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Mating à la Spence: Deriving the Market Demand Function for Status Goods

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Mating à la Spence: Deriving the Market Demand Function for Status Goods

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Mating à la Spence: Deriving the Market Demand Function for Status Goods

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Abstract

Conspicuous consumption of luxuries plays a central role in the work of Thorstein B. Veblen. More recently, interpersonal effects have emerged as an important factor in consumption theory. However, the inadequate modelling of individuals' interaction often leads to questionable results with regard to the market demand function for status goods. Following Spence, who recommended the application of his *Job Market Signaling* to conspicuous consumption, in Mating à la Spence potential partners are faced with asymmetric information: Individuals know their own properties, but are incompletely informed about potential partners. However, individuals have the possibility to signal their properties by demonstrative consumption. Mating à la Spence provides a game theoretical derivation of the market demand function for status goods with respect to level and distribution of income in the considered economy: If (1) the price is low, everyone buys the good; if (2) the price is high, only the rich buy the good (a status good in a narrow sense). If (3) the price is located in a very high as well as in a middle range, demand drops. In addition this approach allows conclusions about the potential welfare improving impact of conspicuous consumption.

1 Introduction

In the history of economic thought status seeking and conspicuous consumption play an ancillary role. Among economists, only Thorstein B. Veblen (*1857, †1929) achieved a prominent profile. In his *Theory of the Leisure Class* he described the conspicuous consumption of the pecuniary upper class [Veblen

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1899]. Today, Veblen's continuing popularity derives less from his model of social evolution, but rather from Harvey Leibenstein's contribution *Bandwagon, Snob, and Veblen Effects in the Theory of Consumers' Demand*. There, because of the lack of a better term, Leibenstein named the case of a partly upward sloping demand function the *Veblen Effect* [Leibenstein 1950, 203].

More recently, status seeking and conspicuous consumption as interpersonal effects have emerged as an important factor in consumption theory.¹ Already, Frank [1985], Ireland [1994] as well as Corneo and Jeanne [1997] analyse status seeking and conspicuous consumption in rather classical consumer model frameworks. Following the intuition of Hirsch [1976] that status seeking can be seen as a zero sum game, they claim that the conspicuous consumption of status goods is *social waste* and recommend a *luxury tax* to internalise the negative external effects of consumption. Similar results are found by Jaramillo and Moizeau [2003] as well as Hopkins and Kornienko [2004].

Unlike these approaches, in the models of Bagwell and Bernheim [1996], Cole et al. [1995], Haucap [2001] and Pesendorfer [1995] demonstrative consumption is seen as a useful signaling device in the initiation of social contacts. Furthermore Haucap [2001] demonstrates that demonstrative consumption as a signal in social interaction may be welfare improving. However, the derivation of the market demand function for status goods is not presented there.

The model presented here closes this gap in the tradition of Spence's *Job Market Signaling* [Spence 1973] and provides a game theoretical derivation of the market demand function for status goods.² Whether a status good can be a distinctive signal or not depends on its price and the income level and distribution in the considered society.

We will proceed as follows: In section 2 a simple mating model without status signaling is developed, which serves as a benchmark in the following analysis of the welfare. In section 3 individuals have the option to demonstrate their status by conspicuous consumption. Section 4 shows the comparative welfare analysis, before the market demand function for status goods is presented in section 5. Section 6 concludes.

The present paper is also related to the contributions of Corneo and Jeanne [1998] as well as Van Long and Shimomura [2004], who analyse the intertemporal consumption decision in the frame of life cycle models. Cooper et al. [2001], Corneo and Jeanne [2001] and Rauscher [1997] focus on the impact of conspicuous consumption on economic growth. Haucap [2001] as well as Jaramillo et al. [2001] analyse conspicuous consumption in clubs. Ferrer [2005] presents a signaling game, in which education acts as a status signal. Krähmer [2006] focuses on the connection between advertising and conspicuous consumption.

¹For a concise and worthwhile reading overview of the related literature see the introduction of Hopkins and Kornienko [2004].

²With reference to Veblen's *Theory of the Leisure Class* [Veblen 1899] already Spence [1974, 62] recommended the analogous application of his *Job Market Signaling* to the consumption of status goods.

2 A World without Status Signaling

Consider a economy with two types of individuals H and L . The individuals earn different incomes w_i , with $w_H > w_L$. The population shares of the two types are *common knowledge* and denoted by q_H and $q_L = (1 - q_H)$. Each individual knows her own income, but cannot observe the income of the others directly. Hence, the situation is characterised by asymmetric information. Furthermore, individuals do have the option to enter a partnership or to stay alone. If an individual enters a partnership, she obtains fifty percent of the income of the couple. Thus the payoffs in a partnership result as follows:

	H	L
H	$(\frac{w_H+w_H}{2}, \frac{w_H+w_H}{2})$	$(\frac{w_H+w_L}{2}, \frac{w_L+w_H}{2})$
L	$(\frac{w_L+w_H}{2}, \frac{w_H+w_L}{2})$	$(\frac{w_L+w_L}{2}, \frac{w_L+w_L}{2})$

If the individual stays alone, she can dispose of the full amount of her own income. But in this case psychic costs of being alone c_A emerge. Otherwise, if an existing partnership is dissolved, psychic costs of separating c_T emerge. Both kinds of psychic costs are independent of the type of individual.

In a world without status signaling individual i only consumes the numéraire y . The price of the numéraire is normalised to 1. The individual spends her whole income to consume y . So, the very simple resource constraint of the individuals is

$$w_i = y_i. \quad (1)$$

Only the consumption of the numéraire y enters the utility function, so the utility function for each individual i is given by:³

$$u_i = f(y_i) = y_i^\alpha. \quad (2)$$

Substituting (1) into (2) leads to the utility function

$$u_i = w_i^\alpha. \quad (3)$$

2.1 The Desire for Partnership

In the present model, the individual desire for partnership results from the comparison between the expected utility in a partnership and the certain utility of being alone. Index A denotes that individual i stays alone. Index P denotes that individual i enters a partnership. The expected utility from partnership is

³The assumption of homogenous preferences holds. Furthermore, the standard assumption of a positive but decreasing marginal utility $0 < \alpha < 1$ holds; $\frac{\partial u_i(y_i)}{\partial y_i} > 0$, $\frac{\partial^2 u_i(y_i)}{\partial y_i^2} < 0$.

$$E(u_{i,P}) = q_H \left(\frac{w_i + w_H}{2} \right)^\alpha + (1 - q_H) \left(\frac{w_i + w_L}{2} \right)^\alpha. \quad (4)$$

If an individual stays alone, her certain utility is

$$u_{i,A} = w_i^\alpha - c_A. \quad (5)$$

The individual i desires a partnership, if

$$E(u_{i,P}) \geq u_{i,A} \quad (6)$$

holds.⁴ The individual i wants to stay alone, if

$$E(u_{i,P}) < u_{i,A} \quad (7)$$

holds.

Substituting (4) and (5) into (6) as well as algebraic transformation lead to

$$c_A \geq w_i^\alpha - q_H \left(\frac{w_i + w_H}{2} \right)^\alpha - (1 - q_H) \left(\frac{w_i + w_L}{2} \right)^\alpha. \quad (8)$$

Hence, individuals of type H desire a partnership, if

$$c_A \geq (1 - q_H) \left(w_H^\alpha - \left(\frac{w_H + w_L}{2} \right)^\alpha \right) \quad (9)$$

holds, and individuals of type L desire a partnership, if

$$c_A \geq q_H \left(w_L^\alpha - \left(\frac{w_L + w_H}{2} \right)^\alpha \right) \quad (10)$$

holds. Note that the right hand side of inequation (10) is negative, because $w_H > w_L$. This means that individuals of type L desire a partnership even if the psychic costs of being alone are negative, in other words even if they obtain a payoff from being alone. In the present model, individuals of type L desire a partnership at lower psychic costs of being alone than individuals of type H . This is illustrated by Figure 1. Proposition 1 summarises the resulting conditions.

⁴The assumption that individuals desire a partnership if $E(u_{i,P}) = u_{i,A}$, leads to the exact definition of equilibria.

Proposition 1 (a) If psychic costs of being alone c_A are low and $c_A < q_H(w_L^\alpha - (\frac{w_L+w_H}{2})^\alpha)$ holds, no individual desires a partnership.

(b) However, if $q_H(w_L^\alpha - (\frac{w_L+w_H}{2})^\alpha) \leq c_A < (1 - q_H)(w_H^\alpha - (\frac{w_H+w_L}{2})^\alpha)$ holds, only individuals of type L desire a partnership.

(c) If psychic costs of being alone c_A are high and $c_A \geq (1 - q_H)(w_H^\alpha - (\frac{w_H+w_L}{2})^\alpha)$ holds, all individuals desire a partnership.

Proof. (a) In this case, individuals of type L represent the critical type, because they desire a partnership at lower psychic costs of being alone c_A than individuals of type H . According to (7) individuals of type L desire a partnership if

$$u_{L,A} = w_L^\alpha - c_A > q_H(\frac{w_L + w_H}{2})^\alpha + (1 - q_H)(\frac{w_L + w_L}{2})^\alpha = E(u_{L,P}) \quad (11)$$

holds. Algebraic transformation of (11) leads to Proposition 1(a).

(b) According to (7) individuals of type H want to stay alone, if

$$u_{H,A} = w_H^\alpha - c_A > q_H(\frac{w_H + w_H}{2})^\alpha + (1 - q_H)(\frac{w_H + w_L}{2})^\alpha = E(u_{H,P}) \quad (12)$$

holds. According to (6) individuals of type L desire a partnership, if

$$u_{L,A} = w_L^\alpha - c_A \leq q_H(\frac{w_L + w_H}{2})^\alpha + (1 - q_H)(\frac{w_L + w_L}{2})^\alpha = E(u_{L,P}) \quad (13)$$

holds. Algebraic transformation of (12) and (13) lead to Proposition 1(b).

(c) In this case, individuals of type H represent the critical type, because they do not desire a partnership at lower costs of being alone c_A than individuals of type L . According to (6) individuals of type H desire a partnership, if

$$u_{H,A} = w_H^\alpha - c_A \leq q_H(\frac{w_H + w_H}{2})^\alpha + (1 - q_H)(\frac{w_H + w_L}{2})^\alpha = E(u_{H,P}) \quad (14)$$

holds. Algebraic transformation of (14) leads to Proposition 1(c). ■

2.2 Equilibria in a World without Status Signaling

In a world without status signaling, only individuals who desire a partnership mate. If an individual desires a partnership, she is randomly matched with a partner who desires a partnership too. After the individual has entered the partnership she compares the certain utility from the partnership with the expected utility from restarting the mating game after separation $E(u_{i,T})$. Basically, a gain by restarting the mating game is only possible, if individual i was matched with an individual of type L before. In this case individual i has an incentive to dissolve the partnership, if

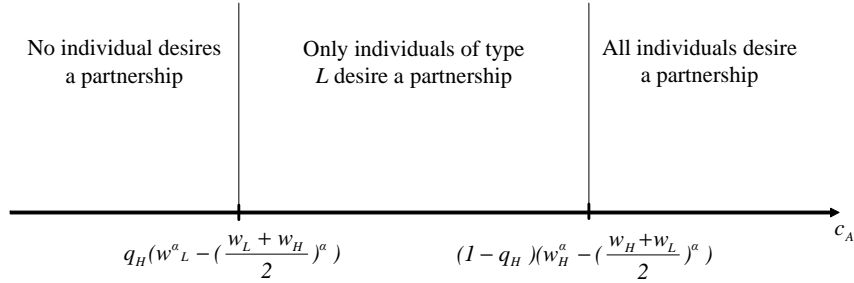


Figure 1: The Desire for Partnership

$$\begin{aligned}
E(u_{i,T}) &= q_H \left(\frac{w_i + w_H}{2} \right)^\alpha + (1 - q_H) \left(\frac{w_i + w_L}{2} \right)^\alpha - c_T \quad (15) \\
&> \left(\frac{w_i + w_L}{2} \right)^\alpha = u_{i,P}
\end{aligned}$$

holds. An equilibrium emerges, if no individual can make herself better off by leaving the equilibrium, in other words by dissolving the partnership. The welfare depends on the question which individuals enter a partnership and which not.

Definition 1 *The welfare measure W is defined by the ratio of the absolute value of the welfare and the number of individuals in the considered economy. Thus W is the welfare per capita. With respect to the different groups of individuals, W_i represents the relative welfare contribution of the group of individuals of type $i \in \{L, H\}$ per capita of the whole population*

$$W_i = q_i u_i. \quad (16)$$

The welfare of the whole economy is defined by

$$W = W_H + W_L. \quad (17)$$

Proposition 2 illustrates equilibria in a world without status signaling as well as the corresponding welfare.

Proposition 2 (a) *If, in a world without status signaling, $c_A < q_H(w_L^\alpha - (\frac{w_L + w_H}{2})^\alpha)$ holds, an equilibrium emerges in which all individuals stay alone and welfare is $W_{H,A;L,A} = q_H w_H^\alpha + (1 - q_H)w_L^\alpha - c_A$.*

(b) *However, if $q_H(w_L^\alpha - (\frac{w_L + w_H}{2})^\alpha) \leq c_A < (1 - q_H)(w_H^\alpha - (\frac{w_H + w_L}{2})^\alpha)$ holds, an equilibrium emerges in which only individuals of type L enter a partnership. In this case welfare is $W_{H,A;L,P} = q_H w_H^\alpha + (1 - q_H)w_L^\alpha - q_H c_A$.*

(c) If $c_A \geq (1 - q_H)(w_H^\alpha - (\frac{w_H + w_L}{2})^\alpha)$ and in addition $c_T \geq q_H(w_H^\alpha - (\frac{w_H - w_L}{2})^\alpha)$ hold, an equilibrium emerges in which all individuals enter a partnership. The welfare is $W_{H,P;L,P} = q_H w_H^\alpha + (1 - q_H)w_L^\alpha$.

(d) $W_{H,P;L,P} > W_{H,A;L,P} > W_{H,A;L,A}$ holds.

Proof. (a) As shown in Proposition 1(a) no individual desires a partnership, if $c_A < q_H(w_L^\alpha - (\frac{w_L + w_H}{2})^\alpha)$ holds. As a result, all individuals stay alone. According to Definition 1 the welfare per capita is given by

$$W_{H,A;L,A} = q_H w_H^\alpha + (1 - q_H)w_L^\alpha - c_A. \quad (18)$$

(b) As shown in Proposition 1(b) only individuals of type L desire a partnership, if $q_H(w_L^\alpha - (\frac{w_L + w_H}{2})^\alpha) \leq c_A < (1 - q_H)(w_H^\alpha - (\frac{w_H + w_L}{2})^\alpha)$ holds. Hence, they are matched only with other individuals of type L . According to Definition 1 the welfare per capita is given by

$$W_{H,A;L,P} = q_H w_H^\alpha + (1 - q_H)w_L^\alpha - q_H c_A. \quad (19)$$

(c) As shown in Proposition 1(c) all individuals desire a partnership, if $c_A \geq (1 - q_H)(w_H^\alpha - (\frac{w_H + w_L}{2})^\alpha)$ holds. According to (4) individuals expect a specific utility from partnership. If an individual i is matched with a partner of type L , the expectations of i are not fulfilled and she tends to dissolve the partnership. In this case, individuals of type H are the critical type, because they dissolve a partnership at lower separation costs c_T than individuals of type L .⁵ Individuals of type H have no incentive to dissolve a partnership with an individual of type L , if

$$\begin{aligned} u_{H,P} &= \left(\frac{w_H + w_L}{2}\right)^\alpha \\ &\geq q_H \left(\frac{w_H + w_H}{2}\right)^\alpha + (1 - q_H) \left(\frac{w_H + w_L}{2}\right)^\alpha - c_T = E(u_{H,T}) \end{aligned} \quad (20)$$

holds. In this case an equilibrium emerges. Algebraic transformation of (20) leads to Proposition 2(c). According to Definition 1 the welfare per capita is given by

$$W_{H,P;L,P} = q_H w_H^\alpha + (1 - q_H)w_L^\alpha. \quad (21)$$

(d) Proposition 2(d) results directly from comparison between (18), (19) and (21). ■

In a world without status signaling and low psychic costs of being alone $c_A < q_H(w_L^\alpha - (\frac{w_L + w_H}{2})^\alpha)$ welfare is given by the average utility minus the costs of aloneness for the whole population c_A .

⁵Individuals of type H dissolve a partnership at lower separation costs c_T because of their higher income and the assumption of a positive but decreasing marginal utility. As a result of this, their risk of utility loss with separation and restarting the mating game is lower than the risk of individuals of type L .

If the psychic costs of being alone c_A are higher and $q_H(w_L^\alpha - (\frac{w_L+w_H}{2})^\alpha) \leq c_A < (1 - q_H)(w_H^\alpha - (\frac{w_H+w_L}{2})^\alpha)$ holds, welfare is given by the average utility minus the costs of being alone for type H individuals $q_H c_A$. In this case, no psychic costs of being alone emerge among individuals of type L .

If the psychic costs of being alone are high and $c_A \geq (1 - q_H)(w_H^\alpha - (\frac{w_H+w_L}{2})^\alpha)$ holds, welfare per capita is given by the average utility. In this case all individuals enter a partnership and no psychic costs of being alone emerge.

3 A World with Status Signaling

In a world with status signaling individuals have the option to demonstrate their income by the conspicuous consumption of status goods. Thus status signaling has an important effect on the mating game: If an individual signals, she is matched with another individual, who signals too. If an individual does not signal, despite the option to do so, she expects with a probability of 1 to be matched with an individual of type L .

In the considered society only one good is established as a status signal. The status good only works as a status signal, is without intrinsic value and does not influence the individual's utility directly. Each individual purchases at most one unit of the status good x , at the price $p_S \geq 0$, so that $x = \{0, 1\}$ holds. If an individual purchases the status good x , beside this, she only consumes the numéraire y . However, if the individual does not purchase the status good, she spends her whole income on the consumption of y . Only the consumption of the numéraire y causes utility.

3.1 Signaling Costs

In a world with status signaling the budget constraint of the individuals is

$$w_i = p_S + y_i. \quad (22)$$

The utility function (3) is already known:

$$u_i = f(y_i) = y_i^\alpha.$$

Now, y_i in (3) can be substituted by (22). This leads the following utility function:

$$u_i = (w_i - p_S)^\alpha. \quad (23)$$

If an individual signals by means of conspicuous consumption, signaling costs $c_{S,i}$ arise. These signaling costs $c_{S,i}$ reflect the opportunity costs in terms of directly utility enhancing consumption. This results in a utility loss Δu_i .⁶ The signaling costs $c_{S,i}$ are given by

⁶See Corneo and Jeanne [1997, 59].

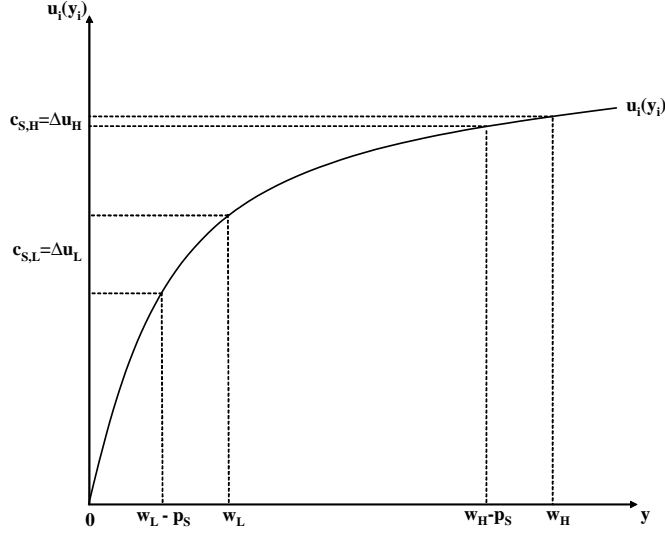


Figure 2: Costs of Conspicuous Consumption

$$c_{S,i} = \Delta u_i = w_i^\alpha - (w_i - p_S)^\alpha. \quad (24)$$

As one can see, the signaling costs $c_{S,i}$ depend on the income w_i and so, depend on the type of consumer. Because of the assumption of a positive but decreasing marginal utility

$$c_{S,H} < c_{S,L} \quad (25)$$

holds. As a result, the ostentatious display of wealth is cheaper for individuals of type H than for individuals of type L . With this, the approach presented here provides a utility theoretical explanation for the validity of the *single crossing property* in the present mating game.⁷

3.2 Signaling Decision

Depending on the signaling decision of the individuals *pooling* and *separating equilibria* can emerge.

⁷See the illustration in Figure 2. The *single crossing property* is the condition for the possible emergence of separating equilibria in signaling games. It is also well known as *sorting condition*, *constant sign condition* or *Spence-Mirrlees condition* [Fudenberg/Tirole 1991, 259].

3.2.1 Pooling Equilibrium

In a *pooling equilibrium* individuals of both types signal. In this case an individual of type i has an incentive to signal, if

$$\begin{aligned} E(u_i^{pool}) &= q_H \left(\frac{w_i + w_H}{2} \right)^\alpha + (1 - q_H) \left(\frac{w_i + w_L}{2} \right)^\alpha - c_{S,i} \\ &\geq \left(\frac{w_i + w_L}{2} \right)^\alpha = u_{i,L}. \end{aligned} \quad (26)$$

holds. If the individual i is matched with a partner of type L , her expectations are not fulfilled. Therefore, she tends to dissolve the partnership, restart the mating game and signal again. However, in this case psychic costs of separation c_T emerge. The individual i only has an incentive to stay inside the partnership, if

$$\begin{aligned} u_{i,L}^{pool} &= \left(\frac{w_i + w_L}{2} \right)^\alpha \\ &\geq q_H \left(\frac{w_i + w_H}{2} \right)^\alpha + (1 - q_H) \left(\frac{w_i + w_L}{2} \right)^\alpha - c_{S,i} - c_T = E(u_{i,T}^{pool}) \end{aligned} \quad (27)$$

holds. Thereby, individuals of type H are the critical type, because they leave the partnership and so the *pooling equilibrium* at lower separation costs c_T , than individuals of type L .⁸ Algebraic transformation of (27) leads to the stability condition for *pooling equilibria*:

$$c_T(p_S) \geq q_H(w_H^\alpha - \left(\frac{w_H + w_L}{2} \right)^\alpha) - (w_H^\alpha - (w_H - p_S)^\alpha). \quad (28)$$

The separation costs c_T , which are sufficient for the stability for the *pooling equilibrium* and thus for the stability for partnerships, is dependent on the price of the status good p_S . If (26) and (28) hold, an equilibrium emerges in which both the individuals of type H as well as the individuals of type L signal.

3.2.2 Separating Equilibrium

In the *separating equilibrium* only individuals of type H signal and individuals of type L do not. Individuals of type H have an incentive to signal, if

$$u_H^{sep} = \left(\frac{w_H + w_H}{2} \right)^\alpha - c_{S,H} \geq \left(\frac{w_H + w_L}{2} \right)^\alpha = u_{H,L} \quad (29)$$

holds. With this, the utility of an individual of type H from a partnership with a partner of type L is not bigger, than her utility from a partnership with a partner of type H minus the type specific signaling costs.

⁸As before, individuals of type H dissolve a partnership at lower separation costs c_T because of their higher income and the assumption of a positive but decreasing marginal utility. Now, beside their lower risk of utility loss, their signaling costs $c_{S,H}$ are lower than the signaling costs of L -type individuals $c_{S,L}$ too.

However, individuals of type L have no incentive to signal, if

$$u_L^{sep} = \left(\frac{w_L + w_H}{2}\right)^\alpha - c_{S,L} < \left(\frac{w_L + w_L}{2}\right)^\alpha = u_{L,L} \quad (30)$$

holds. With this, the utility of an individual of type L from a partnership with a partner of type L is bigger than her utility from a partnership with a partner of type H minus the type specific signaling costs.

If (29) and (30) hold, an equilibrium emerges in which only the individuals of type H signal.

3.3 Sequence of Moves

The game unfolds as follows:

(1) According to the probability distribution $\{q_H; 1 - q_H\}$ the types of individuals are randomly assigned. Individuals know their own type, but the type is not directly observable by the others. However, the good which is established as a status good, its price p_S as well as the probability distribution $\{q_H; 1 - q_H\}$ are common knowledge.

(2) Individuals compare their utility from being alone with their expected utility from partnership and decide to initiate a partnership or not.

(3) If the individuals decide to stay alone, the mating game stops. However, if the individuals decide to initiate a partnership, in a further step they compare the certain utility from a partnership with a partner of type L with the expected utility from partnership in the *pooling equilibrium* or certain utility from partnership in the *separating equilibrium* with regard to the type specific signaling costs and decide to buy the status good or not $x = \{0, 1\}$.

(4) According to the matching technology in the *pooling equilibrium* each individual is randomly matched with a partner; in the *separating equilibrium* each individual of type H is matched with a partner of type H and each individual of type L is matched with a partner of type L .

(5) Each individual compares the utility obtained with the expected utility from dissolving the partnership and restarting the mating game. Then, the individual decides to stay in the partnership or not.

(6) Final Payoffs accrue.

Whether *pooling equilibrium* oder *separating equilibrium* emerge depends on the price of the status good. Proposition 3 encapsulates this.

Proposition 3 (a) *If in a world with status signaling*

$0 \leq p_S \leq w_L - \sqrt[\alpha]{w_L^\alpha + q_H(w_L^\alpha - (\frac{w_L + w_H}{2})^\alpha)}$, the stability condition $c_T(p_S) \geq q_H(w_H^\alpha - (\frac{w_H + w_L}{2})^\alpha) - (w_H^\alpha - (w_H - p_S)^\alpha)$, and the budget condition $\alpha \leq \ln(\frac{1+q}{q}) / \ln(\frac{w_H + w_L}{2w_L})$ hold, a pooling equilibrium emerges in which all individuals purchase the status good. In this case welfare is

$$W^{pool} = q_H w_H^\alpha + (1 - q_H) w_L^\alpha - [q_H c_{S,H} + (1 - q_H) c_{S,L}].$$

(b) However, if

$w_L - \sqrt[\alpha]{2w_L^\alpha - (\frac{w_L + w_H}{2})^\alpha} \leq p_S \leq (\frac{w_H - w_L}{2})$, and the budget condition $\alpha \leq \ln(2)/\ln(\frac{w_H + w_L}{2w_L})$ hold, a separating equilibrium emerges in which only individuals of type H purchase the status good. In this case welfare is $W^{sep} = q_H w_H^\alpha + (1 - q_H) w_L^\alpha - q_H c_{S,H}$.

(c) No signaling equilibria emerge, if

$w_L - \sqrt[\alpha]{w_L^\alpha + q_H(w_L^\alpha - (\frac{w_L + w_H}{2})^\alpha)} < p_S < w_L - \sqrt[\alpha]{2w_L^\alpha - (\frac{w_L + w_H}{2})^\alpha}$ or $p_S > (\frac{w_H - w_L}{2})$ holds.

Proof. (a) In this case individuals of type L are the critical type, because they leave the *pooling equilibrium* at a lower price of the status good p_S than individuals of type H . According to (26), individuals of type L have an incentive to signal, if

$$\begin{aligned} E(u_L^{pool}) &= q_H \left(\frac{w_L + w_H}{2}\right)^\alpha + (1 - q_H) \left(\frac{w_L + w_L}{2}\right)^\alpha - c_{S,L} \quad (31) \\ &\geq \left(\frac{w_L + w_L}{2}\right)^\alpha = u_{L,L} \end{aligned}$$

holds. Substituting (24) into (31) and algebraic transformation lead to Proposition 3(a). Inequality (28) is the stability condition for the equilibrium. The budget condition $\alpha \leq \ln(\frac{1+q}{q})/\ln(\frac{w_H + w_L}{2w_L})$ prevents that the willingness to pay of individuals of type L may exceed their budget in the case of low income $w_L < w_H(\frac{q}{2+q})$, so that (22) holds.⁹ According to Definition 1 welfare is given by

$$W^{pool} = q_H w_H^\alpha + (1 - q_H) w_L^\alpha - [q_H c_{S,H} + (1 - q_H) c_{S,L}]. \quad (32)$$

(b) A *separating equilibrium* emerges, if individuals of type H signal and individuals of type L do not. According to (29) individuals of type H have an incentive to signal, if

$$u_H^{sep} = \left(\frac{w_H + w_H}{2}\right)^\alpha - c_{S,H} \geq \left(\frac{w_H + w_L}{2}\right)^\alpha = u_{H,L} \quad (33)$$

holds. According to (30) individuals of type L do not have an incentive to signal, if

$$u_L^{sep} = \left(\frac{w_L + w_H}{2}\right)^\alpha - c_{S,L} < \left(\frac{w_L + w_L}{2}\right)^\alpha = u_{L,L} \quad (34)$$

holds. Substituting (24) into (33) and (34) as well as algebraic transformation lead to Proposition 3(b). The budget condition $\alpha \leq \ln(2)/\ln(\frac{w_H + w_L}{2w_L})$ prevents that the willingness to pay of individuals of type L may exceed their budget

⁹In parametric constellations $w_L > w_H(\frac{q}{2+q})$ the condition is already fulfilled by the standard utility assumption $0 < \alpha < 1$.

constraint in the case of low income $w_L < w_H/3$, so that (22) holds.¹⁰ According to Definition 1 welfare is given by

$$W^{sep} = q_H w_H^\alpha + (1 - q_H) w_L^\alpha - q_H c_{S,H}. \quad (35)$$

(c) Proposition 3(c) results directly from (a) and (b). ■

4 Welfare Comparison

Now, no less than five different cases are to be compared with respect to the welfare: (a) a world without status signaling, where all individuals stay alone, (b) a world without status signaling and only individuals of type L entering a partnership, (c) a world without status signaling and all individuals entering a partnership, (d) a world with status signaling and a *pooling equilibrium* and (e) a world with status signaling and a *separating equilibrium*.

The following table summarises the welfare of the five cases.

(a)	$W_{L,A;H,A} = q_H w_H^\alpha + (1 - q_H) w_L^\alpha - c_A$	(18)
(b)	$W_{L,P;H,A} = q_H w_H^\alpha + (1 - q_H) w_L^\alpha - q_H c_A$	(19)
(c)	$W_{L,P;H,P} = q_H w_H^\alpha + (1 - q_H) w_L^\alpha$	(21)
(d)	$W^{pool} = q_H w_H^\alpha + (1 - q_H) w_L^\alpha - [q_H c_{S,H} + (1 - q_H) c_{S,L}]$	(32)
(e)	$W^{sep} = q_H w_H^\alpha + (1 - q_H) w_L^\alpha - q_H c_{S,H}$	(35)

Proposition 4 (a) *Status signaling is welfare improving, if $c_A < q_H(w_L^\alpha - (\frac{w_L+w_H}{2})^\alpha)$ holds and in addition $c_A > q_H c_{S,H} + (1 - q_H) c_{S,L}$ in the pooling equilibrium or $c_A > q_H c_{S,H}$ in the separating equilibrium holds.*

(b) *Status signaling is also welfare improving, if $q_H(w_L^\alpha - (\frac{w_L+w_H}{2})^\alpha) \leq c_A < (1 - q_H)(w_H^\alpha - (\frac{w_H+w_L}{2})^\alpha)$ holds and in addition $q_H c_A > q_H c_{S,H} + (1 - q_H) c_{S,L}$ in the pooling equilibrium or $q_H c_A > q_H c_{S,H}$ in the separating equilibrium holds.*

Proof. (a) As shown in Proposition 1(a), no individual desires a partnership, if $c_A < q_H(w_L^\alpha - (\frac{w_L+w_H}{2})^\alpha)$ hold. In this case psychic costs of being alone c_A emerge in the whole population. From the table directly follows that $W^{pool} > W_{L,A;H,A}$, if

$$c_A > q_H c_{S,H} + (1 - q_H) c_{S,L} \quad (36)$$

holds and that $W^{sep} > W_{L,A;H,A}$, if

$$c_A > q_H c_{S,H} \quad (37)$$

holds.

(b) As shown in Proposition 1(b), only individuals of type L desire a partnership, if $q_H(w_L^\alpha - (\frac{w_L+w_H}{2})^\alpha) \leq c_A < (1 - q_H)(w_H^\alpha - (\frac{w_H+w_L}{2})^\alpha)$ holds. In this case

¹⁰In parametric constellations $w_L > w_H/3$ the condition is already fulfilled by the standard utility assumption $0 < \alpha < 1$.

psychic costs of being alone c_A only emerge in the type H part of the whole population. From the table directly follows, that $W^{pool} > W_{L,P;H,A}$, if

$$q_H c_A > q_H c_{S,H} + (1 - q_H) c_{S,L} \quad (38)$$

holds and that $W^{sep} > W_{L,P;H,A}$, if

$$q_H c_A > q_H c_{S,H} \quad (39)$$

holds. ■

In summary it can be ascertained that the lower the costs of being alone c_A are, the more likely status signaling is to be welfare improving. Consequentially, in no way can status signaling be seen as *social waste*.

5 Market Demand Function for Status Goods

The number of the status goods purchased is given by the part of the population, which buys just one unit of the status good. Thus in a world with status signaling price ranges of the status good have to be considered, in which *pooling* or *separating equilibria* emerge. Proposition 5 shows the market demand function for the status good.¹¹

Proposition 5 *The market demand function for the status good $D(p_S)$ is given by:*

$$D(p_S) = \begin{cases} 1, & \text{if } 0 \leq p_S \leq w_L - \sqrt[\alpha]{w_L^\alpha + q_H(w_L^\alpha - (\frac{w_L+w_H}{2})^\alpha)} \\ 0, & \text{if } w_L - \sqrt[\alpha]{w_L^\alpha + q_H(w_L^\alpha - (\frac{w_L+w_H}{2})^\alpha)} < p_S \\ & < w_L - \sqrt[\alpha]{2w_L^\alpha - (\frac{w_L+w_H}{2})^\alpha} \\ q_H, & \text{if } w_L - \sqrt[\alpha]{2w_L^\alpha - (\frac{w_L+w_H}{2})^\alpha} \leq p_S \leq (\frac{w_H-w_L}{2}) \\ 0, & \text{if } p_S > (\frac{w_H-w_L}{2}) \end{cases} \quad (40)$$

Proof. The market demand function for the status good $D(p_S)$ follows directly from Proposition 3 and its proof. ■

There exist four ranges of the market demand function for the status good $D(p_S)$ which are determined by the upper and lower price limits of the *pooling* and *separating Equilibrium*. Inside the different ranges the demand for the status good is inelastic. The location of those ranges depend on the level of income w_H

¹¹Figure 3 illustrates the market demand function for the status good for $w_H = 100000$, $w_L = 50000$, $q_H = 0,3$ and $\alpha = 0,90$.

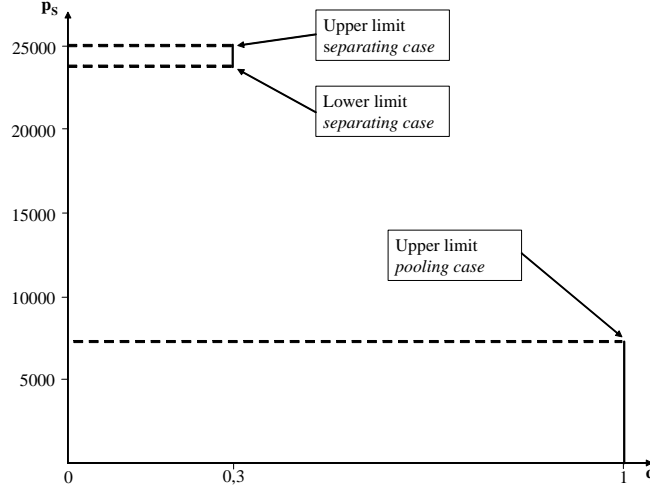


Figure 3: Market Demand for Status Goods

and w_L and its distribution in the considered economy q_H and $q_L = (1 - q_H)$ as well as on the exponent of the utility function α . The ranges of the market demand function react to changes of the parameters as follows:

	Reaction of the price ranges		
	(a) Upper limit of the pooling case	(b) Lower limit of the separating case	(c) Upper limit of the separating case
$w_H \uparrow$	\uparrow	\uparrow	\uparrow
$w_L \uparrow$	$\downarrow \uparrow$	$\downarrow \uparrow$	\downarrow
$q_H \uparrow$	\uparrow	0	0
$q_L \uparrow$	\downarrow	0	0
$\alpha \uparrow$	\uparrow	\uparrow	0

The first order derivatives of the p_S -limits with respect to the different parameter can be found in the Appendix.

6 Conclusion

In the current mating game, conspicuous consumption of status goods only serves as a signal at the initiation of partnership in a world of asymmetric information. If an individual purchases the status good, signaling costs as utility loss emerge, because of the lower amount of other goods consumed. This definition of signaling costs allows a utility theoretical explanation for the validity of the *single crossing property* in the present mating game.

With respect to the level and distribution of income in the considered economy we compute a critical price for the status good to act as a distinctive signal (a status good in a narrow sense). Taking this special importance of the price of status goods into account, the model allows the derivation of the market demand function for status goods.

The derived market demand function clearly differs from the standard case: If (1) the price is low, a *pooling equilibrium* emerges and everyone in the considered economy buys the good. In this case the good is no status good in a narrow sense, because it does not act as a distinctive signal. If (2) the price is high, a *separating equilibrium* emerges and only the rich part of the population purchases the good. In this case the good is a status good in a narrow sense. If (3) the price is located in a very high as well as in a middle range, demand drops. The location of the price ranges in which *pooling* or *separating equilibria* emerge depend on the level and distribution of income in the considered economy.

Interpreting demonstrative consumption as a useful signaling device in the initiation of social contacts in a world of asymmetric information this approach allows conclusions about the potential welfare improving impact of conspicuous consumption. Consequentially, it has to be stated that in no way status signaling can be seen as *social waste*. Taking these results into account, recommendations by numerous economists to prevent the welfare losses of conspicuous consumption by introducing a *luxury tax* are highly questionable.

The present model is for sure quite basic. It only considers two groups of individuals and only one status good. Nevertheless, the basic mechanisms of status driven demand were presented on a market level. With regard to future research the model could be developed into a more sophisticated model with n types of individuals and $(n - 1)$ status goods.

Another challenge is the empirical verification of the market demand function for status goods. A starting point could be the contribution of Basmann, Molina and Slottje [1983/1988], Phillips and Slottje [1983] as well as Creedy and Slottje [1991]. The authors show empirically *Veblen Effects* as the positive price dependency of demand for commodities. However, whether this special price dependency refers to interpersonal consumption effects stays ambiguous there.

References

- Bagwell, L.S./Bernheim, B.D. [1996]. *Veblen Effects in a Theory of Conspicuous Consumption*. In: American Economic Review, 86, 349-373.
- Basmann, R.L./Molina, D.J./Slottje, D.J. [1983]. *Budget Constraint Prices as Preference Changing Parameters of Generalized Fechner-Thurstone Utility Functions*. In: American Economic Review, 73, 411-413.
- Basmann, R.L./Molina, D.J./Slottje, D.J. [1987]. *Price-Dependent Preferences and the Fechner-Thurstone Direct Utility Function: An Exposition*. In: Journal of Institutional and Theoretical Economics, 143, 568-594.

- Cole, H.L./Mailath, G.J./Postlewaite, A. [1995]. *Incorporating Concern for Relative Wealth Into Economic Models*. In: Federal Reserve Bank of Minneapolis Quarterly Review, 19, 12-21.
- Cooper, B./García-Peñalosa, C./Funk, P. [2001]. *Status Effects and Negative Utility Growth*. In: Economic Journal, 111, 642-665.
- Corneo, G./Jeanne, O. [1997]. *Conspicuous Consumption, Snobbism and Conformism*. In: Journal of Public Economics, 66, 55-71.
- Corneo, G./Jeanne, O. [1998]. *Social Organization, Status, and Saving Behavior*. In: Journal of Public Economics, 70, 37-51.
- Corneo, G./Jeanne, O. [2001]. *Status, the Distribution of Wealth, and Growth*. In: Scandinavian Journal of Economics, 103, 283-293.
- Creedy, J./Slottje, D.J. [1991]. *Conspicuous Consumption in Australia*. Research Paper Number 307, University of Melbourne.
- Ferrer, A.M. [2005]. *Signaling, Inequality and the Social Structure*. In: *Economica*, 73, 515-529.
- Frank, R.H. [1985b]. *The Demand for Unobservable and Other Nonpositional Goods*. In: American Economic Review, 75, 101-116.
- Fudenberg, D./Tirole, J. [1991]. *Game Theory*. Cambridge, London: MIT Press.
- Haucap, J. [2001]. *Konsum und soziale Beziehungen*. In: *Jahrbuch für Wirtschaftswissenschaften*, 52, 243-263.
- Hirsch, F. [1976]. *Social limits to growth*. Cambridge: Harvard University Press.
- Hopkins, E./Kornienko, T. [2004]. *Running to Keep in the Same Place: Consumer Choice as a Game of Status*. In: American Economic Review, 94, 1085-1107.
- Ireland, N.J. [1994]. *On limiting the market for status signals*. In: Journal of Public Economics, 53, 111-126.
- Jaramillo, F./Kempf, H./Moizeau, F. [2001]. *Conspicuous Consumption, Social Status and Clubs*. In: *Annales d'Économie et de Statistique*, Heft 63-64, 321-344.
- Jaramillo, F./Moizeau, F. [2003]. *Conspicuous Consumption and Social Segmentation*. In: Journal of Public Economic Theory, 5, 1-24.
- Krähmer, D. [2006]. *Advertising and Conspicuous Consumption*. In: Journal of Institutional and Theoretical Economics, 162, 661-682.
- Leibenstein, H. [1950]. *Bandwagon, Snob, and Veblen Effects in the Theory of Consumers' Demand*. In: Quarterly Journal of Economics, 64, 183-207.
- Pesendorfer, W. [1995]. *Design Innovation and Fashion Cycles*. In: American Economic Review, 85, 771-792.

- Phillips, R.J./Slottje, D.J. [1983]. *The Importance of Relative Prices in Analyzing Veblen Effects*. In: Journal of Economic Issues, 17, 197-206.
- Rauscher, M. [1997]. *Conspicuous Consumption, Economic Growth, and Taxation*. In: Journal of Economics, 66, 35-42.
- Spence, M. [1973]. *Job Market Signaling*. In: Quarterly Journal of Economics, 87, 355-374.
- Spence, A.M. [1974]. *Informational Transfer in Hiring and Related Screening Processes*. Cambridge, London: Havard University Press.
- Van Long, N./Shimomura, K. [2004]. *Relative Wealth, Status-Seeking, and Catching-Up*. In: Journal of Economic Behavior and Organization, 53, 529-542.
- Veblen, T.B. [1899] (1953). *The Theory of the Leisure Class – An Economic Study of Institutions, reprint*. New York: The New American Library of World Literature.

Appendix

Note, that all parameter $w_H, w_L, q_H, \alpha > 0$.

(a) The upper limit of the pooling case is given by

$$p_S = w_L - \sqrt[\alpha]{w_L^\alpha + q_H(w_L^\alpha - (\frac{w_L + w_H}{2})^\alpha)}.$$

Note, that in the *pooling equilibrium* the budget condition $\alpha < \ln(\frac{1-q_H}{q_H}) / \ln(\frac{w_H+w_L}{2w_L})$ holds, so that $w_L^\alpha + q_H(w_L^\alpha - (\frac{w_L+w_H}{2})^\alpha) > 0$.

The first order derivatives of p_S with respect to w_H, w_L, q_H and α are given as follows:

$$\frac{\partial p_S}{\partial w_H} = \frac{1}{2} q_H (\frac{w_L + w_H}{2})^{\alpha-1}. \quad (41)$$

$$(w_L^\alpha + q_H(w_L^\alpha - (\frac{w_L + w_H}{2})^\alpha))^{(\frac{1}{\alpha}-1)} > 0, \text{ and}$$

$$\frac{\partial p_S}{\partial w_L} = 1 - (w_L^{\alpha-1} + q_H(w_L^{\alpha-1} - \frac{1}{2}(\frac{w_L + w_H}{2})^{\alpha-1})). \quad (42)$$

$$(w_L^\alpha + q_H(w_L^\alpha - (\frac{w_L + w_H}{2})^\alpha))^{(\frac{1}{\alpha}-1)} \leq 0.$$

If w_L is low, $\frac{\partial p_S}{\partial w_L} > 0$ holds. If w_L is high, $\frac{\partial p_S}{\partial w_L} < 0$ holds. One can construct parametric constellations for each case.

$$\begin{aligned} \frac{\partial p_S}{\partial q_H} &= \frac{1}{a} \left(\left(\frac{w_L + w_H}{2} \right)^\alpha - w_L^\alpha \right). \quad (43) \\ (w_L^\alpha + q_H(w_L^\alpha - \left(\frac{w_L + w_H}{2} \right)^\alpha))^{\left(\frac{1}{\alpha}-1\right)} &> 0. \end{aligned}$$

$$\begin{aligned} \frac{\partial p_S}{\partial \alpha} &= \left(\frac{(w_L^\alpha + q_H(w_L^\alpha - \left(\frac{w_L + w_H}{2} \right)^\alpha)) \ln(w_L^\alpha + q_H(w_L^\alpha - \left(\frac{w_L + w_H}{2} \right)^\alpha))}{\alpha^2(w_L^\alpha + q_H(w_L^\alpha - \left(\frac{w_L + w_H}{2} \right)^\alpha))} + \right. \\ &\quad \left. \frac{\alpha \left(q_H \left(\frac{w_L + w_H}{2} \right)^\alpha \ln \left(\frac{w_L + w_H}{2} \right) \right) - (1 + q) w_L^\alpha \ln(w_L)}{\alpha^2(w_L^\alpha + q_H(w_L^\alpha - \left(\frac{w_L + w_H}{2} \right)^\alpha))} \right). \\ (w_L^\alpha + q_H(w_L^\alpha - \left(\frac{w_L + w_H}{2} \right)^\alpha))^{\frac{1}{\alpha}} &> 0. \quad (44) \end{aligned}$$

(b) The lower limit of the separating case is given by

$$p_S = w_L - \sqrt[\alpha]{2w_L^\alpha - \left(\frac{w_L + w_H}{2} \right)^\alpha}.$$

Note, that in the *separating equilibrium* the budget condition $\alpha < \ln(2)/\ln(\frac{w_H+w_L}{2w_L})$ holds, so that $2w_L^\alpha - \left(\frac{w_L + w_H}{2} \right)^\alpha > 0$.

The first order derivatives of p_S with respect to w_H , w_L , q_H and α are given as follows:

$$\begin{aligned} \frac{\partial p_S}{\partial w_H} &= \frac{1}{2} \left(\frac{w_L + w_H}{2} \right)^{(\alpha-1)}. \quad (45) \\ (2w_L^\alpha - \left(\frac{w_L + w_H}{2} \right)^\alpha)^{\left(\frac{1}{\alpha}-1\right)} &> 0, \text{ and} \end{aligned}$$

$$\begin{aligned} \frac{\partial p_S}{\partial w_L} &= 1 - (2w_L^{(\alpha-1)} - \frac{1}{2} \left(\frac{w_L + w_H}{2} \right)^{(\alpha-1)}). \quad (46) \\ (2w_L^\alpha - \left(\frac{w_L + w_H}{2} \right)^\alpha)^{\left(\frac{1}{\alpha}-1\right)} &\leq 0. \end{aligned}$$

If w_L is low, $\frac{\partial p_S}{\partial w_L} > 0$ holds. If w_L is high, $\frac{\partial p_S}{\partial w_L} < 0$ holds. One can construct parametric constellations for each case.

$$\frac{\partial p_S}{\partial q_H} = 0. \quad (47)$$

$$\begin{aligned} \frac{\partial p_S}{\partial \alpha} &= \left(\frac{(2w_L^\alpha - (\frac{w_L+w_H}{2})^\alpha) \ln(2w_L^\alpha - (\frac{w_L+w_H}{2})^\alpha)}{\alpha^2(2w_L^\alpha - (\frac{w_L+w_H}{2})^\alpha)} + \right. \\ &\quad \left. \frac{\alpha((\frac{w_L+w_H}{2})^\alpha \ln(\frac{w_L+w_H}{2}) - 2w_L^\alpha \ln(w_L))}{a^2(2w_L^\alpha - (\frac{w_L+w_H}{2})^\alpha)} \right). \\ &(2w_L^\alpha - (\frac{w_L+w_H}{2})^\alpha)^{(\frac{1}{\alpha})} > 0. \end{aligned} \quad (48)$$

(c) The upper limit of the separating case is given by

$$p_S = \left(\frac{w_H - w_L}{2} \right).$$

The first order derivatives of p_S with respect to w_H , w_L , q_H and α are given as follows:

$$\frac{\partial p_S}{\partial w_H} = \frac{1}{2} > 0, \quad \frac{\partial p_S}{\partial w_L} = -\frac{1}{2} < 0, \quad \frac{\partial p_S}{\partial q_H} = 0 \quad \text{and} \quad \frac{\partial p_S}{\partial \alpha} = 0. \quad (49)$$

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- Haucap, Justus & Tobias Just, Der Preis ist heiß. Aber warum? Zum Einfluss des Ökonomiestudiums auf die Einschätzung der Fairness des Preissystems, Nr. 24 (November 2003), erschienen in *Wirtschaftswissenschaftliches Studium (WiSt)* 33 (9), 2004, 520-524.
- Dewenter, Ralf & Justus Haucap, Mobile Termination with Asymmetric Networks, No. 23 (October 2003), erschienen unter dem Titel "The Effects of Regulating Mobile Termination Rates for Asymmetric Networks" erschienen in: *European Journal of Law and Economics* 20, 2005, 185-197.
- Dewenter, Ralf, Raising the Scores? Empirical Evidence on the Introduction of the Three-Point Rule in Portuguese Football, No. 22 (September 2003).
- Haucap, Justus & Christian Wey, Unionisation Structures and Innovation Incentives, No. 21 (September 2003), erschienen in: *The Economic Journal* 114, 2004, C145-C165.
- Quitzau, Jörn, Erfolgsfaktor Zufall im Profifußball: Quantifizierung mit Hilfe informations-effizienter Wettmärkte, Nr. 20 (September 2003).
- Reither, Franco, Grundzüge der Neuen Keynesianischen Makroökonomik, Nr. 19 (August 2003), erschienen in: *Jahrbuch für Wirtschaftswissenschaften* 54, 2003, 131-143.
- Kruse, Jörn & Jörn Quitzau, Fußball-Fernsehrechte: Aspekte der Zentralvermarktung, Nr. 18 (August 2003).
- Bühler, Stefan & Justus Haucap, Mobile Number Portability, No. 17 (August 2003), erschienen in: *Journal of Industry, Competition and Trade* 4, 2004, 223-238.
- Zimmermann, Klaus W. & Tobias Just, On the Relative Efficiency of Democratic Institutions, No. 16 (July 2003).
- Bühler, Stefan & Justus Haucap, Strategic Outsourcing Revisited, No. 15 (July 2003), erschienen in *Journal of Economic Behavior and Organization* 61, 2006, 325-338.
- Meyer, Dirk, Die Energieeinsparverordnung (EnEV) - eine ordnungspolitische Analyse, Nr. 14 (Juli 2003).
- Zimmermann, Klaus W. & Tobias Thomas, Patek Philippe, or the Art to Tax Luxuries, No. 13 (June 2003).
- Dewenter, Ralf, Estimating the Valuation of Advertising, No. 12 (June 2003).
- Otto, Alkis, Foreign Direct Investment, Production, and Welfare, No. 11 (June 2003).
- Dewenter, Ralf, The Economics of Media Markets, No. 10 (June 2003).
- Josten, Stefan Dietrich, Dynamic Fiscal Policies, Unemployment, and Economic Growth, No. 9 (June 2003).

- Haucap, Justus & Tobias Just, Not Guilty? Another Look at the Nature and Nurture of Economics Students, No. 8 (June 2003).
- Dewenter, Ralf, Quality Provision in Interrelated Markets, No. 7 (June 2003), erschienen unter dem Titel "Quality Provision in Advertising Markets" in: *Applied Economics Quarterly* 51, 5-28.
- Bräuninger, Michael, A Note on Health Insurance and Growth, No. 6 (June 2003).
- Dewenter, Ralf, Media Markets with Habit Formation, No. 5 (June 2003).
- Haucap, Justus, The Economics of Mobile Telephone Regulation, No. 4 (June 2003).
- Josten, Stefan Dietrich & Achim Truger, Inequality, Politics, and Economic Growth. Three Critical Questions on Politico-Economic Models of Growth and Distribution, No. 3 (June 2003).
- Dewenter, Ralf, Rational Addiction to News?, No. 2 (June 2003).
- Kruse, Jörn, Regulierung der Terminierungsentgelte der deutschen Mobilfunknetze?, Nr. 1 (Juni 2003).

Frühere Diskussionsbeiträge zur Wirtschaftspolitik

- Bräuninger, Michael & Justus Haucap, Das Preis-Leistungs-Verhältnis ökonomischer Fachzeitschriften, Nr. 120 (2002), erschienen in: *Schmollers Jahrbuch* 123, 2003, S. 285-305.
- Kruse, Jörn, Competition in Mobile Communications and the Allocation of Scarce Resources: The Case of UMTS, Nr. 119 (2002), erschienen in: Pierre Buigues & Patrick Rey (Hg.), *The Economics of Antitrust and Regulation in Telecommunications*, Edward Elgar: Cheltenham 2004.
- Haucap, Justus & Jörn Kruse, Predatory Pricing in Liberalised Telecommunications Markets, Nr. 118 (2002), erschienen in: Christian von Hirschhausen, Thorsten Beckers & Kay Mitusch (Hrsg.), *Trends in Infrastructure Regulation and Financing*, Edward Elgar: Cheltenham 2004, S. 43-68.
- Kruse, Jörn, Pay-TV versus Free-TV: Ein Regulierungsproblem?, Nr. 117 (2002), erscheint in: Mike Friedrichsen (Hg.), *Kommerz - Kommunikation - Konsum. Zur Zukunft des Fernsehens in konvergierenden Märkten*, 2003.
- Kruse, Jörn, Regulierung der Verbindungsnetzbetreiberauswahl im Mobilfunk, Nr. 116 (2002), als Kurzform erschienen in: *Multimedia und Recht*, Januar 2003, S. 29-35.
- Haucap, Justus & Jörn Kruse, Verdrängungspreise auf liberalisierten Telekommunikationsmärkten, Nr. 115 (2002), erschienen in: *Perspektiven der Wirtschaftspolitik* 5, 2004, 337-361.
- Haucap, Justus & Helmmar Schmidt, Kennzeichnungspflicht für genetisch veränderte Lebensmittel: Eine ökonomische Analyse, Nr. 114 (2002), erschienen in: *Zeitschrift für Wirtschaftspolitik* 53, 2002, S. 287-316.
- Kruse, Jörn & Jörn Quitzau, Zentralvermarktung der Fernsehrechte an der Fußball-Bundesliga, Nr. 113 (2002), erschienen in: *Zeitschrift für Betriebswirtschaft, Ergänzungsheft zur Sportökonomie*, 2002, S. 63-82.

- Kruse, Jörn & Justus Haucap, Zuviel Wettbewerb in der Telekommunikation? Anmerkungen zum zweiten Sondergutachten der Monopolkommission, Nr. 112 (2002), erschienen in: *Wirtschaftsdienst* 82, 2002, S. 92-98.
- Bräuninger, Michael & Justus Haucap, What Economists Think of Their Journals and How They Use Them: Reputation and Relevance of Economics Journals, Nr. 111 (2002), erschienen in *Kyklos* 56, 2003, S. 175-197.
- Haucap, Justus, Telephone Number Allocation: A Property Rights Approach, Nr. 110 (2001), erschienen in: *European Journal of Law and Economics* 15, 2003, S. 91-109.
- Haucap, Justus & Roland Kirstein, Government Incentives when Pollution Permits are Durable Goods, Nr. 109 (2001), erschienen in: *Public Choice* 115, 2003, S. 163-183.
- Haucap, Justus, Konsum und soziale Beziehungen, Nr. 108 (2001), erschienen in: *Jahrbuch für Wirtschaftswissenschaften* 52, 2001, S. 243-263.
- Bräuninger, Michael & Justus Haucap, Was Ökonomen lesen und schätzen: Ergebnisse einer Umfrage, Nr. 107 (2000), erschienen in: *Perspektiven der Wirtschaftspolitik* 2, 2001, S.185-210.
- Haucap, Justus, Uwe Pauly & Christian Wey, Collective Wage Setting When Wages Are Generally Binding: An Antitrust Perspective, Nr. 106 (2000), erschienen in: *International Review of Law and Economics* 21, 2001, S. 287-307.
- Haucap, Justus, Selective Price Cuts and Uniform Pricing Rules in Network Industries, Nr. 105 (2000), erschienen in: *Journal of Industry, Competition and Trade* 3, 2003, 269-291.
- Bräuninger, Michael, Unemployment Insurance, Wage Differentials and Unemployment, Nr. 104 (2000) erschienen in: *Finanzarchiv* 75, 2000, S. 485-501.
- Kruse, Jörn, Universaldienstlast etablierter Postunternehmen, Nr. 103 (2000) erschienen in: *Zeitschrift für Betriebswirtschaft*, Ergänzungsheft 3, 2002, S. 99-117.
- Kruse, Jörn, Sportveranstaltungen als Fernsehware, Nr. 102 (2000) erschienen in: Schellhaaß, Horst-Manfred (Hg.), *Sportveranstaltungen zwischen Liga- und Medien-Interessen*, Hofmann: Schorndorf 2000, S. 15-39.

Frühere Diskussionsbeiträge aus dem Institut für Theoretische Volkswirtschaftslehre

- Bräuninger, Michael, Social Capital and Regional Mobility, Nr. 4/2002.
- Schäfer, Wolf, EU-Erweiterung: Anmerkungen zum Balassa-Samuelson-Effekt, Nr. 3/2002, erschienen in: Stefan Reitz (Hg.): *Theoretische und wirtschaftspolitische Aspekte der internationalen Integration*, Duncker & Humblot: Berlin 2003, S. 89-98.
- Bräuninger, Michael, The Budget Deficit, Public Debt and Endogenous Growth, Nr. 2/2002.
- Rösl, Gerhard, Die Umverteilung der Geldschöpfungsgewinne im Eurosystem: Das Earmarking-Verfahren seit dem 1.1.2002, Nr. 1/2002, als Kurzform erschienen in: *Wirtschaftsdienst* 82, 2002, S.352-356.
- Schniewindt, Sarah, Two-Way Competition in Local Telecommunication Networks, Nr. 2/2001.

- Reither, Franco, Optimal Monetary Policy when Output Persists: On the Equivalence of Optimal Control and Dynamic Programming, Nr. 1/2001.
- Schäfer, Wolf, MOEL-Wechselkursarrangements, Nr. 1/2000, erschienen in: Günther Engel & Peter Rühmann (Hg.): *Geldpolitik und Europäische Währungsunion*, Göttingen 2000, S. 217-228.
- Heppke, Kirsten, On the Existence of the Credit Channel in Poland, Nr. 8/1999.
- Bräuninger, Michael, Unemployment and International Lending and Borrowing in an Overlapping Generations Model, Nr. 8/1999.
- Henning, Andreas & Wolfgang Greiner, Organknappheit im Transplantationswesen - Lösungsansätze aus ökonomischer Sicht, Nr. 7/1999.
- Chung, Un-Chan, East Asian Economic Crisis - What is and What Ought to be Done: The Case of Korea, Nr. 6/1999, erschienen in: *Research in Asian Economic Studies* 10, 2002, S. 93-121.
- Carlberg, Michael, Europäische Währungsunion: Der neue Policy Mix, Nr. 5/1999, erschienen in *Wirtschaftswissenschaftliches Studium (WiSt)* 29(1), 2000, S. 8-13.
- Carlberg, Michael, European Monetary Union: The New Macroeconomics, Nr. 4/1999, erschienen in: Gerhard Rübel (Hg.), *Real and Monetary Issues of International Economic Integration*, Duncker & Humblot: Berlin 2000, S. 155-175.
- Bräuninger, Michael & J.-P. Vidal, Private versus Financing of Education and Endogenous Growth, Nr. 3/1999, erschienen in: *Journal of Population Economics* 13, 2000, S. 387-401.
- Reither, Franco, A Monetary Policy Strategy for the European Central Bank, Nr. 2/1999 erschienen in: Rolf Caesar & Hans-Eckart Scharrer (Hg.), *European Economic and Monetary Union: Regional and Global Challenges*, Nomos Verlag: Baden-Baden 2001, S. 213-226.
- Bräuninger, Michael, Wage Bargaining, Unemployment and Growth, Nr. 1/1999 erschienen in: *Journal of Institutional and Theoretical Economics* 156, 2000, S. 646-660.

Frühere Diskussionsbeiträge zur Finanzwissenschaft

- Josten, Stefan, Crime, Inequality, and Economic Growth. A Classical Argument for Distributional Equality, 2002, erschienen in: *International Tax and Public Finance* 10, 2003, S. 435-452.
- Zimmermann, Klaus W. & Tobias Thomas, Öffentliche Güter, natürliche Monopole und die Grenze marktlicher Versorgung, 2002, erschienen in: *Wirtschaftswissenschaftliches Studium (WiSt)* 32, 2003, S. 340-344.
- Holm-Müller, Karin & Klaus W. Zimmermann, Einige Anmerkungen zur Internalisierungsstrategie mit dem produktorientierten Konzept der Pigousteuer, 2002, erschienen in: *Zeitschrift für Umweltpolitik und Umweltrecht* 25, 2002, S. 415-420.
- Josten, Stefan, Nationale Schuldenpolitik in der EWU, 2002, erschienen in: *Wirtschaftsdienst* 82, 2002, S. 219-225.
- Hackmann, Johannes, Der Sonderabgabenbezug nach dem Lebenspartnerschaftsergänzungsgesetz, 2002, erschienen in: *Wirtschaftsdienst*, 82, 2002, S. 241-248.

- Josten, Stefan, Das Theorem der Staatsschuldneutralität. Eine kritisch-systematische Rekonstruktion, 2001, erschienen in: *Jahrbuch für Wirtschaftswissenschaften* 53, 2002, S. 180-209.
- Zimmermann, Klaus W., Komplikationen und Fallstricke in der Pigou-Analyse von Externalitäten, 2001, erschienen in: *Jahrbuch für Wirtschaftswissenschaften* 53, 2002, S. 245-267
- Josten, Stefan, National Debt in an Endogenous Growth Model, 2001, erschienen in: *Jahrbuch für Wirtschaftswissenschaften* 53, 2002, S. 107-123.
- Hackmann, Johannes, Vom Ehegattensplitting zum Partnerschaftssplitting?, 2001, erschienen in: Volker Arnold (Hg.), *Wirtschaftsethische Perspektiven VI*, Schriften des Vereins für Socialpolitik 228/VI, Duncker & Humblot: Berlin 2002, S. 189-222.
- Zimmermann, Klaus W. & Tobias Just, Politische Glaubwürdigkeit und der Euro: Eine verfassungsökonomische Perspektive, 2000, erschienen in: Fritz Söllner & Arno Wilfert (Hg.), *Die Zukunft des Steuer- und Sozialstaates*, Physica Verlag 2001, S. 373-397.
- Josten, Stefan, National Debt, Borrowing Constraints, and Human Capital Accumulation in an Endogenous Growth Model, 2000, erschienen in: *FinanzArchiv* 58, 2001, S. 317-338.
- Zimmermann, Klaus W. & Tobias Just, The Euro and Political Credibility in Germany, 2000, erschienen in: *Challenge* 44, 2001, S. 102-120
- Josten, Stefan, Public Debt Policy in an Endogenous Growth Model of Perpetual Youth, 1999, erschienen in *FinanzArchiv* 57, 2000, S. 197-215.
- Zimmermann, Klaus W., Internalisierung als Nirwana-Kriterium der Umweltpolitik, 1999, erschienen in: Kilian Bizer, Bodo Linscheidt & Achim Truger (Hg.), *Staatshandeln im Umweltschutz. Perspektiven einer institutionellen Umweltökonomik*, Duncker & Humblot: Berlin 2000.
- Hackmann, Johannes, Die unterlassene Besteuerung der Nutzungswerte selbstgenutzten Wohnungseigentums: Vergebene Reformpotentiale, 1999, erschienen in: R. Lüdeke, W. Scherf & W. Steden (Hg.), *Wirtschaftswissenschaft im Dienste der Verteilungs-, Geld- und Finanzpolitik*, Festschrift für A. Oberhauser, Berlin 2000, S. 387-412.
- Zimmermann, Klaus W. & Tobias Just, Interest Groups, Referenda, and the Political Process: On the Efficiency of Direct Democracy, 1999, erschienen in: *Constitutional Political Economy* 11, 2000, S. 147-163.
- Josten, Stefan, Staatsverschuldung und Wirtschaftswachstum in einem Diamond-OLG-Modell mit AK-Technologie, 1999, erschienen in: *Jahrbuch für Wirtschaftswissenschaften* 51, 2000, S. 237-254.