Higher taxes, more evasion? Evidence from border differentials in TV license fees

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ABSTRACT

This paper studies the evasion of TV license fees in Austria. We exploit border differentials to identify the effect of fees on evasion. Comparing municipalities at the low- and high-fee side of state borders reveals that higher fees trigger significantly more evasion. Our preferred estimator indicates that a one percent increase in fees raises the evasion rate by 0.3 percentage points. The positive effect of fees on evasion is confirmed in different parametric and non-parametric approaches and survives several robustness checks.

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1. Introduction

Identifying the link between taxes and evasion is an equally difficult as important task for empirical research: it is difficult, because measuring evasion requires us to work with 'evidence of the invisible' (Slemrod and Weber, 2012); at the same time, it is important to quantify evasion responses to taxation, in order to predict revenue consequences of tax reforms and to design optimal tax policies.[1] In contrast to studies that exploit exogenous variation in enforcement (e.g., Kleven et al., 2011), however, causal evidence on the impact of taxes on evasion is still scarce. The early literature on income

tax evasion provides conflicting evidence (e.g., Clotfelter, 1983; Slemrod, 1985; Feinstein, 1991). Recent studies point to a positive effect: Gorodnichenko et al. (2009), who study a major tax reform in Russia, find a huge positive elasticity of evasion with respect to the tax rate.[2] Kleven et al. (2011) examine bunching at kinks in the Danish income tax schedule. Comparing bunching of pre- and post-auditing incomes, they identify a small positive effect of tax rates on evasion. Our paper indirectly contributes to this literature by studying the evasion of TV license fees. Based on unique cross-sectional data from Austria, we examine whether higher fees result in more evasion.

License fees are a widespread tool to finance public broadcasting: two thirds of all European, half of all African and Asian, and a few countries in the Americas collect license fees. In 2005, a total of €20 billion on fees were collected in Europe (see Fellner et al., 2013).

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[1] Note that taxable income is not a sufficient statistic to evaluate the efficiency cost of income taxation when behavioral responses generate externalities (Saez et al., 2012). As tax evasion is associated with fiscal externalities (Chetty, 2009), optimal income taxation depends on whether the elasticity of taxable income is mainly driven by evasion rather than, say, labor supply responses (Piketty et al., 2014).

[2] Their results might be influenced by a simultaneous reform in the tax administration. Further evidence on large behavioral responses in a high evasion context are provided by Kopczuk (2012) and, in the context of tariff evasion, by Fisman and Wei (2004).

Table 1
Basic summary statistics.

Variable	Mean	S.D.
Evasion rate	0.045	0.077
Enforcement rate	0.012	0.025
Annual fees	238.122	19.916
Households (H_i)	1,521	5,802
Labor income	30,496	3,274
Distance (minutes)	40.980	24.408

Notes: The table reports descriptive statistics for the evasion rate, annual license fees (nominal Euro values), the enforcement rate, and selected municipality characteristics (see Online Appendix). Number of observations: 2380.

Households have an incentive to evade fees because public broadcasting programs can be received without paying fees. Rincke and Traxler (2011) demonstrate that households trade off the gains from evasion against the costs of detection. Beyond this similarity to tax evasion, the institutional framework is attractive as it offers a good measure of evasion: 99% of all Austrian households own a radio or TV (ORF Medienforschung, 2006), which makes them liable to register for license fees, according to federal law. Relating the number of registered to all households thus gives a reasonable proxy for evasion. In addition, the set-up allows us to apply a border based identification strategy in the spirit of Holmes (1998).

Total license fees include a specific state tax. While the collection and enforcement of the fees is harmonized at the federal level, variation in the state tax creates significant border differentials in license fees. We exploit these discontinuities – or 'border notches' (Slemrod, 2010) – by comparing evasion rates among municipalities on the high- and low-tax side of state borders. In addition, we compute the driving distance of each municipality to the nearest state border and implement a regression discontinuity design (Lee and Lemieux, 2010). Before doing so, we carefully discuss the identifying assumptions that allow us to exploit the border differentials in a quasi-experimental way. Among others, we document that – within the tightly constrained framework of Austria's federalism – other fiscal policies are uncorrelated to the specific state tax. Moreover, we show that a large set of relevant municipality characteristics (including enforcement rates) are balanced and smoothly distributed around the borders.

The analysis of border differentials identifies a precisely estimated, positive effect of fees on evasion. This result is confirmed in different parametric and non-parametric approaches and survives several robustness checks. On average, license fees increase by around 18%– from €206 to €243 – at the state borders. This differential is accompanied by a discontinuous increase in the evasion rate of 5 percentage points. Putting these numbers together, our central estimate indicates that a one percent increase in fees raises the evasion rate by about 0.3 percentage points.

Given that this semi-elasticity reflects a binary response – evasion at the extensive margin – it is hard to directly compare the effect size with the intensive margin responses analyzed in the literature. However, finding a large evasion response is consistent with the huge elasticities of evasion with respect to tax rates documented in the

few other studies: Fisman and Wei (2004), for instance, find that a one percent increase in taxes and tariffs increases import tax evasion by more than 3%. Fack and Landais (2016) document that the elasticity of overreporting tax deductions (charitable contributions) is large and above 2. Similarly strong income reporting effects in equally weak enforcement contexts are provided by Gorodnichenko et al. (2009) and Kopczuk (2012). The large effect identified in our institutional set-up seems consistent with these findings.

We make several contributions to the literature. First and foremost, our evidence strongly supports the intuition that higher taxes trigger more evasion. This is important for two reasons. On the one hand, the relationship between taxes and evasion is theoretically ambiguous (Yitzhaki, 1974). We introduce a simple model to study the binary evasion decision which is relevant in our case. Although our set-up differs from the classical income tax evasion theory in several important ways, we show that the ambiguous comparative static from the literature also applies to our context. On the other hand, empirical evidence on the causal link between taxation and evasion is scarce and conflicting (see the survey in Andreoni et al., 1998). In light of this scarcity and in the absence of a clear theoretical prediction, the result that higher fees trigger more evasion marks a valuable contribution. Moreover, by studying a binary evasion decision, we provide a rare piece of evidence on the extensive margin of evasion.

On a more general account, our study provides evidence that further corroborates the rational model of evasion which stresses the economic incentives to cheat. The relevance of these incentives was often questioned in the past. Over the last years, however, several studies convincingly demonstrated that the expected *costs* from evasion play a significant role in shaping non-compliance (Kleven et al.,2011; Fellner et al.,2013; Dwenger et al.,2016). The present paper contributes to this literature by documenting the impact of the potential *gains* from cheating.

In terms of methods, the present study is the first to use discontinuities at borders – in the tradition of Holmes (1998) and Black (1999) – to identify the effect of taxes on evasion. Our approach is closely related to recent work that exploits state tax differentials to analyze cigarette tax avoidance (Merriman, 2010) and the role of the internet as a tax haven (Agrawal, 2014).[3] More generally, we contribute to the growing literature on border based identification (e.g., Bayer et al., 2007) and spatial regression discontinuity designs (e.g., Lalive, 2008).

The remainder of the paper is structured as follows. Section 2 introduces the institutional background and describes our data. In Section 3 we discuss a simple theoretical model with a binary evasion decision. Section 4 briefly discusses the outcome from a naive cross-sectional regression and highlights the identification problem. Section 5 discusses our identification strategy and presents the results from a border notch and a spatial RD design. The last section concludes.

2. Set-up and data

2.1. TV license fees

Many countries in the world use obligatory TV and radio license fees to finance public broadcasting. A typical system of license fees can be found in Austria, where the Broadcasting License Fee Act stipulates that every 'household' (broadly defined, including apartment-sharing communities) must register its broadcasting equipment with Fee Info Service (FIS). FIS, a subsidiary of the public broadcasting company, is responsible for collecting and enforcing the fees. Each year, one license fee has to be paid per household, independently

Table 2
Cross-sectional estimation.

	Coefficients	Clustered SEs	Robust SEs
log(Fees)	0.129	[0.087]	[0.022]
Enforcement rate	−0.273	[0.169]	[0.072]
log(Income)	−0.017	[0.034]	[0.028]
Self-employed	0.215	[0.084]	[0.046]
Observations	2378		
R^2	0.298		

Notes: Results from OLS regressions of Eq. (4). Additional control variables are included. The full estimation output is reported in the Online Appendix. Bootstrapped clustered standard errors (based on Cameron et al.'s, 2008 Wild Cluster Bootstrap-t procedure; 2000 replications) and robust standard errors are presented in parentheses.

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[3] For other studies that work with border tax differentials, see Eugster and Parchet (2013), Agrawal (2015), and Agrawal and Hoyt (2014).