

# Tax Compliance in the Rental Housing Market: Evidence from a Field Experiment

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VATT WORKING PAPERS

122

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We would like to thank the team at the Finnish Tax Administration for cooperation in conducting the field experiment. The Finnish Tax Administration neither endorses nor disagrees with the views and opinions presented by the authors. We also thank conference participants at IIPF Congress 2018, NTA Congress 2018, MaTax Conference 2018, Workshop on Empirical Analysis of Tax Compliance at University of Oslo, and seminar audiences at NHH Bergen, University of Turku and the Ministry of Finance for helpful comments and discussions. The research received funding from the Academy of Finland (grant no. 277283).

ISBN 978-952-274-241-4 (PDF)

ISSN 1798-0291 (PDF)

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Arkadiankatu 7, 00100 Helsinki, Finland

Helsinki, October 2019

# Tax Compliance in the Rental Housing Market: Evidence from a Field Experiment

VATT Institute for Economic Research  
VATT Working Papers 122/2019

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## Abstract

We study rental income tax compliance using a large-scale randomized field experiment and register data with third-party information on the ownership of apartments. We analyze the responses of potential landlords to treatment letters notifying them of stricter tax enforcement, or providing simplifying information on filing practices for the rental income tax. We find that both types of letters caused an increase in the propensity to report rental income, with letters notifying landlords of the use of third-party information in tax enforcement having the strongest effect. Our research design also allows us to analyze different types of spillover effects in tax enforcement. We find an indication of positive reporting spillovers within the household, but do not find clear evidence of spillovers between landlords in local rental markets.

**Key words:** Tax compliance, field experiment, rental market

**JEL classes:** H26, H31

# 1 Introduction

Rental income is an interesting form of taxable income in several respects and somewhat different from other forms of capital income. First of all, it is largely lacking in third party reporting. There are reasons to believe that this might create opportunities for tax evasion.<sup>1</sup> Related to this, in many countries there seems to exist clear economic incentive for tax evasion. For instance, in many OECD countries rental property is the most heavily taxed type of asset (OECD (2018)). Further, the ownership of rental units tends to be widespread across households, which makes different types of enforcement measures potentially costly for tax authorities.

There is increased awareness of the potential consequences of rental income tax evasion for the efficiency of taxation. This is especially important if tax evasion opportunities vary between different types of capital income. For instance, in the U.K., it is estimated that a significant tax loss is likely in the rental market.<sup>2</sup> In addition, a recent report concluded that roughly half of the landlords in one borough of London do not report their rental income.<sup>3</sup>

We analyze tax enforcement and compliance in the rental housing market using a large-scale field experiment in Finland and register data on the entire population of Finnish private individuals owning housing units.<sup>4</sup> The data enables identifying apartments occupied by someone else than the owner, and the owners of such apartments are classified as potential landlords in our study. That is, even though such third-party information was not routinely used in the enforcement of rental income taxation during the study period, it is possible to construct such measures through combining information from different registers.

In the experiment, a randomly selected subset of potential landlords received letters from the Finnish Tax Administration, notifying them of various features of rental income tax filing and enforcement. The experiment comprised several treatments that allow us to disentangle different determinants of non-compliance. First, ignorance (e.g. about reporting requirements concerning income vs. expenses) and compliance costs may affect

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<sup>1</sup>Several recent studies have analyzed the role of third-party reporting in other cases and have found it to be an important factor in understanding tax evasion. See e.g. Kleven et al. (2011) and Harju et al. (2017).

<sup>2</sup>“Tax evasion in 2014 and what can be done about it”  
<http://www.taxresearch.org.uk/Documents/PCSTaxGap2014Full.pdf>.

<sup>3</sup>“Half of landlords in one London borough fail to declare rental income”, The Guardian, August 13, 2017.

<sup>4</sup>The experiment has been pre-registered at the AEA RCT Registry, <https://www.socialsciregistry.org/trials/2575>

the level of non-compliance, and one of our treatments aimed at reducing these costs, through providing simplifying information on the tax filing procedure and requirements related to rental income taxation. Our second treatment signaled a general increase in enforcement intensity to the recipients. Finally, our third treatment informed potential landlords of the use of third-party information in tax enforcement, and allows us to assess the effectiveness of third-party information in deterring tax evasion, compared with a general increase in enforcement intensity.

We find that the treatment letters had an effect on the reporting behavior of potential landlords. The effect is most pronounced on the extensive margin (i.e. increasing the number of individuals that report a positive amount of rental income), while effects on the intensive margin (i.e. on the euro amount of rental income reported) are smaller. The strongest treatment, notifying potential landlords of the use of third-party information in tax enforcement, has the strongest effect. In particular, potential landlords who did not file any rental income in the year prior to the experiment respond very strongly to the use of third-party information: the propensity to report a positive amount of rental income was over 50 % higher in this group in the treatment year, compared to the baseline level in the control group.

We also analyze whether information about intensified enforcement has spillover effects beyond those individuals who receive a treatment letter. Spillover effects in tax reporting may arise if the information on the treatments spreads between landlords, or within the family. Using a randomized block design similar to Crépon et al. (2013), we analyze spillover effects from intensified enforcement across landlords within local rental markets. Further, the base population in our study is constructed in such a way that we are able to also examine potential spillovers within the household.

We find some indication of spillover effects in tax reporting behavior within the household. We do not find clear evidence of enforcement spillovers between landlords in local rental markets.

We contribute to previous literature in a number of ways. First, despite likely opportunities for evasion, prior literature on rental income tax evasion is very scarce. Wenzel and Taylor (2004) carried out an experiment where owners of rental properties were asked to itemize expenses in tax returns, which led to a 5 – 7.5% reduction in reported expenses compared to receiving an information letter only.

Second, whereas the importance of third-party information in tax enforcement has been acknowledged in earlier literature (e.g. Slemrod (2007), Kleven et al. (2011)), literature utilizing randomized variation in third-party information is scarce.<sup>5</sup> Harju et al. (2017)

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<sup>5</sup>In Kleven et al. (2011), variation in 3rd party reporting comes from certain types of income being

have implemented randomized variation in the salience of third-party information, albeit in a quite different context, namely tax evasion on car imports.

Third, analyzing spillovers is essential for obtaining an accurate understanding of the overall implications of stricter enforcement. Crépon et al. (2013) argue that in the context of labour market policies, ignoring spillovers may bias our understanding of the effects of a policy if making some individuals more employable has a negative externality on other jobseekers. In the context of tax enforcement, ignoring spillover effects may lead to misleading conclusions about the effects of intensified enforcement. Depending on the sign of the spillover effect, the effects of enforcement may be understated or overstated if one only looks at the direct effect. Ignoring some of these responses also leads to biased estimates of the compliance gap (i.e. the amount of tax revenue that can be recouped by more intensive enforcement).<sup>6</sup> Further, understanding spillover effects helps in the targeting of enforcement measures. A few earlier papers have studied regional enforcement spillovers between individuals in the context of TV license fee collection (Rincke and Traxler (2011), Drago et al. (2015) and income tax filing (Meiselman (2018)). Frimmel et al. (2018) and Alstadsaeter et al. (2019) analyze tax evasion and avoidance spillovers within the family, while these two papers do not focus on the effects of enforcement measures. Pomeranz (2015), Boning et al. (2018) and Brockmeyer et al. (2018) analyze enforcement spillovers in firm networks. We contribute to this literature by analyzing tax enforcement spillovers both between landlords in local rental markets, as well as between family members.

## 2 Institutional Background

Overall, more than 60% of Finnish households live in owner-occupied housing. In general, the share is lower in large cities. For instance, in the capital city of Helsinki the share of owner-occupiers is slightly less than 50%.

The Finnish rental market can be divided into the private rental market and social subject to 3rd party reporting, while others (notably self-employment income) are not. In studying firm responses to an audit experiment, Pomeranz (2015) compares those line-items in the VAT declaration of firms that are covered by the paper trail (transactions between two firms) to line items that are not (sales to final consumers). Naritomi (2016) compares retail transactions (where the extent of 3rd party information increased due to a campaign that incentivized consumers to send in their receipts to the authorities) and wholesale transactions (not affected by the campaign). In none of these studies was 3rd party information in itself subject to randomization.

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<sup>6</sup>See e.g. Gemmill and Hasseldine (2014) and Slemrod (2017).

housing.<sup>7</sup> We focus on the private rental market constituting roughly two thirds of the overall rental market. In the private rental market, roughly half of the rental units are owned by large institutional landlords. The other half are owned by private individuals. Currently the net rental income is subject to a 30% capital income tax rate and 34% if taxable income exceeds an annual threshold of 30,000 euros.<sup>8</sup>

Overall, in the private rental market, legislation on rental agreements is very flexible. For instance, rent-setting is not subject to any restrictions.<sup>9</sup> In addition, valid reasons for contract termination include unpaid rents, sale of the dwelling by the landlord or personal use. The annual mobility rate among renters is around 20% and is substantially higher than the mobility rate of owner-occupier households.

The rental income tax is a non-negligible source of tax revenue in Finland. In 2015, total reported rental income net of expenses amounted to 1.6 billion euros. The corresponding tax revenue was more than 480 million euros (or 1.1% of the state tax revenue).

In the analysis, we focus on rental apartments owned by individuals. For the purposes of this study, we identify likely landlords by combining register data on ownership and flat occupancy in a manner discussed in more detail in Section 3.2.

Figure 1 illustrates the nature of the phenomenon under study. The figure shows the share of individuals reporting rental income as well as the share of potential landlords and total tax revenue by the number of potential rental apartments owned by the individual.

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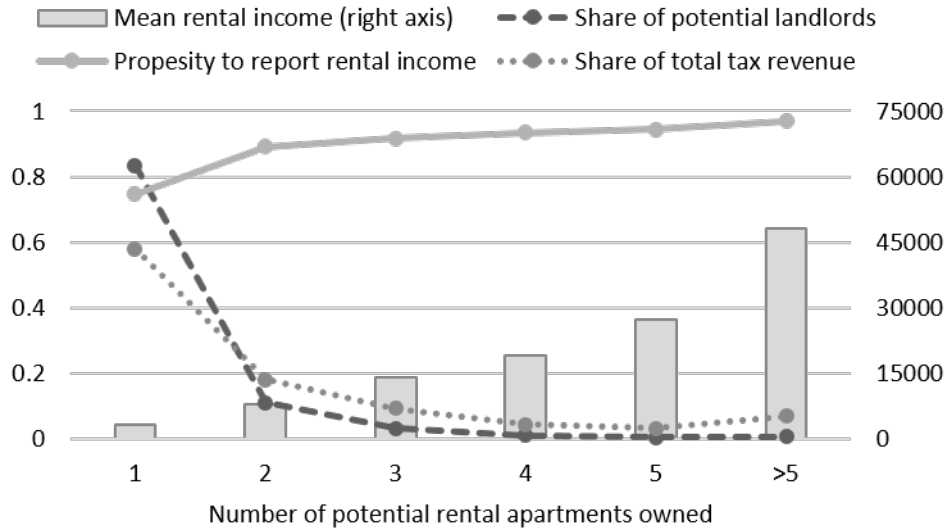
<sup>7</sup>In the social housing sector, rents and tenant selection are regulated. The housing units are owned by municipalities and non-profit organizations that are not subject to regular capital income taxation.

<sup>8</sup>The tax rate has been slightly increased during the recent decades and the progressivity was introduced in 2012.

<sup>9</sup>In the case of long-term rental agreements, the rent is typically reviewed annually. The size of annual rent increases must be specified in the lease agreement and is typically based on the cost-of-living index.



**Figure 1:** Rental income tax reporting by potential landlords



Notes: Figure describes reporting of rental income and the share of total tax revenue by the number of potential rental flats owned in the end of tax year 2015. The data used in the figure contains individuals in untreated control blocks (N = 19,028).

There are a number of interesting points to note from the figure. First, small scale renting is highly prevalent, and significant from a tax revenue perspective: More than 80% of all potential landlords own only one potential rental apartment, and their share of the overall rental income tax revenue was almost 60%. Second, out of those individuals owning one potential rental flat, roughly 75% reported some rental income to the tax authority in tax year 2015. The figure also shows (right axis) the amount of rental income reported in 2015 by the number of potential rental apartments.

As the ownership of rental units is widespread across households and small-scale renters make up a large share of tax revenue, enforcement may be costly for tax authorities. This underlines the importance of looking for ways to steer taxpayers to comply without audits.

Turning next to the tax-filing procedure, pre-populated income tax returns are sent out to taxpayers in late April each year. They contain information on incomes that are subject to third-party reporting. Thereafter, the taxpayer is required to submit a revised return to the tax authority if any income information is missing from the pre-populated return. The taxpayer can also apply for discretionary deductions (e.g. expenses for travel to work). The taxpayers have to submit their corrections in May; otherwise, the original proposal is implemented.

As income from rental property is not subject to any third-party reporting, those

individuals with rental income always have to revise the pre-populated tax return and submit the revision to the tax authority. Rental income is reported on a separate form (see Appendix B), and income and deductible expenses have to be reported separately.

## 3 Research design and data

### 3.1 Experiment

#### 3.1.1 Constructing the base population

The base population for the experiment was formed using national registers on flat ownership and flat occupancy to identify potential landlords.<sup>10</sup> Information from different registers can be combined using personal identification numbers that uniquely identify individuals across different national registers.

We proceed as follows: Information on flat ownership is based on end of year 2015 situation.<sup>11</sup> Information on personal addresses, i.e. flat occupancy in the end of 2015, is obtained from another government register. Combining information from these different registers, we classify flats that are occupied by someone else than one of the owners as potential rental flats. For each potential rental flat owned by at least two individuals, we identify the main owner and allocate the flat to this specific owner. These owners are classified as potential landlords.

From each household with more than one potential landlord, we include only one in the base population. We construct households using information on the street address. For each household, we identify the individual with the largest number of potential rental flats and select only this individual to the base population. This guarantees that only one member of each household receives the treatment and this individual is the one with most extensive ownership. We also drop individuals with more than 15 potential rental flats.

In addition, some flats have several owners who are not members of the same household. As we wish to minimize spillovers across experimental treatment groups, we further restrict the base population so that we randomly keep only one of the owners of jointly owned flats.

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<sup>10</sup>We focus on flats in apartment buildings and leave out detached houses which are often located in rural areas with thin rental markets.

<sup>11</sup>We drop flats that have been bought in November or December because it is unlikely that a new rental contract could have been made with a tenant before the end of 2015. We also drop flats with more than 15 tenants and more than 5 owners.

### 3.1.2 Treatments

The treatment letters were sent out in April 2016 by the Finnish Tax Administration. The letters were sent out just prior to the time when taxpayers received their pre-populated income tax returns. Reporting concerned income earned in 2015, and therefore any effects that we find for the first treatment year are pure reporting responses. Any real responses are ruled out by the timing of the experiment. However, we have data on reporting behavior also for the following year, and any effects that we find on rental income reported in 2017 (concerning income in tax year 2016) may incorporate both reporting and real responses: Stricter enforcement increases the effective tax rate on rental income and may therefore affect real behavior (portfolio choice) of landlords.

All in all, roughly 45,000 treatment letters were sent. The experiment consisted of four different treatments: 1) Letter with a neutral reminder to file tax returns; 2) Letter providing information on how to file rental income; 3) Letter notifying the recipient of a general increase in the intensity of rental income tax enforcement; 4) Letter on intensified enforcement of rental income taxation and a mention of the use of third-party information on ownership of dwellings. All treatment letters (2)–(4) contained also the neutral information provided in treatment letter (1), and therefore group (1) served as a baseline for the actual treatments of interest.

The enforcement measures described in letters (3) and (4) were implemented by the Finnish Tax Administration in summer 2016. The full letters are shown in Appendix B.

Table 1 describes our experimental design. We used a randomized block design, similar to the design in Crépon et al. (2013), to assign individuals randomly to the four treatment groups. To be able to analyze potential spatial spillovers of the treatments, we use the following procedure. We first allocate each potential landlord in our base population to a postcode area based on where the flats owned are located. Those owning flats in different postcode areas are allocated to the postcode area with most flats.

Finland is a typical European country in the sense that most households live in owner-occupied housing, and rental markets are mostly concentrated in the larger cities and towns. As we wish to analyze spatial spillovers, we leave out housing market areas that are mostly populated by owner-occupiers living in detached houses, and select into our treatment only postcode areas with a reasonably dense rental market.<sup>12</sup> These postcode areas (or blocks) are then randomly assigned into three treatment groups with varying

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<sup>12</sup>We leave out rural municipalities with less than 5,000 flats. Furthermore, we leave out postcode areas with less than 60 flats and with on average less than five flats per building. After these restrictions, we have 263 postcode areas.

intensity of treatment: i) control blocks where no letters were sent; ii) low-intensity blocks where 24% of potential landlords in the base population received a letter; iii) high-intensity blocks where 62% of potential landlords received a letter.<sup>13</sup> In addition, the share of the stronger treatment letters (3) and (4) was higher in the high-intensity blocks. For instance, out of those receiving a letter, roughly a third in the low-intensity blocks and a half in the high-intensity blocks received letter (4).

**Table 1:** Experimental design.

	Not in blocks	Control blocks	Low intensity blocks	High intensity blocks	Total
No letter	28178	19208	21320	14995	83701
Letter 1	4779	0	1713	2502	8994
Letter 2	4871	0	1739	2383	8993
Letter 3	1397	0	1118	6476	8991
Letter 4	2813	0	2310	12863	17986
Total	42038	19208	28200	39219	128665
Postcode areas	4200	62	90	111	4463

Notes: Table shows the number of letters sent to different groups of potential landlords in the base population in the treatment and control groups as well as the number of postcode areas.

Figure 2 shows an illustration of the block design for Helsinki, the capital city and largest municipality in our data. There are roughly 650,000 inhabitants and 80 postcode areas in Helsinki. The postcode areas with reasonably dense rental market are randomly assigned to control, low-intensity or high-intensity groups (for data confidentiality reasons, we are not able to show which ones).

<sup>13</sup>We first form groups of postcode areas with similar size. Then within each strata, randomly assign postcode areas to different blocks.

**Figure 2:** An illustration of the block design for Helsinki.



Source: City of Helsinki, Map service. <https://kartta.hel.fi/>

## 3.2 Data

Our data contains very rich information on individual incomes from different sources, assets, and taxes paid. Summary statistics of key variables in the data are reported in Table A1 of Appendix A.

Given that landlords and rental markets not in the blocks are quite different from those in the blocks, we utilize data from the blocks only in our main analysis and report the results for individuals outside the blocks in the appendix. This choice also allows us to analyze spatial spillovers, and to isolate the treatment effects of the letters from such spillovers.

Table 2 describes reporting of rental income before the treatment (Panel A) and after the treatment (Panel B). The comparison of different treatment groups in Panel A shows that the randomization has been successful as the groups are very similar to each other in terms of the pre-treatment propensity to report, reported gross rental income and reported net rental income. This is to be expected by construction.

Overall, a comparison of Panel A and B indicates that the propensity to report rental income is higher after the treatment. This is true also in the "No letter" group. Such changes over time may be due to general developments in the rental market. One specific reason may be related to turnover: some of those who owned a potential rental flat in

2015 may not have owned one in 2014. This would mechanically increase the propensity to report from 2014 to 2015.

A first indication that the treatment had some effect on the propensity to report rental income is visible in Panel B: For example, those receiving Letter (4) had a higher propensity to report than those not receiving a letter or receiving Letter (1).

**Table 2:** Reporting of rental income before and after the treatment.

	Reported rental income 1/0		Gross rental income		Net rental income	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
<i>Panel A: Before treatment (tax year 2014)</i>						
No letter	0.735	0.441	8146	23774	4473	14028
Letter 1	0.744	0.437	8040	16979	4485	13643
Letter 2	0.742	0.438	7743	11885	4267	7629
Letter 3	0.739	0.439	8143	17851	4601	11225
Letter 4	0.745	0.436	7911	16212	4342	8988
<i>Panel B: After treatment (tax year 2015)</i>						
No letter	0.783	0.412	8994	25886	4910	15886
Letter 1	0.803	0.398	9029	20720	5043	15298
Letter 2	0.810	0.392	8564	12091	4733	7678
Letter 3	0.813	0.390	9092	18592	5106	11508
Letter 4	0.824	0.380	8890	17707	4910	10277

Notes: Table shows rental income reporting before the treatment (tax year 2014) and after the treatment (tax year 2015) in the treatment groups.

### 3.3 Empirical strategy

We use the following Difference-in-Differences type model to estimate the effects of the various treatments in our experimental design:

$$y_{it} = \alpha + \zeta After_t + \sum_j \beta_j Let_j After_t + \sum_k \gamma_k Blo_k After_t + \sum_j \lambda_j Let_j + \sum_k \eta_k Blo_k + \epsilon_{it} \quad (1)$$

where  $y_{it}$  is the outcome for individual  $i$  at time  $t$ . We control for general changes in outcomes in the after period (either tax year 2015 or 2016) with dummy  $After_t$ .

We consider the effects of the different treatment letters ( $Let_j$ ) separately, and include dummies for high or low intensity blocks ( $Blo_k$ ).  $\beta_j$  then identify the effects of the different letters on outcome  $y$ . Similarly,  $\gamma_k$  identify the effects of being in a high or low treatment block (over and above the direct effect of receiving a letter), relative to the control block.  $\epsilon$  is the error term. We cluster standard errors at the postcode level.

We also report results at the block level using the following specification:

$$y_{it} = \alpha + \zeta After_t + \sum_k \gamma_k Blo_k After_t + \sum_k \eta_k Blo_k + \epsilon_{it} \quad (2)$$

This specification does not include controls for the different letter treatments separately. In this case, the estimates capture the combined effect of all four treatments, while treatment intensity differs between the three groups.

In both specifications, we include individual fixed effects and control for the number of all flats owned.<sup>14</sup> We also control for the enforcement measures associated with the experiment.

## 4 Results

### 4.1 Descriptive analysis

Figures 3 and 4 provide first descriptive evidence on the effects of our experimental treatments. Both figures show reporting behavior in our base population in the treatment and control blocks in tax years 2013-2016. Tax years 2013-2014 are pre-treatment years, and tax year 2015 is the first treatment year. The development is shown separately for the control blocks, those who did not receive a letter in the treatment blocks, as well as recipients of treatment letters (2)-(4) combined.

Figure 3 shows the development of the share of potential landlords reporting a positive amount of rental income. The fraction develops similarly in all the groups before the treatment, and the pre-treatment levels are not statistically significantly different from each other. This is in line with the observation from Table 2 above that the randomization appears to have been successful.

The figure indicates that the treatment letters caused a statistically significant increase in the fraction of potential landlords reporting a positive amount of rental income in tax year 2015. In the following year, the fraction reporting rental income declines somewhat.

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<sup>14</sup>We exclude individuals who own more than 20 flats. This constitutes less than 0.2% of our observations.

On the other hand, other landlords in the treatment blocks do not seem to be affected on average (a measure of possible spillover effects, also to be discussed in more detail below).

Finally, Figure 3 shows that approximately 77% of the potential landlords in the control blocks reported a positive amount of rental income in 2015. There may be some measurement error and some potential landlords may not report rental income for legitimate reasons, as it is possible that no rent was paid even if the apartment was occupied. Nevertheless, it seems likely that non-compliance in rental income taxation is a non-trivial phenomenon. Also, landlords' reactions to the treatment letters are a first indication of underlying non-compliance. It is therefore of interest to analyze how compliance can be improved. In the next section, we turn to an econometric analysis of the effects of information on stricter tax enforcement in the rental housing market.

**Figure 3:** Fraction of potential landlords reporting rental income, by treatment groups and letters, tax years 2013-2016.

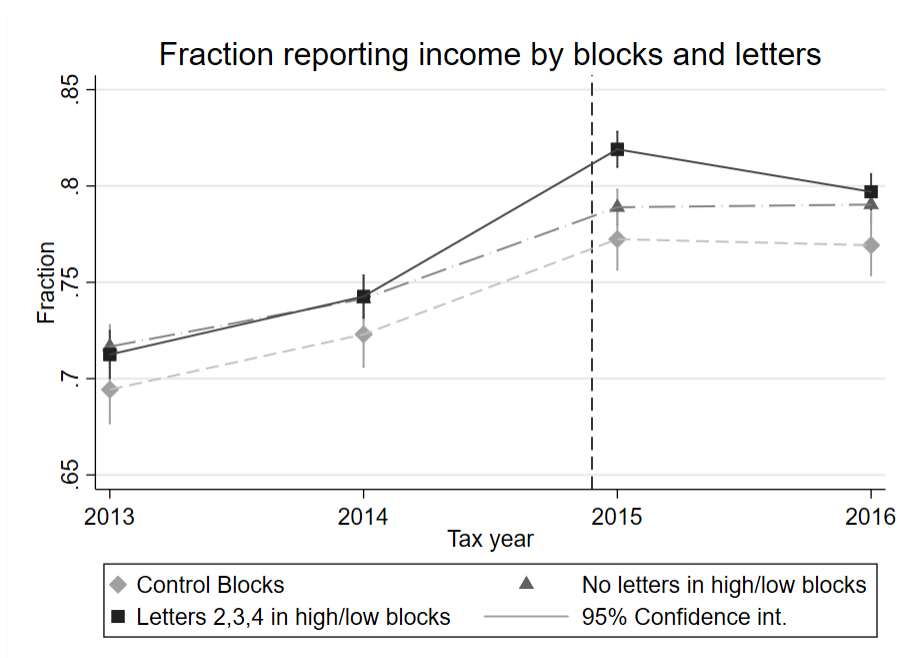
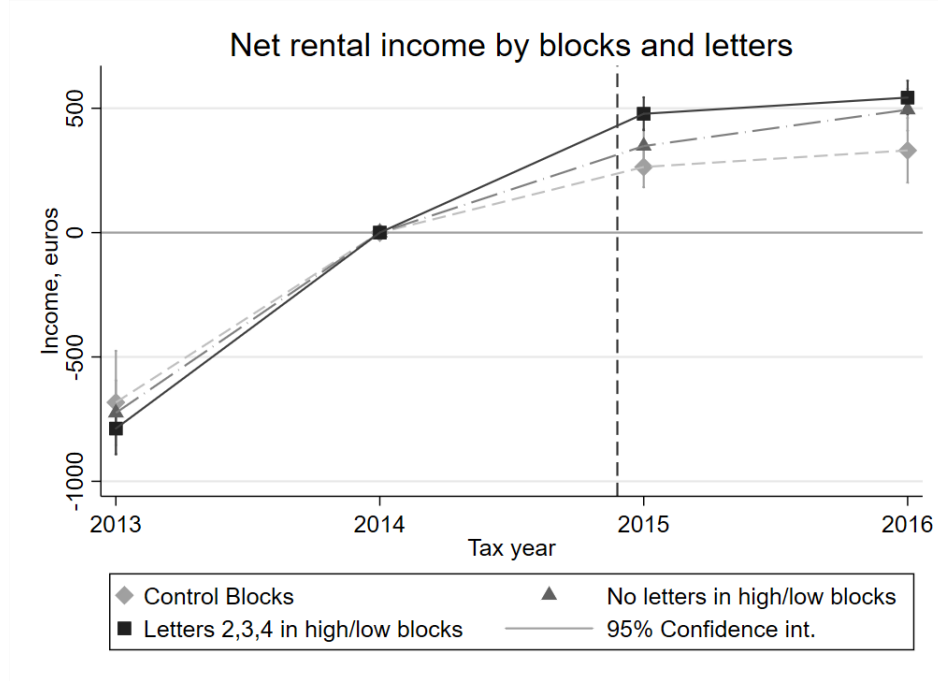


Figure 4 shows the development of the amount of net rental income. The figure is based on an individual-level fixed-effects regression and also includes block-level net rental income as a control. The figure shows that in the treatment year (tax year 2015), net rental income increased for those receiving a letter, but did not change for other groups. In the following year (tax year 2016) net income is still on a higher level in the group that received the letter. In that year, there is a slight increase visible also for those in the treatment blocks who did not receive any letter. The latter effect is consistent with a



positive spillover effect, though the effect is not statistically significant.<sup>15</sup>

**Figure 4:** Net rental income reported by landlords, by treatment groups and letters, tax years 2013-2016. Based on an individual level fixed-effects regression.



## 4.2 Econometric analysis

We now turn to regression analysis. We first report results from estimating equation (2) at the block level for the first treatment year without separate controls for the different treatment letters. Table 3 shows reporting behavior in low-intensity and high-intensity postcode areas compared to control areas with no letters.

The estimates capture the combined effect of all four treatments, while treatment intensity differs between the treatment groups. In the low-intensity blocks 24%, and in the high-intensity blocks 62% of potential landlords in the base population received a letter. In addition, the share of treatment letters (3) and (4) was higher in the high-intensity blocks (cf. Table 1).

<sup>15</sup>As we showed above, randomization has led to balanced samples across the treatment groups in 2014. Figure 4 shows that net rental income also develops reasonably parallel from 2013 to 2014 across different blocks. Control blocks are however on a slightly less steep trend than treatment blocks on average. This may be due to the small number of blocks, 63 in the control group. This could create a small bias to our regression estimates quantifying the effect, which we need to take into account in our total assessment of the results.

**Table 3:** Effects by geographical intensity of the treatment.

Dep. Var.	Reported			Spouse reported		
	rental income (0/1)	Rental income (gross)	Rental income (net)	rental income (0/1)	HH rental income (gross)	HH rental income (net)
Low intensity blocks	0.00278 [0.00400]	68.77 [76.43]	101.1* [53.83]	0.00293 [0.00288]	93.48 [85.33]	146.4** [63.13]
High intensity blocks	<b>0.0136***</b> [ <b>0.00360</b> ]	79.28 [77.96]	122.1** [48.07]	0.00222 [0.00248]	123 [91.71]	179.8*** [62.08]
N	172950	172950	172950	106228	172950	172950
R-sq	0.075	0.038	0.02	0.021	0.029	0.017
Baseline mean	0.747	8044.9	4366.6	0.427	10107.7	5491.7

Notes: Table shows estimates for the effect of geographic intensity of the treatment on reporting of rental income. Control blocks where no treatment letters were sent is the excluded category. Data covers tax years 2014 (before treatment) and 2015 (after treatment). All models include individual fixed effects, the number of apartments owned and additional enforcement measures related to the treatment letters as controls. Standard errors clustered at postcode area level (263 clusters) are in brackets. Significance is denoted by asterisks: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Bold font indicates significant difference at 5% level relative to low intensity blocks

Table 3 shows that the fraction of potential landlords reporting a positive amount of rental income is slightly higher in the low-intensity blocks than in the control blocks; and even higher in the high-intensity blocks. The difference of the high-intensity blocks to the control blocks, as well as between the high-intensity and low-intensity blocks, are statistically significant. This is first evidence that the treatment letters had an impact on reporting rental income and that the intensity of treatment might matter. Further, also the reported net rental income is highest in the high-intensity blocks. Note that the change in the reported net rental income may be larger than the change in gross income as the treatment may affect also the reporting of deductions.

The effects reported in Table 3 may stem from three sources: differences in the share of potential landlords receiving a letter; differences in the share of different types of letters; and differences in potential spillover effects of the letters due to differences in the intensity of treatment between blocks. In the following analysis, we aim to disentangle the relative importance of these different channels.

Table 4 turns to analyze the effects of the different treatment letters (equation (1)), showing the effects of the treatments on the reporting of rental income for tax year 2015. We analyze effects on three outcomes: propensity to report a positive amount of

rental income, reported gross rental income and reported net rental income (i.e. income minus expenses). The table shows separately the effects of all four treatment letters ( $\beta_j$  coefficients) and the blocks ( $\gamma_k$  coefficients).<sup>16</sup>

Recall that letter (1) was a neutral reminder to file tax returns, not related to rental income. Letter (2) provided information on how to file rental income. Letters (3) and (4) provided information on intensified enforcement of rental income taxation and letter (4) also included a mention of the use of third-party information on the ownership of dwellings in tax enforcement.

The first observation is that all letters caused a statistically significant increase in the propensity to report (column 1). Letter (2) providing information on reporting procedures and requirements on rental income increased compliance, which suggests that outright mistakes may play a role in non-compliance. Letter (4), the strongest treatment, which notified potential landlords of the use of third-party information in tax enforcement, had the largest effect. The effect of letter (4) is to increase the compliance rate by about 3.0%-points, which amounts to a relative effect of 4.0% compared to the baseline compliance rate of 74.7%.

The above estimates concern effects on compliance at the extensive margin. The estimates for the effects on the amount of net rental income reported (column 3) are also positive, and statistically significant for letters (3) and (4).

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<sup>16</sup>Table A2 in Appendix A shows the results for the base population outside the treatment blocks. The results are broadly in line with those in Table 4.

**Table 4:** Effects of letters and geographical intensity of the treatment.

Dep. Var.	Reported			Spouse reported		
	rental income (0/1)	Rental income (gross)	Rental income (net)	rental income (0/1)	HH rental income (gross)	HH rental income (net)
Letter 1	0.0107* [0.00586]	166.8 [178.8]	144.5 [87.83]	0.00149 [0.00536]	195 [185.6]	121.2 [103.8]
Letter 2	0.0229*** [0.00599]	60.69 [92.74]	68.11 [75.33]	-0.00865** [0.00425]	-66.11 [260.7]	19.75 [129.6]
Letter 3	0.0180*** [0.00394]	127.1* [71.03]	112.4* [66.35]	0.00613 [0.00417]	153.7 [94.04]	95.1 [82.53]
Letter 4	<b>0.0302***</b> <b>[0.00370]</b>	177 [109.0]	162.1*** [48.78]	0.00361 [0.00305]	294.7** [148.1]	219.7*** [75.52]
Low intensity blocks	-0.00226 [0.00402]	36.69 [77.04]	71.59 [54.94]	0.0029 [0.00291]	57.64 [87.50]	117.5* [64.06]
High intensity blocks	-0.00053 [0.00395]	-8.868 [79.65]	41.64 [51.78]	0.000761 [0.00296]	0.787 [93.66]	88.55 [67.95]
N	172950	172950	172950	106228	172950	172950
R-sq	0.076	0.038	0.02	0.021	0.029	0.017
Baseline mean	0.747	8044.9	4366.6	0.427	10107.7	5491.7

Notes: Table shows estimates for the effect of treatment letters and geographic intensity of the treatment on reporting of rental income. The excluded category for letters 1-4 is no letter and the excluded category for low and high intensity blocks is control blocks where no treatment letters were sent. Data covers tax years 2014 (before treatment) and 2015 (after treatment). All models include individual fixed effects, the number of apartments owned and additional enforcement measures related to the treatment letters as controls. Standard errors clustered at postcode area level (263 clusters) are in brackets. Significance is denoted by asterisks: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Bold font indicates significant difference at 5% level relative to letter (1).

We next divide the sample into two subgroups based on whether the individual reported any rental income in tax year 2014, i.e. one year before the treatment. Table 5 and Table 6 report the results for these subgroups.

Table 5 first shows the results for individuals who did not report any rental income in tax year 2014. While some of these individuals may indeed not have owned or rented out a flat in the previous year, this is nevertheless a subgroup where non-compliance appears more likely. Indeed, the baseline compliance rate (at the extensive margin) in the control block in tax year 2015 in this subgroup is only about 15%.

The effects on the treatment letters on the propensity to report are now much stronger than in Table 4. Given the low baseline compliance rate in this subgroup, the relative effect on the compliance rate of intensified enforcement is very large in this group: receiving letter (4) causes an over 50% increase in the propensity to report rental income. Such a strong reaction indeed indicates that baseline non-compliance is likely to be extensive in this group.

**Table 5:** Effects of letters and geographical intensity of the treatment – subgroup with no reported rental income in tax year 2014.

Dep. Var.	Reported rental income (0/1)	Rental income (gross)	Rental income (net)	Spouse reported rental income (0/1)	HH rental income (gross)	HH rental income (net)
Letter 1	0.0301* [0.0153]	-146.6 [216.5]	-241.2** [107.4]	0.02 [0.0157]	-230.8 [312.6]	-342.1* [195.5]
Letter 2	0.0642*** [0.0160]	136.3 [172.1]	<b>42.16</b> <b>[111.2]</b>	-0.0196 [0.0157]	325.7 [493.9]	83.97 [233.9]
Letter 3	0.0460*** [0.0111]	-186.3 [154.3]	-106.5 [100.6]	0.00451 [0.0138]	-245.4 [188.3]	-161.1 [127.9]
Letter 4	<b>0.0856***</b> <b>[0.00972]</b>	363.3 [285.7]	<b>159.8</b> <b>[139.3]</b>	0.0199** [0.00976]	585.6 [381.9]	<b>285.1</b> <b>[216.1]</b>
Low intensity blocks	0.00579 [0.0129]	29.94 [172.4]	65.3 [110.5]	0.0188** [0.00861]	167.7 [225.5]	120.7 [137.6]
High intensity blocks	0.0114 [0.0135]	173.9 [178.6]	167.8 [105.1]	0.00314 [0.00988]	120.4 [233.9]	159.5 [146.8]
N	45398	45398	45398	23510	45398	45398
R-sq	0.367	0.129	0.102	0.115	0.116	0.099
Baseline mean	0.152	1065.8	531.4	0.118	1582.9	793.1

Notes: Table shows estimates for the effect of treatment letters and geographic intensity of the treatment on reporting of rental income. Sample includes individuals who did not report rental income in 2014. The excluded category for letters (1)-(4) is no letter and the excluded category for low-intensity and high-intensity blocks is control blocks where no treatment letters were sent. Data covers tax years 2014 (before treatment) and 2015 (after treatment). All models include individual fixed effects, the number of apartments owned and additional enforcement measures related to the treatment letters as controls. Standard errors clustered at postcode area level (263 clusters) are in brackets. Significance is denoted by asterisks: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Bold font indicates significant difference at 5% level relative to letter (1).

In the previous table, we focused on the individuals who did not report any rental income in 2014. To complete the analysis, Table 6 shows the results for individuals who reported some rental income in tax year 2014. For this subgroup, the baseline compliance rate is as high as 97.6%, implying that almost all of those who reported rental income in tax year 2014 continue to do so in tax year 2015. Nevertheless, letters (3) and (4) clearly had a positive effect on the propensity to report also in this group. Moreover, for this subgroup the effects on net rental income are more precisely estimated and positive for letters (3) and (4).

**Table 6:** Effects of letters and geographical intensity of the treatment – subgroup with reported rental income in tax year 2014.

Dep. Var.	Reported			Spouse reported		
	rental income (0/1)	Rental income (gross)	Rental income (net)	rental income (0/1)	HH rental income (gross)	HH rental income (net)
Letter 1	0.00506 [0.00395]	244.5 [210.8]	282.5** [113.6]	-0.00215 [0.00503]	294.3 [232.1]	273.7** [135.6]
Letter 2	0.00777* [0.00412]	10.84 [107.8]	67.45 [89.80]	-0.00529 [0.00417]	-272 [285.6]	-42.85 [137.9]
Letter 3	0.0100*** [0.00287]	201.3** [85.86]	180.9** [80.61]	0.00819** [0.00409]	258.4** [110.8]	178.2* [98.54]
Letter 4	<b>0.0121***</b> <b>[0.00245]</b>	117.6 [114.0]	166.2*** [56.16]	-0.00027 [0.00229]	186.9 [139.4]	191.2*** [70.06]
Low intensity blocks	0.00255 [0.00282]	70.88 [80.10]	95.40* [57.76]	0.000306 [0.00267]	38.02 [96.05]	128.7* [70.06]
High intensity blocks	0.00448 [0.00274]	-27.58 [85.58]	20.63 [60.04]	0.00194 [0.00256]	-21.53 [103.1]	69.68 [74.84]
N	127695	127695	127695	82820	127695	127695
R-sq	0.045	0.031	0.015	0.005	0.022	0.013
Baseline mean	0.976	11026.5	6002.4	0.522	13695.1	7464.9

Notes: Table shows estimates for the effect of treatment letters and geographic intensity of the treatment on reporting of rental income. Sample includes individuals who did not report rental income in 2014. The excluded category for letters (1)-(4) is no letter and the excluded category for low and high intensity blocks is the control block where no treatment letters were sent. Data covers tax years 2014 (before treatment) and 2015 (after treatment). All models include individual fixed effects, the number of apartments owned and additional enforcement measures related to the treatment letters as controls. Standard errors clustered at postcode area level (263 clusters) are in brackets. Significance is denoted by asterisks: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Bold font indicates significant difference at 5% level relative to letter (1).

All in all, the results concerning reporting behavior of those receiving the letters right after the treatment indicate that especially the treatment letter containing both information on intensified enforcement and the use of third-party information had a positive effect on the propensity to report, and on the reported amount of rental income. The effects are very strong for the subgroup of potential landlords who did not report any rental income in the year prior to the experiment.

In addition to these direct effects, the results in Tables 4-6 allow us to analyze whether

information about intensified enforcement has spillover effects beyond those individuals who receive a treatment letter. Spillover effects in tax reporting may arise if the information on the treatments spreads within the household or between landlords. For this purpose, the base population in our study is constructed in such a way that we are able to examine potential spillovers within the household. Also, the randomized block design similar to Crépon et al. (2013), enables us to analyze spillover effects from intensified enforcement across landlords within local rental markets.

We first focus on spillovers between household members, where information sharing may be particularly likely. The direction of possible spillover effects between spouses is not obvious a priori. A threat effect induced by the treatment letters would suggest positive spillovers. On the other hand, if spouses jointly own a flat and previously only one of them has mistakenly reported income on the entire flat, letter (2) containing information on how to report rental income may alert them to the fact that both of them should report their rental income according to their ownership share. In this case the spillover may also be negative.

Columns 4 of Tables 4-6 indicate in most cases negligible and statistically insignificant spillovers, albeit the estimated coefficients are positive between spouses at the extensive margin, i.e. in the likelihood of reporting any rental income. In the case of Table 4 and letter (2), however, the spillover effect is negative, suggesting that the mechanism outlined above may be operational in the case of the information treatment. Consistent with this mechanism, the effect on the reported net rental income at the household level is very small. The net effect of letter (2) on the propensity to report at the household level (the sum of the coefficients in columns 1 and 4) remains positive however. Columns 5 and 6 take into account spillovers between spouses by focusing on the amount of reported rental income at the household level. For letter (4) that notified the recipients of intensified enforcement and third-party information, the effects are somewhat stronger than in columns 2 and 3 looking at the individuals in the base population only. However, this difference is not statistically significant.

The results in Table 5 point towards the existence of some positive reporting spillovers between spouses in this subgroup of more likely evaders. In particular, we find positive spillovers between spouses (column 4) in the case of the strongest treatment letter 4 notifying potential landlords of the use of third-party information in tax enforcement.

Next, we utilize the block design in order to analyze enforcement spillovers between landlords in local rental markets. Local spillover effects are incorporated in the coefficients  $\gamma_k$  in equation (1). In this specification, we find no evidence of local reporting spillovers. Nevertheless, utilizing a block design that allows us to examine and control for potential



regional spillovers, has the important benefit that we can be confident that the estimates of the direct effects are not biased by potential spillovers.

To the extent that spillovers on non-treated landlords may be larger than spillovers between letter recipients, the estimates of the block dummies in 4 and 5 may hide some positive spillovers on non-treated landlords. Another, more direct way to test for the existence of reporting spillovers is to isolate effects on those who did not receive a treatment letter. The results of this type of a specification are shown in Table A3 and Table A4 in Appendix A, concentrating on spillovers within the high-intensity block. The results are similar to those shown in Tables 4 and 5, namely that the estimated spillover effects are positive but not statistically significant.

Finally, we move from the immediate effects of the experiment that reflect reporting responses only to the analysis of behavior in subsequent years. Any effects found in later years may incorporate both reporting and real responses to more intense tax enforcement, as landlords will have had the opportunity to adjust their real estate holdings. For example, scaling down on real estate holdings may be an optimal response to a perceived increase in the effective tax rate on rental income caused by a perceived increase in the intensity of tax enforcement.

**Table 7:** Effects of treatment letters and geographical intensity of the treatment – tax year 2016.

Dep. Var.	Reported			Spouse reported		
	rental income (0/1)	Rental income (gross)	Rental income (net)	rental income (0/1)	HH rental income (gross)	HH rental income (net)
Letter 1	0.00297 [0.00587]	4.578 [151.0]	54.44 [98.06]	0.000201 [0.00579]	176 [199.2]	178.8 [144.3]
Letter 2	0.00529 [0.00515]	-100.1 [108.2]	-78.15 [84.03]	-0.00571 [0.00480]	-520.6 [415.8]	-121.8 [96.09]
Letter 3	-0.00529 [0.00405]	77.39 [206.5]	-56.75 [73.71]	-0.0063 [0.00445]	-55.07 [234.3]	-146.5 [92.96]
Letter 4	0.00706* [0.00416]	-40.19 [88.13]	55.03 [49.84]	-0.00124 [0.00349]	27.61 [148.0]	92.39 [82.62]
Low intensity blocks	-0.001 [0.00387]	34.2 [85.17]	30.32 [62.43]	0.00173 [0.00296]	-20.82 [98.96]	75.57 [70.44]
High intensity blocks	0.00171 [0.00393]	28.37 [91.04]	66.05 [65.98]	0.000937 [0.00323]	22.69 [120.1]	103.6 [76.52]
N	172932	172932	172932	106215	172932	172932
R-sq	0.084	0.068	0.049	0.029	0.048	0.04
Baseline mean	0.769	8800.8	4713.7	0.442	11069.4	5909.6

Notes: Table shows estimates for the effect of treatment letters and geographic intensity of the treatment on reporting of rental income. The excluded category for letters 1-4 is no letter and the excluded category for low and high intensity blocks is control blocks where no treatment letters were sent. Data covers tax years 2014 (before treatment) and 2016 (two years after treatment). All models include individual fixed effects, the number of apartments owned and additional enforcement measures related to the treatment letters as controls. Standard errors clustered at postcode area level (263 clusters) are in brackets. Significance is denoted by asterisks: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Bold font indicates significant difference at 5% level relative to letter (1).

The results for tax year 2016 (reporting in spring 2017) are shown in Table 7. We find smaller effects on the propensity to report rental income than in Table 4 where we focused on the immediate effects. We also no longer find any effects on the reported net rental income (the intensive margin effect). These findings may be due to the impact of the letters on reporting being diluted over time (a reporting effect): some potential landlords may have forgotten about the treatment, or may perceive the threat of intensified

enforcement no longer credible. Another potential explanation for the effects being smaller in tax year 2016 is that some landlords may in fact have reduced their apartment holdings due to a perceived higher effective tax rate on rental income (a real effect). At this stage we are unable to disentangle these two effects.

## 5 Conclusion

We have reported the results from a large-scale randomized field experiment focusing on rental income tax compliance. The experiment was conducted in spring 2016 and our data covers two years of reporting behavior (spring 2016 and 2017) combined with a rich set of other tax related information about potential landlords. This enables us to analyze the effects of the treatment on the immediate reporting behavior of potential landlords, as well as the behavior one year after the treatment. To distinguish between potential reasons for non-compliance, we examine both the effects of providing simplifying information on tax filing practices as well as notifying landlords of intensified tax enforcement.

Our findings suggest that different types of treatment letters had an effect on the reporting behavior of potential landlords. The effect is most pronounced at the extensive margin (that is, the propensity to report any rental income) while we also find some effects on the intensive margin (that is, the euro amount of rental income reported). We find that some potential landlords respond to the letter providing simplifying information on tax-filing practices, suggesting that outright mistakes may play a role in non-compliance. However, the strongest effects are found for the treatment letter that notified potential landlords of the use of third-party information on the ownership of apartments in tax enforcement.

We find largest effects for individuals who had reported no rental income in the year prior to treatment: the strongest treatment, providing information on the use of third-party information in tax enforcement, increased the propensity to report rental income in this group by over 50%.

Our experimental design also allows for studying two types of reporting spillovers from enforcement information. We have utilized a randomized block design where the intensity of treatment varies between postcode areas, which allows us to analyze local reporting spillovers. We do not find clear evidence of spillovers in reporting behavior between landlords within local rental markets.

We also analyze reporting spillovers within the household, where we find some evidence of positive spillovers. The (positive) effects of enforcement on tax reporting may be understated if spillover effects are ignored.

The letter that notified potential landlords of the use of third-party information in the enforcement of the rental income tax increased reported net rental income at the household level by about €220, which translates to an approximately €70 revenue gain per household receiving this type of treatment letter. Our results indicate that making the existence and utilization of third-party information more salient to potential landlords is likely to be a highly cost-effective strategy for enforcement of the rental income tax.

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# Appendix

## A Additional tables

**Table A1:** Summary statistics for key variables 2014-2016.

	Obs	Mean	Std.Dev.	Median	1st percentile	99th percentile
Reported rental income (0/1)	259881	0.774	0.418	1	0	1
Gross rental income	259881	8794	22719	5868	0	63840
Net rental income	259881	4811	13217	2942	-1893	37273.17
Spouse reported rental income (0/1)	159669	0.442	0.497	0	0	1
HH Gross rental income	259881	11142	29849	6984	0	80566
HH Net rental income	259881	6091	17697	3689	-2367	47137
Owned apartments	259881	2.306	2.409	2	0	11
Potential rental apartments	259881	1.271	0.827	1	1	5

Notes: Table shows summary statistics for individuals in our control and treatment blocks and their spouses for tax years 2014-2016.

**Table A2:** Effects by treatment letter in areas outside the blocks (tax year 2015).

Dep. Var.	Reported			Spouse reported		
	rental income (0/1)	Rental income (gross)	Rental income (net)	rental income (0/1)	HH rental income (gross)	HH rental income (net)
Letter 1	0.0255*** [0.00536]	188.9** [83.47]	22.55 [63.39]	0.00458 [0.00517]	216.2** [99.46]	-11.65 [75.70]
Letter 2	<b>0.0444***</b> [ <b>0.00545</b> ]	109.8 [73.01]	31.49 [58.03]	0.0125*** [0.00479]	99.15 [83.59]	31.28 [68.68]
Letter 3	0.0245** [0.0104]	171.7 [136.4]	-37.47 [89.73]	<b>0.0251***</b> [ <b>0.00929</b> ]	369.7** [180.5]	-52.31 [115.1]
Letter 4	0.0302*** [0.00724]	-38.65 [105.6]	-93.47 [76.70]	0.00541 [0.00628]	-41.03 [126.5]	-149.4 [91.20]
N	83825	83825	83825	49957	83825	83825
R-sq	0.073	0.058	0.018	0.021	0.05	0.017
Baseline mean	0.717	6525.2	3314.1	0.398	8172.7	4151.8

Notes: Table shows estimates for the effect of treatment letters. Sample includes individuals in postcodes outside the block design. The excluded category for letters (1)-(4) is no letter. All models include individual fixed effects, the number of apartments owned and additional enforcement measures related to the treatment letters as controls. Standard errors clustered at postcode area level (4,200 clusters) are in brackets. Significance is denoted by asterisks: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Bold font indicates significant difference at 5% level relative to letter (1).

**Table A3:** Effects by treatment letter and spillovers in the high-intensity blocks (tax year 2015).

Dep. Var.	Reported			Spouse reported		
	rental income (0/1)	Rental income (gross)	Rental income (net)	rental income (0/1)	HH rental income (gross)	HH rental income (net)
No Letter	-0.00136	19.28	30	0.000393	8.301	77.11
(high blocks)	[0.00393]	[85.18]	[54.14]	[0.00314]	[99.75]	[72.65]
Letter 1	0.00854	-92.03	110.5	0.00461	-35.29	149.7
(high blocks)	[0.00806]	[153.2]	[110.7]	[0.00659]	[185.9]	[131.2]
Letter 2	0.0188**	-23.7	157.1	-0.0109**	-58.65	192.4
(high blocks)	[0.00830]	[139.7]	[96.84]	[0.00516]	[166.3]	[118.0]
Letter 3	0.0173***	130.8	172.6**	0.00557	148.7	181.9**
(high blocks)	[0.00482]	[95.47]	[71.53]	[0.00419]	[116.0]	[85.77]
Letter 4	<b>0.0308***</b>	172.8	217.4***	0.00568*	311.0*	323.8***
(high blocks)	<b>[0.00451]</b>	[136.6]	[66.89]	[0.00323]	[177.9]	[95.94]
N	116669	116669	116669	71446	116669	116669
R-sq	0.077	0.035	0.025	0.019	0.032	0.024
Baseline mean	0.747	8044.9	4366.6	0.427	10107.7	5491.7

Notes: Table shows estimates for the effect of treatment letters and spillover effects in high-intensity blocks. Sample includes individuals in control and high-intensity blocks. The excluded category is no letter in control blocks. All models include individual fixed effects, the number of apartments owned and additional enforcement measures related to the treatment letters as controls. Standard errors clustered at the postcode level (263 clusters) are in brackets. Significance is denoted by asterisks: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Bold font indicates significant difference at 5% level relative to letter (1).



**Table A4:** Effects by treatment letter and spillovers in the high-intensity block (tax year 2015) - subgroup with no reported rental income in 2014.

Dep. Var.	Reported			Spouse reported		
	rental income (0/1)	Rental income (gross)	Rental income (net)	rental income (0/1)	HH rental income (gross)	HH rental income (net)
No Letter	0.0139	168.8	147.2	0.000577	158.2	153
(high blocks)	[0.0137]	[184.5]	[107.8]	[0.0106]	[243.1]	[157.3]
Letter 1	0.0357	-123	-78.18	0.0404*	-249.4	-216.3
(high blocks)	[0.0228]	[242.4]	[144.8]	[0.0210]	[508.8]	[352.5]
Letter 2	0.0662***	181.5	143.6	-0.019	0.042	49.89
(high blocks)	[0.0243]	[226.4]	[160.4]	[0.0216]	[310.7]	[223.6]
Letter 3	0.0523***	-17.92	61.34	0.00634	-93.07	19.93
(high blocks)	[0.0155]	[188.1]	[121.1]	[0.0142]	[236.6]	[159.2]
Letter 4	<b>0.0978***</b>	542.3	316.8*	0.0280***	741.9	459.7*
(high blocks)	<b>[0.0144]</b>	[388.1]	[190.7]	[0.00973]	[454.2]	[244.5]
N	30736	30736	30736	15862	30736	30736
R-sq	0.371	0.08	0.108	0.11	0.115	0.126
Baseline mean	0.152	1066.3	531.6	0.118	1583.6	793.5

Notes: Table shows estimates for the effect of treatment letters and spillover effects in high intensity blocks. Sample includes individuals in control and high-intensity blocks who did not report rental income in tax year 2014. The excluded category is no letter in control blocks. All models include individual fixed effects, the number of apartments owned and additional enforcement measures related to the treatment letters as controls. Standard errors clustered at the postcode level (263 clusters) are in brackets. Significance is denoted by asterisks: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Bold font indicates significant difference at 5% level relative to letter (1).

**Table A5:** Effects by treatment letter and spillovers in the high-intensity block (tax year 2016).

Dep. Var.	Reported			Spouse reported		
	rental income (0/1)	Rental income (gross)	Rental income (net)	rental income (0/1)	HH rental income (gross)	HH rental income (net)
No Letter	0.00219	87.65	41.75	0.0014	27.46	73.24
(high blocks)	[0.00417]	[87.61]	[65.86]	[0.00351]	[114.5]	[78.50]
Letter 1	0.00142	-52.51	132.8	0.00241	214	382.4
(high blocks)	[0.00787]	[190.6]	[155.3]	[0.00686]	[308.6]	[231.8]
Letter 2	0.00212	-123.8	30.39	-0.00782	-279.2	-25.9
(high blocks)	[0.00719]	[146.3]	[117.2]	[0.00534]	[216.2]	[130.2]
Letter 3	-0.00317	-9.723	27.97	-0.00752*	-188.6	-29.94
(high blocks)	[0.00516]	[107.6]	[87.41]	[0.00436]	[140.5]	[107.5]
Letter 4	0.00930*	-18.22	139.6*	0.000862	56.21	223.5**
(high blocks)	[0.00478]	[112.8]	[72.92]	[0.00366]	[170.2]	[103.6]
N	116660	116660	116660	71439	116660	116660
R-sq	0.083	0.069	0.053	0.027	0.055	0.043
Baseline mean	0.746	8235.7	4455.2	0.43	10364.7	5604.6

Notes: Table shows estimates for the effect of treatment letters and spillover effects in high intensity blocks. Sample includes individuals in control and high-intensity blocks in tax years 2014 and 2016. The excluded category is no letter in control blocks. All models include individual fixed effects, the number of apartments owned and additional enforcement measures related to the treatment letters as controls. Standard errors clustered at the postcode level (263 clusters) are in brackets. Significance is denoted by asterisks: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Bold font indicates significant difference at 5% level relative to letter (1).

# B Rental income form and treatment letters



Tax Administration  
P.O. Box 700  
00052 VERO



7H RENTAL INCOME  
RENTAL APARTMENTS

Use this form to report any rental income earned from renting out an apartment in a housing company. If you are a co-owner of the apartment, report only your portion of the rental income and the related expenses.

Do not deduct interest on this form; report it as interest on expenses incurred in acquiring or maintaining income. More information is available in the instructions for filling in the form.

Do not attach any receipts to the form; place them somewhere for safekeeping. The Tax Administration will ask you for them, if necessary. For further tax instructions concerning rental income, go to tax.fi.

Report rental income from real estate rented out on form 7K and rental income from other property on form 7L. Use form 16B to report rental income earned abroad.

## 1 Personal details and tax year

Name	Personal identity code or business ID	Tax year

## 2 Apartment in a housing company I

Name of housing company or real estate holding company		Business ID	Apartment number
Personal identity code or business ID of the tenant	Name of tenant		
Tenancy period (ddmmyyyy-ddmmyyyy)	Share of ownership in apartment		(%)
		€	c
2.1 Your share of gross rental income per year .....			
2.2 Monthly maintenance charges and water charges paid per year (only your share) .....			
2.3 Other costs per year (only your share) .....			
2.4 Net taxable rental income per year (positive difference between income and expenses) .....	+		
2.5 Net taxable loss from rental operations per year (negative difference between income and expenses) .....	-		

## 2 Apartment in a housing company II

Name of housing company or real estate holding company		Business ID	Apartment number
Personal identity code or business ID of the tenant	Name of tenant		
Tenancy period (ddmmyyyy-ddmmyyyy)	Share of ownership in apartment		(%)
		€	c
2.1 Your share of gross rental income per year .....			
2.2 Monthly maintenance charges and water charges paid per year (only your share) .....			
2.3 Other costs per year (only your share) .....			
2.4 Net taxable rental income per year (positive difference between income and expenses) .....	+		
2.5 Net taxable loss from rental operations per year (negative difference between income and expenses) .....	-		

Date	Signature	Telephone number

The information entered on this form will be read by computer, by optical character recognition. The computer system does not process anything you may have written outside the spaces. Only fill in forms printed out from tax.fi, do not use photocopies. Photocopies may have inferior quality, making optical character recognition difficult.

30111

VEROH-3011e 1.2018

**VERO** SKATT

## NOTICE

Finnish Tax Administration PO Box 325 FI-  
00052 Vero, Finland

Ref.

### Check your pre-completed tax return

You have received a pre-completed tax return containing information on your earnings and deductions in 2015. Review the tax return with care. If the information is correct and nothing is missing, you need not do anything. If the information is incorrect, or some pieces of information are missing, you must correct or supplement the tax return. Information to be supplemented may include rental income, travel expenses between your home and place of work, or tax credit for household expenses, for example.

You can supplement and correct the information in the pre-completed tax return in the *Tax return online* service ([vero.fi/veroilmoitus](http://vero.fi/veroilmoitus)). The service will remain open until the tax return deadline indicated on your tax return. If you supplement your tax return online, you need not use the tax return form or its appendix forms.

If you use a paper form to submit your tax return by regular post, you must also send the required appendix forms. For example, you must use form 7H to announce your rental income from a unit in a housing company and form 14A to get your tax credit for household expenses. The required appendix forms are listed in the instructions on how to complete the tax return. Don't forget to enter the required pieces of information in the correct part of the tax return form in addition to the appendix forms.

For more information, please visit [vero.fi/henkilöasiakkaat](http://vero.fi/henkilöasiakkaat) > Veroilmoitus (Individual taxpayers > Tax return) or call the service number specified in your pre-completed tax return.

Finnish Tax Administration

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If you received rental income in 2015, announce the rental income and related expenses. The most common expenses to be deducted from rental income include maintenance charges, annual repair costs and real estate tax. If you received rental income from several sources (such as a unit in a housing company and a summer home), you must separately announce the income and expenses of each property. If you own a unit in a housing company with another person, you must only announce the share of rental income and expenses corresponding to your share of ownership. Calculate the amount of taxable rental income by deducting the expenses from the rental income.

**Example of calculating rental income**

The taxpayer owns one unit in a housing company, which they rented out for the entire year of 2015, with the rent being EUR 1,000 per month. The taxpayer/landlord paid a maintenance charge of EUR 250 per month. Other expenses related to the renting of the apartment totalled EUR 1,500. The taxable rental income is the difference between the rental income and expenses, or  $12 \times \text{EUR } 1,000 - 12 \times \text{EUR } 250 - \text{EUR } 1,500 = \text{EUR } 7,500$ . Hence, the taxable rental income is **EUR 7,500**.

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Finnish Tax Administration

**VERO** SKATTFinnish Tax Administration  
PO Box 325  
FI-00052 Vero, Finland**NOTICE**

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**The Finnish Tax Administration is boosting the monitoring of tax to be paid for rental income. Hence, additional information on rental income and related expenses will be requested more often than before.** The additional information is needed for the Tax Administration to verify that the rental income and expenses specified in your tax return are correct.

If you received rental income in 2015, you must announce all rental income you received and related expenses. If necessary, the Tax Administration can request receipts or other additional information on your rental income and expenses. If we need additional information on your rental income, you will receive a request to supplement your tax return after the tax return deadline. Do not enclose your receipts with your tax return, however; the Tax Administration will separately request them if necessary.

You can supplement and correct the information in the pre-completed tax return in the *Tax return online* service ([vero.fi/veroilmoitus](http://vero.fi/veroilmoitus)). The service will remain open until the tax return deadline indicated on your tax return. If you supplement your tax return online, you need not use the tax return form or its appendix forms.

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**The Finnish Tax Administration is boosting the monitoring of tax to be paid for rental income. Hence, additional information on rental income and related expenses will be requested more often than before.**

The additional information is needed for the Tax Administration to verify that the rental income and expenses specified in your tax return are correct.

**The rental income information for 2015 will be compared to information on landlords' property ownership more comprehensively than before.** Special attention will be paid to tax returns where the rental income information is not consistent with the property ownership information. According to the information available to the Tax Administration, you own at least one unit in a housing company, and the apartment may have been rented out in 2015.

If you received rental income in 2015, you must announce all rental income you received and related expenses. If necessary, the Tax Administration can request receipts or other additional information on your rental income and expenses. If we need additional information on your rental income, you will receive a request to supplement your tax return after the tax return deadline. Do not enclose your receipts with your tax return, however; the Tax Administration will separately request them if necessary.

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Finnish Tax Administration