Veblen effect, search for status goods, and negative utility of conspicuous leisure.

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Abstract

When expected savings on purchases are greater than the wage rate, the optimal search results in the negative marginal utility of leisure. The search transforms the classical backward bending effect and the leisure becomes complementary to the search. Consumers compensate "bad" leisure by status goods of exceptional quality on markets with high price dispersion. Status consumption complements "bad" conspicuous leisure and produces the Veblen effect as well as the "gardening aboard the boat" effect.
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Introduction

The classical presentation of the Veblen effect, made by H.Leibestein, postulates the existence of conspicuous price (Leibestein 1950). However, when Bagwell and Bernheim reviewed Veblen effects in the theory of conspicuous consumption, they pointed out that "yet Veblen himself did not endorse the view that the price of an object affects utility directly, or that individuals seek to pay high prices for the sheer pleasure of being overcharged… Although the prices that one pays for goods may affect status *in equilibrium,* this relation should be *derived,* not *assumed*" (Bagwell and Bernheim 1996). This paper tries to demonstrate the dependency of conspicuous price on the consumption-leisure choice, when the Veblen effect, to the extent to which the demand is increased with a higher rather than a lower price, becomes more functional than it is usually considered.

The purchases of status goods also need information and search. And the smart-shopping behavior exists on markets of luxuries as well as on markets of necessities. How we choose the hotel in Paris? There, the VIIeme arrondissement and the XIVeme arrondissement represent different local markets. We choose the arrondissement according to our reservation price, but after that we insistently search for the best offer inside.

The paper doesn't try to review the voluminous literature on search behavior as well as on conspicuous consumption. It simply develops the reserve maximization model (Malakhov 2003, 2011, 2012) with regard to the phenomenon of the demand at "high-price stores". The reserve maximization model represents a synthesis of the G.Stigler's approach with the classical individual labor supply model. In the model the utility of the consumption-leisure choice is maximized with respect to the equality of the marginal costs of search to its marginal benefit.

This approach reconsiders the consumers behavior in the dual "low-price store – high-price store" market environment. The Veblen effect is presented here as the status-seeking behavior, which results in conspicuous acts of purchasing and in store-related status gains (Mason 1992). However, all Diamond's consumers maximize the difference between their willingness to pay and the purchase price, wherever they buy in low-price stores or in high-price stores (Diamond 1987). The increase in the willingness to pay for a status item is followed by changes in expected savings on purchase. The consumer regards the difference between the purchase price and "internal, reference price as something gained" (Schindler 1998). The increase in expected savings changes the equilibrium opportunity costs of search. And the increase in the opportunity costs of search makes high-price stores more open, because "only high-search-cost individuals go to high-price stores" (Stiglitz 1979).

The paper is organized as follows. The Part I briefly describes the "common model" of consumer behavior, when the search decreases both the labor time and the leisure time. The "common model" derives the specific form of the marginal rate of substitution of leisure for consumption that inherits the main features of the classical individual labor supply model with regard to the process of search. This specific form of the marginal rate of substitution of leisure for consumption will discover a vehicle for the Veblen effect.

The Part II exposes the properties of the "leisure model" of consumer behavior, when the search decreases only labor time but it increases leisure time. The "leisure" model shows the transformation of the classical backward-bending individual labor supply curve under the search process. The model presents the simple economic mechanism, which transfers consumers from low-prices stores to high-prices stores. It also explains why consumers can increase utility of their conspicuous consumption-leisure choices only at high-price stores. The "leisure model" presents the simple mathematical treatment of "reputable leisure", which results, according to T.Veblen, "in the care and decoration of the house,.. in proficiency at dress, cards, yachting, golf, and various sports" (Veblen 1899 [2003]). The model tries to establish the correspondence of the concept of the "reputable leisure" with modern trends in the allocation of time (Aguiar and Hurst 2007a), where the "gardening aboard the boat" effect between men becomes more and more evident.

Part I: the "common model" of behavior

Suppose a consumer who has no liquidity constraint because his precautionary motive is strong enough to keep his real balances positive (Carroll 2001). The optimal amount of search is determined by the equality of expected savings, i.e., the quantity Q the consumer wishes to purchase times the expected reduction in price $\partial P/\partial S$, to the marginal costs of the search (Stigler

1961). If the consumer gets saving on purchase, he adds it to the reserve R for consequent purchases. If we denote the general relationship of the search S as $R(S)=wL(S)-QP(S)$, the equality of marginal benefit to the marginal costs results in the maximum reserve for future purchases.

$$R(S) = wL(S) - QP(S);$$
$$Q\frac{\partial P}{\partial S^*} = w\frac{\partial L}{\partial S^*} \Rightarrow \frac{\partial R}{\partial S^*} = 0 \quad (1)$$
$$\partial P / \partial S < 0; \partial L / \partial S < 0; \partial^2 P / \partial S^2 > 0; \partial^2 L / \partial S^2 < 0$$
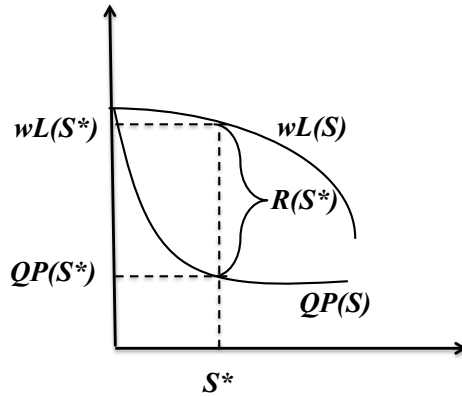
This model describes the behavior of monetary values – labor income, savings on purchases, and expenditures, but it doesn't analyze the consumption itself, which may differ from expenditures under price dispersion (Aguiar and Hurst 2005). However, the model provides the marginal value of opportunity costs of the search $w \times \partial L / \partial S$, which can be used as a parameter in the consumption-leisure model. Indeed, if we change initial assumption of the model and we take the value Q as a variable and the expected value of price reduction $\partial P / \partial S$ as an attribute of a local market, we can solve the static utility maximization problem with regard to the rule of the optimal amount of search, derived from the reserve maximization model (1). A consumer who has not liquidity constraint will always follow this monetary rule of the optimal search.

If we re-arrange the equation (1), we get the constraint to the utility maximization problem.

$$\Lambda = U(Q,H) + \lambda(w - Q\frac{\partial P / \partial S}{\partial L / \partial S}.) \ (2)$$

A local market can be distinguished horizontally (the place and the store) and vertically (the product and the brand). The consumer's choice of the local market usually is multidimensional, but there he is still a *price-taker*. It means with regard to the price dispersion that the consumer is also the price-reduction-taker of a particular local market. He can expect some savings on purchase with regard to his willingness to pay, but whether he gets them or not does not depend only on him. The market corrects unrealistic expected savings. So, we can take the consumer as the *taker of the price reduction $\partial P / \partial S$* of a particular local market. The consumer maximizes the utility of his consumption-leisure choice, when

$$\frac{\partial U / \partial H}{\partial U / \partial Q} = MRS(HforQ) = -\frac{Q}{\partial L / \partial S}\partial^2 L / \partial S \partial H = -\frac{w}{\partial P / \partial S}\partial^2 L / \partial S \partial H \quad (3)$$

The "common model" of behavior is really common because here the search S "squeezes out" of the time horizon of the consumption-leisure choice T both the labor L and the leisure H ($L+H+S=T; \ \partial L/\partial S+\partial H/\partial S+1=0; \ -1<\partial L/\partial S<0; \partial H/\partial S<0$). This consideration gives us:

a) the value of the propensity to search $\partial L/\partial S$ at the moment of purchase and the values of its second derivatives, which are important for our analysis

$$L(S) = T - H(S) - S;$$
$$\partial L / \partial S = -\partial H / \partial S - 1;$$
$$dH(S) = dS\frac{\partial H}{\partial S} = -dS\frac{H}{T}$$
$$\Downarrow$$
$$\frac{\partial L}{\partial S} = -\frac{\partial H}{\partial S} - 1 = \frac{H}{T} - 1 = \frac{H-T}{T}. = -\frac{L+S}{T} \quad (4)$$
$$\frac{\partial L}{\partial S} = \frac{H-T}{T} \Rightarrow \partial^2 L / \partial S \partial H = 1/T;$$
$$\frac{\partial L}{\partial S} = -\frac{L+S}{T} \Rightarrow \partial L^2 / \partial S^2 = -\frac{\partial L / \partial S + 1}{T} < 0$$

b) the correspondence between the reserve maximization model and the classical model of the individual labor supply, which can be presented with regard to the satisficing decision procedure

$$MRS(HforQ) = -\frac{w}{\partial P / \partial S}\partial^2 L / \partial S \partial H = -\frac{w}{\partial P / \partial S}\frac{1}{T} = \frac{w}{P_0} \quad (5)$$

where the value P_0 represents the willingness to pay $P_0 = w(L+S)$[1]

c) the form of the utility function

$$U(Q;H) = Q^{-\partial L / \partial S}H^{\partial H / \partial S} \quad (6)[2]$$

If we try to describe the elasticity of utility with respect to both consumption and leisure, we can follow the assumption of Aguiar and Hurst, that the opportunity cost of time of the shopper is the same as that of the person undertaking home production (Aguiar and Hurst 2007b). Indeed, home production can be presented as a "search for a lower price". Here, a consumer starts the "search" at the price level of corresponding market service, which is substituted by a particular home activity, and he concludes the "search". i.e., the particular home production, with prices of inputs for this activity.

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[1] The proof of compliance of the satisficing consumer decision procedure with the optimal consumption-leisure choice is presented in Malakhov (2012).
[2] The value of the *MRS (H for Q)* (3) represents the form of the *MRS (H for Q)* of the Cobb-Douglas utility function (Malakhov 2011).

Following the results of Aguiar and Hurst (Aiguiar and Hurst 2007a), we take the value of total market labor as *L*, the value of the total non-market labor (obtaining goods and services, meal preparation and cleanup, home maintenance, painting and decorating, outdoor cleaning, vehicle repair, gardening, etc., excluding medical care, child care, and education) as *S*, the value of the measure 'Leisure 4' (any time not allocated to market or non-market work) as *H*, and we get, for example, for the year 2003 the "one-shot" static utility function for American women, when *L, S,* and *H* respectively were equal to 24.93 hours, 22.55 hours, and 120.52 hours, as:

$$U(Q;H)=Q^{0.28}H^{0.72} \qquad (7)$$

We take here the utility function of women because during the period 1965 – 2003 they exposed the "common model" of behavior. The increase in the wage rate during that period decreased the attractiveness of the search in any of its form, either shopping or home production. The labor and the search represent different sources of income. So, when $\partial S/\partial w<0$, then due to the rules of the "common model" $\partial L/\partial S<0; \partial H/\partial S<0$ we have $\partial L/\partial w>0; \partial H/\partial w>0$. And these considerations correspond to the results of the analysis of the time allocation between American women during the period 1965 – 2003, when women increased both labor and leisure time (Aguiar and Hurst 2007a).

We see, that in the "common model" of behavior ***opportunity costs of the search are less than the wage rate***. But sometimes opportunity costs of the search become ***greater than the wage rate***. It happens when markets provide savings on purchases greater than the wage rate and the market environment activates the "leisure model" of behavior.

Part II: the "leisure model" of behavior
We know that when income effect of the increase in the wage rate outweighs the substitution effect, the labor supply curve becomes backward bending. The search process results in the non-labor income. And the non-labor income can produce the same backward bending effect.

It happens when the absolute value of expected savings is greater than the wage rate. The key equation of the model (1) transforms this consideration into high propensity to search. The absolute value of the propensity to search becomes more than one, or $\partial L/\partial S <-1$.

However, the value $\partial L/\partial S <-1$ changes the relationship between the search and the leisure. This relationship becomes ***complementary***. We don't think that the value $\partial^2 L/\partial S^2$ becomes positive and the *wL(S)* curve takes the S-shape because we cannot apply the $\partial H/\partial S=-H/T$ rule to this complementary relationship. As a result, the willingness to pay in the "leisure model" becomes greater than the value *w(L+S)*. Although we will not be able to identify the parameter $\partial H/\partial S$ for the "leisure model" in the manner like we have done it for the "common model", it certainly becomes positive, or $\partial H/\partial S>0$. But the positive $\partial H/\partial S$ relationship changes the $\partial^2 L/\partial S\partial H$ value.

It becomes negative because now the relationship between labor and leisure becomes negative, or $\partial L/\partial H < 0$. However, when the value $\partial^2 L/\partial S \partial H$ becomes negative the *MRS (H for Q)* also changes it sign. ***The relationship $\partial Q/\partial H$ becomes positive***.

Just here we can already formalize the Veblen effect. If the consumer goes to a high-price store, where he doesn't know prices, the choice of this high-price store stimulates the search, or $\partial S/\partial P > 0$. The consumer is really afraid to make a wrong choice; because "this lack of knowledge provides an incentive for firms to "cheat", to lower their quality, thereby raising their effective price" (Stiglitz 1997) The commonsense assumption that the increase in prices stimulates the search can be supported by the simple economic logic. If the proportional increase in both the wage rate and prices doesn't change the allocation of time, then $dS(w,P)=0$ and when $\partial S/\partial w < 0$ we have $\partial S/\partial P > 0$. However, this commonsense assumption immediately produces the positive $\partial Q/\partial P$ relationship for the "leisure model" of behavior, or

$$\partial S/\partial P > 0; \ \partial H/\partial S > 0; \ \partial Q/\partial H > 0;$$

$$\partial Q/\partial P > 0 \quad (8)$$

We can make the following conclusion:

When a consumer optimizes his consumption-leisure choice on the market where the absolute value of expected savings is greater than his wage rate, the optimal amount of search produces the Veblen effect.

The increase in price happens not only when a producer changes the price. It also happens when a consumer changes the local market. If he seeks for status, he can begin his search in the store with greater ambience. We can trace this change of consumer behavior. If the consumer seeks for status but at the same time he is still the smart-shopper, he can expect more important savings on purchase with respect to his willingness to pay in the status "high-price" shop. This consideration results in the change of the $\partial P/\partial S$ value of his optimal choice. If in Paris a man decides to buy a true cigar he doesn't come to the tobacco shop on the street corner, but he goes a La Cave a Cigares or a La Civette, where the price reduction with regard to his willingness to pay is greater than in the tobacco shop. If an American woman buys four handbags per year, once she can decide to change an everyday handbag for Gucci or Louis Vuitton. And there she meets the ranges spanned from $225 to $3,850 for Louis Vuitton and $295 to $9,690 for Gucci (Young Jee Han et al. 2010)

These considerations do not challenge the assumption that only high-search-cost individuals make purchases in high-price stores (Stiglitz 1979). In our model the value of search costs consists of two variables – the wage rate *w* and the propensity to search $\partial L/\partial S$. It means than once two individuals with different wage rates and with different propensities to search will meet

each other in the same high-price store because they will have the same opportunity cost of the search, or

$$w_i \partial L/\partial S_i = w_j \partial L/\partial S_j \ (9)$$

If we come back to the values of marginal utilities of the optimal consumption-leisure choice, we can find the reason why the value of the *MRS (H for Q)* changes its sign.

$$MU_Q = \lambda \frac{\partial P/\partial S}{\partial L/\partial S}; \ MU_H = -\lambda \frac{w}{\partial L/\partial S} \partial^2 L/\partial S \partial H \ (10)$$

We can see that when the value $\partial^2 L/\partial S \partial H$ becomes negative, the MU_H becomes also negative and the leisure itself becomes "bad".

From here it is very simple to identify possible results of the decision to increase consumption, which can increase the utility *U(Q,H)*. The consumer can make savings on the economy of scale of the search and he can substantially increase consumption of items with low marginal utility. On the other hand, when he purchases a unique item of repeatable use, the only way to increase the utility *U(Q,H)* is to buy an item with high marginal utility. We know, that a person will choose to swim at a mosquito-infested beach only if the sand and surf are of exceptional quality (Nicholson 1992).

However, in our model the marginal utility of consumption MU_Q directly depends on the absolute value of price reduction $|\partial P/\partial S|$. To its turn, the value of price reduction $\partial P/\partial S$ depends on the product heterogeneity and, first of all, on the dispersion of quality. The change in the value of price reduction doesn't mean directly the change of the local market. It can simply mean the extension of the scope of search. If a consumer limits the scope of the search to his habitual low-price store, where the absolute value of the price reduction $|\partial P/\partial S|$ is less than his wage rate, he follows the "common model" of behavior, and the search decreases both the labor and the leisure. However, if he takes into account products in another, high-price store, he automatically increases the absolute value of the price reduction $|\partial P/\partial S|$. And if the latter exceeds the value of the wage rate, the consumer follows the "leisure model" of behavior.

As we can see, the "leisure model" of behavior can be produced by rather different motivations. Economic literature usually pays attention to the motivation to buy a status item. If the smart-shopper decides to buy a high-quality item he visits the high-price store where he makes savings on purchase greater than his wage rate. By doing this he automatically gets an extra leisure time, for example, to smoke a cigar.

However, there is another consideration. The consumer buys evening dress because he should go to the party. If the party decreases his labor time, the utility of the party becomes negative. So, the purchase of the evening suit should compensate the negative leisure.

If we are invited only for one party, we can buy a suit even in the second-hand store. However, if we should spend almost all-evening time on parties, we can buy more suits. The second suit will be bought in the supermarket and the third – in the boutique. The increase in "bad' leisure automatically increases the marginal utility, i.e., the equilibrium value of price reduction $\partial P/\partial S$ of the next purchase.

The example of the eveningwear discovers the importance of the time horizon of the consumption-leisure choice. We see that the key criterion of the "leisure model" is the relationship between the price reduction and the wage rate. In the reserve maximization model the value of the price reduction is determined by the relationship of the willingness to pay to the time horizon of the consumption-leisure choice, when the latter depends on the product lifecycle.[3]

However, the product lifecycle can also be a dependent variable. Both the product lifecycle and the time horizon depend on the intensity of consumption. There are many considerations we should take into account. If we take on the suit only once a month it can serve for years. We can consider the difference of intensity of consumption between the house and the chalet at the ski station. There are "dead seasons" for yachts and boats. On the other hand, humidors extend the lifecycle of cigars. Finally, we should not forget about the time value of money and to discount the perceived labor income.

We should take all these considerations into account, because, as we can see, for example, the increase in the term of use of the evening suit decreases the relative value of expected savings $\partial P/\partial S$ and can transform the "leisure model" into the "common model" of behavior.

Unfortunately, the decision to buy another suit before the first one becomes really shabby or not, is not only economic. Somebody can follow fashion and can buy evening suits every season, and somebody cannot put on two tunics (Mark 6:9). So, sometimes we can get the answer to the question whether the purchase of the first suit was an example of either "leisure model" or of the "common model" of behavior, only *ex post*, at the date of the purchase of the second suit.

And now, let us come back to the non-market work. There, the activities of "common model" of behavior, like preparing meals, have low $|\partial P/\partial S|$ values, which can be considered as either added or shadow market values of prepared meals. In the "leisure model" of behavior this activity results in delicious dishes which have high shadow $|\partial P/\partial S|$ values. If we organize the party at home we buy some bottles of good wine and we also prepare delicious dishes, which have important shadow prices. In addition, all other results of our home activity – exotic flowers,

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[3] The analysis of the satisficing decision procedure provides a very simply rule for expected savings, willingness to pay, and the time horizon of the consumption leisure choice: $|\Delta P/\Delta S|=P_0/T$ (Malakhov 2012)

ornamental trees, and the handmade furniture in the garden - will decorate the outdoor party and will make it more pleasant and longer.

Here, we should also take into account the time horizon of the consumption-leisure choice. Handmade garden furniture as well as the plantation of ornamental trees could serve for years and the "search" for these items, i.e., their production, could not leave the limits of the "common model" of behavior. On the other hand, delicious dishes are prepared only for one night and flower gardens need everyday concern.

Frenchmen like to make parties on the board of their boats, also decorated by small gardens. So why we would like to call the effect of the decrease in labor time in favor of both non-market work, including search, shopping, decorating prestigious items, and leisure itself as the "gardening aboard the boat" effect. This effect represents a synthesis of the conspicuous consumption with the "reputable leisure".

This consideration is based on the analysis of the trends in the allocation of time, presented by Aguiar and Hurst. They discovered the long-term trend of the decrease in American men's labor time, accompanied by the increase in both leisure and non-market work, including gardening and entertainment (Aiguiar and Hurst 2007a).

But the most dramatic increase happened in watching television. "Watching World Series" really has become a form of the "reputable leisure". However, according to Aguiar and Hurst, watching television can be presented as a result of the home production "of a commodity "watching a television show" which combines services from a durable (the television), a cable subscription, and time." (Aguiar and Hurst 2012) So, "preparing to watch a TV show" could be really added to non-market work.[4]

If we come back to the "pure" search, i.e., to shopping, the slight decrease, only for a half an hour, in "obtaining goods and services" between men during that period of time, really does not matter. Here, we should take into account possible changes in shopping patterns and the development of the advertising, which usually decreases the shopping time. In addition, the stable decreasing in shopping time from 4.85 hours per week in 1965 to 3.83 hours in 1993 was interrupted by an increase to 4.34 hours during next ten years till the year 2003. In general, the mean $\Delta L/\Delta S$ and $\Delta H/\Delta S$ values, where the "search" represented the total non-market work, for the period 1965 – 2003 between men were respectively (- 3.21) and 2.21.

All these considerations contribute to the assumption of the manifestation of the "gardening aboard the boat" effect between American men. And this backward-bending effect does not correspond to the classical income effect of the increase in the wage rate, because, as Aguiar and

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[4] Here, we meet the problem of classification of activities. For example, Aguiar and Hurst classified gardening and pet care as both leisure and home production. However, that methodological problem becomes important only for the "common model" of behavior, because in the "leisure model" the search and the leisure complement each other.

Hurst argued, "the recent divergence in leisure between educational groups suggests that, cross-sectionally, lower incomes imply more leisure… and during the last 30 years high-wage workers supplied relatively more market hours" (Aguiar and Hurst 2007a).

It is rather difficult to dispute the assumption that increase in consumption of the complements to all abovementioned activities – TV, music centers, computers, sportswear and equipment, etc. – usually is followed by the increase in quality and in purchase prices. The model presented here discovers the role of the "bad" leisure as a vehicle for this trend. This consideration challenges the usual underestimation of the factor of conspicuous leisure (Solnik and Hemenway 2005). Veblen himself in the presentation of his book postulated the synthetic approach:

From the foregoing survey of the growth of conspicuous leisure and consumption, it appears that the utility of both alike for the purposes of reputability lies in the element of waste that is common to both. In the one case it is a waste of time and effort, in the other it is a waste of goods.

We can see that the role of conspicuous leisure role is very important. If the leisure has negative utility, the conspicuous consumption becomes the result of the rational decision to increase total utility of the consumption-leisure choice.

Conclusion

There is only one question to be answered in conclusion – how we can identify negative price for this "bad" leisure. It seems that the model presented here can give only one answer. The price paid for the complements of "bad" leisure does not differ from the price paid for the disposal of garbage. When leisure time is increased with the decrease in the labor time and when it becomes "bad", the purchase of leisure items can be considered as the price paid for the disposal of the "bad" leisure.

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