Tax Professionals: Tax-Evasion Facilitators or Information Hubs?*

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Abstract

To study the role of tax professionals, we merge tax records of 2.5 million taxpayers in Italy with the respective audit files from the tax revenue agency. Our data covers the entire population of sole proprietorship taxpayers in seven regions, followed over seven fiscal years. We first document that tax evasion is systematically correlated with the average evasion of other customers of the same tax professional. We then exploit the unique structure of our dataset to study the channels through which these social spillover effects are generated. Guided by an equilibrium model of tax compliance with tax professionals and auditing, we highlight two mechanisms that may be behind this phenomenon: *self-selection* of taxpayers who sort themselves into professionals of heterogeneous tolerance for tax evasion; and *informational externalities* generated by the tax professional activities. We provide evidence supporting the simultaneous presence of both mechanisms.

Keywords: tax enforcement, tax evasion

JEL classification: K34, H26

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1 Introduction

The traditional literature on tax evasion and tax avoidance focuses on the direct relationship between the tax authority and taxpayers: individuals are assumed as independent utility maximizers who trade off costs and benefits of violating the laws. It is, however, increasingly the case that the relationship is more complex, as it is mediated by tax professionals. In the U.S. alone it has been estimated that 65% of individuals use some type of paid tax return preparer (Bloomquist et al., 2007; Book, 2008); and, indeed, the number of individual tax returns prepared by practitioners increased from 63 million to 80 million from 1996 to 2005. The same is true for most of the other developed countries: for example, tax preparers represent 75% of taxpayers in Australia (Devos, 2012) and in Italy there is one registered tax professional for every 515 citizens (Fondazione Nazionale dei Commercialisti, 2017). This evolution in the relationship between taxpayers and the tax authorities is caused by the increasing complexity of the tax code and, at least for corporations and the upper tail of the income distribution, by globalization which stimulates the demand for professional advice by creating opportunities for avoidance and evasion.

In this context, understanding the role of tax professionals is key to minimizing the cost of compliance and making auditing more efficient. What do tax professionals do beyond helping their clients understand and apply the laws? Recent informal accounts suggest that tax professionals play a key role in the formation of their clients' expectations regarding enforcement probabilities and the risk of certain practices (see Braithwaite, 2005). They also help shape tax norms and ethical standards (see Smith and Kinsey, 1987; Raskolnikov, 2007). For example, Braithwaite (2005) finds from interviews of tax professionals that tax advisers played an important role in the diffusion of tax shelters with a "supply driven" contagion effect. A precise understanding of what tax professionals do seems important for tax policy: information diffusion may be in the interest of both taxpayers and the tax authority; the diffusion of ambiguous ethical standards or the use of informational advantages to avoid controls certainly are not. Is it really true that tax professionals serve as informational and ethical hubs for their clients? Is this good or bad? Addressing these questions with hard, quantitative evidence has proven so far elusive because most of the relationship is private.

In this paper, we take advantage of an exclusive dataset to shed light on these questions. Our dataset merges individual level information from two separate administrative records from the Italian tax revenue agency (henceforth, IRA): the return files for approximately 2.5 million taxpayers and the audit files, for which we have records for seven fiscal years or three full auditing cycles, from 2007 to 2013.[1] The data provide detailed information about

[1]In the Italian system the IRA has up to five years to audit a taxpayer report after it is filed.

the taxpayer's reported income, demographic characteristics and audit history, including the outcome of any audit: i.e. the resulting assessed taxable income and the amount of found evasion, measured by the difference between the assessed and the reported income. Importantly, the data also provide information regarding whether a taxpayer employs a tax accountant: around 97% of taxpayers in our sample rely on the services of a tax accountant who is identified by a unique code by law. This allows us to match taxpayers with accountants and follow the history of the taxpayer-accountant relationship over time.

We start by documenting a strong correlation between a taxpayer's evasion and that of the other clients of his or her accountant–a social spillover effect.[2] Even controlling for demographic characteristics (gender, age), location, time of filing of tax returns, business sector and size of business activity, the share of evasion over reported income by taxpayer i served by tax accountant j, $e_{i,t}$, is positively correlated with the average share of evasion by the other customers of i's accountant, E_j^{-i}. One standard deviation increase in E_j^{-i} is associated with a higher evasion rate of each single taxpayer of 8.7%. In addition to using a rich array of controls, we show that the result is robust in two ways. First, we replicate it in a Heckman selection model that accounts for non-random audits.[3] Second, we show it is robust to a placebo test replacing E_j^{-i} with the average evasion of clients of other accountants in similar groups (for example, the same geographical province and business sector of i) implying that social spillovers arise through the tax accountant.

We then exploit the unique structure of our data-set to study the channels through which these social spillover effects are generated. Guided by an equilibrium model of tax compliance with tax accountants and auditing, we study two mechanisms behind this phenomenon: *self-selection* of taxpayers who sort themselves into accountants of heterogeneous tolerance for tax evasion; and *informational externalities* generated by the tax accountant activities. The model highlights the fact that even if the IRA targets resources strategically to audit taxpayers expected to evade more, self-selection of taxpayers who choose accountants that better fit their tolerance for evasion and the fact that accountants acquire and share with other clients information on the tax authority's auditing strategy induce spillover effects. Depending on the environment, either of these two channels, self-selection and informational spillovers, independently or together can contribute to the correlation between own and peers' evasion.

[2]Using Italian data, Filippin et al. (2013) document that the intensity of tax audits at the local level boosts people's attitudes against tax evasion.

[3]Our dataset provides natural instruments to address the potential endogeneity of audits. We show that a number of business cycle indexes at time t are correlated with the number of audits performed at time t on years $t-j$ tax filing, where j is predominantly equal to 4(see Section 3). The important observation is that it is plausible to assume that at $t-j$ taxpayers (as much as anyone else) are unable to predict the business cycle at t.

To test for the presence of the first channel, self-selection, we use the panel structure of our data-set and look at taxpayers who switch their accountant. This allows us to test two clean implications of self selection. The first is that if taxpayers self-select into the choice of tax accountants, we expect the type of the accountant before the switch (as measured by the observed historical tendency of its clients to evade) to be correlated with the type of the accountant after the switch. We show this is indeed true both in the entire sample of taxpayers who switch accountants, and in the sub-sample of taxpayers who are forced to switch because their accountant retires. Although the closure of a tax practitioner's activity is a relatively rare event, the large size of our data-set allows us to do this analysis which is robust to endogenous switching.[4] The second implication of self-selection is more "micro": if taxpayers self-select into the choice of tax accountants, we expect that the behavior of taxpayer i who is with accountant j at time t to be correlated with the behavior at t of customers of accountant k selected at $t+1$ when j ends his/her activity, because i would select an accountant with similar characteristics as j. We find that taxpayer i's evasion at t strongly correlates with the average evasion at t of the customers of the new accountant chosen at $t+1$. Once again this test is possible because of the richness of our dataset.

To shed light on the informational spillovers hypothesis, which is that tax accountants play a role as informational hubs, we study whether the income reported by a taxpayer i at time t depends on whether other clients of his/her accountant j have been audited at $t-1$, and how this compares to the effect of a direct audit to i at $t-1$. We control for time-varying characteristics of the taxpayer, the characteristics of the accountant and a taxpayer fixed effect to reflect time invariant characteristics. We find that an audit of i at $t-1$ induces a 7.7% increase in the income reported at t; while an audit at $t-1$ to some other customer of accountant j induces an increase of 1% of i's reported income at t. This latter result is robust to a placebo test: if we use audits to other taxpayers in comparable groups but with a different accountant, we see no relationship between a taxpayer's income declaration at t and the $t-1$ audits in the comparable group. These accountant-induced peer effects tend to magnify the effect of audits along two dimensions: first an audit on i has an effect on *all* peer-customers of i's accountant j; second, the peer effects tend to be persistent over time. The effect on $i's$ currently reported income of a three-year old audit on other customers of the same accountant is not only positive but even larger that the one-year old effect. Cumulatively, after three years, an audit on the other customers of the same accountant increases reported income by 9.7%. In comparison, if taxpayer i is audited,

[4] In our sample, we indeed observe 183,300 forced switches due to the closure of the tax practitioner and for 90,666 of them we can calculate the average evasion of clients of both the old and the new accountant, that is they are cases for which both the old and new accountant have at least one client who has been audited in the observed period.

the effect on reported income fades away with time: after three years it is 40% of the one year lagged effect and cumulatively is worth a 16.6% increase in reported income. We find that this spillover does not depend on whether the other customers are geographically close, but they are larger for peers in the same sector, age and size of business. This suggests that the vehicle through which the spillover diffuses among customers is the accountant, not geographic proximity; and that the accountant selectively shares with their customers the information that they gather from their activities.

Sharing of information about other taxpayers audits through the tax accountant also affects the taxpayer's decision to voluntarily switch accountants. We find that a given taxpayer is less likely to separate from his accountant when the share of audited taxpayers is higher. This is fully consistent with the informational hub role of the accounts. First, because the taxpayers can only come to know that other clients have been audited because their accountant notifies them about the IRA activities. Second, because taxpayers that are notified are less likely to switch their accountant precisely because he is passing them more valuable information. In sum, our evidence lends strong support to the idea that tax accountants play the dual role of informational hubs as well as of tax-evasion facilitators for taxpayers prone to evasion.

Our work is at the intersection of two literatures that have remained mostly separated up until now. First, the relatively small literature on tax practitioners, and second, the literature on social spillovers in tax compliance. With respect to the first, the research on tax practitioners has traditionally focused on the role of tax accountants as providers of expert advice but has ignored the potential social spillovers between clients of the same practitioner, implicitly assuming that the tax accountant does not change the nature of the traditional direct relationship between the tax authority and an individual taxpayer.[5] The focus instead has fallen on the determinants of the choice of hiring a practitioner or not (Erard, 1993), the usefulness of tax practitioners (Slemrod, 1989), the effect on the level and type of compliance (Klepper et al., 1991; Erard, 1993), the role played by practitioners in reducing uncertainty and costs of compliance (Scotchmer, 1989; Beck and Jung, 1989; Reinganum and Wilde, 1991). The role of tax accountants in collecting and distributing information has been suggested by anthropological and social studies (Smith and Kinsey, 1987; Braithwaite, 2005; Raskolnikov, 2007), albeit informally.

The literature on social spillovers has focused on showing network externalities in compliance behavior. Early work tested the hypothesis of social spillovers using laboratory experiments (see Fortin et al., 2007; Alm et al., 2009; and Alm et al., 2017). More recent research has used field data and experiments to investigate the role of spatial proximity. Studying

[5]See Andreoni et al. (1998) for a survey of this literature.

compliance in TV license fees in Austria, Rincke and Traxler (2011) find that household compliance increases with enforcement in the vicinity. Galbiati and Zanella (2012) estimate social externalities of tax evasion in a model in which a social multiplier is induced by congestion of the auditing resources of local tax authorities. Perez-Truglia and Troiano (2018) find evidence that tax delinquents respond to shaming penalties that increase the salience of their violations. On the contrary, however, Meiselman (2018) finds no evidence that sending letters to Detroit city income tax non-filers induces neighbors to file with higher frequency.[6]

For the most part this literature has ignored the affiliation to a *common* tax practitioner as a source of network effects. An exception is Boning et al. (2018), who study the comparative effect of either the visit of an IRS Revenue Officer or of an informational letter from the IRS on firms suspected of noncompliance with the requirement to remit withheld income and payroll taxes, which are due every quarter. They look for network effects on other firms related to the targeted firm by a parent-subsidiary link or, as we do, firms who share the same tax practitioner. They find neither network effects of letters nor network effects of visits on remittances more than a quarter from the visit, but they find evidence at the 10% significance level of effects on firm i's remittances in the following quarter of direct visits to other firms served by the same tax practitioner as i's. This is an important finding consistent with ours, but it still leaves open the question of the existence of network effects in income tax returns. Tax returns are filed on a yearly basis, thus peer effects have an impact on returns only if they survive for more than one quarter. As mentioned above, we find that the effect of an audit on peers–arguably a more intrusive intervention than a mere visit–persists for years. One advantage of Boning et al. (2018)'s work with respect to ours is that it relies on a controlled experiment on over 12,000 firms suspected of violations.[7] Whereas one advantage of our work is that we observe one-third of the universe of sole proprietorship taxpayers in Italy for seven years, thus allowing us to exploit the size of the dataset (over 10 million individual observations) and its panel structure to explore the mechanisms behind the observed network effects. In addition, while the controlled experiment speaks about the network effect of the policy, it is silent about whether the tax authority discounts these network effects in the design of its policy. Our data are informative of the IRA policy and show that the authority's audit policy is biased towards taxpayers served by accountants with a record of higher than average density of evaders.

We proceed as follows. In Section 2 we provide an overview of the institutional back-

[6]A different type of externality is considered by Bordignon (1993) who looks at the effect of fairness on taxpayers' compliance. In this context, perceived tax evasion of other tax payers is assumed to be a key determinant of the decision to evade.

[7]The authors assigned 12,172 firms suspected to be noncompliant to one of three treatments or to a control group. The treatments consisted of either an informational letter or a visit by an IRS revenue officer.

ground. In Section 3, we describe our dataset. In Section 4 we provide evidence of spillovers among clients of the same tax practitioner. In Section 5 we set up a formal model to study the mechanism thorough which the spillovers can be generated. In this section we use our dataset to study empirically these two channels and provide evidence of IRA strategic evasion deterrence policy. Section 6 puts our results in perspective and concludes.

2 Institutional background

In Italy, the Italian Revenue Service (IRA henceforth) is the agency in charge of tax collection and tax enforcement. It is also the primary agency responsible for performing tax audits with the main objective of enforcing compliance so as to maximize tax revenue net of auditing costs.

The IRA performs its tax collection and auditing activities through a rich network of local branches, one for each province (a geographical entity roughly the size of a US county). To bridge the distance between the IRA and the taxpayers, each provincial branch has a contained set of local offices (between 2 and 7 depending on population and geographical size). Local offices serve the dual role of disseminating information among taxpayers and offering them assistance, as well as gathering relevant tax compliance information to help target tax audits. Provincial branches are also responsible for tax management and litigation, tax collection and tax auditing. Based on its business location, each taxpayer is attached to a specific provincial branch. Although provincial branches have a certain degree of autonomy in their operations, all province branches conform to a common strategy centrally defined by the IRA's national headquarters. In addition, their activities are coordinated and supervised by 20 regional departments (Italy is divided into 107 provinces, grouped into 20 regions). However, differences between territorial departments, for instance in the efficiency of tax audits, may arise due to specific local factors and choices made at the province or regional branch level reflecting the degrees of freedom they enjoy.

As a general rule, audits are not random and do not involve commitment (the taxpayer is not audited if he/she conforms to a pre-set rule, such as reporting a minimum level of income, see Andreoni et al., 1998). Audits are decided ex post after taxes have been filed conditioning on any information available to the IRA. This includes imputed incomes based on statistical models (called "studi di settore", *ssy*), mapping reported expenses on inputs using sector- and input-specific parameters. In this setting, the IRA carries out its auditing activities without disclosing its rules to the taxpayers. Hence, there is both scope and motive for taxpayers to learn about the rule in order to infer probabilities of being audited.

In this regard, tax accountants can play an important role. Like in other countries, Italian taxpayers rely on tax accountants to file taxes. This is particularly true for taxpayers in our sample: the sole proprietorship taxpayers.

These types of firms rely on tax accountants both to keep their accounting records–i.e. for book-keeping and preparing financial statements–as well as tax consulting. As such, they advise firms on how to file taxes, inform them of the opportunities offered by the tax code and provide assistance to the taxpayers if audited or in case of litigation with the IRA. In this role, tax accountants deal directly with the IRA when the taxpayers are asked to provide additional information or clarifications about the tax files. Nearly all of these taxpayers have a tax accountant (see Section 3). Because accountants serve several firms, and know who is audited, they can exploit this mass of information to learn about the IRA auditing policy. In turn, what is learned can be shared with all of their customers. This is particularly valuable, compared to each taxpayer learning on his own, in light of the fact that auditing probabilities are very low (unconditionally, 1.7%) so that pinning them down with precision requires many observations.

3 Data

Our study relies on population-level data for all Italian sole proprietorship taxpayers located in seven regions, distributed over the territory–two in the North (Lombardia and Veneto), two in the Center (Lazio and Umbria), two in the South (Campania and Puglia) and one of the Islands (Sardegna)–covering 55% of the country's population. The data merge information from two different administrative records from the IRA: returns files and audit files. In both cases, records are at the individual level and cover filings of incomes generated in seven fiscal years, from 2007 to 2013, reported between 2008 and 2014, and audited between 2009 and 2015. By law, tax filings older than five years cannot be audited, and so one needs at least five years of data to observe a full auditing cycle. Accordingly, our data contain at most three full sets of tax reports with completed audits. The data contains detailed information on all components of taxpayers reported income and his/her demographics (gender, age, marital status, location, detailed sector of activity). It also documents whether and when the taxpayer was audited and the tax filing year being audited. The data also contains the result of the audit with the assessed taxable income, and thus the amount of evasion found (if any) computed as the difference between reported and assessed income. Importantly for our purposes, the data reports the identifier of the tax accountant/consultant that filed the taxpayer's tax statement.[8] Because we have population-level data we can trace all

[8] We drop observations with negative filed income (3.3% of the observations), taxpayers that do not use an accountant (3.4% of the observations) and filings of tax accountants (2% of the observations).

taxpayers in a region that are served by the same tax consultant, observe taxpayers' mobility from one accountant to another, as well as accountant closures which force taxpayers to match with a new tax accountant. Because we know the location of the taxpayer and that of the accountant, we can portray the geography of the accountant clientele and identify accountants that are likely to be closer substitutes for the one currently serving a given taxpayer. As we will show, these properties are important for documenting peer effects and establishing their nature.

Taxpayers The taxpayers we focus on are individuals who own a sole proprietorship, where no legal distinction is made between the enterprise and the sole owner. Table 1, panel A shows summary statistics. Overall, our sample contains almost 2.5 million taxpayers (unevenly) distributed in the seven regions. About 27% are women and the average age is 46.5 years. The average enterprise has been in operation for 13 years and, consistent with the small size of these businesses, employs 0.8 workers with relatively limited variability (standard deviation 3.3; 90th percentile 2 employees). The average reported gross annual income is 19,506 euros with relevant heterogeneity (standard deviation 54,032 euros; 90th percentile 41,465 euros) partly reflecting differences across industries.

IRA: Auditing and Evasion During the sample period, 138,263 taxpayers (5.6% of the total) were audited at least once. The share of audited tax filings is around 1.7%. However, there is some variation over time and substantial heterogeneity in auditing probabilities across regions (Table A1 in the Appendix). Tax filings of larger firms, defined either in terms of the number of employees or the value of filed income, are more likely be audited. Conditional on being audited, the fraction of filings with positive evasion is 51% (Table 1, panel B). Thus, for almost half of the audits, the IRA finds no evidence of tax evasion. The distribution of the share and amount of income evaded are shown in the two panels of Figure 4 and are both quite dispersed. Around 12% of audited taxpayers are found to have evaded all of the income produced. The average amount evaded, conditional on evasion, is about 21,124 euros, 1.1 times the average income filed with the tax agency (Table 1, panel B). Conditional on auditing a taxpayer, the IRA can review any of the tax filings over the past five years. Hence, each year, the population of tax filings at risk of being audited comprises all tax filings up to five years old that have not been audited in the previous years (about 49.8 million filings in our sample). The share of audits over the population at risk is 0.37% (184,673 audits divided by 49.8 million cases).

Because filings older than five years can no longer be audited (except in the case of suspected tax fraud), the IRA has an incentive to audit relatively older tax statements in order to avoid losing the option of auditing them. Figure 5 shows the distribution of the age of the audited tax filings. Most of the distribution is comprised between 1 and 5, with very few cases older than 5 years. The average age of audited tax filings is 3.9 years; in 48% percent of the cases the IRA audits a 4-year old tax filing, around 20% are three and five years old and 8% two years old; none of the audited tax statements are one year old. As we discuss below, the fact that audited filings are relatively old ones will help with instruments to adjust for selection when estimating spillover effects.

Accountants Except for a small minority (1.57%), all of the taxpayers rely on the services of a tax advisor. Accountants serve taxpayers geographically close to them: in our sample an accountant has 68% of the customers in the same municipality and almost all (96%) in the same region. Overall there are 84,185 tax accountants serving the 2.5 million taxpayers in our sample; hence, on average, a tax accountant serves 29 sole proprietorship taxpayers.[9] There is, however, considerable heterogeneity in the size of tax accountants, as shown in Figure 6, which plots the distribution of accountants in terms of the number of customers (panel A) and of the overall income filed by their customers (panel B). Over the sample period, we observe entries of new accountants and exits of existing ones. The average annual entry rate is 6.4% and the exit rate is 5.9%. Interestingly, while taxpayers tend to have long term relations with their tax accountant, some of them switch, sometimes as a consequence of their accountant closing. Overall, we observe 7% of the customers switching accountants (Table 1, panel C) from one year to the next, with one-third of such switches following the closure of the accountant. In Section 5.2 we rely on switchers to test for sorting between taxpayers and accountants based on their propensity to evade taxes. In Section 5.4, we study the relationship between the IRA audit policy and accountants' heterogeneity in tax-evasion propensity.

Figure 7 provides descriptive information on heterogeneity across accountants along two dimensions: the share of customers that are audited (panel A) and the share of customers that are found to evade taxes, conditional on being audited (panel B). In a given year, around 50% of the accountants have no customer audited. The rest of the distribution shows marked heterogeneity across accountants in the fraction of their customers audited. The empirical distribution of the share of evaders among the audited customers of each account also shows substantial heterogeneity and a long tail to the right–a few accountants have very large shares of evaders. The share of accountants with more than one-fourth of evaders among their audited clients is 81.8%, while the share of accountants with no evaders among their

[9]Needless to say, the customer base of a tax accountant is larger than this figure as they serve also incorporated firms as well as individual taxpayers.

audited clients is 16.5%.

4 Tax Accountants and Tax Evasion Spillovers

We start by presenting evidence suggesting that tax accountants play a role in tax compliance. We consider the universe of taxpayers who have been audited at least once during the period under analysis and estimate the relationship between own tax evasion and the average propensity to evade of the other clients of the same accountant. We use several specifications of the model:

$$e_{ijt} = \alpha E_{jt} + \beta_1 z_{it} + \beta_2 z_{jt} + f_T + f_L + f_S + \varepsilon_{ijt} \quad (1)$$

where i denotes the individual taxpayer, j indexes the accountant and t the year the audited income has been produced. The lefthand side variable e_{ij} is an index of tax evasion–the share of income evaded by taxpayer i , and E_j denotes the average share evaded among the clients of accountant j, excluding i, over the period under analysis. For each i, we also exclude from the average the value in the year when i is audited to avoid simultaneity issues due to the presence of a spatially lagged dependent variable on the righthand side (see, e.g. Anselin, 1988).[10] The vectors z_i and z_j include taxpayer and accountant characteristics, while f_T, f_L and f_S are time fixed effects (capturing common trends in evasion), location fixed effects (picking up systematic differences in the propensity to evade across areas due e.g. to differences in audit costs), and sector fixed effects (reflecting e.g. differences in ease of hiding income across sectors), respectively. A value $\alpha > 0$ would be evidence of a spillover effect on tax compliance.

Before showing results we discuss two econometric problems that the identification of this model poses: selection and measurement error. Consider the problem of selection first. While evasion may characterize the behavior of a possibly large part of the population, it is only observed for the sample of audited taxpayers. And as documented in Section 3, only a small share of the taxpayers is audited. The issue here is selection. As discussed in Section 3.2, while the IRA decides some audits randomly, it chooses others conditioning on observables that have predictive power on both the probability that a taxpayer hides income from the IRA and the extent of income under-reporting. The estimated correlation between e_{ij} and E_j may be simply due to a correlation between E_j and a variable that is common to other taxpayers served by other tax accountants based on which the IRA decides which taxpayers to audit. That is, there could be nothing specific to the accountant; rather, accountants

[10] To the extent that the errors are *iid* across units and time, lags and leads of the spatial lag are orthogonal to the error term in equation 1. OLS thus provides reliable estimates.

and their taxpayers may have some tax-relevant common trait(s) observed by the IRA but unobserved by us. Needless to say, depending on the specific uncontrolled variable, selection can bias the estimated α but the sign of the bias is unknown. For example, the unobserved variable affecting the auditing probability could be the efficiency of the local IRA auditors. This decreases evasion and increases the auditing probability, implying that $E(\varepsilon_{ijt}, u_{it}) < 0$. In this case, our OLS estimates would be a conservative estimate of the true α.

We mitigate selection concerns using three different strategies. First, we insert a rich set of controls in model (1), thus reducing the scope for omitted variables. This strategy is likely to be particularly effective in our case because we observe *all* of the "hard" variables (i.e. variables codified in the administrative records at IRA) that the IRA observes when choosing the auditing strategy. In particular, we observe a measure of whether the income the taxpayer reports to the tax authority conforms with the IRA expectations based on the so called "studi di settore" (*ssy* in short)–an estimate of the taxable income capacity of a given taxpayer based on a set of observable characteristics specific to a given industry, narrowly defined. A taxpayer whose filed income falls short of *ssy* should be more likely to be audited. This is captured in our model by two indicator variables called "congruent" and "coherent," respectively. A "coherent" taxpayer filing is one that, based on a vector of business indicators, does not reveal anomalous behavior.[11] A "congruent" taxpayer is one whose reported income is not too far from an inputed range estimated by the tax authority for a group of taxpayers sharing similar characteristics. Both indicators are provided by the IRA in the data that they shared with us.[12] Second, we run placebo regressions where for each taxpayer i, we replace E_j in model (1) with a placebo given by the average evasion of the clients of other accountants with similar characteristics (location, sector) and similar levels of tax evasion. If there are unobserved characteristics which are common to all accountants with a given threshold of tax evasion then the estimated spillover effect in these placebo regressions should be statistically different from zero. Finally, we run a Heckman selection model. Heckman selection corrections are notoriously difficult to implement because of the difficulties in finding variables affecting selection (here audit decisions) and orthogonal to outcome choices (here reported income). The unique structure of our dataset offers us an opportunity to find such variables. We use three measures of local economic conditions at the time the audit is notified by the IRA as instruments. Because the audit is announced years after the income was filed, the local economic conditions at the time of audit notification are

[11]That is, relevant and systematic departures from threshold values for the vector of indicators, defined using the empirical distribution of measures of behavior of taxpayers with similar characteristics.

[12]Because *ssy* is not defined for some taxpayers, we include as a control a dummy for those for which the *ssy* is not defined. Hence, "coherent" and "congruent" capture the variability across taxpayers for which the IRA observes the *ssy*.

not known by the taxpayer at the time of filing. Local economic conditions, on the other hand, affect the audit decisions, as we will discuss in Section 5.4.

Consider now the problem of measurement error. Evasion, as discussed in the previous section, is computed as the difference between taxpayer reported income and the taxpayer's income assessed by the tax authority. If income is assessed with error, there are two consequences: first, individual evasion e_{ijt} may be measured with error, and second, E_{jt} –being the average of e_{ijt} over i – may also be measured with error. However, if the error is classical, independent across taxpayers and the number of audited customers for each account is sufficiently large (so that the measurement error in E_{jt} tends to average to zero as the number of audited customers increases), the presence of measurement error has either no effect on the estimate of α (for a large number of audited customers of the same accountant the measurement error averages out to zero when computing E_{jt}) or biases it downwards, leading to a conservative estimate of the extent of spillovers. On the other hand, standard errors will be overstated. Because we find significant evidence of correlated spillovers, measurement error is unlikely to be a serious issue.

4.1 Results

Table 2 shows a first set of OLS estimates when e_{ijt} is the share of evasion by taxpayers i scaled by reported income, and E_{jt} is the average share evaded by the other customers of accountant j (also scaled by reported income). We retain all tax accountants with at least two audited customers and at least one with positive evasion. For this sample, the average number of audited tax filings per tax accountant is 25 with a standard deviation of 9.[13] All regressions control for the gender of the taxpayer (a dummy=1 if taxpayer is a woman), his/her age and the age and size of the business he/she manages. In addition, the first column controls for location using region dummies. We cluster standard errors at the accountant level in all regressions. Results reveal that women and younger people evade higher shares of income, while owners of larger and older firms evade smaller shares of income. There are systematic differences across regions in evasion, resulting in statistically significant location dummies. Consistent with the tax spillover hypothesis, the value of α is positive, highly statistically significant and economically relevant: one standard deviation increase in the average evasion rate of the other co-customers of the accountant is associated with a higher evasion rate of each single taxpayer of 8.7 percentage points (27.2% of the sample mean). The second column adds finer geographical controls using a full set of province dummies. The spillover effect is unchanged. In the third column, we add the indicators developed

[13] We obtain the same results if we run the estimates on the sample of tax accountants with at least 50 customers.

by the IRA to gauge a taxpayer's propensity to evade discussed above, and accountant's characteristics.[14] Being "congruent" and "coherent" correlates negatively and strongly with the share of evasion and the same is true for whether the taxpayer has been audited more than once, while the size of the accountant predicts a larger share of evasion. These controls, however, only marginally affect the evidence on the existence of a spillover. The fourth column adds municipality fixed effects. Because Italy counts more than 8,000 municipalities, these very granular geographical controls ensure that spillovers are not a reflection of omitted local factors. Consistent with this, the point estimate of the spillover effect is only slightly reduced and remains strongly statistically significant (p-value 0.006). [15] In the last column, we add a correction term for non-random audits. As mentioned in the previous section, we ran a Heckman selection model where we use as instruments the characteristics of the local economy when the audit policy is decided, which were not known by the taxpayer at the time of filing one or more years earlier. We devote Section 5.4 to the discussion of the audit policy (first stage regression).[16]

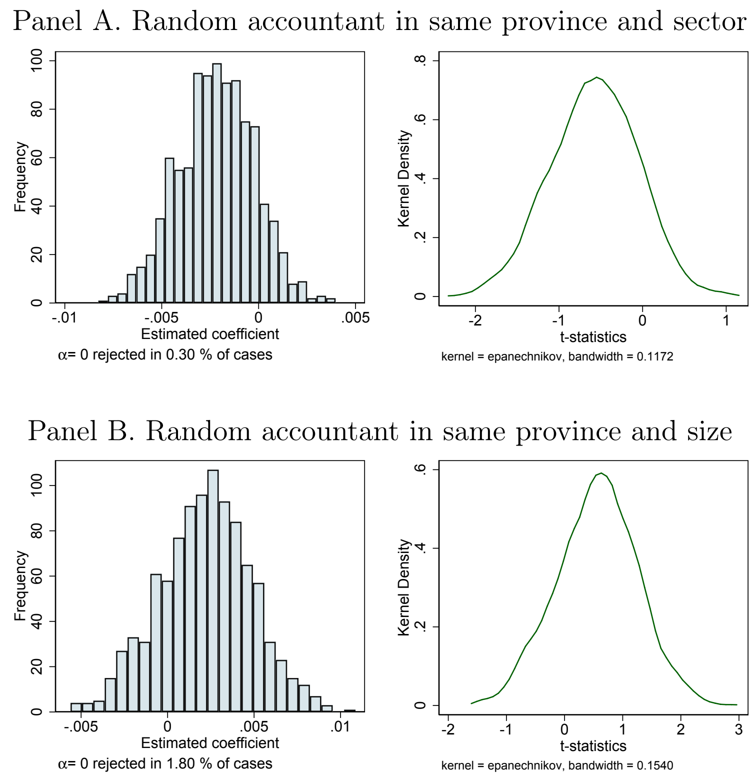
One concern with these estimates is that the relation between e_{ij} and E_j is not picking up spillovers specific to the tax accountant of individual i, but other features that are common to other tax accountants in the same location or sharing similar characteristics as those of i's accountant. One such channel could be tax audits targeted to specific types of accountants, or taxpayers (e.g. lawyers or restaurant owners) that tend to be served by different accountants. The correlation would then be the reflection of a common strategy followed by the tax authority to audit specific groups. In this case, the correlation between e_{ij} and E_j would only be due to the fact that audits are targeted to groups of taxpayers with some specific features other than belonging to a given accountant.

To assess the validity of this concern we run placebo regressions replacing E_j with the average evasion of the clients of *other* accountants in the same province as taxpayer i. We run 1000 regressions, each time randomly reassigning each taxpayer to a new accountant in the: i) same province and sector; or ii) same province and decile of the accountant size (measured by the number of customers). Figure 1 shows the distribution of the estimated α parameter for each of these placebos, as well as the distribution of the t-statistic of the

[14] We report the results obtained when including among the accountant's characteristics the number of clients, the number of provinces with at least one client, and the share of evaders over audited clients until the previous period. Results remain unchanged if we also include the share of clients by age, firm sector, and firm size.

[15] Results are similar to those reported in Table 2 if we estimate our empirical model when e_{ijt} is an indicator for being an evader and E_{jt} is the share of evaders among the other clients of accountant j: the probability that a taxpayer evades taxes is higher if the fraction of evaders among the clients of the same tax accountant increases.

[16] The correction in column 5 is obtained using the same set of controls in the first and second stage regressions with the exclusion of the instrumental set that is only included in the first stage.



Notes. Figures show the distribution of estimated coefficients and t-statistics for the OLS specification in Table 2, column 4 while randomly assigning accountants in the same province and with at least one client in the same sector as the taxpayer (panel A), and in the same province and decile of the taxpayer accountant's number of clients (panel B). The spillover estimate obtained in Table 2, column 4 is 0.083.

Figure 1: Placebo regressions: spillover effect

null $\alpha = 0$. When the placebo is used, the spillover is statistically significant only in 3.4% of the cases when the first assignment rule is used and in 4.8% of the cases using the second assignment rule. The conclusion is clear: the average evasion at accountants other than one's own has no effect on own evasion except by chance. What matters is the behavior of the other clients of one's own accountant, which is consistent with the spillover arising from a specific role of one's own accountant.

5 Mechanisms

The evidence presented in the previous section is consistent with accountants playing some specific role that affects the tax compliance of their customers. In Subsection 5.1 we present a simple theoretical framework to rationalize this phenomenon and use it to derive a number of testable hypotheses. In our model, accountants optimally choose the evasion of the taxpayers conditional on the information that, thanks to their role, they can aggregate by observing several realizations of tax audits and use it to anticipate the IRA auditing probabilities. In turn, the tax authority chooses these probabilities optimally to maximize tax revenues net of auditing cost. The model predicts a positive relationship between individual tax evasion and average tax evasion of the other clients of the tax accountant, highlighting two mechanisms: self-selection of tax payers into accountants with heterogeneous attitudes about tax evasion, and informational externalities generated in the tax accountant's activities. In Subsections 5.2, 5.3 and 5.4 we leverage the structure of our dataset to explore the mechanisms suggested by the model. A reader who is not interested in the details of the theoretical derivation can jump to Section 5.2 and 5.3. The predictions of the model are summarized in Observations 1-5 at the end of Section 5.1.

5.1 Theory

Setup Assume there is a continuum of taxpayers with mass one. Taxpayer i chooses whether to report all income or to evade e_i dollars. Taxpayer i's utility of choosing a level of tax evasion $e_i \geq 0$ is assumed to be:

$$u(e_i, m_i) = [(1 - p_i)(e_i) - p_i (Te_i)] - F(e_i) - e_i^2/(2m_i). \tag{2}$$

where p_i is the probability of being audited and discovered and Te_i is the cost of being audited with evasion e_i. The term in brackets is the net expected benefit of the tax evasion; the second term, $F(e_i)$, is the fee to be paid to a tax accountant who prepares the tax returns, that may be a function of e_i (in the remainder we assume all taxpayers need a tax accountant).[17] The last term, $e_i^2/(2m_i)$, is the "ethical" cost of violating the law, where m_i is the taxpayer's type: the lower is m_i, the more costly it is to violate the law. We assume that the types m_i are uniformly distributed in $[\underline{m}, \overline{m}]$.

We assume that there is a finite number J of tax accountants with heterogeneous dispositions to allow their customers to violate the law. Specifically, the utility of an accountant who chooses a level of evasion e_i for a customer i is:

$$U(F, e_i, d_j) = F(e_i) - \frac{(e_i)^2}{2d_j} \tag{3}$$

where the term $\frac{(e_i)^2}{2d_j}$ is again the "ethical" cost of allowing evasion, where d_j is the accountant's type. Accountants are ordered according to their disposition to violate the law with

[17] In our dataset, only 3.4% of taxpayers choose to file without a tax accountant.

$d_l > d_k$ if $l > k$, $d_j \in \left[\underline{d}, \overline{d}\right]$. With a slight abuse of notation, we denote the set of accountants as J. For simplicity, we assume that the d_j's are equidistant (i.e. $|d_j - d_k| = \Delta d$ for some $\Delta d > 0$) and taxpayers are uniformly distributed around them (as in Figure 2 below). If we denote as S_j the set of taxpayers m_i who are closest to d_j, then this assumption implies $|S_l| = |S_k|$ for all k, l. [18] Taxpayers and accountants share the net expected monetary benefit of the tax evasion, with the accountant receiving a fraction α of it, implying $F(e_j) = \alpha(1 - (1 + T)p_j)e_j$, which can be positive or negative.

We assume that neither the tax authority nor the tax accountant can observe the taxpayers' types. The tax authority may observe the accountant type and target its auditing effort to specific types of accountants.[19] The tax authority chooses the auditing rate to maximize expected revenue collection net of the cost of the auditing. If z_j dollars are spent in auditing a taxpayer assisted by accountant j and a level of evasion e_j, the probability of discovery is equal to $p(z_j) = \sqrt{z_j}$. The expected benefit for the tax authority is $p(z_j) \cdot (Te_j + \xi_j)$. The variable ξ_j is an i.i.d. realization reflecting idiosyncratic factors concerning j that may affect the tax authority's decision.[20] We assume the distribution of ξ_j is a truncated normal that takes only non-negative values, with mean $\overline{\xi} > 0$ and variance $1/r$. For simplicity, we assume r is sufficiently large that for all practical purposes ξ_j can be assumed to be normal with $\overline{\xi} > 0$ and variance $1/r$, which allows us to simplify the analysis. The cost of the audit is λz_j, where λ is the shadow cost of public funds. Naturally it must be that $z_j \leq 1$ for all j (or else the probabilities of a discovery will be higher than one). In the following, we assume that, as is natural, λ is sufficiently large such that this is always true. For simplicity, we will therefore ignore the constraint $z_j \leq 1$ going forward.

The timing of the game is as follows. In the first stage the tax authority chooses the probability of auditing a taxpayer. As mentioned, this probability can be contingent on the accountant type but not on the taxpayer type m_i, which is unobservable (taxpayers are otherwise identical). The model can be easily generalized to allow for different observable classes of taxpayers (say different regions, etc.), and we will discuss this extension in greater detail below. In the second stage, the taxpayers choose a tax accountant without observing the tax authority's auditing strategy. In the third stage, each tax accountant j observes L informative signals $\mathbf{s_j} = (s_{j,l})_{l=1}^{L}$ on the auditing probability p_j and chooses the level of tax evasion for each customer. We assume that each signal $s_{j,l} = p_j^* + \varepsilon_l$, $l = 1, ..., L$ where ε_l is an

[18] That is $|m_i - d_j| \leq |m_i - d_k|$ for all $k \in J$.

[19] Intuitively, the tax authority can observe the tax accountant's activity with many clients over time, thus it can collect more accurate information on the tax accountant's type.

[20] As discussed above, many factors affect the decision to audit a taxpayer, including the business cycle and the sector in which the taxpayer operates. To these factors, we can add other unobserved factors such as the availability of tax inspectors and general guidelines periodically sent by the Treasury.

i.i.d. normal random variable with mean zero and variance $1/k$, and p_j^* is the actual auditing probability. The idea is that the tax accountant can infer this probability by observing a small sample from his/her audited clients.

We study the perfect Bayesian equilibria in pure strategies of this game. A strategy for a taxpayer is a function $\varphi(m_i)$ mapping the taxpayer's type to a tax accountant j. A strategy for the tax authority is an allocation of available resources $\mathbf{z} = (z_j)_{j=1}^J$ such that $z_j \geq 0$ given the observed vector of shocks ξ_j.[21] A strategy for a tax accountant is given by a pair of functions $e(d_j, \mathbf{s}_j)$ and $\mu(d_j, \mathbf{s}_j)$. The function $e(d_j, \mathbf{s}_j)$ maps the accountant's type and the observed vector of signals $\mathbf{s}_j = (s_{j,1}, ..., s_{j,L})$ to a level of tax evasion in $[0, \infty]$. The function $\mu(d_j, \mathbf{s}_j)$ maps the observed vector of signals to a posterior distribution on the level of auditing chosen by the tax authority. This belief is part of the equilibrium because it depends on the tax accountants beliefs on the tax authority's auditing strategy, given the observed signals.

Equilibrium behavior We solve the game by backward induction. In the last stage, the accountant of type d_j chooses e_j to maximize (3) given $F(e_j)$. From the first order condition we obtain:

$$e(d_j, \mathbf{s}_j) = \begin{cases} \alpha d_j \left(1 - (1+T) E\left[p(z_j, \xi_j); \mathbf{s}_j\right]\right) & E\left[p(z_j, \xi_j); \mathbf{s}_j\right] < 1/(1+T) \\ 0 & else \end{cases} \tag{4}$$

where $E\left[p(z_j, \xi_j); \mathbf{s}_j\right]$ is the expected level of auditing. The accountant chooses a positive level of tax evasion only if the expected probability of auditing or the penalty T are sufficiently small. In this case, the level of tax evasion is decreasing in $E\left[p(z_j, \xi_j); \mathbf{s}_j\right]$.

To find the equilibrium, we follow a guess-and-verify approach where we first assume that the equilibrium belief $\mu(d_j, \mathbf{s}_j)$ is that $p(z_j, \xi_j)$ follows a normal distribution with mean equal to A_j and precision B_j. We will then verify that this expectation is correct in equilibrium.

When the accountant believes that $p(z_j, \xi_j)$ is a $N(A_j, B_j)$ random variable, Bayes' rule implies that the posterior probability of the probability of auditing, conditional on the sample $\mathbf{s}_j$, is normally distributed with mean and variance:

$$E\left[p(z_j, \xi_j); \mathbf{s}_j\right] = \Phi(\overline{s}_{j,L}) = \frac{A_j B_j + Lk \cdot \overline{s}_{j,L}}{B_j + Lk} \tag{5}$$

$$Var\left[p(z_j, \xi_j); \mathbf{s}_j\right] = \left(B_j^{-1} + Lk\right)^{-1} \tag{6}$$

[21]Implicitly, the tax authority has a budget R such that $\sum z_j = R$. This is captured by the fact that the cost of choosing z_j is λ, a parameter that can be interpreted as the Lagrangian multiplier associated with the budget.

where $\overline{s}_{j,L}$ is the sample mean of the L signals.[22] Intuitively, the posterior belief is an average of the equilibrium belief on the strategy followed by the tax authority and the evidence collected in the field, i.e. the signals $\mathbf{s}_j$.

In the second stage, the tax authority chooses the amount to spend on auditing j's customers, z_j, given the equilibrium strategy and beliefs of the tax accountants as described by (4) and (5). The tax authority's problem can be directly written as:

$$\max_{\mathbf{z}\geq 0} \sum\nolimits_j E\left\{\sqrt{z_j}\left[\alpha d_j T\left(1-(1+T)\,\Phi_j(\overline{s}_{j,L})\right)+\xi_j\right]-\lambda z_j\right\} \tag{7}$$

where the expectation reflects the fact that the tax authority does not know the actual sample of signals $\overline{s}_{j,L}$ observed by the consultant. Note that we have:

$$E\Phi(\overline{s}_{j,L}) = \frac{A_jB_j + Lk\cdot(E\overline{s}_{j,L})}{B_j+Lk} = \frac{A_jB_j + Lk\cdot\left(\sqrt{z_j}\right)}{B_j+Lk} \tag{8}$$

Substituting (8) in (7), the authority's problem can be directly written in terms of the auditing probabilities $\mathbf{p} = (p_j)_{j=1}^{J}$:

$$\max_{\mathbf{p}\geq\mathbf{0}} \sum\nolimits_j \left[\begin{array}{c} p_j\left[\alpha d_j T\left(1-(1+T)\,\frac{A_jB_j}{B_j+Lk}\right)+\xi_j\right] \\ -\left(\frac{\alpha d_j T(1+T)Lk}{B_j+Lk}+\lambda\right)p_j^2 \end{array}\right]$$

Because we assumed above that ξ_j is positive with arbitrarily high probability, we will ignore for now the cases in which $\xi_j < 0$, and so:

$$p(z_j^*,\xi_j) = \frac{\alpha d_j T\left(1-(1+T)\,\frac{A_jB_j}{B_j+Lk}\right)}{2\left(\frac{\alpha d_j T(1+T)Lk}{B_j+Lk}+\lambda\right)} + \frac{\xi_j}{2\left(\frac{\alpha d_j T(1+T)Lk}{B_j+Lk}+\lambda\right)} \tag{9}$$

The auditing probability $p(z_j^*,\xi_j)$ can be approximated by a normal random variable with mean equal to the expected value of the righthand side of (9) and variance equal to the variance of the second term in the righthand side of (9). In equilibrium, we need that the tax accountants' beliefs are correct, implying:

$$\begin{aligned} A_j &= \frac{\alpha d_j T\left(1-(1+T)\,\frac{A_jB_j}{B_j+Lk}\right)}{2\left(\frac{\alpha d_j T(1+T)Lk}{B_j+Lk}+\lambda\right)} + \frac{\overline{\xi}}{2\left(\frac{\alpha d_j T(1+T)Lk}{B_j+Lk}+\lambda\right)} \\ B_j &= \left[\left(2\left(\frac{\alpha d_j T\,(1+T)\,Lk}{B_j+Lk}+\lambda\right)\right)^2\cdot r - Lk\right]^{-1} \end{aligned} \tag{10}$$

[22] See, for instance Theorem 1 in DeGroot, 1970[ch. 9.5].

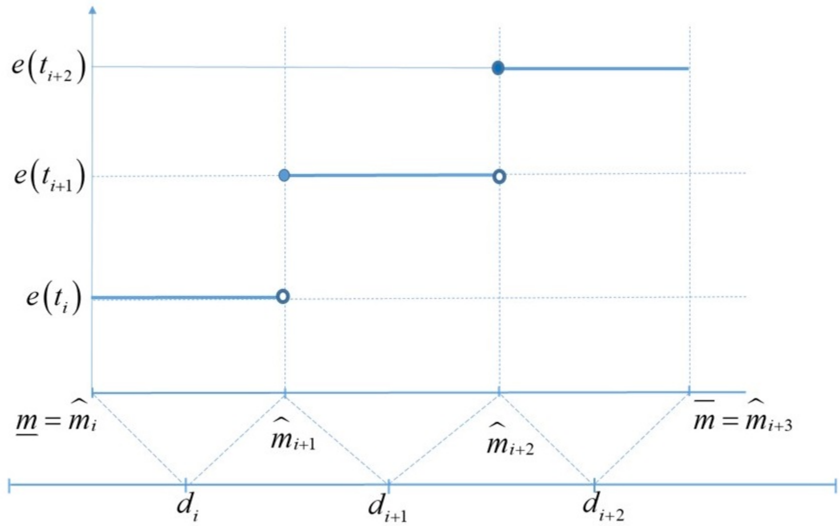


Figure 2: The equilibrium

for all j. The next result shows that a pure-strategy equilibrium of the subgame between the tax authority and the tax accountants exists and it characterizes the equilibrium level of auditing and tax evasion.

Proposition 1. *In equilibrium, the tax authority will monitor accountant j with probability $p(z_j, \xi_j)$ given by (9) with mean A_j and variance B_j given by the system of equations (10). Tax accountant j chooses a level of evasion $e(d_j, \overline{s}_{j,L})$ given by (4) and (5) that is monotonically decreasing in the $\overline{s}_{j,L}$.*

While the equilibrium level of evasion is not, in general, expressible in closed form, it is easy to characterize it in the limit case in which the accountant observes a large number of signals, or very precise signals. In the limit as $L \to \infty$, $e(d_j, \overline{s}_{j,L})$ converges to $e(d_j, \overline{s}_{j,\infty})$ with:

$$e(d_j, \overline{s}_{j,\infty}) = \begin{cases} \alpha d_j \left(1 - \frac{(1+T)[\alpha d_j T + \xi_j]}{2[\alpha d_j T(1+T)+\lambda]}\right) & \frac{(1+T)[\alpha d_j T + \xi_j]}{2[\alpha d_j T(1+T)+\lambda]} < 1 \\ 0 & else \end{cases}$$

which is increasing in d_j.

We now study the taxpayers' decision. It is natural that if ξ_j or T are very large and λ small, then tax evasion may be zero.[23] In general, however, when λ is sufficiently large, the probability of auditing will be sufficiently small so that $e(d_j, \overline{s}_{j,\infty}) > 0$. Moreover, as the following results show, for a sufficiently large λ, auditing is insufficient to equalize the level of

[23]Note that as $L \to \infty$, we have $s_{j,L} \to \xi_j$ by the law of large numbers, so it is as if the tax accountant could see ξ_j.

evasion among tax accountants even if their types are observable. In this case, taxpayers will sort themselves among tax accountants with taxpayers with higher m_i choosing accountants with higher d_j.

Proposition 2. *There is a* λ^* *such that for* $\lambda \geq \lambda^*$ *the equilibrium is characterized by a partition of taxpayers types* $\{\widehat{m}_j\}_{k=1}^{J}$ with $\widehat{m}_1 = \underline{m}$, $\widehat{m}_J = \overline{m}$ and $\widehat{m}_j < \widehat{m}_{j+1}$ *such that* ***a*** *taxpayer of type* $m_i \in (\widehat{m}_j, \widehat{m}_{j+1}]$ *evades* $e(d_j, \overline{s}_{j,L})$ *as defined in (4),(5) and (10).*

Figure 2 illustrates the equilibrium. Taxpayers with a higher propensity to evade (higher m_i) match with accountants that are more likely to allow them to do it (higher d_j), which causes the distribution of tax evasion to be systematically dependent on the identity of the accountant. This phenomenon is attenuated if the tax authority can see the accountants' types because the authority can then check accountants with higher d_j more intensively. For a sufficiently high cost of public funds λ, however, this is not sufficient to eliminate sorting. This leads to our first two observations. The first concerns the auditing strategy and it can be summarized as follows:

Observation 1. (strategic auditing) *The tax authority targets the customers of tax accountants who are more likely to choose higher levels of tax evasion based on observables. An increase in the cost of public funds induces a reduction in the probability of auditing and an increase in the level of evasion.*

The second part of Observation 1 provides the theoretical underpinning for the instrument we used in Section 4 to control for the endogeneity of the audits. Changes in the business cycle at t affect the number of audits on incomes in periods $t-j$ performed at time t, as we have documented in the previous section. Changes in the business cycle at t, however, are hardly predictable by taxpayers at $t-j$, so they do not affect their choices.

The second observation concerns the limit of the tax authority in eliminating sorting:

Observation 2. (sorting effect) *Except when the cost of auditing is zero, in equilibrium, taxpayers with a higher propensity to evade match with tax accountants who are more accommodating. This implies that the expected tax evasion of a client of an accountant is increasing in the share of other customers who are found evading taxes.*

A third important implication of the model is that the final level of tax evasion depends not only on the accountant type, but also on the information that the accountant acquires regarding the auditing strategy followed by the tax authority. The tax accountant fine-tunes the level of tax evasion based on the accountant's tolerance for evasion (i.e. the type d_j) and the observed signal s_j. When d_j's are positive (i.e. when there is some tolerance for evasion), we observe heterogeneity in behavior due to heterogeneous signals. This leads to the following observation:

Observation 3. (informational externality effect I) *Even if there is no sorting because all tax accountants have the same type* $d_j = d^*$*, the expected tax evasion of a client of an accountant is increasing in the share of other customers who are found evading taxes.*

Without directly observing the tax accountant's types, it would be hard to separate the sorting effect vs. the informational spillover effect and thus test Observations 2 and 3. The the informational spillover effect, however, has two additional testable implications. The most likely signal used by the tax accountant to fine-tune his/her activities at time t is his/her direct experience with customers at time $t-1$ and perhaps the experience of nearby accountants if they can communicate. It follows that:

Observation 4. (informational externality effect II) *The expected probability of receiving an audit at time t is increasing with the share of clients that are audited at* $t-1$*, or, if the accountant j is in communication with an accountant k, increasing with the share of k's clients who are audited. Hence, reported income (evasion) of a taxpayer at t is expected to correlate positively (negatively) with the number of other clients of the same tax practitioner audited at* $t-1$*.*

To see the second implication, it is useful to consider a simple generalization of the model. In the previous analysis we have assumed that the tax authority can only target auditing at the tax accountant level. It is, however, natural to assume that the tax authority can target with a finer grid that depends on observables: at the accountant/sector of the client (for example, it can treat clients of a tax accountant differently if they are, say, new or old businesses, lawyers, or plumbers). From a theoretical point of view, this scenario is exactly as the one studied above, except that now the tax accountant receives sets of signals that are contingent on the sector and/or demographics of the clients (say, the number of lawyers vs. the number of plumbers who have been audited).[24] If this is the case, then we should expect evasion of i to be especially sensitive to the share of similar customers who have been audited. Summarizing:

Observation 5. (informational externality effect III) *The behavioral response of taxpayers to audits of other customers of their tax accountant is higher when the other audited taxpayers are similar to them in terms of observables, such as the business sector, size or gender.*

In practice, we can have four cases. When the heterogeneity in the accountants' types is sufficiently important and the accountants' signals are sufficiently precise, we should observe

[24] A way to see that the formalization presented above extends easily to this scenario is to consider the tax accountant/sector of client as independent entities in the model. A tax accountant with clients in, say, three sectors, would then be split into three different "tax accountants."

both self-selection and informational spillovers in the data. We might, however, have three other cases: if accountants' d_j's are not very heterogeneous, but signals are important, then we might observe only the informational spillover effect; when accountants' types are heterogeneous, but signals are uninformative, then we might observe only the sorting effect; if both types of heterogeneity are weak and signals are uninformative, then we might not observe either of the two effects.

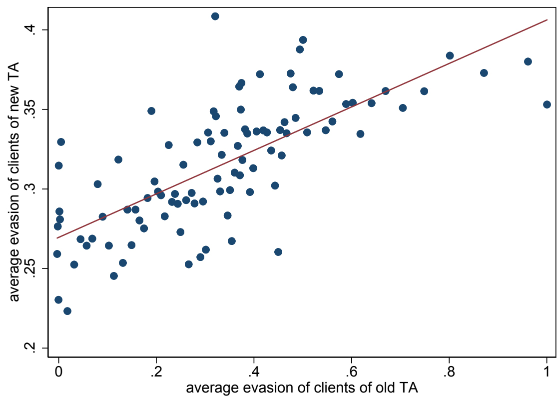
5.2 The sorting hypothesis

The estimates in Table 2 suggest that the correlation between a taxpayer's tax evasion and the tax evasion of the other clients of his/her own accountant is neither spurious nor an artifact of uncontrolled selection. The model presented in the previous section provides an economic framework to interpret these correlations and suggests two potential mechanisms: sorting and informational spillovers. In light of this, we now refine our empirical analysis to test for the presence of these two possible channels.

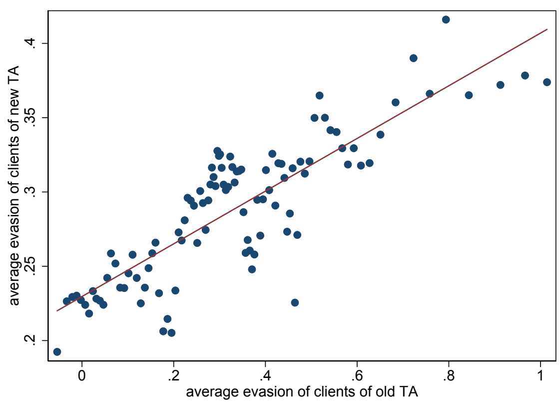
Taxpayers undoubtedly choose their tax accountant. A tax accountant can be chosen based on competence or convenience (e.g. proximity), but can also be chosen according to the accountant's willingness "to close an eye (or maybe both)" to accommodate the clients' demand for evasion. That is, evasion-prone taxpayers may tend to match with evasion-prone accountants. If this happens, we should expect evasion-prone taxpayers to cluster among evasion-prone accountants, leading to a positive correlation between own and other clients evasion rates, as implied by Observation 2.

To examine whether this channel can at least partially explain the correlation between own evasion and the evasion of other clients of the same accountant, we start by looking at taxpayers who have switched accountants. Specifically, we look at the correlation in the propensity to evade of the accountant before the switch and that of the accountant after the switch. Sorting implies that, upon moving, a client should match with a new tax accountant with a similar propensity. We measure this propensity using the average evasion rate of the clients of the new accountant. Figure 3 shows a bin-scatter of the evasion rates of the old and new accountants, after we partial out year, sector and municipality fixed effects as well as a set of switchers' characteristics. These controls are meant to account for endogenous switching decisions and, most importantly, for the possibility that evasion rates have a local/sector component. The first panel shows the (non-parametric) relationship for the whole sample of switchers (318,534 taxpayers for which we can compute the average evasion of the clients of the old and new account) and is unambiguously strongly positive. This lends support to the sorting hypothesis. The second panel shows the same relationship

Panel A: All taxpayers switching accountant



Panel B: Taxpayers switching because of accountant's closure



Notes. The sample includes taxpayers changing accountant at least once. The x-axes shows the average share of evasion of the clients of the accountant of origin binned in 100 quantiles. The y-axes reports the average share of evasion of the clients of the new accountant after partially out the characteristics of the taxpayer and his business, year and province fixed effects.

Figure 3: Sorting of taxpayers into accountants

but now computed on the sample of taxpayers that change accountants upon closure of their old one (we have 90,666 such cases). This way we address more directly the issue of endogenous switching. The evidence on positive sorting is even stronger: there is a steeper relationship with a better fit. Table 3, panel A, confirms the graphical evidence of sorting using formal OLS linear regressions of the average evasion at the old accountant on average evasion at the new accountant, controlling for switchers' observable characteristics and year, location and industry fixed effects. The first four columns are run on the whole sample and the last is run on the switchers after accountant closure. Irrespective of the controls used, the relationship is positive and highly statistically significant. The coefficient on the average evasion of the new accountant doubles among those moving upon closure.

The size of our sample allows us to refine this test further by running our regressions at the individual level and focusing on taxpayers that switch and were audited at least once *before* switching accountants. We can then measure tax evasion of the switcher when he/she was served by the older accountant, and check whether high tax-evasion taxpayers, once they switch accountant, match with another high-evasion accountant, as measured by the average evasion of their clients. Table 3 panel B reports the results. Because we focus on audited switchers, the sample size shrinks to 14,279 taxpayers but remains large enough for reliable inference. The first three columns show regressions for the same specifications as in panel A. The correlation between own evasion at the old accountant and average evasion of the clients at the new accountant (measured before the switch occurs) is positive, highly statistically significant and very similar in size to the slopes estimated in panel A.

To deal with endogenous switching we perform two exercises. In the third column, we limit the sample to audited movers who filed with the previous tax accountant but was audited *after* switching. For example, a taxpayer that until 2010 was with accountant A, switches to accountant B in that year and then has his/her 2009 filing audited in 2012 when he is with the new accountant. In this way we deal with one particular source of endogenous switching: that triggered by a taxpayer being audited (see next section for evidence). The estimated correlation is hardly affected. The last column shows the estimates for the sample of movers after accountant closure. The sample size shrinks further to 3,015 observations and we lose some precision, but the estimate remains significant (at the 5% level) and of comparable size as in the other columns.

Finally, we run two placebo tests to corroborate the evidence presented thus far. In the first, we match a switcher with a new, randomly selected tax accountant in the same province and with at least one client in the same industry as the switcher. In the second, we match the switcher with an accountant in the same province and decile of size of customer base as the old accountant. We repeat this 1000 times, and each time we run the regression in the third column of Table 3, panel A and record the coefficient on the average evasion of the previous accountant and its significance. Figure 8 shows the distribution of the estimated slope parameter and of the corresponding t-statistic. The graph shows that the estimates are small and centered around zero. The highest value obtained is about 0.006, 10-times smaller than the estimated slope. That is, randomly assigning switchers to another accountant never results in sorting as strong as the one implied by the actual new tax accountant.

Overall, the evidence strongly supports the idea that tax accountants play an important role in facilitating tax evasion.

5.3 The informational spillover hypothesis

To shed light on the information channel we bring the implications of Observations 3-4 in Section 5.1 directly to the data. We follow two approaches: first we note that, if the tax accountant acts as an information hub, reported income at t should increase if other clients of the same accountant were audited at $t-1$. Second, note that besides affecting filed income, tax audits may also affect a taxpayer's decision to switch accountant. We thus look at the effect of audits of a customer i and of other customers $-i$ served by the same tax accountant on i's decision to change tax accountant.

With respect to the first effect, the first column of Table 4 shows the estimation of a simple regression of log filed income where the only audit variable is an indicator equal to 1 if in the previous year other clients of the same accountant were audited (while excluding the taxpayer in question). In the second column, we include an indicator for whether the taxpayer was audited at $t-1$. All estimates include year fixed effects, taxpayer fixed effects and sector fixed effects. We also control for a set of time-varying taxpayer observables (age, marital status, size of the business and number of years of activity) and for the size of the tax accountant's customer base.

The effect of the others' audits is positive and highly statistically significant. It triggers a 1.2% increase in filed income in the following year.[25] The second column adds an indicator for whether a taxpayer was audited at $t-1$; the effect of other customers' audits is somewhat smaller but retains its statistical significance. If a taxpayer was audited at $t-1$, then in the subsequent year he/she reports a higher income to the tax authority, roughly 7.7% higher. One's own history of tax audits is obviously the first source of information one draws on to learn about the IRA audit policy and this has a much stronger effect on filed income than other customers' audits. A stronger response to own that to others' audits may reflect heterogeneity in types among the clients of the accountant, together with auditing policy being sensitive to individual characteristics. In other words, the accountant may inform his customers that the tax authority is auditing taxpayers with a specific set of individual characteristics. Taxpayers with those specific characteristics may react more strongly, while taxpayers with different characteristics may feel un-targeted and, as a result, not alter their reported income. The average response will then depend on the distribution of these characteristics across clients.

As noted in Observation 4, if an accountant is in communication with other accountants he/she can share information with his/her customers about the audits of *other* accountants'

[25] A similar positive and significant correlation is obtained if we use the precise share of clients audited at $t-1$, including the taxpayer in question, which is part of the set of signals observed by the tax accountant, while controlling separately for the own indicator.

customers. To test whether accountants share auditing information, we estimate a model like the one in the second column of Table 4 but replace the share of clients of the same accountant audited at $t-1$ with the analogous share of another accountant. Because we do not know who is in communication with whom, the share of the other accountant is obtained by randomly assigning each taxpayer to another accountant in the following pairs: *i*) the same province and sector, *ii*) the same province and decile of size of customer base, *or iii*) the same province and decile of share of audited clients that have evaded. We run 1000 regressions with a new randomly assigned accountant each time. If accountants are informationally connected, we should see a significant effect of the share of audits of other accountants' clients in a large fraction of these regressions. Figure 9 plots the distribution of the estimated parameter and of the corresponding t-statistics. Overall we find little support for the idea that accountants form an information-sharing network. In the vast majority of the cases, we find no effect on reported income at t of the share of audited customers of a different accountant at $t-1$.

In Table 5, panel A we test the informational channel from a slightly different perspective: taxpayers are interested in learning about the IRA policy in general but particularly about the audit policy towards people like them. If the accountant informs his/her clients about the characteristics of the taxpayers that have been audited, we should expect that individuals are more responsive to audits of other taxpayers at the same accountant that are similar to them along some dimension. This is a direct implication of our theoretical model (Observation 5). To test this possibility, we add to the specification an interaction between the share of peers audited and several measures of similarity with the taxpayer (a dummy for at least one other audited client working in the same sector, of the same age, or in a firm of the same size).[26] We find supportive evidence: reported income is higher in response to audits of clients of the same accountant if the other clients have similar traits to those of the taxpayers and these traits enter the IRA auditing policy estimated in the next section. An alternative story is that the taxpayer comes to know about these audits directly from the peers and not through the tax accountant. To investigate this possibility, in panel B we replace the peer audit and similarity dummies with analogous dummies that indicate if other individuals that are not clients of the taxpayer's accountant, live in the same province and have similar characteristics (same sector, same firm size or same age) have been audited in the previous year. We find that these variables have no explanatory power, suggesting again that it is the information disseminated by one's own accountant that really matters.

In Table 6 we dig deeper into the information mechanism by examining the persistence of

[26]We consider as size threshold 10 employees. This follows the definition of micro-enterprise established by EU Commission Recommendation 2003/36, and adopted by the IRA as reference for fiscal purposes.

the information effect. In the first column, we include three controls for own audit at $t-1$, at $t-2$ and $t-3$ while controlling for other clients' audits at $t-1$. Interestingly, the effect of own audits is significant at all lags but the size decays over time, albeit slowly: the effect a three-year old audit on current reported income is still 40% of the effect of a one-year old audit. The cumulative effect of an audit after three years is to increase reported income by 16.6%–twice as much as the one-year lagged effect. In this specification, the effect of an audit of other clients in the last year is significant and of the same size as in Table 4. In the second column, we also allow the audits of peers to affect reported income with lags of up to three years. The three lags are all positive and highly statistically significant. Importantly, once they enter together their size increases considerably (and the one-year lag effect doubles). Perhaps most interestingly, the effect of the other audits observed by the accountants on taxpayer reported income is larger for older audits. One potential explanation for this result is that information disseminates with lags. A perhaps more plausible explanation is that details about the IRA policy are revealed as the audits unfold after they have already been notified. The variable for one-year lagged audits of others only captures the IRA's notification of an audit to the taxpayers (and to the accountant), while the two- and three-year old audits also reveal what the IRA investigates. This additional information allows the tax accountants to infer more about the IRA auditing policy. Both because estimated coefficients are larger and because several lags matter, the cumulative effect of the information spillover increases reported income by 9.7 percent. This is a non-negligible effect. To get a better sense of the quantitative importance of the information channel on reported income, consider increasing the number of audits by one unit for each tax accountant. In our sample there are 81,185 accountants, each serving an average of 20.8 clients that report an income of EUR 19,505 on average. Our estimates imply that the total cumulative direct effect on the reported income of these taxpayers amounts to EUR 420 million, and the information spillover effect amounts to EUR 152 million–as much as a third of the direct effect.[27]

We now turn to study the effects of tax audits on accountant switches. In Table 7 we study whether tax audits may affect taxpayers decision to switch accountants in addition to affecting filed income. The lefthand side is an indicator equal to 1 if the taxpayer has

[27] These effects are estimated as follows. Let α_i be the marginal direct effect of own audit at lag $i = 1, 2, 3$; and let β_i be the marginal effect of the *others* audits at lag $i = 1, 2, 3$. Also notice that the marginal spillover effect of the audits of one other clients is β_i/N , where N is the number of clients of the accountant. The direct effect is estimated as *Number of audits*$\times \sum \alpha_i \times$*Average income*=81,185×0.166×31,956 =430.7 million euros, where the average income figure is that of the audited taxpayers from Table 1, panel B. The cumulative spillover effect of an extra control is equal to *Number of affected clients of a tax account*$\times (\sum \beta_i/N) \times$*Average income*= 19.8×(0.097/20.8)×19,905=1.84, where the average income is that of the total sample (Table 1, panel A). The total spillover is obtained by multiplying this number by the number of tax accountants (81,185).

switched accountants in that year. In all specifications of the probit estimates we include a rich set of controls including time and region fixed effects, taxpayer characteristics (gender, marital status, age, number of years of activity, firm size, firm sector dummies) and number of customers of the accountant. Panel A shows that, indeed, taxpayers also respond along this margin in an interesting way. The first column includes both the indicator for audits of other clients last year and an indicator for own audit in the past year. Interestingly, the effect of other clients' audits is negative: a taxpayer is less likely to switch accountants if other customers of his/her accountant have been audited. This effect is also quite sizable. If at least one other client of the accountant has been audited, the probability of the taxpayer switching accountants falls by 6 percentage points - amounting to 86% of the sample share of switchers. While this negative effect may, prima facie, sound implausible, it is fully consistent with the information dissemination role of the tax accountant. Indeed, a taxpayer can only come to know that other clients have been audited because their accountant notifies them about the IRA's activities. Taxpayers that become aware of this are less likely to switch accountants for two possible reasons. The first possible reason is the well-known behavioral phenomenon known as the "gambler's fallacy," that is the mistaken belief that, if something happens more frequently than normal during a given period, it will happen less frequently in the future. The second and perhaps more important reason is that the taxpayer who has not been targeted by the audit may appreciate the fact that the tax accountant shares valuable information about the audits with other customers.

Panel A also shows the effect of own audit is positive and significant: a taxpayer that has been audited this year is more likely to switch accountants next year. The increase in the probability of switching is about one percentage point, or 14% of the sample share of switchers. One plausible interpretation of this positive effect is that the tax audit signals some incompetence of the accountant to the taxpayer.[28] The other columns enrich the specification by adding interactions between the indicator for audits of other customers and indicators for similarity between the others and the taxpayer to test whether the decision to switch is sensitive to information that is more relevant to the taxpayer's characteristics. Indeed we find that others' audits have a stronger negative effect on the probability of switching when the other customer is similar to the taxpayer either in terms of gender, age or firm sector and size.

Finally, panel B studies dynamic effects of audits of others and own audit on the switching decision by adding lags of these variables. Note that the effect of own audit is always positive

[28]This phenomenon is not necessarily inconsistent with the gambler's fallacy hypothesis described above. However, the disappointment associated with the fact of being audited may overwhelm the effect of the gambler's fallacy in this case.

at all lags but fades away with time, while the effect of audits of others is always negative at all lags and its absolute size is either constant or increasing over time. This pattern of effects is very similar to the response in reported income documented in Table 6. The last two columns repeat the estimates, adding as a control a dummy for whether the tax accountant is still active to make sure that the switching decision is not triggered by accountant closure. The results are qualitatively unchanged.

5.4 The IRA strategic auditing policy

Finally, we turn to discussing the implications of our evidence for the strategic behavior of the tax authority, as predicted by Observation 1. Observation 1 asserts that *a*) the IRA audit policy should respond to the public cost of funding, and *b)* it should target the customers of tax accountants who, based on observable characteristics, display higher levels of tax evasions. We start by estimating the determinants of the IRA's audit policy and then contrast the predictors of the audit policy with those of tax evasion estimated in Table 2.

Audit policy estimate As argued in Section 2, the IRA does not follow a random audit policy but rather chooses targets based on available information, either gathered centrally or obtained locally by its branches. Let $p_{kirt} = \gamma z_{kirt} + u_{kirt}$ define the IRA auditing policy, where p_{kirt} is the probability of auditing in year t the tax filing k of taxpayer i in region *r;* z_{kirt} is a vector of observable tax filing and taxpayer characteristics, including those of their tax accountant, and other variables that may affect IRA policy; u_{kirt} is a random component. The latter may itself be part of the optimal policy in so far as some audits are chosen randomly. We only observe audit realizations A_{kirt}:

$$A_{kirt} = \begin{cases} 1 & if\, p_{kirt} > 0 \\ 0 & otherwise \end{cases}$$

To learn about IRA auditing policy we assume u_{kirt} is normal and estimate a probit model. Because the tax authority can audit a tax filing up to five years later, the sample of tax statements that can be audited–the sample at risk–changes over time. In any given year t, the sample at risk includes all filings of the taxpayers in our population that are up to five years old and that have not yet been audited in the previous years. We estimate the IRA auditing policy on this sample. We control for a rich set of observables, beginning with a set of regional dummies. These can reflect both geographical heterogeneity in IRA human resources and systematic differences in taxpayers compliance that call for stronger deterrence in certain regions. We control for firm size by inserting a full set of dummies for the number of employees and for taxpayers' demographic characteristics (gender, age dummies, marital status, years of activity), but we do not attach any specific interpretation to these variables.[29] We also insert a full set of year of audit dummies to capture aggregate movements in auditing policy.

Our model in Section 5.1 predicts that the tax authority should respond to the cost of public funding and react strategically to the type of the tax accountant, auditing evasion-prone accountants more frequently. We proxy the cost of public funding with a set of measures of performance of the local economy (the net rate of new firm creation, the unemployment rate in the province and a measure of the local CPI inflation). We proxy the tax accountant type with three observable characteristics: the share of evaders and that of evaded income among audited customers, the number of provinces where the accountant has customers, and the size of the tax accountant which is measured by the number of customers and captures a higher reputation cost of backing tax evasion for large, successful tax accountants.

Additionally, we include two binary indicators of conformability of the reported income with the IRA's expectations based on the so called "studi di settore" (or *ssy*). A taxpayer is considered "coherent" when his/her filing, based on a vector of indicators, does not reveal anomalous behavior; "congruent" if the reported income is not too far from an inputed range estimated by the tax authority for a group of taxpayers sharing similar characteristics.[30]

Table 8 shows the results of the audit policy estimates. Reported coefficients are marginal effects. The sample at risk includes over 49.8 million observations. The first column includes all taxpayer controls, as well as regional, time and age of tax filing dummies. Even after controlling for taxpayers characteristics, there are systematic regional differences in the probability of auditing. The characteristics of the taxpayer all have predictive power for the auditing probability, which is higher for owners of larger firms that have been operating for a longer time. The IRA policy is also predicted by taxpayers characteristics: older people are more likely to be audited while women and married taxpayers are less likely to be audited. The age of the tax filing very neatly shows the hump shape described in Figure 5, with a marked spike at age four when the probability of an audit is eight times the sample mean, and a very low probability of auditing a tax filing older than five years. The "congruent" and "coherent" dummies both predict the probability of an audit and are very precisely estimated. Both indicators negatively and significantly affect the probability of an audit today. Quantitatively, a "congruent" tax filing is 3 percent less likely to be audited than the

[29] Like many administrative data, demographic information is only the one which is relevant for the purpose for which the data are collected. In our case, taxpayers' education is not available.

[30] To make sure that no relevant variable is left out, we have consulted a high-ranking IRA representative who has confirmed the validity of our specification of the IRA audit policy, without taking a stand on the estimated parameters.

unconditional mean, a "coherent" 9 percent less likely. A taxpayer that is simultaneously "congruent" and "coherent" has an audit probability that is 12 percent lower than the sample mean. While these variables have a relatively strong effect, they are far from being the only information on which the IRA chooses its auditing policy.

The second column adds the accountant controls. Importantly, they also predict the IRA policy: taxpayers served by accountants with a higher share of evaders (an extensive margin) and with a higher share of evaded income in the past (an intensive margin) are more likely to be audited (a one standard deviation increase in the average share of evaders increases the probability of an audit by as much as eight percent of the sample mean–a relatively large effect) and so are taxpayers served by accountants with customers in several provinces. On the other hand, customers of larger accountants are less likely to be audited. These effects are predicted by the model developed in Section 5, where the IRA optimally chooses the audit policy knowing the accountant type and targets its auditing effort to specific types of accountants.

The third column adds the measures of local economic performance: firm creation, CPI inflation and unemployment at time of audit.[31] All of these measures predict the auditing probability with signs consistent with the idea that the tax authority tailors its auditing policy according to the local business cycle. The probability of an audit is higher when firm creation is higher and when demand is strong, as captured by CPI inflation. The audit rate decreases when firms face worse local market conditions, as captured by a higher unemployment rate and plant closure rate.[32]

IRA strategic behavior We now turn to discussing the implications of our evidence for the strategic behavior of the tax authority as predicted by Observation 1. This asserts that

[31] We used the provincial-level yearly time series released by the Italian National Institute of Statistics. Firm entry is the share of companies registered in the year over the companies active at the end of the year. The inflation rate is the Consumer Price Index for the population (NIC), with baseline year harmonized to 2010=1. The unemployment rate is the share of people seeking employment in the labor force (15 years and over). We aggregated the provinces subject to administrative changes in boundaries during the period to a unique fictional province and we assigned them the average value of the original series weighted by the population in the 2011 ISTAT Census.

[32] These variables are the instruments we use when running selection-adjusted regressions in Table 2, column 6. First, notice that they have strong predictive power. Second, they are valid exclusion restrictions. To understand this, notice that it is the current state of the local economy that affects the current auditing policy; but the IRA audit refers to an income produced and filed at least 2 years and in most cases 4 years before the audit is announced (see Figure 5). Thus at the time of filing, the state of the economy when the audit is decided is unobserved to the taxpayers. Clearly, while these variables affect the auditing policy, they do not affect the taxpayer's filing decision. They therefore qualify as instruments when we estimate selection-adjusted tax spillovers in Table 2. In the regression in third column of 8 we also control (coefficients not reported) for the state of the economy in the province at time of filing to capture any effect on taxpayers income reporting that is anticipated by the tax authority and incorporated in its audit policy.

the IRA audit policy *a*) should respond to the public cost of funding and *b)* should target the customers of tax accountants with higher levels of tax evasions. We do so by putting together the results in Table 8, which document the determinants of IRA audit policy, and those in Table 2, which show evidence of the predictors of tax evasion.

The estimates of the IRA policy in Table 8 are consistent with Observation 1, part *a*): the IRA responds to the cost of public funding as proxied by the three measures of the local economic conditions in the province of the taxpayers. The IRA is more likely to audit, and thus to extract funds from, taxpayers that reside in provinces whose economies are doing relatively well, thus allocating the burden of taxations to areas where its cost is presumably lower.

They are also consistent with Observation 1, part *b*). To see this, notice that strategic auditing requires that the probability of an audit responds positively (negatively) to the observable characteristics of tax accountants that predict higher (lower) tax evasion. A similar implication holds with respect to predictors of tax evasion that the IRA can construct based, for instance, on the income statement of representative firms of an industry as the "congruent" and "coherent" indicators discussed earlier. In Table 9 we reproduce the estimates of the effects of the tax accountants' characteristics and the "congruent" and "coherent" indicators on the IRA policy in Table 8 and on tax evasion in Table 2. These variables predict tax evasion well. Consistent with strategic auditing policy, they significantly affect the IRA audit policy with the same sign. Finally, together with the evidence that sorting on propensity to evade taxation occurs and is strong, the IRA's strategic auditing behavior suggests that auditing costs are still high enough to prevent a strategic audit policy strong enough to equalize tax evasion behavior across accountants (an implication of Proposition 2).

6 Discussion, policy implications and conclusions

Tax codes in advanced countries have become increasingly complex, creating scope for experts' advice. We argue that, depending on the role played, tax intermediaries can have profound effects on the nature of the relationship between tax authorities and taxpayers. Tax accountants can facilitate tax evasion by helping evasion-prone taxpayers take advantage of the complexity of tax rules and game tax authorities by offering bilateral, taxpayer-specific counseling on how to minimize income reporting within (or even outside) the boundaries of the tax code. The implication is the emergence of a market for tax advisors where (some) accountants specialize in offering evasion advice to evasion-prone taxpayers. A smart tax authority should then invest resources to learn the accountants' types, diverting attention from the taxpayers to their intermediaries and auditing with higher probability clients of more evasion-prone accountants. This breaks the direct link between the tax authority and the taxpayers assumed in the traditional literature on tax evasion and compliance (e.g. Allingham and Sandmo, 1972; Graetz et al., 1986). In these models, absent tax intermediaries, taxpayers comply only because they can be audited with some probability and punished if found non-compliant. With tax intermediaries, taxpayers can also be disciplined by targeting with higher probability customers of tax-evasion prone accountants. We find that, as predicted by our model, the IRA policy function is sensitive to tax accountants' observable characteristics, and significantly (economically and statistically) tilts audits towards accountants with a higher share of tax evaders in the past. This discourages sorting, but despite the IRA's targeted action, we find strong evidence that evasion-prone taxpayers match with evasion prone-tax accountants, implying that indeed some accountants specialize as tax-evasion facilitators.

In addition (or alternatively), intermediation through tax accountants can change the nature of the taxpayer/authority relationship because accountants act as information hubs: taxpayers can learn about the tax authority's policy because accountants can pool the audit experiences of many customers over many years and share this information with each of their clients. From the point of view of the taxpayer, this speeds up learning about the tax authority policy function, providing an additional incentive to rely on tax accountants. From the point of view of the tax authority, auditing one taxpayer can, through the information disseminated by the accountant, affect the compliance of the other clients. We find evidence that this is indeed the case. Reported income not only responds positively to a directly experienced audit but also to the audits of the other customers of one's own tax accountant. The size and pattern of responses to the two types of audits is telling: taxpayers' response to own audits is strong on impact but its effect is short-lived and vanishes rapidly with time. The response to other clients' audits is milder on impact but persists unchanged over time. Hence, while the difference in the impact effect between own and others' audits is large (eight times), the long-term difference is much more contained (1.7 times after three years). One interpretation is that own audits have much greater salience than others' audits, but salience vanishes as distance from the audit increases and a new audit that would maintain high salience is rare. On the other hand, at each point in time, accountants are much more likely than single taxpayers to observe an audit. Passing on this information to their clients increases audit salience. Accountants have the ability to keep track of all previous audits of their clients: information accumulates and becomes more precise as time lapses. Understanding the dynamic response to direct and indirect exposure to audits is both intriguing and of practical relevance to improve tax compliance design. Our analysis moves a first step in this direction.

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A Appendix

A.1 Proof of Proposition 1

In equilibrium the mean and variance of the accountant's beliefs are a fix point $(A_j, B_j) = F(A_j, B_j)$, where $F(A_j, B_j)$ is defined by (10). Note that F is continuous in A_j, B_j and A_j, B_j must be in $[0, 1] \times [0, \overline{B}]$ where

$$\overline{B} = \left[(2\lambda)^2 \cdot r - Lk\right]^{-1}$$

It follows by the Kakutani fix point theorem that A_j, B_j exists. By construction, the tax accountant choice of tax evasion is optimal given the beliefs and the beliefs are correct in equilibrium. Similarly, the tax authority chooses the optimal level of auditing given the correct beliefs of the accountant's evasion. ■

A.2 Proof of Proposition 2

The taxpayer does not know $\overline{s}_{j,L}$ when choosing consultant, so expects evasion:

$$Ee(d_j, \overline{s}_{j,L}) = e(d_j) = max\left(\alpha d_j\left(1 - (1+T)\frac{A_j B_j + Lk \cdot A_j}{B_j^* + Lk}\right), 0\right)$$

where A_j^* and B_j^* are the equilibrium levels of $A_j$and $B_j$given by (10). Taxpayers choose j to maximize:

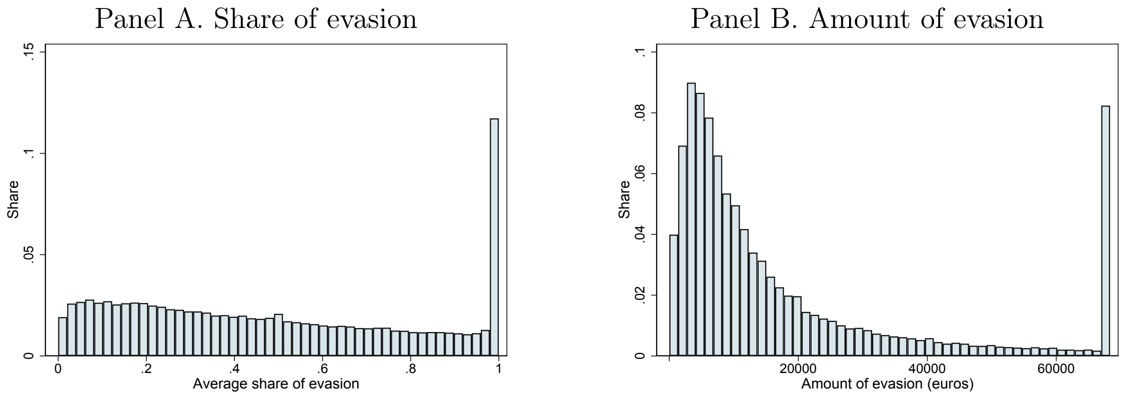
$$(1-\alpha)\left(1-(1+T)\,p(d_j)\right)e(d_j) - \frac{e(d_j)^2}{2m_i}$$

Note that there is a λ^* such that for $\lambda \geq \lambda^*$, $e(d_j)$ is monotonically increasing in d_j and $(1-\alpha)\left(1-(1+T)\,p(d_j)\right) > 0$. This implies that $(1-\alpha)\left(1-(1+T)\,p(d_j)\right)e(d_j)$ is increasing in d_j as well. Assume now that type m_i prefers d_j to d_k with $d_j > d_k$. Then we have:

$$m_l \geq m_i \geq \frac{1}{2}\left(\frac{e(d_j)^2 - e(d_k)^2}{(1-\alpha)\left[\left(1-(1+T)\,p(d_j)\right)e(d_j) - \left(1-(1+T)\,p(d_k)\right)e(d_k)\right]}\right)$$

for any $m_l \geq m_i$, implying that m_l also prefers d_j to d_k. Similarly, we can show that m_i prefers d_j to d_k with $d_j < d_k$, then m_l prefers d_j to d_k for any $m_l \leq m_i$. This implies that the set of m_is who chooses a consultant d_j is convex and increasing in d_j. That is there is a set of cut points $\{\widehat{m}_j\}_{j=1}^J$ with $\widehat{m}_j \leq \widehat{m}_{j+1}$ and $\widehat{m}_j \in [\underline{m}, \overline{m}]$, such that all types in $(\widehat{m}_j, \widehat{m}_{j+1}]$ find it optimal to choose a consultant of type d_j. ■

B Figures



Notes. Taxpayers with positive evasion. In panel B, values of evasion above the 95-*th* percentile are winsorized.

Figure 4: Distribution of the share and amount of tax evasion across taxpayers

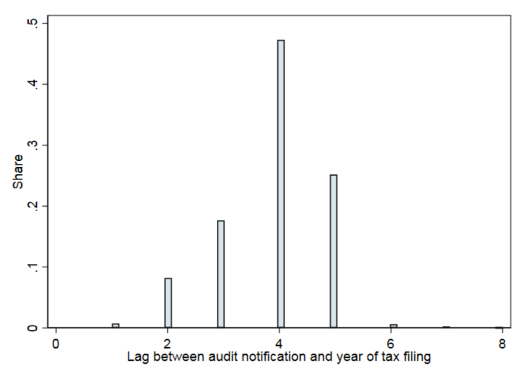
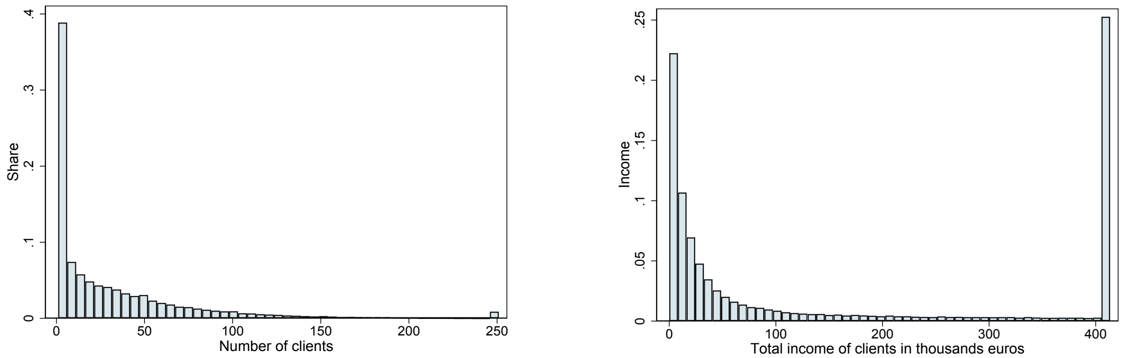


Figure 5: Distribution of the age of audited tax filings

Panel A. Size: Number of clients

Panel B. Size: Value of clients' reported income

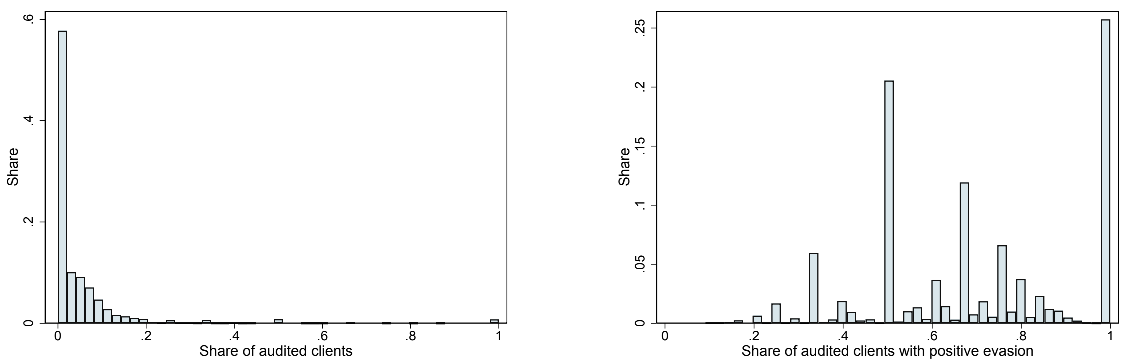


Notes. In panel A, size is the number of unique clients over the entire period; in panel B it is the sum of the average income of the clients over the entire period. For legibility, the mass above the 75-*th* percentile is collapsed in a single class.

Figure 6: Distribution of the size of tax accountants

Panel A. Share of audited clients

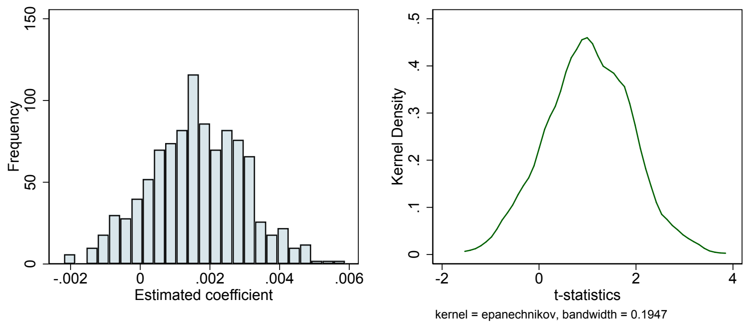
Panel B. Share of audited clients with positive evasion



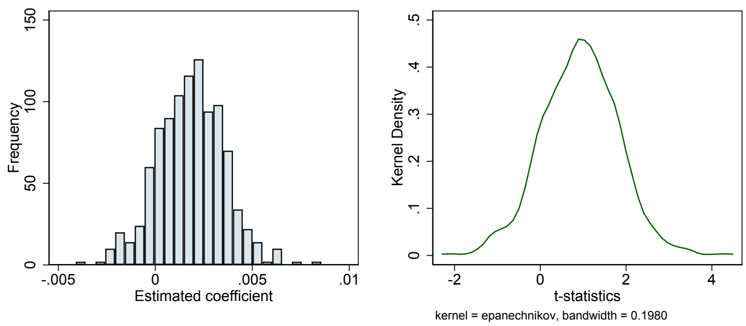
Notes. Panel A includes all the tax accountants. In panel B, the sample includes all the accountants with at least two clients audited and at least one client with positive evasion.

Figure 7: Distribution of audited clients across tax accountants

Panel A. Random accountant in same province and sector



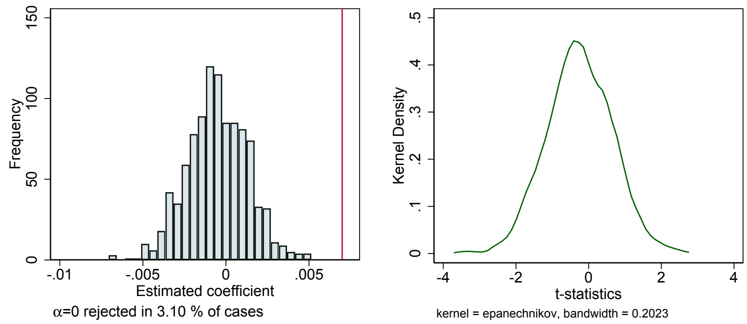
Panel B. Random accountant in same province and same size



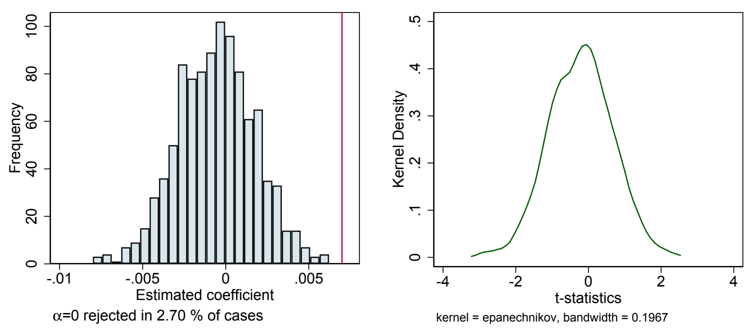
Notes. Figures show the distribution of estimated coefficients and t-statistics from the OLS specification in panel A of Table 3, column 3, while randomly assigning accountants in the same province and with at least one client in the same sector as the taxpayer (panel A), and in the same province and decile of the taxpayer accountant's number of clients (panel B). The estimate of the sorting effect obtained in Table 3, column 3 is 0.061.

Figure 8: Placebo regressions: sorting channel

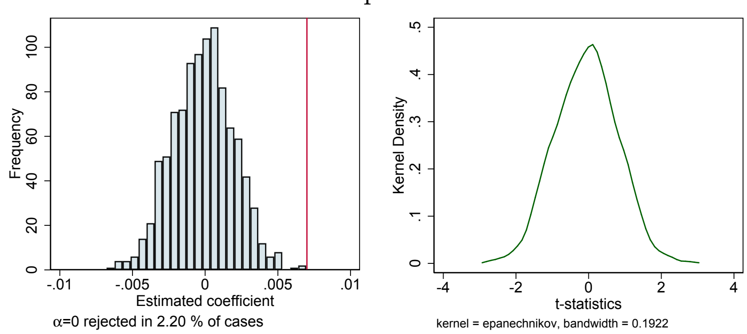
Panel A. Random accountant in same province and sector



Panel B. Random accountant in same province and with same size



Panel C. Random accountant in same province and with same share of evaders



Notes. Figures show the distribution of estimated coefficients and t-statistics from the OLS specification in Table 4, column 2, while randomly assigning accountants in the same province and with at least one client in the same sector as the taxpayer (panel A), and in the same province and decile of the taxpayer accountant's number of clients (panel B), and in the same province and decile of number of evaders over the number of audited clients (panel C). The red line represents the actual estimate obtained in Table 4, column 2, which is 0.009.

Figure 9: Placebo regressions: pathway of spillover effect

C Tables

Table 1: Descriptive Statistics

A. Taxpayers					
Unique taxpayers: 2,459,202	mean	median	sd	10th pct	90th pct
Woman	0.27	0	0.44	0	1
Married	0.65	1	0.48	0	1
Age	46.52	45	12.36	31	63
Years of activity	13.42	11	10.40	1	29
N. employees	0.80	0	3.28	0	2
Switcher	0.07	0	0.25	0	0
Filed income	19,505.87	10,735	54,032.41	0	41,465
By industry:					
Agriculture	4,329.53	805	37,303.04	0	9,632
Retail	15,193.09	9,958	27,855.95	0	32,444
Manufacturing	16,193.11	13,247	23,709.30	217	29,914
Private services	25,382.64	12,539	75,983.72	0	51,782
Public services	47,108.62	33,520	54,751.66	2,773	98,599

B. IRA: Audits and Evasion					
Audited filings:184,673, taxpayers:138,263					
Taxpayers audited at least once: 5.61%					
Taxpayers with positive evasion: 64.77%	mean	median	sd	10th pct	90th pct
% audited tax filings	1.72	2.25	1.20	0.19	3.17
% tax filings with positive evasion	51.19	63.11	19.76	17.77	70.25
% not congruent tax filings	34.17	32.53	5.69	28.40	43.98
% not coherent tax filings	51.20	51.26	3.87	45.39	56.13
% taxpayers audited more than once	7.01	7.17	0.77	5.80	7.77
Age of audited tax filings	3.89	4	0.90	3	5
Reported income among audits	31,956.85	14,014	107,809.62	0	64,046
Evaded income	21,123.98	4,080	158,202.48	0	35,794
Evaded income of evaders	33,999.74	10,000	199,614.11	2,564	56,264
Share of evasion on total income	31.92	18.82	34.85	0	93.09

C. Accountants					
Unique accountants: 84,185	mean	median	sd	10th pct	90th pct
N. taxpayers per accountant	20.81	7.86	67.95	1	50.75
% clients in the same municipality	68.31	70.11	25.46	32.16	100
% clients in the same province	90.12	96.30	14.01	69.62	100
% clients in the same region	96.32	100	9.30	88.35	100
% clients audited	4.60	0	11.03	0	11.11
% evaders on clients	3.05	0	9.09	0	7.41
% evaders on audited	64.65	70.37	36.11	0	100
% of new accountants in a year	6.41	6.38	0.99	4.98	8.01
% of closing accountants in a year	5.91	5.72	0.52	5.43	6.71

Table 2: Tax evasion spillovers

Dep. Var.: Share of Evasion	(1)	(2)	(3)	(4)	(5)
Accountant: Average Evasion Others	0.129***	0.125***	0.099***	0.083***	0.102***
	(0.007)	(0.007)	(0.006)	(0.006)	(0.006)
Lombardia	0.014***				
	(0.005)				
Veneto	0.046***				
	(0.006)				
Lazio	0.034***				
	(0.005)				
Campania	0.090***				
	(0.005)				
Puglia	0.048***				
	(0.006)				
Sardegna	0.096***				
	(0.007)				
Woman entrepreneur	0.015***	0.015***	0.009***	0.009***	0.005**
	(0.003)	(0.003)	(0.002)	(0.002)	(0.003)
Married entrepreneur	-0.029***	-0.029***	-0.025***	-0.025***	-0.026***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Entrepreneur 31-50 y.o.	-0.038***	-0.038***	-0.026***	-0.027***	-0.023***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Entrepreneur >50 y.o.	-0.032***	-0.032***	-0.027***	-0.026***	-0.024***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Years of activity	-0.002***	-0.002***	-0.002***	-0.002***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm size: 1-5	-0.031***	-0.031***	-0.019***	-0.020***	-0.008***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)
Firm size: 6-10	-0.026***	-0.026***	-0.008*	-0.007	0.017***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)
Firm size: 11-15	-0.045***	-0.045***	-0.026***	-0.025***	0.008
	(0.008)	(0.008)	(0.007)	(0.007)	(0.009)
Firm size: 16-20	-0.026**	-0.026**	-0.006	-0.004	0.031**
	(0.012)	(0.012)	(0.012)	(0.012)	(0.013)
Firm size: >20	-0.052***	-0.052***	-0.037***	-0.036***	0.010
	(0.011)	(0.011)	(0.011)	(0.011)	(0.014)
Congruent			-0.105***	-0.105***	-0.107***
			(0.002)	(0.002)	(0.002)
Coherent			-0.091***	-0.090***	-0.096***
			(0.002)	(0.002)	(0.002)
Accountant: n. of clients/1000			-0.002	-0.001	-0.002*
			(0.001)	(0.001)	(0.001)
Accountant: n. of provinces			0.002***	0.002***	0.002***
			(0.001)	(0.001)	(0.001)
Accountant: evaders/audited up to t-1			0.022***	0.019***	0.024***
			(0.005)	(0.005)	(0.005)
Inverse Mills ratio					-0.774***
					(0.127)
Constant	0.330***	0.377***	0.337***	0.350***	0.311***
	(0.014)	(0.013)	(0.015)	(0.015)	(0.015)
Rho					-.0006
Year FE	yes	yes	yes	yes	yes
Sector FE	yes	yes	yes	yes	yes
Year of audit FE	yes	yes	yes	yes	yes
Age of filing FE	yes	yes	yes	yes	yes
Province FE		yes	yes		yes
Municipality FE				yes	
R-squared	.109	.111	.156	.187	.156
N.Obs.	151,070	151,070	151,070	150,464	151,070

Notes. OLS estimates with standard errors clustered at the tax accountant level (in parentheses). The sample includes all taxpayers audited at least once and whose accountant has at least another audited client in at least one year other than the current one. The average evasion of other clients of the same accountant is computed over all the years excluding the current one. Baseline categories: Umbria, age of entrepreneur: younger than 30 years, firm size: no employee. *, **,*** denote statistical significance at the 10, 5 and 1 percent level.

Table 3: Sorting channel

Panel A Dep. Var.: Avg Share of Evasion of Clients old accountant	(1)	(2)	(3)	(4)
AvgEva Clients new accountant	0.076***	0.073***	0.061***	0.144***
	(0.009)	(0.009)	(0.008)	(0.023)
Woman entrepreneur	-0.002*	-0.002	-0.002	-0.002
	(0.001)	(0.001)	(0.001)	(0.002)
Married entrepreneur	-0.000	-0.000	-0.000	-0.001
	(0.001)	(0.001)	(0.001)	(0.002)
Entrepreneur 31-50 y.o.	-0.009***	-0.008***	-0.007***	-0.011***
	(0.002)	(0.002)	(0.002)	(0.004)
Entrepreneur >50 y.o.	-0.011***	-0.010***	-0.008***	-0.015***
	(0.002)	(0.002)	(0.002)	(0.005)
Years of activity	-0.000***	-0.000***	-0.000***	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)
Firm size: 1-5	-0.005**	-0.005**	-0.005***	-0.005
	(0.002)	(0.002)	(0.002)	(0.004)
Firm size: 6-10	-0.009***	-0.009***	-0.010***	-0.009
	(0.003)	(0.003)	(0.003)	(0.006)
Firm size: 11-15	-0.008*	-0.007*	-0.009**	-0.010
	(0.004)	(0.004)	(0.004)	(0.008)
Firm size: 16-20	0.002	0.003	0.002	-0.001
	(0.007)	(0.007)	(0.006)	(0.012)
Firm size: >20	-0.014**	-0.013**	-0.016***	-0.018*
	(0.007)	(0.006)	(0.006)	(0.010)
Congruent	-0.009***	-0.008***	-0.008***	-0.008***
	(0.002)	(0.002)	(0.001)	(0.003)
Coherent	-0.013***	-0.013***	-0.012***	-0.009***
	(0.001)	(0.001)	(0.001)	(0.003)
Constant	0.419***	0.366***	0.363***	0.344***
	(0.010)	(0.014)	(0.009)	(0.021)
Year FE	yes	yes	yes	yes
Sector FE	yes	yes	yes	yes
Region FE	yes			
Province FE		yes		
Municipality FE			yes	yes
No audit before move				
Prev. accountant closed				yes
R-squared	0.053	0.061	0.105	0.253
N.Obs.	312,840	312,840	312,228	88,776

Panel B Dep. Var.: Average Share Evasion of Switcher before switch	(1)	(2)	(3)	(4)	(5)
AvgEva Clients new accountant before switch	0.071***	0.071***	0.069***	0.069***	0.058**
	(0.012)	(0.012)	(0.013)	(0.016)	(0.028)
Woman entrepreneur	0.014**	0.014**	0.020**	0.018*	0.030*
	(0.007)	(0.007)	(0.008)	(0.010)	(0.018)
Married entrepreneur	-0.028***	-0.028***	-0.027***	-0.012	-0.032**
	(0.006)	(0.006)	(0.007)	(0.009)	(0.015)
Entrepreneur 31-50 y.o.	-0.033**	-0.033**	-0.027	-0.036*	-0.060
	(0.015)	(0.015)	(0.017)	(0.019)	(0.044)
Entrepreneur >50 y.o.	-0.025	-0.026	-0.017	-0.037*	-0.056
	(0.017)	(0.017)	(0.019)	(0.022)	(0.048)
Years of activity	-0.002***	-0.002***	-0.002***	-0.002***	-0.002*
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)
Firm size: 1-5	-0.022***	-0.022***	-0.027***	-0.039***	-0.015
	(0.007)	(0.007)	(0.007)	(0.009)	(0.016)
Firm size: 6-10	-0.049***	-0.049***	-0.064***	-0.062***	-0.076***
	(0.013)	(0.013)	(0.014)	(0.019)	(0.029)
Firm size: 11-15	-0.097***	-0.096***	-0.105***	-0.119***	-0.083
	(0.020)	(0.020)	(0.022)	(0.028)	(0.055)
Firm size: 16-20	0.024	0.028	0.003	0.016	-0.037
	(0.037)	(0.037)	(0.039)	(0.050)	(0.097)
Firm size: >20	-0.063**	-0.059**	-0.079***	-0.062	-0.147**
	(0.027)	(0.027)	(0.030)	(0.038)	(0.065)
Congruent	-0.058***	-0.058***	-0.056***	-0.065***	-0.048***
	(0.007)	(0.008)	(0.008)	(0.010)	(0.018)
Coherent	-0.056***	-0.055***	-0.049***	-0.064***	-0.058***
	(0.007)	(0.007)	(0.007)	(0.009)	(0.016)
Constant	0.444***	0.433***	0.381***	0.402***	0.426***
	(0.025)	(0.033)	(0.028)	(0.033)	(0.066)
Year FE	yes	yes	yes	yes	yes
Sector FE	yes	yes	yes	yes	yes
Region FE	yes				
Province FE		yes			
Municipality FE			yes	yes	yes
No audit before move				yes	
Prev. accountant closed					yes
R-squared	0.088	0.091	0.213	0.233	0.276
N.Obs.	14,279	14,279	13,321	8,812	3,015

Notes. OLS estimates with standard errors clustered at the tax accountant level (in parentheses). In panel A, the sample includes taxpayers who changed accountant at least once and whose old and new accountant have at least on client audited at least once during the sample period. In panel B, the sample includes taxpayers who changed accountant at least once and were audited before the switch. *, **,*** denote statistical significance at the 10, 5 and 1 percent level.

Table 4: Information sharing channel

Dep. Var.: Logarithm of income	(1)	(2)
Peer audit at t-1	0.012***	0.009***
	(0.003)	(0.003)
Own audit at t-1		0.077***
		(0.005)
Married entrepreneur	0.373***	0.321***
	(0.009)	(0.009)
Age of entrepreneur	-0.128***	-0.127***
	(0.002)	(0.002)
Years of activity	0.108***	0.078***
	(0.002)	(0.002)
Size of the firm	0.021***	0.014***
	(0.002)	(0.002)
Accountant: n. clients/1000	-0.039***	-0.037***
	(0.013)	(0.008)
Constant	11.426***	12.034***
	(0.080)	(0.083)
Year FE	yes	yes
Sector FE	yes	yes
ID FE	yes	yes
R-squared	0.678	0.684
N.Obs.	8,289,936	7,259,308

Notes. OLS estimates with standard errors clustered at the tax accountant level (in parentheses). The sample includes all taxpayers. “Peer audit at t-1” is a binary variable with value 1 if the previous year the accountant was audited and the taxpayer was not audited. *, **,*** denote statistical significance at the 10, 5 and 1 percent level.

Table 5: Information sharing channel: peers vs accountant

Dep. Var.: Logarithm of income	(1)	(2)	(3)	(4)	(5)	(6)
Peer audit at t-1	0.007**	0.006*	0.006*	-0.029	-0.171	0.070
	(0.003)	(0.003)	(0.003)	(0.096)	(0.321)	(0.089)
Peer audit at t-1*Peer Same Sector audited at t-1	0.026***					
	(0.005)					
Peer audit at t-1*Peer Same Size audited at t-1		0.010***				
		(0.004)				
Peer audit at t-1*Peer Same Age audited at t-1			0.028***			
			(0.004)			
Peer audit at t-1*Same Province & Sector audited at t-1				0.038		
				(0.096)		
Peer audit at t-1*Same Province & Size audited at t-1					0.180	
					(0.321)	
Peer audit at t-1*Same Province & Age audited at t-1						-0.062
						(0.089)
Own audit at t-1	0.073***	0.075***	0.073***	0.077***	0.077***	0.077***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Married entrepreneur	0.321***	0.321***	0.321***	0.321***	0.321***	0.321***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Age of entrepreneur	-0.126***	-0.126***	-0.126***	-0.127***	-0.127***	-0.127***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Years of activity	0.078***	0.078***	0.078***	0.078***	0.078***	0.078***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Size of the firm	0.014***	0.014***	0.014***	0.014***	0.014***	0.014***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Accountant: n. of clients/1000	-0.039***	-0.037***	-0.039***	-0.037***	-0.037***	-0.037***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Constant	12.016***	12.023***	12.013***	12.034***	12.034***	12.034***
	(0.084)	(0.084)	(0.084)	(0.083)	(0.083)	(0.083)
Year FE	yes	yes	yes	yes	yes	yes
Sector FE	yes	yes	yes	yes	yes	yes
ID FE	yes	yes	yes	yes	yes	yes
R-squared	0.684	0.684	0.684	0.684	0.684	0.684
N.Obs.	7,259,308	7,259,308	7,259,308	7,259,308	7,259,308	7,259,308

Notes. OLS estimates with standard errors clustered at the tax accountant level (in parentheses). The sample includes all taxpayers. In panel A, "Peer audit at t-1" is interacted with a set of binary variables with value 1 if other clients of the *same* accountant with similar characteristics have been audited in the previous year. In panel B, "Peer audit at t-1" is interacted with a set of binary variables with value 1 if other individuals in the *same province* but not the same accountant and with similar characteristics have been audited in the previous year. *, **,*** denote statistical significance at the 10, 5 and 1 percent level.

Table 6: Memory of information

Dep. Var.: Logarithm of income	(1)	(2)
Peer audit at t-1	0.012***	0.020***
	(0.004)	(0.005)
Peer audit at t-2		0.036***
		(0.005)
Peer audit at t-3		0.041***
		(0.005)
Own audit at t-1	0.081***	0.082***
	(0.008)	(0.008)
Own audit at t-2	0.051***	0.053***
	(0.008)	(0.008)
Own audit at t-3	0.033***	0.031***
	(0.007)	(0.008)
Accountant: n. of clients/1000	-0.038	-0.044*
	(0.024)	(0.027)
Constant	7.660***	7.606***
	(0.048)	(0.051)
Sector FE	yes	yes
ID FE	yes	yes
R-squared	0.736	0.740
N.Obs.	3,927,310	3,674,085

F tests - P-values

$H_0 : \beta^{own}_{t-1} = \beta^{own}_{t-2} = \beta^{own}_{t-3}$	.000	.000
$H_0 : \beta^{peer}_{t-1} = \beta^{peer}_{t-2} = \beta^{peer}_{t-3}$	-	.002
$H_0 : \beta^{peer}_{t-2} = \beta^{peer}_{t-3}$	-	.304

Notes. OLS estimates with standard errors clustered at the tax accountant level (in parentheses). In column 1 the sample includes taxpayers filing in two consecutive years; in column 2 taxpayers filing in four consecutive years. *, **,*** denote statistical significance at the 10, 5 and 1 percent level.

□

Table 7: Audit and accountant switches

Panel A Dep. Var.: Probability of switching accountant	(1)	(2)	(3)	(4)
Peer audit at t-1	-0.059***	-0.050***	-0.040***	-0.048***
	(0.003)	(0.002)	(0.002)	(0.002)
Peer audit at t-1*Peer Same Sector audited at t-1		-0.024***		
		(0.002)		
Peer audit at t-1*Peer Same Size audited at t-1			-0.025***	
			(0.003)	
Peer audit at t-1*Peer Same Age audited at t-1				-0.024***
				(0.003)
Own audit at t-1	0.012***	0.016***	0.016***	0.016***
	(0.001)	(0.001)	(0.001)	(0.001)
Taxpayer's characteristics	yes	yes	yes	yes
Accountant's n. clients	yes	yes	yes	yes
Region FE	yes	yes	yes	yes
Year FE	yes	yes	yes	yes
Pseudo R-squared	0.033	0.037	0.039	0.038
N.Obs.	7,664,456	7,664,456	7,664,456	7,664,456

Panel B Dep. Var.: Probability of switching accountant	(1)	(2)	(3)	(4)
Peer audit at t-1	-0.061***	-0.009***	-0.027***	-0.006***
	(0.005)	(0.001)	(0.002)	(0.001)
Peer audit at t-2		-0.008***		-0.005***
		(0.001)		(0.001)
Peer audit at t-3		-0.014***		-0.009***
		(0.001)		(0.001)
Own audit at t-1	0.010***	0.008***	0.008***	0.008***
	(0.001)	(0.001)	(0.000)	(0.000)
Own audit at t-2	0.008***	0.007***	0.007***	0.007***
	(0.001)	(0.001)	(0.000)	(0.000)
Own audit at t-3	0.005***	0.004***	0.004***	0.004***
	(0.001)	(0.001)	(0.000)	(0.000)
Taxpayer's characteristics	yes	yes	yes	yes
Accountant's n. clients	yes	yes	yes	yes
Region FE	yes	yes	yes	yes
Year FE	yes	yes	yes	yes
Previous accountant still active			yes	yes
Pseudo R-squared	0.041	0.018	0.019	0.014
N.Obs.	4,121,810	3,892,972	4,064,846	3,869,737

Notes. Marginal effects of probit models estimates with standard errors clustered at the tax accountant level (in parentheses). The sample includes taxpayers with tax filings in at least two consecutive years in panel A and in at least four consecutive years in panel B. Columns (3) and (4) of panel B exclude taxpayers who moved to a new accountant simultaneously to the closure of the previous accountant. All specifications include as controls the characteristics of taxpayers (gender, marital status, age class, years of activity), size and macro-sector of the business, the number of clients of the accountant, region and year fixed effects. *, **,*** denote statistical significance at the 10, 5 and 1 percent level.

Table 8: IRA audit policy

Dep. Var.: Received an audit	(1)	(2)	(3)
Age of tax filing: 2 y.	0.00540***	0.00548***	0.00527***
	(0.00011)	(0.00013)	(0.00013)
Age of tax filing: 3 y.	0.01207***	0.01226***	0.01151***
	(0.00022)	(0.00027)	(0.00026)
Age of tax filing: 4 y.	0.03071***	0.03089***	0.02854***
	(0.00047)	(0.00056)	(0.00056)
Age of tax filing: 5 y.	0.02269***	0.02281***	0.02032***
	(0.00039)	(0.00048)	(0.00049)
Age of tax filing: 6 y.	0.00023***	0.00023***	-0.00008
	(0.00007)	(0.00008)	(0.00007)
Age of tax filing: 7 y.	-0.00041***	-0.00044***	-0.00067***
	(0.00006)	(0.00006)	(0.00006)
Woman entrepreneur	-0.00035***	-0.00034***	-0.00035***
	(0.00001)	(0.00001)	(0.00001)
Married entrepreneur	-0.00014***	-0.00016***	-0.00015***
	(0.00001)	(0.00001)	(0.00001)
Entrepreneur 31-50 y.o.	0.00020***	0.00021***	0.00021***
	(0.00002)	(0.00002)	(0.00002)
Entrepreneur >50 y.o.	0.00019***	0.00019***	0.00018***
	(0.00003)	(0.00003)	(0.00003)
Years of activity	0.00001***	0.00001***	0.00001***
	(0.00000)	(0.00000)	(0.00000)
Firm size: 1-5	0.00101***	0.00100***	0.00100***
	(0.00002)	(0.00003)	(0.00003)
Firm size: 6-10	0.00293***	0.00292***	0.00291***
	(0.00008)	(0.00009)	(0.00009)
Firm size: 11-15	0.00435***	0.00443***	0.00442***
	(0.00015)	(0.00017)	(0.00017)
Firm size: 16-20	0.00506***	0.00515***	0.00512***
	(0.00024)	(0.00028)	(0.00028)
Firm size: >20	0.00621***	0.00636***	0.00635***
	(0.00028)	(0.00032)	(0.00032)
Congruent	-0.00011***	-0.00010***	-0.00009***
	(0.00001)	(0.00001)	(0.00001)
Coherent	-0.00035***	-0.00034***	-0.00034***
	(0.00001)	(0.00001)	(0.00001)
Accountant: n. of clients/1000		-0.00014	-0.00014
		(0.00014)	(0.00015)
Accountant: n. of provinces		0.00001	0.00001
		(0.00001)	(0.00001)
Accountant: evaders/audited up to $t-1$		0.00021***	0.00019***
		(0.00004)	(0.00004)
Accountant: Average Evasion Others		0.00019***	0.00020***
		(0.00004)	(0.00004)
Firm entry (share of total registered)			0.01099***
			(0.00199)
Inflation rate (CPI)			0.00732***
			(0.0007)
Unemployment rate			-0.00229***
			(0.00043)
Region FE	yes	yes	yes
Year FE	yes	yes	yes
Year of audit FE	yes	yes	yes
Province-level economic controls at time of filing			yes
Pseudo R-squared	0.111	0.111	0.112
N.Obs.	49,857,346	42,233,624	42,233,624

Notes. Marginal effects of probit models with standard errors clustered at the tax accountant level (in parentheses). Baseline categories: Umbria, age of entrepreneur: younger than 30 years, firm size: no employee, age of tax filing: 1 year. *, **,*** denote statistical significance at the 10, 5 and 1 percent level.

Table 9: Evidence on strategic audit

	IRA Audit Policy (Table 8)	Client Tax evasion (Table 2)
Tax evasion predictors		
TA: n. of clients/1000	-0.00014	-0.002*
TA: n. of provinces	0.00001	0.002***
TA: evaders/audited up to t-1	0.00019***	0.024***
TA: average evasion of others	0.00020***	0.102***
Congruent filing	-0.00009**	-0.107***
Coherent filing	-0.00034***	-0.096***
Cost of public funds		
Firm entry *(t)*	0.01099***	-
Inflation rate *(t)*	0.00732***	-
Unemployment rate *(t)*	-0.00229***	-
Sample share of audited tax filings	0.00370	
N.Obs.	42,233,624	151,070

Table A1: Audit rates

Region	2007	2008	2009	2010	2011	2012	2013	All
Lombardia	2.31	2.56	1.73	1.85	0.84	0.39	0.33	1.45
Veneto	2.27	2.19	1.56	1.74	0.70	0.27	0.13	1.29
Umbria	3.73	3.80	2.77	2.53	1.71	0.70	0.27	2.25
Lazio	2.92	4.46	2.92	2.41	0.80	0.21	0.10	2.00
Campania	4.02	4.05	2.87	3.07	1.66	0.41	0.14	2.34
Puglia	2.82	3.08	2.61	2.59	1.14	0.35	0.12	1.82
Sardegna	2.74	2.92	2.33	2.18	1.11	0.25	0.10	1.69
All regions	2.81	3.17	2.26	2.25	1.02	0.34	0.19	1.74

Notes. Percentage of audited filings on total filings by region and fiscal year of filing.