The hidden costs of tax evasion.
Collaborative tax evasion in markets for expert services

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ABSTRACT

We experimentally examine the impact of tax evasion attempts on the performance of credence goods markets, where contractual incompleteness results from asymmetric information on the welfare maximizing quality of the goods. Our results suggest that tax evasion attempts – independently of whether they are successful or not – lead to efficiency losses in the form of too low quality and less frequent trade. Thus, shadow economies may reduce welfare not only by inducing agents to incur costs to hide or to uncover taxable transactions, by imposing risk on uncertainty-averse tax evaders and by distorting competition, but also by creating an additional efficiency loss in the underlying market by forfeiting possible gains from trade and by inducing insufficient quality provision. We call these the hidden costs of tax evasion.

1. Introduction

Each year trillions of dollars slip through the tax authorities' fingers as a consequence of tax evasion. In the United States, for example, the overall net tax gap in 2006 was estimated to be approximately $385 billion (IRS, 2012). A substantial body of theoretical and empirical work – briefly discussed at the end of the introduction – addresses the problem, focusing mainly on the determinants of the occurrence and the magnitude of tax evasion and on its welfare consequences. Considering the government as a provider of public goods and services financed by tax revenues, tax evasion is detrimental to welfare for the simple reason that it adds to the excess burden of taxation because some of the costs of evasion are real resource costs and not just transfers (Feldstein, 1995, 1999; Chetty, 2009).[1] For instance, a real resource cost can emerge when taxpayers try to conceal and tax authorities try to detect tax evasion (see, e.g., Bayer, 2006), when tax evasion imposes uncertainty on risk-averse evaders (Yitzhaki, 1987) and when tax-evading firms drive tax-honest ones out of the market (Strand, 2005). In this paper we argue that in markets where transactions are governed by contractual incompleteness an additional welfare impact of attempted and successful tax evasion might result from its effect on agents' moral incentives of exploiting their informational advantage to their benefit and to the detriment of their trading partners, hence leading to a substantial drop in overall efficiency.

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[1] The standard thought experiment for the measurement of the excess burden of taxation is to calculate the net loss from raising the tax rate and returning the revenue lump sum to the taxpayer. As Feldstein (1995, 1999) first asserted, under some conditions the 'tax-base-elasticity' (for the case of income taxation better known as the 'elasticity of taxable income') is a sufficient statistic for the marginal welfare loss of raising the tax rate (see Saez et al., 2012, for a discussion). The tax-base-elasticity approach implicitly assumes that – at the agent's optimal solution – the marginal *social* cost of reducing the tax base by a dollar equals the tax rate for all behavioral responses intended to reduce the burden of taxation. As Slemrod (1998) and Chetty (2009) have convincingly argued, for tax evasion as the behavioral response this assumption is likely to be violated in practice because some of the *private* costs of evasion are transfers rather than real resource costs.

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Key to our argument is the observation that in many markets the approval of both trading partners is needed to evade taxes.[2] This cooperative dimension of tax evasion implies that at some point the trading partners have to reveal their preferences regarding tax evasion to each other. In markets governed by incomplete contracts it seems plausible that the revelation of an agent's attitude regarding tax evasion influences the trading partner's sentiments towards the agent and therewith the behavior in the underlying market.

We will experimentally investigate the impact of revealed intentions regarding tax evasion on the performance of a market characterized by incomplete contracts — a topic that has to the best of our knowledge not yet been explored in the literature. The setting in our controlled laboratory experiment is a market for expert services — often also referred to as a *credence goods* market (see Dulleck and Kerschbamer, 2006, for a general framework and an overview of the theoretical literature). Such markets are plagued by serious contractual incompleteness due to superior information of the seller on the quality that yields the highest surplus from trade. Prime examples are health services, where the doctor knows better than the patient which disease the latter has and which treatment is appropriate, and all kinds of repair services, where the expert knows more about the type of service the item needs than the owner. On top of the asymmetric information on the welfare maximizing quality, in many markets for expert services there is also asymmetric information on the quality provided. For instance, in the market for medical services a patient might be unable to tell ex post whether the injection he received contained a high-cost substance or not. The informational asymmetries imply that complete contracts are infeasible and open the door to a whole array of different types of fraudulent behavior on the sellers' side, including overtreatment (providing a higher quality than the surplus maximizing one), undertreatment (choosing a quality that is insufficient to satisfy the consumer's needs), and overcharging (charging for a higher quality than has been provided). Furthermore, anticipated fraud might lead consumers to abstain from the market altogether, leading to further efficiency losses.[3]

Our main hypothesis is that the size of the efficiency losses resulting from contractual incompleteness depends on the trading partners' revealed intentions to evade taxes. On the one hand, a mutual agreement to pay or to evade taxes can decrease the social distance between the trading parties. Reduced social distance has been demonstrated to lead to more cooperative behavior, for instance by Charness et al. (2007) and Götte et al. (2012). Based on this evidence we would expect that agents behave nicer towards trading partners who reveal the same attitude regarding tax evasion. In the case where a mutual agreement to *pay* taxes leads to nicer (i.e., more trustful or more trustworthy) behavior we refer to this as the *solidarity effect*, while in the case where a mutual agreement to *evade* taxes leads to nicer behavior we refer to a *conspiracy effect*.

On the other hand, in constellations where one trading partner reveals the intention to pay while the other reveals the intention to evade taxes each player might have negative emotions towards the other, leading to less trustful and trustworthy behavior and thereby decreasing the efficiency of a transaction. We call this the *punishment effect*. Systematic differences in the market behavior of sellers in different constellations of revealed intentions to evade taxes might

also arise if the revealed intentions to evade taxes are driven by preferences that also drive market behavior. For instance, it seems plausible that more pro-social sellers are not only less inclined to evade taxes but also less willing to defraud consumers.[4] We call this the *selection effect*. Finally, differences in behavior may also be due to the sheer fact that taxes are actually evaded in one but paid in another constellation, which directly affects the resulting profits from the transaction. We call this the *cake size effect*. In addition to these direct effects an impact on efficiency might also arise if sellers who reveal their willingness to pay or to evade taxes are expected to be more or less likely to defraud their consumers (because of the solidarity, conspiracy, punishment, selection or cake size effect). Consumers may then be more or less willing to interact, producing a further impact on efficiency. Given all those effects it is not a priori clear whether attempted or actual tax evasion has a positive, negative, or no impact on the efficiency of the underlying market.

To assess the empirical relevance of these effects we ran an experiment with 248 subjects who were either in the role of a seller or a consumer on a credence goods market. Our experiment involved three treatments implemented in a between-subjects design. In our main treatment, before any interaction could take place, both sellers and consumers had to indicate whether they wanted to evade or to pay taxes. Only when both parties to a potential trade agreed, taxes were evaded, otherwise they were paid.[5]

The results of our main treatment suggest that revealed intentions to evade taxes lead to efficiency losses of up to 50% of the available surplus, independently of whether taxes are actually evaded or not. In the experiment the drop in efficiency is driven by large differences in interaction and undertreatment rates of up to 20 percentage points. In particular, tax-honest consumers are much less likely to enter the credence goods market if they know they will have to interact with a tax-dishonest seller. Also, if a transaction takes place, the undertreatment rate is higher when at least one of the agents has revealed the intention to evade taxes than in constellations where both transaction partners are tax honest.

Using control treatments to disentangle the various effects of revealed intentions regarding tax compliance, we find evidence for the existence of a solidarity effect between two tax-honest agents and a conspiracy effect between two tax-dishonest agents, both leading to less fraud when agents reveal the same tax attitude. We also find some limited evidence for the existence of a selection effect, with tax-dishonest sellers being more likely to defraud their customers, but almost no evidence for the existence of a punishment effect or a cake size effect.

Overall, our results suggest that tax evasion may reduce welfare not only by inducing agents to incur costs to hide or to uncover taxable transactions, by imposing risk on risk-averse tax evaders and by distorting competition between tax-honest and tax-evading firms, but also by creating an additional ('hidden') efficiency loss in the underlying

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[2] This is not the case for all bilateral transactions, of course. For instance, in the case of sales taxes or excise taxes, the seller may provide a false invoice to the buyer who remains unaware that the tax is evaded. While we will also study a situation where tax evasion can be imposed unilaterally by the seller, our focus will be on transactions where both partners must agree to evade taxes.

[3] Although standard theory assuming own-money-maximizing and risk-neutral preferences predicts low efficiency in markets governed by incomplete contracts, recent experimental studies – by Dulleck et al. (2011) and Beck et al. (2013) for markets for credence goods and by Huck et al. (2010, 2012, 2013) for markets for experience goods – have shown that such markets work considerably better than predicted, probably due to agents' social preferences, as examined in Kerschbamer et al. (forthcoming).

[4] While in the context of our experiment – where the tax receipts are contributed to a public good which benefits all subjects – the link between being a tax evader and being an anti-social agent seems natural, this link might be less apparent in reality. Indeed, as one of the anonymous referees pointed out, in countries where the government is highly corrupted, over-regulates the market, or imposes too strong fiscal pressure on citizens, tax evasion might be a natural, ethically acceptable behavior — see Schneider and Enste (2000, p.108) for a discussion. This raises the question of how important the phenomena studied here are for different markets. Experimental evidence presented by Güth et al. (2005) suggests that tax evasion decisions do not depend on whether tax receipts are redistributed with overall efficiency gains or losses (the latter mimicking waste or corruption in government). Whether this 'neutrality' result extends to the present framework is an open question and we consider it as important to examine this question in more depth in future studies.

[5] Note that in real markets differences in behavior between the taxed and the untaxed sector might also arise from differences in institutional consumer protection. For instance, liability rules might only apply in the taxed but not in the untaxed sector. We abstract from such differences to isolate the pure effect of collaborative tax evasion on the performance of the market in which the transaction takes place.