

Tax Simplicity or Simplicity of Evasion? Evidence from Self-Employment Taxes in France*

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Abstract

We exploit individual panel information from introducing of new and simpler tax regimes for the self-employed in France, in order to assess the extent to which individuals' shift towards the new regimes is driven by a quest for tax simplicity, and the extent to which the demand for tax simplicity is itself at least partly driven by tax evasion motives. We find evidence of a quest for tax simplicity from observing a significant amount of bunching at the eligibility thresholds for the simpler self-employment tax regimes and from the fact that bunching is increasing in the degree of simplicity of the self-employment regime. We also argue that tax evasion plays an important role in accounting for individuals' attraction towards simpler tax regimes. Finally, we quantitatively assess the importance of simplicity and evasion motives for choosing a simpler self-employment regime. More precisely, we combine bunching estimates and a structural model to jointly estimate the real income elasticities, the value of tax simplicity, and the evasion elasticity. We find that the parameters values which generate the best fit with the observed bunching across different tax brackets and years, imply noticeable preference for tax simplicity with a sizeable evasion elasticity behind it, and a negligible real income elasticity.

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1 Introduction

Simplicity is the ultimate sophistication,” wrote Leonardo da Vinci. Presumably policy makers would likely agree with this statement. Designing a policy that fulfils its stated goals, provides clear and correct incentives without unintended consequences, minimizes administrative hassle for individuals, and at the same time remains sufficiently simple for people to understand is an enormous challenge. This is particularly true for tax policy: the best designed tax incentives may turn out to be ineffective if people do not understand them. Even worse, complexity tends to make the tax system become more regressive if it is mostly the least sophisticated agents or those who cannot afford professional tax advice who cannot understand it and benefit from it. As it turns out, many tax and transfer policies have been targeted towards the bottom end of the income distribution, yet the lack of simplicity have prevented the targeted taxpayers from fully taking advantage of these policies.

While tax simplicity has undeniable advantages, in this paper we argue that it may also have a cost, namely to also sometimes favor tax evasion. More specifically, in this paper we exploit individual panel information from introducing of new and simpler tax regimes for the self-employed in France, in order to assess the extent to which individuals’ shift towards the new regimes is driven by a quest for tax simplicity, and the extent to which the demand for tax simplicity is itself at least partly driven by tax evasion motives. We define tax simplicity as the combination of conceptual simplicity and practical simplicity: a system is simple if it is both easy to understand and logistically easy to handle. There are three tax regimes under which the self-employed in France may choose to operate – a standard regime, a simplified regime, and a super-simplified regime introduced more recently - which differ along two main dimensions: the monetary tax burden and the amount of red taping they impose upon individuals. Studying the observed choices of self-employed individuals between these three regimes and changes in these choices, we can assess individuals’ demand for tax simplicity and the importance of tax evasion motives.

Our focus on the self-employed stems from three main considerations. First, those are typically shown to be less constrained than wage earners and can more easily adjust their incomes to tax incentives (Saez, 2010; Kleven and Waseem, 2013), which matters if we want to assess how people respond to simpler or more complex tax policies. Second, self-employment in France is a particularly well-suited quasi-laboratory for studying the effects of tax simplicity and complexity. Indeed, it displays a high variety of fiscal “regimes” which differ not only with regard to monetary incentives, but also in their degrees of tax simplicity. Institutional parameters of these fiscal regimes have changed significantly over time, providing valuable policy variation that helps our estimation.

There are at least three motives for choosing a simpler tax regime: (1) *monetary incentives*: by reporting less income and/or filing for an often less taxed regime, individuals end up paying fewer taxes in the simpler regime than if they had remained in the standard regime; (2) *tax simplicity*: by remaining in the simpler regimes, individuals save on hassle costs and reduce their administrative burdens; (3) *ease of misreporting*: it is much easier to misreport income in the simpler regimes than in the standard regimes. In this paper we argue the quest for simplicity, plays an important role in explaining individuals' behavior around the eligibility thresholds for the simplified and super simplified regimes, and that this quest is itself at least partly driven by tax evasion motives.

In a nutshell, we find evidence of a quest for tax simplicity from observing a significant amount of bunching at the eligibility thresholds for the simpler self-employment tax regimes and from the fact that bunching is increasing in the degree of simplicity of the self-employment regime: it is higher at the eligibility threshold for the super simplified regime than at the threshold for the simplified regime. We also show that the observed bunching at the eligibility thresholds is to a large extent driven by tax evasion, itself made possible by and increasing the attraction of simpler tax regimes.

More precisely, we exploit new individual panel data from the French tax authority (the DGFip) to analyze individuals' choice of tax regime to then infer the extent to which this choice is driven by a quest for simplicity and/or by tax evasion motives. The self-employed can choose between three regimes, which we can rank by decreasing degree of complexity. The "standard regime" treats individuals' net business incomes (revenues minus costs) as taxable incomes, which is advantageous for corporate businesses with many employees, significant investments, or high operating costs. However, this regime entails involved tax accounting requirements, aimed at limiting the scope for misreporting. The "simplified regime" cuts down on tax complexity by allowing agents to claim a flat-rate rebate as a fraction of revenues instead of reporting their true business costs, this is particularly advantageous for agents with low operating costs. Finally, the "super simplified" regime enhances tax simplicity further by replacing all income taxes and social insurance contributions by a unique – and relatively low– flat rate payment proportional to gross revenues. However, to qualify for the simplified and super simplified regimes a self-employed individual must report revenues below some corresponding eligibility thresholds, the threshold being lower for the super-simplified regime than for the simplified regime. These thresholds in turn vary with the type of business activity, and they have also evolved over time. Overall, the eligibility thresholds for the simplified and super-simplified regimes induce discontinuities in monetary incentives, evasion opportunities, and in the degree of tax simplicity.

We first exploit individuals' bunching behavior around the eligibility thresholds to

provide evidence of a quest for tax simplicity. Indeed, the eligibility thresholds create discontinuities in individuals' payoffs, which can be thought of as "notches", where not only the tax burden, but also the hassle costs and the ability to evade taxation, can potentially change. What complicates our assessment of individuals' response to the notches, is that we do not consistently observe revenues for agents above the eligibility thresholds for simpler regimes. Yet, in Section 3, we show that both the simplified and super simplified regimes exhibit sharp spikes in the density distribution of individuals right below the threshold. Most importantly, bunching is higher at the eligibility threshold for the super simplified regime than at the threshold for the simplified regime: this is true globally but also across activities. This in turn reflects a quest for simplicity on top of pure monetary incentives.

Second, we show tax evasion motives partly explain the quest for simplicity. The sharp bunching observed is in itself a smoking gun for evasion and avoidance responses. We further show dynamic bunching evidence, in addition to the static one: namely, individuals who bunch at the eligibility ceiling have sharply higher growth rates than other self-employed individuals but lower growth rates than those who cross the ceiling. Additional evidence for evasion comes from the fact that revenue statements are more often round numbers close to the thresholds than far from the thresholds, which in turn can be seen as evidence that the reported figure is more likely to have been forged. A second piece of evidence is that in households with two self-employed individuals, the highest earner appears to shift some of their income to their partner as their own income approaches the eligibility ceiling. Finally, we show that there is some "hidden employment" whereby employers contract out work previously done in-house, effectively circumventing costly labor contracts and relabeling self-employed work as employment.

This latter piece of evidence fits with the debates around the rise of platforms such as Uber or Task Rabbit, and the outsourcing of jobs previously done in-house. In recent work, [Katz and Krueger \(2019\)](#) and [Katz and Krueger \(2017\)](#) cast light on the rise of alternative work arrangements – those differing from conventional self-employment and regular employment – and on the ensuing fragmentation of the labor market.

Finally, we quantitatively assess the importance of simplicity and evasion motives for choosing a simpler self-employment regime. More precisely, we use our reduced-form bunching estimates as data moments to match in the estimation of a structural model of self-employed behavior. The model allows us to infer the value of tax simplicity and the evasion elasticity. We find that the parameters values which generate the best fit with the observed bunching across different agents and regimes imply a significant preference for tax simplicity and a sizeable evasion elasticity.

Our paper lies at the intersection of several strands of the literature. Most closely related to our analysis are the literatures on tax simplicity, on tax evasion, and on bunch-

ing by small firms or self-employed individuals.

Tax simplicity: Farhi and Gabaix (2020) develop a theory of optimal taxation with behavioral agents which display misperceptions. Craig and Slemrod (2022) analyze the interplay between taxation and taxpayer education when individuals have an incomplete understanding of the tax system. Feldman et al. (2016) try to determine whether tax complexity causes misperceptions by looking the effects of tax liability changes. Relatedly, Abeler and Jäger (2015) and Bhargava and Manoli (2015) seek to understand how individuals react when facing complex tax systems, and suggest individuals underreact to change in tax incentives because of psychological frictions. Benzarti (2020) uses a quasi-experiment to estimate the cost of filing taxes. Blumenthal and Slemrod (1992), Slemrod (2005) and Zwick (2021) also investigate the effects of compliance costs in complex tax systems, while Warskett et al. (1998) and Grottko and Lorenz (2017) look at the role the institutional context (such as the interplay between public authorities, tax preparers and taxpayers) in shaping tax complexity. de Paula and Scheinkman (2010) and Tazhitdinova (2018) look at how tax enforcement can reduce tax evasion in the context of VAT and charitable givings. Finally, Pirttilä and Selin (2011) show in the context of a dual income tax system in Finland, that a decrease in the marginal tax rate targeted to capital incomes increased income shifting for self-employed. We contribute to this literature by exploiting individual panel information on the choice between different tax regimes to provide evidence of a quest for tax simplicity, and by showing that this quest is at least partly driven by tax evasion motives.

Tax evasion: our work relates to multiple empirical studies of misreporting in response to taxation. Engström and Holmlund (2009) and Johns and Slemrod (2010) document significant income underreporting among the Swedish and US self-employed population. Harju and Matikka (2016) show that tax incentives are a motive for evasion, as income-shifting accounts for the majority of the overall taxable elasticity of income for business owners. Similarly, Saez (2010) and LaLumia et al. (2015) demonstrate that self-employed earners respond to tax incentives created by the EITC in the US. On the contrary, Parker (2003) finds no effect of tax incentives on the occupational choice to be self-employed and on tax evasion in Great-Britain. Kleven et al. (2011) use a tax enforcement field experiment in Denmark, to study the extent to which external tax auditing reduces the scope for tax evasion. Pomeranz (2015) uses randomized experiments on Chilean firms to assess the extent to which, once tax evasion is taken into account, seemingly equivalent taxation devices become markedly different. Carrillo et al. (2017) use information about a policy intervention on Ecuadorian firms to show the importance confronting taxpayer reports with third party information. Almunia and Lopez-Rodriguez (2018) use quasi-experimental information to analyze the effects of firm-size-dependent tax enforcement on tax compliance. Naritomi (2019), Brockmeyer et al. (2019) and Boning et al. (2020) also provides evidence of the role of tax

enforcement in reducing tax evasion. We contribute to this literature by showing how tax evasion motives may hide behind the choice for self-employment and tax simplicity.

Bunching and structural estimation: A growing literature applies the bunching methodology to a wide range of topics such as inter-temporal allocation in response to mortgage contracts changes, transaction taxes in housing markets, or corporate taxation. Thus, [Saez \(2010\)](#) uses bunching information from US tax return data to estimate the elasticity of reported income with respect to the marginal tax rate. [Gelber et al. \(2020\)](#) use information on bunching in the earnings distribution at the budget set kinks to reassess the impact of changes in the effective marginal tax rate. [Bergolo et al. \(2021\)](#) study underreporting through tax deductions in Uruguay, and [le Maire and Schjerning \(2013\)](#) investigate the role of income shifting in explaining taxable income bunching in Denmark for the self-employed individuals. [Kleven and Waseem \(2013\)](#) exploit bunching information using administrative data from Pakistan to assess the impact of optimization frictions on individual responses to tax changes. [Bastani and Selin \(2014\)](#) and [Alinaghi et al. \(2021\)](#) also find that optimization frictions partly explain the observed bunching patterns in response to income taxes in Sweden and New-Zealand. [Devereux et al. \(2014\)](#) and [Coles et al. \(2022\)](#) focus on responses to corporate taxes. [Mortenson and Whitten \(2020\)](#) document behaviors that seek to maximize tax credit refunds in the US, and find that bunching is mainly driven by the self-employed. [Chetty et al. \(2013\)](#) use differences in manipulation of self-employed income across US areas as a proxy for knowledge of the EITC program, in order to estimate wage earnings responses from this program. [Chetty et al. \(2011\)](#) use information on bunching at kinks using Danish tax records, to show that the labor supply response to tax changes, depends upon interaction between adjustment costs on the workers side and the working hours set by firms. [Tazhitdinova \(2020\)](#) also document the interplay between labor demand and labor supply in shaping earnings responses to tax incentives, using a salient discontinuity created by the “mini-jobs” program in Germany. [Bíró et al. \(2022\)](#) study the role of the minimum wage and tax enforcement in the Hungarian labor market where informality and imperfect enforcement are prevalent. We combine contribute to this literature by combining our computed reduced form bunching moments with a structural model to jointly estimate the value of tax simplicity and the tax evasion elasticity.

The remaining part of the paper is organized as follows. Section 2 presents the evolving landscape of self-employment in France over the period 1994-2015, describing the various self-employment regimes and the dynamic sequence of self-employment reforms. It also presents the data and provides some descriptive statistics. Section 3 provides evidence of a quest for tax simplicity by looking at individuals’ bunching at the eligibility thresholds for the simpler self-employment regimes. Using the observed

bunching characteristics, section 4 provides evidence to the effect that the quest for tax simplicity is partly driven by tax evasion motives. Section 5 uses the bunching moments to perform the structural estimation. Finally, section 6 concludes.

2 Institutional Background, Data and Descriptive Statistics

We begin with a brief description of the French self-employment regimes. We then present our data and provide descriptive statistics.

2.1 The Landscape of Self-Employment Regimes in France

In this section, we describe the landscape of self-employment in France over the period 2006 to 2015.

Activities. Self-employed individuals are classified into three types of activities, namely:

1) the “Industrial and Commercial Services” category, referred to as *I&C Services* below, 2) the “Industrial and Commercial Retail” category, referred to as *I&C Retail*, and 3) the *Non Commercial* category.¹ These are defined mainly for tax purposes and do not necessarily align well with the underlying economic characteristics of businesses. For instance, developing and selling software pertains to the Non Commercial type, while purchasing and selling equipment goods pertains to the I&C Retail category. Similarly, bakery, butchery, or restaurant businesses are counted as I&C Retail activities, while construction work, plumbing, carpentry, and auto or other repair shops and dry cleaning count as I&C Services. Moreover, all professional activities, such as consulting, private coaching, translation services, sales agents services, expert services, empty property subleasing, as well as all liberal professions (doctors, notaries, or lawyers in private practices) belong to the Non Commercial category.

Regimes. We focus on self-employed businesses that are taxed at the personal income tax schedule. As of 2009, the self-employed can choose between one of three regimes: the *super simplified* regime, the *simplified* regime and the *standard* regime. The 2009 reform led to the creation of the super simplified regime. Prior to this date, only the simplified and standard regime were available. That reform stemmed from the political will to further increase tax simplicity by reducing accounting requirements and

¹these are the so-called *Bénéfices Industriels et Commerciaux Services* for “Industrial and Commercial Services”, *Bénéfices Industriels et Commerciaux Vente* for “Industrial and Commercial Retail” and *Bénéfices Non Commerciaux* for “Non Commercial”.

tax hassle. The super simplified and simplified regimes have eligibility income ceilings (see below) above which individuals have to move to the standard regime.

Note that a self-employed individual who owns her business can also choose to incorporate and be subject to the corporate tax system. We do not study those individuals for two reasons. First, they typically operate on a larger scale than the businesses analyzed here. Second, individuals in either the super simplified or the simplified regimes that were to cross the eligibility threshold would be by default subject to the standard regime. As a result, we take the standard regime to be the next best alternative to the super simplified and simplified regimes.

Eligibility requirements. The super simplified and simplified regimes can only be chosen by agents with revenues below a given threshold y_{kt}^* , which depends upon the type of activity k , where $k \in \{\text{I\&C Retail, I\&C Services, Non Commercial}\}$, and upon the fiscal year t .² Figure 1 shows the thresholds' evolution. The thresholds for the Services and Non Commercial activities are lower than those for the Retail activities (32,600 euros in 2012 as contrasted with 81,500 euros). In the case of the super simplified regime, there is an additional requirement on the family income as of year $t - 2$, which has to be below a year-specific threshold f_t^* that corresponds to the third tax bracket cutoff.³ An individual with income below the threshold y_{kt}^* for activity k in year t can choose between the simplified, the super simplified, and the standard regimes.

Above the threshold, the only possible option is the standard regime.⁴ In practice and to avoid a costly regime change when the individual's income passes the threshold, there is a *tolerance region*. Thus, individuals with incomes with at most 6.1% of the threshold in 2012 for the Services and Non Commercial Activities and 9.9% of the threshold for the Retail Activities are in the tolerance region and can remain in the simpler regimes provided they do not cross the formal region more than two years in a row. If the special regime status is lost, then the individual has to file under the standard regime.⁵

²In practice, the threshold is proportional to the number of months spent into the regimes. For example, someone starting their activity March 1st has an eligibility threshold of $(10/12) \times y_{kt}^*$. In our data, we only observe unconditional total revenues, making us unable correct for it. This problem is likely to be minor as it mainly applies to entry and exit years.

³For instance, that cutoff was 26,420 euros for year 2010, so that for households to be eligible for the super simplified regime in 2012, their family income in 2010 had to be lower than 26,420 euros.

⁴In theory, there is a limit of 750,000 euros for self-employed in the standard regime. We will not study that threshold, as it makes an agent shift between the personal and corporate income tax realms.

⁵In addition, certain types of professions cannot operate under the simplified or super simplified regimes, most notably agricultural activities, leasing of durables and equipment, leasing of professional or non-furnished buildings, and real estate businesses. Additional activities excluded from the super simplified regime include liberal professions such as lawyers, doctors, insurance agents, or accounting experts, and formally registered artists rewarded through copyright.

Tax base and taxes. In the standard regime, the taxable income is the net business income, i.e. the difference between gross revenues and costs, including the depreciation of assets and investments according to standard accounting rules. In the simplified regime, the taxable income is equal to revenues times a scaling factor $1 - \mu$, where the rebate factor μ is determined by the tax administration. It depends on the activity type: 71% for Retail, 50% for Services, and 34% for Non Commercial activities.⁶ In the super simplified regime, taxable income is simply equal to revenues (i.e. the rebate $\mu = 0$).⁷ Under the simplified and super simplified regimes, an individual cannot claim any deficits.

In the standard and simplified regimes, the regular tax and social insurance contribution rates apply, both of which differ across households depending on various factors as explained in the Appendix. In the super simplified regime, the individual pays a flat rate that covers both the income tax and the social insurance contributions. The flat rate differs by activity and it has changed over time, but it is unrelated to the individual's actual income tax bracket or to tax rate that applies to the remaining part of her income, not subject to the super simplified regime. Thus, even an individual in the zero income tax bracket is taxed at same flat rate on all her activities that fall under this regime. In the simplified regime, a minimal social security contribution is due even for individual with income equal to zero.

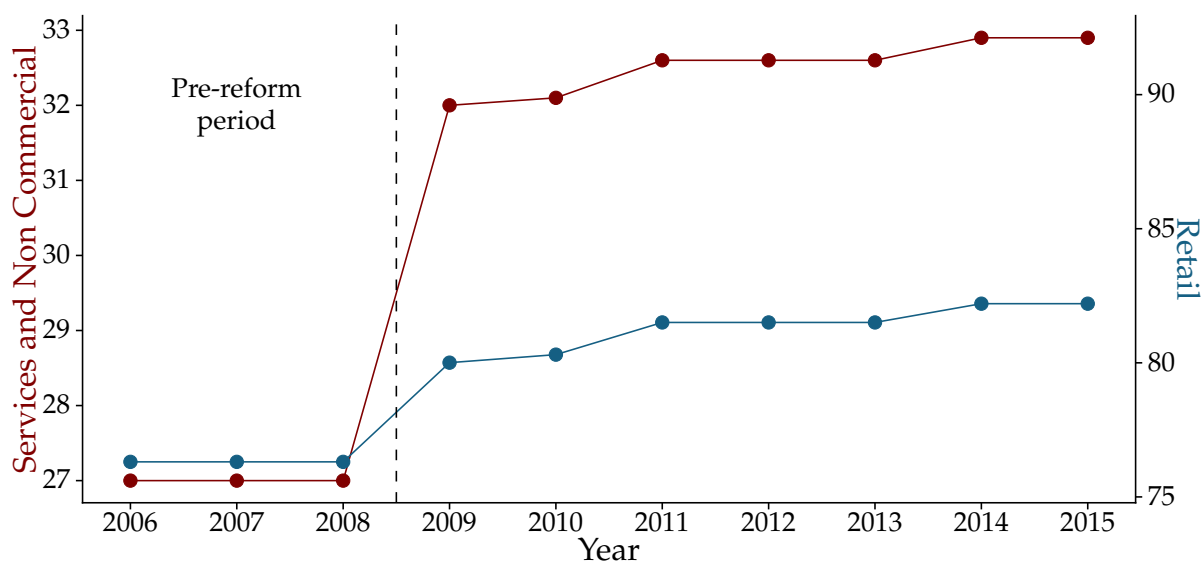
Accounting and simplicity. Each of those three regimes has different accounting requirements, and therefore it allows an individual to avoid taxes to a different extent. Self-employed individuals in the standard regime have to keep detailed accounts to document their revenues and costs, following standard rigorous accounting practices. Businesses in this regime can call upon a "certified accounting center" (hereafter, CAC), which helps them keep their accounts and also serves as a guarantor of sound fiscal conduct vis-a-vis the tax authority. In practice, almost all the self-employed resort to a CAC as not doing so results in the business' taxable income being inflated by 25%. The self-employed in the simplified and super simplified regimes only need to report their revenues and are not required to comply with rigorous accounting practices. They are nevertheless required to keep the private accounts for their activity, as well as receipts for purchases and sales, which they can display in case an audit takes place, much like any regular tax payer would do, e.g. to claim itemized deductions.

Having to keep various types of accounts involves more hassle in the standard regime than in the simplified regimes. But the various regimes also differ in how easy

⁶The minimal rebate amount is capped at 305 euros.

⁷A subtlety to note is that, to determine the overall tax bracket of the household, it is the revenues times $1 - \mu$ where μ is the same rebate as in the equivalent simplified regime that is added to the rest of a household's income. It is not the full amount of revenues that is added, which would make the super simplified regime very unattractive.

Figure 1: Eligibility threshold for simpler regimes, by activity and year



Notes: The figure plots the evolution of the eligibility threshold by activity over time, in thousand euros. The eligibility threshold correspond to the self-employed revenues, before the application of any potential rebate. The I&C Services and Non Commercial activities are on the left axis, while the I&C retail category is on the right axis. The vertical dashed line correspond to the introduction year of the super simplified regime in 2009.

it is to file taxes. In the standard and simplified regimes, tax payments occur annually at the normal tax filing date and social insurance payments occur separately through the regular social insurance procedure, thus requiring two separate filings. In the super simplified regime, tax and social insurance payments are due monthly or quarterly, based on actual realized revenues (cash in hand), and all are being processed at the same time, thereby minimizing filing and hassle costs.⁸

2.2 Data and Descriptive Statistics

Data. Our data is based on the universe of French tax returns over the period 2006-2015 from the French Internal Revenue Service.⁹ The income tax returns contain comprehensive income data at the individual and household levels, as well as key demographic information such as household composition, individual age, and gender. Importantly, it allows us to follow individuals over time.

Additionally, we use a survey provided by the French National Statistics Institute¹⁰ available for 2010 and 2014. It asks entrepreneurs about their experience during the

⁸In addition, the standard regime is the only one subject to the Value Added Tax: self-employed in this regime charge VAT on their products sold and claim VAT on their inputs.

⁹The data provider is *Direction Générale des Finances Publiques* (DGFIP) and access is ensured by the CASD

¹⁰The survey is called *New enterprises information system*

first years of their business activity.

Sample. Our benchmark sample consists of all individuals who are French fiscal residents in mainland France and are between 30 and 59 years of age. We only consider individuals that are main filers, excluding dependants such as children. Moreover, the French personal income tax is reported at the household level which generates different reporting obligations for individuals that change their marital status in a given tax year. Taking into account these cases is not straightforward because of several data limitations, so we only keep individuals that changed their marital status to married or in a civil union after 2011 and that file an unique tax return for a given year. Finally, we keep individuals with self-employment income that are uniquely defined in a regime and activity.¹¹

Descriptive statistics Table 1 shows summary statistics by regime (simplified, super-simplified and standard) and activity (*I&C Retail* (1), *I&C Services* (2) and *Non Commercial* (3)) for our sample. The average age is around 45. A significant share of those in non-commercial activities live in Paris. Average revenues are higher for retail than for Services and Non-Commercial activities and higher in the standard regime.

Figure 2 plots the number of self-employed over time by regime and status, normalized to 100 in 2010. Panel (a) plots the total number of self-employed individuals, which reached 2,4 millions by 2015. Panel (b) shows the number of entrepreneurs who stay in the same regime as in the previous year (“stayers”). We can see that this number is significantly lower than the number in Panel (a) for entrepreneurs in the standard regime, suggesting that they start switching to the super-simplified regime after it is introduced in 2009. Panel (c) shows the number of new entrepreneurs each year, which amounts to around 15% of those in the standard regime, 20% of those in the simplified, and almost a third of those in the super-simplified. Panel (d) the number who exit self-employment. These numbers are very close to the entry rates for each regime, suggesting that by 2014, the system may have reached a steady-state.

¹¹It excludes for example individuals with self-employment in different regimes and activity.

Table 1: Summary statistics, by regime and activity

Variable	Simplified			Super simplified			Standard	
	Retail	Services	Non Commercial	Retail	Services	Non Commercial	Retail and Services	Non commercial
Mean age	46	45	44	44	43	43	47	46
In couple	0.54	0.56	0.52	0.55	0.56	0.53	0.66	0.65
Has children	0.54	0.57	0.54	0.57	0.59	0.59	0.59	0.68
Living in Paris	0.02	0.07	0.11	0.02	0.03	0.07	0.02	0.08
SE revenues	14632	9315	9564	11890	9314	9095	–	–
Taxable SE income	4243	4658	6312	3448	4657	6002	25825	59234
Observations	658497	1144606	990993	219161	332724	372843	3028307	2570586

Notes: This table shows summary statistics by regime and activity, for the post-reform period (2009-2015). Note that for the standard regime, Retail and Services activities are pooled together in the tax returns and cannot be distinguished. Self-employed revenues for the standard regime are not observed. The variable living in Paris is in percentage points. Self-employed revenues and taxable income are in thousand euros.

3 Bunching at the Eligibility Thresholds for Simpler Regimes

In this section, we provide evidence of bunching at the eligibility thresholds for the simplified and super simplified regimes, and we perform some comparative analysis on the magnitude of this bunching. We start by describing the different incentives that can generate responses at the threshold. We then describe the methodology to quantify such responses, and we finally provide graphical and estimation evidence of individuals' behavioral response at the eligibility thresholds.

3.1 Expected Behavioral Responses

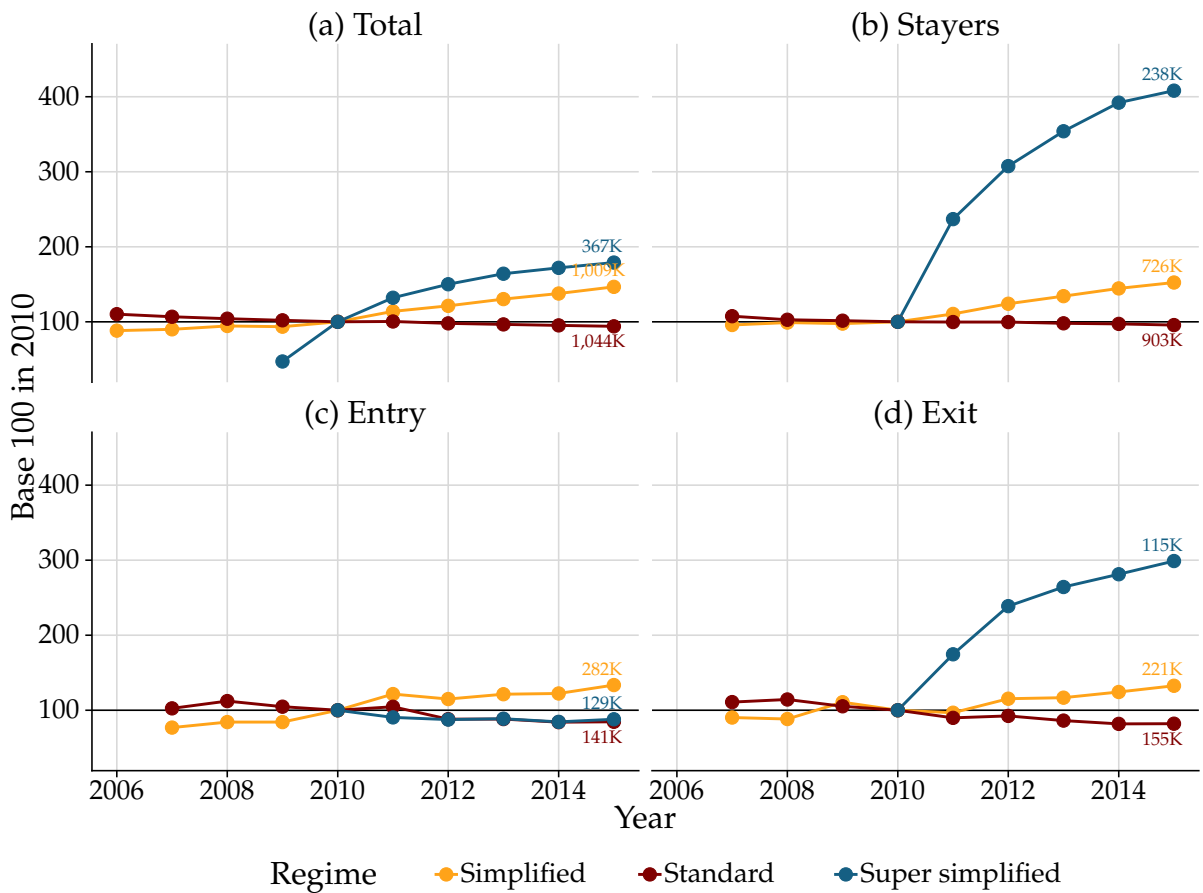
Notches The eligibility threshold between simpler regimes (simplified and super simplified) and the standard regime can be considered as a notch for three reasons: (i) the average tax rate change at the threshold, (ii) the hassle cost is lower in simpler regimes and (iii) it is easier to misreport revenues. Agents who choose to be in one of the simpler regimes and who would have earned revenues above the eligibility threshold absent the eligibility threshold face a discontinuity in monetary incentives. We therefore expect individuals to strategically locate before the threshold, creating an excess mass we can quantify using bunching.

We also expect the behavioral response to be higher in the super simplified regime compared to the simplified regime: the discontinuity in monetary incentives when crossing the threshold is higher for the former than the latter. This is due to both an increase in the degree of simplicity and in the ease of evasion associated with the super simplified regime. Interestingly, two agents reporting the same self-employed revenues can face disparate tax incentives depending on their regime, activity type (which also affects operating costs and the rebate), family income and other characteristics.

Survey evidence Figure 3 depicts the responses from a survey of individuals in simpler regimes for years 2010 and 2014. These were asked the question: "Do you perceive the main advantages of being in a simpler regime to be: (i) attractive tax rates; (ii) simplicity in accounting, in social security payments, and reduced costs of registration and of reporting procedures; (iii) none of the above two.

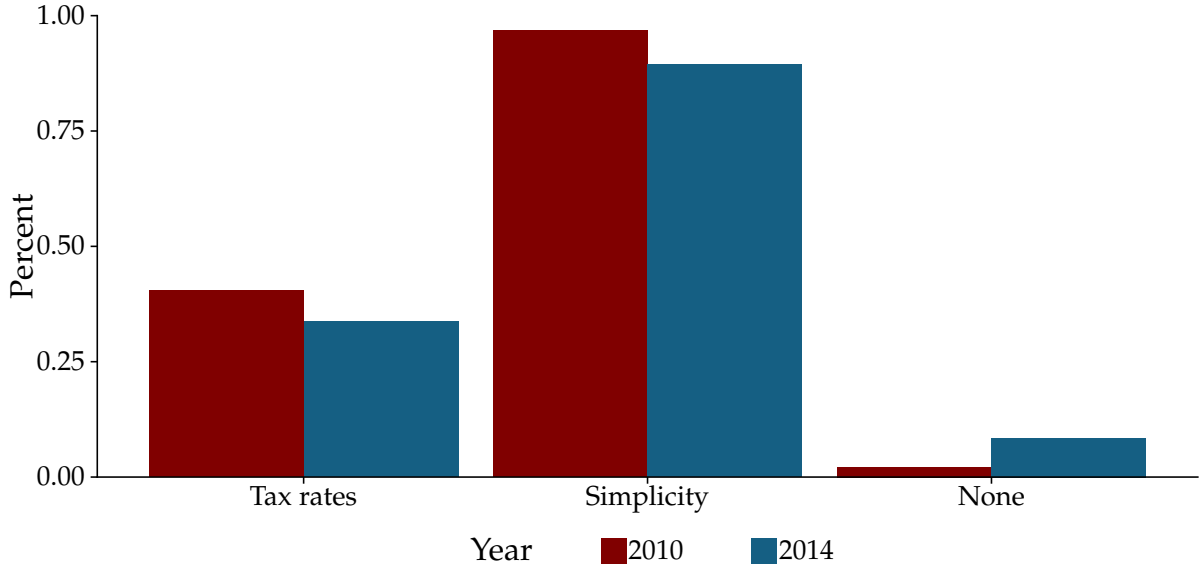
We see that almost all individuals report simplicity and the concern for hassle costs as being their main motivation for choosing a simpler regime. Then tax incentives also play an important role (between 30 and 50% of individuals in the survey mention it as a main motivation for choosing a simpler regime).

Figure 2: Number of self-employed by regime over time



Notes: The figure plots the total number of self-employed individuals (panel (a)), the number of stayers in the same regime relative to the previous year (panel (b)), the number of entry (panel (c)) and the number of exit (panel (d)) by regime over time. All series are normalized to 100 in 2010, and raw count in 2015 (in thousand observations) are reported for each of them. An individual is considered entering if he is not observed in the previous year but observed in the current year. On the contrary, an individual is considered exiting if he is observed the previous year but not the current year.

Figure 3: Advantages of simpler regimes



Notes: The figure plots the answered advantages of simpler regimes (simplified and super simplified) from a survey for year 2010 and 2014.

3.2 Quantifying Behavioral Responses with Bunching

Method Using simple bunching methods we can identify and assess the importance of the behavioral responses at the eligibility threshold between simpler regimes and the standard regime (Saez (2010), Chetty et al. (2011)). Recall that we do not consistently observe revenues for agents above the eligibility threshold in simpler regimes, hence the empirical distribution at the right of the threshold cannot be used to estimate the counterfactual distribution absent the notch. Here, we show how commonly used estimation procedures in the bunching literature can still be adapted to our setting.

Let $B = B(D)$ denote the extra number of individuals at the left of D following the introduction of a simpler tax regime with eligibility threshold D . To measure B , we estimate the counterfactual income distribution by fitting a smooth polynomial based on the empirical density. Revenues are centered around the eligibility threshold, and grouped by bins of size B_S : bin j contains all individuals with self-employed income in the interval $]B_j - B_S, B_j]$, so that all individuals reporting revenues at exactly the threshold belong to B_D . To estimate a counterfactual distribution to the left of the threshold, we run the following regression:

$$C_j = \sum_p \beta_p \cdot (B_j)^p + \sum_{d=D^-}^D \gamma_d \cdot \mathbf{1}[B_j = d] + \sum_r \alpha_r \cdot \mathbf{1}[r \in B_j] + \epsilon_j \quad (1)$$

where C_j stands for the number of individuals in income bin B_j , p is a set of polynomial integer exponents; $\mathbf{1}[B_j = d]$ are dummies equal to 1 for bins in the bunching zone

(between D^- and D); $\mathbf{1}[r \in B_j]$ is a dummy equal to 1 if bin B_j contains r and r is a multiple of round numbers (for example multiples of 1000, 5000, etc.).

The counterfactual distribution absent the notch is predicted by $\hat{C}_j = \sum_p \beta_p \cdot (B_j)^p + \sum_r \alpha_r \cdot \mathbf{1}[r \in B_j]$ so that the bunching coefficient is equal to $B = \sum_j (C_j - \hat{C}_j)$, for bin j in the bunching zone. Finally, we define the excess mass as $b = B/C_D$, where C_D is defined as the average count of individuals across bins in the bunching zone. Because we do not observe the density distribution to the right side of the threshold, our estimate represents an upper bound of the excess mass. To compute standard errors, we generate earnings distributions and excess mass estimates by re-sampling the residuals in (1) using a bootstrap procedure.

Earnings response. The excess mass b is informative about the earnings response Δy^* at the eligibility threshold of the simpler regime. Individuals in the bunching area would have declared income in the interval $[y^*, y^* + \Delta y^*]$ absent the notch. We can express the bunching coefficient B as a function of the counterfactual density at the notch $h_0(y^*)$ and the marginal buncher located at $y^* + \Delta y^*$:

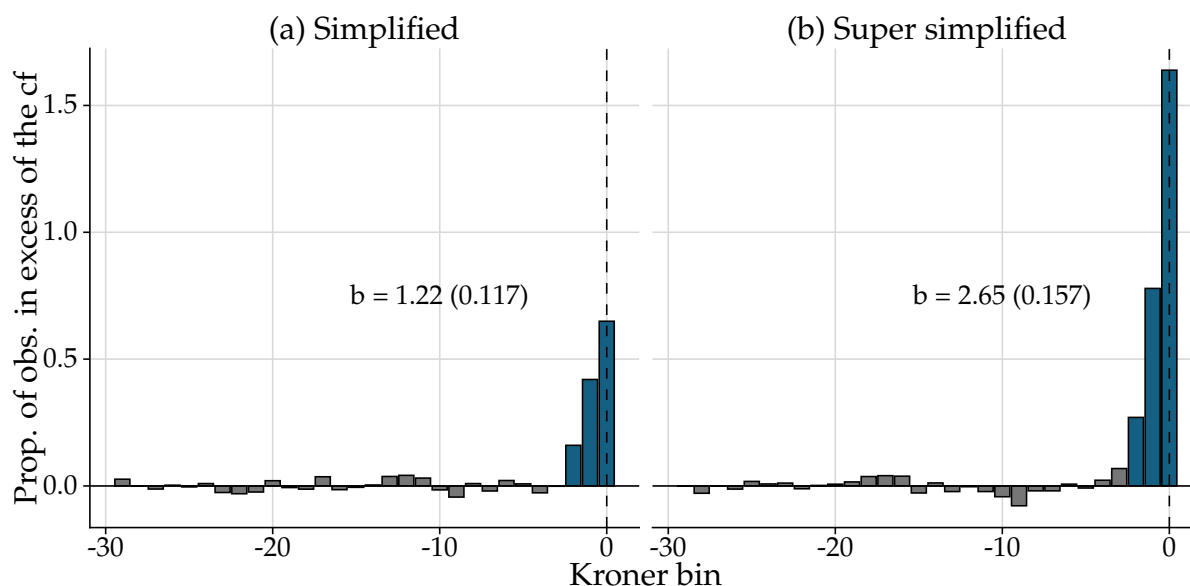
$$B = \int_{y^*}^{y^* + \Delta y^*} h_0(y) dy \approx h_0(y^*) \Delta y^*$$

Let us also define the counterfactual number of individuals located at the threshold by $\hat{\beta}_0$, where $\hat{\beta}_0$ is estimated using equation (1). The estimated density at the threshold is then equal to: $\hat{h}_0(y) = \hat{\beta}_0/B_S$. From there, we can express Δy^* as a function of the bunching coefficient and the estimated density: $\Delta y^* = (B/\hat{\beta}_0) \times B_S$. The empirical equivalent of $\hat{\beta}_0$ is C_D , so that $\Delta y^* = b \times B_S$.

3.3 Results

Bunching. Figure 4 shows the estimated behavioral responses to the introduction of the simpler regimes for the period 2009-2015. Activities are pooled and revenues are centered around the threshold (the dashed vertical line) and grouped in kroner bins of 500 euros bins for I&C Services and Non Commercial activities and of 1500 euros bins for the I&C Retail activity. We report the difference between the actual and counterfactual counts, relative to the counterfactual counts by kroner bin: $(C_j - \hat{C}_j)/\hat{C}_j$. For example, a coefficient of 0.5 means that the number of self-employed above the counterfactual is half the number of self-employed under the counterfactual distribution. The bunching region is colored in blue. This representation has two main advantages. First, we can easily compare the actual and the observed distributions of self-employed revenues. If the two distributions are similar, the difference must be close to zero. Second, because we report a difference relative to the counterfactual, we can easily com-

Figure 4: Bunching estimation by regime



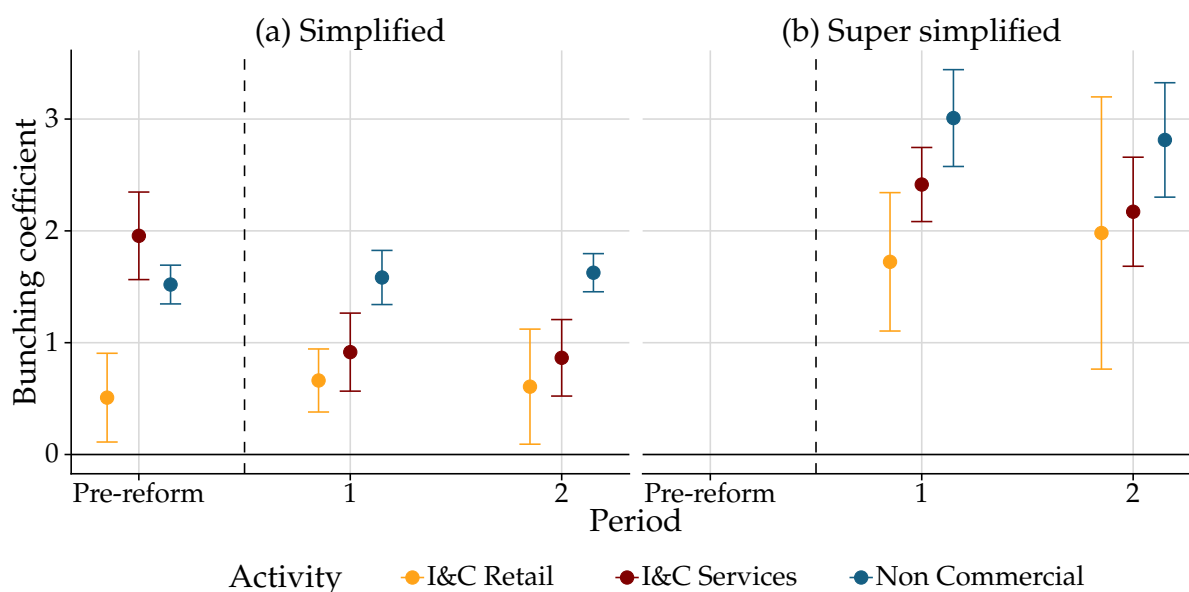
Notes: The figure represents the frequency of revenues, by kroner bins of revenues centered around the eligibility threshold (the vertical dashed line). Results are using the pooled population for 2009-2015 and all agents in the simplified and super simplified regimes. The figure plots $(C_j - \hat{C}_j)/\hat{C}_j$: the difference between the actual and counterfactual counts, relative to the counterfactual counts by kroner bin. The counterfactual distribution is fitted using a smooth polynomial as explained in subsection 3.2. The bunching area is in blue. There is significant bunching, equal to 122% of the average counterfactual frequency within the bunching area for the simplified regime and 265% for the super simplified regime. Standard errors are calculated using a bootstrap procedure in by random resampling ($n = 400$) of the residuals.

pare the behavioral responses for the two simpler regimes.

Both regimes exhibit a sharp spike in the distribution right before the threshold. The difference between the actual and counterfactual distributions is close to zero before the bunching region (in grey) and undergoes a large increase in the bunching region (in blue). Notably, the increase is starker for the super simplified (panel (b)) regime compared to the simplified regime (panel (a)). It translates into sizeable and significant excess masses, respectively equal to 1.22 for the simplified and 2.65 for the super simplified. This is in line with the stronger incentives (from a hassle cost and reporting perspective) to remain in the super simplified regime than to remain in the simplified regime.

Heterogeneity in bunching by activity and time period. The incentives to remain in the simpler regime are likely to differ according to the type of activity. Figure 5 shows the excess mass b by activity and period. Panels (a) and (b) respectively report results for the simplified and super simplified regimes. All bunching estimates are large and significant. Similar to the pooled estimations, the behavioral responses for

Figure 5: Bunching estimation by regime, activity and period



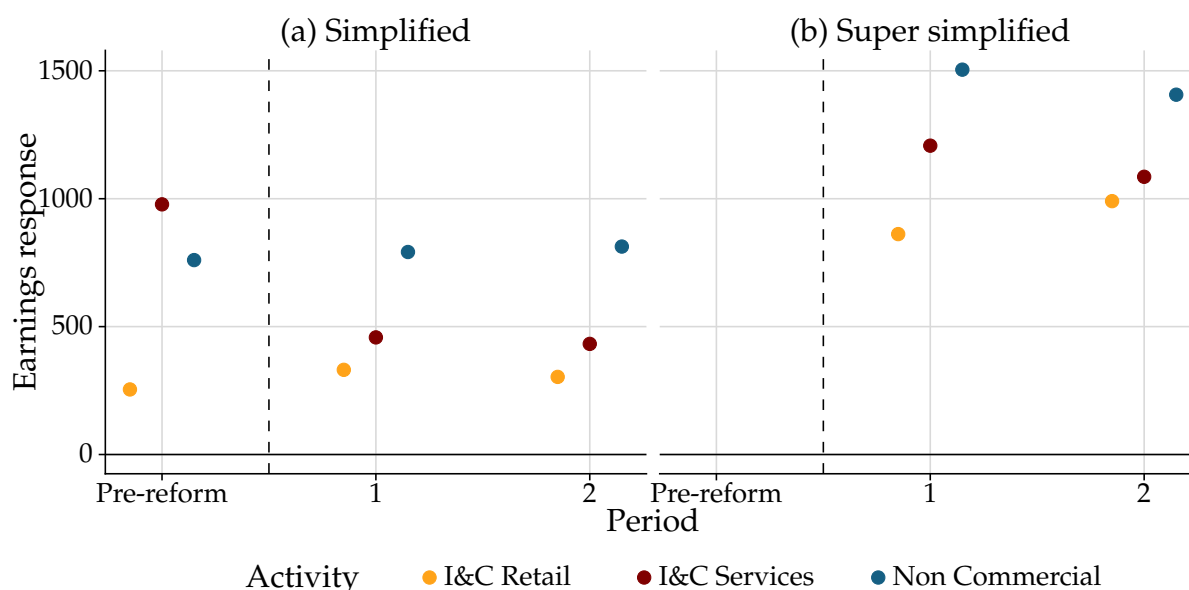
Notes: The figure plots the bunching coefficients b from subsection 3.2 by regime, activity and period. The pre-reform period is 2006-2008, period 1 is 2009-2013 and period 2 is 2014-2015. The counterfactual distribution is fitted using a smooth polynomial as explained in subsection 3.2. There is significant bunching for all categories, but systematically higher for the super simplified regime. Standard errors are calculated using a bootstrap procedure in by random resampling ($n = 400$) of the residuals.

the super simplified regime are larger than for the simplified regime. We also notice that bunching is generally more pronounced in the Non Commercial Activities than in the I&C Services. I&C Retail activities have the lowest bunching estimates. This in turn may reflect the fact that individuals in Non Commercial Activities have more flexibility to adjust their income.

Empirical earnings responses. Figure 6 shows the earning responses implied by the bunching coefficients in Figure 5. We see that lies between 250 and 1000 euro for the simplified regime and between 800 and 1500 euro for the super simplified regime. Moreover, these earning responses remain very similar across periods, which in turn suggests that variation in tax rates over time have little effect on the earning responses.

Robustness tests. Figure 25 shows the results of robustness tests on the estimation of the excess mass b . More specifically, we run variants of the above regressions where we both, modify the functional form by changing the degree of the polynomial or by running a Poisson regression, and allow for changes in the number of bins in the bunching area (the number of excluded bins in the plot). We perform this robustness exercise for each of the two simpler regimes and for the various types of activities separately. Each time the average excess mass is represented by the dashed line. Our preferred estimate

Figure 6: Earnings responses estimation by regime, activity and period



Notes: The figure plots the earnings responses $\Delta y^* = b \times B_S$ from subsection 3.2, by regime, activity and period. The pre-reform period is 2006-2008, period 1 is 2009-2013 and period 2 is 2014-2015.

is in red: namely, we see that it is always close or non statistically different from the average excess mass. This in turn is reassuring about our basic estimation being a robust estimate of the true excess mass.

4 Evidence on Tax Evasion

In section 3, we discussed three potential motives for bunching at the threshold between simpler regimes and the standard regime: (i) pure responses to taxes, (ii) ease of misreporting and (iii) a taste for simplicity. In this section, we show that misreporting is indeed part of the explanation for the observed individuals' behavioral response. We first provide motivating facts that speak to self-employed individuals' incentives to misreport their income. We then take advantage of the panel structure of our data to show evidence of misreporting using dynamic bunching methods. More specifically, using an intent-to-treat methodology, we provide several pieces of evidence to the effect that individuals change their misreporting behavior as they get closer to the eligibility thresholds. In particular, we observe that individuals in the bunching areas in a given year are more likely to remain in the same bunching area in subsequent years. This in turn is consistent with there being a discontinuity in the growth rate of revenues as the self-employed approach the eligibility threshold. Moreover, we observe that individuals disproportionately report multiple of zeros, and even more so in the bunching region, which is consistent with individuals misreporting their revenues

to specific round numbers, such as multiple of 100 euros.

4.1 Motivating Facts

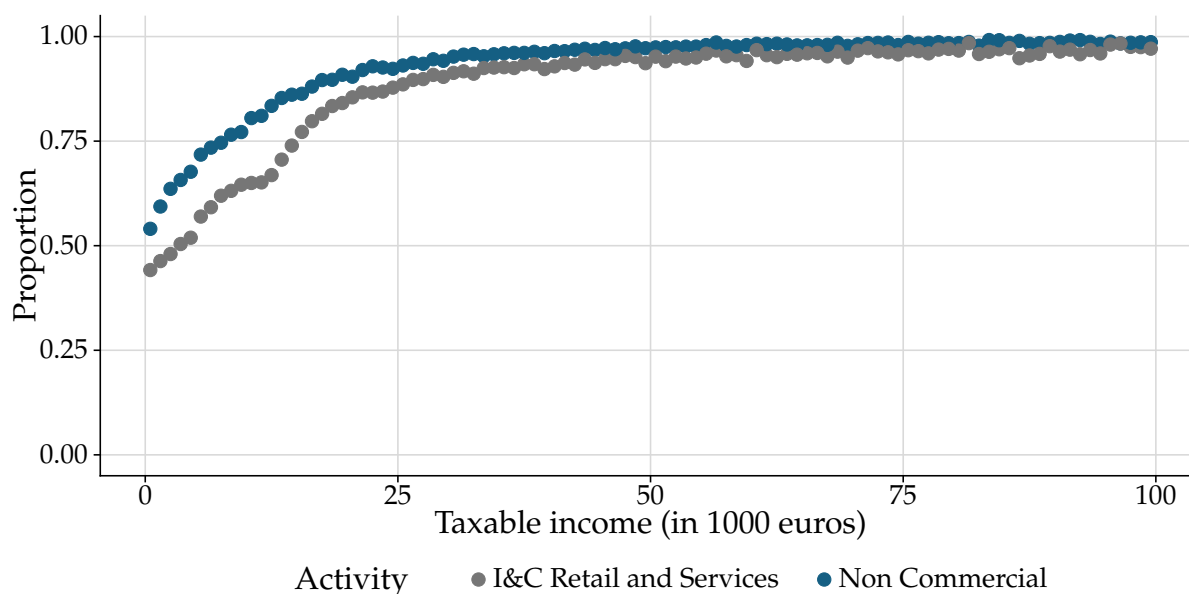
Why is it tempting to evade in the simpler regimes? Beyond the financial incentives they entail, the simpler regimes require fewer administrative tasks and proofs of sound fiscal accounting. In the simpler regimes, an individual does not have to send records of the purchases or sales she makes, she just needs to report total sales. In the standard regime, a large share of agents send detailed accounting information to certified accounting center (CAC), which in turn doublechecks the accounts and can contact the tax authority directly if it wishes to do so.

The financial incentives to join a CAC - namely the exemption from membership and accounting expenses and the avoidance of a 25% inflation of the tax base - have led a large share of agents in the standard regime to join such centers. Figure 7 shows that at the taxable income levels relevant for our analysis (between 15,000 and 35,000 euros), almost all agents in the standard regime are CAC members. A governmental report ([Cour des Comptes \(2014\)](#)) states that conditional on an audit, the size of penalties among non-CAC members is larger than among CAC members of comparable size (around 26,000 euros versus 7,000 euros). It adds that the discrepancy between taxes due and taxes actually paid comes more often from genuine accounting mistakes and delays in payments and less often from outright tax evasion among CAC members than among non-CAC members. In the end, cheating appears much easier to do in the simplified regimes, and it seems likely that among the large share of agents in the standard regime who are members of a CAC, only a minority of them intentionally misreported their revenues.

Timing frictions in the simpler regimes provide yet one more reason for underreporting. Agents have to decide by February of fiscal year t which regime they want to be affiliated with for their income earned in that fiscal year; however it is only at the end of year t and according to the accumulated revenues by then that individuals will know whether or not they actually qualify for the regime to which they applied. Agents with sales above the threshold can be tempted to underreport revenues to appear right below the threshold, as it would be very costly to have to switch status at this point.¹² In particular, a retroactive switch into the standard regime for an individual who was not part of a CAC initially entails a 25% increase in her tax base (plus the non-deductibility of the memberships and accounting expenses), since an entrepreneur joining a CAC after the fifth month of the year is not entitled to these advantages. And in addition in the standard regime the individual becomes subject to VAT: hence, if she

¹²The tolerance region can limit the misreporting, but only for revenues below the tolerance threshold and for a maximum of two years. The self-employed may also fear the signal that this choice may send to the tax authority, or not be aware of the existence of this facility.

Figure 7: Take up of CAC by activity



Notes: The figure plots the proportion of agents in the standard regime who are members of a CAC, by activity. The figure is based on the 2006-2015 data. Each dot represents the average number of agents, by year. The x axis represents taxable income in the standard regime, i.e. net business income. At low income levels, there is a sizable fraction of agents who are not CAC members. That fraction declines rapidly and converges to zero at around 30,000 euros.

has not kept the checks of her expenses, the individual may not be able to deduce the VAT spent. Finally, the individual may want to save the time and energy needed to get familiar with the standard regime.

Institutional evidence on evasion The French administration is aware of the risk of cheating and misreporting involved by the introduction of the simpler regimes. The following quote from Deprost et al (2013) at the Inspection Generale des Finances, is quite illustrative in this respect: "The simplicity of the system and the weakness of the accounting obligations make the (misreporting) risk high". Auditing individuals in the simpler regimes is make unlikely by the fact that the simplified accounting rules make audit activities become unprofitable, on top of the difficulty to access individuals' places of residence. Altogether, the administration does not give priority to individuals in simpler regimes when allocating their audit effort.

Yet, two audit exercises directed at individuals in simpler regimes, have been carried out by the French administration. The exercise was performed in 2011, and it involved 1162 randomly selected self-employed individuals in simpler regimes: it turns out that 30% of them had a positive tax adjustment whereas less than 1% of them had a negative tax adjustment. The average amount of the adjustment was of 577 euros. The second audit exercise was performed that same year on 999 individuals in the Ile de

France region. Again, the average adjustment was positive, equal to 710 euros. These amounts are likely to be lower bounds given that very few among the surveyed individuals actually lied near the eligibility threshold where underreporting is most likely to increase. Overall, the French administration extrapolated from these two exercises that it would have recovered about 400 million euros had all the self-employed been audited.

Despite the evidence they found of underreporting by individuals in the simpler regimes, the French tax authorities consider that one benefit of introducing the simpler regimes, is that some activities that were fully informal before, are now taking place officially.

4.2 Methodology

To estimate the distortions introduced by the eligibility threshold on various outcomes, we need the counterfactual of these outcomes in the absence of the notch. Bunching estimates from section 3 showed that entrepreneurs manipulate their earnings in response to the threshold, making it invalid to directly compare individuals in the bunching area to individuals outside the area.

Intent to treat design To circumvent this selection bias, we build on the method developed by [Diamond and Persson \(2016\)](#) to estimate the treatment effect of the discontinuity at the notch using an intent to treat design (ITT henceforth). Our design and empirical implementation also follow [Chen et al. \(2021\)](#). Intuitively, these methods allow us to compare the observed average outcome of individuals in the bunching area to a potential outcome had the threshold not been implemented. The ITT estimator for any outcome X is given by:

$$ITT(X) = \mathbb{E}[X|\text{Notch}, Y \in (D^-, D)] - \mathbb{E}[X|\text{No Notch}, Y \in (D^-, D)] \quad (2)$$

where Y denotes self-employed earnings, D^- denotes the lower bound of the bunching area and D denotes the eligibility threshold. The first component in Equation 2 is the average X across individuals in the bunching area, which we directly observe in the data. The second component is the counterfactual average X which we need to estimate. This estimator is an ITT effect because the interval (D^-, D) includes both the self-employed that respond to the program and other self-employed individuals who do not respond to the program but happen to be in that area for other reasons.

We now describe the procedure for the estimation of the counterfactual average outcome $\mathbb{E}[X|\text{No Notch}, Y \in (D^-, D)]$. By definition, this quantity is itself the combination of the counterfactual density in self-employed earnings $\hat{h}_0(y)$ and the counterfactual

average outcome conditional on those earnings $\mathbb{E}[X|\text{No Notch}, Y = y]$:

$$\mathbb{E}[X|\text{No Notch}, Y \in (D^-, D)] = \int_{y=D^-}^D \hat{h}_0(y) \mathbb{E}[X|\text{No Notch}, Y = y] dy \quad (3)$$

To compute an empirical counterpart of these two quantities, we bin self-employed earnings following the same procedure as in section 3. It allows us to estimate $\hat{h}_0(\cdot)$ using the bunching method. For the second quantity, we fit a polynomial regression on binned outcome X_j , excluding the bunching region:

$$X_j = \sum_p \beta_p \cdot (B_j)^p + \sum_{d=D^-}^D \gamma_d \cdot \mathbf{1}[B_j = d] + \sum_r \alpha_r \cdot \mathbf{1}[r \in B_j] + \epsilon_j \quad (4)$$

and use as an estimator: $\mathbb{E}[X_j|Y_j, \text{No Notch}] = \sum_p \beta_p \cdot (B_j)^p + \sum_r \alpha_r \cdot \mathbf{1}[r \in B_j]$.

4.3 Results

Self-employed revenues dynamics. We start by studying the dynamics of self-employed revenues to uncover potential cheating behavior by the self-employed. Thus, if the growth rate of individuals who are in a simplified regime in two successive years shows a discontinuity only in the bunching area, it is suggestive of strategic misreporting by the individual. We also expect such a discontinuity to be larger when the notch is larger, i.e., for the super simplified regime as compared to the simplified regime.

Figure 8 shows the distribution of the growth rates of revenues between t and $t + 1$, averaged by bin of revenue in year t and as a function of the distance to the threshold in year t . As we can see, the mean growth rate for self-employed in the simplified regimes is negative. However, the growth rate of revenues in the bunching area is significantly higher than what would have been expected absent the threshold. The difference is 0.5 percentage points for the simplified regime and 3.5 percentage points for the super simplified regime. This is indicative of these individuals being on a track to cross the eligibility ceiling in year $t + 1$, as their growth rate is higher than that of those who remain below the threshold (and presumably below the one of those who have passed the threshold and whose revenues we do not observe). To avoid crossing the threshold, these individuals misreport their income just enough to remain eligible for the simplified regimes.

In order to compare individuals across all regimes, including the standard one, we recast this analysis in terms of taxable income. Figure 9 plots the average growth rate of self-employed taxable income between year t and year $t + 1$, by bins of 1000 euros of self-employed taxable income in year t . Individuals who are in the standard regime are a “placebo” group in this analysis. We do not see any discontinuity in their growth rates around any of the thresholds. On the contrary, there is a clear increase in the

growth rates of individuals in the simplified and super-simplified regimes.

To provide more detail, Figure 10 considers growth rates in taxable income for individuals switching between one of the simpler regimes to the standard regime; Figure 11 instead considers only individuals who stay in the same regime between two years.¹³ Those who switch from a simplified to the standard regime have the biggest uptick in taxable income, which is consistent with the idea that they grow faster and that those who remain right below the threshold are, in fact, under-reporting their true growth in taxable income.

Furthermore, Figure 13 shows that the likelihood of remaining at the same distance from the threshold, is particularly high in the bunching regions, 11.4 percentage points higher in the threshold for the simplified regime and 15.5 percentage points higher for the super simplified regime. This is indicative of individuals underreporting their true increase in income from one year to the next.

Overall, these discontinuities in the dynamics of self-employed earnings suggests that evasion and misreporting are at least partially at the root of the observed bunching at the eligibility thresholds.

We now consider a specific reporting behavior, namely round number reporting, as another signal of evasion and misreporting.

Bunching at specific digits Absent incentives to evade taxes, we expect the probability to report a given number as last digit to be the same in the bunching area as anywhere else in the distribution of revenues. And under the assumption that the last digit follows Benford's law, we expect any number in the set $\{1,2,3,\dots,9\}$ to be reported with equal probability.¹⁴

Figure 14 shows the distribution of the probability to report 0 or any other digit by knoner bin and regime. We see that individuals in both the simplified and the super simplified regimes are more likely to report zero no matter where they lie in the revenue distribution, but individuals in the bunching areas for the two regimes are around 5 percentage points more likely to do so.

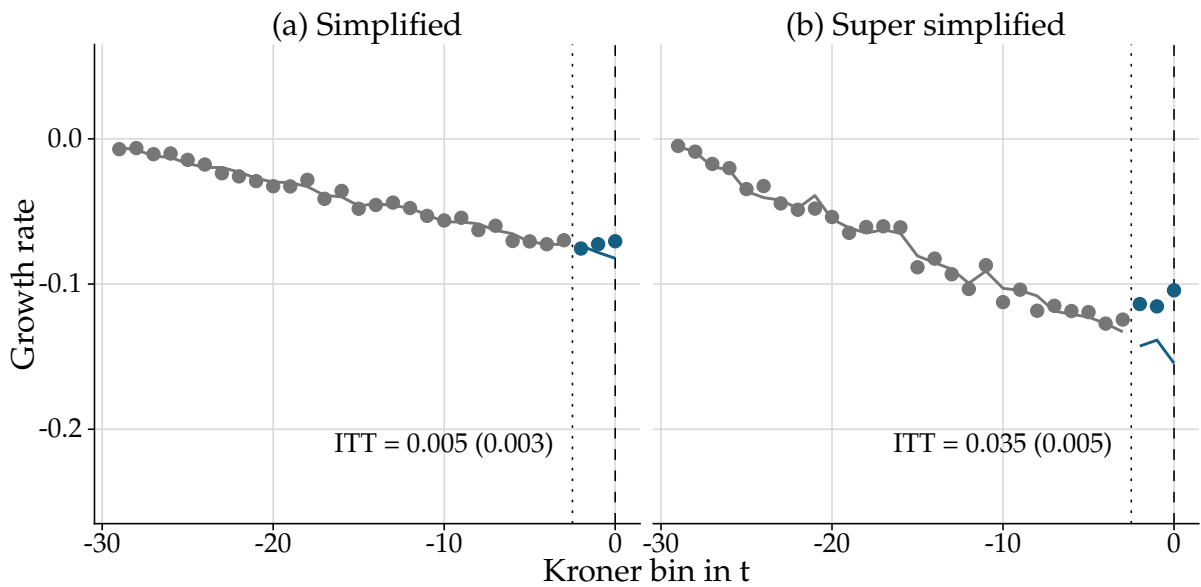
Figure 15 plots the ITT coefficients for each digit by regime. We see that individuals disproportionately report 0 as the last digit in the bunching regions, which strongly speaks to strategic reporting as a way to evade taxation.

Round numbers bunching. We now dig further into the possibility for strategic reporting, by looking more closely at the numbers individuals actually fill in. We start by testing for possible excess probability of reporting multiples of 50, 100 and 250 euros.

¹³Figure 12 plots the proportion of individuals switching from a simpler regime to the standard regime between two years.

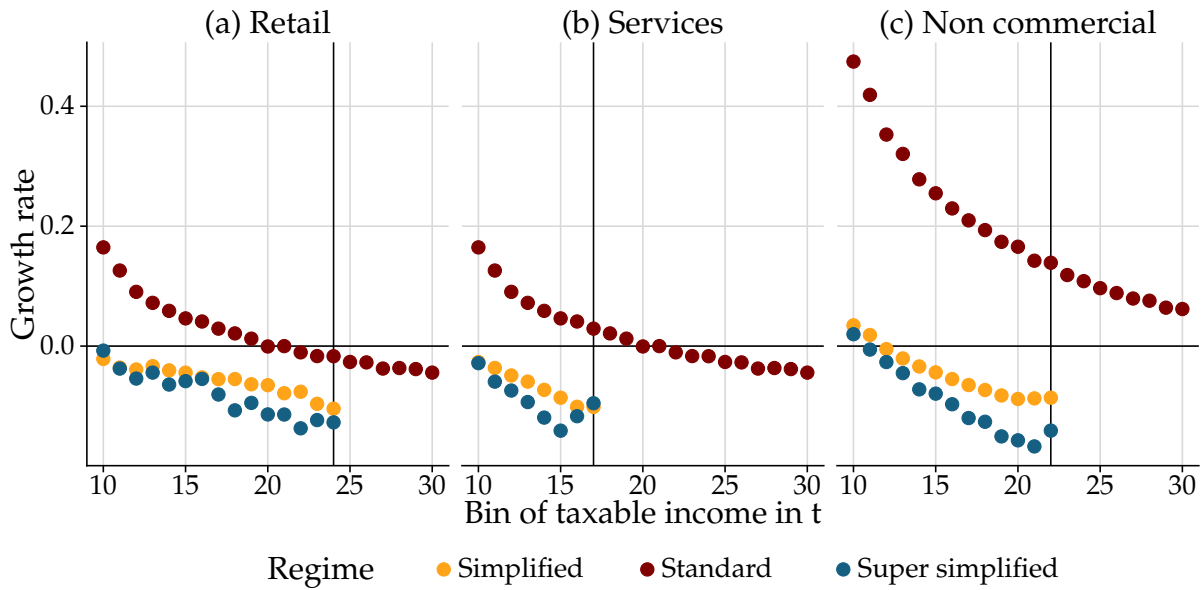
¹⁴See [Varian \(1972\)](#).

Figure 8: Growth rate in self-employed revenues between t and $t + 1$



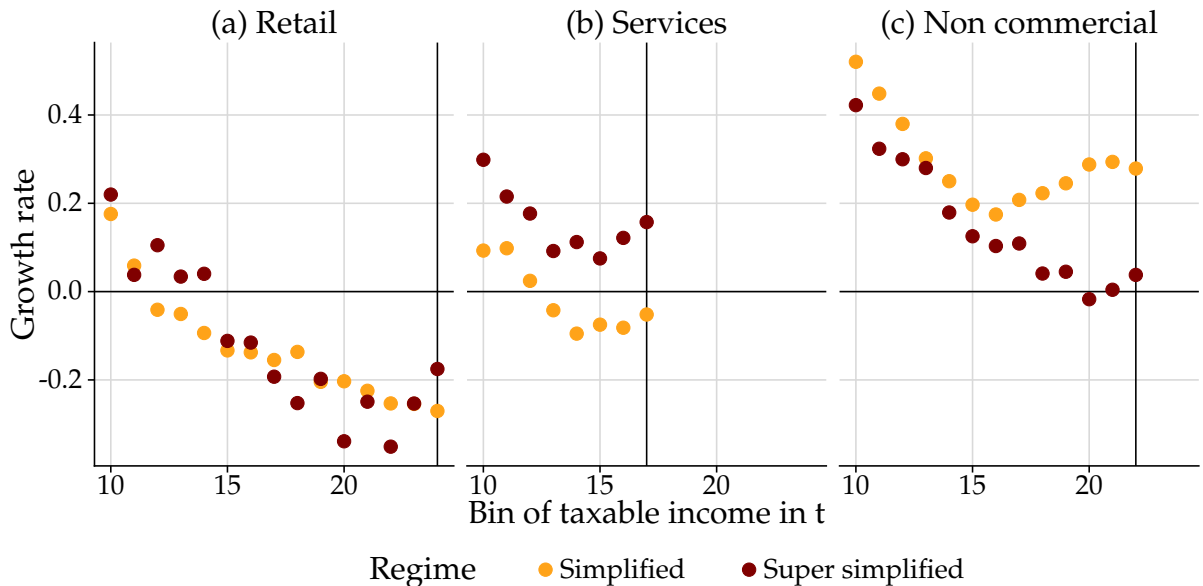
Notes: The figure plots the average growth rate of revenues between year t and year $t + 1$, by initial (year t) kroner bins of revenues centered around the eligibility threshold (the vertical dashed line). Results are computed using the pooled population for 2009-2015 and all agents in the simplified and super simplified regimes. The counterfactual distribution is fitted using a smooth polynomial as explained in subsection 4.2. The bunching area is in blue, between the dotted and the dashed vertical lines. A discontinuity in the average growth rate is shown in the bunching area, but only significant for the super simplified regime. The growth rate is on average 0.5 percentage points higher for the simplified regime compared to the counterfactual situation without the threshold, and 3.5 percentage points higher for the super simplified regime. Standard errors are calculated using a bootstrap on the ITT procedure ($n = 400$).

Figure 9: Growth rate in self-employed taxable income between t and $t + 1$



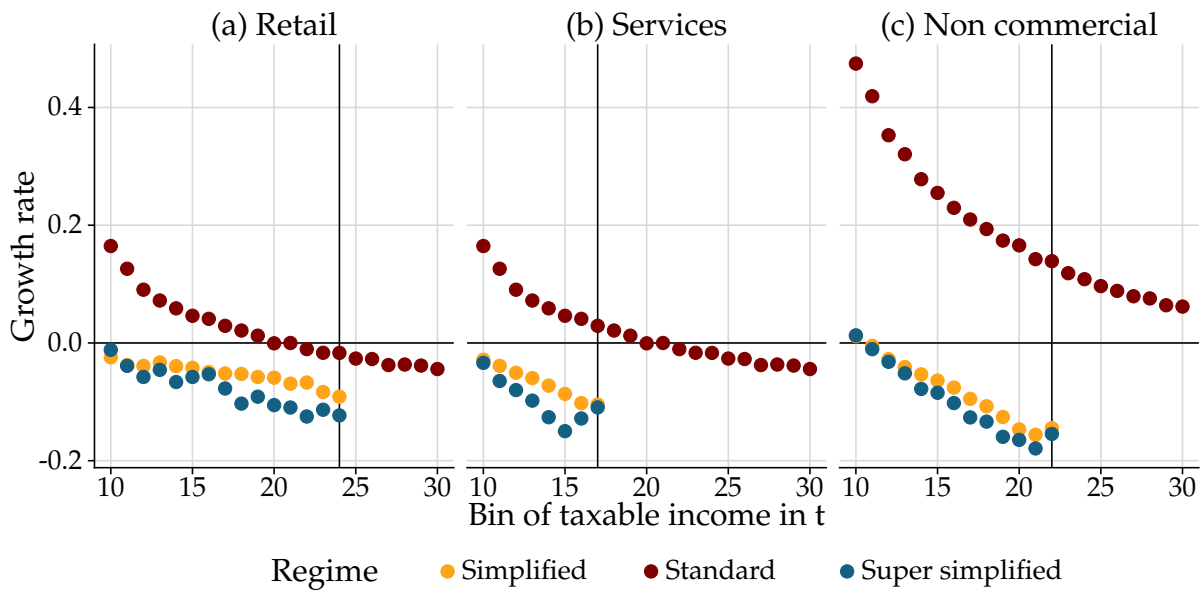
Notes: The figure plots the average growth rate of self-employed taxable income between year t and year $t + 1$, by bins of 1000 euros of self-employed taxable income in initial year t . Results are computed using the pooled population for 2009-2015, separately for Retail (panel (a)), Services (panel (b)) and Non commercial (panel (c)) activities and by regimes. Activity and regime is measured in initial year t .

Figure 10: Growth rate in self-employed taxable income between t and $t + 1$ for switchers



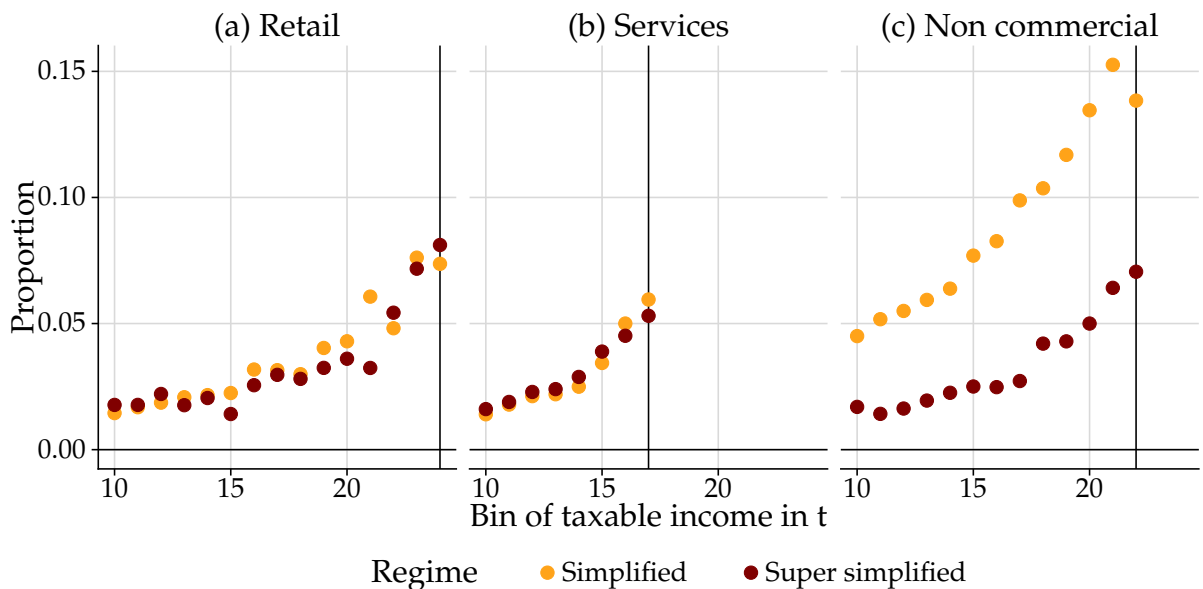
Notes: The figure plots the average growth rate of self-employed taxable income between year t and year $t + 1$ for individuals switching between one of the simpler regimes to the standard regime, by bins of 1000 euros of self-employed taxable income in initial year t . Results are computed using the pooled population for 2009-2015, separately for Retail (panel (a)), Services (panel (b)) and Non commercial (panel (c)) activities and by regime. Activity and regime is measured in initial year t .

Figure 11: Growth rate in self-employed taxable income between t and $t + 1$ for stayers



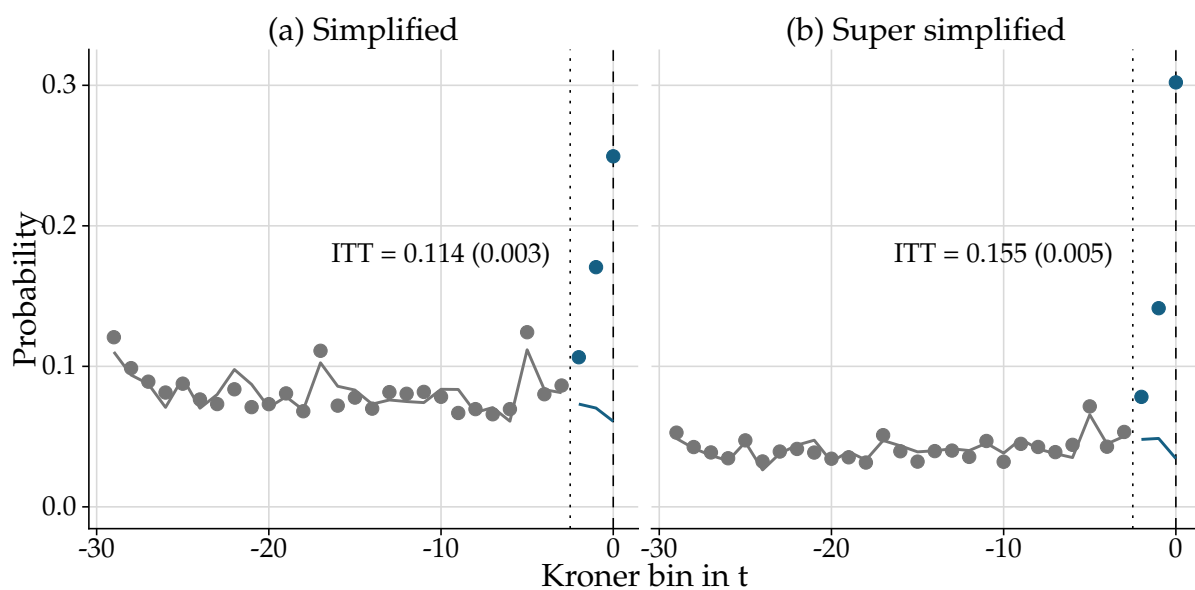
Notes: The figure plots the average growth rate of self-employed taxable income between year t and year $t + 1$ for individuals staying in one of the simpler regimes, by bins of 1000 euros of self-employed taxable income in initial year t . Results are computed using the pooled population for 2009-2015, separately for Retail (panel (a)), Services (panel (b)) and Non commercial (panel (c)) activities and by regime. Activity and regime is measured in initial year t .

Figure 12: Proportion of switchers between t and $t + 1$



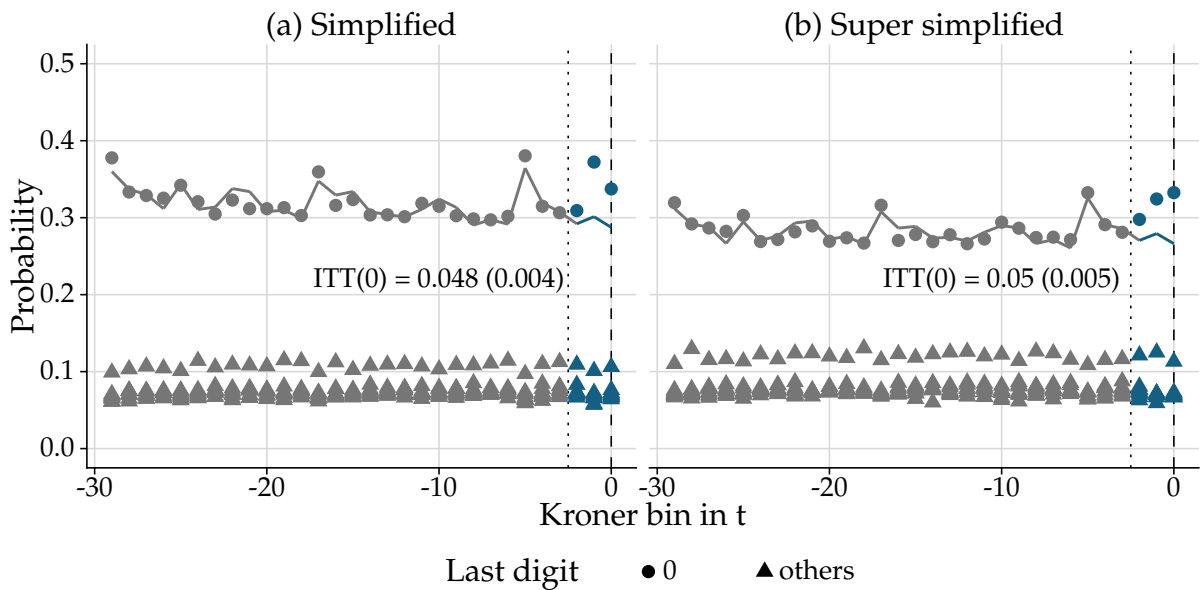
Notes: The figure plots the proportion of switchers between one of the simpler regimes to the standard regime between year t and year $t + 1$, by bins of 1000 euros of self-employed taxable income in initial year t . Results are computed using the pooled population for 2009-2015, separately for Retail (panel (a)), Services (panel (b)) and Non commercial (panel (c)) activities and by regime. Activity and regime is measured in initial year t .

Figure 13: Probability to remain in the same kroner bin between t and $t + 1$



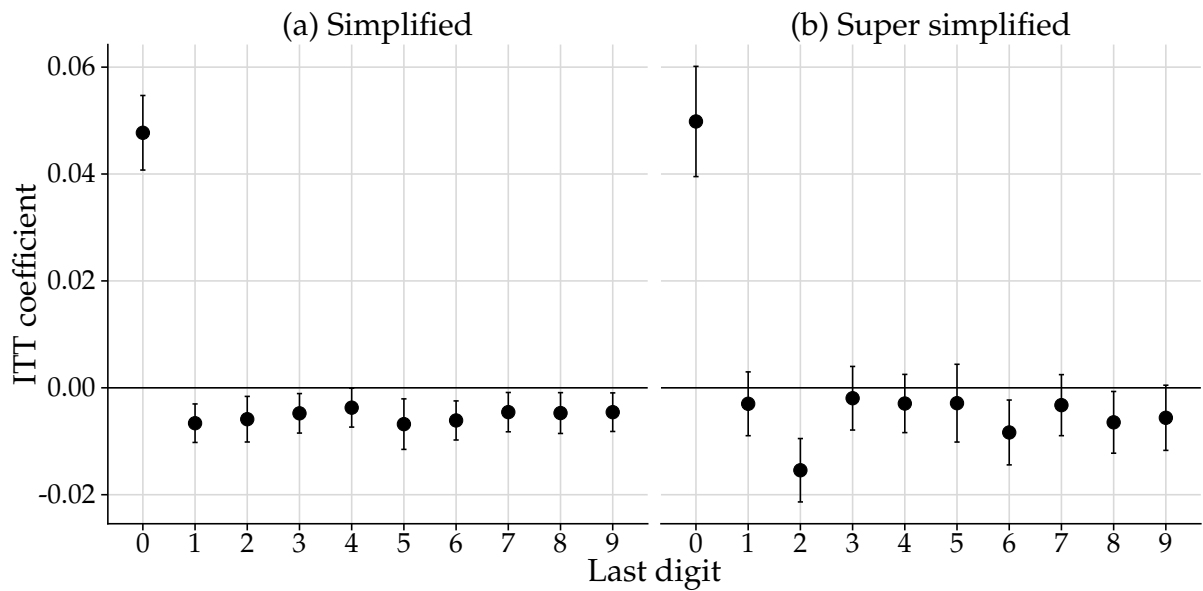
Notes: The figure plots the probability to remain in the same kroner bin between year t and year $t + 1$, by initial (year t) kroner bins of revenues centered around the eligibility threshold (the vertical dashed line). Results are using the pooled population for 2009-2015 and all agents in the simplified and super simplified regimes. The counterfactual distribution is fitted using a smooth polynomial as explained in subsection 4.2. The bunching area is in blue, between the dotted and the dashed vertical lines. A discontinuity in the average growth rate is shown in the bunching area, but only significant for the super simplified regime. The probability is on average 11.4 percentage points higher for the simplified regime compared to the counterfactual situation without the threshold, and 15.5 percentage points higher for the super simplified regime. Standard errors are calculated using a bootstrap on the ITT procedure ($n = 400$).

Figure 14: Probability to report a specific last digit for self-employed revenues



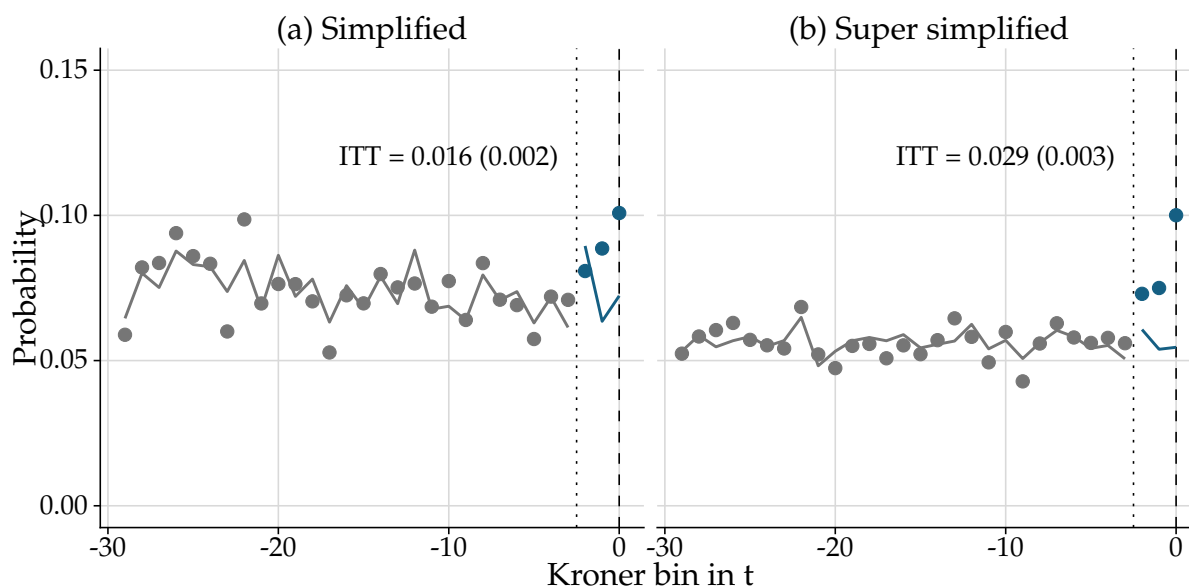
Notes: The figure plots the probability to report a specific last digit between 0 and 9, by kroner bins of revenues centered around the eligibility threshold (the vertical dashed line). Dots represent the probability to report 0 as last digit and triangles the probability to report other digits. Results are using the pooled population for 2009-2015 and all agents in the simplified and super simplified regimes. The counterfactual distribution is fitted using a smooth polynomial as explained in subsection 4.2. The bunching area is in blue, between the dotted and the dashed vertical lines. A discontinuity in the average growth rate is shown in the bunching area. The probability is on average 4.8 percentage points higher for the simplified regime compared to the counterfactual situation without the threshold, and 5 percentage points higher for the super simplified regime. Standard errors are calculated using a bootstrap on the ITT procedure ($n = 400$).

Figure 15: ITT coefficients for specific last digit for self-employed revenues



Notes: The figure plots the ITT coefficients for the probability to report a last digit between 0 and 9. Results are using the pooled population for 2009-2015 and all agents in the simplified and super simplified regimes. The coefficient is computed using the method in subsection 4.2. For example, the probability is on average 4.8 percentage points higher for the simplified regime compared to the counterfactual situation without the threshold, and 5 percentage points higher for the super simplified regime. Standard errors are calculated using a bootstrap on the ITT procedure ($n = 400$).

Figure 16: Probability to report a multiple of 100



Notes: The figure plots the ITT coefficients for the probability to report a multiple of 100 euros in t (in grey) and in $t + 1$ (in blue), for two populations: for individuals not in the bunching area in t and for all individuals in t . Results are using the pooled population for 2009-2015 and all agents in the simplified and super simplified regimes. The coefficient is computed using the method in subsection 4.2 and ranking individuals in kroner bin of centered revenues in $t + 1$. The bunching area is in blue, between the dotted and the dashed vertical lines. A discontinuity in the average growth rate is shown in the bunching area. The probability is on average 1.6 percentage points higher for the simplified regime compared to the counterfactual situation without the threshold, and 2.9 percentage points higher for the super simplified regime. Standard errors are calculated using a bootstrap on the ITT procedure ($n = 400$).

Figure 16 shows the probability to report a multiple of 100 euros as a function of both, the individual's distance to the threshold and her activity. Consistent with our analysis in the previous subsection, we find that individuals in the bunching regions disproportionately report multiples of 100 euros compared to those outside the bunching region. The probability is on average 1.6 percentage points higher for the simplified regime, and it is on average 2.9 percentage points higher for the super simplified regime.

Figure 26 and Figure 27 reproduce the same analysis but for multiples of 50 and 250 euros respectively. We see that the ITT coefficient becomes very small in both cases, which in turn suggests that individuals in the bunching regions evade taxes mainly by reporting revenues that are multiples of 100.

Income shifting within the household. Another signal for misreporting and avoidance comes from income shifting within the household. The eligibility thresholds apply to individual income, which means that if an individual with self-employed income lives with another individual with self-employed income, they can to some ex-

tent relabel the revenues as coming from one business or the other and remain below the threshold by shifting some revenues from one business to the other.

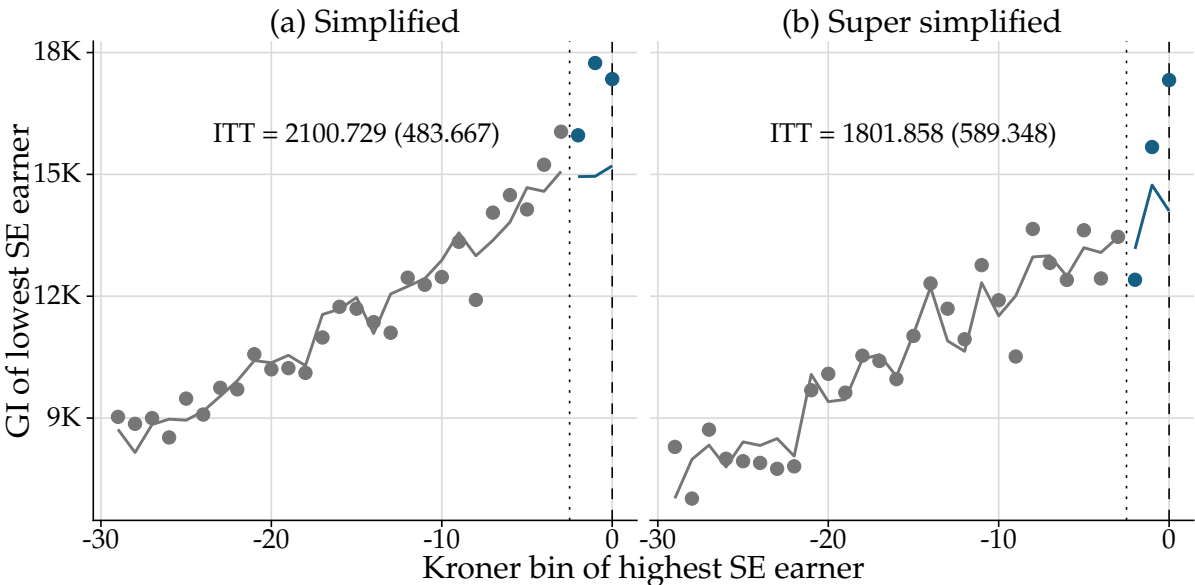
We find strong evidence that this is indeed the case by studying couples who both have self-employed earnings in one of the simplified regimes. Our sample for the 2009-2015 period contains 178914 individuals \times year observations, which is equivalent to 89457 household units for which we observe two individuals in either the simplified regime or super simplified regime. First, on the intensive margin, Figure 17 plots the average gross income of the lowest self-employed earner, by kroner bins of revenues of the highest self-employed earner, and centered around the eligibility threshold (the vertical dashed line). Figure 18 instead shows the ratio of the self-employed earnings of the lowest earner to those of the highest earner in the household. We can clearly see that, as the higher earner's self-employed earnings approach the threshold, there is a significant and large jump in the earnings of the lower earner as well. Furthermore, there is evidence of responses on the extensive margin as well. Figure 19 plots the probability to have a spouse that is also reporting self-employed revenues, by kroner bins of revenues centered around the eligibility threshold. While that probability is increasing overall (which can itself be due to assortative matching by activity or income type), there is a significant discontinuity just in the bunching region.

Labor earnings and "hidden employment." One of the concerns raised in the policy debate about the simplified regimes was that they may lead to "hidden employment." I.e., employees may be fired and re-hired as contractors, thereby allowing employers to essentially circumvent costlier standard labor contracts. We therefore consider how employed labor income varies around the eligibility threshold.

Figure 20 shows the average labor earnings reported by self-employed individuals by kroner bins of self-employed revenues centered around the eligibility threshold (the vertical dashed line).¹⁵ Labor earnings generally decline with the level of self-employed revenues, which suggests that there is substitution between self-employed and employed work, potentially because of time constraints or because of hidden employment. However, there is a discontinuous sharp and significant increase in labor earnings just in the bunching region. This provides some evidence in favor of the hidden employment hypothesis: as hidden employees are about to cross the eligibility threshold, their employers transfer some of their pay in the form of regular salary. Figure 21 plots the probability of reporting any labor earnings in addition to self-employed revenues, which is an extensive margin response. This figure similarly shows that there is a discontinuous increase in the likelihood of reporting labor earnings just before the threshold.

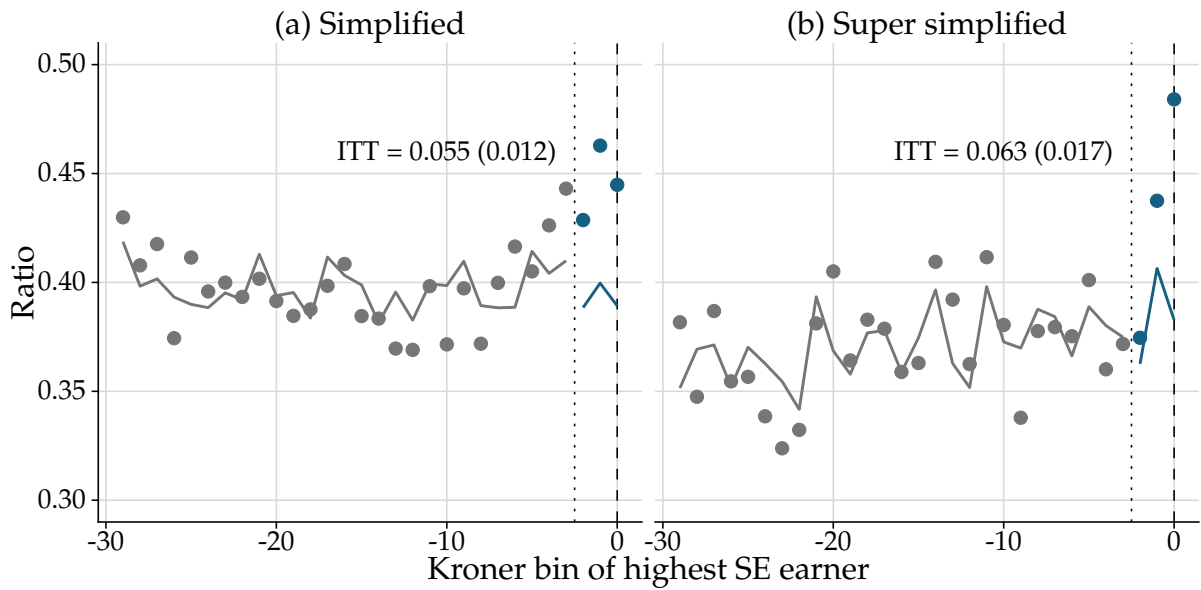
¹⁵We include individuals with zero earnings.

Figure 17: Average gross income of the lowest self-employed earner within household



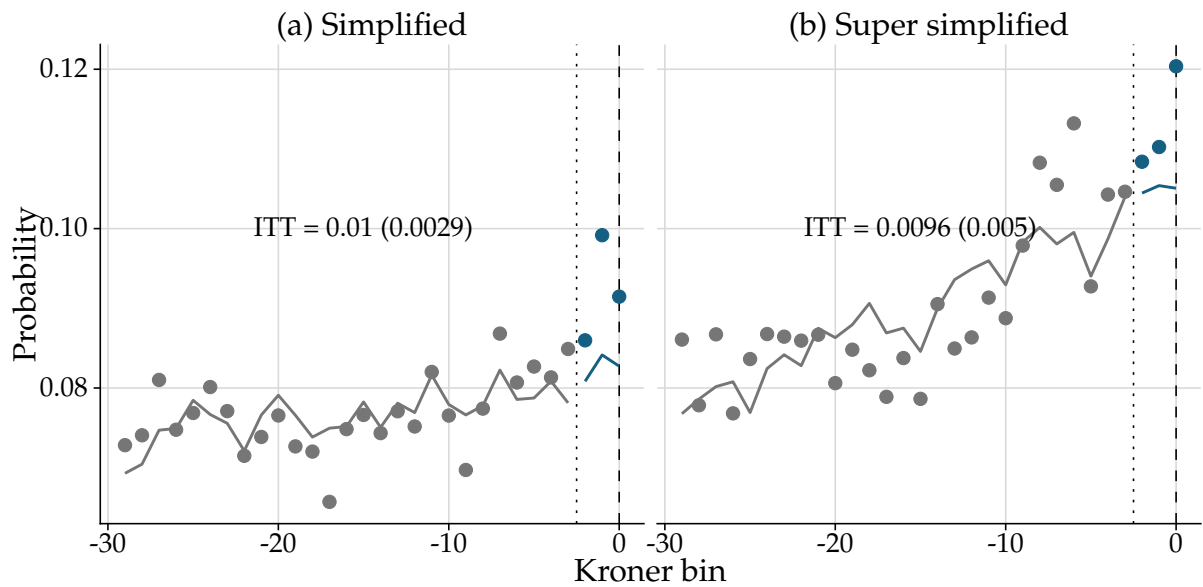
Notes: The figure plots the average gross income of the lowest self-employed earner, by kroner bins of revenues of the highest self-employed earner, and centered around the eligibility threshold (the vertical dashed line). Results are using the pooled population for 2009-2015 and all agents in the simplified and super simplified regimes. It implies that both members of the household are in one of this two regimes. Panel (a) (resp. panel (b)) plots the result for the highest earner being in the simplified (resp. super simplified) regime. The counterfactual distribution is fitted using a smooth polynomial as explained in subsection 4.2. The bunching area is in blue, between the dotted and the dashed vertical lines. A discontinuity in the average gross income of the lowest earner is shown in the bunching area. The average gross income of the lowest earner is on average 2100 euros higher for the simplified regime compared to the counterfactual situation without the threshold, and 1800 euros higher for the super simplified regime. Standard errors are calculated using a bootstrap on the ITT procedure ($n = 400$).

Figure 18: Ratio lowest/highest gross incomes within household



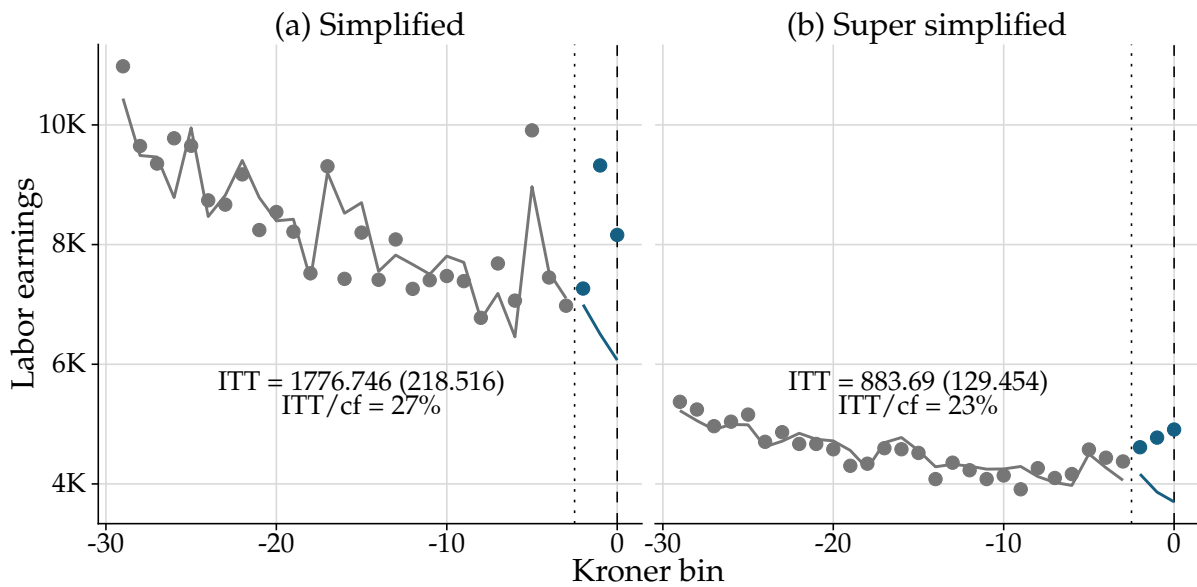
Notes: The figure plots the ratio between the gross income of the lowest self-employed earner and the gross income of the highest self-employed earners, by kroner bins of revenues of the highest self-employed earner, and centered around the eligibility threshold (the vertical dashed line). Results are using the pooled population for 2009-2015 and all agents in the simplified and super simplified regimes. It implies that both members of the household are in one of this two regimes. Panel (a) (resp. panel (b)) plots the result for the highest earner being in the simplified (resp. super simplified) regime. The counterfactual distribution is fitted using a smooth polynomial as explained in subsection 4.2. The bunching area is in blue, between the dotted and the dashed vertical lines. A discontinuity in the ratio is shown in the bunching area. The ratio is on average 5.5 percentage points for the simplified regime compared to the counterfactual situation without the threshold, and 6.3 percentage points higher for the super simplified regime. Standard errors are calculated using a bootstrap on the ITT procedure ($n = 400$).

Figure 19: Probability to have a spouse in a simpler regime



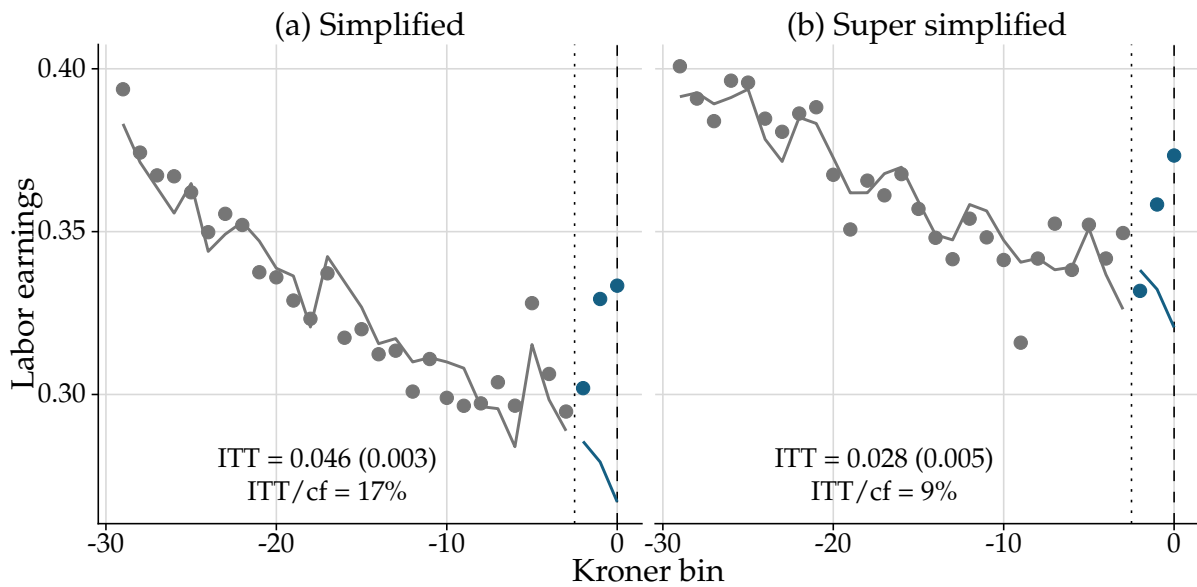
Notes: The figure plots the probability to have a spouse that is also reporting self-employed revenues, by kroner bins of revenues centered around the eligibility threshold (the vertical dashed line). Results are using the pooled population for 2009-2015 and all agents in the simplified and super simplified regimes. It implies that both members of the household are in one of this two regimes. Panel (a) (resp. panel (b)) plots the result for individuals being in the simplified (resp. super simplified) regime. The counterfactual distribution is fitted using a smooth polynomial as explained in subsection 4.2. The bunching area is in blue, between the dotted and the dashed vertical lines. A discontinuity in the probability is shown in the bunching area. The probability is on average 1 percentage points for both the simplified and super simplified regime compared to the counterfactual situation without the threshold. Standard errors are calculated using a bootstrap on the ITT procedure ($n = 400$).

Figure 20: Average labor earnings



Notes: The figure plots the average labor earnings reported by self-employed individuals, by kroner bins of self-employed revenues centered around the eligibility threshold (the vertical dashed line). Results are using the pooled population for 2009-2015 and all agents in the simplified and super simplified regimes. Panel (a) (resp. panel (b)) plots the result for individuals being in the simplified (resp. super simplified) regime. The counterfactual distribution is fitted using a smooth polynomial as explained in subsection 4.2. The bunching area is in blue, between the dotted and the dashed vertical lines. A discontinuity in the average labor earnings is shown in the bunching area. Labor earnings are on average 1777 euros higher for the simplified regime compared to the counterfactual situation without the threshold, and 884 euros higher for the super simplified regime. Standard errors are calculated using a bootstrap on the ITT procedure ($n = 400$).

Figure 21: Probability to report labor earnings



Notes: The figure plots the probability to report labor earnings in addition to self-employed revenues, by kroner bins of self-employed revenues centered around the eligibility threshold (the vertical dashed line). Results are using the pooled population for 2009-2015 and all agents in the simplified and super simplified regimes. Panel (a) (resp. panel (b)) plots the result for individuals being in the simplified (resp. super simplified) regime. The counterfactual distribution is fitted using a smooth polynomial as explained in subsection 4.2. The bunching area is in blue, between the dotted and the dashed vertical lines. A discontinuity in the probability is shown in the bunching area. The probability is on average 4.6 percentage points higher for the simplified regime compared to the counterfactual situation without the threshold, and 2.8 percentage points higher for the super simplified regime. Standard errors are calculated using a bootstrap on the ITT procedure ($n = 400$).

5 Estimating the Value of Tax Simplicity

The previous sections showed evidence that self-employed regimes differ in their simplicity, that there is significant and sharp bunching at the eligibility thresholds, and that tax evasion and misreporting are likely channels through which individuals remain in the bunching regions. The motivation to remain in the simpler regimes is threefold: i) Financial incentives: namely that by reporting less income and/or filing for an often less taxed regime, individuals pay fewer taxes in the simpler regimes than they would in the standard one; ii) Preference for simplicity. By remaining in the simpler regimes, individuals save on hassle costs and reduce their administrative burdens; iii) Ease of misreporting: as we argued in the previous section, it is much easier to misreport income in the simpler regimes than it is in the standard regime. In fact, evasion is both part of what might motivate individuals to remain in simpler regimes and what allows them to remain below the eligibility thresholds for these regimes in the first place.

Tax simplicity, monetary, and evasion incentives are intrinsically related, which makes a reduced-form identification quite challenging. Tax simplicity and simplicity of evasion go hand in hand as it is the simplification itself that both eases misreporting and provides an intrinsic value too.

In this section, we develop a simple and tractable structural model to disentangle monetary incentives from the simplicity motive and from the ease of misreporting. The model also allows us to quantify the value of tax simplicity. Our estimation method relies on using the observed bunching for different activities, regimes, and years as our “data moments” to match. More precisely, we jointly estimate the real income elasticities, the evasion elasticities and the value of tax simplicity, based on the observed bunching at the eligibility thresholds.

Key to this estimation is that we can measure the monetary gain (change in tax from one regime to the other) directly. Taking advantage of the large variability in the incentives faced by agents with different occupations across the various regimes, and of the fact that those incentives have also changed over time, we derive enough data moments that inform us about the parameters of interest. Ultimately, the structural parameters that can best explain the observed bunching across different tax brackets and years, imply a large preference for tax simplicity, a sizable evasion elasticity, and a negligible real income elasticity.

5.1 Model

Preferences. Each agent chooses one of the three regimes: the super simplified, simplified or standard regime ($i = f, m, r$). They then generate actual revenues y_i and report revenues \tilde{y}_i . For the ease of exposition, we omit the activity dimension until

later. Each agent has a type θ that captures their productivity: higher θ agents have lower utility costs of producing a given level of revenues. The disutility of generating revenues y_i for an agent of type θ is denoted by $h(y_i; \theta)$, increasing in y_i and decreasing in θ . The cost of misreporting revenues is denoted by $g(y_i, \tilde{y}_i)$, increasing in y_i and decreasing in \tilde{y}_i . An agent's utility from earning revenue y_i and reporting \tilde{y}_i is thus:

$$u_i(y_i, \tilde{y}_i) = y_i(1 - c_i) - T_i(\tilde{y}_i) - h(y_i, \theta) - g(y_i, \tilde{y}_i) - a_i$$

where c_i is the cost¹⁶ of producing y_i , $T_i(\tilde{y}_i)$ is the total tax liability as a function of reported revenues and a_i is a hassle cost. The latter reflects the tax reporting and compliance costs (e.g. administrative accounting requirements, costs of keeping track and complying with the tax procedure). We assume it to be decreasing with the simplicity of the regime: $a_r > a_m > a_f$. Consistent with the earlier tax bunching literature, we assume the following functional forms for $h(y_i; \theta)$ and $g(y_i, \tilde{y}_i)$:

$$h(y_i; \theta) = \frac{\theta}{1 + \frac{1}{\varepsilon}} \left(\frac{y_i}{\theta} \right)^{1 + \frac{1}{\varepsilon}} \quad \text{and} \quad g(y_i, \tilde{y}_i) = \frac{\kappa_i}{1 + \frac{1}{\eta}} \left(\frac{y_i - \tilde{y}_i}{\kappa_i} \right)^{1 + \frac{1}{\eta}}$$

where ε is the real income elasticity, η is the evasion elasticity and κ_i a scaling parameter. In accordance with evidence from section 2 and section 4, agents in the simpler regimes can endogenously misreport their income while agents in the standard regime cannot easily misreport their income. Therefore, in the standard regime, the reporting cost is implicitly infinite because of institutional constraints making it hard to misreport.

Modeling the tax discontinuity. The tax liability depends on both the tax base and the tax rate, which can both differ across regimes. In the simplified regime, the taxable income of agents is $(1 - \mu)\tilde{y}_m$ with μ a rebate on reported income \tilde{y}_m . In the super simplified regime, taxes are directly levied on \tilde{y}_f . Finally, the taxable income in the standard regime is $(1 - c_r)y_r$, where c_r is the cost of producing gross income y_r . The agent's effective average income tax rate τ_i , which is itself a combination of social contributions and income taxes.¹⁷ We summarize the combination of effective rates and tax bases in each regime in the following table:

¹⁶We think about this parameter as effective operating costs.

¹⁷In practice, an agent's effective average income tax rate and his social insurance contribution rate depend on his total income (self-employed income, wages and salaries, ordinary capital income, etc.), household composition, activity type, and occupation, as explained in section 2. As a result, both rates could be different across regimes and activities. Further details about the computation of these average tax rates are available in the Appendix.

Standard regime:	τ_r	is levied on net income	$z_r = (1 - c_r)y_r$
Simplified regime:	τ_m	is levied on taxable (reported) income	$z_m = (1 - \mu)\tilde{y}_m$
Super simplified regime:	τ_f	is levied on gross (reported) revenues	$z_f = \tilde{y}_f$

5.2 Responses under the Notch

We now describe agents' behaviors' at the eligibility threshold for the simplified regime. Derivations for the super simplified regime are similar and we provide further details in the Appendix.

Without the notch. Let us start by describing the interior solution. The optimal choices of actual and reported revenues of an agent in the simplified regime are:

$$y_m = \theta[(1 - c_m) - \tau_m(1 - \mu)]^\varepsilon \quad \text{and} \quad \tilde{y}_m = \theta[(1 - c_m) - \tau_m(1 - \mu)]^\varepsilon - \kappa_i[\tau_m(1 - \mu)]^\eta$$

For the standard regime, we assume no misreporting cost (i.e $g(\cdot) = 0$) such that an agent reports truthfully its revenues $y_r = \tilde{y}_r$. Then, the interior solution is:

$$y_r = \theta [(1 - c_r) - (1 - c_r)\tau_r]^\varepsilon$$

Introducing the notch With the eligibility threshold, there is a marginal agent $y^* + \Delta y^*$ who reports revenues exactly at the threshold y^* but would have reported revenues at $y^* + \Delta y^*$ absent the notch. If they were unconstrained by the notch, their choice would be characterized by reported revenues:

$$y^* + \Delta y^* = (\theta^* + \Delta\theta^*)[(1 - c_m) - \tau_m(1 - \mu)]^\varepsilon - \kappa_i[\tau_m(1 - \mu)]^\eta \quad (5)$$

and actual revenues:

$$y_m = (\theta^* + \Delta\theta^*)[(1 - c_m) - \tau_m(1 - \mu)]^\varepsilon$$

With the notch, this agent reports revenues at the notch, but their actual revenues are $y_m^* = y_m(y^*)$, where y_m^* is given by:

$$\max_{y_m^*} u(y_m^*; y^*) = y_m^*(1 - c_m) - \tau_m(1 - \mu)y^* - h(y_m^*, \theta^* + \Delta\theta^*) - g(y_m^* - y^*) - a_m$$

which implies:

$$(1 - c_m) - \underbrace{\left(\frac{y_m^*}{\theta^* + \Delta\theta^*}\right)^{\frac{1}{\varepsilon}}}_{h'(y_m^*; \theta^* + \Delta\theta^*)} - \underbrace{\left(\frac{y_m^* - y^*}{\kappa_i}\right)^{\frac{1}{\eta}}}_{g'(y_m^*, y^*)} = 0 \quad (6)$$

Let's denote by y_r^I the indifference point in the standard regime, such that the agent is indifferent between earning revenues y_m^* and reporting revenues exactly equal to the threshold y^* or earning y_r^I (which is actual revenues, since there is no misreporting in the standard regime). y_r^I is interior, and hence characterized by the tangency condition in the standard regime:

$$y_r^I = (\theta^* + \Delta\theta^*)[(1 - c_r)(1 - \tau_r)]^\varepsilon \quad (7)$$

The indifference condition $u_r^I = u_m^*$ gives:

$$y_r^I(1 - c_r)(1 - \tau_r) - h(y_r^I, \theta^* + \Delta\theta^*) - a_r = y_m^*(1 - c_m) - \tau_m(1 - \mu)y^* - h(y_m^*, \theta^* + \Delta\theta^*) - g(y_m^* - y^*) - a_m \quad (8)$$

Assumptions. The sets of equations (11)-(14) is a highly non-linear problem and proves to be complicated to solve. We make three further assumptions in order to reduce the dimensions of the problem. First, we take the limit case $\varepsilon \rightarrow 0$, corresponding to the absence of real response to taxes. This assumption is justified by our results from section 3 where we showed that the bunching pattern cannot be explained by real responses to taxes. Second, we assume $c_m = c_r = c$, which simply means that the underlying business or self-employed activity remains the same from a production function standpoint regardless of the choice of regime. Finally, we assume that the average tax rate remains constant around the threshold for both simpler regimes and the standard regime. Put another way, differences in tax incentives between the simpler regimes and the standard regime only comes from difference in average tax rates at the threshold. The system of nonlinear equations simplifies to a single equation:

$$[y^*(1 - \mu)\tau_m - y_m^*(1 - c)\tau_r] + \frac{\kappa}{1 + \frac{1}{\eta}} \left(\frac{y_m^* - y^*}{\kappa_i}\right)^{1 + \frac{1}{\eta}} - \Delta a = 0 \quad (9)$$

5.3 Identification and Estimation

Solution. For given primitives $\Omega = (\eta, c, a_r, a_m, \kappa)$ and policy parameters $\Phi = (y^*, \tau_m, \tau_r, \mu)$, we can solve for y_m^* using (9). Ultimately, the solution yields a model predicted $\Delta y^*(\Omega, \Phi)$ as a function of the primitives and policy parameters. We can do the equivalent exercise for the super simplified regime. Intuitively, a given observed bunching can be generated by (i) a taste for simplicity (embodied by Δa) and (ii) an evasion response (embodied in the misreporting elasticity η and scaling factor κ). The hassle cost by itself creates a “pure notch” –an increase in the average tax without a change in the marginal tax—even in the absence of monetary incentives and thus has a distortionary effect.

Identification. We now discuss the identification of the different parameters Ω . We use the large variability in the incentives faced by different types of agents at the same eligibility threshold because of their difference in taxes for different regimes and activity.

First, consider the taste for simplicity as defined by the hassle cost. This cost is regime specific ($\Delta a_m, \Delta a_f$) and we expect it to be higher in the super simplified regime compared to the simplified regime. Individuals are more likely to bunch in the former compared to the latter. The difference in average excess masses across the two regimes disciplines the hassle cost.

Second, we consider the evasion elasticity (η) to be homogeneous across regimes and activity. This is motivated by the fact that the opportunity to misreport revenues is similar for these groups (as they both face the same simplified accounting rules for example (see section 2)). However, the scaling parameter is activity specific ($\kappa_{\text{I\&C Retail}}, \kappa_{\text{I\&C Services}}, \kappa_{\text{Non Commercial}}$). Intuitively, it may be easier to misreport services or non commercial revenues compared to retail revenues, because the first two are more labor intensive. Given Δa_m and Δa_f , the set of scaling parameters and the evasion elasticity are identified using difference in earnings response across activity.

Estimation. We now explain how we structurally estimate the model using a simulated method of moments. Different agents face widely different incentives because they are in different regimes and activity (because income taxes, social security contribution rates and rebates). As a result, we have many empirical moments Δy^* , which we can target in order to find the parameters that fit best.

We run the estimation for the 2009-2013 period and the 2014-2015 period separately. Our baseline results is based on individuals reporting zero labor earnings. Formally, let i index the regime (super simplified or simplified) and k index the activity (I&C Retail, I&C Services, Non Commercial). For simplicity, we do not index all parameters by the

time period. For each regime, activity, and time period, there is a model-predicted bunching interval Δy_{ik}^* . Its empirical counterpart in the data is $\hat{\Delta} y_{ik}^*$.

Remember that the parameters we seek to estimate are the hassle costs, the evasion elasticity and the set of scaling parameters $\Omega = (\Delta a_m, \Delta a_f, \eta, \kappa_{I\&C\ Retail}, \kappa_{I\&C\ Services}, \kappa_{Non\ Commercial})$. We thus have six parameters to estimate and six data moments ($M = 2$ regimes \times 3 activities). The loss function we minimize is $L(\Omega)$:

$$L(\Omega) = g(\hat{\Delta} y^*, \Delta y^*(\Omega))' \times W \times g(\hat{\Delta} y^*, \Delta y^*(\Omega)) \quad (10)$$

where $g(\hat{\Delta} y^*, \Delta y^*(\Omega))$ is a vector of differences between the empirical and observed earnings responses. The weighting matrix W is diagonal and contains the inverse of the empirical earnings responses. Finally, we test the validity of our exercise by running out-of-sample checks using the estimated structural parameters on the pre-reform period and the 2014-2015 period.

5.4 Estimation Results

Structural parameters Table 2 shows the result from the estimation. There are several key findings.

First, the evasion elasticity is sizable, slightly above 1. Figure 22 reports the implied evaded amount due to under reporting. It ranges between 500 and 750 euros for the simplified regime and 1150 and 1800 euros for the super simplified regimes, implying substantial levels of misreporting. These numbers are reassuringly in line with the evidence discussed in section 4. Remember that [Deproost et al. \(2013\)](#) find that the average adjustment is between 500 and 700 euros for individuals in the simpler regimes. We focus our attention on individuals that are at the margin between the simpler regimes and the standard regime, where incentives to evade are much larger than for agents far away from the thresholds.

Second, the value of simplicity is much higher in the super simplified regime, as can be expected. The average hassle cost for the simplified regime relative to the standard one is between 1100 euros and 1600 euros (depending on the period) and for the super simplified regime it is between 6800 euros and 7200 euros per year and per self-employed. These are sizable values in light of the average hourly gross wage of 18.70 euros and a hourly gross minimum wage of 9.31 in 2012¹⁸ These values, however, are much lower in terms of taxable income.

To put these numbers into perspective, we can draw on the existing evidence on hassle costs. [Pitt and Slemrod \(1989\)](#) find that individual itemization entails a cost

¹⁸Information on the gross hourly minimum wage and average hourly wage can be found at these links: <https://www.insee.fr/fr/statistiques/serie/000883671> and <https://www.insee.fr/fr/statistiques/2508166>.

equal to 0.12% of adjusted gross income. [Benzarti \(2020\)](#) finds a cost of itemizing that is around 0.7% of gross income, which he shows amounts to around 10 to 15 working hours per year. The hassle cost we estimate is somewhat larger because of our specific context. First, we focus our attention on self-employed individuals, a population that is more responsive to tax incentives and able to adjust. Second, the hassle cost also reflects the opportunity to evade. We have seen that the evasion elasticity is large because of the ease of misreporting implied by the simpler regimes. [Benzarti](#) shows that the evasion channel can explain at most 25% of the foregone benefits for joint filers in the 28% marginal tax bracket. In the context of the VAT in Finland, [Harju et al. \(2019\)](#) shows that reporting requirements (compliance costs) are more important than tax variations to explain output response for small firms and entrepreneurs. Using bunching methods, they find that the tax elasticity is small (0.016) and that the compliance cost is large (up to 19% of the value added at the threshold).

Model fit. Figure 23 also shows the percentage deviation between the simulated moments and the empirical moments $((\Delta y^* - \hat{\Delta} y^*)/\hat{\Delta} y^*)$. They are very close to the observed earnings responses in the data, suggesting our model describes well the behavior of entrepreneurs. In Figure 24, we perform an out-of-sample check for the goodness-of-fit of our model. We use the parameters estimated on period 1 and simulate the implied earnings responses for individuals in period 2.

Discussion. The welfare implications of the existence of these simpler regimes are far from clear and our analysis cannot give a definite answer. In particular, the government may or may not be losing valuable revenues. On the one hand, these regimes were explicitly introduced to facilitate the creation of firms that would otherwise not exist, and to shift work from the informal to the formal sector. Consistent with this, [Barruel et al. \(2012\)](#) shows that three quarters of the firms created in the first semester of 2010 under the super simplified regime would not have been created without the introduction of this regime. On the other hand, it is unclear exactly whether this additional firm creation generates completely new income (that is taxed at lighter rates and in part evaded) or represents shifts away from employment (which is taxed and is harder to evade). It is possible that the revenue losses induced by tax evasion, which happen at the margin of the thresholds, may turn out small compared to the overall gains of having more self-employed businesses.

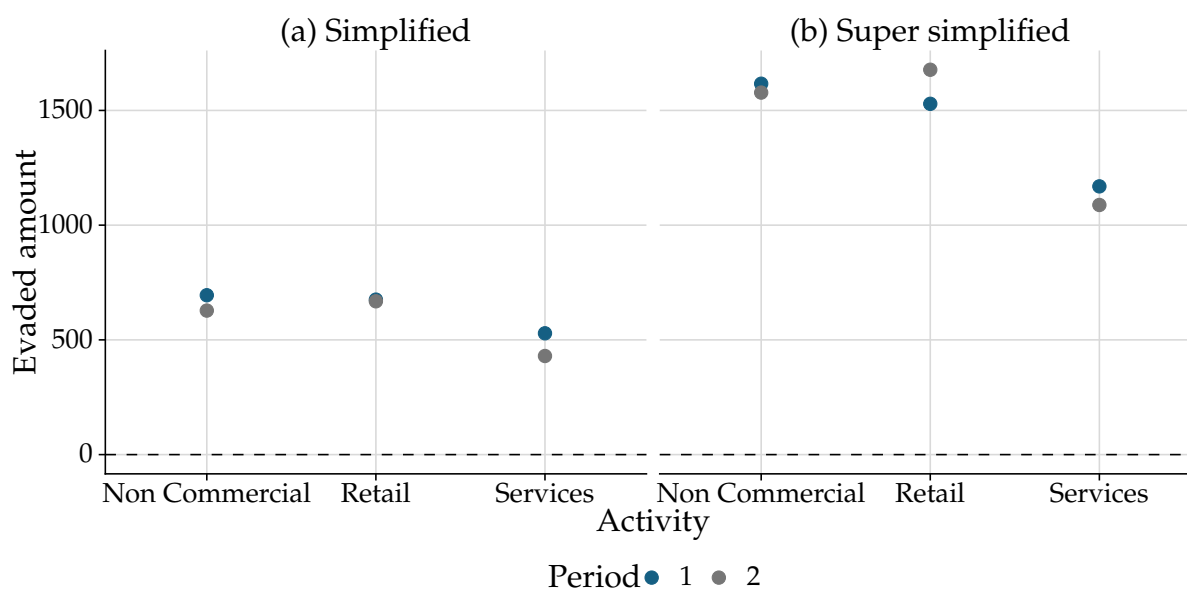
To sum up, evasion is very important, both as an additional value from the simplified regimes and as the means to remain below the threshold. The hassle costs act like a notch and provide a strong incentive to remain below the eligibility threshold.

Table 2: Structural Parameter Estimates, self-employment only

Parameter	Description	Period 1	Period 2
η	Elasticity of evasion	1.1	1.2
κ	Scaling parameter for evasion ...		
$\kappa_{I\&C\ Retail}$... in I&C Retail	120	160
$\kappa_{I\&C\ Services}$... in I&C Services	70	60
$\kappa_{Non\ Commercial}$... in Non Commercial	120	130
Δa	Difference in hassle cost between the standard ...		
Δa_m	... and simplified regimes (in euros)	1600	1100
Δa_f	... and super simplified regimes (in euros)	7200	6800

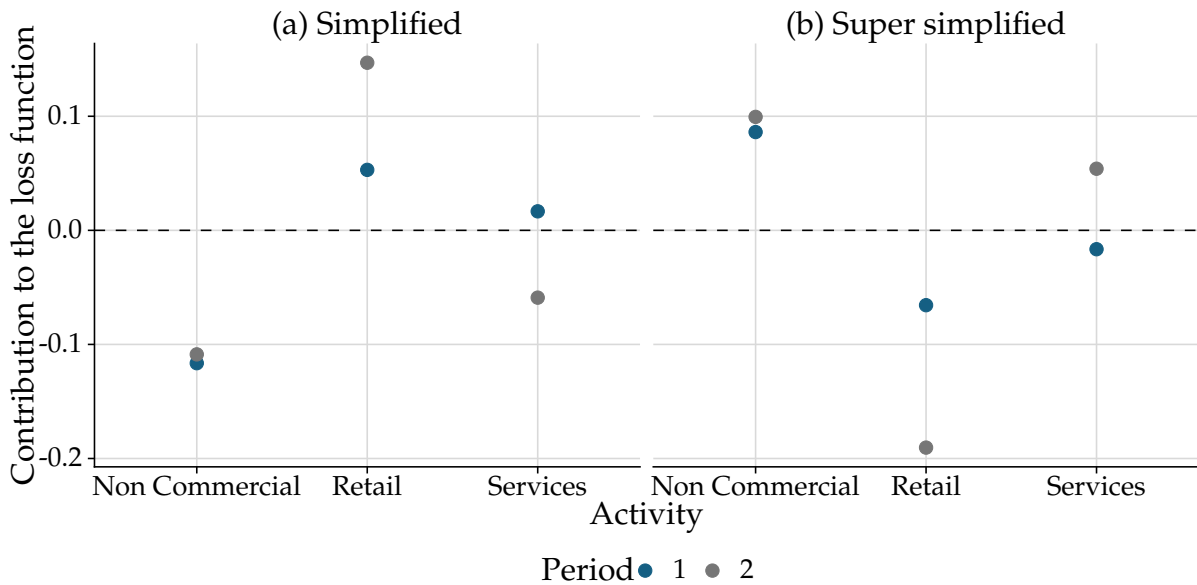
Notes: This table shows the results from the structural estimation, based on the data moments for the 2009-2013 period and the 2014-2015 period and for individuals reporting zero labor earnings. This simulation apply the tax rates based on taxable income.

Figure 22: Evaded amount of the structural estimation



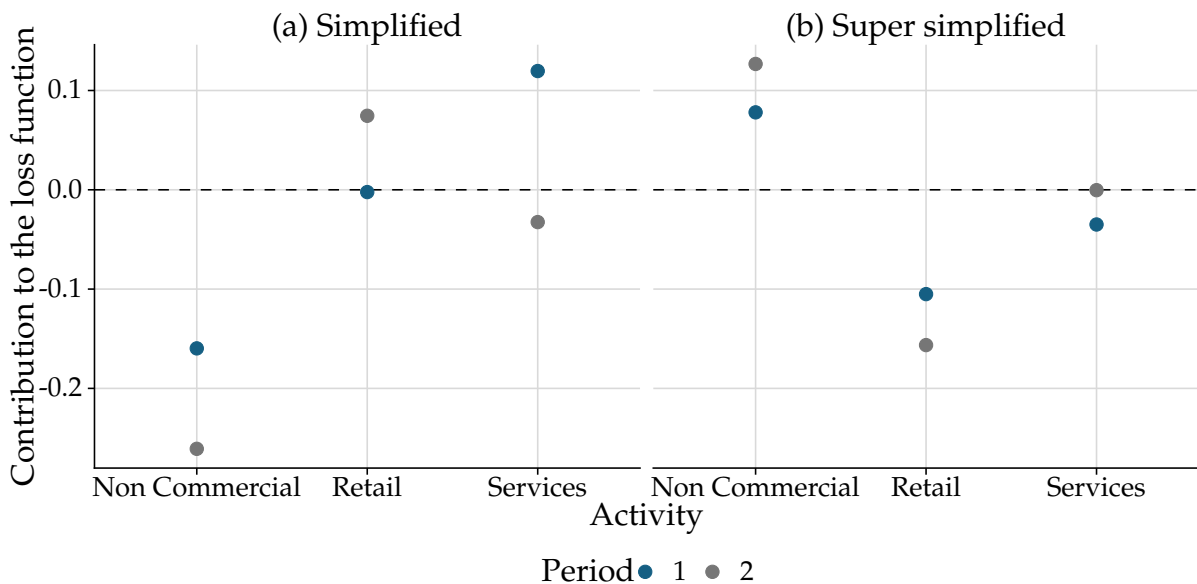
Notes: This table shows evaded amount in euros from the structural estimation based on the period 2009-2013 (period 1) and the out-of-sample prediction based on the period 2014-2015 (period 2), for individuals reporting zero labor earnings. Results are reported separately for the simplified (panel (a)) and the super simplified (panel (b)) regimes.

Figure 23: Empirical fit of the structural estimation



Notes: This table shows percentage deviation between the simulated moments and the empirical moments from the structural estimation based on the period 2009-2013 (period 1) and the out-of-sample prediction based on the period 2014-2015 (period 2), for individuals reporting zero labor earnings. Results are reported separately for the simplified (panel (a)) and the super simplified (panel (b)) regimes.

Figure 24: Out-of-sample fit of the structural estimation



Notes: This table shows percentage deviation between the simulated moments and the empirical moments from the structural estimation based on the period 2009-2013 (period 1) and the out-of-sample prediction based on the period 2014-2015 (period 2), for the full population. Results are reported separately for the simplified (panel (a)) and the super simplified (panel (b)) regimes.

6 Conclusion

We studied how French self-employed respond to the creation and incentives of simplified tax and reporting regimes. The self-employed bunch massively below the eligibility ceilings for the simplified and super simplified regimes. We started by providing evidence suggesting that at least some of this bunching comes from tax evasion. First, we observe a salient discontinuity in the self-employed earnings dynamic and in the probability to remain close to threshold. Second, the tax returns are more often round numbers close to the threshold than far from it, an indication that the reported figure is more likely to be forged. Third, there is evidence for income shifting within the household. Fourth, we can uncover some level of “hidden employment,” whereby employers prefer contracting out work previously done in-house so the employees can benefit from the tax advantages and potentially be able to evade more taxes.

We then used our reduced form bunching estimates as data moments to be matched by a structural model to disentangle the motives for individuals to remain in these simpler regimes. We found that the structural parameters that can best explain the observed bunching across different regimes and activities, turn out to display a large preference for tax simplicity and a sizeable evasion elasticity.

Our analysis could be extended in several interesting directions. A first avenue for future research would be to study whether tax simplicity improves the chances of success of a self-employed activity: do the self-employed individuals who understand tax incentives better end up doing better even in the long-run? Do they become true “entrepreneurs” and ultimately job creators? A second avenue would be to evaluate the general equilibrium effects of the existence of the simplified and super simplified regimes and their impact on public finances and welfare.

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A Bunching

A.1 Robustness checks

B Evasion

C Reduced Form

C.1 Setup

Profits We denote the profit in the super simplified, simplified or standard regime ($i = f, m, r$) by π_i . Agents generate real revenues y_i , subject to cost of production c_i and average tax rate τ_i . For the standard regime, the profit is:

$$\pi_r = y_r(1 - c_r) - y_r(1 - c_r)\tau_r = y_r \left[1 - \underbrace{(c_r + (1 - c_r)\tau_r)}_{t_r} \right]$$

For the simplified or super simplified regime, the profit is (note that $\mu_f = 0$):

$$\pi_i = y_i(1 - c_i) - y_i(1 - \mu_i)\tau_i = y_i \left[1 - \underbrace{(c_i + (1 - \mu_i)\tau_i)}_{t_i} \right]$$

where t_i is the average tax rate on real revenues. We can define the difference in average tax rate between the real regime and simpler regimes:

$$\Delta t = t_r - t_i = (c_r - c_i) + [(1 - c_r)\tau_r - (1 - \mu_i)\tau_i]$$

Elasticity Following Kleven`Waseem`2013, we have the following reduced form elasticity:

$$\varepsilon_R = \frac{1}{2 + \Delta y^*/y^*} \frac{(\Delta y^*/y^*)^2}{\Delta t/(1 - t_i)}$$

D Structural Model

D.1 Setup

Preferences Each agent choose to produce under the super simplified, simplified or standard regime ($i = f, m, r$), which generates real revenues y_i and reported revenues \tilde{y}_i . She has a type θ that captures her productivity and that reduces her cost of producing a given level of revenues. The disutility of generating revenues y_i for an agent of

Figure 25: Bunching estimates by regime, activity and period

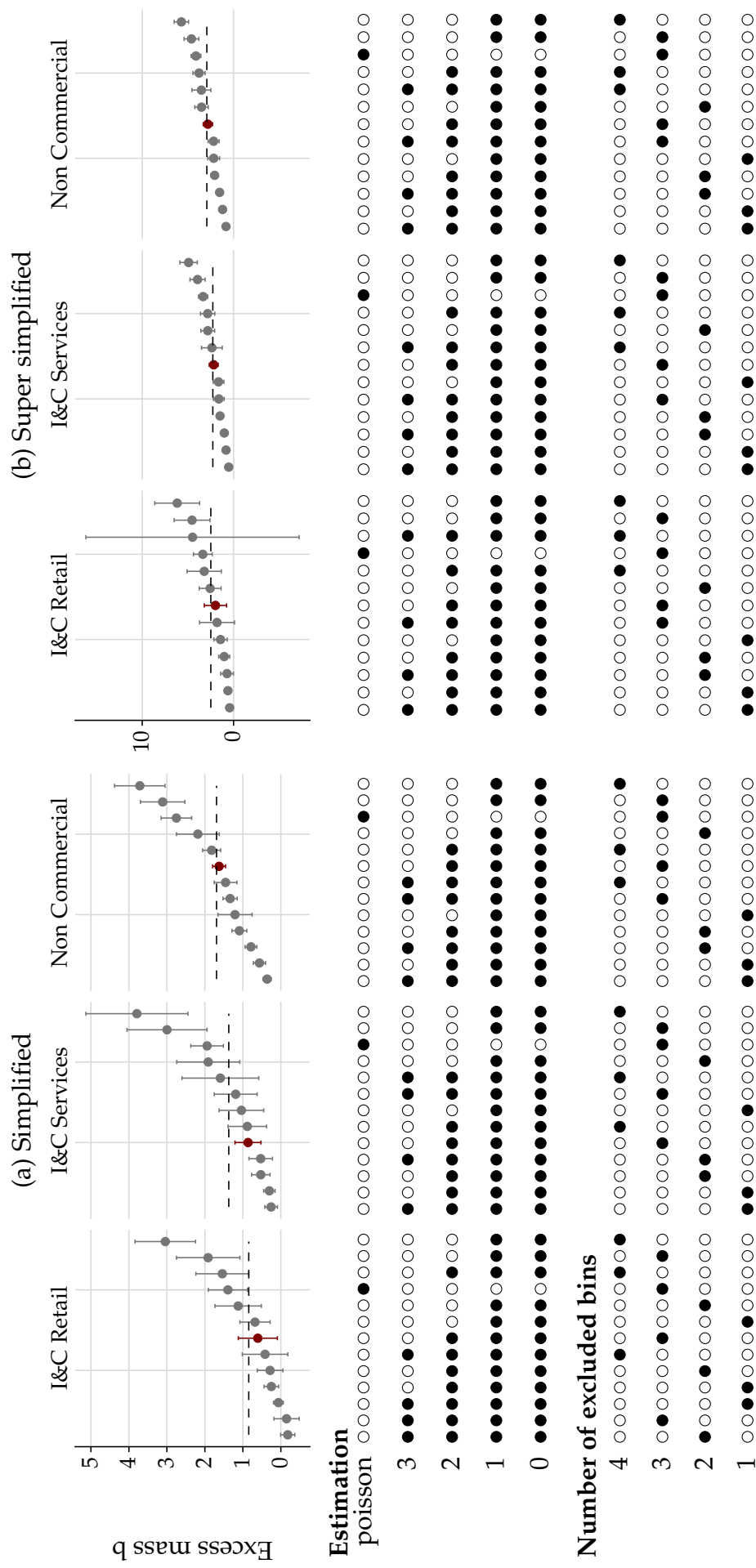
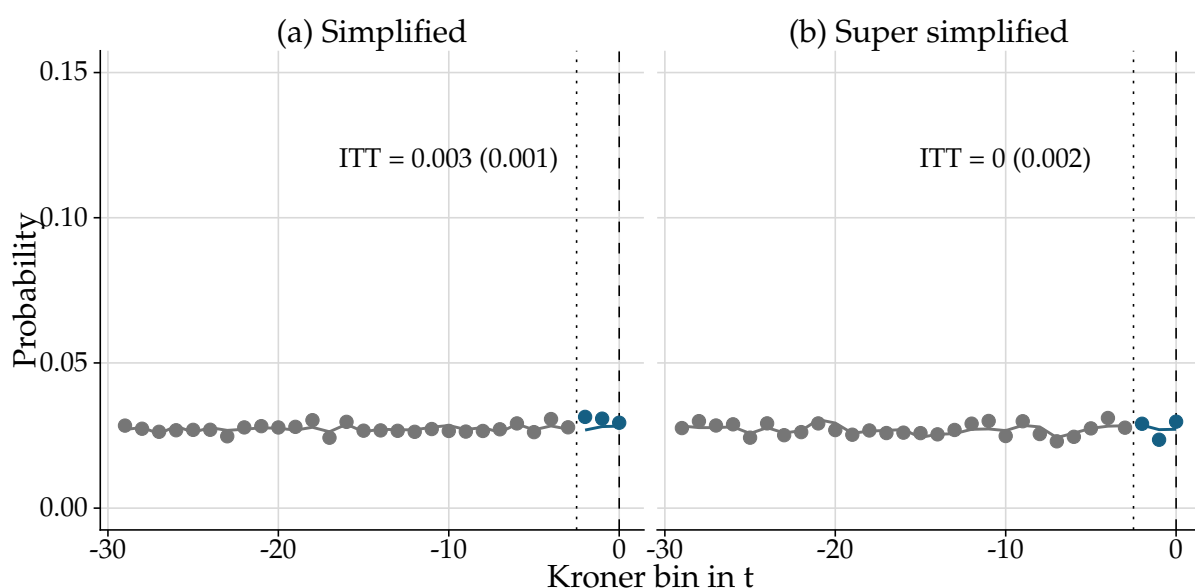
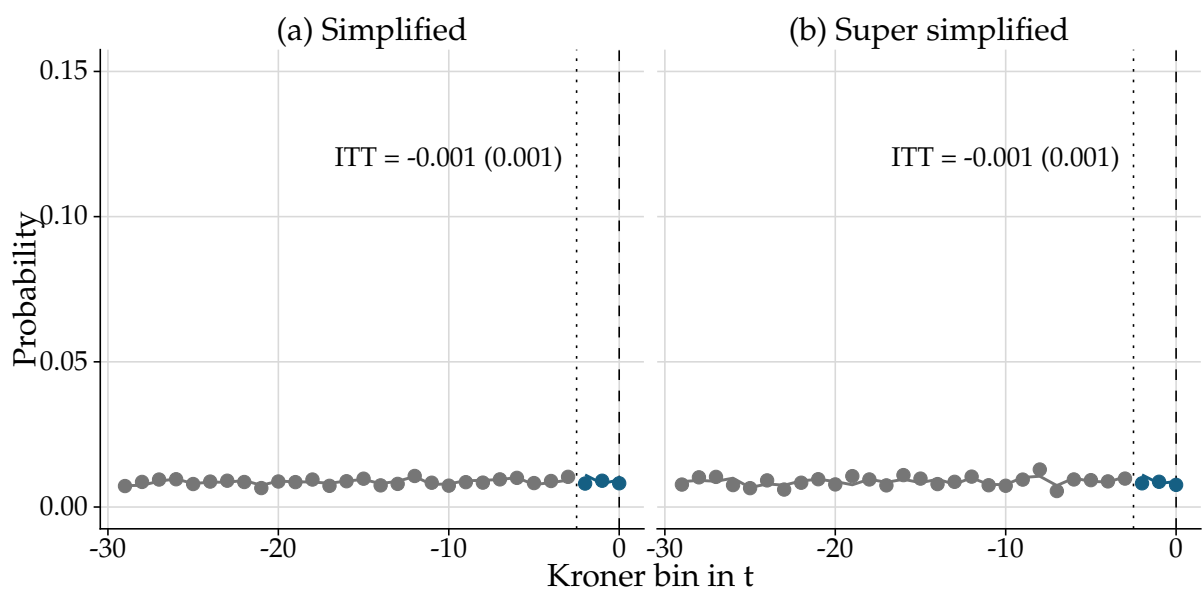


Figure 26: Probability to report a multiple of 50



Notes: The figure plots the probability to report a multiple of 50 euros, by kroner bins of revenues centered around the eligibility threshold (the vertical dashed line). Results are using the pooled population for 2009-2015 and all agents in the simplified and super simplified regimes. The counterfactual distribution is fitted using a smooth polynomial as explained in subsection 4.2. The bunching area is in blue, between the dotted and the dashed vertical lines. A discontinuity in the average growth rate is shown in the bunching area. The probability is on average 0.3 percentage points higher for the simplified regime compared to the counterfactual situation without the threshold, and approximately 0 percentage points higher for the super simplified regime. Standard errors are calculated using a bootstrap on the ITT procedure ($n = 400$).

Figure 27: Probability to report a multiple of 250



Notes: The figure plots the probability to report a multiple of 250 euros, by kroner bins of revenues centered around the eligibility threshold (the vertical dashed line). Results are using the pooled population for 2009-2015 and all agents in the simplified and super simplified regimes. The counterfactual distribution is fitted using a smooth polynomial as explained in subsection 4.2. The bunching area is in blue, between the dotted and the dashed vertical lines. A discontinuity in the average growth rate is shown in the bunching area. The probability is on average 0.1 percentage points lower for the simplified regime compared to the counterfactual situation without the threshold, and 0.1 percentage points lower for the super simplified regime. Standard errors are calculated using a bootstrap on the ITT procedure ($n = 400$).

type θ is denoted by $h(y_i; \theta)$, increasing in y_i and decreasing in θ . The cost of misreporting revenues is denoted by $g(y_i, \tilde{y}_i)$, increasing in y_i and decreasing in \tilde{y}_i . An agent's utility from earning revenue y_i and reporting \tilde{y}_i is thus:

$$u_i(y_i, \tilde{y}_i) = y_i(1 - c_i) - T_i(\tilde{y}_i) - h(y_i, \theta) - g(y_i, \tilde{y}_i) - a_i$$

where c_i is the cost of producing y_i , $T_i(\hat{y}_i)$ is the total tax liability as a function of reported revenues and a_i a hassle cost. This hassle cost is decreasing with the simplicity of the regime: $a_r > a_m > a_f$.

Parametric assumptions Consistent with previous the literature, we assume the following functional forms for $h(y_i; \theta)$ and $g(y_i, \tilde{y}_i)$:

$$h(y_i; \theta) = \frac{\theta}{1 + \frac{1}{\varepsilon}} \left(\frac{y_i}{\theta} \right)^{1 + \frac{1}{\varepsilon}} \quad \text{and} \quad g(y_i, \tilde{y}_i) = \frac{\kappa}{1 + \frac{1}{\eta}} \left(\frac{y_i - \tilde{y}_i}{\kappa} \right)^{1 + \frac{1}{\eta}}$$

where ε is the real income elasticity, η is the evasion elasticity and κ a scaling parameter mapping $h(\cdot)$ and misreporting. In the standard regime, the reporting cost is implicitly infinite because of institutional constraints making it hard to misreport.

D.2 Full model

D.2.1 Simplified regime

Without the notch Let us start by describing the interior solution (without the notch) for the simplified regime. Now, the total tax liability is defined has $T_i(\tilde{y}_m) = \tilde{y}_m(1 - \mu)\tau_m$. The optimal choice of real and reported revenues of an agent are (from the first order conditions on y_m and \tilde{y}_m):

$$\begin{aligned} \frac{\partial u_m}{\partial y_m} &= (1 - c_m) - \left(\frac{y_m}{\theta} \right)^{\frac{1}{\varepsilon}} - \left(\frac{y_m - \tilde{y}_m}{\kappa} \right)^{\frac{1}{\eta}} = 0 \\ \frac{\partial u_m}{\partial \tilde{y}_m} &= -(1 - \mu)\tau_m + \left(\frac{y_m - \tilde{y}_m}{\kappa} \right)^{\frac{1}{\eta}} = 0 \end{aligned}$$

which implies that:

$$y_m = \theta[(1 - c_m) - \tau_m(1 - \mu)]^\varepsilon \quad \text{and} \quad \tilde{y}_m = \theta[(1 - c_m) - \tau_m(1 - \mu)]^\varepsilon - \kappa[\tau_m(1 - \mu)]^\eta$$

We now describe the interior solution for the standard regime. We assume no misreporting cost (i.e $g(\cdot) = 0$). It means that an agent reports truthfully its revenues $y_r = \tilde{y}_r$. It implies that:

$$y_r = \theta [(1 - c_r) - (1 - c_r)\tau_r]^\varepsilon$$

Introducing the notch With the eligibility threshold, there is a marginal agent $y^* + \Delta y^*$ who reports revenues exactly at the threshold y^* but would have reported revenues at $y^* + \Delta y^*$ absent the notch. If she were unconstrained by the notch, her choice would be characterized by reported revenues:

$$y^* + \Delta y^* = (\theta^* + \Delta\theta^*)[(1 - c_m) - \tau_m(1 - \mu)]^\varepsilon - \kappa[\tau_m(1 - \mu)]^\eta \quad (11)$$

and actual revenues:

$$y_m = (\theta^* + \Delta\theta^*)[(1 - c_m) - \tau_m(1 - \mu)]^\varepsilon$$

With the notch, this agent reports revenues at the notch, but his actual revenues are $y_m^* = y_m(y^*)$ as a function of the report, where y_m^* is given by:

$$\max_{y_m^*} u(y_m^*; y^*) = y_m^*(1 - c_m) - \tau_m(1 - \mu)y^* - h(y_m^*, \theta^* + \Delta\theta^*) - g(y_m^* - y^*) - a_m$$

which implies:

$$(1 - c_m) - \underbrace{\left(\frac{y_m^*}{\theta^* + \Delta\theta^*}\right)^\frac{1}{\varepsilon}}_{h'(y_m^*; \theta^* + \Delta\theta^*)} - \underbrace{\left(\frac{y_m^* - y^*}{\kappa}\right)^\frac{1}{\eta}}_{g'(y_m^*; y^*)} = 0 \quad (12)$$

Let's denote by y_r^I the indifference point in the standard regime, such that the agent is indifferent between earning revenues y_m^* and reporting revenues exactly equal to the threshold y^* or earning y_r^I (which is actual revenues, since there is no misreporting in the standard regime). y_r^I is interior, and hence characterized by the optimal (tangency) condition in standard regime:

$$y_r^I = (\theta^* + \Delta\theta^*)[(1 - c_r)(1 - \tau_r)]^\varepsilon \quad (13)$$

The indifference condition $u_r^I = u_m^*$ gives:

$$\begin{aligned}
y_r^I(1 - c_r)(1 - \tau_r) - h(y_r^I, \theta^* + \Delta\theta^*) - a_r = \\
y_m^*(1 - c_m) - \tau_m(1 - \mu)y^* - h(y_m^*, \theta^* + \Delta\theta^*) - g(y_m^* - y^*) - a_m \quad (14)
\end{aligned}$$

D.3 Model with no real elasticity

We now take the limit case $\epsilon \rightarrow 0$, corresponding to no real response.

$$\theta^* + \Delta\theta^* = y_m^* \times \left[(1 - c_m) - \left(\frac{y_m^* - y^*}{\kappa} \right)^{\frac{1}{\eta}} \right]^{-\epsilon} \longrightarrow y_m^* \quad (15)$$

$$y_r^I = (\theta^* + \Delta\theta^*)[(1 - c_r)(1 - \tau_r)]^\epsilon \longrightarrow y_m^* \quad (16)$$

$$[y_r^I(1 - c_r)(1 - \tau_r)] - [y_m^*(1 - c_m) - \tau_m(1 - \mu)y^* - g(y_m^*, y^*)] - \Delta a = 0 \quad (17)$$

$$y^* + \Delta y^* = (\theta^* + \Delta\theta^*)[(1 - c_m) - \tau_m(1 - \mu)]^\epsilon - \kappa[\tau_m(1 - \mu)]^\eta \longrightarrow y_m^* = (y^* + \Delta y^*) + \kappa[\tau_m(1 - \mu)]^\eta \quad (18)$$

Combining the previous couple of equations, we have a reduced form equation:

$$y_m^*(c_m - c_r) + [y^*(1 - \mu)\tau_m - y_m^*(1 - c_r)\tau_r] + \frac{\kappa}{1 + \frac{1}{\eta}} \left(\frac{y_m^* - y^*}{\kappa} \right)^{1 + \frac{1}{\eta}} - \Delta a = 0 \quad (19)$$

If we assume $c_r = c_m$, it reduces to:

$$[y^*(1 - \mu)\tau_m - y_m^*(1 - c)\tau_r] + \frac{\kappa}{1 + \frac{1}{\eta}} \left(\frac{y_m^* - y^*}{\kappa} \right)^{1 + \frac{1}{\eta}} - \Delta a = 0 \quad (20)$$