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Nudges and Threats: Soft vs Hard Incentives for Tax Compliance

Henrik Andersson, Per Engström, Katarina Nordblom, Susanna Wanander

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

Henrik Andersson† Per Engström‡ Katarina Nordblom§ Susanna Wanander¶

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Abstract

We study what induces delinquent wage earners to pay their taxes due, using high-quality administrative data from the Swedish Tax Agency. Here, 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 (from a baseline of 58 %). 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 involving 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 sheet of paper with no valuable information) has an effect of about 7 percentage points for those who do not risk enforcement upon non-payment. However, the same nudge has no detectable effect on the group at risk of enforcement. Finally, we find a small additional effect on payments from social norm messages both for those who risk enforcement and for those who do not.

Keywords: tax compliance, randomized controlled trial (RCT), nudge, quasi-experiment, regression discontinuity

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

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†Department of Economics, Uppsala University, P.O. Box 513, SE-751 20 Uppsala, Sweden, and Institute for Housing and Urban Research (IBF) (email: henrik.andersson@ibf.uu.se)

‡Department of Economics, Uppsala University, P.O. Box 513, SE-751 20 Uppsala, Sweden, and Uppsala Center for Fiscal Studies (UCFS) (email: per.engstrom@nek.uu.se)

§Department of Economics, University of Gothenburg, P.O. Box 640, SE-405 30 Gothenburg, Sweden, and UCFS (email: katarina.nordblom@economics.gu.se)

¶The Swedish Tax Agency, SE-172 31 Sundbyberg, Sweden (email: susanna.wanander@skatteverket.se)

1 Introduction

Although most people in several Western countries with extensive third-party reporting are unable to under-report income, delinquent taxes represent a problem to many tax authorities. In order to promote overall tax compliance, a relevant question is thus how taxpayers can be induced to actually pay their delinquencies. The growing literature on tax compliance has pointed to the importance of both intrinsic and extrinsic motivation (see, for instance, Slemrod, 2019; Alm, 2019, for two recent and excellent surveys.). While many studies since Allingham and Sandmo (1972) have analyzed the impact of enforcement, intrinsic motivation has been highlighted as another important factor for compliance (see, for instance, Luttmer and Singhal, 2014). We study both kinds of motivations for Swedish delinquent taxpayers, using a legal discontinuity in the treatment of delinquencies as well as conducting a field experiment in the same vein as, for example, Hallsworth et al. (2017), Cranor et al. (2020), Chirico et al. (2019), and DeNeve et al. (2021).

While there have been a number of field experiments exploring the effects of behavioral interventions, such as nudges,[1] we are able to quantify the relative importance of standard enforcement and milder interventions in the same setting. To our knowledge, the only previous study of tax compliance comparing enforcement, on the one hand, and information and nudges, on the other, is DeNeve et al. (2021).[2] Although DeNeve et al. (2021) is very rich, our setting allows for a cleaner identification of the effects of standard enforcement.

In a first step, we isolate the effect of the standard enforcement regime. The identification relies on a discontinuity in the treatment of taxpayers. Swedish wage earners (i.e., without income originating from businesses) with delinquent tax debts below SEK 2,000 (approx. EUR 200) have to pay interest to the Swedish Tax Agency (hereinafter *STA*), but there is no real enforcement. Debts exceeding SEK 2,000 are instead handed over from the *STA* to the Enforcement Agency (hereinafter *EA*). Before the debt is handed over, the taxpayer is warned that this will occur in case of non-payment. This gives us a unique opportunity to study both the short-run effect of the "threat" of the EA and the longer-run effect including actual enforcement separately. Thanks to this strict

[1] See Antinyan and Asatryan (2020) for a meta-analysis. Studies in various countries include Bott et al. (2020) in Norway, Del Carpio (2014) in Peru, Castro and Scartascini (2015) in Argentina, Kettle et al. (2016) in Guatemala, Hernandez et al. (2017) in Poland, Hallsworth et al. (2017), Cranor et al. (2020), and John and Blume (2018) in the UK, and DeNeve et al. (2021) in Belgium. The results are mixed and it is not possible to neglect contextual factors.

[2] With regard to related issues, Fellner et al. (2013) study potential evaders of the Austrian TV license fees while Dusek et al. (2020) study compliance with speeding tickets.

SEK 2,000 threshold, we can identify the effect of enforcement using a regression discontinuity (RD) design (see, for instance, Lee and Lemieux, 2010). In this analysis, we study approximately 100,000 Swedes who did not pay their taxes in due time in the years 2016 and 2017. All of them received a letter from the STA in December. Those below the threshold just got a reminder, whereas those above it were also informed that if they did not pay, their debt would be transferred to the EA in January.[3] At the threshold, the likelihood of payment increased by more than 9 percentage points from 58 to 67 percent.

To include actual enforcement (i.e., having the debt transferred to the EA), we compare the likelihood of paying during the period December through February. In such a case, the likelihood of payment increased by 19 percentage points so that almost 85 percent had paid after enforcement. Hence, we find strong effects on tax payments, both from actual enforcement and from the threat of it.

Based on standard economic theory, the above results come as no surprise, but to our knowledge we are the first to show the effect of the threat of enforcement so clearly. The magnitude of the estimated effects also serves as a benchmark when analyzing the effects of milder nudges in the second step, where we conduct a randomized field experiment (following, for instance, Hallsworth et al., 2017) among the 57,000 taxpayers with delinquent taxes ranging from SEK 1,000 to SEK 3,000 in December 2018. All of them received a cover letter together with the standard letter from the STA. For those with a debt exceeding SEK 2,000, four different cover letters were randomized: one non-informative, one alluding to social norms, one containing a brief and simple explanation of the consequences of enforcement, and a fourth letter combining the social norms and the explanation.[4] Those with taxes due below SEK 2,000 did not face the threat of enforcement. Hence, they just received either the non-informative or the social norm letter.

Similar to, for instance, Del Carpio (2014), Hallsworth et al. (2017), and Alm et al. (2019), we find a strong effect of the non-informative letter for those who do not risk enforcement upon not paying.[5] For this group, 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

[3]See Appendix E for the exact design and wording.

[4]See Section 3.2 for the exact wording of all cover letters.

[5]This is also in line with Fellner et al. (2013), who study compliance with TV license fees and where the mere inclusion of a cover letter (irrespective of its content) increases salience as an effective nudge.

the EA. The effect is about 7 percentage points on December payments. The effect on payments during December to February is less precisely estimated but of about the same magnitude. Our interpretation is consequently that the nudge effect is instantaneous and does not grow over time. This is consistent with Antinyan and Asatryan (2020), who find that nudges aimed at increasing tax compliance mainly have short-run effects. Löfgren and Nordblom (2020) also suggest that immediate choices are more easily nudged, as are choices considered unimportant. Corroborating that, we find no significant effect of the neutral letter on tax payments for those who risk enforcement (and for whom the choice of paying or not is more important in financial terms).[6]

We get a significant, albeit small, additional effect of the letter alluding to social norms, irrespective of the size of the debt: The likelihood of paying in December is 2 and 3 percentage points higher than for those receiving the neutral letter when debt falls below and exceeds SEK 2,000, respectively. Those with a debt below SEK 2,000 receiving the social norm letter are thus 9 percentage points more likely to pay than if they had not been nudged at all.

Receiving a brief text about the consequences of having the debt transferred to the EA has about the same short-run effect on those whose debt exceeds SEK 2,000 as the social norm letter. The combined message has an effect of almost 5 percentage points compared to the neutral cover letter. Hence, the social norm and information nudges do not crowd each other out.

The longer-run effects are much more limited for those with large debts, which is expected since those who do not pay in December are handed over to the EA for actual enforcement in January regardless of whether or not they were nudged. Hallsworth et al. (2017), Bott et al. (2020), and Del Carpio (2014) represent other examples of studies that, like us, find that nudges of moral persuasion significantly increase tax compliance, while Cranor et al. (2020) and DeNeve et al. (2021) find no such effects. Our effect of the brief explanation of the consequences of being transferred to the EA is in line with the findings of Cranor et al. (2020), DeNeve et al. (2021), and Chirico et al. (2019), who all find that highlighting the risk of enforcement significantly increases compliance.

While our paper provides many results, a key takeaway is that a mild nudge offers almost the same short-run effect on Swedish delinquent taxpayers as a threat of enforcement. Since enforcement is costly to both the individuals and the government, this result is highly relevant to policy discus-

[6] Although this finding is in line with theory, we cannot entirely rule out that the threat of enforcement itself may be salient so that the additional effect of the cover letter becomes negligible.

sions. Although countries differ in terms of general tax morale, institutions, and how enforcement is carried out and perceived, we claim that we learn something general about the relative importance of hard enforcement and soft nudges from our study. In our setting with credible enforcement, simply including a cover letter making the tax debt more salient has an effect on payments of the same magnitude as the threat of enforcement. Such a strong effect of a mild nudge is most likely to hold also in contexts where enforcement is perceived as less severe or credible.

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

2 Theoretical and institutional background

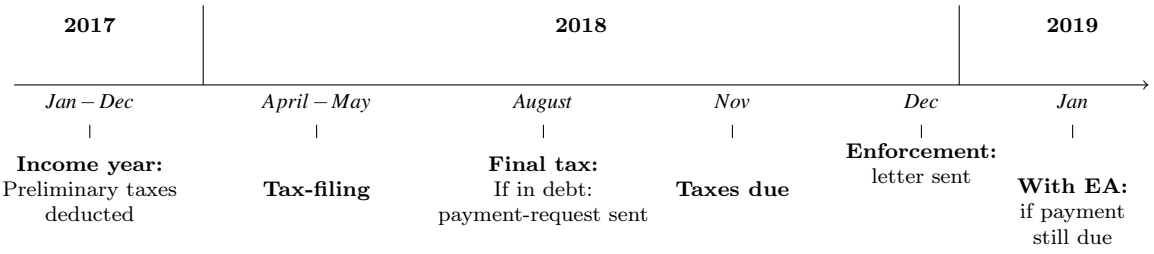
2.1 Tax payment and tax enforcement in Sweden

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

In Sweden, employers throughout the year withdraw preliminary taxes before the employees receive their net salary. Furthermore, banks and financial institutions also withhold taxes on capital income at the source. In April the following year, taxpayers file their tax returns and may add extra income or claim deductions. Most taxpayers make no changes in their tax returns, and for a majority of people, preliminary tax withdrawals only slightly exceed final taxes, which means that they can expect a small tax refund (Engström et al., 2015). However, roughly one in five taxpayers has not paid enough. 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 receive a reminder in early December. Our study focuses on this reminder, where the wording depends on the size of the tax debt as the treatment of the debt differs if it is not paid. An illustration of a timeline of the Swedish tax process is presented in Figure 1.

If the debt is below SEK 2,000 (approx. EUR 200), Swedish law postulates that a sizable interest

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



(16.25 percent on an annual 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 to the taxpayer. Although debts handed over to the EA are subject to a lower interest (1.25 percent on an annual basis), there is an extra fee of SEK 600 associated with the debt, which means that the extra cost resulting from not paying at once is always higher above the threshold than below it for the debt amounts we consider. Moreover, if the debt is not paid immediately, the taxpayer may get a distraint order and 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, which constitute public information. Requesting such a 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 order.

For those whose tax debts amount to SEK 2,000 or more, the standard December letter thus informs them that the debt will be handed over to the EA if not paid by the end of December, and the threat of having debt transferred to the EA is real (all non-payers are transferred to the EA). Those whose December debt is 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 is used to identify the causal effect of the standard enforcement practice through an RD approach, which is explained further in Section 3.1.

In their study of the Belgian context, DeNeve et al. (2021) also study the effects of enforcement at a certain threshold. Their indicator of enforcement, however, is less precise than ours as the Belgian threshold allows for some discretion. The Swedish threshold leaves no room for discretion; below the threshold, the probability of enforcement is zero and above, it is one.

2.2 Theoretical and descriptive background

What makes delinquent taxpayers pay or not pay their debt? According to standard economic theory, economic incentives should be decisive. As the expected economic consequences of not paying are more severe if the debt is transferred to the EA, 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.*

Behavioral economics suggests that people not only adhere to economic incentives, but may also be subject to biases and thus possibly affected by, for instance, nudges. Nudges have become popular policy tools that are non-intrusive while still affecting not fully rational people's behavior. The most commonly used definition of a nudge is presented by Thaler and Sunstein (2008): "*A nudge ... is any aspect of the choice architecture that alters people's behavior in a predictable way without ... significantly changing their economic incentives.*" Hence, what qualifies as a nudge could be a large variety of things. Löfgren and Nordblom (2020) define different kinds of nudges, where a "pure nudge" is one that catches the attention of the decision maker but is unrelated to the choice itself. Hence, it could be something that should be completely irrelevant to the decision but increases salience. For instance, Del Carpio (2014), Hallsworth et al. (2017), and Alm et al. (2019) find that the mere inclusion of a message affects taxpayers' behavior and that what is actually said in the message is less important. Hence, we hypothesize:

Hypothesis 2. *A pure nudge increases the prevalence of tax payments.*

Nudges are likely to be more effective for choices made without much thought. As people tend to pay more attention to important choices than to unimportant ones, they should be more nudgeable in unimportant choice situations (Löfgren and Nordblom, 2020). Since the consequences of not paying are much 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 is 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."

These allude to the utility of the choice alternatives; for instance, by triggering some intrinsic motivation, such as conforming to social norms.[7]

Although results from field experiments are mixed,[8] we expect that delinquent taxpayers could be affected by social norms generated by the behavior or others, which is why we formulate the following hypothesis:

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

Finally, one reason why people fail to pay their taxes may be a lack of knowledge regarding, for instance, the full implications of enforcement. Hence,

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

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 or not the debt is handed over to the EA (for those with taxes due of at least SEK 2,000).Of those who make a payment, fewer than 7 percent make partial payments. Therefore, an analysis along the intensive margin would not be particularly meaningful.

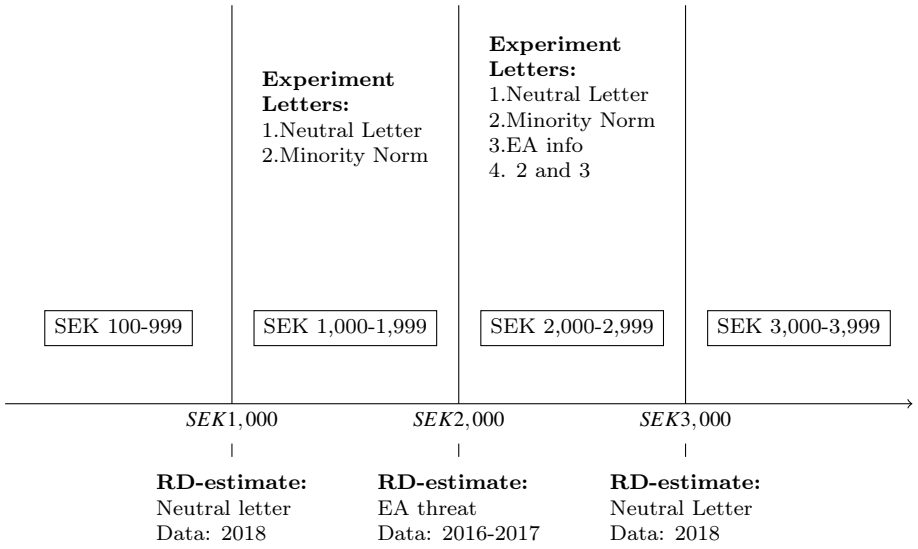
We use different identification strategies in different parts of the study. That is why we here in detail and in chronological order describe how the analysis proceeds.[9] Figure 2 provides an overview of the whole study.

[7]Such intrinsic motivation has been found important in relation to tax compliance. See, for instance, Besley et al. (2022), Wenzel (2004), and Wenzel (2005) for empirical evidence and Myles and Naylor (1996) for a classic theoretical contribution (Furthermore, Besley et al., 2022, present a theoretical model of tax evasion where social norms play an important role).

[8]Hallsworth et al. (2017) find both statistically and economically significant effects of a descriptive norm among delinquent UK taxpayers, Chirico et al. (2019) find a small but significant effect on property tax payments in Philadelphia, while Cranor et al. (2020), who study the Colorado state tax, find no effect of a social norm message.

[9]Some comments are warranted on the pre-analysis plan. The preliminary plan only applies to the experimental part of the study. When planning the experiment, we had already started to analyze preliminary data from 2016 in

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, meaning that we analyze the effects of the standard enforcement strategy. This analysis is 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 these two years (estimates separated by year are available in Section B in the Appendix).

In a lab experiment, we could have randomized subjects into the various treatments to then compare the effects by using simple econometric techniques. In our real-world setting, however, we were restricted by legislation and had to use sufficiently sophisticated econometrics to resemble such randomization. The regression discontinuity (RD) approach assumes that whether individuals end up at either side of a threshold is as good as random, and that individuals on either side of the threshold are thus (on average) comparable (see, for instance, Lee and Lemieux, 2010). Hence, the estimated effect of, for instance, receiving the threat of enforcement can be interpreted as an

regard to the natural experiment part of the study. According to the preliminary plan, the experiment should have been launched at the end of 2017. However, due to technical problems the experiment was delayed for one year. Furthermore, the preliminary data from 2016 turned out to be incomplete, which makes the estimated sample sizes in the preliminary plan quite far off the mark. The sample sizes turned out to be quite a bit larger than expected. Finally, the preliminary plan is of limited value since some of the analysis we carry out is a rather complex mix of a natural experiment combined with an RCT, unforeseen at the time when the plan was drafted. With these caveats disclosed, the preliminary plan at least shows that we stay true to the pre-decided treatments and the main outcome variable (however, we also planned to analyze an additional long-run outcome that we do not have access to).

average causal effect. A number of parametric and non-parametric tests reassure us that we may interpret our results as causal effects.

The pooled observational data for 2016 and 2017 represent the universe of Swedish delinquent taxpayers with a December debt spanning from SEK 100 to 4,000. We only exclude individuals with a registered income from any business activity or individuals we are in other ways able to define as self-employed. Self-employed individuals are subject to different cut-offs and are not part of the objective of this paper. Other than information on the level of tax debt, payments made to the STA, and other income-related information, the data contain information on certain demographic characteristics, such as age, sex, and marital status. In total, our sample includes 258,000 units of taxpayers and year. The subsample of individuals with a debt between SEK 1,000 and SEK 3,000 is around 100,000 units of taxpayers and year.

The standard enforcement strategy provides a distinct cut-off at SEK 2,000. The effect of the threat of ending up being transferred to the EA is analyzed through a standard regression discontinuity (RD) approach. The identifying assumption hinges on the notion that taxpayers do not systematically choose on which side of the SEK 2,000 threshold they end up. Since information on the SEK 2,000 threshold is public (albeit not particularly salient), it is possible that well-informed taxpayers seek to influence on which side they end up. One way of doing this is e.g. to make strategic deductions or simply pay part of the debt to ensure that it falls below the threshold. That said, we do expect most taxpayers to be unaware of the cut-off. The cut-off is not mentioned at all in the standard reminders (i.e. below 2,000), and only in small text on the back of the demands for payment (above 2,000). The information is mentioned on the STA homepage, but hidden away in a an electronic brochure about tax payments. In the end, whether sorting invalidates the identification strategy is an empirical question. We analyze this through the standard toolkit provided by the RD framework (e.g., a McCrary test of the frequency distribution) and by analyzing the evolution of a number of covariates above the threshold.

We implement the RD-design by estimating local polynomial regressions. For the main estimations, we restrict ourselves to local *linear* regressions ($p = 1$) weighted with a triangular kernel (to ensure that the method puts more weight on observations close to the threshold). The bandwidth (h) in the main specifications is selected using a data-driven mean square error approach

(Calonico et al., 2015). In the Appendix, however, we show that results are robust to a wide range of bandwidths (Figures B1, C1, and C2).

Given the chosen order of polynomial ($p = 1$), kernel function (*triangular*), and bandwidth, the local polynomial approach fits two separate weighted regressions for observations above (Equation (1)) and below (Equation (2)) the threshold:

$$Y_i = \alpha_+ + \beta_+(X_i - c) \text{ if } X \geq c \tag{1}$$

$$Y_i = \alpha_- + \beta_-(X_i - c) \text{ if } X < c \tag{2}$$

In Equations (1) and (2), Y_i represent different measures of payment for taxpayer i, α_{+-} is a constant (the intercept), X_i is the running variable, and c is the threshold (at SEK 2,000). The estimated treatment effect ($\hat{\tau}$) is the difference in estimated intercepts:

$$\hat{\tau} = \hat{\alpha}_+ - \hat{\alpha}_- \tag{3}$$

In addition to running local linear regressions, we illustrate our results graphically by plotting the outcomes of interest against our running variable. For the graphical illustrations, however, we rely on *global* linear polynomials.[10]

A minor complicating factor is that all (overdue) debts to the STA are subject to a 16.5 percent interest rate. 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 SEK 1,973 and 2,000 will get a simple reminder without the threat of the EA in December, but if she does not pay anything, the interest will carry her above the threshold in January. After the January clearing, she will thus receive an EA threat and be partially treated in any outcome measure defined over a longer period. Hence, we 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. We exclude the taxpayers in the region of +/- SEK 60 around the threshold to make sure that taxpayers below SEK 2,000 will remain below the

[10]In practice, the local linear estimations are implemented using the default options in the R-command *rdrobust*. The graphical illustrations are in turn implemented using the R-command *rdplot*.

threshold also when we study payments during the period December–February (i.e., through two months of interests).

Density plots (see Appendix A) show that 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 would strategically end up by making partial payments to avoid the EA. Our data indicate, however, that this is not a warranted concern. Further analysis shows that this over-representation is also present at SEK 1,000 and, to a minor extent, at 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 prominent figures when making partial payments on their debts. The addition of monthly interest then pushes the debts slightly above the prominent figure. The donut RD approach we proposed above solves this problem as well.

3.2 RCT nudge study

In 2018, we conducted an RCT in collaboration with the STA in order to test our remaining hypotheses and to compare the effects of a threat of enforcement with those of nudges. The RCT involved roughly 57,000 individuals with a tax debt between SEK 1,000 and SEK 3,000 in December 2018. All those taxpayers received one extra sheet of paper with the standard December letter.

For those with a debt exceeding SEK 2,000 (and who risk actual enforcement), we used 2×2 factorial combinations of social norms and simplified information; hence, subjects were randomly assigned one of the four letters below. Letter 1 is the pure nudge letter containing neither norm nor information. The social norm treatment is the descriptive "minority norm," which proved to be the most effective nudge in the RCT performed by Hallsworth et al. (2017) (expressed in Letters 2 and 4). As some taxpayers may not fully understand the consequences of having their debt transferred to the EA, these consequences were explained in a simplified way in the information treatment (Letters 3 and 4).

Those with a debt below SEK 2,000 did not risk any enforcement, which means that only the social norm treatment applies to this group. Hence, they randomly received either Letter 1 or 2.

Letter 1

Here is a reminder that you have to pay your tax debts. On the next page, you find information so that you can easily make your tax payment.

Letter 2

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

Letter 3

Here is a reminder that you have to pay your tax debts. On the next page, you find information so that you can easily make your tax payment. Pay on time to avoid your tax debt being 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 a default remains in the registers of credit bureaus for three years and can make it difficult for you to, for instance, borrow money or 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, which is why you here get a reminder and information so that you can easily make your tax payment. Pay on time to ensure that 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 a default remains in the registers of credit bureaus for three years and can make it difficult for you to, for instance, borrow money or rent an apartment.

Letter 1 is a "neutral letter" that may be referred to as a pure nudge, meaning that it provides no information in addition to what is communicated in the standard letter; we just add an extra sheet of paper. However, all letter designs also involved a header saying "important notice" (see the exact designs of these letters in Appendix E). The minority norm (Letters 2 and 4) is what Löfgren and Nordblom (2020) refer to as a preference nudge, as it reminds the taxpayer of what most people do. Letters 3 and 4 inform the recipient 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 the norm treatment.

Based on the randomized experiment carried out in December 2018, we analyze the effects of these letters on the likelihood of paying the taxes due. We estimate the following equation:

$$Y_i = \mu + \beta_1 Minority_i + \beta_2 EA_i + \beta_3 MinEA_i + \gamma \mathbf{C}_i + \psi_i. \tag{4}$$

where Y_i is the individual outcome (i.e. payment in December or in December–February), $\gamma \mathbf{C}_i$ a vector of covariates, and ψ_i is the error term. $Minority_i$, EA_i and $MinEA_i$ represent three letter dummies (the "neutral letter" being excluded). Hence, the parameters of interest are $\beta_1 - -\beta_3$ capturing the effects of each letter type compared to Letter 1.

For the experiment below SEK $2,000$, only the letter dummy $Minority_i$ is included. Also, the covariates for taxpayer i, $\gamma \mathbf{C}_i$ are excluded in some specifications.[11]

Measuring the effect of the pure nudge (i.e., 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 did not allow for such a different treatment of any group, which meant that we had to send some kind of cover letter to everyone with debts within the treatment window (i.e., those with tax debts between SEK 1,000 and SEK 3,000). Since the experiment created two artificial thresholds at SEK $1,000$ and SEK $3,000$, these can be used to measure the effects of the neutral letter. Below and above these thresholds, the taxpayers only received the standard letters (i.e., a debt reminder below SEK $1,000$ and the standard EA threat letter above SEK $3,000$). Hence, when we study the effects of a pure nudge in Section 4.2, we do that in terms of two RD analyses conditional on risking enforcement or not risking enforcement. These analyses are 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 drop all other treatment groups from this analysis.[12] One could argue that this approach mixes apples and oranges since the estimate of the pure nudge effect is technically a local average treatment around the cut-off (LATE), while the additional effects of letters 2–4 are ATE estimates (however also local in the sense that the experiment sample only includes taxpayers with SEK 1,000 to SEK 3,000 in debt). To address this (see Appendix, Section C) we analyze the

[11] To check for balance in the covariates we run corresponding regressions with each covariate on the left-hand side instead.

[12] 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 (see Figure A4 for formal density tests around the cut-off.)

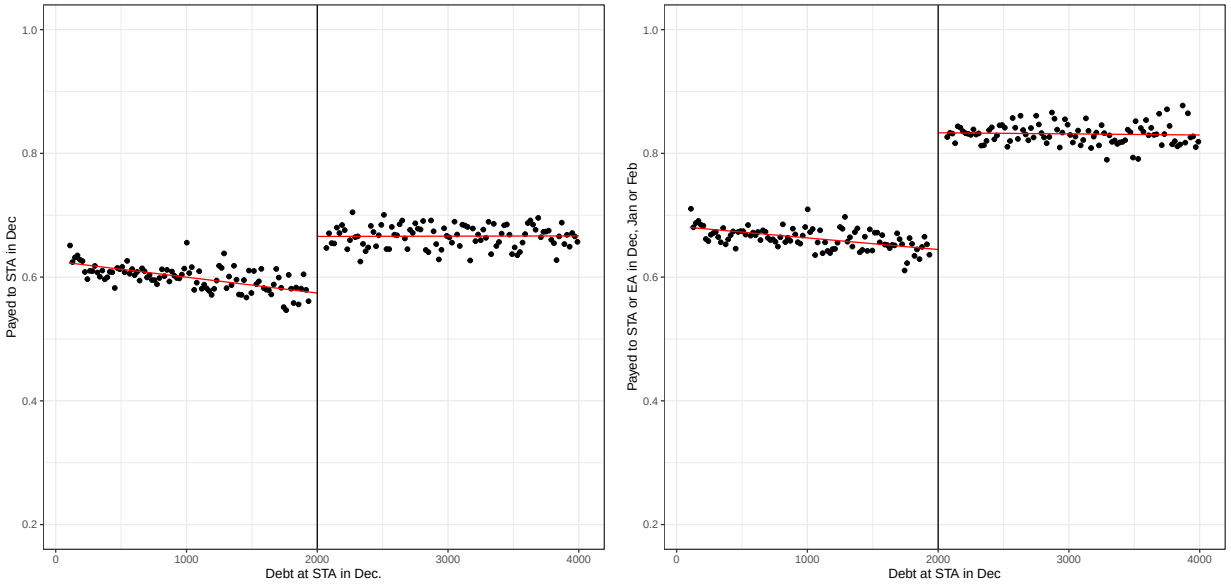
heterogenous treatment effects of letter 1 based on the covariates. In Table C4 and C5 we estimate the interacted treatment effects at both threshold. None of the interacted treatment effects are, however, significant at conventional levels. The interacted treatments at the SEK 1,000 threshold are also economically insignificant. This suggests that the unobserved ATE of letter 1 is probably not that far from the LATE we measure in our RD approach.

4 Results

4.1 RD analysis of the threat of enforcement and 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 due. In both cases, the horizontal axis shows 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 the 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 use binned data and illustrate the effect by using a (global) linear polynomial on each side of the cut-off.

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



(a) Payment in December to the STA

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

Notes: RD plots with a global linear polynomial (uniform kernel). The number of bins is pre-specified at 100 bins on each side of the cut-off. The plots are based on pooled data on all taxpayers with a debt at the STA in December 2016 or 2017 between SEK 100 and SEK 4,000. The running variable along the *x*-axis represents 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 analyzes whether taxpayers paid anything to the STA *during the month of December*, while Figure 3b analyzes whether they paid anything to the STA *or* the EA anytime from *December through February*.

The figures convey a clear message: in line with Hypothesis 1, the threat of ending up with the EA is a powerful enforcement mechanism. Already in December, the share who pays their tax debt is about nine percentage points higher among those who receive 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. It is expected that the total effect of December through February payments is stronger. In January, non-payers with December debts larger than SEK 2,000 are transferred to the EA for actual enforcement. In other words, in Figure 3b, taxpayers not only react to the threat, but also to the realization of the threat.

We show the results from local linear estimations with a triangular kernel and a data-driven bandwidth selection in Table 1, column (1). These coefficients are in line with the results in Figure 3: a 9 percentage point increase in December payments, and a 19 percentage point payment

increase over December through February. Furthermore, in the Appendix (Section B, Figure B1), we display coefficients when varying the bandwidth. Overall, the estimates corroborate our findings; for bandwidths between SEK 400 and SEK 1,000, the estimate is almost exactly 9 percentage points and highly significant for the short-run payments. Even at the smallest reported bandwidth, SEK 150, the estimate drops only to around 8 percentage points (although the coefficient is no longer significant at conventional levels). The longer-run effects are even more stable and statistically significant. For all reported bandwidths, we find highly significant effects of around 17–20 percentage points.

To validate the underlying assumptions of the RD design, section B in the Appendix also includes graphical illustrations, as well as local linear estimates for possible covariates (Figures B2a to B2d and Table B1). 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. In Section A in the Appendix we also provide an extensive discussion on potential bunching and argue against any problem related to sorting using a number of frequency plots. We have also performed the analyses in Figure 3 separately for 2016 and 2017. These results are displayed in Figures B3a to B3d and present the same pattern as observed in Figures 3a and 3b.

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

We continue by testing Hypothesis 2 (i.e., the effect of a pure nudge in the form of the neutral 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 of paper in the letter from the STA (no one below SEK 1,000 or above SEK 3,000 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. We also see that the effects are remarkably stable. In Table 1, column (2), we show local linear estimates of a 7 percentage point increase in December payments.[13] This effect is roughly the same size as the effect of a threat of enforcement (9 percentage points). In fact, in statistical terms, the estimated coefficients do not differ significantly from each other (each 95 percent confidence interval includes the other point estimate). Column (2) in Table 1 also shows that for the longer-run outcome (December through

[13]In Section C, Figure C1, in the Appendix, we show parametric results for different bandwidths and including several control variables with only minor changes to the estimated coefficient.

February), the effect is less precisely estimated and slightly lower (around 5 percentage points and insignificant) for the "optimal bandwidth" (SEK 242). When looking at the whole range of potential bandwidths (see Figure C1 (b) in Appendix C), however, the short and long-run effects are very similar; both effects hover around 7–8 percentage points for all bandwidths above SEK 300. Our interpretation of this is that the pure nudge effect is instantaneous and does not grow over time.

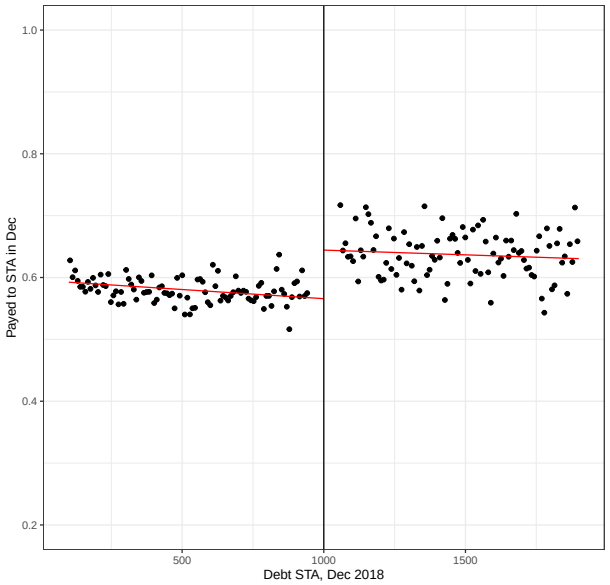
In contrast to the large effects at the SEK 1,000 cut-off, Figures 4c and 4d do not suggest that the neutral letter had any effect on the taxpayers at the SEK 3,000 cut-off, that is those who risk enforcement upon non-payment. We see no indication of a (downward) jump at the SEK 3,000 threshold in terms of either the short or longer-run outcomes. Local linear estimates shown in Table 1, column (3), indicate fairly large but most importantly highly imprecise effects. Section C in the Appendix further varies the bandwidth for the SEK 3,000 cut-off (Figure C2). As expected from the graphical evidence, the estimated effects are unstable and mostly insignificant.[14]

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 as a result of the pure nudge.

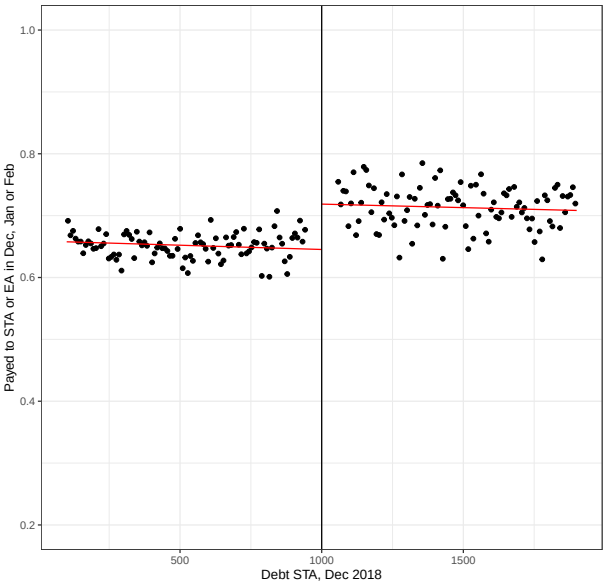
One may suspect that the diverging results in Figure 4 could be due to different samples at the two cut-offs rather than different stakes. Admittedly, individuals with SEK 3,000 in debt are more often married, older, and have slightly higher labor income than individuals with SEK 1,000 in debt (we show this in detail in the Appendix, Table C3). However, using linear interaction models in Tables C4 and C5 (Appendix, Section C), we show that the effect of Letter 1 on payments in December looks very similar for young vs. old, married vs. non-married as well as due to differences in labor income. We thus rule out the explanation that differences in (observable) characteristics drive the results. Although we cannot with certainty rule out sample composition with regards to unobservables, we believe that the difference in stakes at the SEK 1,000 and SEK 3,000 cut-offs is a more plausible explanation for the observed results. When stakes are low, one is more likely to

[14]Section C in the Appendix also includes both rdplots and local linear estimates of covariates for the 1,000 SEK cut-off and the SEK 3,000 cut-off (Figures C3a to C3d and Figures C4a to C4d and Tables C1 and C2). These suggest that covariates indeed balance over the cut-off. In Figure C5, we also show that payments to the STA and/or the EA neither decreased nor increased around the SEK 1,000 and SEK 3,000 cut-offs for the 2016–2017 sample (when no experiment occurred).

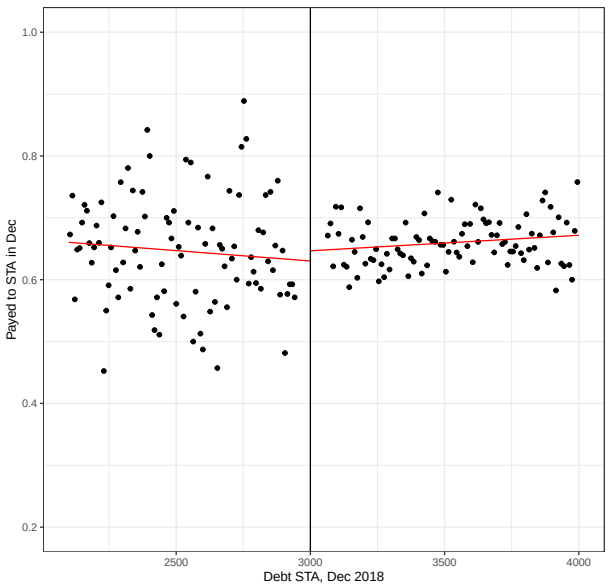
Figure 4: Effects of the pure nudge: Payment in December or December through February, depending on debt to the STA in December, results for 2018



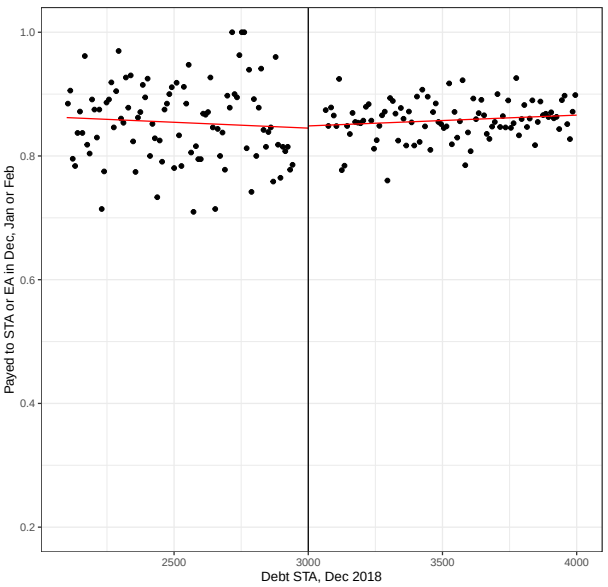
(a) Payment in December to the STA



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



(c) Payment in December to the STA



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

Notes: RD plots with a global linear polynomial (uniform kernel). The number of bins is pre-specified at 100 bins on each side of the cut-off. 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 are based on data on all taxpayers with a debt at the STA in December 2018 between SEK 100 and SEK 1,900. Individuals with debt 'x' in the interval ($940 \leq x \leq 1{,}060$) are dropped. Figures (c)–(d) focus on the SEK 3,000 threshold and are based on data on all taxpayers with a 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.

make an inattentive decision and thus more susceptible to aspects increasing salience.[15]

Another caveat is that the control-group letters are not identical at the two cut-offs. One may argue that the threat of enforcement (that everyone around the 3,000 cut-off receives) itself is more salient than the simple reminder that those around 1,000 get. The difference in salience between control and treatment is thus larger at the 1,000 cut-off. Hence, salience could be the main driving force behind the result irrespective of stake size. However, we cannot disregard the fact that the economic consequences of not paying differ substantially at the two margins.

Table 1: Local linear estimates for enforcement and pure nudge

	Enforcement	Pure nudge	
	Cut-off at SEK 2,000	Cut-off at SEK 1,000	Cut-off at SEK 3,000
	(1)	(2)	(3)
Paid Dec	0.094***	0.071**	0.225
	(0.012)	(0.029)	(0.157)
Bandwidth	560	271	151
Observations	48,309	15,365	1,753
Mean dep. var. (below cut-off)	0.584	0.576	0.616
Paid Dec–Feb	0.19***	0.046	0.166
	(0.013)	(0.031)	(0.121)
Bandwidth	440	242	154
Observations	36,311	13,134	1,813
Mean dep. var. (below cut-off)	0.649	0.654	0.816
Year of observation	2016–2017	2018	2018

Note: ∗p<0.1; ∗∗p<0.05; ∗∗∗p<0.01. Local linear polynomial estimates with a triangular kernel. Optimal bandwidth is calculated using the mean squared error approach (one common bandwidth). Standard errors calculated using nearest neighbor approach. All estimates include age, dummy for sex and married, and standardized labor income as controls. We use a donut estimation, where we drop all individuals with a December debt within +/- SEK 60 of the cut-off. Estimates implemented using the "Rdrobust" package in R. "Mean dep. var. (below cut-off)" calculates the mean below the cut-off, using the optimal bandwidth.

4.3 Effect of minority norm and EA information letter

We now turn to the experiment and estimate the responses to the different wordings in the letters. Table 2 shows the results below the SEK 2,000 cut-off, where we test Hypothesis 4 (that taxpayers react to information that the majority of people pay their taxes on time) by comparing behavior

[15]One may argue that the threat of enforcement (that everyone around the SEK 3,000 cut-off receives) itself is more salient than the simple reminder received by those below SEK 2,000.

between the two different treatments, the control letter (Letter 1) and the minority norm letter (Letter 2). We hence regress "paid in December to the STA" (columns 1 and 2) or "paid December—February to the STA/EA" (columns 3 and 4) on a binary variable coded as receiving Letter 2 or not receiving it.

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 the regression), the point estimates remain unchanged. This brings credibility to the experiment: there seem to be no observable confounding characteristics affecting both the tendency to pay and the probability of receiving 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 of Letter 2, but it 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 much less significant than the effect of the threat of the EA, as well as of simply receiving 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 2: Results for minority norm letter below SEK 2,000 cut-off

	Dependent variable; Paid in:			
	Dec	Dec	Dec–Feb	Dec–Feb
	(1)	(2)	(3)	(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
Mean of dep. var. (letter =1)	0.637	0.637	0.719	0.719

Note: Linear regressions applying Equation 4, only focusing on β_1 (hence: $Y_i = \mu + \beta_1 Minority_i + \gamma \mathbf{C}_i + \psi_i$). Columns (1) and (2) use December payments to the STA as dependent variable. Columns (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 SEK 1,999. Covariates include age (linear), standardized labor income, and dummies for sex, being married, and paper or electronic reminder.

Turning to the sample with a debt exceeding SEK 2,000, we now have four different letters

to consider, thus enabling 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 on enforcement, and Letter 4, containing a combination of Letters 2 and 3. Column (1) in Table 3 presents 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 presents the treatment effect on the binary outcome indicating a debt to the EA in January 2019 (full specification with covariates).

The short-run effect is positive and statistically significant (first two columns). 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 at around 4.5 percentage points. However, no treatment effects are statistically different from each other in a pairwise comparison. Turning to the longer-run effects, we find lower treatment effects for all letters (see columns 3 and 4). The combined Letter 4 still has a higher effect compared to the other two, but the estimates now hover between 1 and 2 percentage points. It makes intuitive sense that the longer-run effects are lower since individuals who refrained from paying were 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: "With the 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 mirror the December payment outcome in column (2).

The abovementioned results support Hypotheses 4 and 5 (i.e., that both a preference nudge and simplified information increase tax payments). However, contrary to the pure nudge, the additional effects of the preference nudge are of a similar magnitude regardless of whether the tax debt in December 2018 was below or above SEK 2,000 (i.e., whether or not the taxpayer risked enforcement).

Table 3: Effect of different letter wordings, above SEK 2,000 cut-off

	Dependent variable:				
	Paid December		Paid December–February		With the 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
Mean of dep. var. (letter =1)	0.649	0.649	0.856	0.856	0.347

Note: Linear regressions applying Equation 4. Columns (1) and (2) focus only on December payments to the STA. Columns (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 otherwise =0. 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 2,000 and SEK 2,999. Covariates include age (linear), standardized labor income, and dummies for sex, married, and paper or electronic reminder.

5 Discussion and policy conclusions

We have studied how delinquent taxpayers can be motivated to pay their taxes due. Specifically, we have compared the effects of enforcement with those of nudges and information in Sweden.

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 of standard enforcement and nudges. The Swedish standard enforcement strategy provides a natural experiment that was used for identification. At a tax debt of SEK 2,000 (approx. EUR 200), there is a sharp cut-off in treatment that is not particularly well-known among Swedish taxpayers. Those 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), which carries out the actual enforcement, a transfer that is made in January. Smaller debts remain with the tax collecting agency (the Swedish Tax Agency – STA), which does not have any particular means of enforcement. Hence, around this cut-off in the Swedish legislation, we analyzed the effects of enforcement and the threat of enforcement using a regression discontinuity design. Contrary to the Belgian system studied

by DeNeve et al. (2021), there is no discretion in the Swedish system, but the enforcement rate below the cut-off is zero and one above. In order to compare the standard enforcement to milder nudges, we also conducted a randomized field experiment, using letters with different wordings. Our analyses provide several policy-relevant takeaways:

First, standard enforcement (and the threat of enforcement) is effective in increasing tax payments, but it is costly for both individuals and society as a whole.

Second, we find substantial effects of the pure nudge (i.e., from the inclusion of an extra sheet of paper that catches the taxpayer's attention). Without any interventions other than the standard STA reminder, almost 60 percent of delinquent taxpayers pay their taxes in December. In the comparable paper by Hallsworth et al. (2017), fewer than 35 percent in the control group paid their taxes after 23 days, and in the study by DeNeve et al. (2021), about 45 percent of those who received a payment reminder paid in their baseline group. Hence, our baseline compliance is comparably high, but we still find substantial effects of behavioral interventions; in the short run, they are actually of the same magnitude as the threat of enforcement. One might think that the higher the baseline compliance, the smaller the room for further compliance, especially from mild nudges. However, our estimated effects are of the same magnitude as found in the previous studies. One important reason may be what, for instance, DeNeve et al. (2021), Cranor et al. (2020), and Dusek et al. (2020) point out, namely salience and simple wordings. We find an effect of an about 7 percentage point higher likelihood of paying during the first month for those who do not risk enforcement simply by including a sheet of paper with the heading "Important message" briefly stating that taxes due have to be paid. The effect is almost as large as including the threat of enforcement (9 percentage points). Hence, simply making the reminder sufficiently salient makes it almost as effective as threatening expensive enforcement (although we cannot rule out the possibility that the threat of enforcement is also more salient than the simple reminder). Worth noting is that the effect of the pure nudge is only significant for those who do not risk enforcement.

Our findings on the effectiveness of an extra sheet of paper speak in favor of using inexpensive nudges in order to reduce the need for costly enforcement. The question is whether the result behind this policy prescription is specific for the Swedish context or if it also would carry over to other countries and contexts. At least, we have no reason to believe that the effects of traditional

enforcement are particularly weak in the Swedish context. Survey results (Nordblom, 2017) indicate that 4 out of 5 Swedes think that it is *very severe* to have your debt handed over to the Enforcement Agency, and the threat of ending up with them is a credible one (more than 99 % of the debts were indeed transferred to the EA upon non-payment).

In a setting with weaker institutions and a less credible threat, a corresponding threat may have a lesser effect. However, we should not see the result as an effect of this particular kind of letter, but rather as an indicator that extrinsic motivation matters – people react (rather strongly) to credible enforcement and to the threat of enforcement. Given the credibility of the threat in Sweden, the high relative effect of the non-informative nudge is even more striking. Hence, it is highly likely that the relative effects of nudges carry over (and are perhaps even stronger) to other contexts with weaker opportunities for traditional enforcement.

So far, our results have inspired the communication officers at the STA to reformulate their standard reminders. The reminders shown in Appendix E may seem confusing and hard to read for some taxpayers. Making them clearer, the STA expects to increase tax payments without having to use costly enforcement. The results that simplified wordings and increased salience increase compliance are likely to be generalizable and not dependent on the Swedish context. Those who are not attentive enough or do not fully understand the institutions could be made to comply to a larger extent by simple means.

Third and finally, while we found that the mere inclusion of a non-informative cover letter only increased payments from those who did not risk enforcement, we found that alluding to social norms had an impact on delinquent taxpayers, irrespective of the debt size. This is a result that is less certain to be generalizable. The literature is very divergent concerning the effects of social norm nudges: Hallsworth et al. (2017) find that the minority norm (which we also use) increases the likelihood of paying from about 35 to 40 percent, while DeNeve et al. (2021) even find a small negative effect among those who risk enforcement. It is likely that the reference to social norms and to what others do depends a great deal on both the overall compliance norms and people's expectations. For instance, when studying potential cheaters with regard to the TV license, Fellner et al. (2013) find that informing people about the overall share who pays the TV license only increases compliance when evasion is believed to be rare (when it is believed to be common, it had

a negative impact). Tax morale has been found to differ significantly between countries, which could be one explanation for the diverging results concerning moral nudges.

Hence, in spite of contextual factors, this study has added to the evidence suggesting that hard threats of enforcement could be replaced and/or complemented with mild and relatively inexpensive nudges, or at least that the enforcement toolkit should be augmented with salient messages at an early stage, which would reduce the number of debtors at risk of encountering hard enforcement. For many tax agencies around the world, effective and mild substitutes to "brute force" enforcement are thus very attractive. The results from this large-scale study show that mild nudges may in the short run be almost as effective in increasing tax payments among delinquent taxpayers as the threat of enforcement.

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Appendices

A Frequency plot

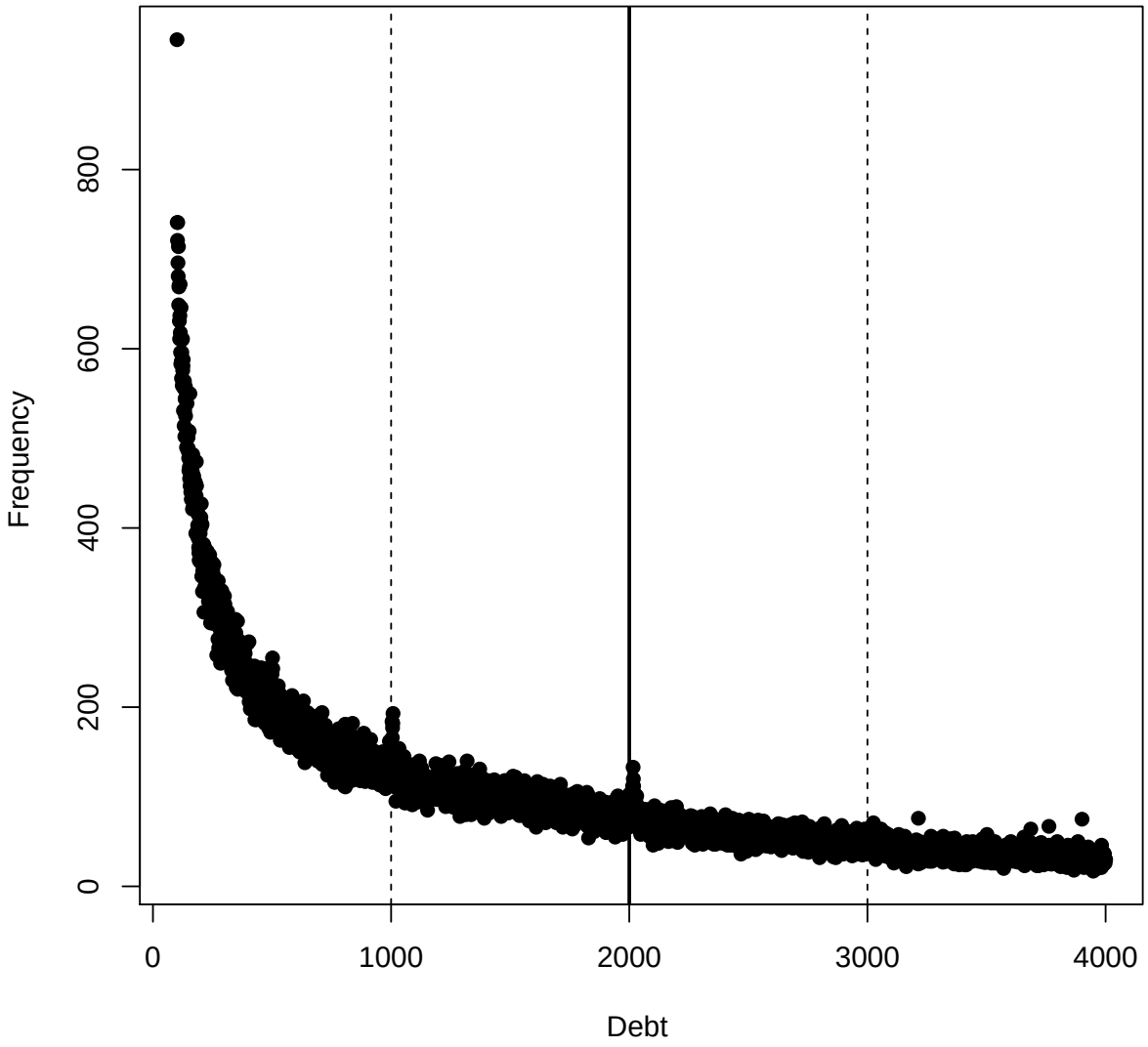
In Figure A1 below, we show a frequency plot for the December debts for all three years pooled (2016-2018). The frequency looks smooth in general but there seems to be a small over-representation of individuals around both SEK 1,000 and around SEK 2,000. When zooming in around SEK 1,000 and SEK 2,000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

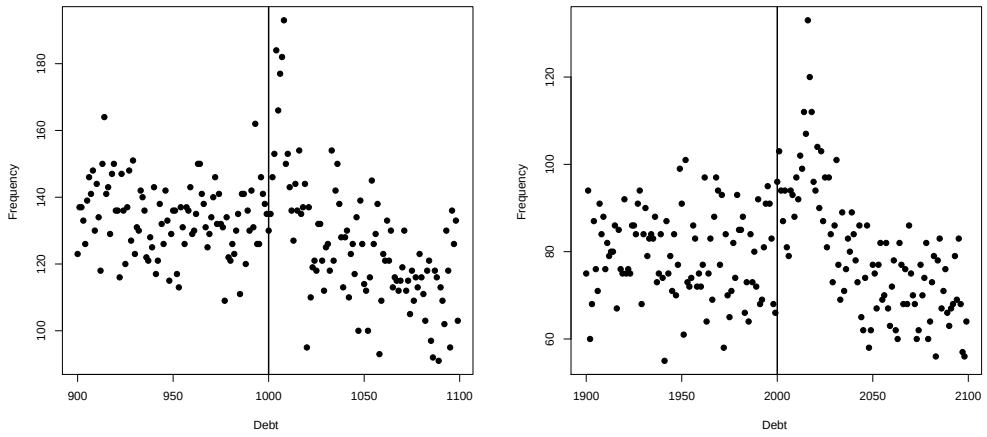
One solution to the problem is thus to only include tax payers that have not made prior payments before December. However, this reduces the sample size substantially. Our preferred solution to the problem will instead rely on the proposed donut strategy, which is necessary to employ at the SEK 2,000 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) (See Figure A4).

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



Notes: Frequency of observations at each unit of debt in December (Swedish SEK) over all years (2016–2018). Each point/bin represents observations per SEK.

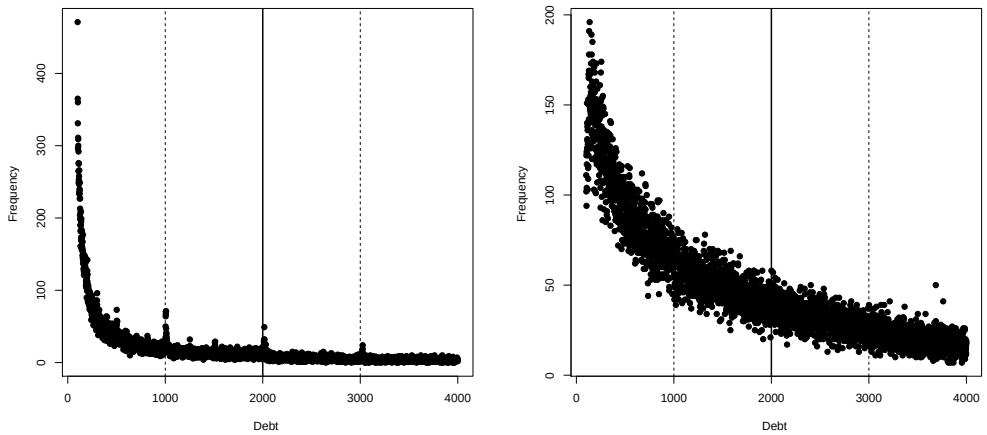
Figure A2: Frequency plots, zooming in on SEK 1,000 and 2,000 cut-offs



(a) Around SEK 1,000 debt (b) Around SEK 2,000 debt

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

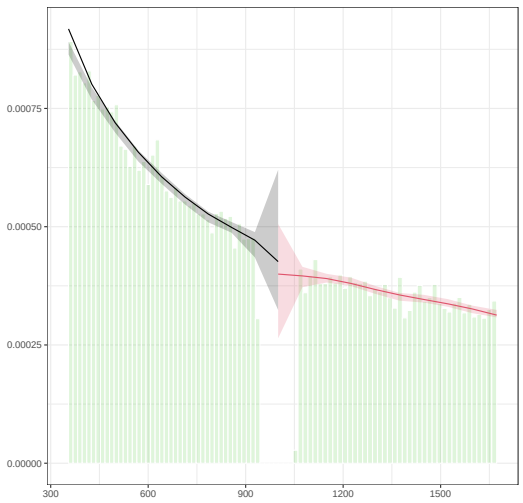
Figure A3: Frequency plot, 2016–2018, share who did or did not pay before December



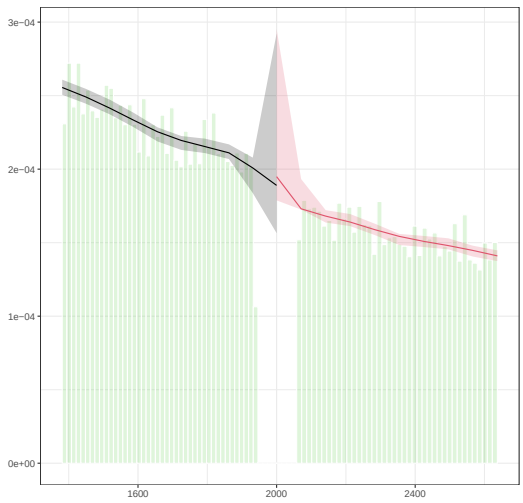
(a) Share who paid something before December (b) Non-tactical payers

Notes: Frequency of observations at each unit of debt in December (Swedish SEK) over all years (2016–2018). Each point/bin represents 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, i.e. the individuals in the 2016 sample paid 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.

Figure A4: Density tests for the donut samples used



(a) SEK 1,000 cut-off (2018 data)



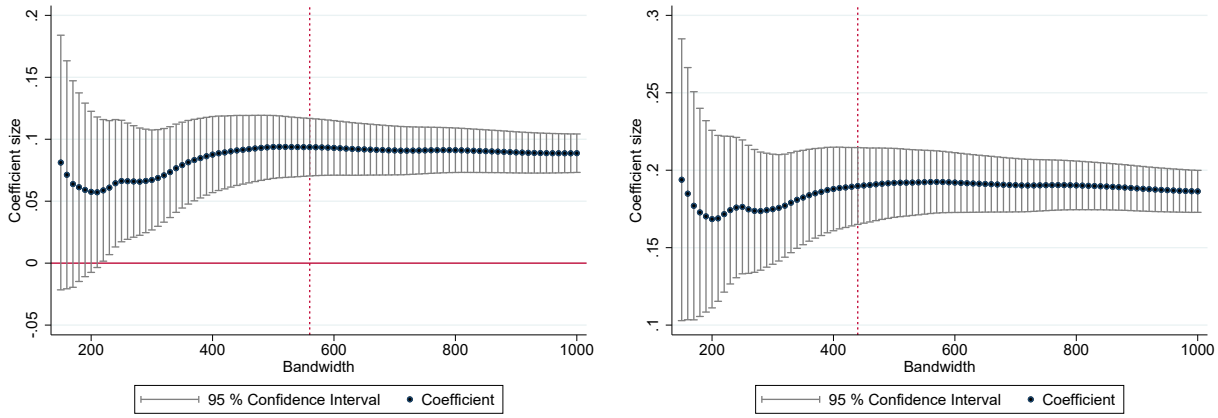
(b) SEK 2,000 cut-off (pooled 2016–2017 data)

(c) SEK 3,000 cut-off (2018 data)

Notes: Density tests using local-polynomial density estimators. Implemented using the *RDdensity* command in R with default options. In (a) and (c) we focus on the SEK 1,000 and 3,000 cut-offs using the 2018 (experiment year) data. In (b) we consider the SEK 2,000 cut-off using the pooled 2016–2017 data. Estimations make use of the donut samples.

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

Figure B1: Effects of enforcement: Payment in December (a) and December through February (b), with estimated effects depending on bandwidth

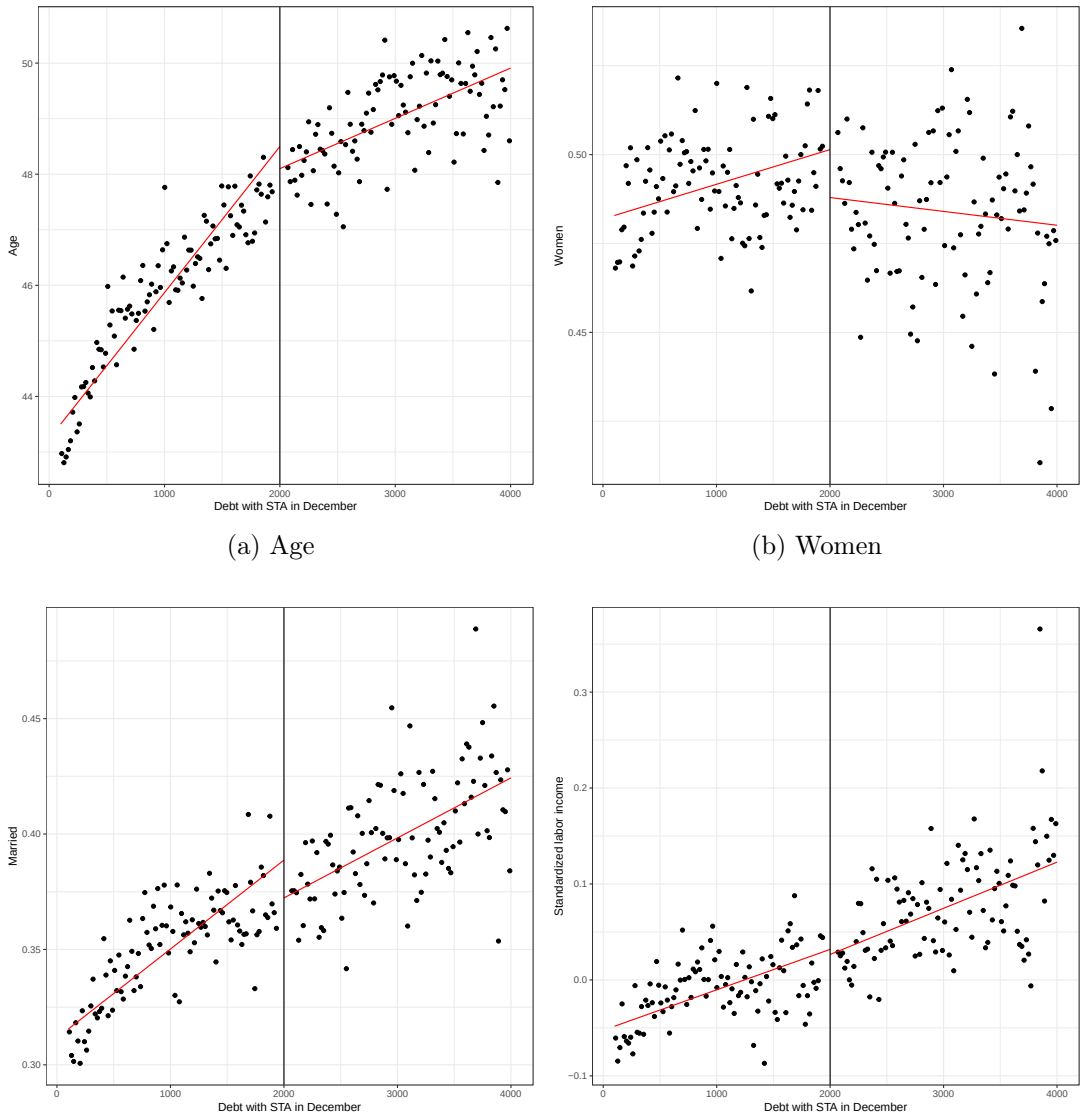


(a) Payment in December to the STA

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

Notes: Figures show estimated point estimates from local linear regressions with a triangular kernel. The outcome is payments in December to the STA (a) and payments December-February to the STA or the EA (b), and the running variable is debt to STA in December. We let the bandwidth vary from 200 SEK with 10 SEK intervals up to 1000 SEK. 95 % confidence interval included. Dashed line represent optimal bandwidth calculated using a mean square error approach. Data is pooled for 2016-2017, and includes a donut, as described in the main text.

Figure B2: 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

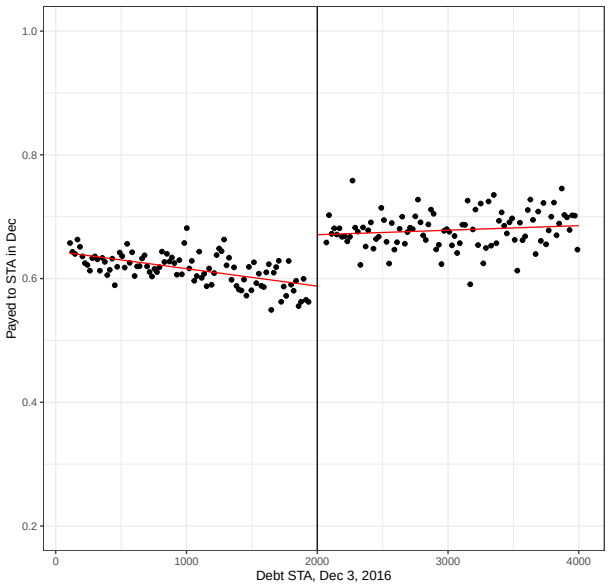
Notes: Pooled data of all taxpayers with debt between SEK 100 and SEK 4,000 at the STA in December 2016 or 2017. We further use a donut type structure, where we drop all individuals with December debt larger than SEK 1,940 but smaller than SEK 2,060. Running variable along the x-axis represent debt at the STA in December. Figure B2a analyze age, Figure B2b the share of women, Figure B2c the share of married and Figure B2d standardized labor income.

Table B1: Covariate balance, SEK 2,000 cut-off, local linear estimations

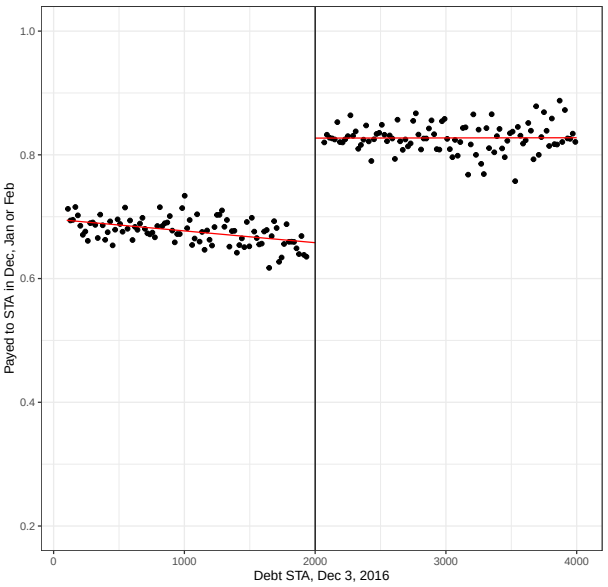
	Bandwidths:			
VARIABLE:	Optimal	H=600	H=400	H=200
	(1)	(2)	(3)	(4)
Age	0.23	0.21	-0.11	0.38
	(0.34)	(0.37)	(0.51)	(1.1)
Bandwidth	668	600	400	200
Observations	59,131	52,162	32,392	13,372
Married	-0.005	-0.0029	-0.003	0.023
	(0.014)	(0.011)	(0.016)	(0.033)
Bandwidth	467	600	400	200
Observations	38,946	52,162	32,392	13,372
Women	-0.007	-0.0067	-1.8e-05	0.0073
	(0.011)	(0.012)	(0.016)	(0.034)
Bandwidth	618	600	400	200
Observations	54,062	52,162	32,392	13,372
Std. Labor Income	0.0051	0.0022	0.0026	-0.024
	(0.021)	(0.02)	(0.028)	(0.059)
Bandwidth	558	600	400	200
Observations	48,103	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.

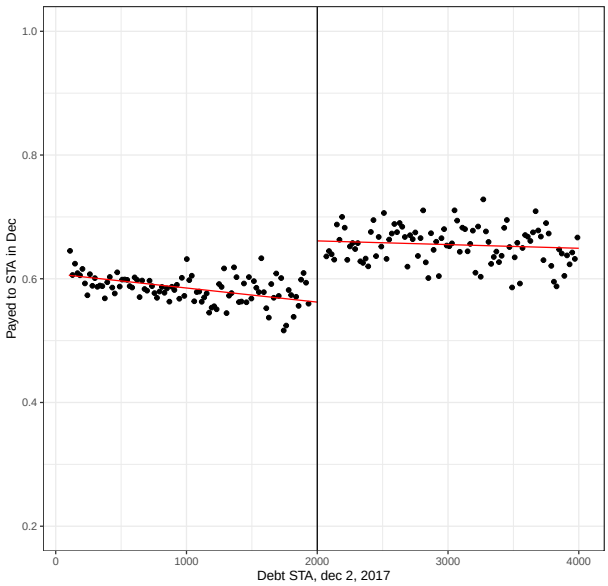
Figure B3: Payment in December or December through February, depending on debt in December with the STA, separate results for 2016 and 2017



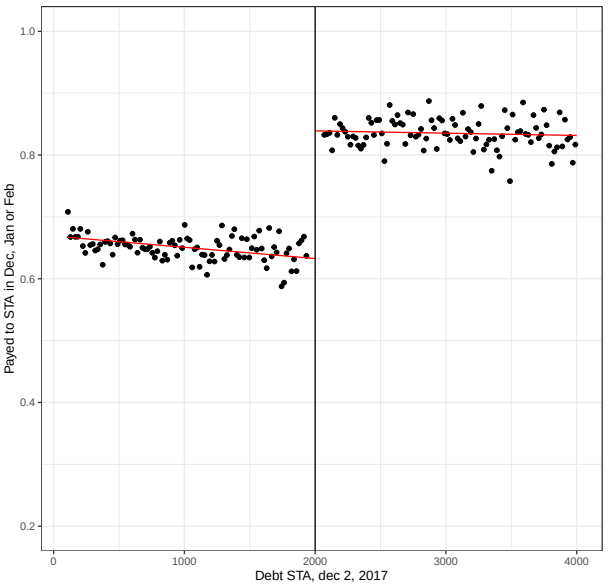
(a) payment in December to the STA, 2016



(b) payment in December, January or February to the STA or EA, 2016



(c) payment in December to the STA, 2017

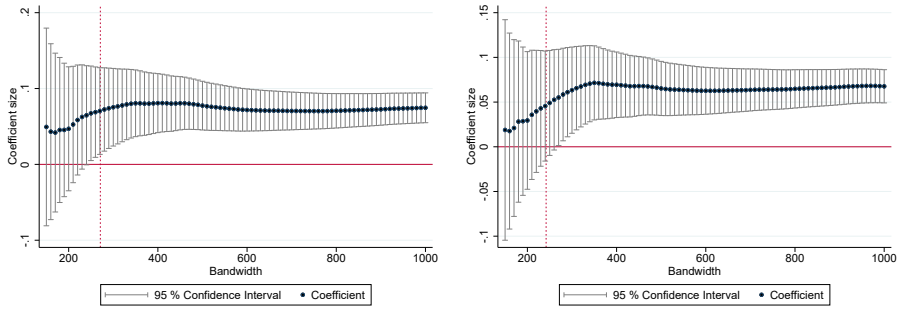


(d) payment in December, January or February to the STA or EA, 2017

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.

Figure C1: Effects of pure nudge at 1,000 cut-off: Payment in December (a) and December through February (b), with estimated effects depending on bandwidth

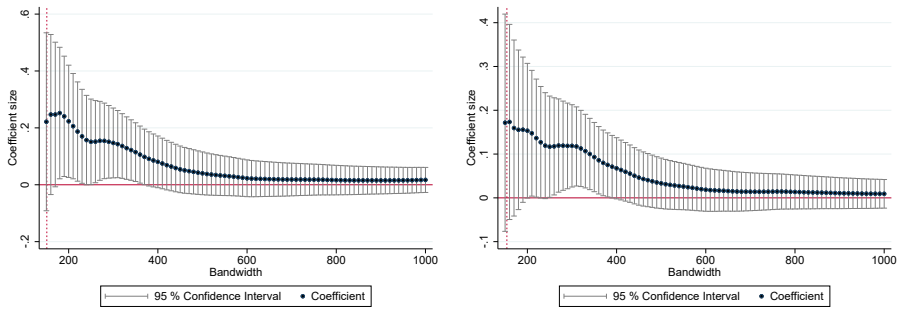


(a) Payment in December to the STA

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

Notes: Figures show estimated point estimates from local linear regressions with a triangular kernel. The outcome is payments in December to the STA (a) and payments December-February to the STA or the EA (b), and the running variable is debt to STA in December. We let the bandwidth vary from 150 SEK with 10 SEK intervals up to 1,000 SEK. 95 % confidence interval included. Dashed line represent optimal bandwidth calculated using a mean square error approach. Data is from 2018, and includes a donut, as described in the main text.

Figure C2: Effects of pure nudge at SEK 3,000 cut-off: Payment in December (a) and December through February (b), with estimated effects depending on bandwidth

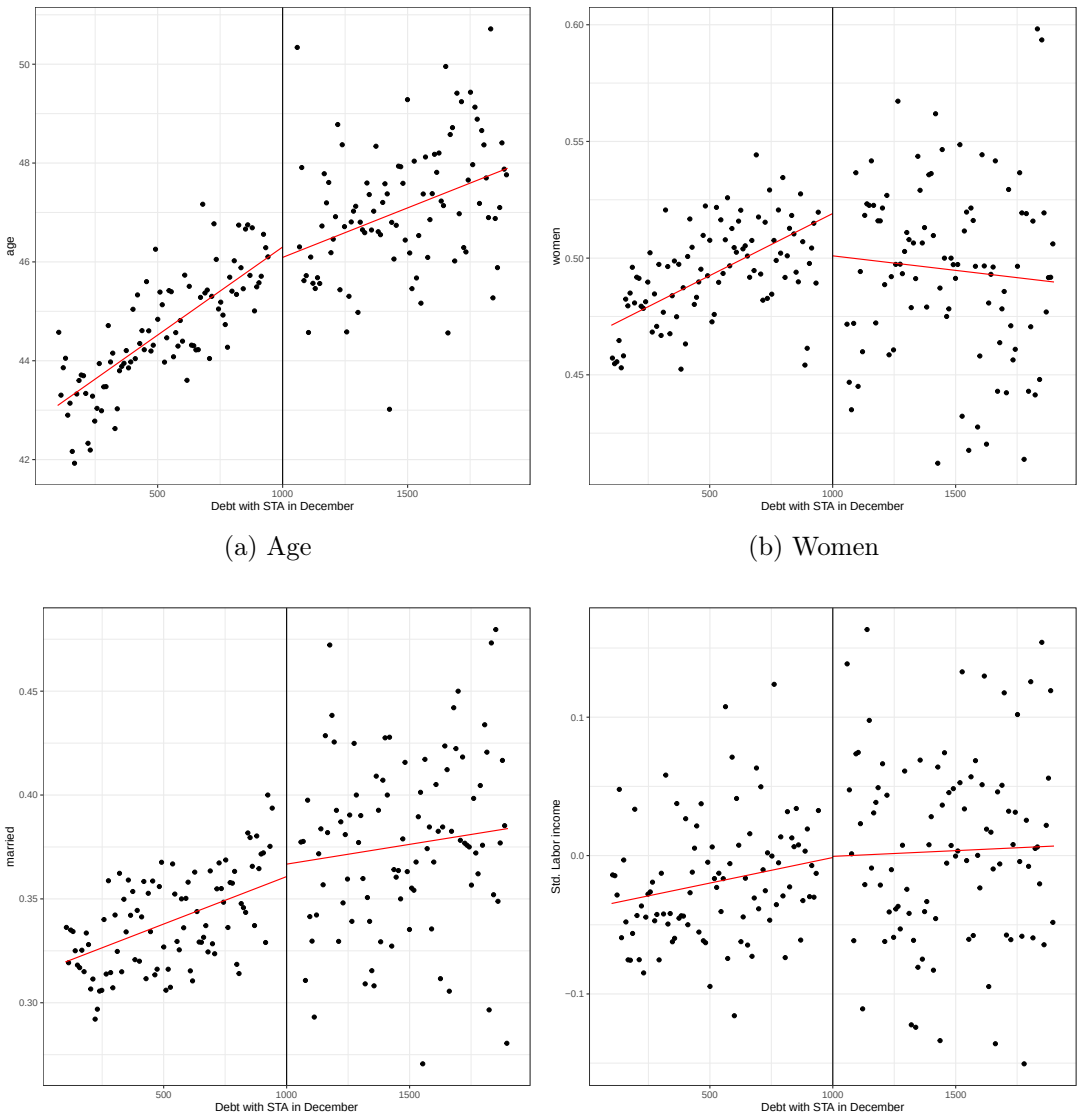


(a) Payment in December to the STA

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

Notes: Figures show estimated point estimates from local linear regressions with a triangular kernel. See Figure C1 for more information.

Figure C3: Covariate balance tests for the SEK 1,000 cut-off; 2018 sample



(a) Age

(b) Women

(c) Married

(d) Labor Income

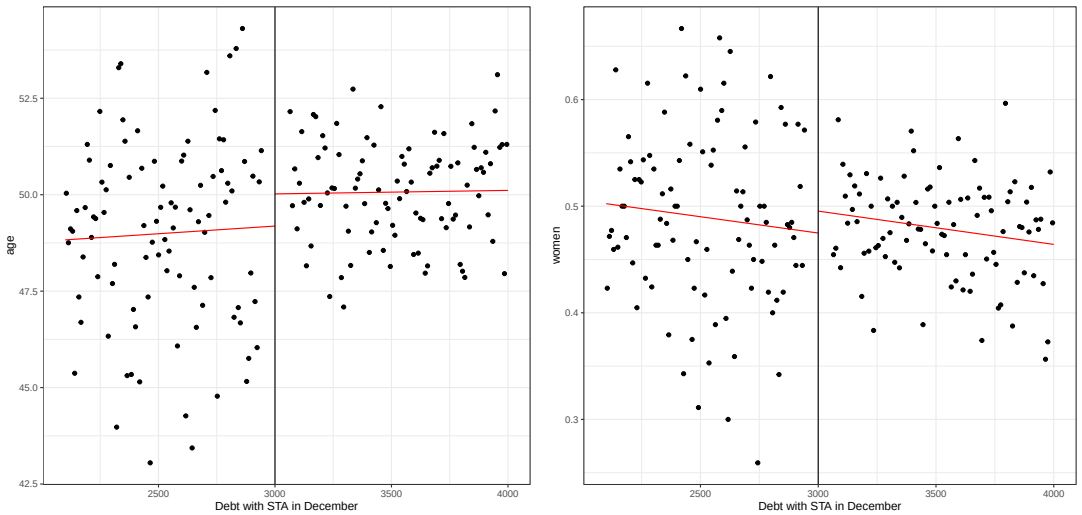
Notes: Data of all taxpayers with $\leq$ SEK 1,900 in debt (and debt $\geq$ SEK 100) at the STA in December 2018. We further use a donut type structure, where we drop all individuals with December debt larger than SEK 940 but smaller than SEK 1,060. Running variable along the x-axis represent debt at the STA in December.

Table C1: Covariate balance, SEK 1,000 cut-off, local linear estimates

	Bandwidths:			
VARIABLE:	Optimal	H=600	H=400	H=200
	(1)	(2)	(3)	(4)
Age	-0.33	-0.12	-0.31	0.93
	(0.94)	(0.49)	(0.68)	(1.5)
Bandwidth	290	600	400	200
Observations	16,812	44,255	25,756	10,066
Married	-0.01	-0.0048	-0.024	-0.078*
	(0.076)	(0.014)	(0.02)	(0.042)
Bandwidth	140	600	400	200
Observations	5,570	44,255	25,756	10,066
Women	-0.056	-0.012	-0.021	-0.078*
	(0.036)	(0.015)	(0.021)	(0.044)
Bandwidth	235	600	400	200
Observations	12,711	44,255	25,756	10,066
Std. Labor Income	0.043	0.035	0.07*	0.044
	(0.062)	(0.027)	(0.036)	(0.075)
Bandwidth	235	600	400	200
Observations	12,711	44,255	25,756	10,066

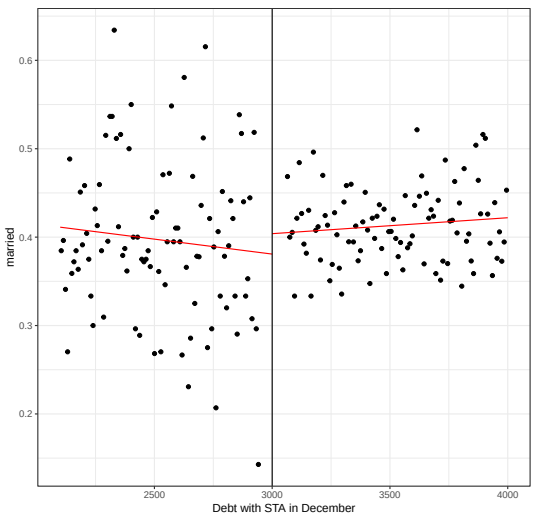
Note: $*p<0.1$; $**p<0.05$; $***p<0.01$. Standard errors calculated using nearest neighbor approach. Optimal bandwidth in column (1) is calculated using the mean squared error approach (one common bandwidth). Estimates done using rdrobust package: with local linear polynomial and triangular kernel. We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

Figure C4: Covariate balance tests for the SEK 3,000 cut-off; 2018 sample

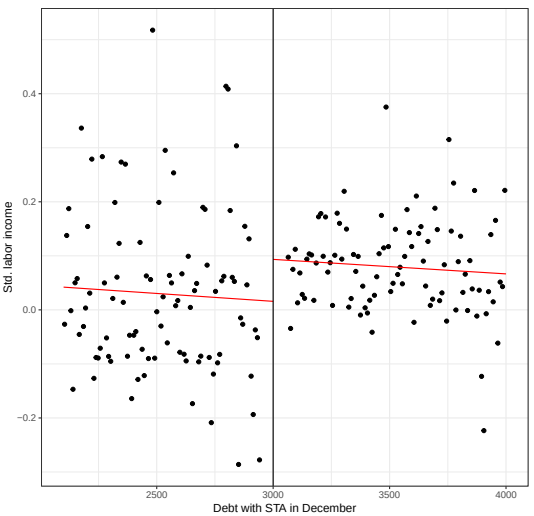


(a) Age

(b) Women



(c) Married



(d) Labor Income

Notes: Data of all taxpayers with ≥ SEK 2,100 in debt (and ≤ SEK 4,000) 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: Covariate balance, SEK 3,000 cut-off, local linear estimates

	Bandwidths:			
VARIABLE:	Optimal	H=600	H=400	H=200
	(1)	(2)	(3)	(4)
Age	3.9	1	2.1	4
	(3.6)	(1.1)	(1.5)	(3.3)
Bandwidth	189	600	400	200
Observations	2,420	9,772	6,288	2,587
Married	0.15	0.035	0.045	0.15*
	(0.093)	(0.032)	(0.044)	(0.09)
Bandwidth	196	600	400	200
Observations	2,538	9,772	6,288	2,587
Women	-0.021	0.016	0.0087	-0.071
	(0.074)	(0.033)	(0.046)	(0.1)
Bandwidth	255	600	400	200
Observations	3,642	9,772	6,288	2,587
Std. Labor Income	0.44**	0.064	0.056	0.27**
	(0.22)	(0.051)	(0.067)	(0.14)
Bandwidth	148	600	400	200
Observations	1,690	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.

Table C3: Descriptives for covariates at SEK 1,000 and 3,000 cut-off

	Around SEK 1,000		Around SEK 3,000	
	Mean	Std.Dev	Mean	Std.Dev
	(1)	(2)	(3)	(4)
Age	45.9	16.5	49.8	15.6
Women	0.50	0.50	0.50	0.50
Married	0.36	0.48	0.41	0.49
Labor income	295,649	255,185	304,040	184,051
Observations	15,441	15,441	1,753	1,753

Note: Mean and standard deviations for sample covariates (age, women, married and labor income) around the SEK 1,000 and 3,000 cut-offs for the 2018 sample. The SEK 1,000 sample is restricted to those with debt in December$\leq$1271 & $\geq$729 (based on optimal bandwidth calculations), including a donut of 60 SEK above and under the cut-off. The SEK 3,000 cut-off is restricted to those with debt in December$\leq$3151 & $\geq$2849 (based on optimal bandwidth calculations), including a donut of 60 SEK above and under the cut-off.

Table C4: Interaction effects for different covariates at SEK 1,000 cut-off

	Dependent variable: December payment				
	(1)	(2)	(3)	(4)	(5)
Letter 1	0.086***	0.084**	0.088***	0.084***	0.080***
	(0.025)	(0.035)	(0.027)	(0.026)	(0.025)
Debt in Dec	0.00003	0.00003	0.00004	0.00002	0.00004
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Letter1*Debt in Dec	-0.0002	-0.0002	-0.0002	-0.0002	-0.0002
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Age		0.002***			
		(0.0003)			
Letter 1*Age		0.0001			
		(0.001)			
Women			0.033***		
			(0.009)		
Letter 1*Women			-0.002		
			(0.017)		
Married				0.135***	
				(0.010)	
Letter 1*Married				0.018	
				(0.017)	
Std. labor income					0.042**
					(0.020)
Letter 1*Std. labor income					0.033
					(0.025)
Constant	0.582***	0.504***	0.566***	0.531***	0.583***
	(0.014)	(0.019)	(0.015)	(0.014)	(0.014)
Observations	15,441	15,441	15,441	15,441	15,441

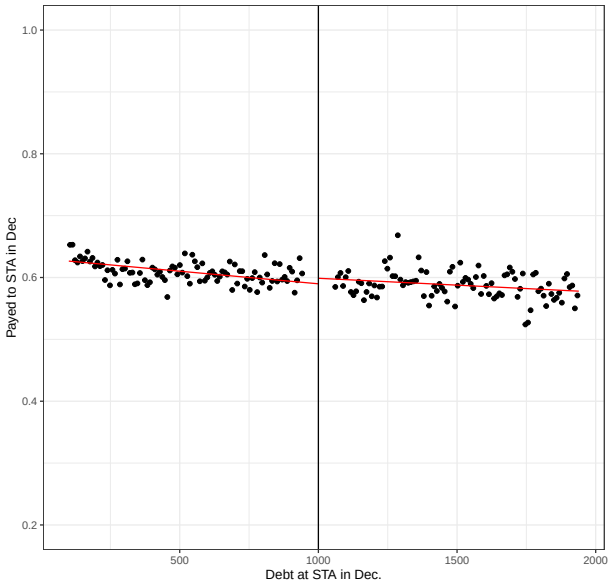
Note: ∗p<0.1; ∗∗p<0.05; ∗ ∗ ∗p<0.01. Linear regression models. 2018 sample restricted to those with debt in December≤1271 & ≥729 (based on optimal bandwidth calculations), including a donut of 60 SEK above and under the cut-off. Column (1) estimates Payed in Dec = Letter 1 + Debt in Dec + Letter1*Debt in Dec, where *Payed in Dec* equals 1 for paying anything to STA in December, *Letter 1* =1 for all with debt in Dec ≥1000; =0 for all with debt in Dec <1000, and *Debt in Dec* equals debt in December -1000, i.e the threshold is normalized to 0. Column (2)–(5) adds interaction terms with covariates.

Table C5: Interaction effects for different covariates at SEK 3,000 cut-off

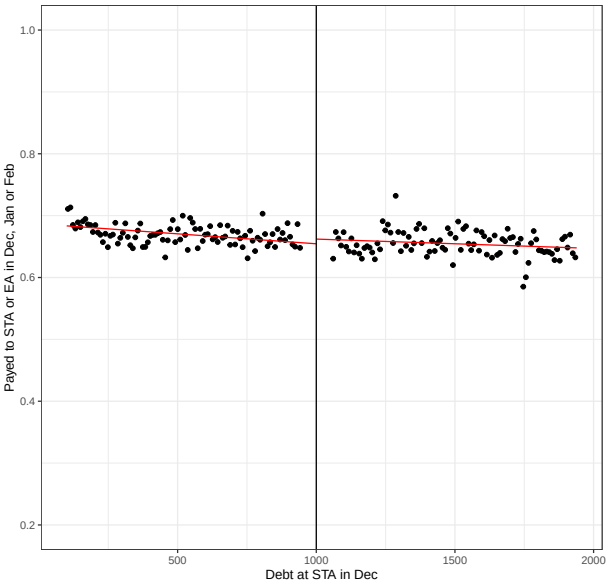
	Dependent variable: December payment				
	(1)	(2)	(3)	(4)	(5)
Letter 1	-0.268**	-0.228	-0.301**	-0.231*	-0.243*
	(0.128)	(0.154)	(0.132)	(0.127)	(0.125)
Debt in Dec	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.0005)	(0.0005)	(0.0005)	(0.0005)	(0.0005)
Letter1*Debt in Dec	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Age		0.001			
		(0.001)			
Letter 1*Age		-0.001			
		(0.002)			
Women			0.008		
			(0.025)		
Letter 1*Women			0.061		
			(0.062)		
Married				0.192***	
				(0.024)	
Letter 1*Married				0.005	
				(0.061)	
Std. labor income					0.130***
					(0.016)
Letter 1*Std. labor income					0.040
					(0.037)
Constant	0.729***	0.691***	0.726***	0.649***	0.720***
	(0.052)	(0.065)	(0.053)	(0.052)	(0.051)
Observations	1,753	1,753	1,753	1,753	1,753

Note: ∗p<0.1; ∗∗p<0.05; ∗ ∗ ∗p<0.01. Linear regression models. 2018 sample restricted to those with debt in December≤3151 & ≥2849 (based on optimal bandwidth calculations), including a donut of 60 SEK above and under the cut-off. Column (1) estimates Payed in Dec = Letter 1 + Debt in Dec + Letter1*Debt in Dec, where *Payed in Dec* equals 1 for paying anything to the STA in December, *Letter 1* =1 for all with debt in Dec <3,000; =0 for all with debt in Dec ≥3,000, and *Debt in Dec* equals debt in December -3,000, i.e the threshold is normalized to 0. Column (2)–(5) adds interaction terms with covariates.

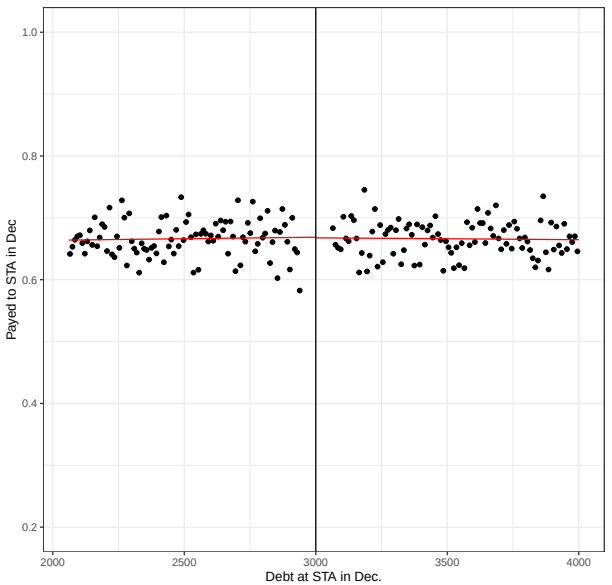
Figure C5: Placebo Figures: Effects at SEK 1,000, and 3,000 cut-off using 2016–2017 data (no experiment these years)



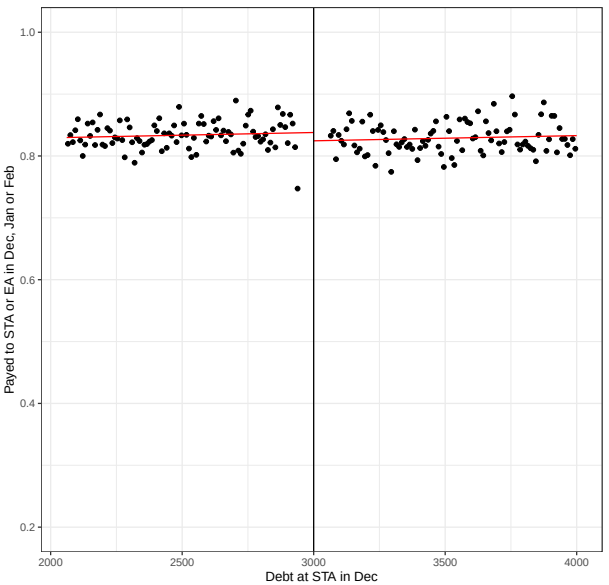
(a) Payment in December to the STA



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



(c) Payment in December to the STA



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

Notes: RD plots with a global linear polynomial (uniform kernel). The number of bins are pre-specified at 100 bins on each side of the cut-off. 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 2016 or 2017 between SEK 100 and SEK 1,900. Individuals with debt 'x' in the interval ($940 \leq x \leq 1{,}060$) 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 2016 or 2017 between SEK 2,100 and SEK 4,000. Individuals with debt 'x' in the interval ($2{,}940 \leq x \leq 3{,}060$) are dropped.

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	0.864	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

SKV 4814 13 sv 00 06

Information

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

skatt

överskjutande ingående moms

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.

skattekonto på Internet.

ordinarie skatt ska betalas och förfallodagen

ännu inte har inträffat. Utbetalning sker inte heller om det finns

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. **basräntan** 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**.

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

Information

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

skatt

överskjutande ingående moms

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.

skattekonto på Internet.

ordinarie skatt ska betalas och förfallodagen

ännu inte har inträffat. Utbetalning sker inte heller om det finns

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. **basräntan** 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**.

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
Box 500
851 07 SUNDSVALL

Telefon
0771-567 567

E-postadress
norrland@skatteverket.se

Information

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.

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

Important information

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."

4860 01 sv 00 04

SKV

Postadress
Kontor 0300
171 94 SOLNA

Skatteupplysningen
0771-567 567

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