

Social Construction of Preferences: Advertising*

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Abstract

We examine, with the tools of economics, a fundamental tenet of some of the most recent theoretical work in sociology, which we refer to as the *Postmodernist Critique*: preferences are socially constructed, firms exploit their monopoly power through advertising in order to create new (false) needs in consumers, and, as a consequence, consumer spending rises, and so does their supply of labor.

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1. INTRODUCTION

Individual preferences are in part a social phenomenon. They are the result of the interaction of the individual with parents, teachers, friends, peers. They are influenced by existing social norms and beliefs, by the relative position of the individual, his/her status in different relevant reference groups.

Individual preferences are also possibly influenced by advertising. In fact, a fundamental tenet of some of the most recent theoretical work in sociology is that firms exploit their monopoly power through advertising in order to create new (false) needs, often for “conspicuous consumption.” As a consequence, consumer spending rises, and so does their supply of labor.¹

Concepts like “consumerism,” “commodification” of culture, and “manipulation” of preferences have become the central core of what could be called a Postmodernist Critique of the organization of society. Monopoly power and advertising are intended as a form of “manipulation.” They interact to “manufacture individual identities,” to impose a system of values and preferences to consumers (“consumerism” together with “preferences for status” and “conspicuous consumption”) which is not “natural,” e.g., it is not supported by psychological and anthropological data.² Consequently, the consumption and leisure choices of agents go against their more “fundamental” will (“spontaneous consumer needs” in Galbraith, 1958): consumers are in “psychological denial” regarding their consumption and leisure habits, and desire commodities which are “useless, altered in a senseless way from the point of view of the rational consumer.”³ Consumers’ “judgement(s) of taste” are socially determined (through the influence of cultural capital on the set of preference predispositions, called “habitus”) so consumers seek “distinction” through “conspicuous consumption,” even though they experience such tastes as natural, personal, and individualized.⁴ In particular, such “manipulation of preferences,” it is argued, induces consumers to reduce the time devoted to leisure activities, and to enter a “work and spend cycle.” This is the main contention of J. Schor in *The Overworked American: The Unexpected Decline of Leisure* and *The Overspent American: Why We Want What We Don’t Need*, two books which

¹ While this theme has been emphasized e.g., by J. A. Schumpeter in *Business Cycles; A Theoretical, Historical and Statistical Analysis of the Capitalist Process*, chapter III, and by J. K. Galbraith in the *Affluent Society*, it has been adopted and developed recently in Postmodernist circles. See e.g., F. Jameson’s *The Cultural Turn*, D. Harvey’s *The Condition of Postmodernity*, as well as Leonard (1997) and Anderson (1998). A good survey of the positions of the Postmodernist literature on “consumerism” is Lee (2000), and especially the paper by Campbell, p. 48–72. The importance of monopoly power in the recent development of capitalist society has also been forcefully stressed by Marxist historians, e.g., from P. Baran and P. Sweezy, in *Monopoly Capital*, to E. Mandel, in *Late Capitalism*, and G. Arrighi, in *The Long Twentieth Century*.

² See e.g., M. Douglas and B. Isherwood, *The World of Good*, D. Rushkoff, *Coercion*, M. Sahlins, *Culture and Practical Reason*.

³ Respectively, Schor, 1998, p. 19, and Mandel, 1972, p. 394 of the English 1978 edition.

⁴ See Bourdieu, 1979; p. 101 of the English edition, 1984. The intellectual roots of this argument are in Veblen, 1899, and Duesenberry, 1949.

have received enormous attention in the social sciences (other than economics). Finally, another important aspect of the Critique is the consideration of leisure itself as “commodified”: private corporations have dominated the leisure ‘market,’ encouraging us to think of leisure as a consumption opportunity.”⁵

To summarize, the basic argument of the Postmodernist Critique can be reconstructed as follows (obviously considerably simplifying across the wide range of different positions). Exploiting their monopoly power, firms manipulate the preferences of consumers through advertising in order to create new (false) needs. Therefore, profits increase and consumer spending rises, to the point where consumers enter a “work and spend cycle.” They reduce the time devoted to leisure activities, or at least they curtail the increase in leisure that would have accompanied productivity and wage increases. Leisure itself is “commodified,” and transformed into a form of consumption (e.g., in exotic vacations, eating out, etc.). Not only, it is argued, is the time devoted to leisure reduced because of advertising, but the mere distinction of consumption and leisure is blurred, as our preferences are “manipulated” to choose forms of leisure that are complementary to consumption. Such patterns of behavior, characterized as the “work and spend cycle” and the “commodification of leisure,” reduces consumers’ overall welfare when welfare is evaluated according to the consumers’ *ex-ante* preferences, that is before advertising takes place.⁶

While it is easy for economists to ignore the Postmodernist literature, especially because of its associated methodological positions,⁷ what we have identified as the Postmodernist Critique nonetheless constitutes a coherent statement about economic quantities that can be studied with the tools of economics. Moreover, even if the Postmodernist literature *per se* is ignored, the Critique we have identified is receiving large attention in the academic profession at large, in the humanities as well as in the social sciences, and in the analyses of many social observers.

In this chapter, we survey theoretical and empirical work regarding advertising as a vehicle for the social construction of preferences. We first posit a model, which can be used to formalize the Postmodernist Critique, from [Benhabib-Bisin \(2002\)](#). We then use this model to organize the existing empirical work relating aggregate advertising and economic activity, bearing therefore directly on the Critique.

⁵ See [Schor \(1992\)](#), p. 162: “private corporations have dominated the ‘leisure market’ . . . How many of us, if asked to describe an ideal week-end, would choose activities that cost nothing?”

⁶ Another factor often cited, as a cause of the “work-spend” cycles is a preference for status and/or for conspicuous consumption. We do not discuss this literature here as [Frank \(2010\)](#) takes it up, in these same volumes. In [Benhabib-Bisin \(2002\)](#), we provide a model of the effect of advertising on status which casts some doubts on the ability of this factor to support the Postmodernist Critique.

⁷ The improper use of scientific jargon in the Postmodernist literature, for instance, has been exposed by [Sokal-Bricmont \(1998\)](#).

2. THE BENCHMARK ECONOMY

Consider a monopolistic competition economy with differentiated goods. A representative consumer consumes a continuum of goods indexed by i , $i \in [0, I]$. Let $x_i \geq 0$ denote his consumption of good i . The consumer is endowed with one unit of time. Let L , $0 \leq L \leq 1$, denote the share of his/her time he/she devotes to work (hence $1 - L$ denotes the share of time devoted to leisure). The consumer evaluates consumption and leisure plans with a constant elasticity of substitution utility function. He/she maximizes his/her utility in terms of aggregate consumption and leisure goods:

$$\max_{\{x_i\}_{0 \leq i \leq I}, L} \left[(X)^{\frac{\sigma-1}{\sigma}} + (1-L)^{\frac{\sigma-1}{\sigma}} \right]^{\frac{\sigma}{\sigma-1}} \quad (1)$$

where

$$X := \left[\int_0^I \alpha_i (x_i)^{\frac{\theta_i-1}{\theta_i}} di \right]^{\frac{\int_0^I \theta_i di}{\int_0^I \theta_i di - 1}}, \quad \theta_i > 1 \quad (2)$$

The parameter σ represents the elasticity of substitution between aggregate consumption and aggregate leisure. When $\sigma = 1$ preferences reduce to a Cobb-Douglas aggregator between consumption and leisure, the case often used in macroeconomics; see [Browning-Hansen-Heckman \(1999\)](#) for a survey. The parameter θ_i represents the elasticity of substitution associated with good i ; finally α_i represents the intensity level of utility associated with good i .

The consumer's utility maximization is subject to his/her budget constraint, as his/her total expenditures must be financed by earned wages, wL , and by the firms' aggregate profits, π , as firms are owned by the representative consumer:

$$\int_0^I p_i x_i di = wL + \pi \quad (3)$$

We will restrict the representative consumer to symmetric preferences, $\alpha_i = \alpha$, and $\theta_i = \theta$, independent of i . We can therefore consider only symmetric equilibria. Let E denote the representative consumer's nominal expenditures. Let $x_i = x_i(p_i, p, E; \alpha, \theta)$ denote the demand of good i , evaluated at $p_j = p_j := p$, for all $j, j' \neq i$, and $\alpha_i = \alpha$, $\theta_i = \theta$.⁸ Each good $i \in [0, I]$ is produced using labour by a firm which is monopolistically competitive in the good's market and perfectly competitive in the labour market. The wage rate is denoted by w . We adopt the normalization that the production of one unit of good requires $\frac{1}{w}$ units of labor. The parameter w is then an index of the marginal product of labor, as well as the wage rate.

⁸ I.e., formally, $x(p_i, p, E, \alpha, \theta) := \operatorname{argmax} \left[\int_0^i \alpha (x_i)^{\frac{\theta-1}{\theta}} di \right]^{\frac{\theta}{\theta-1}}$ subject to $\int_0^i p_i x_i di \leq E$, and, as we focus on symmetric equilibria, $p_j = p_{j'} := p$, for all $j, j' \neq i$.

Any firm producing good i chooses price p_i to maximize profits:

$$p_i = p(p, E; \alpha, \theta, w) = \operatorname{argmax}(p_i - 1)x_i$$

subject to:

$$x_i = x(p_i, p, E; \alpha, \theta)$$

We shall study two distinct economies, characterized by appropriate equilibrium concepts. In the first economy the monopoly power of firms translates into monopoly profits. In the second economy, free entry and expanding varieties guarantee that firms make zero profits in equilibrium.

2.1 The economy with monopoly profits

The set of goods produced and consumed in the economy, $[0, I]$, is exogenous. Without loss of generality we normalize $I = 1$. In the general equilibrium context of our model, the firms' profits are redistributed to (and spent by) their owners. The representative agent framework then implies that expenditures are equal to total wages plus total profits: $E = px = wL + \pi$. As a consequence, in equilibrium, $x = wL$.

A *symmetric monopolistically competitive equilibrium with monopoly profits* is composed of allocations $x_i = x$, $X = (\alpha)^{\frac{\theta}{\theta-1}}x$, L , prices $p_i = p$ such that:

$$x_i(p, p, wL + \pi; \alpha, \theta) = x, \pi = (p - 1)x, p = p(p, wL + \pi; \alpha, \theta), x = wL.$$

In turn, at equilibrium each firm producing an arbitrary good i sets price:

$$p = \frac{\theta}{\theta - 1} \tag{4}$$

and the representative consumer's labor L solves,

$$\frac{L}{1 - L} = \frac{1}{w} \left(\frac{p}{w} \right)^{-\sigma} \alpha^{\frac{\theta(\sigma-1)}{\theta-1}}.$$

2.2 The economy with free entry and expanding varieties

Firms face no barriers to entry and the production of each good entails a fixed-cost c , which can consist of fixed production costs as well as advertising costs. In equilibrium there are no profits, as new firms enter the market and expand the varieties produced until it is no longer profitable to do so. Therefore the number of varieties produced, I , is endogenous for this specification of the economy as firms will expand varieties until profits are driven down to zero: $pIx = wL$.

A *symmetric monopolistically competitive equilibrium with free entry and expanding varieties* is composed of allocations $x_i = x$, $X = (\alpha)^{\frac{\theta}{\theta-1}}x$, L , prices $p_i = p$ and varieties I such that:

$$x_i(p, p, wL; \alpha, \theta) = x, p = p(p, wL; \alpha, \theta), Ix = wL - Ic$$

and profits $\pi = pIx - wL = 0$.

In turn, at equilibrium each firm producing an arbitrary good i sets price:

$$p = \frac{\theta}{\theta - 1}, \quad (5)$$

and the representative consumer's labor L solves,

$$\frac{L}{1 - L} = \left(\frac{p}{w}\right)^{1-\sigma} \alpha^{\frac{\theta(\sigma-1)}{\theta-1}}$$

3. THE EQUILIBRIUM EFFECTS OF ADVERTISING

Consider advertising as affecting the preference parameters α and θ . These parameters represent, respectively, a measure of the intensity of preferences for consumption and the elasticity of substitution across consumption goods. Note that changes in θ translate into effects on the elasticity of substitution between consumption and labor.⁹ We do not consider the case where advertising affects σ , the elasticity of substitution between consumption and leisure.

We also consider a different channel for advertising to affect preferences, adopted by [Molinari-Turino \(2009a,b\)](#), which operates by inducing a *consumption habit* that modifies the consumption aggregator X . Let X be defined as:

$$X := \left[\int_0^I \alpha_i (x_i - b_i)^{\frac{\theta_i - 1}{\theta_i}} di \right]^{\frac{\int_0^I \theta_i di}{\int_0^I \theta_i di - 1}}$$

where b_i denotes a measure of the habit for good i induced by advertising ($b_i = b$ under symmetry), and $b_i = 0$ with no advertising. A higher b_i requires a higher x_i to guarantee the same “utils” to the consumer; hence the *consumption habit* interpretation of advertising.

Advertising is costly and is the result of the strategic interactions between each firm (producing good) i . For simplicity, we will not explicitly study the advertising game, but we instead posit directly the effects of the Nash equilibrium of the game on the agents' preference parameters:¹⁰

⁹ In addition, we do not attempt here a survey of the economic models of advertising. In particular we do not discuss the view that advertising represents simply “a good or a bad” as in [Becker-Murphy \(1993\)](#), and as a consequence that the amount of exposure to advertising can be freely chosen by the consumer. This view of advertising, while quite compelling, is at odds with the Postmodernist view of the world that we aim at rationalizing in this survey.

Also, and again for the sake of our analysis of the Postmodernist critique, we do not either consider informational advertising, i.e., advertising conveying useful information about consumer products; see [Becker \(1996; ch. 1\)](#) and [Tirole \(1990; p. 290\)](#) for an overview.

¹⁰ Conditions on costs guaranteeing that the Nash equilibrium of the game has the posited effects on the parameters can be easily derived; see [Benhabib-Bisin \(2002\)](#).

$$\begin{array}{l} \text{Before advertising : } \alpha = 1 \qquad \theta > 1 \qquad b = 0 \\ \text{After advertising : } \alpha = \alpha_+ \left\{ \begin{array}{l} > \\ = 1 \\ < \end{array} \right. \quad \begin{array}{l} > \\ \text{if } \sigma = 1 \\ < \end{array} \quad \theta = \theta_+, 1 < \theta_+ < \theta \quad b = b_+ > 0 \end{array}$$

Notice that, depending on the elasticity of substitution between consumption and leisure, σ , advertising will either increase or decrease α_i , so as to increase the demand for good i , x_i .

3.1 Advertising and labor

We study first the effect on labor, for both economies. Consider first the economy with monopoly profits. In equilibrium,¹¹

$$\frac{wL - b_+}{1 - L} = \left(\frac{p_+}{w}\right)^{-\sigma} \alpha_+^{\frac{\theta_+(\sigma-1)}{\theta_+-1}}.$$

Consider now the economy with free entry and expanding varieties.

In equilibrium,

$$\frac{\frac{wL}{p_+} - b_+}{1 - L} = \left(\frac{p_+}{w}\right)^{-\sigma} \alpha_+^{\frac{\theta_+(\sigma-1)}{\theta_+-1}}.$$

How does advertising affect equilibrium labor L ? Let's consider separately the effects of the different advertising channels, intensity on α , elasticity of substitution on θ , and habits on b .

1. Advertising on α , given [equations 4 and 5](#), and other things equal, has no effect on prices p_+ . However, advertising on α increases L , by affecting the relative marginal utility of consumption over leisure, unless $\sigma = 1$ (log preferences), in which case advertising on α has no effects.
2. Advertising on θ , other things equal, reinforces any effect of advertising on intensity α . Nevertheless, advertising on θ has also the effect of increasing the price p_+ . The price effect has substitution and income effects. In turn, then the price effect decreases L when the substitution effect dominates. This is the case i) in the economy with monopoly profits, where the income effect is compensated by the redistribution of profits to consumers (who own the firm); ii) if $\sigma > 1$ in the economy with free entry. The price effect instead increases L when the income effect dominates, that is, if $\sigma < 1$ in the economy with free entry. The price effect has no effects on L when the income and substitution effect cancel out, that is, in the log case, when $\sigma = 1$.
3. Advertising on b , other things equal, increases L . It also increases the price p_+ , but the price effect is second order.

The special case of log by both ex-antes as well as preferences ($\sigma = 1$) is important; see e.g., [Prescott \(2004\)](#), and [McGrattan–Prescott \(2007\)](#). In this case, income and substitution effects cancel out and hence:

¹¹ Note that $b_+ > 0$ affects equilibrium prices, by affecting the elasticity of substitution for varieties in the representative consumer's demand. In fact, it can be shown that p_+ increases in b_+ ; see [Molinari–Turino \(2009b\)](#).

1. In Advertising on α , other things equal, has no effect on L .
2. In Advertising on θ , other things equal, has the effect of increasing the price p_+ . The price effect decreases L with monopoly profits, but has no effect on L with free entry.
3. In Advertising on b increases L . It also increases the price p_+ , but the price effect is second order.

3.2 Advertising and welfare

Studying the effects of advertising on consumers' welfare is not straightforward because, as advertising changes consumers' preferences, it is not at all obvious what the reference welfare criterion should be, ex-ante or ex-post with respect to advertising.¹²

Given the preference parameters α , θ , b (we use for simplicity a notation which abuses by postulating symmetry), the representative consumer's equilibrium allocations are denoted by $x(\alpha, \theta, b)$, $L(\alpha, \theta, b)$; and his/her equilibrium utility is denoted $\mathcal{U}(x(\alpha, \theta, b), L(\alpha, \theta, b); \alpha, \theta, b)$. Recall that advertising has the effect of changing his/her preference parameters (α, θ, b) into $(\alpha_+, \theta_+, b_+)$.

We say that the consumer's welfare (weakly) increases due to advertising with respect to ex-post preferences if

$$\mathcal{U}(x(\alpha_+, \theta_+, b_+), L(\alpha_+, \theta_+, b_+); \alpha_+, \theta_+, b_+) \geq \mathcal{U}(x(\alpha, \theta, b), L(\alpha, \theta, b); \alpha_+, \theta_+, b_+). \quad (6)$$

Consumer's welfare (weakly) increases instead due to advertising with respect to ex-ante preferences if

$$\mathcal{U}(x(\alpha_+, \theta_+, b_+), L(\alpha_+, \theta_+, b_+); \alpha, \theta, b) \geq \mathcal{U}(x(\alpha, \theta, b), L(\alpha, \theta, b); \alpha, \theta, b). \quad (7)$$

Several¹³ of our welfare comparisons are in fact unambiguous, in the sense that they hold for the partial ordering induced by both ex-ante as well as for ex-post preferences. In an economy in which prices are distorted by monopoly power of firms, in fact, advertising might, depending of the parameters of the economy, either exacerbate such effects, and hence possibly reduce welfare with respect to both ex-ante and ex-post preferences, or it might introduce a form of nonprice competition across firms which mitigates the effects of monopolistic distortions and hence on the contrary unequivocally improves welfare.

How does advertising affect the welfare of the representative agent? We again consider separately the effects of the different advertising channels, intensity on α , elasticity of substitution on θ , and habits on b .

¹² See Dixit-Norman (1978) for an early analysis of advertising in a monopolistic competition economy.

¹³ Dixit and Norman (1978) suggest that such partial ordering can be surprisingly effective for the analysis of the effects of advertising. Stigler-Becker (1977) compellingly argues in favor of the formulation of metapreference orderings, which depend on advertising (see also Becker (1996)). The partial ordering just introduced is robust to such formulation in the sense that, in our set up, it generates welfare comparisons, which hold for all metapreference orderings increasing in ex-ante and ex-post preferences (Harsanyi (1954) notes that this is not necessarily the case in general.)

It is important to note that our welfare analysis disregards the direct costs of advertising. Even though such costs are potentially empirically relevant, we abstract from them because they are not an essential element of the Postmodernist Critique.

1. Advertising on α , other things equal, decreases (resp. increases, has no effect on) ex-post welfare if $\sigma < 1$ (resp. if $\sigma > 1$, $\sigma = 1$) since it uniformly decreases (resp. increases, has no effects on) utility levels. Furthermore, if $|\alpha_+ - \alpha|$ is high enough, the representative consumer's welfare decreases with respect to ex-ante preferences (a moderate increase in α increases only moderately the labour supply, L , thereby possibly reducing the distortion towards leisure that is induced by monopolistic competition).
2. Advertising on θ , other things equal, reinforces any effect of advertising on intensity α . However, advertising on θ has also the effect of increasing the price p_+ . The price effect always accentuates the negative welfare consequences of monopolistic competition; more so in the economy with free entry, where profits are not redistributed to consumers but rather wasted in expanding varieties.
3. Advertising on b , other things equal, reduces ex-ante welfare but has ambiguous welfare results with respect to ex-post preferences.

Let's study once again the special case of log preferences ($\sigma = 1$), when income and substitution effects cancel out:

1. log Advertising on α , other things equal, has no effects on ex-post or ex-ante welfare.
2. log Advertising on θ , other things equal, has the effect of increasing the price p_+ . The price effect has negative welfare consequences.
3. log An increase in b , other things equal, reduces ex-ante welfare but has ambiguous welfare results with respect to ex-post preferences.

3.3 Commodification of leisure

We briefly sketch the extensions of the benchmark model of the previous section required to discuss "commodification of leisure" (see [Benhabib-Bisin \(2002\)](#)). Monopolistically competitive firms can, by advertising, extract rents from the consumers' leisure activities, as leisure is now composed of different market activities. Consider a continuum of leisure activities, indexed by $j \in [0, 1]$. The aggregator of leisure, which enters in the utility function of agents, is

$$L := \left(\int_0^1 L_{jt}^{\frac{\omega_j - r}{\omega_j}} dj \right)^{\frac{\int_0^1 \omega_j dj}{\int_0^1 \omega_j dj - 1}}, \quad \omega_j \geq 1, \forall j \quad (8)$$

where $1 - L_j$ is interpreted as the amount of labour given up to leisure activity j .

A monopolistic firm controls leisure activity j . The fee charged by the firm per unit of leisure time on activity j is denoted q_j ; such a fee represents a pure rent, as it is assumed that controlling leisure activity j requires no resources as inputs.

The case in which leisure is merely a non-market activity corresponds to the special case in which all leisure activities are perfect substitutes, $\omega_j = \infty$, for all j . Perfect substitutability in fact implies that no rents can be extracted by controlling the different leisure activities in the market. They might then just as well be interpreted as non-market activities, since the fees imposed by the firms controlling such activities are necessarily

zero in equilibrium. If instead, for instance, $\omega_j = \omega < \infty$, for all j , then the demand for market leisure activities is rigid. Consumers will devote some time to each one of such activities in equilibrium, and firms with monopoly power controlling the different leisure activities in the market will charge a positive fee for a profit.

Suppose that advertising by firm j affects ω_j . Before advertising, leisure is composed by non-market activities, $\omega_j = \infty$, for all j . After advertising, “commodification of leisure” is induced and different leisure activities become imperfect substitutes, $\omega_j < \infty$. Consequently, positive rents in the form of positive fees q_j emerge in equilibrium.

The structure of the economy is then as in [Section 1](#). It can be shown that, at equilibrium in the economy with free entry and expanding varieties, after advertising:

$$q_j = q = \frac{1}{\omega - 1}$$

and $L_j = L$ solves:

$$\frac{L}{1 - L} = \left(\frac{p_+}{w}\right)^{1-\sigma} + q$$

In this case, if $\sigma < 1$, consistently with the Postmodernist Critique, the “commodification of leisure” and the “work and spend cycle” are associated to an unambiguous reduction in welfare.¹⁴

3.4 Taking stock

Our analysis of general equilibrium with advertising identifies a set of conditions (or parametrizations of the model) which may lend some support to what we called the Postmodernist Critique. We now summarize our results.

For clarity, we distinguished advertising, which affects the intensity of the preferences from advertising as product differentiation and habit creation. In the first case, advertising may generate a “work-spend cycle” with negative welfare effects for the consumer if the shift in intensity is strong enough and $\sigma < 1$. This effect is though small (resp. null) for σ close (resp. equal) to 1.

Advertising as product differentiation has unambiguous negative welfare effects. If the economy is one of free entry and if the elasticity of substitution between aggregate consumption and leisure is low ($\sigma < 1$), then a “work and spend cycle” associated with negative welfare effects is indeed generated. Finally, when advertising creates habits, the “work-spend cycle” is always generated, but the welfare effects are ambiguous.

Finally, when advertising is aimed at product differentiation and there is free entry that expands product variety and drives profits to zero, the “commodification of leisure” induces a “work-spend cycle” and also has unambiguous negative welfare effects.

¹⁴ In the economy with monopoly profits “commodification of leisure” increases labor L but it might have positive welfare effects as it provides competition for the monopoly power of good producers.

4. THE EFFECTS OF ADVERTISING IN EMPIRICAL WORK

The pattern of consumption, leisure, and consumers' welfare associated with the Postmodernist Critique depends on *i*) the form taken by advertising, *ii*) the elasticity of substitution between consumption and leisure, *iii*) the existence of monopoly profits in equilibrium. The evidence on *i-iii*) is in general controversial. We attempt a discussion below.

i) The form of advertising. Most of the evidence of the effect of advertising documents that its main role consists in affecting the consumer's perceived difference across physically homogenous goods, rather than the intensity of preferences for consumption goods (see e.g., [Arens \(1996\)](#), and [Sutherland, \(1993\)](#)). This is consistent with the fact that advertising expenditures to sales ratios vary by industry, ranging from 10–20% for drugs, perfumes, and cereals, to practically no advertising in homogenous commodities like beet sugar (see [Tirole \(1990\)](#), p. 289).

ii) Elasticity of substitution between consumption and leisure. Much of the microeconomic empirical evidence consistently documents a σ smaller than 1 (see e.g., [Pencavel, 1987](#)). At least restricting to the male population, it is safe to conclude from the evidence that σ is slightly less than 1, according to [Browning-Hansen-Heckman \(1999\)](#). Such a low elasticity may be considered at odds with the implied elasticity of aggregate labour supply. In particular, macroeconomic models are often calibrated with values of σ equal to one, as the average weekly hours per capita remained roughly constant in the U.S. since the '60's while real wage rates increased dramatically in the same period; see e.g., the contributions of Kydland, and of Cooley-Prescott, in [Cooley \(1995\)](#);¹⁵ this argument dates back to [Lucas-Rapping \(1969\)](#), and [Ghez-Becker \(1975\)](#).¹⁶ [Prescott \(2002, 2004\)](#) and [Ljungqvist-Sargent \(2006\)](#) discuss how to reconcile the micro and macro evidence by exploiting the indivisibility of labor.

iii) Monopoly profits in equilibrium. The average return on capital in the U.S. seems to be low, around 4% per annum, suggesting that profits are probably low as well; see [Basu \(1996\)](#). In the U.S., there are few pure monopolies, and in the absence of regulatory restrictions, multimarket firms are the norm ([Tirole \(1990\)](#), p.351). [Bresnahan and Reiss \(1991\)](#)'s empirical results suggest that in general competitive conduct in a market is established after the entry of a second or third firm, with further entry having little effect. It is nonetheless possible that there are variations across industries, and that barriers to entry prevent the dissipation of profits, e.g., in pharmaceuticals. Overall however, the free entry and expanding varieties version of the advertising model where profits are dissipated on fixed costs seems more in line with U.S. market structure.¹⁷

¹⁵ [Leete Guy-Schor \(1992\)](#) argue though that average yearly hours of those workers who were employed full time in the whole year have actually increased in the period 1969–1989.

¹⁶ Historical data shows however, a negative trend in weekly hours worked in the U.S. until the '60s; see [Coleman-Pencavel \(1993\)](#).

¹⁷ [Carroll \(2000\)](#) extensively documents that the distribution of stock ownership across the population is very unequal. In particular, the "rich" (defined as the top 1% of households by net worth) hold a disproportionate share of their

The Postmodernist Critique seems therefore consistent with a broad calibration of the crucial parameters of the model: advertising as product diversification and habit creation, low substitutability between consumption and labor, $\sigma \leq 1$, and free entry in most sectors. Maintaining the assumption that advertising operates as product differentiation, its main effect is an increase in the price level. The secular rise of real wages $\frac{w}{p}$ is due to productivity increases, that are increases in w relative to p . Productivity increases that generate higher incomes have the effect of decreasing the labor supply. Advertising may then indeed have offset a tendency towards further increases in the time devoted to leisure activities since the 60s, with a negative effect on welfare. Such an effect of advertising is consistent with the rising trend in advertising expenditures that tracks the observed secular rise of real wages.¹⁸

Hours and Advertising. To evaluate the Critique more directly we now turn to an overview about what is it known about the relationship between advertising expenditures and hours worked. We concentrate on hours because so does the literature, though the effects of advertising on hours are naturally reflected on consumption and income.

As already noted, historical data show a negative trend in weekly hours worked: in the U.K., for instance, manual workers worked 65 hours per week on average in 1865 and 46 hours in 1960 (see [Matthews-Feinstein-Odling Smeed \(1982\)](#)). Since then, however, the trend appears broken: on average weekly hours in 1997 were 43.5 ([Fraser-Paton \(2003\)](#), Table 1). A similar picture is painted by hours worked for the U.S.¹⁹

Can the growth in advertising explain this break of the time trend in hours in the '60s, in the presence of continuous productivity improvements? Per-capita advertising has in fact grown rapidly since the 50s; in the U.S., at an average rate of about 25% per decade (see [Cowling-Poolsombat \(2007\)](#), Table 1; see also [Brack-Cowling \(1983\)](#) for U.S. data since 1919). Advertising expenditures as a share of GNP, however, do not display any significant time trend in the U.S. or in other OECD countries.²⁰

Interesting stylized facts characterize also the cross-section of advertising expenditures. While constant in the long run, advertising shares vary significantly across the OECD countries: on average over the period 1984–2005, advertising accounts for 2.27% of GDP in the U.S., while it accounts for 1.54% of GDP in the U.K., 1.49% in Germany and 1.16% in Japan (see [Molinari-Turino \(2009a\)](#), Table 1).²¹

¹⁸ Furthermore, quality adjustments in the advertising services category of the Census could have been quite significant because of technological advances in the communication media, and in fact may have given rise to a secular trend in quality-adjusted advertising expenditures as a fraction of GDP.

¹⁹ See [Coleman-Pencavel \(1993\)](#) for U.S. data from 1940.

²⁰ See the Statistical Abstract of the United States, published by the US Bureau of Census, Washington D. C., for the years 1980 to 2000, as well as the Historical Statistics of the United States: Colonial Times to 1970, Bicentennial Edition also published by US Bureau of Census. See also The European Business Readership Survey (1998) of the Financial Times, available online at: <http://www.asianmediaaccess.com.au/ffimes/adspend/gdp.htm>.

²¹ The period 1984–2005 is chosen to facilitate comparability across countries, but in fact the advertising share in the U.S. displays no trend since the 50s.

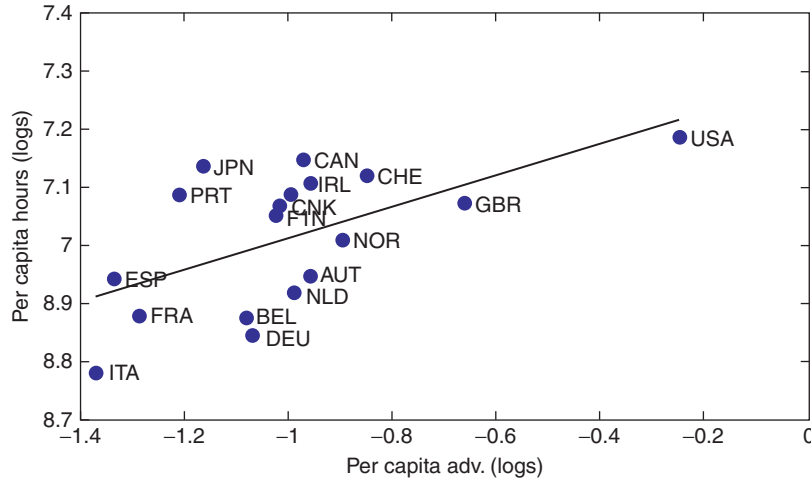


Figure 1 Scatter plot: Log of per capita hours against per capita advertising. Period 1996–2005. Taken from Molinari-Turino (2009a), Figure 2, Panel C.

Most importantly for our objectives, per-capita advertising is positively correlated with per-capita hours in a cross-section of 18 OECD countries over the period 1996–2005: the estimated elasticity is .269% (see Fig. 1).²²

Let's discuss the time series and cross-section evidence in turn. Several studies have looked at the time series of advertising and either GDP or consumption or hours with the aim of uncovering causal effects. Brack-Cowling (1983) have time series regressions of U.S. hours worked on wage and advertising, for the period 1919–1976, which they interpret as an estimate of the long-run labour supply.²³ Interpreting correlations causally, they conclude that over their time-series advertising had the effect of increasing labor supply in the order of 27%. More recently, Fraser-Paton (2003) studied the relationship between hours, wage, and advertising in the U.K. over the period 1952–97 as a vector cointegration analysis (a Vector Error Correction Mechanism, VECM, to be precise). They obtain a strong positive correlation of advertising and hours (.19 for male weekly hours, .186 for female weekly hours, .24 for male yearly hours).²⁴ These elasticities imply large effects: the increase in hours worked for males over their time series, associated with the changes in per-capita advertising, is estimated to be between

²² Per-capita advertising is positively correlated as well with per-capita GDP and per-capita consumption; Molinari-Turino (2009a, Table 2).

²³ It is of course hard to identify labor supply from labor demand effects. Schor (1992) for instance interprets related evidence of increasing hours worked in the U.S. as a demand effect, due to firms' monopsonistic power over labor. Some evidence for labor demand effects is found in survey data for the U.K., when workers report preferences for working shorter hours at the prevailing wage; see Stewart-Swaffield (1997). For arguments in favor of supply effect explanations, see also George (1997).

²⁴ A negative correlation for female yearly hours is considered evidence of mis-specification.

21% to 46%. Interestingly, the correlation of hours and wage is estimated to be negative. A similar Vector Cointegration analysis is applied by [Cowling-Poolsombat \(2007\)](#) to the U.S. over the period 1952–2002. However, to the vector of hours worked, wage, and advertising, [Cowling-Poolsombat \(2007\)](#) add taxes (the effective marginal tax rate as computed by [Prescott \(2004\)](#)). Their analysis also produces a strong positive correlation of advertising and hours (.124 for male weekly hours, .171 for female weekly hours, and .263 for yearly manufacturing production hours), stronger than the negative correlation between hours and taxes. In contrast to [Fraser-Paton \(2003\)](#), the correlation of hours and wage is estimated to be positive.²⁵

While the evidence just surveyed is suggestive of a strong correlation between hours and advertising, a causal relationship is much harder to identify. To this end, [Fraser-Paton \(2003\)](#) also produce some Granger causation tests which provide evidence of unidirectional causation from per capita advertising to (male weekly, female weekly, and male yearly) hours.²⁶

A more structural attempt at studying the time-series relationship between advertising and several macroeconomic variables of interest (hours, consumption, GDP) is due to [Molinari-Turino \(2009a\)](#) who calibrate a dynamic extension of the model we introduced in [Section 1](#).²⁷ More specifically, they embed the monopolistic competition model of advertising of [Section 1](#) into a neoclassical growth model with capital accumulation and a labor-intensive advertising sector. They restrict the analysis to advertising in the form of consumption habits. The calibration they adopt is standard in the Real Business Cycle literature for the U.S. economy,²⁸ augmented with a productivity parameter and a preference parameter for the advertising sector to fit the ratio of advertising to GDP (see [Molinari-Turino \(2009a\)](#), Table 3).²⁹ At the parameters of the calibration, comparative statics exercises on the steady state of the economy show that an increase in advertising (through an increase in the productivity of advertising, other things equal) induces an increase in the price mark-up and an increase in hours. With no advertising, the representative agent would decrease equilibrium hours in the steady state by about 10%. Furthermore, the structural analysis of [Molinari-Turino \(2009a\)](#) has the advantage that, using the model, the welfare effects of advertising can be investigated. In fact, it is shown that at the parameters of the calibration advertising has negative welfare effects (both ex-ante and ex-post): the representative agent is worse-off with advertising than without. The calibration in [Molinari-Turino \(2009a\)](#) is therefore

²⁵ The measure of hours in [Fraser-Paton \(2003\)](#) includes overtime, while that of [Cowling-Poolsombat \(2007\)](#) does not.

²⁶ Bidirectional Granger causality between advertising and consumption has been also documented; see e.g., [Jung-Seldon \(1995\)](#) for the U.S. and [Philip \(2007\)](#) for India.

²⁷ In [Molinari-Turino \(2009b\)](#) essentially the same calibration is used to study the effect of advertising at business cycle frequencies.

²⁸ As in [Prescott \(1986\)](#) and e.g., [Ravn-Schmitt Grohe-Urbe \(2006\)](#).

²⁹ A degree of freedom is exploited in the calibration; this is apparent by comparison with the more parsimonious specification of the model in [Molinari-Turino \(2009b\)](#).

consistent with the Postmodernist Critique and the *work-and-spend cycle*: advertising increases hours worked and decreases welfare.

We can also ask if advertising can help to explain some additional puzzling data. McGrattan-Prescott (2007) have documented that the rise in hours in the U.S. in the period 1990–2005 cannot be reconciled with a neoclassical growth model under the calibration which is standard in Real Business Cycle and the observed labor productivity. Essentially labor productivity is too flat to produce the observed growth in hours. While they show that an extension of the model, which accounts for non-tangible investment, jointly with independent (though indirect) measures of such investment, does well to fit the data, advertising could, in principle, provide a complementary explanation.

Molinari-Turino (2009a) apply the calibrated model to *the U.S. boom of the '90's* by means of a Business Cycle Accounting exercise along the lines of Chari-Kehoe-McGrattan (2007). Using data on investment, GDP, advertising expenditures, and taxes (as in McGrattan-Prescott (2007) for comparison), their methodology produces predictions about hours worked which can be compared with actual data. As documented by McGrattan-Prescott (2007), the benchmark neoclassical growth model under the calibration standard in Real Business Cycle predicts a counterfactual decline of hours in the '90s. The addition of advertising manages to predict a very moderate positive trend, without however coming close to match the actual increase: advertising contributes just about 60% to the explanation the peak of actual hours with respect to the benchmark (see Fig. 2).

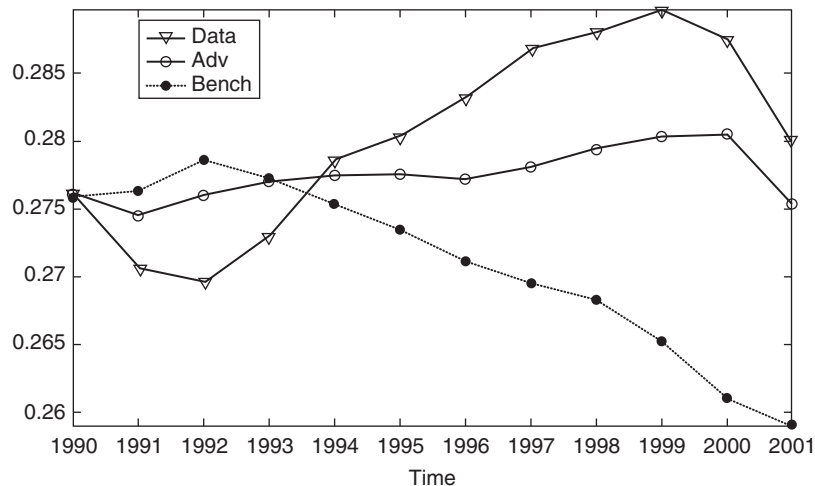


Figure 2 Hours worked during the U.S. boom in the 1990s. Model's prediction vs. actual data. All the data taken from McGrattan-Prescott (2007). Bench refers to the model without advertising. Taken from Molinari-Turino (2009a), Figure 5.

Much less has been done in the literature to explain the cross-country correlation between per-capita advertising and hours in the OECD. Once again, [Molinari-Turino \(2009a\)](#) attack this issue. They show that, not surprisingly, changes in the productivity parameter of advertising can produce enough variation in advertising shares to fit the OECD data. More importantly, they attempt to show that advertising can contribute to explain puzzling data, in this case the *differences in U.S. vs. European hours*. [Prescott \(2004\)](#)³⁰ has documented large differences in average hours between the U.S. and Europe in the nineties. He has also documented that a model with a large elasticity of substitution of labor could explain the data due to the variation of effective tax rates between the U.S. and Europe. Others, e.g., [Alesina-Glaeser-Sacerdote \(2005\)](#), [Bisin-Verdier \(2004\)](#), [Blanchard \(2004\)](#), [Ljungqvist-Sargent \(2006\)](#), [Rogerson \(2006\)](#), have produced distinct explanations of the data, which involve differences in preferences, work ethic norms, social security systems and labor market regulations, which would require less controversial elasticities of substitution of labor. Finally, [George \(1997\)](#), and [Cowling-Poolsombat \(2007\)](#) have suggested that advertising could contribute to the explanation of the puzzle, since the U.S. displays larger advertising shares than European countries. [Molinari-Turino \(2009a\)](#) evaluate the contribution of advertising to [Prescott \(2004\)](#)'s explanation of the U.S.-Europe difference in hours at the calibrated parameters (but at a lower elasticity of labor supply than Prescott's), by varying advertising productivity to fit each country's advertising share. Advertising is shown, in fact, to improve the fit of the model, contributing about 50% to the explanation of the difference in hours worked between the U.S. and Germany, France, Italy, U.K. (see [Molinari-Turino \(2009a\)](#), Table 5).

The theoretical models and the empirical work we surveyed adopt the standard definition of a household as a single agent. In other words, they do not distinguish between male and female labor supply (or between other demographic characteristics). Furthermore, these models and the empirical work do not account for home-production. The empirical work, in particular, adopts measures of hours worked which only include hours worked in the market. Nevertheless, are these assumptions adequate? Are labor and leisure accurately measured? Is the aggregation across demographics and across different forms of labor innocuous? We discuss these issues in turn.

First of all, large shifts have indeed occurred in the composition of average weekly hours across the population since World War II; [McGrattan-Rogerson \(2008\)](#) extensively document trends in average weekly hours, disaggregated along demographic lines. [Leete Guy-Schor \(1992\)](#) decompose the trends in hours with respect to

³⁰ See also [Prescott \(2002\)](#).

employment status. For instance, while average weekly hours substantially increased for families of two or more in the U.S. since the 60s, they have decreased for males and increased for females; see [McGrattan-Rogerson \(2008\)](#). Not much is known about the factors driving such compositional shifts in hours worked. Similarly, a recent extensive review of the evidence by [Browning-Hansen-Heckman \(1999\)](#) concludes that the preference parameter that controls the response of labor supply to real wages is poorly estimated, that it varies significantly with demographics, labor force status, and the level of consumption, and that the evidence is inconsistent with a uniform parameter value that is constant across the population.

Furthermore, adopting measures of hours worked which only include hours worked in the market, disregarding home-production, is of course problematic if the composition of hours in the market and in home-production changes over time and across countries. There is evidence that it is so. By using data from time-use surveys, [Aguiar-Hurst \(2007\)](#) are able to document accurately changes in the allocation of time in the market and in home-production for males and females in the U.S. in the period 1965–2003. They document a decrease total (market plus home production) hours worked for both males (driven by decreasing hours in the market) and females (driven by decreasing hours in home production) over this period (see [Fig. 3](#)).

While the reduction in the slope of the decreasing time trend of total hours is observed after 1975, more disaggregated data suggest a need to reassess the evidence on the relationship between advertising and hours based only on market hours. Also relevant for such a re-evaluation is the evidence from time-diaries indicating that it is the highly educated that have increased their average weekly hours at work; see [Aguiar-Hurst \(2006\)](#), Figure 6a and 6b; see also [Robinson-Godbey \(1997\)](#).

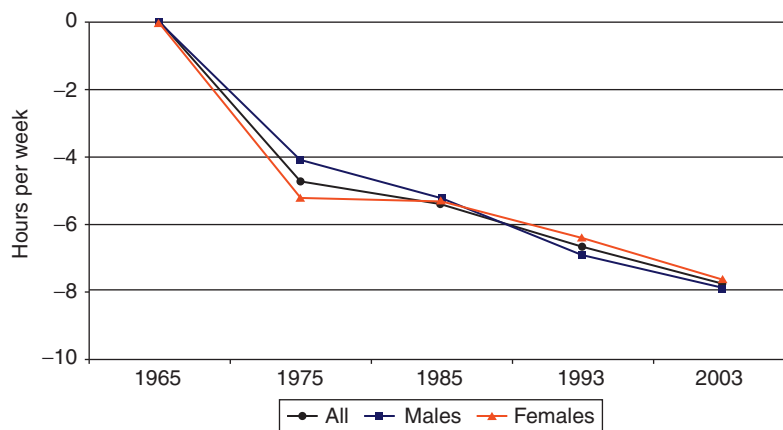


Figure 3 Time spent in total work by sex, conditional on demographics; Change in hours per week relative to 1965. Taken from [Aguiar-Hurst \(2007\)](#), Figure 3.

Finally, time diaries provide us with both time series and cross-country data on the composition of leisure activities. While to the best of our knowledge, no analysis of time-series data at this level of decomposition is available, [Alesina-Glaeser-Sacerdote \(2005\)](#) use data from the Multinational Time Use Survey to decompose “sleep” from other leisure activities in a cross-section of OECD countries; see Table 17. Averaging over the period 1992–1999, it is shown that in the U.S. the time devoted to sleep is, e.g., 5 hours per week less than in France and 3 hours less than in the U.K. Since the U.S. has the highest advertising share in the OECD (and U.K. the second highest) and since “sleep” is the prototypical leisure activity which is not “commodified,” the rankings are suggestive of advertising producing “commodification of leisure” at the expense of sleep.

5. CONCLUSIONS

We identified a Postmodernist Critique of the organization of society. This Critique suggests that the interaction of monopoly power and advertising creates negative welfare effects for consumers. In particular, advertising takes the form of the “manipulation of preferences,” leads consumers to “work and spend cycles” and subjects them to the “commodification of leisure.”

We studied the interaction of monopoly power and advertising in a simple general equilibrium model, constructed to satisfy the basic postulates of this Critique (especially in terms of the effects of advertising on consumers’ preferences) and we identified specifications and parameter configurations of our model that give rise to equilibria which could support the Postmodernist Critique.

While we discussed some of the available empirical evidence pertaining to key aspects of our specification that supports, and is consistent with the Postmodernist Critique, more extensive formal empirical studies are necessary before a stand can be taken on its relevance. In particular, it may be important to assess more precisely the effects of the component of advertising that is emphasized in the Critique, that of the “manipulation of preferences,” relative to the informational content of advertising. The empirical relevance of the distortion induced by advertising and identified by the Postmodernist Critique, relative to the many distortions and frictions present in the U.S. economy (from incompleteness of financial markets and borrowing constraints, to asymmetric information and distortionary taxes) also remains to be established.

Finally, our whole analysis has been conducted under the Postmodernist postulate that advertising directly affects the consumer’s preferences. The cognitive and psychological effects of advertising are not yet well understood, and the contrary view (associated with Gary Becker), that the level of advertising is determined by the supply and demand of rational consumers and firms needs to be better evaluated in view of the Postmodernist Critique.

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