# Nudges and Threats: Soft vs Hard Incentives for Tax Compliance[*]

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## Abstract

We study what induces delinquent taxpayers to pay their taxes due. We use high quality administrative data from the Swedish Tax Agency. We find a strong effect of the standard enforcement regime: a threat of having the debt handed over to the Enforcement Agency increases payments by roughly 10 percentage points. When including actual enforcement, payment increases by around 20 percentage points compared to those who do not risk enforcement. In a field experiment, we compare these effects of standard enforcement to those of much milder nudges, consisting of letters reminding tax delinquents to pay their taxes due. We find that a "pure nudge", i.e., the inclusion of an extra piece of paper with no valuable information, has an effect of 7-8 percentage points for those who do not risk enforcement upon non-payment. However, the same nudge has no detectable effect for the group at risk of enforcement. Social-norm messages in turn increase payments both for those who risk enforcement and for those who do not, but to a much smaller degree. We also find that a pure nudge works much better for those who receive a physical letter than for those who receive information electronically, while the reaction to the social-norm nudge is significant for those who get the electronic information.

Keywords: tax compliance, RCT, nudge, quasi-experiment, regression discontinuity

JEL Codes: C21, D03, D91, H24, H26

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# 1 Introduction

An important question to many governments and tax agencies is how tax compliance could be improved. Although most people are unable to under-report income in many Western countries with extensive third-party reporting, delinquent taxes are a problem to many tax authorities. In order to promote overall tax compliance, a relevant question is how delinquent taxpayers can be induced to actually pay their taxes due. The answer depends on what motivates and restricts them. In this paper we try to find that out for Swedish tax delinquents both by making use of a legal discontinuity in the treatment of delinquencies and by conducting a field experiment in the same vein as, e.g., Hallsworth et al. (2017) and Imbert et al. (2020).

We analyze the effects from both the standard enforcement and milder nudges. An important value added of our study is that we are able to quantify the relative importance of the two in the same context. Moreover, we compare the effects of a pure nudge, i.e., something which catches the taxpayers attention without really being relevant for the task (Löfgren and Nordblom, 2020) with a nudge alluding to social norms. We also study the effect of information on enforcement consequences (in the spirit of e.g., Cranor et al., 2020).

More specifically, in a first step, we isolate the effect of the standard enforcement regime. The identification relies on a discontinuity in the treatment of taxpayers. Tax debts below SEK 2,000 (approx. EUR 200) are due to interest, but there is no real enforcement. Debts exceeding SEK 2,000 are instead handed over, from the Swedish Tax Agency (hereinafter *STA*) to the Enforcement Agency (hereinafter *EA*). Before the debt is handed over to the EA the taxpayer is warned that it will upon non-payment. This makes it possible to study both the short-run effect of the "threat" of EA and the longer-run effect including actual enforcement, separately. The threat of having debt transferred to the EA is real (all non-payers are transferred to the EA) and the consequences are severe: a SEK 600 fee has to be paid and if the debt is not paid immediately the taxpayer may get a distraint order and be subject to payment default. Such default makes it very hard to rent an apartment, get a loan or a credit card.

Thanks to the STA's pervading adherence to the SEK 2,000 rule, we are able to identify the effect of the ordinary enforcement regime using a standard RD design (see e.g., Lee and Lemieux, 2010). In this analysis we use a sample of about 100,000 Swedes who had not paid their taxes in due

time in the years 2016 and 2017. All of those got a letter from the STA in December. Those below the threshold got just a reminder, while those above also got noticed that upon not paying, the debt would be transferred to the EA.[1] Just below the threshold, around 58 percent paid their debt during December, while 66 percent just above it did.[2] Those with a debt above the threshold who failed to pay by the end of December got their debt transferred to the EA in January. To include actual enforcement, we compare the likelihood of paying during the period December through February. Then, 66 percent below the threshold had paid, while 83 percent above it had paid. Hence, our RD design renders strong effects on tax payments, both from the threat of enforcement and from actual enforcement.

Having demonstrated the effect of standard enforcement, in a second step, we conducted a randomized field experiment (following, e.g., Hallsworth et al., 2017) among those who were late with their tax payments in 2018, to investigate if a similar effect could be reached by milder nudges. Transferring tax debts to the EA is costly, both from an overall fiscal point of view and from the perspective of the individual taxpayer. Much would be gained if the STA could make delinquents pay without actual enforcement. We conducted an RCT among the 57,000 tax delinquents who had between SEK 1,000 and SEK 3,000 in taxes due in December 2018. We randomized two different messages for those with a debt below SEK 2,000: one pure nudge letter (letter 1) and one letter alluding to social norms (letter 2). The pure-nudge letter was simply an extra sheet stating that it is time to pay your taxes due. The letter alluding to social norms (letter 2) followed the most effective formulation from Hallsworth et al. (2017): "More than nine out of ten people pay their tax on time. You belong to the minority who have not paid us yet".[3]

For those whose taxes due exceeded SEK 2,000, there was an actual threat of enforcement irrespective of any behavioral intervention. Some taxpayers may not understand the full consequences of this and may therefore comply to a lesser extent than had they understood. For those with a debt exceeding SEK 2,000, we therefore added an explaining treatment, where the consequences of having the debt transferred to the EA are explained in short (letter 3). We also add a joint treatment with both the minority norm and the explanation (letter 4), making delinquents receive one out of four different messages.

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[1]See Appendix E for the exact design and formulations.
[2]"Just below" and "just above" in this specific example means SEK 400 below and above the threshold.
[3]See Section 3.2 for the exact formulations of all letters.

The STA did not allow any random group of taxpayers to be untreated (i.e. to receive only the ordinary payment reminder) which means that everyone in the debt range SEK 1,000 to SEK 3,000 received either letter 1, 2, 3 or 4. We therefore measure the effect of the pure nudge (letter 1) as opposed to the standard regime using an RD at the SEK 1,000 and SEK 3,000 thresholds, respectively.

Similar to, e.g., Del Carpio (2014), Hallsworth et al. (2017), and Alm et al. (2019), we find a strong effect of a pure nudge (letter 1) for those with debt below SEK 2,000, i.e., those who do not risk actual enforcement upon not paying. For those with a tax debt below SEK 2,000, the inclusion of an extra sheet, simply stating that the taxes are due, has an effect on tax payments of the same magnitude as the threat of having the debt transferred to EA. The effect of this pure nudge is around 7–8 percentage points on both short and longer-run payment. The pure nudge effect is thus instant and does not grow over time. This is consistent with Antinyan and Asatryan (2020), who in their meta-study including 41 studies, find that nudges aimed at increasing tax compliance mainly have short-run effects. Also, the theoretical results by Löfgren and Nordblom (2020) suggest that instant choices are more easily nudged than choices where individuals carefully think through the alternatives. They also claim that nudges are more effective for choices that are considered unimportant. As the consequences of not paying are more severe for those whose debt exceeds SEK 2,000, the payment decision should be more important for those with larger debt. In line with that reasoning, we find no clearly significant effect from the neutral letter on tax payments for those whose taxes due exceed SEK 2,000.

We get a significant, albeit small effect from the minority norm (letter 2), compared to letter 1, irrespective of the size of the debt: The likelihood of paying in December is 2.5-3 percentage points higher for those who receive letter 2 than for those receiving letter 1. Those with a debt below SEK 2,000 who receive the minority-norm letter are around 9-10 percentage points more likely to pay than had they not been nudged at all. Giving a short information about the consequences of having debt transferred to EA (letter 3) has about the same short-run effect as letter 2 on those whose debt exceeds SEK 2,000. However, the combined message had an effect of almost 5 percentage points compared to letter 1. This means that the social-norm and information nudges actually complement each-other, while the pure nudge has no statistical effect once there is a threat of enforcement. The

longer-run effects are much lower for those with large debts, which is expected since those who do not pay in December are handed over to EA for actual enforcement in January whether they were nudged or not.

Salience is one reason that nudges affect behavior; e.g., adding an extra piece of paper in a letter, which makes it look different, may catch the reader's eye and thereby affect behavior. As many public authorities around the world now want to communicate electronically with citizens rather than on paper, one may suspect that the potential for nudges would diminish. Including an extra piece of paper or a hand-written note are nudges that might primarily work with physical letters. In our experiment, we have a unique opportunity to study the effect of nudges both in physical and in electronic letters. We find that the pure nudge, i.e., just adding an extra page has a much larger effect for those who get a physical letter than for those who get an electronic one. However, the difference in responses to the letters is smaller when it comes to the social-norm nudge (letter 2). Adding more content to the letter thus seem to reduce the difference in response between physical and electronic letters. These results should, however, be taken as descriptive and not necessarily causal – since the experiment did not randomize who received electronic versus paper letters, the usual caveat regarding selection on unobservables applies.

Our study first and foremost adds to the large literature on tax compliance. In particular, this literature has dealt with the relative importance of extrinsic and intrinsic motivation. While much work since Allingham and Sandmo (1972) have pointed to the impact of enforcement, intrinsic motivation has been put forward as also being of importance for compliance (see, e.g., Luttmer and Singhal, 2014). In particular, social norms have been suggested to guide compliance behavior. E.g., Myles and Naylor (1996), Fortin et al. (2007), and Besley et al. (2019) argue that people are more likely to comply with taxes when they are surrounded by a vast majority of compliant taxpayers. Hallsworth et al. (2017) found, when running an RCT on 200,000 British tax delinquents, that letters alluding to social norms were indeed effective in increasing compliance. Several studies have since then adopted a similar approach, and often tax authorities have collaborated with researchers in order to make use of such social-norm nudges to influence people's behavior.[4] The results are mixed and one cannot neglect the contextual factor. Hallsworth et al. (2017), Bott et al. (2019)

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[4]E.g., Bott et al. (2019) in Norway, Kettle et al. (2016) in Guatemala, Hernandez et al. (2017) in Poland, Cranor et al. (2020), John and Blume (2018) in the UK, Imbert et al. (2020) in Belgium.

and Del Carpio (2014) are examples where nudges of moral suasion significantly have increased tax compliance, while Cranor et al. (2020) and Imbert et al. (2020) find no such effects. Instead Cranor et al. (2020) find that making details of the penalty salient increases compliance, a strategy which increased compliance also in the studies by Hallsworth et al. (2017) and Bott et al. (2019). In a large-scale experiment including several stages of tax payment in Belgium, Imbert et al. (2020) find that deterrence treatments are often effective and that simplification always has a positive effect on compliance.

While our paper provides many results, a key take-away is that a mild nudge gives almost the same short-run effect on Swedish tax delinquents as a threat of being handed over to the EA. Since the EA treatment is costly to both the individuals and the government, this result is of high policy relevance. However, the results from one country and in one context cannot be directly applied to other contexts without further scrutiny. Countries differ in terms of general tax morale, institutions and tax administration, which may be crucial to the effects from a certain intervention. It is therefore interesting to note that the threat of being transferred to the EA is indeed something that Swedes do not take lightly. In 2017, a survey was conducted among 1,000 representative Swedes[5] and almost 4 out of 5 answered that they would consider it *very severe* to have a debt transferred to the EA. Furthermore, the threat of being transferred is real. Our analysis shows that more than 99 percent of the debts were indeed handed over to the EA conditional on no payment, and the STA consistently ranks in the absolute top in terms of public institutions that Swedes trust [6]. Given these Swedish idiosyncrasies, the high relative effect of a simple pure nudge compared to the standard enforcement is even more striking, and more likely to carry over to other contexts with weaker possibilities of traditional enforcement.

The rest of the paper proceeds as follows. Section 2 gives an institutional background to the Swedish setting as well as presenting hypotheses based on previous theoretical and empirical literature. The research design is explained in Section 3 and we present the results in Section 4. Section 5 concludes the paper.

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[5]See Nordblom (2017) for details about the survey.

[6]See Swedish trust indicator 2020

# 2 Theoretical and institutional background

## 2.1 Tax payment and tax enforcement in Sweden

In this section we describe the Swedish taxation model, the Swedish Tax Agency (STA), the Enforcement Agency (EA), and some key facts about tax payment in Sweden.

In Sweden, employers withdraw preliminary taxes before the employees receive their net salary during the income year. Also, banks and financial institutions withhold taxes at source on capital income. In April, the following year, taxpayers file their tax returns and are able to add extra income or claim deductions. Most taxpayers make no changes to their tax returns and for a majority, preliminary tax withdrawals just slightly exceed final taxes, so that they can expect a small tax refund (Engström et al., 2015). However, roughly one in five of taxpayers have paid too little. In August, final tax assessments are sent to the taxpayers and those with taxes due are requested to pay their debt to the STA by mid November. Those who neglect to pay get a reminder in early December. However, the formulation of the reminder depends on the size of the tax debt as the treatment of debt if not paying differs. An illustration of a time line of the Swedish tax process is seen in Figure 1.

Figure 1: The tax year (tax filing year 2018)
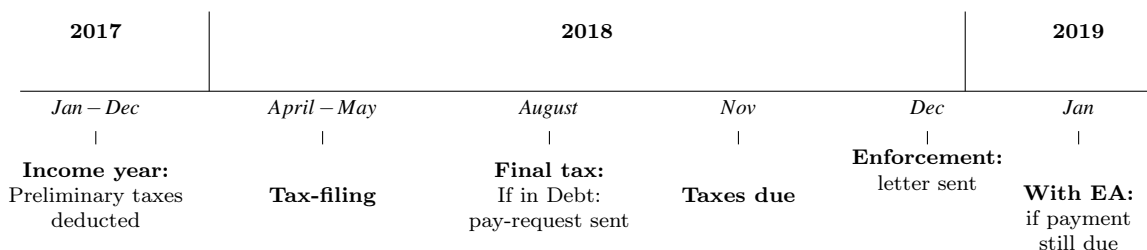


If the debt falls below SEK 2,000 (approx. EUR 200), Swedish law postulates that a sizable interest (16.25 percent on a yearly basis) is added to the debt, but there is no actual enforcement to induce the payment to the STA. However, debts exceeding SEK 2,000 are handed over to the EA in January, which makes a big difference. Although debts handed over to EA are subject to lower interest (1.25 percent on a yearly basis), there is an extra fee of SEK 600 associated with the debt, so the extra cost from not paying at once is higher above the threshold than below it.

Moreover, if the debt is not paid immediately the EA could set a distraint and the taxpayer may be subject to payment default. A payment default makes it very hard to rent an apartment, get a loan or a credit card since Swedish law allows anyone to request a transcript from the payment default records that are public information. To request such transcript is standard practice before entering substantial economic agreements. Apart from the instrumental costs there is likely also a subjective social stigma of a payment default or a distraint.

To those whose tax debts amount to SEK 2,000 or more, the standard December letter thus informs that the debt will be handed over to the EA if it is not paid by the end of December. Those whose December debts fall below SEK 2,000 instead receive a simple payment reminder. See Appendix E for the design of these letters. The discontinuity produced by the SEK 2,000 threshold will be used to identify the causal effect of the standard enforcement practice through an RD approach in Section 3.1.

## 2.2 Theoretical and descriptive background

We want to study the relative importance of enforcement and milder nudges in making tax delinquents pay their taxes due. The study population consists of tax delinquents, i.e., those who have failed to pay their taxes due by mid November a certain year. The standard framework explaining tax compliance from e.g., Allingham and Sandmo (1972) is thus not fully applicable. We are not dealing with non-compliance in the sense of concealing information; the tax authority has already decided on an amount that the individual decides to pay or not. Hence, risk aversion and the likelihood of being audited are no issues here. Everyone who fails to pay is either forced to pay by the EA or has to pay a sizable interest rate, depending on the size of the tax debt. Hence, enforcement by the EA is the main "hard" economic factor we could study that could possibly affect behavior. In accordance with this we hypothesize:

**Hypothesis 1.** *Those who receive a letter with the threat of enforcement are more likely to pay than those who just receive a reminder.*

An important dimension of this study is to compare the standard enforcement regime with milder nudges. What to expect from such nudges does, however, depend on the type of nudge. A natural starting point is what is sometimes labelled as a "pure nudge". A pure nudge is one

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that catches the attention of the decision maker, but is unrelated to the choice itself (Löfgren and Nordblom, 2020). Del Carpio (2014), Hallsworth et al. (2017), and Alm et al. (2019) actually find that the mere inclusion of a message affects taxpayers' behavior, and that it is less important what the message expresses. Following the results from these studies, we expect taxpayers to react to a pure nudge, e.g., to a message that does not provide any useful information at all, but only catches their attention:

**Hypothesis 2.** *Tax delinquents react to a pure nudge.*

Moreover, in the literature on nudging (not specifically on taxpaying) it has been pointed out that nudges are more likely to be effective for choices that are made inattentively, i.e., without much thought. Hence, if people do not pay much attention to the letter they receive from STA, a nudge would play a larger role than if people read carefully and really analyze what would be the best alternative (to pay or not). People tend to pay more attention to important choices than to unimportant ones and are therefore more likely to be nudgeable in unimportant choice situations (Löfgren and Nordblom, 2020). Since the consequences from not paying are more severe for tax debts exceeding SEK 2,000 than for smaller debts, we hypothesize the following:

**Hypothesis 3.** *Nudges are more effective for taxpayers whose tax debt falls below SEK 2,000 than for taxpayers whose debt exceeds that amount.*

As a contrast to pure nudges, Löfgren and Nordblom (2020) also define preference nudges. Those allude to the utility of the choice alternatives so that one is to be perceived as better, for instance, by triggering some intrinsic motivation. Intrinsic motivation, such as moral duties and conforming to social norms, has been found important to tax compliance.[7] Regarding social norms, Cialdini and Trost (1998) make the distinction between descriptive norms that explain what others do, and injunctive norms, referring to what others think one ought to do. Jacobson et al. (2011) conclude that injunctive norms are more powerful for invoking social obligations and Bobek et al. (2007) find, in their hypothetical setting, that descriptive norms do not explain the compliance decision, while injunctive norms do. However, in their study of tax delinquents, Hallsworth et al. (2017) find that a descriptive norm has stronger impact on tax paying than has an injunctive norm.

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[7]See, e.g., Besley et al. (2019) and Wenzel (2004), Wenzel (2005) for empirical evidence and Myles and Naylor (1996) for a classical theoretical contribution (Also Besley et al., 2019, set up a theoretical model of tax evasion where social norms play an important role).

It is likely that injunctive norms, i.e., what others think is the right or wrong thing to do, is important to the decision whether or not to evade taxes for most people. However, this is not the decision at focus in this paper. More than 95 percent of Swedish taxpayers pay their taxes in due time. However, we are, just as, e.g., Hallsworth et al. (2017), Chirico et al. (2019), Cranor et al. (2020), studying tax delinquents, i.e., the small minority who have failed to live up to the social norms in the first place.

In general, people tend to conform with others' behavior irrespective of moral concerns (see, e.g., Bernheim, 1994; Myles and Naylor, 1996). Hence, for the group who has shown not to conform with injunctive norms before (e.g., that most people think one ought to pay taxes on time), we would expect descriptive norms to be more effective. Therefore we express the social-norm treatment in our RCT as a descriptive norm and formulate the following hypothesis.

**Hypothesis 4.** *Reminding tax delinquents that most people pay their taxes on time has a positive effect on tax payments.*

One reason that people fail to pay their taxes may be lack of knowledge. For example, some may not understand how much interest they pay and others may fail to grasp the full implications of enforcement. In their large-scale experiment in Belgium, Imbert et al. (2020) find that simplification always has a positive effect on compliance and Hallsworth et al. (2017) find that providing information about the interest amount or facilitating payment increase tax payment. Also Cranor et al. (2020) find that making details of the penalty salient increases compliance among tax delinquents. If some Swedish tax delinquents are uninformed or unaware of the consequences, providing information about the consequences of having the debt transferred to the EA could increase their likelihood to pay. In our RCT study we therefore also add one treatment where we briefly explain the consequences of having debt transferred to the EA.

**Hypothesis 5.** *Informing about the consequences of enforcement increases the likelihood of payment among those who risk enforcement.*

Finally, the share of taxpayers receiving information electronically has increased over time. In 2018 (when our RCT was conducted) 39 percent of the tax delinquents received their information from STA electronically. A nudge where an additional piece of paper is added to a standard letter

could be more salient if the letter is physical rather than electronic. One may therefore worry that the prevalence of electronic rather than physical letters make taxpayers less observant. Nudges could then be less effective for those who receive electronic letters. Very little research has been conducted on the behavior depending on the way one receives the information, but we hypothesize the following:

**Hypothesis 6.** *Those who receive an electronic letter react less to nudges than those who receive a physical letter.*

## 3    Research Design

When testing our hypotheses, we study the behavior of delinquent Swedish taxpayers who receive a reminder to pay their taxes in early December. The three outcome variables we are interested in are 1) whether the taxpayer makes a payment in December, 2) whether they make a payment during the period December–February, and 3) whether the debt is handed over to the EA or not (for those with taxes due of at least SEK 2,000).

We use different identification strategies in different parts of the study. We will therefore describe in detail, and in chronological order, how the analysis will proceed. Figure 2 provides an overview of the whole study.

Some notes are warranted on the pre-analysis plan. The pre-plan only applies to the experiment part of the study. When planning the experiment we had already started to analyze preliminary data from 2016 in regards to the natural experiment part of the study. According to the pre-plan, the experiment should have launched during the end of 2017. However, the experiment was delayed for one year due to technical problems. Furthermore, the preliminary data from 2016 turned out to be incomplete which makes the estimated sample sizes in the pre-plan quite far off the mark. The sample sizes turned out to be quite much larger than expected. Finally, the pre-plan is of limited value since part of the analysis we do is a rather complex mix of a natural experiment combined with an RCT, unforeseen at the time when the plan was written. With these caveats disclosed, the pre-plan at least shows that we stay true to the pre-registered treatments and the main outcome variable (we had, however, also planned to analyze an additional long-run outcome that we do not have access to).

Figure 2: Overview of treatments depending on debt size
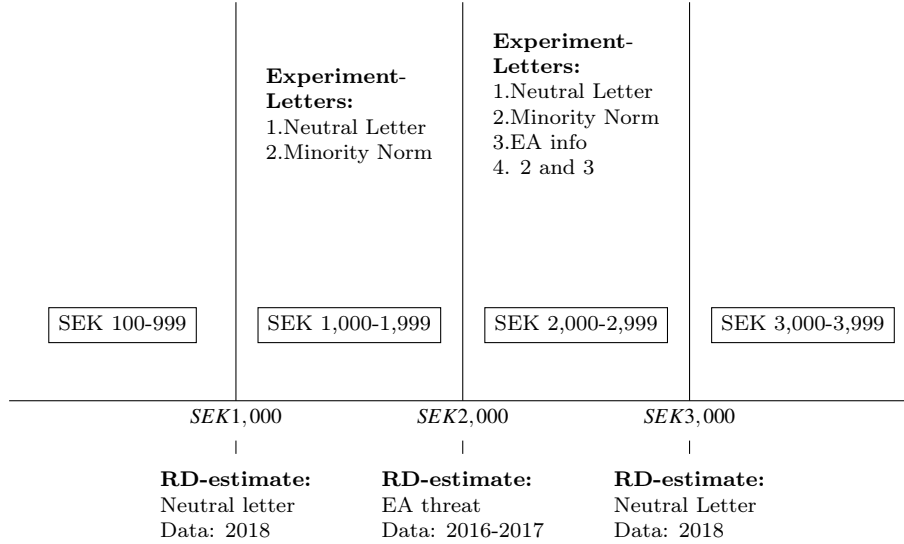


## 3.1 RD analysis of the threat of enforcement and of actual enforcement

We start by testing Hypothesis 1, i.e., we analyze the effects of the standard enforcement strategy. This analysis will be based on observational STA-data from the years 2016 and 2017 in order to estimate effects that are not contaminated by the 2018 experiment. The results from 2016 and 2017 are very similar so we pool the two years (estimates separated by year are available in Section B in the Appendix).

The pooled observational data for 2016 and 2017 represents the universe of Swedish delinquent taxpayers with a December debt spanning from SEK 100 to 4,000. The only restriction made on the sample is that we exclude individuals with registered income from any business activity, or who we can in other ways define as self-employed. Self-employed are subject to different cut-offs and not the primary study object of this paper. Other than information on the level of tax debt, payments made to the tax agency and other income related information, the data hold information on certain demographic characteristics, such as age, sex and marital status. In total, our sample includes 258,000 units of tax payers and year. However, a large share of the sample have fairly low outstanding debts. Focusing on the more relevant sample of individuals with a debt between SEK 1,000 and 3,000, the sample is reduced to the still substantial number of around 100,000 units of taxpayers and year.

As mentioned above, the standard enforcement provides a distinct cut-off level at SEK 2,000.

The effect of the threat of ending up with the EA is analyzed through a standard Regression Discontinuity (RD) approach.

The identifying assumption is that the taxpayers do not systematically choose which side of the 2,000-threshold to end up on. Since information on the 2,000-threshold is public (albeit not very salient) it is possible that well informed taxpayers affect on which side they end up. One way of doing this is to make strategic deductions or, to simply pay part of the debt to ensure that it falls below the threshold. Whether these concerns invalidate the identification strategy is an empirical question. We analyze this through the standard toolkit provided by the RD framework, e.g. a MacCrary test of the frequency distribution and by analyzing the evolution of a number of covariates over the threshold.

The empirical specification in our RD regressions will be:

$$Y_i = \alpha + f(X_i) + \beta \mathbf{1}[X_i \geq \bar{X}] + \varepsilon_i, \tag{1}$$

where $Y_i$ is the outcome variable (different measures of payment) for taxpayer $i$, $\alpha$ is the constant and $f(X_i)$ captures the underlying relationship between the forcing variable, $X_i$ (debt in December), and the outcome variable. The parameter of interest (the potential jump at the threshold) is $\beta$ and $\varepsilon_i$ is the error term. We will restrict $f(X_i)$ to be piece-wise linear with a possible kink at the threshold, i.e. $f(X_i) = \gamma_1 X_i + \gamma_2 \mathbf{1}[X_i \geq \bar{X}] X_i$. When checking for covariate balance around the threshold we will use the analogous specifications, using the covariates as outcomes instead. The covariates we analyze when checking for balance are: age, gender, income and marital status. For all outcomes, we will report results for a wide range of bandwidths, including data-driven approaches (Calonico et al., 2015).

A minor complicating factor is that all (overdue) debts to the STA are subject to a 16.5 percent interest. The interest is added monthly to the taxpayer's tax account. For a debt of SEK 2,000 the monthly interest amounts to SEK 27.50. This means that a taxpayer with a debt in December between about SEK 1,973 and 2,000 will get a simple reminder without the EA threat in December, but if she does not pay anything, the interest will carry her over the threshold in January. After the January clearing she will therefore get an EA threat and thus be partially treated in any outcome measure defined over a longer period. We therefore employ a so called donut RD approach, which

simply means that we drop the taxpayers in an area around the threshold, which eliminates the semi-treated taxpayers just below the threshold. The McCrary tests (see Appendix A) also show that the we have a slight over representation of taxpayers above the SEK 2,000 cut-off. Note that we were afraid of bunching just below SEK 2,000 since this is where a well informed taxpayer could strategically end up by making partial payments to avoid the EA. Our analysis indicates that this over representation is present also at SEK 1,000 and, to a minor extent, SEK 500, SEK 1,500 and SEK 3,000. We argue in Appendix A that this over representation is most likely due to a psychological effect driven by taxpayers making partial payments. Taxpayers seem to aim for simple numbers when making partial payments on their debts. The addition of monthly interest then pushes the debts slightly above the simple number. The donut RD approach that we proposed above also solves this problem. In all RD:s we therefore exclude the taxpayers in the region +/- SEK 60 around each threshold.

## 3.2 RCT nudge study

In the year 2018, we conducted an RCT in collaboration with the STA, to be able to test our remaining hypotheses. The RCT involved roughly 57,000 people who had a tax debt between SEK 1,000 and SEK 3,000 in December 2018. The taxpayers in any of the treatment groups received one extra piece of paper with the standard December letter (either physically or electronically depending on what means of communication the taxpayer had chosen).

Those whose debt fell below SEK 2,000, randomly received either of the letters 1 and 2 below, where Letter 1 is the pure-nudge letter and Letter 2 expresses the 'minority norm', which proved to be the most effective nudge in the RCT run by Hallsworth et al. (2017). Those with a debt of at least SEK 2,000 were randomly assigned any of the four letters below. For them, there was a real threat of enforcement irrespective of any behavioral intervention. Some taxpayers may not understand the full consequences of this, so we add an explaining treatment, where the consequences of having the dept transferred to the EA are explained (letter 3). We also add a joint treatment with both the minority norm and the explanation (letter 4).

**Letter 1**

Here comes a reminder that you have to pay your tax arrears. On the next page, you find

information so you can easily make your tax payment.

### Letter 2

More than nine out of ten people pay their tax on time. You belong to the minority who have not paid us yet and therefore you get a reminder and information so you can easily make your tax payment.

### Letter 3

Here comes a reminder that you have to pay your tax arrears. On the next page, you find information so you can easily make your tax payment. Pay on time so your tax debt is not transferred to the Enforcement Agency.

If the debt is transferred to them, you have to pay SEK 600 in addition to your taxes due. You also risk getting a payment default. Such default remains in the registers of credit bureaus for three years and can make it difficult for you to, e.g., borrow money or to rent an apartment

### Letter 4

More than nine out of ten people pay their taxes on time. You belong to the minority who have not paid us yet and therefore you get a reminder and information so you can easily make your tax payment. Pay on time so your tax debt is not transferred to the Enforcement Agency.

If the debt is transferred to them, you have to pay SEK 600 in addition to your taxes due. You also risk getting a payment default. Such default remains in the registers of credit bureaus for three years and can make it difficult for you to, e.g., borrow money or to rent an apartment

Letter 1 is a "neutral letter" that can be referred to as a pure nudge, i.e., it provides no information in addition to what is communicated in the standard letter; we just add an extra piece of paper (either a physical paper or an electronic "paper" for those that had signed up for an electronic mailbox). However, all letter designs also involved a header saying "important notice" (see exact designs of letters in Appendix E). Letter 2, the minority norm, is what Löfgren and Nordblom (2020) refer to as a preference nudge, as it reminds the taxpayer of what most people do. Letter 3 is information to those not aware of the implications of having debt handed over to the EA. For those who already know this, it is rather a preference nudge, just like Letter 2. Finally, letter 4 is a combination of letter 2 and 3.

Measuring the effect of the pure nudge, i.e., of Letter 1 could have been done by simply excluding one random group from receiving any treatment at all. However, the policy rules of the STA do not allow such different treatment of any group so we had to send some kind of extra letter to everyone with debts within the treatment window, i.e., those with tax debts between SEK 1,000 and 3,000. Since the experiment created two artificial thresholds at SEK 1,000 and at SEK 3,000 these can be used to measure the effects of the neutral letter. Below and above these thresholds the taxpayers received only the standard letters, i.e. a debt reminder below SEK 1,000 and the standard EA threat letter above SEK 3,000. The analysis will be technically identical to the RD analysis described above with one small caveat. Since we want to measure the effect of the neutral letter compared to the default we will drop all other treatment groups from this analysis.[8]

The last analysis is based on the randomized experiment carried out in December 2018. The experimental data is merged with observational characteristics from the STA, and we can thus check for balance in the covariates by running regressions of the following form:

$$C_i = \alpha + \kappa_1 Minority_i + \kappa_2 EA_i + \kappa_3 MinEA_i + \varepsilon_i \tag{2}$$

where $C_i$ is a covariate for taxpayer $i$ and $Minority_i$, $EA_i$ and $MinEA_i$ represent three letter dummies (the "neutral letter" will be excluded and thus captured by $\alpha$). $\kappa_1 - \kappa_3$ are the parameters of interest capturing the effects of each letter type and $\varepsilon_i$ is the error term. For the experiment below SEK 2,000, only the letter dummy $Minority_i$ will be included.

The effects on outcomes (measures of debt payments) will be given by the analogous specification:

$$Y_i = \mu + \beta_1 Minority_i + \beta_2 EA_i + \beta_3 MinEA_i + \gamma \mathbf{C}_i + \psi_i \tag{3}$$

where the parameters of interest are $\beta_1 - \beta_3$. The covariates ($\gamma \mathbf{C}_i$) are excluded in some specifications.

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[8]This exclusion of taxpayers invalidates the McCrary test. However, since the exclusion is purely random by design we may include all taxpayers in the McCrary test even though they are excluded from the rest of the analysis.

# 4 Results

## 4.1 RD analysis of the threat of enforcement and of actual enforcement

We start by testing Hypothesis 1 by means of data from 2016 and 2017. Figures 3a and 3b show the effect of the threat as well as of the realization of being transferred to the EA on the probability of paying taxes. In both cases the horizontal axis' show the debt to the STA in December (2016 or 2017), with a cut-off at SEK 2,000. Along the vertical axis, Figure 3a measures the share of individuals who paid their debt to STA in December, while Figure 3b shows the share who paid to either the STA *or* EA at any point from December through February. The figures are constructed by implementing data-driven regression discontinuity plots with a linear polynomial (Calonico et al., 2015).

Figure 3: Effects of enforcement: Payment in December and December through February, depending on debt in December with the STA, pooled results for 2016 and 2017



(a) Payment in December to STA

(b) Payment in December, January or February to STA or EA
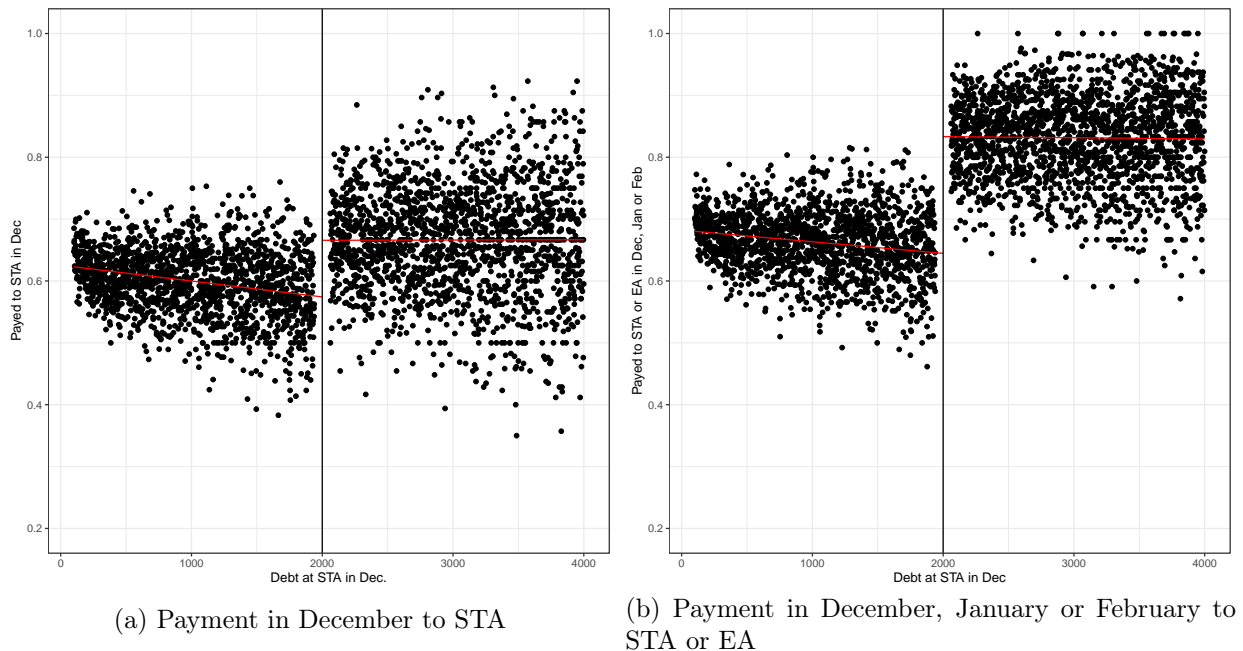
*Notes:* RD plots with a linear polynomial. The plot is based on pooled data of all taxpayers with debt at the STA in December 2016 or 2017 between SEK 100 and SEK 4,000. Running variable along the *x*-axis represent debt in SEK at the STA in December. Individuals with debt '*x*' in the interval ($1,940 \leq x \leq 2,060$) are dropped (see text for more information). Figure 3a analyze if taxpayers payed anything to STA *within the month of December*, while 3b analyze if they payed anything to STA *or* the EA anytime from *December through February*. Number of bins are selected using the default data-driven approach in the R command *rdrobust*, which uses spacing's estimators.

The figures convey a clear message: in line with Hypothesis 1, the threat of ending up with the

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EA is a powerful enforcement mechanism. Already in December, around nine percentage points more individuals pay the tax debt after receiving the threat of ending up with the EA. For the total payment, including January and February payments, the size of the effect is roughly doubled to around 20 percentage points. That the total effect of December through February payments is bigger than only December payments is expected. In January, non-payers with December debts larger than SEK 2,000 are actually transferred to the EA. In other words, in Figure 3b taxpayers are not only reacting to the threat, but also to the actual realization of the threat.

We provide more precise parametric estimations the Appendix (Section B; Table B1). The estimates confirm the graphical evidence; for bandwidths between SEK 400–600 the estimate is almost exactly 9 percentage points and highly significant for the short-run payments. For the smallest reported bandwidth, SEK 200, the estimate drops to around 6 percent and is only marginally significant. The longer-run effects are even more stable and statistically significant. For all reported bandwidths we find highly significant effects of around 20 percentage points.

To validate the underlying assumptions of the RD-design, section B in the Appendix also includes graphical, as well as parametric balance tests for possible covariates (Figures B1a to B1d and Table B2). The included controls, such as age, sex, marital status and labor income, all balance well and give us no indication of systematic sorting around the threshold.[9] Last, as a robustness check we have also performed the analyses in Figure 3 separately for 2016 and 2017. These results are displayed in Figures B2a to B2d, and provide the same pattern as observed in Figures 3a and 3b.

## 4.2  Effect of pure nudge: 1,000 and 3,000 cut-offs

We continue by testing Hypothesis 2, i.e., the effect of a *pure nudge* in the form of a neutral letter (letter 1). We use the 2018 data, and analyze the SEK 1,000 and SEK 3,000 cut-offs, between which everyone received an extra sheet in the letter from STA (below 1,000 and above 3,000 no-one received an extra sheet). Figures 4a and 4b show that this neutral letter indeed caused a larger payment probability at the SEK 1,000 cut-off. The effect of payment in December is around seven percentage points. Unlike in Figure 3, the effect over December to February is not larger than the effect of only December payments. It can also be noted that the effects are remarkably stable. In Section C

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[9]Section A in the Appendix in turn provides an extensive discussion about potential bunching, and argues against any problem related to sorting using a number of frequency plots.

in the Appendix, we show parametric results for different bandwidths and including several control variables, with only minor changes to the estimated coefficient. The formal regressions in Table C1 confirm that the effect is around seven percentage points.

In contrast to the large effects at the SEK 1,000 cut-off, Figures 4c and 4d do not suggest that the neutral letter had any effect for the taxpayers at the SEK 3,000 cut-off. We see no indication of a (downward) jump at the SEK 3,000 threshold either for the short or longer-run outcomes. Section C also includes parametric results for the SEK 3,000 cut-off (C4). As expected from the graphical evidence, the estimated effects are unstable and mostly insignificant.[10]

We hypothesized in Hypotheses 2 and 3 that taxpayers would react to a pure nudge and that the reaction would be stronger for those with a debt smaller than SEK 2,000, i.e., where the decision whether or not to pay is less important than for those who risk enforcement. Indeed, we find that those with small debts react strongly, while those who risk ending up with the EA do not alter their payments significantly due to the pure nudge.

## 4.3 Effect of minority norm and EA information letter

We now turn to the actual experiment and estimate the responses to the different formulations in the letters. Table 1 shows the results below the 2,000 cut-off, where we test Hypothesis 4 (that taxpayers react to information that most others pay tax on time) by comparing behavior between the two different treatments, the control letter (letter 1) and the minority-norm letter (letter 2). We hence regress "paid in December to STA" (column 1 and 2) or "paid December—February to STA/EA"(column 3 and 4) on a binary variable coded as receiving letter 2 or not.

Three things are noticeable: First, when comparing columns 1 and 3 (no additional covariates) with columns 2 and 4(full list of extra covariates included in regression) the point estimate remains unchanged. This brings credibility to the experiment: there seem to be no observable confounding characteristics that affect both the payment tendency and the probability to receive letter 2. This conclusion is further corroborated by balance tests, which are provided in the Appendix (see Table D1). The results from the balance tests indicate that the treatment groups seem to be well balanced over the available covariates. Second, we observe a positive effect from the preference nudge, but it

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[10]Section C also include both parametric and non-parametric covariate balance tests for the 1,000 SEK cut-off and the 3,000 cut-off (Figures C1a to C1d and Figures C2a to C2d and Tables C5 and C6). These suggest that covariates indeed balance over the cut-off.

Figure 4: Effects of the pure nudge: Payment in December or December through February, depending on debt in December to the STA, results for 2018
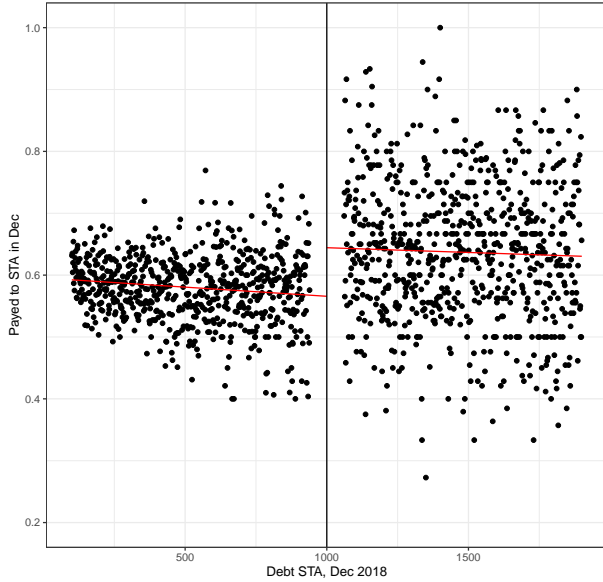


(a) Payment in December to STA
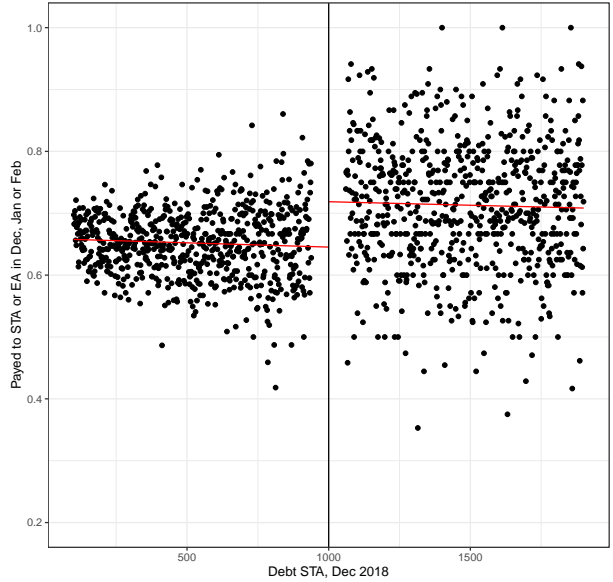
(b) Payment in December, January or February to STA or EA
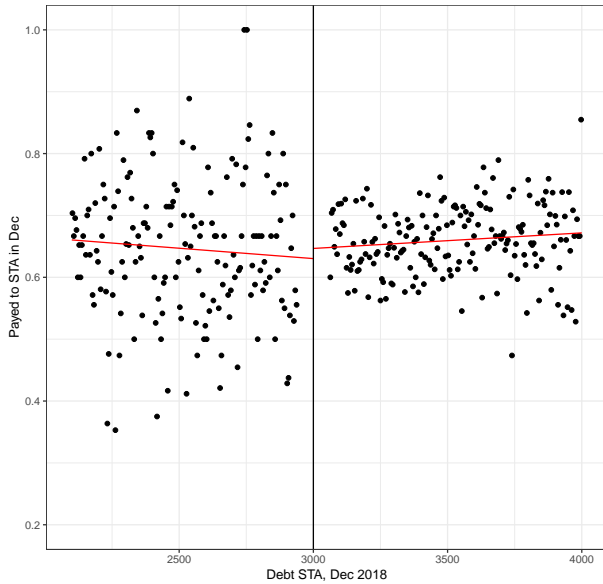


(c) Payment in December to STA
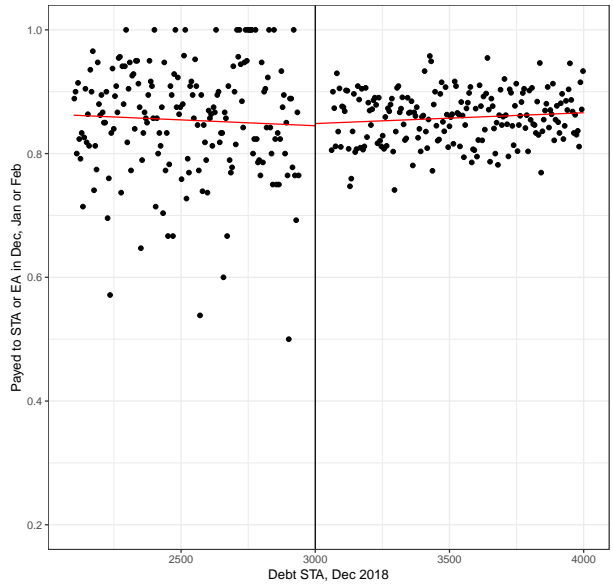
(d) Payment in December, January or February to STA or EA

*Notes:* RD plots with a linear polynomial. The running variable along the *x*-axis represents debt to the STA. The plots in Figure (a)–(b) focus on the SEK 1,000 threshold and is based on data on all taxpayers with debt at the STA in December 2018 between SEK 100 and SEK 1,900. Individuals with debt '*x*' in the interval $(940 \geq x \leq 1{,}060)$ are dropped. Figure (c)–(d) focus on the SEK 3,000 threshold and is based on data on all taxpayers with debt at the STA in December 2018 between SEK 2,100 and SEK 4,000. Individuals with debt '*x*' in the interval $(2{,}940 \leq x \leq 3{,}060)$ are dropped. For bin procedure see 3.

is small. In addition to the baseline probability of paying to the STA in December, the minority-norm letter brings an additional 1.8 percentage point probability of paying. While this effect is statistically significant, it is economically of much lower significance than the effect of the threat of EA, as well as of simply getting the neutral letter 1 (compare Figures 4a and 3a). Third, the direct effect of paying in December is stronger than the "long term" effect of paying until the end of February.

Table 1: Results for minority-norm letter below SEK 2,000 cut-off

| | *Dependent variable; Payed in:* | | | |
|---|---|---|---|---|
| | Dec (1) | Dec (2) | Dec–Feb (3) | Dec–Feb (4) |
| Letter 2 (*minority norm*) | 0.018*** | 0.018*** | 0.012** | 0.012*** |
| | (0.005) | (0.005) | (0.005) | (0.005) |
| Observations | 35,721 | 35,721 | 35,721 | 35,721 |
| Covariates | NO | YES | NO | YES |

*Note:* Linear regressions applying Equation 3, only focusing on $\beta_1$ (hence: $Y_i = \mu + \beta_1 Minority_i + \gamma \mathbf{C}_i + \psi_i$). Column (1) and (2) use December payments to the STA as dependent variable. Column (3) to (4) consider payment to the STA and/or EA December through February. Robust standard errors in parenthesis, with *p<0.1; **p<0.05; ***p<0.01. Sample is restricted to those with a debt between SEK 1,000 and 1,999. Covariates include age (linear), standardized labor income and dummies for sex, being married, and paper or electronic reminder.

Turning to the sample who had debt exceeding SEK 2,000, we now have several letters to consider, allowing us to test both Hypothesis 4 and 5 in this segment of the sample. In addition to the minority-norm Letter 2, we also consider Letter 3, containing comprehensive information about the EA, and Letter 4, containing a combination of the two. Column (1) in Table 2 gives the effects on December payments without any covariates, after which we use the full set of controls in column (2). The next two columns show the total effects on payment in December through February and the last column gives the treatment effect on the binary outcome indicating a debt to the EA in January of 2019 (full specification with covariates).

The short-run effect is positive and statistically significant (first two outcomes). We find roughly the same effect, about 2.5 to 3 percentage points higher payment rate, from letter 2 (minority norm) and letter 3 (EA info) as compared to letter 1. The combined letter (letter 4: both minority norm and EA info) has a slightly higher treatment effect of around 4.5 percentage points. However, no treatment effects are statistically different from each-other in a pairwise comparison. Turning to the

Table 2: Effect of different letter formulations, above SEK 2,000 cut-off

| | *Dependent variable:* | | | | |
|---|---|---|---|---|---|
| | Payed December | | Payed December–February | | With EA, Jan |
| | (1) | (2) | (3) | (4) | (5) |
| Letter 2 (*minority norm*) | 0.029*** | 0.030*** | 0.012* | 0.014** | -0.030*** |
| | (0.009) | (0.009) | (0.007) | (0.007) | (0.009) |
| Letter 3 (*EA info*) | 0.024*** | 0.025*** | 0.011 | 0.011* | -0.023*** |
| | (0.009) | (0.009) | (0.007) | (0.007) | (0.009) |
| Letter 4 (*2 and 3*) | 0.042*** | 0.045*** | 0.015** | 0.018** | -0.044*** |
| | (0.010) | (0.010) | (0.007) | (0.007) | (0.010) |
| Observations | 21,449 | 21,449 | 21,449 | 21,449 | 21,449 |
| Covariates | NO | YES | NO | YES | YES |

*Note:* Linear regressions applying Equation 3. Column (1) and (2) focus only on December payments to the STA. Column (3) to (4) consider payment to the STA and/or EA December through February. Column (5) includes an outcome =1 if an individual had a debt with the EA in January, and =0 otherwise. Robust standard errors in parenthesis, with $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$. Sample is restricted to those with debt between SEK 2,000 and 2,999. Covariates include age (linear), standardized labor income and dummies for sex, married, and paper or electronic reminder.

longer-run effects we find lower treatment effects for all letters (see columns 3 and 4). The combined letter, letter 4, still has a higher effect compared to the other two, but the estimates now hovers between 1 and 2 percentage points. It makes intuitive sense that the longer-run effects are lower since individuals that refrained from paying have been handed over and received sharp letters from the EA in January. The longer-run treatment effects may thus be attenuated since the reactions to the standard EA letters in January may partially iron out the differences between treatment groups.

Since the individuals above the SEK 2,000 threshold suffer a real threat of having their debt transferred to the EA, the most policy relevant outcome for this group is arguably if they actually did get transferred (see third outcome above: "Debt to EA in January"). If the STA follows procedures, this measure should be very closely correlated to the December payment outcome, but with reversed signs. It is thus reassuring that the treatment effects in column (5) for the EA debt almost perfectly mirrors the December payment outcome in column (2).

The abovementioned results support Hypoteses 4 and 5, i.e., that both a preference nudge and simplified information increase tax payments. However, contrary to the pure nudge, the effects from the preference nudge (in addition to those of the pure nudge) are of similar magnitude whether tax

debt in December 2018 was below or above SEK 2,000, i.e., whether the taxpayer risked enforcement or not.

## 4.4 Heterogeneity: is electronic communication as effective as paper communication?

As anticipated in Hypothesis 2 and found in the estimations using the SEK 1,000 threshold, just adding an extra piece of paper, with neutral information, increases payment substantially. Yet, as many public authorities around the world now try to switch to electronic communication, a key policy-aspect is if nudges cause increased compliance, only with the addition of *an actual physical letter* or if the effect prevails also with electronic communication. Hypothesis 6 predicts that electronic communication is less effective in terms of nudges. Thanks to the great quality of the STA data we know whether the taxpayer has chosen an electronic mailbox or to receive traditional physical letters. We thus have a unique opportunity to study the effects of nudges, both in physical and in electronic letter versions.

In Figure 5, we replicate the results for the SEK 1,000 cut-off, but separately for those choosing paper communication, and those choosing electronic communication. We analyze both December payments and total payments December through February. As seen in the graphs, the reaction seems much stronger for the paper letters compared to the e-letters. In Table C2 in the Appendix we confirm that this visual pattern also holds in a formal RD analysis. The causal effect of the pure nudge is around 10 percentage points (both short and longer run) for the group receiving a physical letter, while the effect is around 5 percentage points and only marginally significant (short run) and insignificant (longer run) for the electronic letter group.

While the result is completely in line with Hypothesis 6, we cannot make a strict causal claim in this comparison since the taxpayers have self-selected into e-letters. We have, however, implemented linear interaction models of the effect of the SEK 1,000 cut-off, with additional covariates (gender, age, marital status and income) interacted with the treatment effects and the debt level. In these specifications, the interacted treatment effect for letter type is statistically unaffected by the inclusion of additional interacted treatments. This indicates that the lower reaction to electronic letters may actually be a causal effect and not only due to selection. And it is intuitively plausible

Figure 5: Stratifying effects for paper and electronic reminders
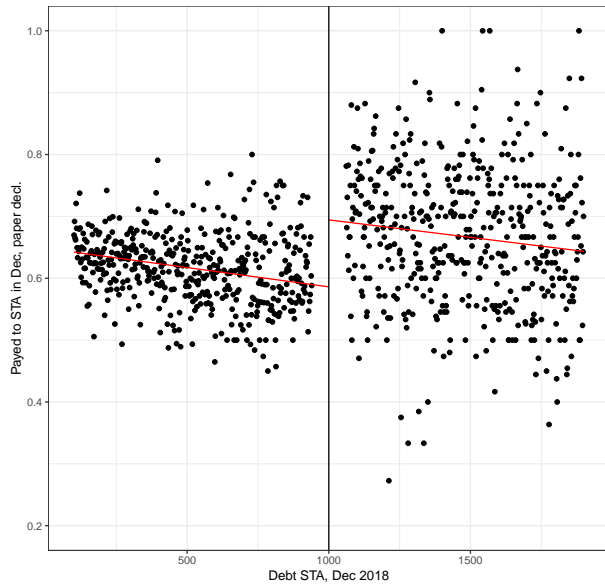


(a) Payment in December to STA, **paper**
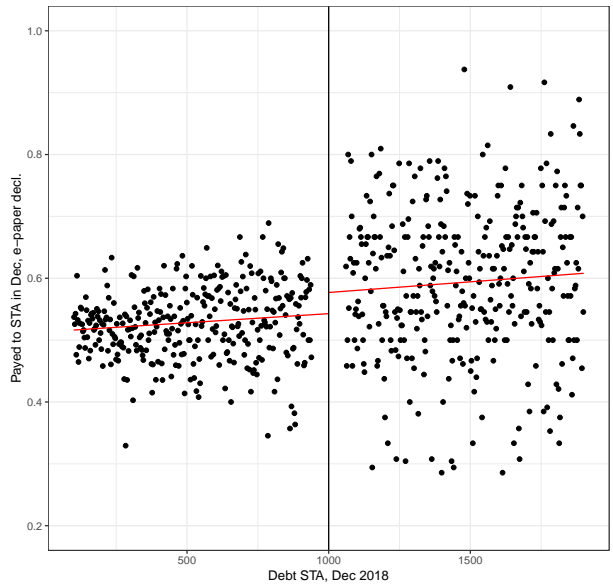


(b) Payment in December to STA, **electronic**
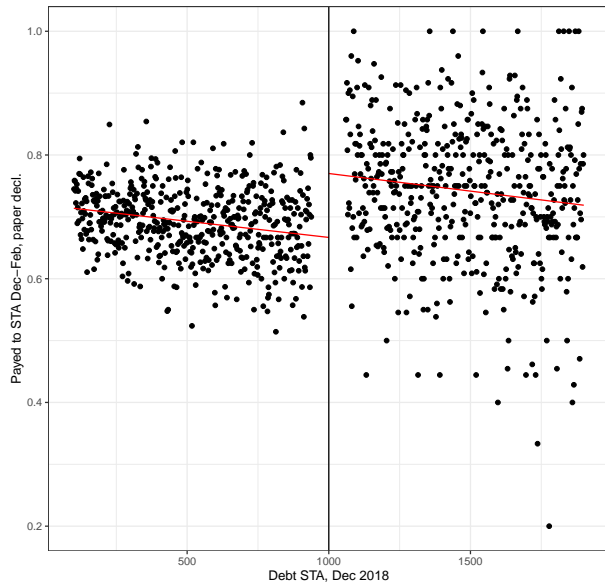


(c) Payment in December, January or February to STA or EA, **paper**
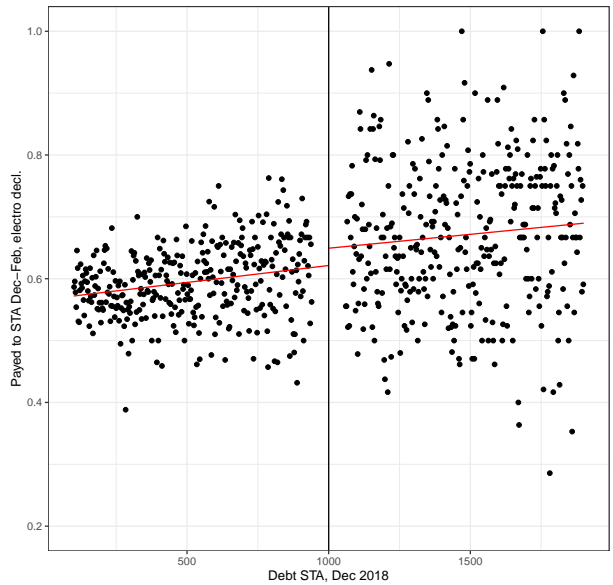


(d) Payment in December, January or February to STA or EA, **electronic**

*Notes:* Payment in December or December through February, depending on debt in December to Swedish tax authority (STA) 2018. Stratifying effects for paper and electronic letters. See Figures 4a and 4b for more information.

that electronic versions of pure nudges are less effective than physical ones. It is arguably much more salient to receive an extra sheet in a physical letter than in an electronic one.[11].

Turning to the actual letter experiment for the sample below SEK 2,000, the pattern is reversed, though. For this group, we compare the effect of letter 2 on top of letter 1. As seen in the two first columns of Table C2 the additional effect of letter 2 is only significant for the electronic letters; this holds true for both short- and longer-run outcomes. The content of the letter thus seems to matter for the electronic letters, while the mere presence of an extra sheet of paper is what matters for physical letters.

The pattern becomes much less clear when turning to the experiment for those with a debt above SEK 2,000. For most letter versions, the reaction is stronger for the electronic letters but the differences are generally small and statistically insignificant.

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[11]See interaction results in Table C3 in Appendix

Table 3: Heterogeneity results; paper vs. electronic declarations

| | Below SEK 2,000 cut-off | | Above SEK 2,000 cut-off | |
| | Paper | Electronic | Paper | Electronic |
| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| **PANEL A (Dec payment)** | | | | |
| Letter 2 | 0.002 | 0.041*** | 0.025** | 0.035** |
| | (0.006) | (0.008) | (0.011) | (0.015) |
| Letter 3 | | | 0.021* | 0.029** |
| | | | (0.011) | (0.015) |
| Letter 4 | | | 0.035*** | 0.058*** |
| | | | (0.012) | (0.016) |
| Observations | 21,261 | 14,460 | 13,194 | 8,255 |
| **PANEL B (Dec–Feb payment)** | | | | |
| Letter 2 | -0.002 | 0.032*** | 0.005 | 0.026*** |
| | (0.006) | (0.008) | (0.009) | (0.010) |
| Letter 3 | | | 0.006 | 0.018* |
| | | | (0.009) | (0.010) |
| Letter 4 | | | 0.019* | 0.015 |
| | | | (0.010) | (0.011) |
| Observations | 21,261 | 14,460 | 13,194 | 8,255 |

*Note:* Linear regressions using the same method as in Tables 1 and 2. Sample is restricted to those with debt between SEK 1,000 and 1,999 and i) paper declaration in column (1) and ii) electronic declaration in column (2). Sample restricted to those with debts between 2,000 and 2,999 and iii) paper declaration in column (3) and iv) electronic declaration in column (4). On average, around 60 percent uses paper declaration. Robust standard errors in parenthesis, with *p<0.1; **p<0.05; ***p<0.01.

# 5   Conclusions

We have studied how delinquent taxpayers can be motivated to pay their taxes due, and we have especially compared the effects from enforcement with those from nudges and information. Countries differ in their enforcement strategies concerning tax delinquencies (OECD, 2014). We have argued that the Swedish strategy is particularly well suited to quantify the effects from standard enforcement and nudges. The Swedish standard enforcement provides a natural experiment that may be used for identification. At a tax debt at SEK 2,000 (approx. EUR 200), there is a sharp cut-off in treatment. Taxpayers with an unpaid debt at or above the cut-off in early December get notified that upon non-payment the debt will be transferred to the special Enforcement Agency

(EA) that carries out the actual enforcement, a transfer that is carried out in January. Smaller debts remain with the tax collecting agency (the Swedish Tax Agency – STA), that has no particular means of enforcement. Hence, around this cut-off in the Swedish legislation we analyzed the effects of enforcement and of the threat of it using an RD analysis. To be able to compare the standard enforcement to milder nudges we also conducted an RCT, using letters with different formulations. Our analyses provide several take-aways:

First, the standard threat of enforcement, i.e. sending a letter from STA stating that the debt will be handed over to the EA upon non-payment, is effective for increasing payments. Informing Swedish taxpayers that their debt will be transferred to the EA upon non-payment increases the likelihood for payment within a month by almost ten percentage points compared to just sending a simple reminder. Our longer-run outcome – payment within three month – shows a corresponding effect of around 20 percentage points. This estimate also includes the reaction to actually having the debt transferred to the EA.

Second, also using an RD analysis, we found that a pure nudge[12], i.e., just adding an extra piece of paper with neutral wording (except the heading stating 'Important information'), was effective for the delinquent taxpayers who were not at risk of enforcement upon non-payment. The effect for those with debt below SEK 2,000 was of similar magnitude as from the threat of enforcement for those just above. Those who risked enforcement were more likely to pay to start with, and the pure nudge did not increase their propensity to pay any further. This result is in line with Löfgren and Nordblom (2020), who argue that nudges are more effective for inattentive, relatively less important choices. The result also provides a reassuring result for tax agencies. Based on our findings, a mild pure nudge, simply making the payment due more salient, may give effects on tax compliance of the same magnitude as threats of enforcement, which is arguably much more costly.

Third, using a nudge alluding to social norms to increase payments further, we estimated effects of roughly 2 percentage points in addition to the pure nudge, regardless of whether the stakes were high (above SEK 2,000) or low (below SEK 2,000). This means that the additional effect, on top of the pure nudge, of a preference nudge is relatively small but prevails also in cases when the stakes are high. However, the total effect of the preference nudge (as compared to no nudge at all) was substantially higher when the stakes were low compared to the high-stake case. In line with the

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[12]Just catching attention, without giving any extra information

results by e.g., Hallsworth et al. (2017) and Imbert et al. (2020), informing about the consequences of being transferred to the EA, were about 2.5 percentage points more likely to pay than those who received the pure nudge. Hence, the effect is significant, but not very large. Most Swedish tax delinquents thus seem to be aware of the consequences of the enforcement.

Fourth, the pure nudge only had a significant effect on tax delinquents who received a *physical letter*. We found no significant effect for those who received an electronic notice. However, the additional effect of the social-norm nudge was stronger for those who received electronic letters. Around the world, public authorities are turning towards more electronic communication with citizens. While we cannot interpret these results completely causally (since taxpayers self-select into the way they want to communicate with authorities), at face value, these results indicate that the trend towards more electronic communication may make it harder to use simple pure nudges, while there is still room for nudges with actual content, such as preference nudges.

The policy relevance of our study comes from the fact that standard enforcement usually is very costly to both individuals and society as a hole. In Sweden, there is a mandatory fee of SEK 600 for every new case that ends up at the EA. However, the impact of this fee is probably dwarfed by the indirect consequences of getting transferred to the EA. If the debt is not payed immediately, the debtor will get a payment default that will make it hard to borrow money and rent an apartment. Furthermore, there is a non-trivial stigma attached to having a debt to the EA in Sweden. It would thus be desirable if the hard threat of EA could be replaced with mild and relatively cheap nudges; or at least if the enforcement toolkit would be augmented with effective nudges at an early stage that reduces the number of debtors at risk of ending up with the EA. For many tax agencies around the world, effective mild substitutes to "brute force" enforcement are therefore very attractive. The results from this large-scale study show that standard enforcement, and the threat of it, indeed matter for tax compliance. However, we also found that mild nudges may also be effective in increasing tax payments among delinquent taxpayers. We found that for a taxpayer whose tax debt was about SEK 2,000 the effect on the payment probability was of the same magnitude from the threat of enforcement and from a milder nudge.

Indeed, almost the same increase in tax payments may be reached by cheaper (both to the individual and to society) nudges as by the threat of standard enforcement. Although the study

was carried out in the Swedish context, it is likely that nudges are generally effective in increasing tax compliance, especially among those with minor debts and that are not yet subject to more traditional enforcement.

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# Appendices

## A   Frequency plot

In Figure A1 below, we show a frequency plot for the December debts for all three years pooled (2016-2018). The frequency looks smooth in general but there seems to be a small over-representation of individuals around both SEK 1,000 and around SEK 2,000. When zooming in around SEK 1,000 and SEK 2,000 (see Figure A2) the pattern is clearer.

There is a puzzling over-representation of individuals slightly above both thresholds. A strategic taxpayer that wants to avoid the EA would rather bunch below the 2000 cutoff. And no specific rules relate to the 1000 cutoff.

We have access to payments to the STA made earlier throughout the year. When we plot the share of individuals, conditional on their December debt, that made an earlier partial payment to STA, a similar pattern emerges. The individuals with debts close to (slightly above) SEK 1,000 and SEK 2,000 have made prior payments more frequently. The reason for the pattern we see is thus likely that the taxpayers aim for simple numbers when making partial early payments on their debts. We can also confirm this by looking at the December debt distribution but drop the taxpayers that have made earlier payments. If our story is correct, the "spikes" in the frequency distribution should then vanish. As can be seen from the graph below (see Figure A3), the spikes clearly disappears when we only include taxpayers that have not made prior partial payments.

One solution to the problem is thus to only include tax payers that have not made prior payments before December. However, this reduces the sample size substantially. Our preferred solution to the problem will instead rely on the proposed donut strategy, which is necessary to employ at the SEK 2,000 threshold anyway due to the monthly interest that applies to the debts. When we drop the taxpayers in a +/- SEK 60 region around the threshold the McCrary test is passed at all three relevant thresholds, SEK 1,000 (year 2018), SEK, 2,000 (year 2016 and 2017) and SEK 3,000 (year 2018).

Figure A1: Frequency plot, 2016-2018, full sample
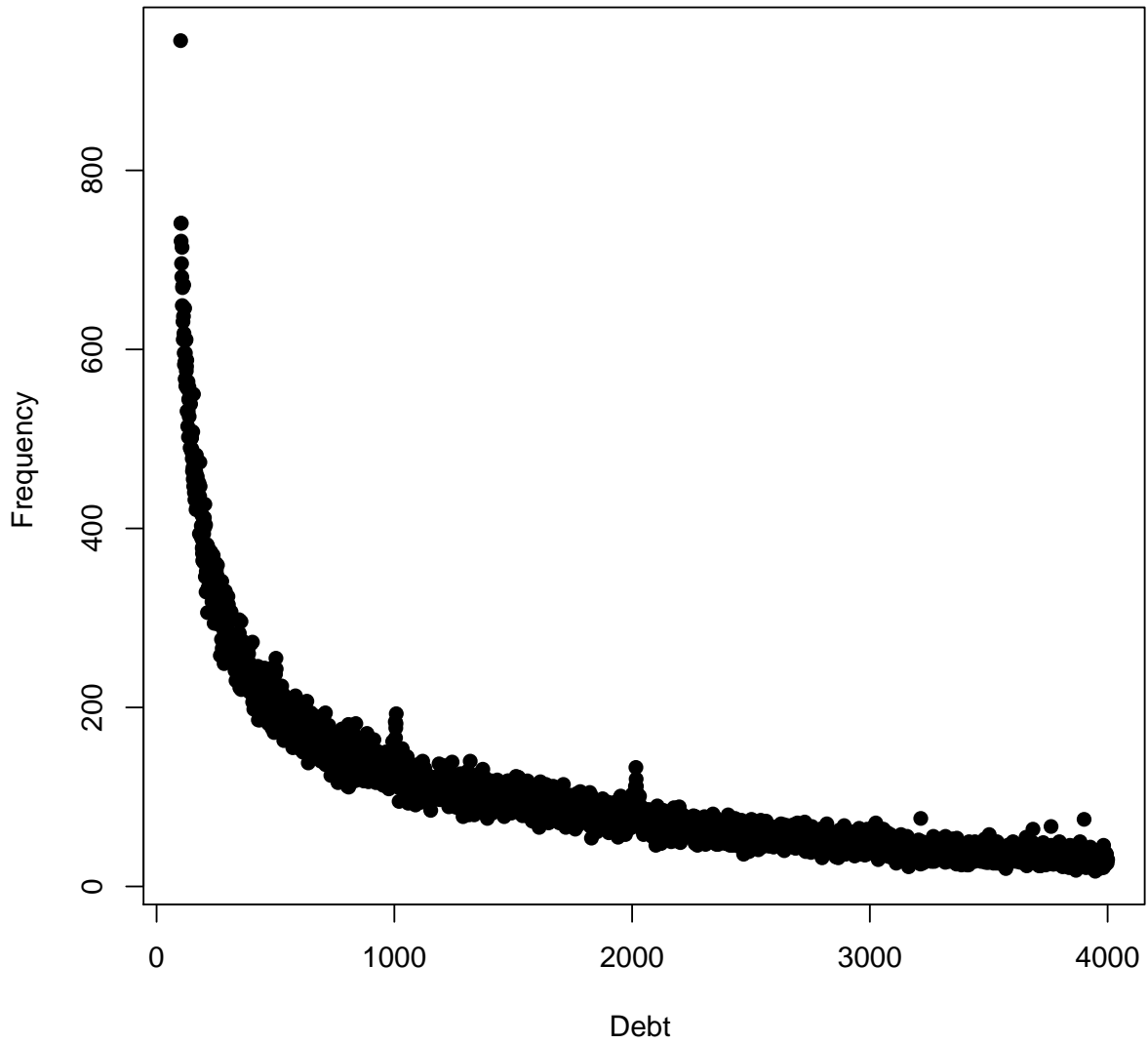


*Notes:* Frequency of observations at each unit of saldo (Swedish SEK) over all years (2016-2018). Each point represent the observations per SEK.

Figure A2: Frequency plots, zooming in on SEK 1,000 and 2,000 cut-offs
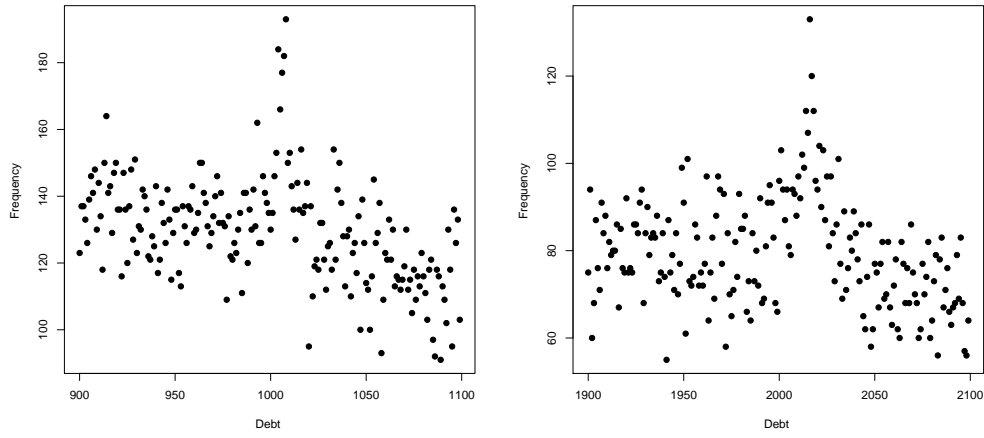


(a) Around 1000 SEK debt

(b) Around 2000 SEK debt

*Notes:* Frequency of observations at each unit of saldo (Swedish SEK) over all years (2016-2018). Each point represent the observations per SEK. Sample restricted to 900–1100 in Figure (a) and 1,900–2,100 in Figure (b).

Figure A3: Frequency plot, 2016-2018, share who did or did not pay before December
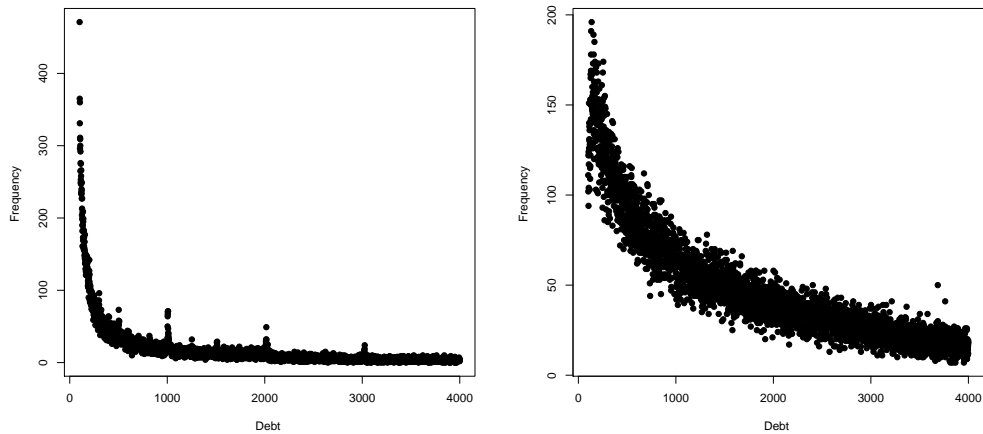


(a) Share who payed something before December

(b) Non-tactical payers

*Notes:* Frequency of observations at each unit of saldo (Swedish SEK) over all years (2016-2018). Each point represent the observations per SEK. Figure (a) keep only individuals who payed some amount to the STA between Jan 1 and Dec 1, the year of analysis. So, for those in the 2016 sample, these individuals payed some amount to the STA between Jan 1 and Dec 1, 2016. Figure (b) shows the other group; those who did not pay anything in advance.

# B    Enforcement Agency: SEK 2,000 cut-off material

Table B1: Parametric results, SEK 2,000 cut-off, Payment December and Payment December–February

| | Optimal (1) | H=600 (2) | H=400 (3) | H=200 (4) |
|---|---|---|---|---|
| | | *Bandwidths*: | | |
| Payed Dec | 0.093*** | 0.093*** | 0.088*** | 0.057* |
| | (0.012) | (0.011) | (0.016) | (0.033) |
| Bandwidth | 560 | 600 | 400 | 200 |
| Observations | 48309 | 52129 | 32371 | 13362 |
| Payed Dec-Feb | 0.19*** | 0.19*** | 0.19*** | 0.17*** |
| | (0.013) | (0.0098) | (0.014) | (0.029) |
| Bandwidth | 440 | 600 | 400 | 200 |
| Observations | 36,311 | 52,129 | 32,371 | 13,362 |

*Note:* ∗p<0.1; ∗∗p<0.05; ∗∗∗p<0.01. Standard errors calculated using nearest neighbor approach. Optimal bandwidth in column (1) is calculated using the mean squared error approach (one common bandwidth). Estimates done using rdrobust package: with local linear polynomial and triangular kernel. All estimates include age, dummy for sex and married and standardized labor income as controls. We use a donut type estimation, where we drop all individuals with December debt larger than SEK 1,940 but smaller than SEK 2,060.

Figure B1: Covariate balance tests for the SEK 2,000 cut-off; pooled data for tax payers in 2016 and 2017



(a) Age



(b) Women



(c) Married



(d) Std. Labor Income
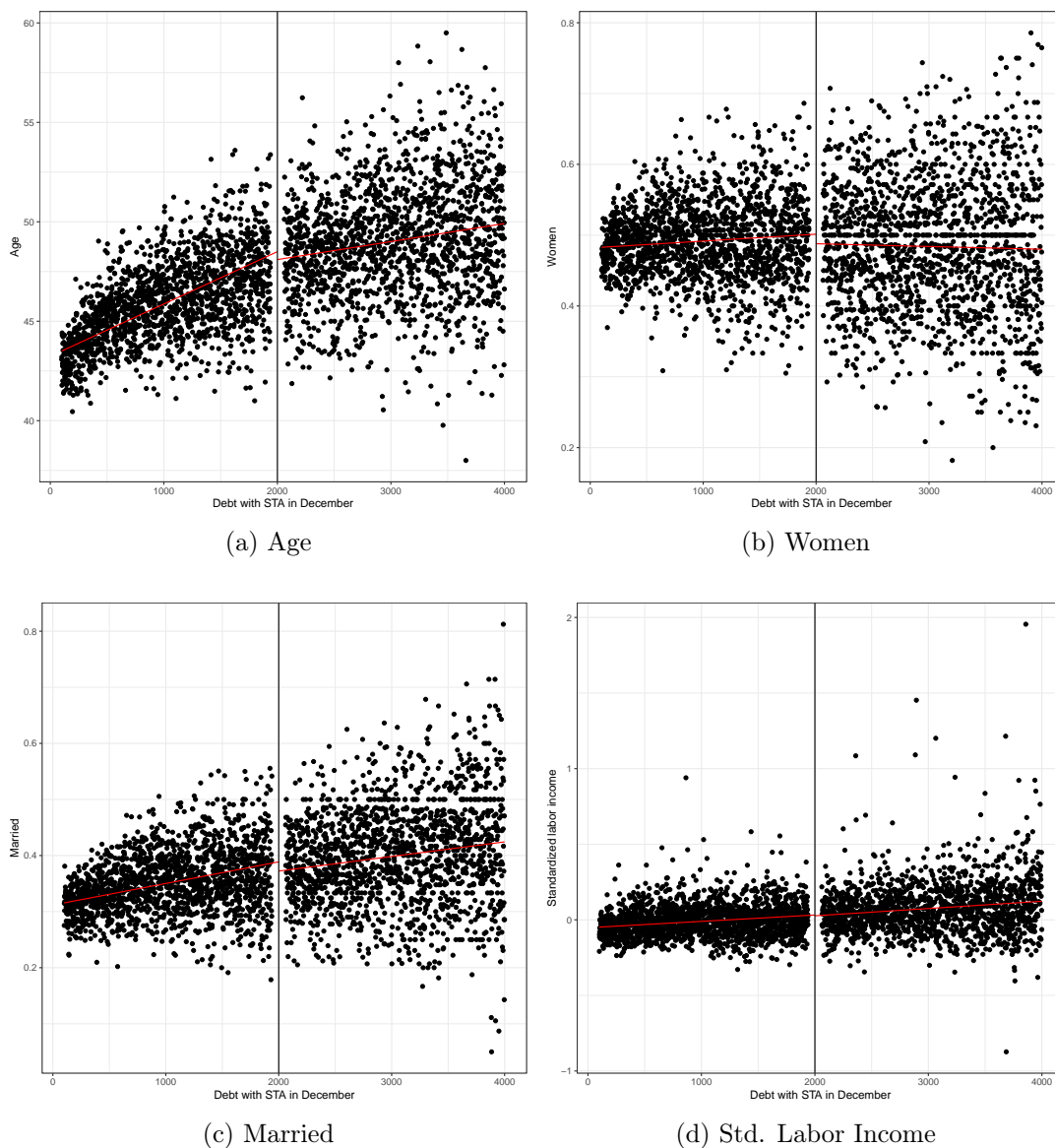
*Notes:* Pooled data of all taxpayers with < SEK 4,000 in debt at the STA in December 2016 or 2017. We further use a donut type structure, where we drop all individuals with December debt larger than SEK 1,940 but smaller than SEK 2,060. Running variable along the *x*-axis represent debt at the STA in December. Figure B1a analyze age, Figure B1b the share of women, Figure B1c the share of married and Figure B1d standardized labor income.

Table B2: Covariate balance, SEK 2,000 cut-off, parametric results

| | | *Bandwidths*: | | |
|---|---|---|---|---|
| VARIABLE: | Optimal | H=600 | H=400 | H=200 |
| | (1) | (2) | (3) | (4) |
| Age | 0.23 | 0.21 | -0.11 | 0.38 |
| | (0.32) | (0.37) | (0.51) | (1.1) |
| Bandwidth | 721 | 600 | 400 | 200 |
| Observations | 64,375 | 52,162 | 32,392 | 13,372 |
| Married | -0.0045 | -0.0029 | -0.003 | 0.023 |
| | (0.012) | (0.011) | (0.016) | (0.033) |
| Bandwidth | 546 | 600 | 400 | 200 |
| Observations | 46,905 | 52,162 | 32,392 | 13,372 |
| Women | -0.0089 | -0.0067 | -1.8e-05 | 0.0073 |
| | (0.01) | (0.012) | (0.016) | (0.034) |
| Bandwidth | 735 | 600 | 400 | 200 |
| Observations | 65,726 | 52,162 | 32,392 | 13,372 |
| Std. Labor Income | 0.0055 | 0.0022 | 0.0026 | -0.024 |
| | (0.022) | (0.02) | (0.028) | (0.059) |
| Bandwidth | 543 | 600 | 400 | 200 |
| Observations | 46,471 | 52,129 | 32,371 | 13,362 |

*Note:* $*$p<0.1; $**$p<0.05; $***$p<0.01. Standard errors calculated using nearest neighbor approach. Optimal bandwidth in column (1) is calculated using the mean squared error approach (one common bandwidth). Estimates done using rdrobust package: with local linear polynomial and triangular kernel. We use a donut type estimation, where we drop all individuals with December debt larger than SEK 1,940 but smaller than SEK 2,060.

Figure B2: Payment in December or December through February, depending on debt in December with the STA, separate results for 2016 and 2017
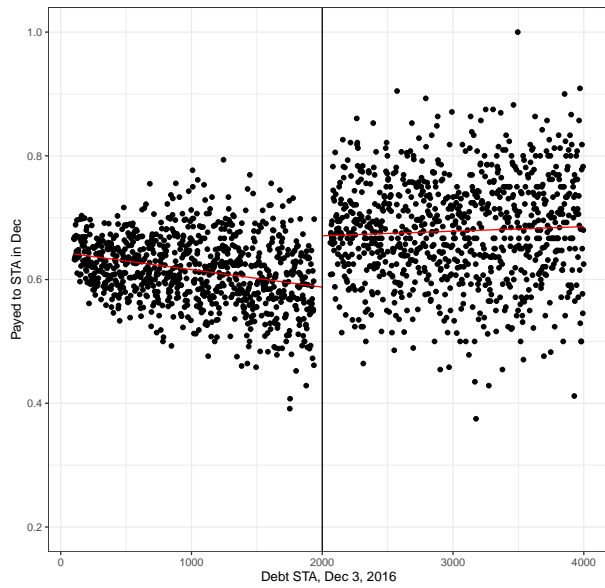


(a) payment in December to STA, 2016
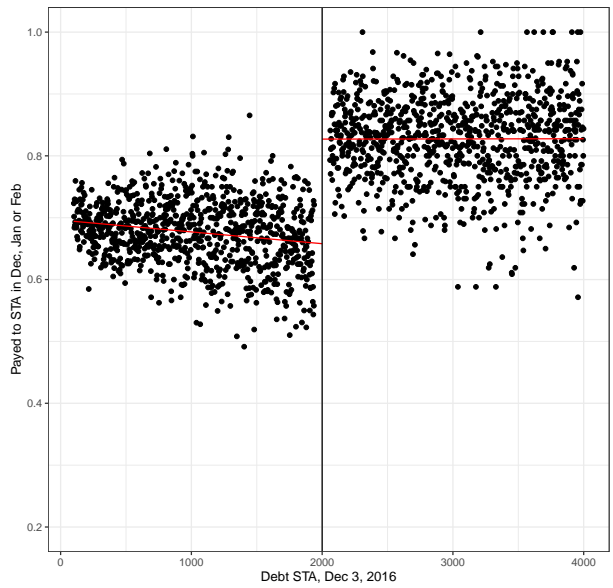
(b) payment in December, January or February to STA or EA, 2016
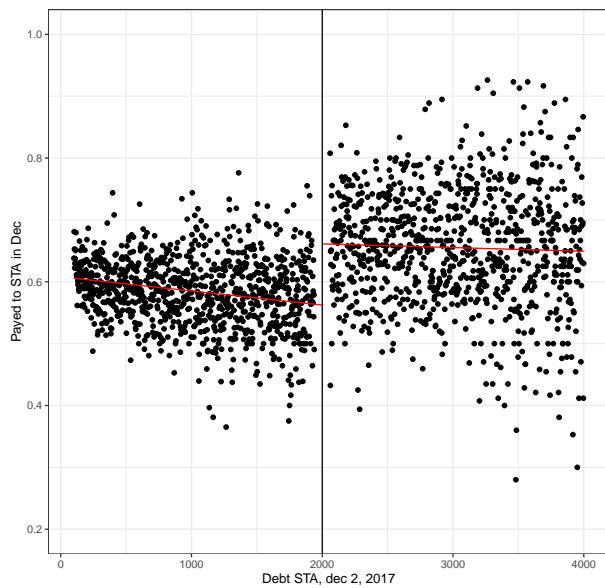
(c) payment in December to STA, 2017
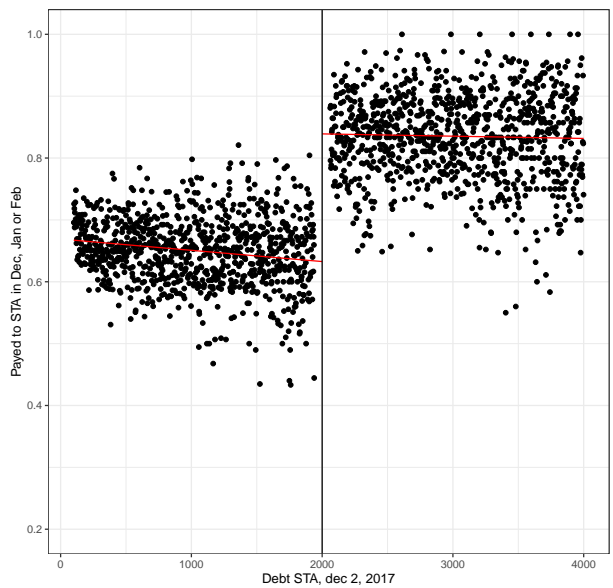
(d) payment in December, January or February to STA or EA, 2017

*Notes:* Replicating main result in Figure 3; but with separate data analysis by year. (a)-(b) show 2016, (c)-(d) show 2017.

# C    SEK 1,000 and SEK 3,000 cut-off, 2018–2019.

Table C1: Parametric results, SEK 1,000 cut-off

| | *Bandwidths*: | | | |
|---|---|---|---|---|
| | Optimal | H=600 | H=400 | H=200 |
| | (1) | (2) | (3) | (4) |
| Payed Dec | 0.071** | 0.072*** | 0.081*** | 0.046 |
| | (0.029) | (0.014) | (0.02) | (0.042) |
| Bandwidth | 271 | 600 | 400 | 200 |
| Observations | 15,365 | 44,255 | 25,756 | 10,066 |
| Payed Dec-Feb | 0.046 | 0.063*** | 0.07*** | 0.028 |
| | (0.031) | (0.013) | (0.019) | (0.039) |
| Bandwidth | 242 | 600 | 400 | 200 |
| Observations | 13,134 | 44,255 | 25,756 | 10,066 |

*Note:* ∗p<0.1; ∗∗p<0.05; ∗∗∗p<0.01. Standard errors calculated using nearest neighbor approach. Optimal bandwidth in column (1) is calculated using the mean squared error approach (one common bandwidth). Estimates done using rdrobust package: with local linear polynomial and triangular kernel. All estimates include age, dummy for sex and married and standardized labor income as controls. We use a donut type estimation, where we drop all individuals with December debt larger than SEK 940 but smaller than SEK 1,060.

Figure C1: Covariate balance tests for the SEK 1,000 cut-off; 2018 sample



(a) Age

(b) Women

(c) Married

(d) Labor Income
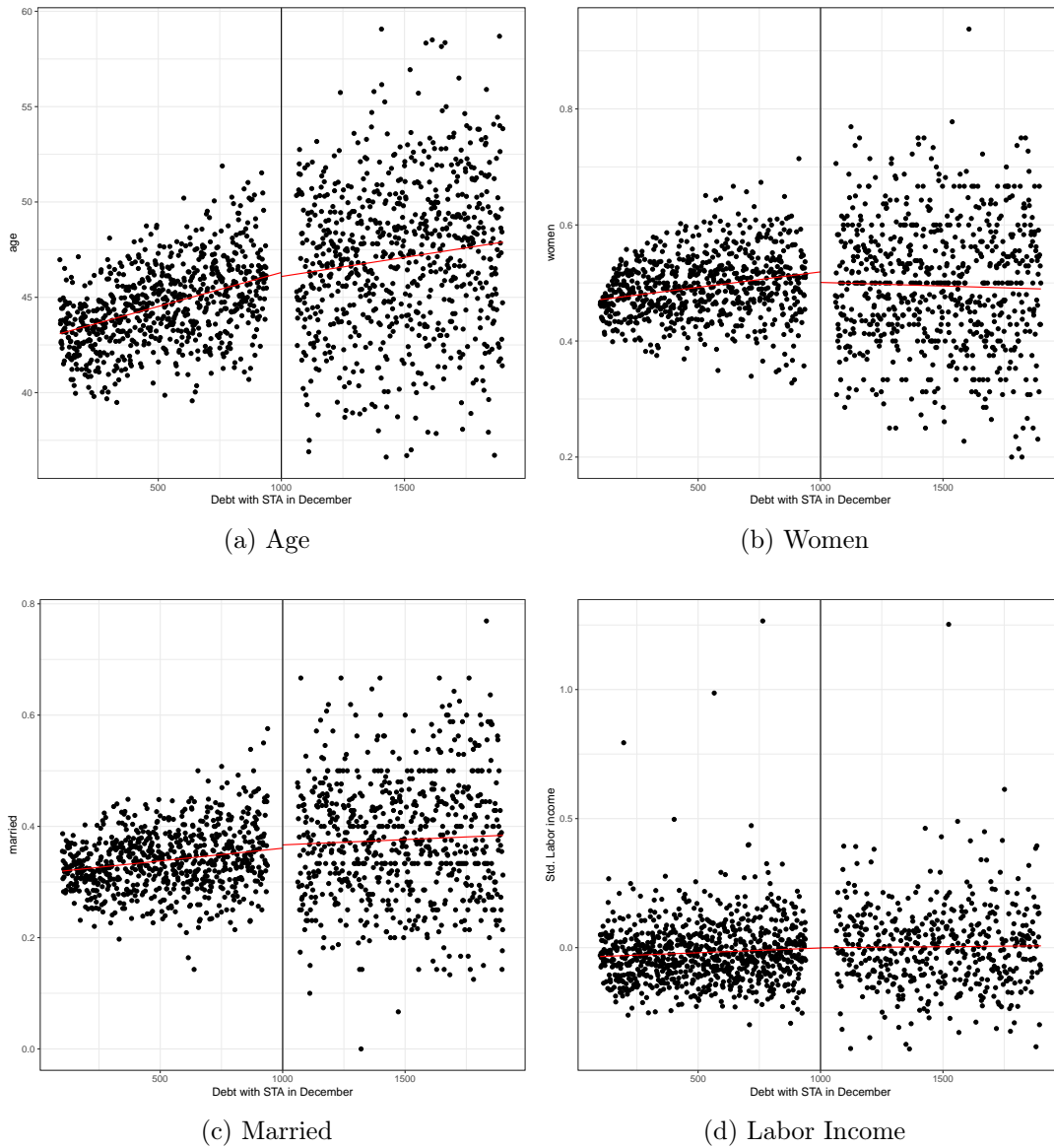
*Notes:* Data of all taxpayers with $\leq$ SEK 1,900 debt at the STA in December 2018. We further use a donut type structure, where we drop all individuals with December debt larger than SEK 940 but smaller than SEK 1,060. Running variable along the *x*-axis represent debt at the STA in December.

Figure C2: Covariate balance tests for the SEK 3,000 cut-off; 2018 sample



(a) Age

(b) Women

(c) Married

(d) Labor Income
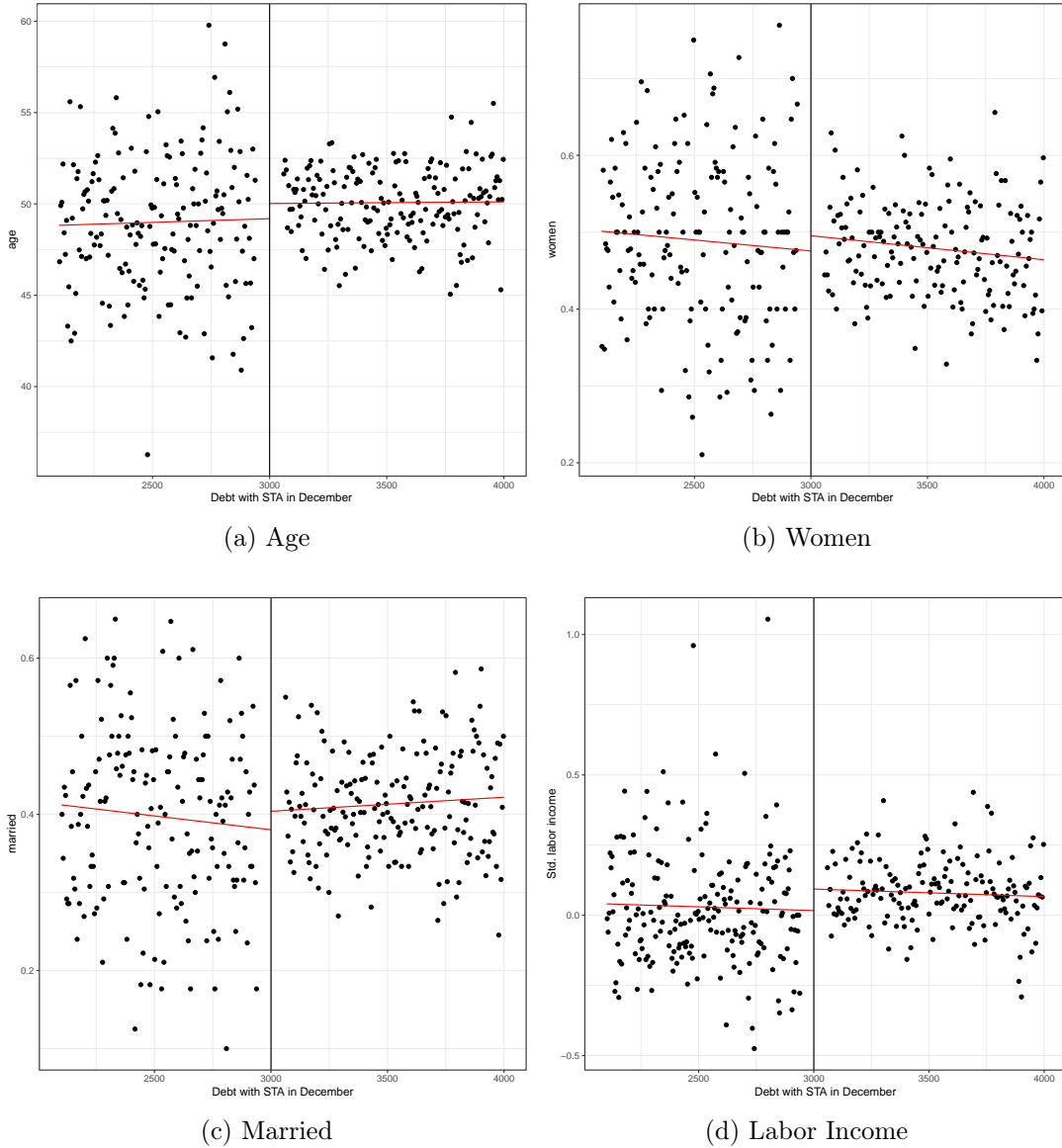
*Notes:* Data of all taxpayers with $\geq$ SEK 2,100 debt at the STA in December 2018. Running variable along the *x*-axis represent debt at the STA in December. We use a donut type estimation, where we drop all individuals with December debt larger than SEK 2940 but smaller than SEK 3,060.

Table C2: Parametric results, SEK 1,000 cut-off; separated for taxpayers getting a physical paper or an electronic reminder

| | *Bandwidths*: | | | |
| | Optimal (1) | H=600 (2) | H=400 (3) | H=200 (4) |
|---|---|---|---|---|
| **PANEL A: PAPER** | | | | |
| Payed Dec | 0.096*** | 0.098*** | 0.11*** | 0.081 |
| | (0.037) | (0.018) | (0.025) | (0.054) |
| Bandwidth | 276 | 600 | 400 | 200 |
| Observations | 9,186 | 25,740 | 14,955 | 5,824 |
| Payed Dec-Feb | 0.11** | 0.093*** | 0.11*** | 0.11** |
| | (0.054) | (0.017) | (0.023) | (0.048) |
| Bandwidth | 184 | 600 | 400 | 200 |
| Observations | 5,150 | 25,740 | 14,955 | 5,824 |
| **PANEL B: ELECTRONIC** | | | | |
| Payed Dec | 0.049 | 0.044** | 0.053* | 0.0019 |
| | (0.044) | (0.022) | (0.031) | (0.066) |
| Bandwidth | 279 | 600 | 400 | 200 |
| Observations | 6,762 | 18,514 | 10,800 | 4,241 |
| Payed Dec-Feb | -0.088 | 0.028 | 0.022 | -0.076 |
| | (0.07) | (0.021) | (0.03) | (0.064) |
| Bandwidth | 190 | 600 | 400 | 200 |
| Observations | 3,964 | 18,514 | 10,800 | 4,241 |

*Note:* $*p<0.1$; $**p<0.05$; $***p<0.01$. Standard errors calculated using nearest neighbor approach. Optimal bandwidth in column (1) is calculated using the mean squared error approach (one common bandwidth). Estimates done using rdrobust package: with local linear polynomial and triangular kernel. All estimates include age, dummy for sex and married and standardized labor income as controls. We use a donut type estimation, where we drop all individuals with December debt larger than SEK 940 but smaller than SEK 1,060.

Table C3: SEK 1,000 cut-off: Effect of Letter 1 for paper vs electronic, conditional on covariate interaction effects

| | Bandwidths: | | |
| --- | --- | --- | --- |
| | H=600 (1) | H=400 (2) | H=200 (3) |
| Interaction (Letter 1*paper) | 0.057** (0.026) | 0.064* (0.034) | 0.014 (0.070) |
| Observations | 44,324 | 25,822 | 10,110 |

*Note:* $*$p$<$0.1; $**$p$<$0.05; $***$p$<$0.01. Coefficient from a linear regression, using an interaction model. We fit the following linear model: $Y_i = \alpha + \beta_1 Letter1_i + \beta_2 Paper_i + \beta_3 Paper_i * Letter1_i + \Gamma_1 \mathbf{X_i} + \Gamma_2 \mathbf{X_i} * Letter1_i + \gamma_3 Debt_i + \Gamma_4 \mathbf{X_i} * Debt_i + \Gamma_5 \mathbf{X_i} * Letter1_i * Debt_i + \gamma_6 Debt_i * Paper_i + u_i$, where $Y_i$ is payed in December or not. On the right hand side $Letter1_i$ represent receiving the pure nudge letter 1; which in practice in this sample means having a debt$\geq$ 1,000. $Paper_i$ is =1, if the tax payer receives letters on paper by standard post, and is =0, if the tax payer receives communication digitally. The coefficient in the Table is $\beta_3$, measuring the interaction effect. $\mathbf{X_i}$ is a vector of covariates, including age, married or not, labor income and sex., $Debt_i$ measures the debt to the Tax Agency in December. In column (1) we restrict the sample to a bandwidth of 600 around the SEK 1,000 cut-off, in column (2) 400 and in column (3) 200. A symmetric donut of SEK 60 is applied, similarly to all other analyses.

Table C4: Parametric results, SEK 3,000 cut-off

| | Bandwidths: | | | |
| --- | --- | --- | --- | --- |
| | Optimal (1) | H=600 (2) | H=400 (3) | H=200 (4) |
| Payed Dec | 0.22 (0.16) | 0.022 (0.033) | 0.079* (0.046) | 0.22** (0.1) |
| Bandwidth | 151 | 600 | 400 | 200 |
| Observations | 1,753 | 9,772 | 6,288 | 2,587 |
| Payed Dec-Feb | 0.17 (0.12) | 0.017 (0.025) | 0.064* (0.036) | 0.15* (0.078) |
| Bandwidth | 154 | 600 | 400 | 200 |
| Observations | 1,813 | 9,772 | 6,288 | 2,587 |

*Note:* $*$p$<$0.1; $**$p$<$0.05; $***$p$<$0.01. Standard errors calculated using nearest neighbor approach. Optimal bandwidth in column (1) is calculated using the mean squared error approach (one common bandwidth). Estimates done using rdrobust package: with local linear polynomial and triangular kernel. All estimates include age, dummy for sex and married and standardized labor income as controls. We use a donut type estimation, where we drop all individuals with December debt larger than SEK 2940 but smaller than SEK 3,060.

Table C5: Covariate balance, SEK 1,000 cut-off, parametric results

| | | *Bandwidths*: | | |
|---|---|---|---|---|
| VARIABLE: | Optimal | H=600 | H=400 | H=200 |
| | (1) | (2) | (3) | (4) |
| Age | -0.3 | -0.12 | -0.31 | 0.93 |
| | (0.59) | (0.49) | (0.68) | (1.5) |
| Bandwidth | 472 | 600 | 400 | 200 |
| Observations | 32,003 | 44,255 | 25,756 | 10,066 |
| Married | -0.052** | -0.0048 | -0.024 | -0.078* |
| | (0.025) | (0.014) | (0.02) | (0.042) |
| Bandwidth | 308 | 600 | 400 | 200 |
| Observations | 18,306 | 44,255 | 25,756 | 10,066 |
| Women | -0.021 | -0.012 | -0.021 | -0.078* |
| | (0.021) | (0.015) | (0.021) | (0.044) |
| Bandwidth | 399 | 600 | 400 | 200 |
| Observations | 25,756 | 44,255 | 25,756 | 10,066 |
| Std. Labor Income | 0.072* | 0.035 | 0.07* | 0.044 |
| | (0.043) | (0.027) | (0.036) | (0.075) |
| Bandwidth | 333 | 600 | 400 | 200 |
| Observations | 20,271 | 44,255 | 25,756 | 10,066 |

*Note:* ∗p<0.1; ∗∗p<0.05; ∗∗∗p<0.01. Standard errors calculated using nearest neighbor approach. Optimal bandwidth in column (1) is calculated using the mean squared error approach (one common bandwidth). Estimates done using rdrobust package: with local linear polynomial and triangular kernel. We use a donut type estimation, where we drop all individuals with December debt larger than SEK 940 but smaller than SEK 1,060.

Table C6: Covariate balance, SEK 3,000 cut-off, parametric results

| VARIABLE: | Bandwidths: | | | |
|---|---|---|---|---|
| | Optimal | H=600 | H=400 | H=200 |
| | (1) | (2) | (3) | (4) |
| Age | 3.4 | 1 | 2.1 | 4 |
| | (2.2) | (1.1) | (1.5) | (3.3) |
| Bandwidth | 286 | 600 | 400 | 200 |
| Observations | 4,213 | 9,772 | 6,288 | 2,587 |
| Married | 0.065 | 0.035 | 0.045 | 0.15* |
| | (0.065) | (0.032) | (0.044) | (0.09) |
| Bandwidth | 270 | 600 | 400 | 200 |
| Observations | 3,895 | 9,772 | 6,288 | 2,587 |
| Women | 0.0092 | 0.016 | 0.0087 | -0.071 |
| | (0.051) | (0.033) | (0.046) | (0.1) |
| Bandwidth | 362 | 600 | 400 | 200 |
| Observations | 5,577 | 9,772 | 6,288 | 2,587 |
| Std. Labor Income | 0.27** | 0.064 | 0.056 | 0.27** |
| | (0.12) | (0.051) | (0.067) | (0.14) |
| Bandwidth | 228 | 600 | 400 | 200 |
| Observations | 3,163 | 9,772 | 6,288 | 2,587 |

*Note:* ∗p<0.1; ∗∗p<0.05; ∗∗∗p<0.01. Standard errors calculated using nearest neighbor approach. Optimal bandwidth in column (1) is calculated using the mean squared error approach (one common bandwidth). Estimates done using rdrobust package: with local linear polynomial and triangular kernel. We use a donut type estimation, where we drop all individuals with December debt larger than SEK 2,940 but smaller than SEK 3,060.

# D  Letter experiment

Table D1: Covariate Balance for letter regressions

|  | *Dependent variable:* | | | |
|  | Letter 2 | Letter 2 | Letter 3 | Letter 4 |
|  | <2000 | >2000 | >2000 | >2000 |
|  | (1) | (2) | (3) | (4) |
| Age | 0.00002 | -0.0001 | 0.0004* | -0.0003 |
|  | (0.0002) | (0.0002) | (0.0002) | (0.0002) |
| Women | -0.005 | 0.008 | -0.008 | -0.003 |
|  | (0.005) | (0.006) | (0.006) | (0.006) |
| Married | -0.003 | 0.003 | -0.004 | -0.005 |
|  | (0.006) | (0.007) | (0.007) | (0.006) |
| Paper | 0.009 | -0.001 | -0.002 | 0.011* |
|  | (0.006) | (0.007) | (0.007) | (0.006) |
| Std. Labor Income | -0.0001 | -0.002 | 0.004 | -0.002 |
|  | (0.003) | (0.003) | (0.003) | (0.002) |
| Observations | 35,721 | 21,449 | 21,449 | 21,449 |
| F Statistic | 0.858 | 0.511 | 1.543 | 1.476 |

*Note:* ∗p<0.1; ∗∗p<0.05; ∗∗∗p<0.01. Covariate balance tests for 2018 data (experiment data). Coefficients represent effects from linear regressions with different letter types as left hand side variable.

# E  Letters from the STA

## E.1  Standard reminders

**Account statement**

**Skatteverket**
Skattekontoret Eskilstuna
Box 538
631 07 ESKILSTUNA

**Kontoutdrag**

Datum                                    Skattekontonummer

Vid inbetalning              Ditt referensnummer (OCR)*

Bankgiro

*Anges om du betalar på annat sätt än med förtryckt inbetalningskort.

Ditt konto vid utbetalning

Kontoutdraget avser avstämningsdag 2015-12-05

## Kontoutdrag för perioden 7 december 2014 - 5 december 2015

| Specifikation | Ränta fr.o.m. | Belopp |
|---|---|---|
| Ingående saldo 2014-12-07 | | 15 |
| Inbetalning bokförd 151029 | 151030 | 78 000 |
| Inbetalning bokförd 151029 | 151030 | 5 050 |
| Inbetalning bokförd 151029 | 151030 | 8 000 |
| Inbetalning bokförd 151029 | 151030 | 10 000 |
| Slutlig skatt | 150213 | - 138 019 |
| Avdragen skatt enligt kontrolluppgifter | 150213 | 38 558 |
| Preliminär skattereduktion för rot-/rutarbete | 150213 | - 2 726 |
| Kostnadsränta | | - 847 |
| **Utgående saldo 2015-12-05** | | **- 1 969** |

## Betalningsuppmaning

Din skuld till Skatteverket är                                          1 969
Beräknad kostnadsränta t.o.m. 2015-12-28                        20
**Belopp att betala**                                                        **1 989**

**Payment request**
Your debt to the STA is
Interest payment until 2015-12-28
**Payment due**

Beloppet ska vara bokfört på Skatteverkets konto **senast 2015-12-28**

Payment to the Tax Agency is due 2015-12-28

**www.skatteverket.se**

| Postadress | Telefon | E-postadress |
|---|---|---|
| Box 538 | 0771-567 567 | linkoping@skatteverket.se |
| 631 07 ESKILSTUNA | | |

# Upplysningar

## Kontoutdrag

I början av varje månad stäms ditt skattekonto av. Kontoutdraget visar de transaktioner som bokförts på ditt skattekonto.

**Utgående saldo** visar ställningen på ditt skattekonto, plus (+) för överskott/pengar tillgodo och minus (-) för underskott/skuld. Observera att det kan finnas egna inbetalningar som ännu inte har hunnit redovisas på kontoutdraget.

Rubriken "Övrig information" skrivs ut om det finns t.ex. beslutade skatter och avgifter som inte har förfallit till betalning och därför ännu inte har bokförts på ditt skattekonto. "Övrig information" finns inte med på utskrifter av tidigare kontoutdrag (s.k. kopia) eller på kontoutdrag med utbetalningsspecifikation.

## Utbetalning

Överskott betalas ut automatiskt vid

- överskjutande ingående moms

en överskjutande ingående moms som ännu inte granskats av Skatteverket. Belopp under 100 kr betalas inte ut utan står kvar på skattekontot och ränteberäknas.

Om du vill låta pengarna stå kvar på ditt skattekonto för att täcka framtida skatter och avgifter kan du begära utbetalningsspärr. Pengarna står då kvar på ditt skattekonto och ränteberäknas. Du kan begära utbetalningsspärr via ditt skattekonto på Internet eller på blanketten Begäran utbetalningsspärr (SKV 4813). Beställ blanketten via servicetelefonen 020-567 000, direktval 6707, eller via webbplatsen.

Om ett överskott på ett skattekonto inte har kunnat betalas tillbaka p.g.a. att kontohavarens adress inte är känd för Skatteverket eller p.g.a. annan omständighet som beror på kontohavaren, ska beloppet stå kvar på skattekontot. Ett överskott, som inte kunnat betalas tillbaka och under förutsättning att inget annat än ränta registrerats på kontot, tillfaller staten efter tio år. Registreras något på kontot, till exempel en ny betalning, startar en ny tioårsperiod efter detta datum.

## Konto vid utbetalning

Hos banken - eller via ditt skattekonto på Internet - kan du **anmäla konto** för återbetalning av skatt. Ditt anmälda konto framgår av kontoutdraget.

Om du inte har anmält konto får du ett utbetalningskort om beloppet är minst 2 000 kr. Belopp under 2 000 kr står kvar på ditt skattekonto och kan användas mot kommande skatter att betala.

## Inbetalning

En inbetalning kan inte styras till en viss skatt eller avgift utan räknas av mot det sammanlagda underskottet på skattekontot.

Vid inbetalning ska du ange ditt **OCR-/referensnummer** (se kontoutdraget eller ta fram ditt referensnummer på vår webbplats).

Inbetalningskort kan du beställa på **skatteverket.se** eller via vår servicetelefon 020-567 000, direktval 6704.

Vid **inbetalning från utlandet** ska du ange ditt person- eller organisationsnummer samt:

| | |
|---|---|
| IBAN nummer | SE82 5000 0000 0522 1100 0347 |
| BIC/Swiftkod | ESSESESS |
| Bank | SEB, S-106 40 Stockholm |
| Betalningsmottagare | Skatteverket, S-831 87 Östersund |

## Underskott på skattekontot

Belopp under 100 kr behöver inte betalas nu. Beloppet står kvar på skattekontot och ränteberäknas. Observera att det numera är hög kostnadsränta, lägst 16,25 %, på alla underskott på skattekontot. När skulden uppgår till minst 100 kr får du en betalningsuppmaning. Du ska då betala beloppet så det är bokfört på Skatteverkets bankgiro 5050-1055 senast det datum som framgår av betalningsuppmaningen.

Om du inte betalar kan skulden överlämnas till Kronofogden för indrivning. På underskott som lämnats till Kronofogden är det låg kostnadsränta, lägst 1,25 %.

## Ränta

På överskott beräknas **intäktsränta** och på underskott beräknas **kostnadsränta**. Räntan beräknas dag för dag på det aktuella saldot. Intäktsräntan är skattefri. Kostnadsräntan får du inte göra avdrag för.

Räntorna är knutna till den s.k. **basränta** som kan ändras under året. Uppgift om aktuella procentsatser kan du få på vår webbplats.

## Särskilt om slutlig skatt

En inbetalning av **underskott** som avser slutlig skatt (skillnaden mellan slutlig skatt och preliminärskatt) ska vara bokförd hos Skatteverket senast på den förfallodag som infaller närmast efter det att **90 dagar** har gått från beslutsdatum enligt slutskattebeskedet. Förfallodagen framgår av beräkningsbilaga till slutskattebeskedet.

För löntagare och pensionärer betalas normalt hela **överskottet** på kontot ut i samband med avstämningen av den slutliga skatten. Företag får däremot endast skillnaden mellan preliminär och slutlig skatt utbetald automatiskt.

## Skattekonto på Internet

Med e-legitimation kan du se aktuellt saldo och bokförda transaktioner direkt via Internet. Du kan också anmäla bankkonto för skatteåterbetalning, begära utbetalning av överskott och begära utbetalningsspärr. Läs mer om e-tjänsten Skattekonto på vår webbplats.

## Vill du veta mer?

Mer information finns på www.skatteverket.se och i Skattekontobroschyren (SKV 408). Broschyren finns på www.skatteverket.se.

---

**Deficit on the tax account**

Amounts below SEK 100 do not need to be paid now. The amount remains in the tax account and interest is calculated. Note that from now on high interest applies, at least 16.25%, on all deficits in the tax account. When the debt amounts to at least SEK 100, you will receive a payment request. You must then pay the amount so that it is registered on the Swedish Tax Agency's bank giro 5050-1055 no later than the date stated in the payment request.

If you do not pay, the debt can be handed over to the Enforcement Agency for collection. For deficits that are handed over to the Enforcement Agency low interest, at least 1.25%, applies.

## E.2 Reminders with EA threat

**Skatteverket**
Skattekontoret Sundsvall
Box 500
851 07  SUNDSVALL

**Kontoutdrag**

Datum                                    Skattekontonummer

Account statement

Vid inbetalning          Ditt referensnummer (OCR)*

Bankgiro

*Anges om du betalar på annat sätt än med
förtryckt inbetalningskort.

Kontoutdraget avser avstämningsdag 2014-12-06

## Kontoutdrag för perioden 2 december 2013 - 6 december 2014

| Specifikation | Ränta fr.o.m. | Belopp |
|---|---|---|
| Ingående saldo 2013-12-02 | | - 779 |
| Kostnadsränta | 140105 | - 12 |
| Kostnadsränta | 140202 | - 10 |
| Kostnadsränta | 140302 | - 10 |
| Kostnadsränta | 140406 | - 13 |
| Kostnadsränta | 140504 | - 10 |
| Kostnadsränta | 140602 | - 11 |
| Kostnadsränta | 140706 | - 13 |
| Kostnadsränta | 140803 | - 10 |
| Kostnadsränta | 140907 | - 14 |
| Kostnadsränta | 141005 | - 11 |
| Kostnadsränta | 141102 | - 11 |
| Slutlig skatt | 140213 | - 44 300 |
| Avdragen skatt enligt kontrolluppgifter | 140213 | 43 215 |
| Korrigerad kostnadsränta | | - 6 |
| Kostnadsränta | | - 27 |
| **Utgående saldo 2014-12-06** | | **- 2 022** |

OBS! Din skuld överlämnas till Kronofogden om du inte betalar i tid. Se betalningskrav.

NOTE! Your debt will be transferred to the Enforcement Agency if you do not pay on
time. See the demand for payment.

SKV   4814   13   sv   00   06

www.skatteverket.se

| Postadress | Telefon | E-postadress |
|---|---|---|
| Box 500 | 0771-567 567 | norrland@skatteverket.se |
| 851 07  SUNDSVALL | | |

# Upplysningar

## Kontoutdrag

I början av varje månad stäms ditt skattekonto av. Kontoutdraget visar de transaktioner som bokförts på ditt skattekonto.

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Överskott betalas ut automatiskt vid ~~...~~

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en överskjutande ingående moms som ännu inte granskats av Skatteverket. Belopp under 100 kr betalas inte ut utan står kvar på skattekontot och ränteberäknas.

Om du vill låta pengarna stå kvar på ditt skattekonto för att täcka framtida skatter och avgifter kan du begära utbetal-ningsspärr. Pengarna står då kvar på ditt skattekonto och ränteberäknas. Du kan begära utbetalningsspärr via ditt skattekonto på Internet eller på blanketten Begäran ut-betalningsspärr (SKV 4813). Beställ blanketten via service-telefonen 020-567 000, direktval 6707, eller via webbplatsen.

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| | |
|---|---|
| IBAN nummer | SE82 5000 0000 0522 1100 0347 |
| BIC/Swiftkod | ESSESESS |
| Bank | SEB, S-106 40 Stockholm |
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## Ränta

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## Särskilt om slutlig skatt

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![Skatteverket] **Skatteverket**
Skattekontoret Sundsvall
Box 500
851 07 SUNDSVALL

**Betalningskrav**

Datum                    Skattekontonummer

*Demand for payment*

Vid inbetalning          Ditt referensnummer (OCR)*

Bankgiro

*Anges om du betalar på annat sätt än med förtryckt inbetalningskort.

Betalningskravet avser avstämningsdag 2014-12-06

## Enligt våra noteringar har du en skuld på ditt skattekonto

| | |
|---|---|
| Din skuld till Skatteverket   2014-12-06 | 2 022 |
| Beräknad kostnadsränta t.o.m.  2014-12-29 | 20 |

## Hur mycket ska du betala?

Här måste du själv lägga till vad du ska betala denna månad och dra ifrån gjorda inbetalningar som inte ännu tillgodoförts dig.

| | | |
|---|---|---|
| **Skuld enligt detta betalningskrav**   *Current debt* | | 2 042 |
| Moms att betala | + | |
| Arbetsgivaravgifter  } Gäller i första hand företagare | + | |
| Avdragen skatt | + | |
| F- eller SA-skatt | + | |
| Annat t.ex. slutlig skatt eller skatt på grund av omprövningsbeslut | + | |
| Avgår inbetald skatt som inte ännu tillgodoförts mitt skattekonto | - | |
| **Belopp att betala**   *Payment amout* | = | |
| **Oss tillhanda senast**   *Due date* | | **29 december 2014** |

### OBS!

Din skuld kan komma att överlämnas till Kronofogden om du inte betalar i tid både det betalningsuppmanade beloppet samt alla övriga skatter och avgifter som ska betalas under denna månad.

**NOTE!**

Your debt may be handed over to the Enforcement Agency if you do not pay in time, both the requested amount and all other taxes and fees that are due this month.

www.skatteverket.se

| Postadress | Telefon | E-postadress |
|---|---|---|
| Box 500 | 0771-567 567 | norrland@skatteverket.se |
| 851 07 SUNDSVALL | | |

## Upplysningar

### Betalningskrav
Du har nu fått ett betalningskrav eftersom du har en skuld till Skatteverket, dvs. obetalda skatter på skattekontot.

### Du måste därför i tid betala
- betalningskravets belopp **och**
- övriga skatter och avgifter som du ska betala under månaden (t.ex. F-skatt, skatt pga. omprövningsbeslut eller att ett anstånd upphör).

**OBS!** Din skatteskuld kommer att överlämnas till Kronofogden om:
- du fortfarande har ett underskott på skattekontot den 26:e denna månad (eller nästföljande vardag om den 26:e infaller på en helgdag) - oavsett vad underskottet avser.

Du får alltså inte ha underskott på skattekontot

**NOTE!** Your debt will be handed over to the Enforcement Agency if:
- you still have a deficit in the tax account on the 26th of this month (or the next weekday if the 26th falls on a public holiday) - regardless of what the deficit refers to.

Inbetalning
Vid inbetalning ska du ange ditt OCR-/referensnummer
se betalningskravet eller ta fram ditt referensnummer

Inbetalningskort kan du beställa på **skatteverket.se** eller via vår servicetelefon 020-567 000, direktval 6704.

Vid **inbetalning från utlandet** ska du ange ditt person- eller organisationsnummer samt:

| | |
|---|---|
| IBAN nummer | SE82 5000 0000 0522 1100 0347 |
| BIC/Swiftkod | ESSESESS |
| Bank | SEB, S-106 40 Stockholm |
| Betalningsmottagare | Skatteverket, S-83187 Östersund |

### Skuld till Kronofogden
En skuld på skattekontot som inte betalas i tid ska lämnas till Kronofogden för indrivning. Skattekontosystemet innebär att det är ett underskott på skattekontot som lämnas för indrivning - inte en viss obetald skatt eller avgift.

Det är underskottets storlek som avgör om skulden ska lämnas för indrivning eller inte. För dig som ska lämna skattedeklaration eller har F-skattsedel är beloppsgränsen 10 000 kr. För övriga (de flesta löntagare och pensionärer) är beloppsgränsen 2 000 kr. Om skulden varit obetald under en längre tid gäller 2 000-kronorsgränsen för samtliga.

### Avgift och betalningsanmärkning
När en skuld överlämnas till Kronofogden tillkommer en avgift på 600 kr. Dessutom kan det medföra en betalningsanmärkning i kreditupplysningsföretagens register. Denna anmärkning kan exempelvis leda till att du kan få svårt att låna pengar, få arbete, skaffa lägenhet eller telefonabonnemang.

## Information in English

According to your account statement you have an unpaid debt on the tax account. Therefore you now have received a payment notice.

The debt may be transferred to the enforcement authority for collection if the deficit on the tax account is not paid by the date stated on the payment notice.

Please note! In order to avoid collection you must pay both the amount stated on the payment notice and any amounts due for the current month (F-tax, VAT etc.). It is the deficit on the tax account that is handed over for collection, not a specific unpaid tax.

When paying from abroad you must cite your personal identification number or organization number and use:

| | |
|---|---|
| IBAN | SE82 5000 0000 0522 1100 0347 |
| BIC/Swiftcode | ESSESESS |
| Bank | SEB, S-106 40 Stockholm |
| Payee | Skatteverket, S-83187 Östersund |

If you have any questions about your payment notice, please contact your tax office.

**Fee and payment default**
When a debt is handed over to the Enforcement Agency, a fee of SEK 600 will be added. In addition, it may result in a payment default in the credit reporting companies' records. This default can, for example, lead to you having difficulty borrowing money, getting a job, getting an apartment or a telephone subscription.

## E.3 Nudge letters sent through experiment

**Letter 1, 2, 3 and 4**

**Skatteverket**
Skatteenhet 3 Stockholm
Kontor 0300
171 94  SOLNA

**Viktig information**
Datum
2018-12-01
Skattekontonummer

Name and address

goes here

Fler än nio av tio betalar sin kvarskatt i tid. Du tillhör den minoritet som ännu inte gjort det i år. Därför får du här en betalningspåminnelse och information så att du enkelt kan göra din skattebetalning. Betala i tid så hamnar inte skatteskulden hos Kronofogden.

Överförs skulden till dem så måste du betala 600 kronor utöver din skatteskuld. Dessutom riskerar du att få en betalningsanmärkning. En sådan ligger kvar i kreditupplysningsföretagens register i tre år och kan göra det svårt för dig att exempelvis låna pengar eller hyra lägenhet.

Letter specific text goes here:

**Letter 1**: "Here comes a reminder that you have to pay your tax arrears. On the next page, you find information so you can easily make your tax payment."

**Letter 2**: "More than nine out of ten people pay their tax on time. You belong to the minority who have not paid us yet and therefore you get a reminder and information so you can easily make your tax payment."

**Letter 3**: "Here comes a reminder that you have to pay your tax arrears. On the next page, you find information so you can easily make your tax payment. Pay on time so your tax debt is not transferred to the Enforcement Agency.

If the debt is transferred to them, you have to pay SEK 600 in addition to your taxes due. You also risk getting a payment default. Such default remains in the registers of credit bureaus for three years and can make it difficult for you to, e.g., borrow money or to rent an apartment."

**Letter 4 (displayed)**: "More than nine out of ten people pay their taxes on time. You belong to the minority who have not paid us yet and therefore you get a reminder and information so you can easily make your tax payment. Pay on time so your tax debt is not transferred to the Enforcement Agency.

If the debt is transferred to them, you have to pay SEK 600 in addition to your taxes due. You also risk getting a payment default. Such default remains in the registers of credit bureaus for three years and can make it difficult for you to, e.g., borrow money or to rent an apartment."

SKV 4860 01 sv 00 04

Postadress
Kontor 0300
171 94  SOLNA

Skatteupplysningen
0771-567 567

Mejl via "Kontakta oss" på
www.skatteverket.se