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Advertising expenditure and consumer prices ☆

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A R T I C L E I N F O

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A B S T R A C T

This paper studies the effect of a change in the marginal costs of advertising on advertising expenditures of firms and on consumer prices. I make use of a policy change in Austria, that involved an increase of the taxation of advertising in parts of the country, and a simultaneous decrease in other parts. I show that advertising expenditures of firms move quickly in the opposite direction of the marginal costs of advertising. Consumer prices increase with advertising in some industries, and decrease in others. This effect correlates with informational differences in advertisements across industries.

1. Introduction

This paper studies the effect of a change of the marginal costs of advertising on both advertising expenditures and consumer prices. It makes use of a policy change in Austria that directly affected the marginal costs of advertising, and consequently advertising expenditure. While previous works have estimated the impact of advertising on consumer prices for certain goods, this is the first study to investigate the effect of advertising costs on consumer prices for all major industries and representative data for equilibrium effects of an entire economy. As I show below, advertising increases consumer prices in some industries, and decreases them in others. This heterogeneous effect correlates with the information content of advertisements across industries.

There are at least three important reasons why advertising has been of interest to economists: first, advertising has been debated at length in the theoretical economic literature as it is closely tied to the central topic information and search as well as entry barriers and product quality. Throughout advertising has remained a controversial topic, with contradicting policy recommendations, see below. Empirical evidence on the reaction of equilibrium market prices to changes in advertising might be helpful to guide the debate on how equilibrium market prices react to changes in advertising costs.

Second, advertising itself is an increasingly important business activity. In the United States, media advertising accounts for almost 2 percentage points of GDP and in Europe for around one percent.[1] In Austria, on which this paper focuses, advertising accounted for a share of 0.009 of GDP in 2000. This was a substantial increase from the year 1990 when the share of advertising in GDP was only 0.0061 (see Grohall et al., 2007). Advertising is one of the main sources of revenue for the media industry and the internet as well as for cultural and sporting events and a better understanding of advertising is relevant for businesses in all these industries.

Third, the taxation of advertising is a recurring policy idea. Here I mention only a few examples. While there are many cities and towns worldwide that tax local advertising, there have also been frequent attempts to introduce advertising taxes at state or national levels. In 1987 the Florida legislature enacted a sales tax on a range of services that included advertising. In a heavy storm of protests the advertising tax was attacked as "unfair, unwise and unconstitutional" (Hellerstein, 1988), and was repealed only six months after its enactment. More recently, in 2006 the Pennsylvanian senate discussed a bill (Senate Bill 854) that attempted to introduce a six percent sales tax on advertising in that state, but was not enacted (see Philadelphia Business Journal 2006). In Europe, the Slovak Republic charged a tax on all advertising expenditure which was eliminated when Slovakia

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[1] See Arkolakis (2008) and Kosmelj and Zabkar (2008).

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entered the European Union in 2004. Hence despite few actual observations of taxation of advertising at state or national levels, it remains a recurring and important political subject, and an idea that is periodically discussed. Almost all countries have laws that ban advertising of certain products, like cigarettes or health related products. These bans are likely to have effects similar to a substantial increase of an advertising tax.

For this investigation I make use of a policy change in Austria in 2000 that harmonized regional taxes on advertising expenditure, thus simultaneously increasing the tax in some parts of the country while reducing it in others, and leaving them roughly similar in a third group. Using this natural experiment, I provide two empirical contributions in this article. First, I show empirically that the taxation of advertising has a strong effect on the advertising expenditures of firms. Second, I show that consumer prices move in different directions across industries. This variation allows me to classify industries by the different ways in which their advertising works. This second finding may be understood by the presence of conflicting informative and persuasive forces. The economic literature has long distinguished these two forms of advertising. Typically, persuasive advertising is advertising which shifts demand outwards and/or decreases elasticities of substitution, both of which serve to increase market prices. Informative advertising increases competition through improved information and thus reduces consumer prices.[2]

Throughout the debate advertising has remained a controversial topic: some economists have argued that there are excessive amounts of advertising, which therefore may be a good target for taxation, while others have suggested that underprovision of advertising might provide a case for a subsidy.[3] The main cause of these conflicting policy conclusions is that advertising can be seen as persuasive or as informative (see Bagwell, 2007). Butters (1977) defines these two views as "advertising as a set of psychological ploys which induce consumers to buy products or brands that they otherwise would not buy", or as "a provision of information which allows consumers to make more discriminating choices within the framework of a fixed set of preferences". This distinction has roots further back in the work of Alfred Marshall (1919) who defined similar categories with the names of combative and constructive advertising. The persuasive view of advertising typically sees changes in preferences in the form of an outward shift of demand, a decrease of elasticities of substitution between products, or increased monopoly power of firms, and thus increasing market prices, while the informative view sees increased information for consumers, thus stronger competition and lower market prices (see Nelson 1970, 1974, 1978 or Stahl 1989, 1994). A closely related distinction was brought forward by Johnson and Myatt (2006) who call two related types of advertising 'hype' and 'real information'.

The persuasive view of advertising suggests that advertising shifts demand outwards. Its proponents have often called for a tax on advertising. Kaldor (1950) asserts a harmful effect of advertising and suggests the introduction of a tax on advertising. Further, Sutton (1974) makes the distinction between generated sales and diverting sales from advertising, where the described case would be encountered if there were only diverted and no generated sales. Finally, Gasmi et al. (1992) suggest that the advertising game between Pepsi and Coca Cola is a predatory competition that hardly serves to generate sales for the industry, and should be taxed. By the other view, advertising might serve as a transporter of information. This idea has been formalized in models closely linked to the large literature on consumer search, but instead of consumers searching for products, firms search for consumers via advertising. Here advertising provides useful information to consumers such as the existence, the quality, or the price of a good. This idea has been formalized in models of informative advertising as for example in Butters (1977) or Stahl (1989). In these models advertising expenditure has a marginal effect on a firm's demand that will correspond to the marginal advertising costs it faces. Therefore a change of the cost function will likely change advertising expenditure, and thus demand. It follows that in these models the taxation of advertising has in general a clear effect on firm variables: more advertisements increase competition in the final goods market and thus lower prices. As demonstrated by Stahl (1989), in these models a subsidy for advertising may be desirable.[4] Thus the discussion of information versus persuasion in advertising follows a large existing literature, and the marginal price responses could be informative about whether informative or persuasive forces dominate in an industry.

This paper proceeds as follows: Section 2 describes the data and empirical strategy used to estimate the effects of a change in marginal advertising costs on advertising expenditures and consumer prices, and Section 3 presents the main empirical results. Section 4 concludes.

2. Empirical strategy and data

The empirical investigation relies on a policy change of the tax on advertising in Austria in 2000. Austria is one of the few countries in the world, and the only OECD country, that collects a tax on advertising. The nationwide tax is officially called 'Werbeabgabe', and locally referred to as 'Werbesteuer'. It covers advertising for goods and services from all industries. A constant fraction of advertising expenditure that a firm pays to the media has to be paid by the advertising firm to the authorities as advertising tax. There are only a few exempt companies or publications, such as advertising expenditure for content in student run school magazines, or the advertising by churches and benevolent non-profit organizations. The tax includes all television and radio spots, advertisements in newspapers and magazines, and expenditure for all other publicly displayed advertisements. The Austrian advertising tax does not include advertising on the internet. However, the internet was not yet a relevant outlet for advertising in 2000 on which this study is based and thus not a major concern here. For details concerning the tax see Grohall et al. (2007).

The advertising tax was introduced in Austria in 1927, and has remained in place ever since without interruption. Up to the year 2000 it was collected at regional levels with different tax systems in different regions, whereby the location of the publication in which the advertisement appears and not the location of the firm determines the payable tax rate. The states Tirol and Burgenland[5] did not collect any advertising tax. The amount payable in the other states was typically ten percent of advertising expenditure. In the state of Salzburg the tax was only collected in the city of Salzburg and not in the rest of the state, and the state Vorarlberg had a tax of only five percent (see Bundesgesetzblatt, 2000; VÖZ, 1995). At the overall national level, at which the large majority of firms operate and most advertisements are made, the tax was also ten percent up to the year 2000.

After a change of the law, which took effect on June 1st, 2000, the tax has been collected at the national level with an overall tax rate of 5% (WKO, 2002) for national, regional and local advertising alike. Hence the year 2000 brought about an increase of the advertising

[2] Ackerberg (2001) argues that advertising that provides product information can be identified, as it should only attract consumers that are inexperienced with the brand. However, this definition of informational advertising is different from the one used in this paper.

[3] Some examples for these different viewpoints are: Pigou suggested a tax on advertising in 1929, in addition Dixit and Norman (1978) argued for the possible presence of excessive amounts of advertising. Stivers and Tremblay (2005) present the case for a subsidy. Meurer and Stahl (1994) and Stegeman (1991) discuss models that can have both outcomes.

[4] Grossman and Shapiro (1984) argue however that in the case of differentiated products advertising can lead to an inflation of the number of firms, which does not suggest the case for subsidy.

[5] Throughout I refer to the nine regional units of Austria as states. In German these units are called Bundesländer. In other publications they may be referred to as provinces or regions.