ECONOMIC AGENT BEHAVIOR ON REAL ESTATE MARKET

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Abstract

Traditional theory of the consumer explains development of demand through changes in prices and income. Consumer tastes and preferences are considered to be constant, stable, therefore does not take account of them in explaining market participants behavior. Indeed, from scientific point of view, can only be explained a behavior by a hypothesis relating to individual tastes or preferences since it would be impossible to subject to such a hypothesis to the test of facts.

If your preferences are stable, how we interpret fast transformation of modes of consumption? The increase of income can explain an increase in volume for consumption, but not the changes in its structure. At the limit, relative prices could explain budget allocation between existing goods and services, but not the incessant occurrence of new goods and services, which they come to satisfy what current language means that new needs.

Key words: *real estate market, hedonic price, demand, supply, market equilibrium.*

JEL Classification: *R31, R34*

I. INTRODUCTION

Real estate market represents all the transactions involving rights of ownership or use of land and buildings. Like any market, the price of the transaction is established, in the first place, by the interaction between supply and demand. That each building is unique determine very high complexity of the market and its division on the basis of areas and the order in which it will be used object in question. Real estate transaction shall mean the permanent or temporary transfer of a right to a good real estate from one side to the other in exchange for a ransom which, usually, it is a sum of money. Due to the specific nature of real estate, transfer of ownership does not mean the actual transport of the property, and each building sold or purchased is different from that of the other by positioning, drawing up and relevant infrastructure. (Stiglitz, Walsh, 2005)

Real estate economy is in charge of goods and services linked to the dwelling buildings and other activities (industrial buildings and storage, offices, commercial spaces). The general plan, this has as its object analyzing markets and of the effects of public interventions in these markets. Real estate economy borrows methods of analysis from both microeconomics and macroeconomics, as well as from unproved skill and provides an increasingly meant finance theory. Despite the importance of real estate in patrimonial economic operators, the economics of immovable property has not occurred only recently, mainly at the initiative of Anglo-Saxon authors.

II. HEDONIC HYPOTHESIS

Traditional theory could be confused with goods and services needs that they must satisfy. When describes a utility function in the form

$$U = U(X, Y, Z, \ldots)$$

it is assumed that the individual seeks to satisfy 'a need X' or 'Y' need.

In other words, the consumer has a need of tomato, a need for car, one need newspapers ... new paradigm - of the hedonic markets - contest theory, pointing out that the man has no need of tomato, but has need to feed; he has no need of machine, But he needs to move (or to show their friendliness in dislikes prosperity); it doesn't need newspapers, but needs information. (Copaciu, 2013)

As soon as the hypothesis stability preferences returns to compatible with a change in consumption mode. Indeed, the same need, stable can be satisfied by goods different, used alone or in combination with other goods. Then, the utility function is written such:

U = U(food, travel, information)

Thus, the arguments put between brackets are no longer property, but also the satisfaction that the individual seeks to and produce, combining between them different goods and services. For each of its satisfactions (S), there is a production function

S = S(X, Y, Z, …), where X, Y, Z means the goods and services.

Goods are no longer subject to any desire; they are no longer than production factors evaluative and used interchangeably depending on the evolution of the costs and technologies that contribute to meet needs found in the utility function. The latter may remain perfectly stable, even if techniques for the production of satisfactions adopted by individuals, and hence consumption modes, are evolving rapidly.

Traditional theories neglect an essential aspect in using the various goods and services: consumption, more or less important, of time. But, time is a resource rare, in the same way as goods, if not even more than that. Using it has a cost of opportunity: all satisfactions what could be obtained using the otherwise.

New theory, evoked above, permit the integration time cost in the analysis, by entering the time that one of the factors of satisfaction production:

S = S(X, Y, Z, T…).

Thus, they can be understood phenomena that traditional theory could not explain in the absence of additional hypothesis tastes and preferences (Généreux, 2000).

The point of departure in the construction of economic theory model hedonic prices is hedonic hypothesis. In essence, this hypothesis assumes that each asset or product is characterized by a set or basket of intrinsic attributes. If there are n attributes, when a good is defined by a point in a space with n dimensions, and preferences are defined rather on attributes than on goods.

Thus, the convenience of a car may be, for example: engine power, gasoline consumption, shape of the bodywork, the number of seats; for a residential property: location, comfort, number of rooms, the area; for a certain kind of food: nutritional power, the taste; for a financial asset of the type of operations, BONDS, for bonds, etc. : the yield, liquidity, the degree of safety (Abraham-Frois , 1998).

As a result, some good or product may be divided into various varieties of subtypes, such as, for example, the various models of cars, and each subtype can be considered as a good-its own right with its own price and quantity.

Formally speaking, the hedonic hypothesis translates as follows: consider a good some X for which it has been defined a class features ordered by $x_1, x_2,…, x_k$ noted in the vector form:

$X = (x_1, x_2, …, x_k)'$

and let us assume that consumer preferences are determined only in connection with the set of features of given object. Under these conditions, the hypothesis hedonic claims that there is a relationship check f between the price of the property, *p*, and the vector of characteristics of X:

p = f(x)

This relationship is also known as hedonic regression equation.

The idea hedonic hypothesis has been made since the early 1990 ' 60- '70 by Lancaster (1966) and Rosen (1974) in two articles that have become the reference later in this field. In hedonistic prices theory can talk about two important moments in its development. In a first stage, Lancaster (1966), on the basis of theory reformulation consumer, by taking into account the heterogeneity goods, analyzed the basic features that make up a good and argued that the demand for a good man does not depend on the good in itself but by its characteristics.

The heterogeneity goods - particularly real estate - have a range of integrated features, and these types of goods are traded as the sum of these features inherent in. In their economic circuit, these goods are purchased by households which use them as a kind of 'Investment' and translate them into utilities. (Cătoiu., Teodorescu, 2004)

The level of utility obtained depends on the quantity of the various features embedded in respective good. It is difficult to be analyzed market these goods through the use of traditional model consumer because it could not be considered that the property in question has only a single price. Therefore, you should adopt a series of prices (hedonistic prices) to highlight the object in question. As a result, the price of a good is composed of more than one hedonic price, each attribute of the object having its own price by default and all these prices implied forming a structure of price. (Colwell, Cannaday, Wu, 1983)

At a later stage, American economist Rosen (1974) has established the model of equilibrium of supply and demand on the basis of the characteristics of goods. In his approach in theory, it has been started from the hypothesis that there is an open markets with perfect competition and the criterion for the consumer's choice -

namely To maximize the usefulness - and of the manufacturer - maximize profits - for the purpose of analyzing the balance in the long term and short-term heterogeneity markets.

Rosen's investigations have been constituted in a solid foundation in theory abstention hedonice prices on the basis of which methods may be used to estimate econometric modeling various functions of prices hedonice, in order to obtain prices for the characteristics default various goods and for the purpose of analysing, finally, Demand for these features. (Rosen, 1974)

III. CHARACTERISTICS OF REAL ESTATE GOODS

In economic literature, the notion of good is one primitive and is used in the manufacture of several results on plan in theory. As a general rule, goods and services are changing markets and is, for this reason, in the center economic analysis. The cause of this exchange is the utility that procure a good or a service and it depends on the price of the goods and services.

Utility concept has been introduced into social theory of Jeremy Bentham (1748-1832). According to Bentham, utility property is 'an object property ... to produce pleasure, good or happiness ... or to prevent pain, the evil or misfortune' (Bentham, 1907).

The current approach, we say that a good is useful when the consumption object in question provides a satisfaction. The utility is defined as so far as the goods are valued by the consumer (degree in providing satisfaction).

Hedonic hypothesis allows you to formulate rigorous following definition of the notion of good: a good is characterized by that set or class of models or variants of features corresponding to a single hedonic equation; A good is fully characterized by all the classes of features whose prices can be explained by each attribute in part and their weightings in object structure.

As a result, the price of a good is a variable described by means of the formula:

$p_j = f(x_j, \beta) + u$

where: $x_j = (x_1, x_2, \ldots, x_k)$; k – vector of related characteristics model, relevant for a class of goods; $\beta = (\beta_0, \beta_1, \ldots, \beta_k)$ shall mean the percentage of the total price of goods attributable to a particular feature, usually interpreted as representing feature price question; u – residual variable.

From the point of view econometric equation can be regarded as a model of multiple regression in which the coefficients unknown β are estimates using specific procedures. Assets have characteristics clearly defined, and the combination of these features contribute to complexity analysis. A first feature refers to their sustainability. It is therefore necessary to dissociate stock "The good itself - the flow of real estate services on the unit time. There is, therefore, two markets which must be taken into account. On a market shall be negotiated a consumer, real estate service (for example, with reference to employment a dwelling or a building of offices), causing it to this situation the price of a unit of service (rent or hire apparent notional). On the other shall be negotiated a good investment, causing shall be the price of a unit of good real estate. The two markets are correlated, the value object darting in accordance with the flow of goods and services in which it produces it. (Pecican, 2006)

Another feature of immovable property shall relate to their sustainability and has numerous implications. This creates, in the first place, a difficulty related to the adaptation real estate park on request. Another implication is related to the role of property quality of real estate in the active held by households and enterprises. The investor compares expected profitability of its investment real estate with that obtained from another's use of its own funds. For this reason, real estate market it's more on the theory of financial investment.

On the other hand, assets are goods heterogeneous that can distinguish between them by area, age, high degree of comfort, etc. at the beginning real estate analysis did not take into account this heterogeneity of these types of goods and has used the concept of homogeneous good. Today, however, some analyzes are trying to integrate the heterogeneity of real estate. Extending this approach to the case residential properties was inaugurated by Sherwin Rosen as from the year 1974. It is to be mentioned that, in the case of immovable property, the type of office buildings, this type of analysis is still at the beginning.

Assets are always goods clearly situated in space because the price of placement will be reflected in the price field, and it can be very variable in comparison to the other components of a real estate price. Therefore, the economy should be to integrate real estate specific size land economy - the so-called spatial analysis. Other special notes of immovable property shall be the cost of the transaction and the imperfect vision plagued him high information on real estate markets. This last specificity shall have the effect that markets do not adjust than leaving to defend a certain rate of serious underemployment structural or natural. We have to emphasize, at the same time, the fact that the real estate sector the variables related to regulations have a very great importance.

IV. **THE OPTIMAL CHOICE OF THE REAL ESTATE CONSUMER**

The hedonic function prices resulting from interaction between consumers and producers and represents market balance.

License revenues from the market is a recipient of price; it shall elect US hedonic price index location noting the price on the market, but may not have a the influence of on it. This assumption was made by more than one author (McConnell, Phipps, 1987) and allows us to ignore the offer on the market in the model of decision of houses. Given the size urban property markets in which techniques for the determination of the price US hedonic price index are usually applied such an assumption would be reasonable. (Palmquist, 1991)

Each housekeeping buy or lease only single property. If houses also act as owners, decisions on their choices for residential locations shall be assumed to be independent of the decisions on other properties. If houses buy second house, say a holiday house - when it is to be considered as a good separately, being bought in a separate hedonic market. Again, this assumption is generally accepted as being defensive.

Given these assumptions, Rosen lays down a model in which houses choose their residential location so as to obtain maximum flow of benefits or, in economic terms, maximum usefulness of this property. To do this, it is assumed that houses, in the market, have well-defined preferences for all goods and these preferences can be represented by the function usefulness (utility function is assumed to be identical for all houses in the market). As a matter of fact, its usefulness derive from a specific property characteristics z and a certain property of the other goods x which depend on the houses characteristics, s.

$U(z, x; s)$

Utility function provides a utility for which household enjoys a period of time, given arguments levels contained in the brackets. In this case, we have 3 arguments.

- z represents levels represent different characteristics of property on which a household may purchase or lease it. Normally, the utility of which setting up housekeeping enjoys a period of time depends on the qualities of property in which it chooses to live.

- x represents all other goods outside real estate market. As a convention, we have standardized x to a national currency unit, so we represent all other goods to a quantity currency (in economic literature, the x is used frequently as cash, good composed or set of hicksian attributes). The greater the amount of money spent on other goods, the house will enjoy on a longer period of time.

- s represents the own home characteristics. For example, a swimming pool in the court from behind a residential property will give a little satisfaction a household whose members do not know how to swim. Notice that this argument is positioned as shown in the variable usefulness. This indicates that the usefulness of a housework he has from each of the characteristics which may make a choice (z and x) will depend on its own special characteristics.

Due to the fact that it is intended to improve behavioral model, is not specified exact form of utility function. In other words, it is not necessary to be referred to the quantity on which the utility is setting up housekeeping, for example, twice the number of rooms plus four times the size garden plus 0.02 times the number of decibels of street traffic.

It can only be assumed that there is such a function, identical for each house, conditional on its features. Some authors (Epple, 1987) require a special form function operational effectiveness and uses as a tool for investigation of prices and elections in hedonistic markets.

Homes choose levels of z or x to maximize U(z, x, s), subject to the constraints imposed by their budget. Since the price of x is considered as a unit and the price of property with the characteristics z is given by P(z), the function hedonistic prices, we can represent budgetary restriction that:

$y = x + P(z),$

where y is the income for a period of time of homes.

V. **THE OPTIMAL CHOICE OF THE REAL ESTATE PRODUCER**

Up to this point we have examined real estate market only from the point of view of the application; this meaning consumer choice between differentiated products. From the point of view of demand, we will examine the way in which owner shall be decided on the type of properties it provides. To simplify this analysis, we will assume that each owner hires single property.

This analysis remains relatively simple if we assume that the owner hires more than a property, each property having the same characteristics. If the owner hires more of the properties with different characteristics, the model becomes considerably more complex, but adds very little understanding hedonic market mechanism. In the same period of time, housework pays to the landlord rent to live in this property. (Peter, Olson, 2003)

Of course, the rent is not a pure profit for its owner; it costs in offering property for rent:
1. First and most important is initial purchase of property.
2. The second is maintaining the quality of property by constant renovation and maintenance.
3. The third consists of investments or no investments intended for changing attributes of property after purchase.

To incorporate these costs in the model of payments staggered, all investments shall be converted into the equivalent of the costs staggered. For example, the buying-in price for full ownership can be expressed as the equivalent series a line of a deferred payment.

In the same way, it is possible to express an investment, let's say the income tax bracket installation, the updated value of a series of expenditure incurred for the duration of the life of the investment. Deferred expenses in providing the owner property having the characteristics z is given by the function cost.

$$C(z; \hat{P}\hat{z}, z', r)$$

The cost of production of a property with the characteristics z differs from one owner to another in many reasons. Factors that determine these differences are the three arguments of provided function.

a) $\hat{P}\hat{z}$ defines the initial purchase price of the property. We consider two initial owners having two identical properties. As regards notation, vector attributes originating status of property is identical for both owners. The two owners have purchased properties in different periods: the first, in the period of recession, and the second, in the period of economic momentum. Differences in the market price paid by the two differences are shown in P, the function hedonic prices encountered by the owner at the time of purchase.

b) the vector z' defines attributes levels, after initial purchase of the property, which shall be supplied without the costs of ownership. For structural attributes, this vector is likely to be identical with $\hat{z}$, the vector attributes of property acquired by the owner. Of one of the following attributes location, surroundings and the environment, the levels of z' will tend to be determined by reference to the factors which are outside the control of owner. In economic science, are called externally induced factors.

c) the vector r include other important parameters in determination of the costs of ownership. For example, r will include owner's characteristics and the market price of the investment. For this reason, cost function determines the cost of providing a unit having the characteristics z given by the purchase price of the property $\hat{P}\hat{z}$, on the level of attributes exogenous property z' and number of other parameters that includes the features of owner, r.

Given unit cost, defined by the function cost, the profit achieved by the owner of rental property with z features will be determined by the rent that the owner can collect for such a property in the market. For this reason:

$\Pi (z; z`, r) = P(z) – c(z; z`, r)$

where Π is the profit function defining owner's profit.

To make this analysis compatible with that of the application, we will define a function that brings together all combinations of z and P(z) and which shall return same profit of owner. Thus, egalam Π (z; z', r) with constant Π in the equation above and solve the equation obtained for those levels of market prices that would be required to perform Π profit for different levels of z feature.

$\Phi(z; z`, r, \Pi) = \Pi + c(z; z`, r)$

This function is the function of Rosen's offer.

Offer curves are different between owner-occupiers due to the difference of the purchase price. The vector of parameters r and levels of attributes z' are exogenous genetic material determined. As a consequence, different owners will choose to offer properties with different sets of features. This aspect is represented in the figure below.

Of course, prices hedonic function formed the lowest Envelope curve for owner-occupiers, optimizing offer curves.

VI. CONCLUSIONS

'Balance on a market shall be carried out at that price level, called equilibrium price, on which the application is equal with the tender. Equilibrium price is a unique price on the market. Any different price of equilibrium price determined situations of imbalance in the market. Equilibrium price is the price at which the quantity sold and bought is at a maximum and sellers/buyers are completely satisfied with. However, this balance is a balance temporarily (this is a dynamic balance and not one static). It can be changed if one of the two forces of the market changes. Thus, if there is an increase in demand and the quote remains constant, and then balance point will change on the market. '(Tocan, 2011).

With regard to the analysis balance of the real estate market, it is necessary to have in the light of the price US hedonic price index and consumer preferences. Up to this moment I have analyzed elections of consumers and owners on the state of the real estate market as fully independent of one another. Below figure shows both sets of decisions combined in the same diagram.

Homes shall define optimal residential location by the choice of a property which brings together the set of attributes in such a way that demand curve is tangent to hedonic price curve function. Houses will not able to increase its usefulness by opting for a property with different characteristics. Simultaneously, the owners maximize profits by offering a property with the set of attributes that will allow a travel toward the highest curve in the range of services on offer, but which is still compatible with market prices.

Demand curves and house curves offer owners will be tangent along the curve hedonic price function. At every intersection of the application with the tender, the owners and houses are matched. The owner can do anything more than to accept the house offer, which, in turn, can do nothing more than to rent property from it. The situation described above is one of the real estate market balances. Unlike the assessments made in other sectors of the economy, such as financial war - in real estate matters problem turns out to be much more complex as a result of specific character real estate market linked to the acquisition and processing of information within it.

In conclusion, the activities related to investigate the real estate market, both in the plan in theory as well as practical, look for more and more the need of a interdisciplinary approaches with the use of tools well scientific advice.

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