption process. This is the case with electric

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lights, furniture, used cars, washing machines, vacuum cleaners, refrigerators, i.e. any other durable goods. These products form a wide class of «experience goods». There are also markets in which characteristics such as «quality» of products are tested rarely, even in the process of consumption (quantity of fluoride and abrasives in toothpaste, the amount of vitamin C in the ascorbic acid, timeliness of medical intervention). This type of goods form the class of the «search goods».

In the known literature sources studying of the demand is based on the assumption that at the moment of the purchase of goods and services people know exactly what price they are willing to pay for them and what utility they are going to obtain using those goods and services [4, 5]. For example, when a consumer buys a chocolate bar, he realizes how much money he will pay for this bar of chocolate, and knows how much he likes chocolate. If a consumer buys a video recorder, car, washing machine or any other durable goods, the situation is different. In each of these cases, consumers purchase the goods that will be used for a long time and, therefore, the more they look into the future, they less can say, what would be the balance of costs and benefits of the purchasing this product.

## 2. Method

Consider the case of a washing machine, the purchase of which will cost 500 euro. If he pays cash, the structure of his momentary costs will not include any uncertainty, the sum will be equal to 500 euro. But washing machine can be broken. It is possible that in two years he will have to pay for its repair 100 euro. It's impossible to predict these things but if it happens, he will have to pay the price, just like he had to pay 500 euro when buying a washing machine. In other words, when he buys a washing machine, the full price he will have to pay for the product during the period of its use, is uncertain [9].

If the costs of this washing machine are uncertain, the benefits of its purchase and use are also uncertain. Perhaps the reason of his desire to buy a washing machine was an analysis of the brochure of the manufacturer or the watching TV or magazine advertising, etc. But after temporary using of this product the consumer may find its advantages and disadvantage, which were not suspected. For example, the machine does not dry his clothes as he counted on it, furthermore, the car makes much noise, it leaks, the machine door is closed too tightly and so on, thus the purchase of durable goods is associated with the uncertainty. The same can be said about the acquisition of property, regardless of whether it is physical property (e.g., estate property) or about financial property (e.g., shares). In the case of purchase of the property the uncertainty is associated with the future price of it, the direction of change of which the consumer can not know exactly.

In economy based on knowledge, regarding durable goods, i.e. «experience goods» and «search goods», the main issues are demand, supply, selection of goods, information, and knowledge. Furthermore, the peculiarity of the market of mentioned goods is a typical case when the buyer evaluates the quality of the goods statistically and the seller knows the quality of each item individually. Demand for durable goods  $Q^D$  mostly depends on two factors - the price  $p$ , and the average quality of  $g$ , i.e., the function of demand depends on two variables  $Q^D = Q(p, g)$ . As a supply  $S$ , and the average quality of the product depends on the price, in other words,  $g = g(p)$  and  $Q^S = Q^S(p)$ . By reducing the prices usually the quality and supply are decreased.

High quality goods ( $k$ ) and low quality goods ( $n$ ) have respective market shares  $v_k S$  and  $v_n S$  which are probabilities and, hence, there is the following correlation:  $v_n S = 1 - v_k S$ . Market supply of goods is formed from two groups with high and low quality level described weighted sum of two functions of supply

$$Q^S(p) = v_k^S Q_k^S(p) + (1 - v_k^S) Q_n^S(p), \quad (1)$$

where market shares are weighting coefficients

$Q_k^S = Q_k^S(p)$ , if  $g_0 \leq g \leq 1$  and  $Q_n^S = Q_n^S(p)$ , if  $0 \leq g \leq g_0$  are functions of supply of high quality goods and low quality goods.

Consumers don't know at the moment of purchase about both the level of quality of the purchased product and its market share. They make a selection among goods of different quality formed by mixing them in certain proportions to the total number of goods. Owing to that they have to make their own version of the

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