You've got mail: A randomised field experiment on tax evasion*

Kristina Bott Alexander W. Cappelen Erik Ø. Sørensen
Bertil Tungodden

July 24 2014, preliminary version
Discussion Paper 26/2014
Department of Economics
Norwegian School of Economics

Abstract

The present paper reports the results from a randomized field experiment conducted with 18 000 taxpayers who were likely to have misreported their foreign income. Shortly after sending the pre-populated tax returns for 2012, the tax administration in Norway mailed a letter to these tax subjects with information about how to report foreign income. We find that including a moral appeal in this letter almost doubled the average foreign income reported compared to a base letter without such an appeal. The effect of a moral appeal is similar in size to the effect of including a sentence that increases the perceived probability of detection. However, moral appeals and detection probability influence tax compliance in fundamentally different ways. The moral appeals mainly work on the intensive margin, by increasing the amount reported of those who report any foreign income. The probability of detection, on the other hand, mainly works on the extensive margin, by increasing the share of tax subjects who report any foreign income.

*We would like to thank Nadja Dwenger, Uri Gneezy, David Laibson, John List, László Sándor, and Emmanuel Saez for extremely valuable comments and suggestions; Ingvild Holler Deisz, Paul-Gunnar Larsen, Sissel Madsen, Gitte Mårtensen, and Christine Osen Tefre at Skatt Vest for their assistance in implementing the experiment; and Trine Sivertsen Sommerlade at Bergen Brannvesen and Fredrik Naumann for pictures used in the experimental materials. All authors: The Choice Lab, Norwegian School of Economics.

1 Introduction

A key challenge in all societies with a large tax financed public sector, is to limit tax evasion. This challenge is particularly difficult to handle when the tax administrations have to rely on information that is self-reported by the taxpayer. In the absence of effective control and enforcement systems, the taxpayer has an economic incentive to under report income. As demonstrated in the seminal paper by Allingham and Sandmo, taxpayers who maximize their income after taxes and penalties, will under report their income as long as the the expected gain from evasion is larger than the expected cost of being detected (Allingham and Sandmo, 1972). Clearly, tax evasion could be reduced by increasing the probability of detection, as demonstrated in the study by Kleven, Knudsen, Kreiner, Pedersen, and Saez (2011). However, increasing the detection probability is often costly, and an important policy question is therefore whether there are other ways to reduce tax evasion. In particular, whether appeals to the moral motivation of taxpayers could increase compliance.

To study the role of moral motivation in tax compliance, we conducted a field experiment together with the Norwegian tax administration on a unique sample of taxpayers. Our sample consists of taxpayers who in the previous tax year had income in a foreign country and who were likely to have misreported this income. Information about foreign income is not included in the pre-populated tax return and the taxpayers therefore have to self-report this information. Historically, it has been difficult for the tax authorities to verify the self-reported information because they have not had access to third-party reports from foreign countries. In recent years, financial institutions and tax administrations have increasingly exchanged information, in Norway through so called AKU reports.[1] The Norwegian tax administration can therefore compare the self-reported information from the taxpayers with the AKU reports they receive from abroad. This development is, however, not well known to the public and the tax administration does not inform the taxpayers if the receive reports about them. Approximately half the taxpayers for whom the tax administration received reports, had substantially lower self-reported foreign income on domestic tax statements than indicated in the AKU-reports. This deviation could have many explanations, the most likely being that these taxpayers have under reported their foreign income. We limited the sample to those 18 000 taxpayers who had a substantial negative deviation between self-reported foreign income and third party reports for the income year 2011.

The intervention consisted of an information letter sent by the tax administration shortly before taxpayers were to submit their tax return for the fiscal year

[1] *AKU report* is the abbreviation for the Norwegian term *Automatiske Kontrolloppgaver Utland*, translating to *Automatic control reports from abroad.*

2012. The base letter contained information about why and how to report foreign income income and wealth. We were mainly interested in the effect of adding two types of moral appeals to this base letter. One of them, in form of two sentences added to the base letter, reminded of most tax subjects in Norway reporting their income correctly and completely. Increasing the taxpayer's perception about other taxpayers' tax compliance, we expected this treatment to increase self-declarations of foreign income. The second type of moral appeal reminded the taxpayers that taxes are used to finance important public goods and services. Emphasising the benefits of taxation should increase the salience of taxation, and again we would expect tax compliance to increase. Lastly, we designed a treatment letter that included a information aimed at increasing the taxpayers' subjective probability of detection.

We study the effect of our treatment manipulations on self-reported foreign income in the subsequent tax return.[2] Since the subjects were randomly allocated to treatments, any systematic difference in the self-reported foreign income must be due to the differences in our treatments.

Our main result is that moral appeals have a large and significant effect on self-reported foreign income. The average self-reported amount by those that received one of the moral treatments is almost double the amount reported by those who received the base letter. In particular, the treatment that reminded taxpayers of most taxpayers reporting their income correctly and completely has a large effect on compliance. The size of the average self-reported amount in this group compares very closely to the average self-reported amounts in the detection treatment. But moral appeals and detection probability affect self-reported income in very different ways. While detection mainly increases the number of people who report foreign income, i.e. the extensive margin, moral appeal mainly affect the amount reported, i.e. the intensive margin.

In order to shed light on what explains the effect of moral appeals, we conducted a survey experiment with subjects who had foreign income in previous years, but who had not taken part of in the field experiment. These taxpayers received one of the letters sent out during the field experiment, with the instruction to read it carefully, and answer a questionnaire subsequently. The results from this survey experiment suggest that moral appeal did not affect subjects perception of the probability of being detected, but indeed strengthened the moral motivation to comply with the tax rules.

Our results contribute to the growing literature in behavioural economics

[2]At the moment we are in the process of collecting information about AKU reports for the tax year 2012. This will give us more precise information about how much foreign income the taxpayers in our sample should have reported, and we compare how much of it they did report. In addition we will receive information about foreign income reported on domestic tax statements for the income year 2013. This will give us an indication of the long term effects of our intervention.

studying the role of moral motivation. These studies, mostly relying on lab experiments, have documented that moral concerns matter for people when they make economic decision (Andreoni and Miller, 2002; Charness and Rabin, 2002; Cappelen, Drange Hole, Sørensen, and Tungodden, 2007; Cappelen, Moene, Sørensen, and Tungodden, 2013b; Cappelen, Konow, Sørensen, and Tungodden, 2013a; Engelmann and Strobel, 2004; Fehr, Naef, and Schmidt, 2006; Fisman, Kariv, and Markovits, 2007; Konow, 2000). Our results show that moral considerations matter beyond the lab, even in a high stake environment.

More specifically, our study contributes to the understanding of what motivates tax compliance in situations in which tax subjects have to self-report their income. This way it further complements earlier field experiments on tax compliance (Schwartz and Orleans, 1967; Scholz and Pinney, 1995; Coleman, 1996; Blumenthal, Christian, and Slemrod, 2001; Coleman, 2007; Kleven et al., 2011; Hallsworth, List, Metcalf, and Vlaev, 2012; **?**): Evidence from these experiments have been mixed and for the most part they have not been able to document that moral considerations play a role when deciding to evade taxes. Our study not only provides strong evidence of moral motivation being an important factor in explaining tax compliance, it also demonstrates that deterrence strategies and moral appeals have different strengths and weaknesses. The strength of deterrence strategies is that they motivate most taxpayers, since most taxpayers presumably are concerned with their economic self- interest. However, the effect of deterrence is limited to the income they believe that the tax administration is able to detect. Moral appeals on the other hand, only affect the behavior of those who are morally motivated. The effect of moral appeals is, however, not limited to the income the taxpayer believes the tax administration might have information about.

The structure of the paper is as follows: Section 2 presents the setting for the field experiment and the sample, while Section 3 provides details of the experimental design. Section 4 discuss the results, while Section 5 provides some concluding remarks.

2 Background and sample

In this section we first present how foreign income is reported in Norway. We then describe the sample of taxpayers in our study.

2.1 Tax reporting in Norway

In April every year, the Norwegian tax administration (NTA) sends pre- populated tax returns to all Norwegian tax subject for the previous fiscal year. The pre-populated tax return constitutes a preliminary tax statement, and the taxpayer is

required to to add missing information and correct potential mistakes before the end of April. If the taxpayer believes the information in the pre-populated tax return is correct and complete, she is not required to conduct any changes.

When filing their taxes, taxpayers are reminded to declare all income earned in the previous fiscal year, both foreign and domestic. The pre-populated tax return does not, however, include information about foreign income and this information must therefore be self-reported by the tax subjects. Historically, it has been difficult for the tax administration to control if taxpayers correctly reported foreign income because there has been limited exchange of third party information across jurisdictions. Over the last few years, however, tax administrations have increasingly provided information about the income and wealth that tax residents of other countries earn or hold in their countries. As part of this development, the Norwegian tax administration receives so called *Automatic country reports from abroad*, or AKU reports (Automatiske Kontrolloppgaver Utland), from other tax administrations. The AKU reports contain information about Norwegian tax residents' incomes (wage, pension and capital income) and wealth in the respective countries.[3] Since the NTA receives these reports after the filing season, they cannot include information obtained from these reports in the pre-populated tax returns. The NTA can at a later point, however, compare whether this foreign income was self-reported by the tax subjects.

In 2010, the total self-reported foreign income of Norwegian tax residents was around fifty percent of the foreign income reported on the AKU reports. Since the AKU reports only provide third-party reported income in a limited number of countries, it is clear that considerable amounts of foreign income are being under reported. This may reflect that information exchanges between tax administrations are little known to the tax subjects.

2.2 The sample

The key feature of our sample is that taxpayers had foreign income or wealth in the income year 2011, and that a comparison of the AKU report with the domestic tax return revealed that the taxpayers failed to self-report foreign income correctly.

For the fiscal year 2011, the NTA received AKU reports for around 40 000 individuals. 17% of those AKU reports consisted of information on wage income, 28% on financial income, and 58% on pension incomes. Taxpayers may also commit *honest mistakes*, which is why we limit this sample to individuals who misreported foreign income between 2 000 NOK and 200 000 NOK the income year 2011.

[3]The exchange of AKU reports is a result of bi-negotiations between national tax authorities and not all countries are exchanging information with Norway.

Table 1 and Table 2 provide comparisons of our sample of 18 000 individuals, with the remaining 22 000 tax subjects who reported foreign income either correctly, or up to 2 000 NOK. In the last column, we add information from a representative sample of the Norwegian population. From Table 1 we observe that the share of non-Norwegian citizens is relatively high in our sample. Though these individuals are not Norwegian citizens, they are still Norwegian tax residents. Thus, they are required by law to report any income or wealth that they may have in another country to the Norwegian tax administration. Largely however, these individuals are from citizens of other Nordic countries. The tax subjects with a foreign citizenship also tend to be older and are slightly more likely to be male compared to the general population in Norway.

From Table 2 we observe that tax subjects with foreign income have significantly more wealth than the general population, while there is only a small difference in income.

[Table 1 about here.]

[Table 2 about here.]

Comparing our sample to the remaining group of tax subjects for whom the tax administration received AKU reports, we observe one particular differences, namely, that our sample is older and receives a higher income. Other than that, both groups are very similar in terms of observable background variables, such as gender and age.

3 Experimental design

We allocated the sample of taxpayers randomly into nine groups, where each of the groups contained on average about 2 000 tax subjects. One group thereby served as the control group that did not receive any letter. The other groups can be classified into a base treatment (two groups), a moral treatment (four groups), and a detection treatment (one group).[4]. As expected, the randomisation produced a balanced sample across treatments on all background variables (please see Table 3).

[Table 3 about here.]

[4]One group was assigned to a practical policy experiment that tested the usefulness of a web-link providing further information about how to report foreign income. Since this specific treatment may initiate a number of behavioral mechanisms, it is not informative for our study and we therefore only report the findings in the appendix

In week 14 all subjects in our sample received their pre-populated tax return statements. During the first three days only one week later, during week 15, the Norwegian tax administration sent the treatment letters. This meant that the subjects received the letters only shortly before they had to hand in the completed tax returns, in week 18.

Any letter from the tax authorities may cause a change in behavior, due to a number of reasons, including a fear for detection, increased moral salience, or better knowledge about how to proceed with the reporting. To enable us to study more precisely the underlying behavioural mechanisms, we therefore included a treatment using a *base letter* that only contained general information about how to report foreign income abroad. The effect of this base letter is then compared to letters adding one, maximally two short sentences with a moral appeal or information aimed at updating their perceived detection probability.

The base letter consists of three paragraphs, and the treatment letters only changed or added maximally two sentences within the first paragraph of the letter. In addition, two treatment letters were sent out with an attachment, to illustrate the public goods and services financed by tax revenues.

3.1 Base treatment

With the base treatment, tax subjects received a letter containing information about why foreign income is subject to income taxation in Norway, followed by some very general information on where and when to submit the tax returns. The letter thereby consists of three paragraphs, the first explaining why the reader receives this letter. It plays on the fact that the Norwegian economy is becoming more internationalized, and that an increasing number of taxpayers receives income from abroad, and have assets abroad. The taxpayer was sent the letter, because the Norwegian tax administration would like to inform her, about how this type of income is taxed, and how it should be reported.

The second paragraph of the letter states that all tax resident of Norway are liable to pay taxes to Norway on all income and assets, even on foreign income and foreign assets unless otherwise specified in the tax treaties Norway has entered into with other countries. This paragraph also provides a link to the homepage of the Norwegian tax administration. In addition, the Norwegian tax administration provided a unique phone number for all taxpayers that received the treatment letters. The phone number to this call centre was added to this paragraph as another source of useful information.[5]

[5]In order to guarantee answers to the questions of all callers that were as similar as possible, we provided the phone operators with a script of potential questions and answers. It is worth highlighting that not even the phone operators were aware of being part of an experiment.

The final paragraph then informs about how to proceed after having received the pre-populated tax returns, and added a treatment-specific web-link to the same information that is referenced as a helpful source of further information when filing Norwegian tax return statements. A galley of one of the base letters can be found in Appendix A.

We had two different versions of the base letter, one using active language, thus, addressing the reader with "you", and another using passive language. This draws back on the idea, that the less the individual feels addressed, the less she associates her own behaviour with the letter, and the less thus the effect of sending such a letter. Similarly, Bryan, Adams, and Monin (2012) find that the appeal not to be a "cheater" evokes less cheating behaviour compared to the appeal not "to cheat". Though those who received the passive letter reported on average slightly less than those who received the active letter, the difference is not statistically significant. We therefore do not differentiate between the two in the main analysis.

3.2 Treatment variations

To cleanly identify a causal effect of moral appeals and the probability of detections, we manipulated the base letter only along one of the three dimensions in each of the additional treatments.

We had two types of moral appeals. In what we shall refer to as the fairness treatment, we included a sentence that reminded the reader of the fact that most Norwegians pay their taxes. Specifically, we added the following text at the end of the first paragraph: "The great majority report information about their income and assets in Norway correctly and completely. In order to treat all taxpayers fairly, it is therefore important that foreign income and foreign assets are reported in the same manner". Otherwise, the letter was identical to the base letter.

In what we shall refer to as the public service treatment, we added a sentence at the end of the first paragraph stressing the benefits to society resulting from taxation: "Your tax payment contributes to the funding of publicly financed services in education, health and other important sectors of society". All treatments were aimed at increasing the moral costs of tax evasion.

In addition we had two treatments that visualised the benefits from taxation by adding an attachment illustrating publicly financed services in health, education, infrastructure, and research (Appendix B). The flier was added both to the base letter and to the public service letter.

In the detection treatment, we added a sentence which stated that the tax administration knew that the recipient in previous years had had income or assets in a foreign country. Specifically, the first sentence in the letter was replaced with the sentence: "The tax administration has received information that you in previous years have had income and/or assets abroad". Otherwise, the letter was identi-

cal to the base letter. The aim of this manipulation was to affect the *perceived* detection probability.

4 Results

We start out by examining the treatment effect on total reported foreign income, before we look separately on how the treatments affect the number of subjects who report any foreign income at all, the extensive margin, and the reported income conditional on reporting foreign income, the intensive margin. Finally, we discuss evidence from a survey experiment that shed light on the behavioral mechanisms explaining the treatment effects.

4.1 Treatment effects on self-reported income

Figure 2 provides an overview over the average total foreign income reported by treatment group. The average self-reported foreign income is 8 087 Norwegian Kroner (NOK) for the control group who did not receive any letter. This amount increases to 11 238 NOK for those who received the base letter ($p = 0.053$). Strikingly, we find that the effect of including a moral appeal in the letter is much larger than the effect of simply receiving the base letter. Compared to the base letter, the reported foreign income increases by two thirds to 18 951 NOK ($p = 0.01$). Since the only difference between moral and base treatments is the addition of a short moral appeal, this result provides causal evidence of moral appeals affecting tax compliance.

The average self-reported income in the detection treatment, 20 583 NOK, almost twice the amount reported in the base treatment. This confirms that the fear of detection is a strong motivator of tax compliance ($p < 0.01$).

[Figure 2 about here.]

The treatment effects on total reported foreign income is confirmed by the regressions reported in Table 4, showing that the estimated effects are robust to the inclusion of controls. The first column repeats the numbers from Figure 2 for reference, but measured relative to the level of the base letter. In the second column, we see that the size and significance of the results in levels are not affected much at all by the inclusion of controls such as a one-year lag of the outcome, indicators for socio-economic status and demographics. We also report a difference-in-difference specification in which we specify that in the year before our intervention, no treatment was given, and look at the change in reported income relative to the letter received. This barely changes the size of the estimates, but precision is somewhat reduced.

[Table 4 about here.]

Reported foreign income is a heavily skewed outcome with a long right tail. In an attempt to mitigate the statistical issues that arise from this, we transform the outcome variable with a $\log(y+1000)$ transformation in the last three columns of Table 4. Because the variance of the outcome also varies by treatment (it is higher in the moral and the detection treatment), these estimated regression coefficients cannot easily be given a quantitative interpretation. We instead provide simple tests for equality of distribution with the base treatment (which is rejected with $p < 0.05$ for both the moral and the detection treatment in all three specifications).[6]

We now turn to a comparison between the four moral treatments. Figure 5 reports average foreign income per treatment. The average amount reported in the fairness treatment is considerably larger than in the three public service treatments. We further observe that the addition of a flier illustrating the benefits of publicly financed services did not increase the effect of the moral appeal.

[Figure 5 about here.]

In the appendix we report regressions to examine heterogeneity in how the treatments work (Table 5 and Table 6). A main finding is that the moral treatment has a stronger effect on people with a high socio-economic background.

4.2 Extensive vs. intensive margin

The effect of the moral and the detection treatments is statistically about the same. However, the two types of treatments are very different in how they work. In the absence of any letter, only 11 percent of the tax subjects report a positive foreign income (see figure 3). This share almost doubles to 19.4 percent, when the taxpayers receive one of the base letters ($p < 0.01$). Introducing a moral appeal in the base letter however, only results in a moderate increase to 20.9 percent ($p = 0.055$). A moral appeal thus only slightly increases the number of tax payers that self-report foreign income. The detection treatment, in contrast, motivates a share of 32.7 percent ($p < 0.01$) of taxpayers to report their foreign income. This increase of more than 12 percent from the moral letter is a comparably large effect.

[Figure 3 about here.]

[6] This result is insensitive to the amount added to income. Varying the amount by an order of magnitude in either direction does not make much of a difference to the significance of the parameters.

Figure 4 reports the total foreign income conditional on having reported a positive amount. Compared to the base letter, we find no significant effect of the detection treatment ($p = 0.725$), but we find a large and significant effect of the moral treatments ($p = 0.023$).

[Figure 4 about here.]

Moral appeals and the threat of detection affect self-reported income in very different ways. While detection mainly affects the number of people who report foreign income, i.e. the extensive margin, moral appeal mainly affect the amount reported, i.e. the intensive margin.

4.3 Mechanisms

The fairness treatment is the moral treatment with the strongest effect, reminding taxpayers that most people report their income correctly and completely. In principle this reminder could affect both the moral cost of tax evasion and the perceived probability of detection. It could increase the moral cost by affecting their estimate of other people's tax compliance. To the extent that people are conditional cooperators who are motivated to contribute to public goods when they believe others contribute, this would make the more motivated to comply with the tax rules. However, the reminder could also affect their beliefs about how likely it is to be detected, since they might think that most people comply because the probability of detection is high.

In order to shed light on what explains the effect of moral letters, we conducted a survey experiment on participants who had not been part of the field experiment, but who had foreign income in previous years. The participants received one letter from a sub-sample of the letters used in the field experiment. After reading the letter they were asked to fill out a questionnaire and then to return the questionnaire to the Norwegian tax administration by mail. In addition to questions about the readability and tone of the letter, the questionnaire included questions about how likely they believed it was that tax evasion would be detected, as well as about their perception of other people's tax compliance.

[Figure 6 about here.]

[Figure 7 about here.]

The detection treatment, as expected, increases the perceived probability of being detected (please see figure 6). This is not, however, the case for the fairness treatment or for the public service treatment. This suggests that the mechanism

behind the effect of the moral treatments is not that they increase the perceived detection probability. Furthermore, Figure 7 reveals that the fairness letter, but not the detection letter increases the belief that most people report their income completely and correctly on their tax statements.

5 Conclusions

We presented the process of carrying out a large-scale natural field experiment with a unique sample of Norwegian tax residents that earned income in a foreign country and are likely to have misreported their income in previous years. We find that the sending of a neutral information letter significantly increases self-reported foreign income. More importantly, however, we find that individuals who receive a letter which includes a moral appeal report approximately twice as much foreign income as those who receive the a neutral base letter. The effect of the moral appeal is about as large as the effect of increasing the perceived probability of detection, and is particularly strong when the moral appeal reminds participants that most others report their income and assets correctly. Evidence from a survey study on a new but similar sample suggests that the moral appeals do not affect the perceived probability of detection, but rather increase the moral costs of tax evasion.

Our results further shed light on policies designed to fight tax evasion. First, it shows that tax compliance can be increased in a cost effective way even in situations where tax subjects self-report their income. Including an additional sentence in an information letter is virtually costless, and we found that this had a substantial effect on self-reported foreign income. In total, our interventions increased self-reported foreign income by around 150 million NOK (approximately 25 million USD). Second, our results are relevant for the communication strategy of the tax administration. In particular, our results show that media coverage that showcases the tax administrations ability to detect tax evasion, might backfire because it might give taxpayers the impression that many others do not pay their taxes.

References

Allingham, Michael G. and Agnar Sandmo (1972). "Income tax evasion: A theoretical analysis," *Journal of Public Economics*, 1(3-4): 323–338.

Andreoni, James and John Miller (2002). "Giving according to GARP: an experimental test of the consistency of preferences for altruism," *Econometrica*, 70(2): 737–753.

Blumenthal, Masha, Charles Christian, and Joel Slemrod (2001). "Do normative appeals affect tax compliance? evidence from a controlled experiment in Minnesota," *National Tax Journal*, 54(1): 125–138.

Bryan, Christopher J., Gabrielle S. Adams, and Benoît Monin (2012). "When cheating would make you a cheater: Implicating the self prevents unethical behaviour," *Journal of Experimental Psychology: General*.

Cappelen, Alexander W., Astri Drange Hole, Erik Ø. Sørensen, and Bertil Tungodden (2007). "The pluralism of fairness ideals: An experimental approach," *American Economic Review*, 97(3): 818–827.

Cappelen, Alexander W., James Konow, Erik Ø. Sørensen, and Bertil Tungodden (2013a). "Just luck: An experimental study of risk taking and fairness," *American Economic Review*, 103(3): 1398–1413.

Cappelen, Alexander W., Karl O. Moene, Erik Ø. Sørensen, and Bertil Tungodden (2013b). "Needs versus entitlements: An international fairness experiment," *Journal of the European Economic Association*, 11(3): 574–598.

Charness, Gary and Matthew Rabin (2002). "Understanding social preferences with simple tests," *Quarterly Journal of Economics*, 117(3): 817–869.

Coleman, Stephen (1996). "The minnesota income tax compliance experiment: State tax results," .

Coleman, Stephen (2007). "The minnesota income tax compliance experiment: Replication of the social norms experiment," .

Engelmann, Dirk and Martin Strobel (2004). "Inequality aversion, efficiency, and maximin preferences in simple distribution experiments," *American Economic Review*, 94(4): 857–869.

Fehr, Ernst, Michael Naef, and Klaus M. Schmidt (2006). "Inequality aversion, efficiency, and maximin preferences in simple distribution experiments: Comment," *American Economic Review*, 96(5): 1912–1917.

Fisman, Raymond J., Shachar Kariv, and Daniel Markovits (2007). "Individual preferences for giving," *American Economic Review*, 97(5): 1858–1876.

Hallsworth, Michael, John A. List, Robert Metcalf, and Ivo Vlaev (2012). "Using social norms and fairness concerns increases tax payments: evidence from a large-scale natural field experiment," .

Kleven, Henrik Jacobsen, Martin B. Knudsen, Claus Thustrup Kreiner, Søren Pedersen, and Emmanuel Saez (2011). "Unwilling or unable to cheat? Evidence from a tax audit experiment in Denmark," *Econometrica*, 79(3): 651–692.

Konow, James (2000). "Fair shares: Accountability and cognitive dissonance in allocation decisions," *American Economic Review*, 90(4): 1072–1091.

Scholz, John T. and Neil Pinney (1995). "Duty, fear, and tax compliance: The heuristic basis of citizenship behavior," *American Journal of Political Science*, 39(2): pp. 490–512.

Schwartz, Richard D. and Sonya Orleans (1967). "On legal sanctions," *The University of Chicago Law Review*, 34(2): 274–300.
[To be completed]

6 Appendix

A Example of the general letter

The Norwegian Tax Administration

[redacted]

Our date 08.04.2013

Our reference 2013/XXXXX-X

Information about the tax return for the income year 2012

The Norwegian economy is becoming more internationalised, and an increasing number of Norwegian taxpayers receive income and have assets abroad. You are receiving this letter because The Norwegian Tax Administration would like to inform you about how this type of income is taxed and how it should be reported.

If you are a tax resident of Norway, you are liable to pay taxes to Norway even on foreign income and foreign assets, unless otherwise specified in the tax treaties Norway has entered into with other countries. Information about tax treaties and the rules that apply for taxation of foreign income and foreign assets is available at the homepage of The Norwegian Tax Administration www.skatteetaten.no. You can also contact us by telephone 21 49 73 94 (opening hours: 08.00 - 15.30).

When you receive the pre-completed tax return, you must check the information that it contains. If all information is correct and complete, you do not need to make any changes. The pre-completed tax return will typically not contain information about foreign income and foreign assets. You therefore need to report all income, all assets and all taxes paid in foreign countries. More information is available on www.skatteetaten.no/A-rettledninger.

Regards

The Norwegian Tax Administration

Postal address	Street address	Phone number
Postboks 8103	See www.skatteetaten.no	21 49 73 94
4068 STAVANGER	Org. nr: 991733108	

B Attachment

Figure 1: Attachment to moral (public services) treatment. The subtitle to the picture states that ”Your taxes finance important public services”.

C Figures

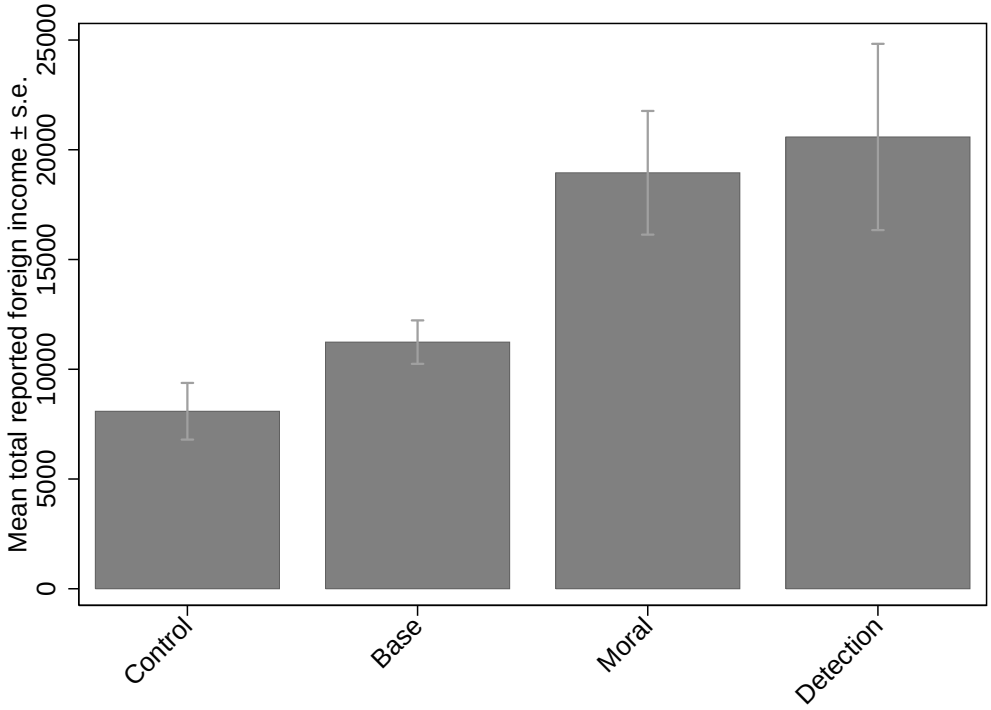


Figure 2: Total reported foreign income

Figure 3: Extensive margin – Share of taxpayers reporting positive amounts of foreign income

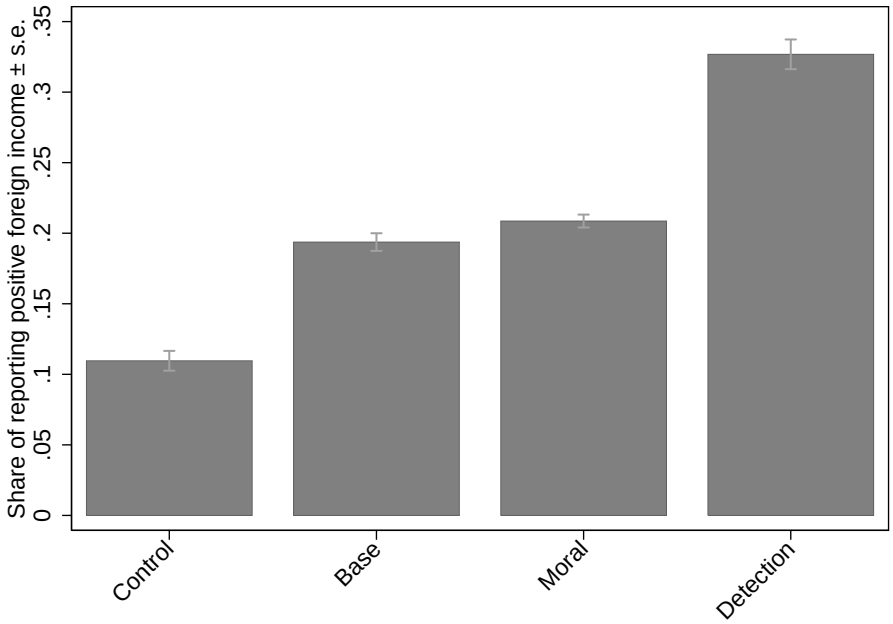
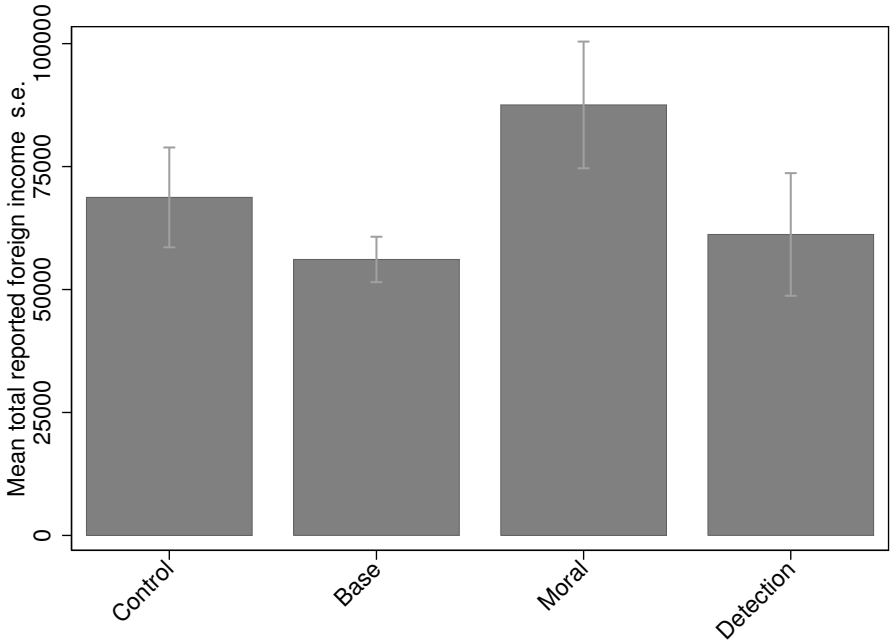


Figure 4: Intensive margin – mean reported foreign income by treatment, conditional on having reported a positive amount



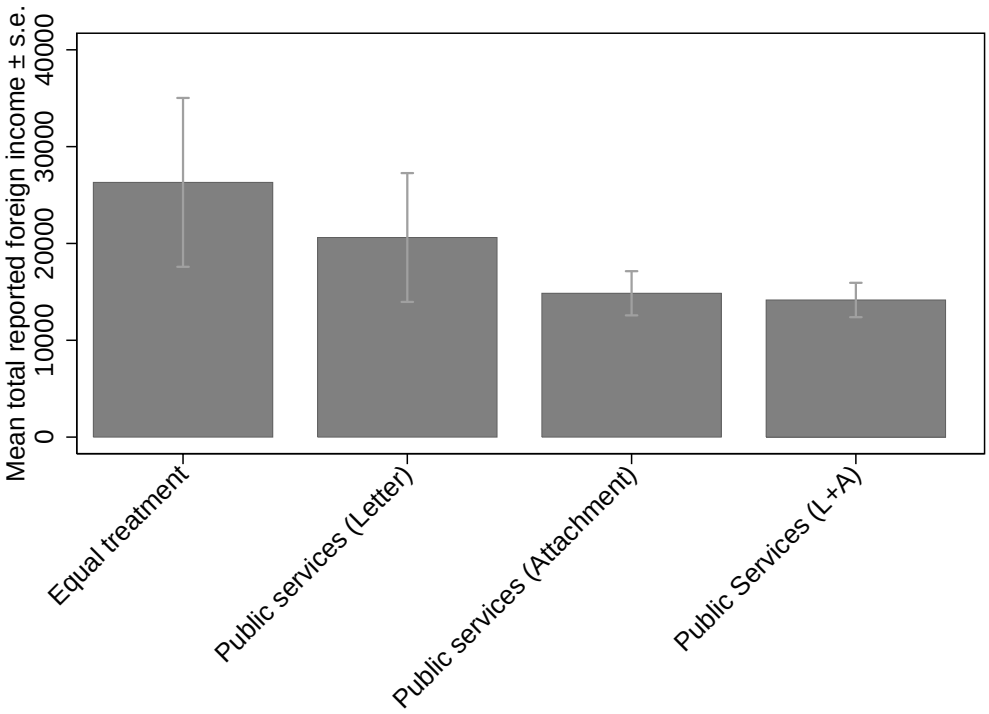


Figure 5: Total reported foreign income by moral treatment

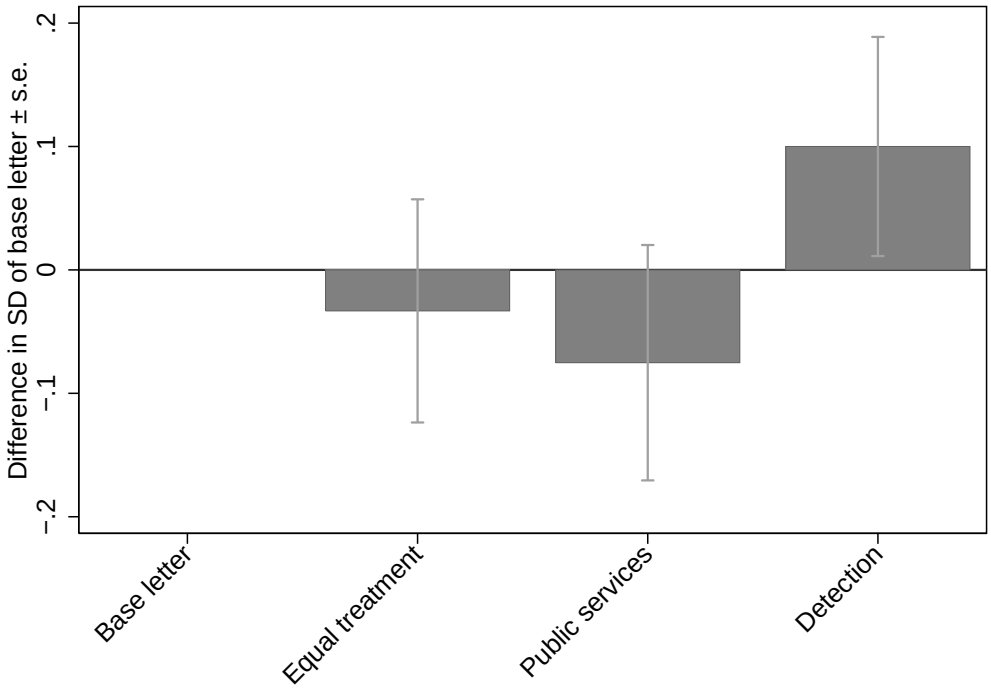


Figure 6: Treatment effect on beliefs about the probability of being detected
Note: Numbers in standard deviations relative to in the base treatment.

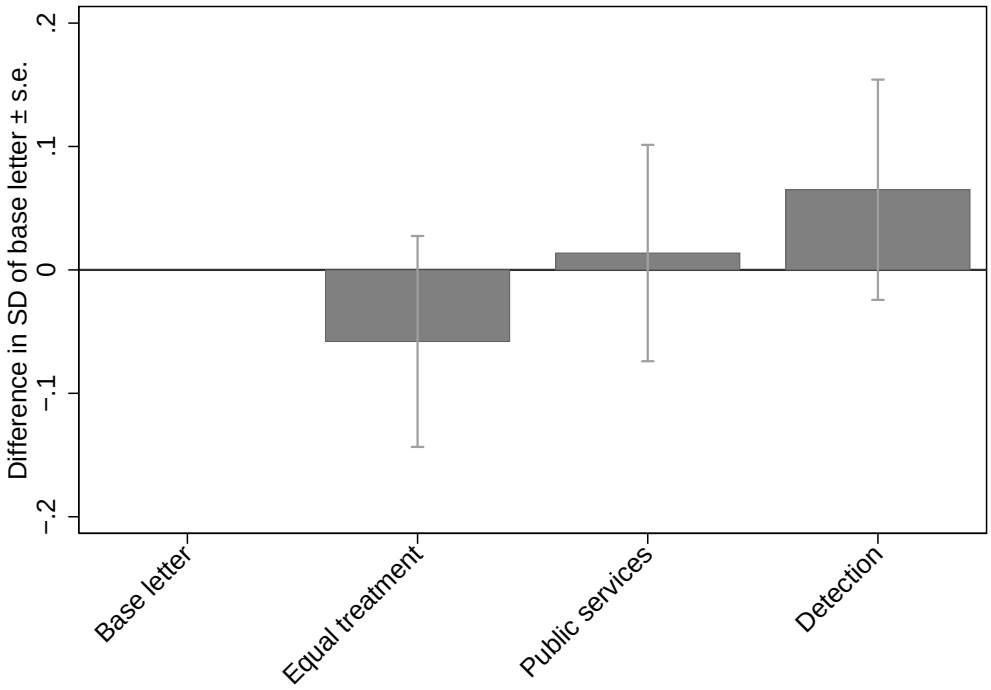


Figure 7: Treatment effect on the belief that most people pay their taxes
Note: Numbers in standard deviations relative to in the base treatment.

D Tables

Table 1: Descriptive statistics on the samples: General

	Sample		
	AKU		General
	evaders	non-evaders	population
Share Norwegian citizen	0.548	0.503	0.836
Share citizen of other Nordic country	0.433	0.474	0.039
Share female	0.456	0.437	0.502
Mean age	59.3	49.9	49.8
Share older than 60 years old	0.570	0.332	0.289
Share self-employed	0.094	0.133	0.084
n	17 899	22 189	256 044

Table 2: Descriptive statistics on the samples: Income

	Sample		
	AKU		General
	evaders	non-evaders	population
A. Taxable income, 2011:			
mean	296 585	403 619	272 616
Q_{25}	95 674	147 551	110 447
Q_{50}	182 190	274 685	274 685
Q_{75}	345 318	644 865	458 413
B. Taxable wealth, 2011:			
mean	1 427 926	1 189 590	462 820
Q_{25}	0	0	0
Q_{50}	56 655	35 277	63
Q_{75}	644 865	577 269	325 706
C. AKU reports of foreign income, 2011:			
mean	55 595	36 852	
Q_{25}	7 504	105	
Q_{50}	18 929	868	
Q_{75}	48 725	12 284	
D. Estimate of misreporting, 2011:			
mean	30 888	-8 285	
Q_{25}	6 194	0	
Q_{50}	15 703	47	
Q_{75}	37 578	464	

We examine the same three groups as in Table 1. Panel A and B refer to (taxable) income and wealth in 2011. Panel C shows total foreign income according to AKU reports, while panel D shows misreported foreign income when comparing the AKU reports and self-reported foreign income. Q_x refers to the x-percentil in the relevant group.

Table 3: Randomisation, treatment balance

	Control	Base	Moral	Detection
Share citizens	0.550	0.552	0.546	0.546
Share other Nordic country	0.428	0.431	0.434	0.439
Share female	0.460	0.450	0.459	0.448
Mean age	58.15	58.780	58.604	57.846
Above 60	0.558	0.564	0.576	0.557
Share self-employed	0.098	0.099	0.091	0.097
N	2,015	4,038	7,988	2,014

Table 4: Treatment effects on total reported foreign income

	In levels			With $\log(y+1000)$ transformation		
	No controls	Controls	D-in-D	No controls	Controls	D-in-D
moral	7713.2***	7126.7**	7083.1*	0.0635**	0.0668***	0.109***
	(2986.3)	(2816.5)	(4120.0)	(0.0276)	(0.0257)	(0.0370)
detection	9345.7**	10700.4**	11993.0*	0.390***	0.406***	0.405***
	(4356.4)	(4790.3)	(6202.6)	(0.0426)	(0.0399)	(0.0566)
N	13856	13856	31900	13757	13649	31653

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Controls: Flexible specification of Demographics, one-year-lag of outcome, dummies for low total income (less than 25th percentile in 2011) and high status (above 75th percentile for income or wealth in 2011). The reported coefficients are relative to the "Base" treatment. Diff-in-diff to 2011 (also using control treatment).

Table 5: Heterogeneity in how moral treatments work

	In levels				With $\log(y+1000)$ transformation			
	Citizen	Above 60	Female	High SES	Citizen	Above 60	Female	High SES
Group	-2464.2	-3320.2	-1361.1	3545.4	-0.119**	0.197	0.128***	0.109**
	(2394.6)	(14695.5)	(1958.2)	(2250.7)	(0.0473)	(0.142)	(0.0438)	(0.0462)
Moral	9767.2*	11109.4*	7215.5	-121.8	0.0395	0.00366	0.0893**	0.0232
	(5472.8)	(6529.0)	(4417.1)	(1042.5)	(0.0378)	(0.0325)	(0.0370)	(0.0338)
Group × Moral	-3712.3	-6098.5	1191.8	17251.2***	0.0274	0.0946*	-0.0735	0.0703
	(6547.6)	(6857.3)	(5965.8)	(6635.4)	(0.0538)	(0.0524)	(0.0542)	(0.0551)
Treatment effect on "group"	6054.9*	5010.9**	8407.3**	17129.4***	0.0668*	0.0983**	0.0158	0.0936**
	(3484.8)	(1955.7)	(4091.6)	(6601.7)	(0.0382)	(0.0411()	(0.0396)	(0.0434)
Observations	11870	11870	11870	11870	11789	11789	11789	11789

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Column headers indicate what has been used for the definition of "group." In addition to the group variable, the full set of controls from table **??** has been used (but is not reported in the table). Effects are relative to the base treatments. "High SES" (socio-economic-status) is defined as having had income or wealth above the 75th percentile in the general population (in 2011).

Table 6: Heterogeneity in how detection treatment work

	In levels				With $\log(y+1000)$ transformation			
	Citizen	Above 60	Female	High SES	Citizen	Above 60	Female	High SES
Group	-3218.773	8170.029	-2276.629	3672.522*	-0.137***	0.285	0.126***	0.082*
	(2569.451)	(6678.844)	(1879.576)	(2147.250)	(0.052)	(0.188)	(0.044)	(0.049)
Detection	13772.752	11663.498	5288.111	2868.647*	0.342***	0.207***	0.377***	0.351***
	(9010.117)	(9263.466)	(3518.274)	(1500.308)	(0.058)	(0.051)	(0.055)	(0.052)
Group × Detection	-7610.299	-3827.812	9771.015	14727.872	0.105	0.353***	0.053	0.106
	(9469.486)	(9828.722)	(9391.333)	(9853.040)	(0.082)	(0.081)	(0.083)	(0.084)
Treatment effect on "group"	6162.453*	7835.686***	15059.126*	17596.518*	0.447***	0.561***	0.431***	0.457***
	(3233.877)	(2973.660)	(8834.024)	(9710.279)	(0.058)	(0.062)	(0.062)	(0.065)
Observations	5971	5971	5971	5971	5928	5928	5928	5928

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Column headers indicate what has been used for the definition of "group." In addition to the group variable, the full set of controls from table **??** has been used (but is not reported in the table). Effects are relative to the base treatments. "High SES" (socio-economic-status) is defined as having had income or wealth above the 75th percentile in the general population (in 2011).