

Gillitzer, Christian; Skov, Peer Ebbesen

Working Paper

Evidence on unclaimed charitable contributions from the Introduction of third-part information reporting in Denmark

EPRU Working Paper Series, No. 2013-04

Provided in Cooperation with:

Economic Policy Research Unit (EPRU), University of Copenhagen

Suggested Citation: Gillitzer, Christian; Skov, Peer Ebbesen (2013) : Evidence on unclaimed charitable contributions from the Introduction of third-part information reporting in Denmark, EPRU Working Paper Series, No. 2013-04, University of Copenhagen, Economic Policy Research Unit (EPRU), Copenhagen

This Version is available at:

<https://hdl.handle.net/10419/123491>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Economic Policy Research Unit
Department of Economics
University of Copenhagen
Øster Farimagsgade 5, Building 26
DK-1353 Copenhagen K
DENMARK
Tel: (+45) 3532 4411
Fax: (+45) 3532 4444
Web: <http://www.econ.ku.dk/epru/>

Evidence on Unclaimed Charitable Contributions from the
Introduction of Third-Part Information Reporting in Denmark

Christian Gillitzer, Peer Ebbesen Skov

Evidence on Unclaimed Charitable Contributions from the Introduction of Third-Party Information Reporting in Denmark*

Christian Gillitzer
University of Michigan

Peer Ebbesen Skov
University of Copenhagen

This version: 13 November, 2013

Abstract

The introduction of information reporting and pre-population of charitable tax deductions in Denmark in 2008 coincided with a doubling in the number of tax deductions claimed, and a 15 percent rise in the value of claims. We attribute this change to incomplete claiming of eligible charitable tax deductions under the prior self-reporting regime: a pre-reform randomized audit shows a negligible amount of charitable overreporting, and we present evidence that there was no change in giving behavior around the time of the reform. We estimate the per-year average amount of forgone tax benefits to be small, but find that many taxpayers repeatedly failed to claim eligible charitable tax deductions under the self-reporting regime. We provide evidence on information frictions from taxpayer behavior due to a notched subsidy scheme.

*We would like to thank our advisers Jim Hines, Claus T. Kreiner (Chair), Søren Leth-Petersen, Martin Schmalz, Matthew Shapiro, and Joel Slemrod (Chair) for their guidance and encouragement. We would also like to thank Jim Andreoni, Morten Appelsø, Gerald Auten, Wojciech Kopczuk, Greg Leiserson, Emily Lin, Day Manoli, Ankur Patel, James Pearce, Søren Pedersen, Matt Smith and seminar participants at the U.S. Department of Treasury's Office of Tax Analysis for helpful comments. We are grateful to the Danish tax administration (SKAT) for providing data.

1 Introduction

For the 2008 tax year, Denmark's tax authority (SKAT) introduced third-party information reporting for tax-deductible charitable contributions, where previously these deductions were self-reported and subject to verification only upon an audit. Under the new system, charitable organizations report contributions received from each taxpayer directly to the tax authority. These information reports are used by SKAT to pre-fill charitable deductions on taxpayers' annual declarations (referred to as pre-population). While information reporting is now widely used for sources of income tax return line items in advanced countries, the use of information reporting and pre-population for a tax return *deduction* line item is relatively new.¹

The effect of the policy change on reported deductions was immediate, large, and in some respects surprising; the number of taxpayers claiming a charitable deduction doubled. The total value of contributions also rose, but by only 15 percent, due to a fall in the mean charitable tax deduction of 42 percent.

Using data from a recent large-scale audit experiment in Denmark, we document that pre-reform overreporting of charitable contributions was negligible. This is somewhat unexpected, because evasion rates for self-reported sources of income are often large (see Slemrod 2007). The same audit experiment estimated an evasion rate of 42 percent for total self-reported net income, but only 0.3 percent for third-party reported income (see Kleven et al. 2011). There is good reason to trust the accuracy of these audits in identifying overclaiming of charitable deductions: unlike self-reported sources of income, the burden of proof falls on the taxpayer, who under the self-reporting regime was required upon audit to produce receipts to justify all deductions claimed. For reasons discussed in detail in Section 3, audits did not appear to identify unclaimed charitable deductions.

Administrative reports on total donations collected by charities enable us to separately identify the effect of the policy change on charitable giving and reporting behavior. We find

¹See OECD (2006) for a survey of pre-population in OECD countries.

no evidence of a change in giving behavior coinciding with the introduction of information reporting and pre-population of deductions. Accordingly, we argue that the rise in the value of reported deductible contributions—and the near doubling in the number of reporting contributors—is due to taxpayers with modest tax-deductible contributions who neglected to report their deductions under the self-reporting regime in place before 2008.²

We estimate that the average unclaimed charitable tax deduction under the self-reporting regime was worth about DKK786, which, given the one-third subsidy rate, translates to DKK262 in forgone after-tax income.³ There was little change in the number of tax deductions of more than DKK2,500—indicating that few taxpayers left large sums of money on the table in any given year. But over a period of years, the cumulative amount of foregone benefits appears to have been economically significant for many taxpayers; more than two-thirds of the taxpayers who claimed a deduction in 2008 under the information reporting and pre-population regime, but who did not claim a deduction in either 2006 or 2007 under the self-reporting regime, claimed a deduction in each of the years 2009-2011.

Our finding of negligible charitable overreporting under the self-reporting regime is interesting in light of work by Fack and Landais (2011), who find that reforms in the U.S. and France that tightened enforcement of charitable tax deductions resulted in a fall in reported donations, which they attribute to evasion. In France, a 1983 reform required taxpayers to attach receipts to their tax return for all charitable deductions claimed, whereas previously the tax authority only sought to inspect receipts during an audit. The rule change coincided with a 75 percent fall in the value of charitable tax deductions claimed between 1982 and 1983. In the U.S., a 1969 law change reduced opportunities for top-income earners to use private charitable foundations as a tax sheltering or evasion scheme. Following the law change, creation of private charitable foundations fell by 80 percent. They estimate that 30 percent of charitable tax deductions claimed by the top 0.1 percent of income earners before the policy change was due to tax avoidance or evasion behavior. The reform in France studied

²Examining a policy experiment in Finland in the 1990s, Kotakorpi and Laamanen (2013) argue that unclaimed deductions may be particularly prevalent when many sources of income line items are pre-filled for taxpayers.

³DKK1 is approximately US\$0.18.

by Fack and Landais (2011) is more relevant in our setting because we study behavior for the population of donors, rather than just top-earner taxpayers.

Our findings are consistent with Rehavi (2010), who uses survey reports of U.S. taxpayers to provide suggestive evidence of incomplete claiming of eligible charitable deductions. She goes on to argue that as much as one-third of the response of charitable tax deductions to the subsidy rate is due to changes in reporting rather than giving behavior.⁴ In contrast to the survey evidence used by Rehavi (2010), the administrative panel data available to us provides arguably more credible evidence because it is less susceptible to systematic misreporting (providing incorrect information to the tax authority has an expected penalty, whereas misreporting on a household survey does not).

A related literature on incomplete enrollment in benefit programs has found evidence of sizable unclaimed benefits. Bhargava and Manoli (2011) estimate that about one-quarter of taxpayers apparently eligible for the U.S. earned-income tax credit (EITC) do not claim the EITC. However, we recognize that the type of taxpayers who are eligible for the EITC and those who make charitable gifts are likely to differ in important ways that affect their claiming behavior. Elsewhere in the literature, stigma is often cited as a reason for incomplete take-up of welfare benefits (see, for example, Besley and Coate, 1992), but there should be no stigma attached to claiming charitable deductions. Pre-population is akin to default enrollment—taxpayers are automatically credited with their eligible charitable tax benefits—and the post-reform surge in charitable tax deductions claimed attests to the power of defaults (see, for example, Carroll et al., 2009 or Chetty et al., 2012).

Some taxpayers may have rationally decided not to claim charitable tax deductions because the private compliance cost exceeds the forgone tax benefits. For 1982 U.S. taxpayers, Pitt and Slemrod (1989) estimated the compliance costs of itemizing deductions by estimating how much taxpayers claiming the standard deduction could have saved from instead itemizing their deductions. They estimated a compliance cost of \$43, which is, after adjusting their estimate in 1982 dollars for inflation, about double our preferred estimate of

⁴Slemrod (1989) finds, based on analysis of audited U.S. income tax returns, that charitable giving overstatement is less sensitive to the subsidy rate than is actual giving behavior.

the average value of charitable deductions forgone under the self-reporting regime. But the Pitt and Slemrod (1989) estimate of compliance costs should be larger because it measures the compliance costs associated with all deductions for which a taxpayer is eligible, not just charitable contributions; differences in tax-system design between Denmark and the U.S. may also affect the comparability of these estimates.

More generally, this paper contributes to a growing literature that takes optimization frictions seriously: Kleven and Waseem (2013) find that a majority of the income taxpaying population in Pakistan face optimization frictions affecting their taxable income choice of at least 2.5 percent of gross income; Chetty (2012) shows that it is possible to reconcile high-quality intensive-margin labor supply elasticity estimates from the labor and public finance literatures given an assumption of frictions equal to about one percent of income; and Saez (2010) finds kinks in the U.S. Earned Income Tax Credit insufficiently powerful to create bunching, except at the first kink, and only for self-employed taxpayers.⁵ The attenuated response of taxable income to marginal tax rates reflects taxpayer frictions such as inattention, misperception, and inertia, but also adjustment costs faced by taxpayers in finding employers offering desired combinations of hours of work and compensation. Unsurprisingly, the magnitude of frictions affecting claiming of charitable tax deductions appear to be much smaller than is required in other recent work to reconcile observed behavior of taxable income with a frictionless benchmark.

Theoretical work by Kleven and Kopczuk (2011) argues that differential response by type of taxpayer to compliance costs can be exploited to discriminate between deserving and undeserving welfare program recipients. If hassle costs are more burdensome for undeserving than for deserving applicants, the introduction of a hassle cost, such as a paperwork requirement, may facilitate a higher benefit level, that in the absence of the hassle cost would induce substantial additional take-up by undeserving applicants. The reform we study is interesting in light of this (mostly) theoretical literature because it provides empirical evidence on taxpayer response to a change in a paperwork requirement (taxpayers had to maintain receipts and

⁵Saez (2010) attributes the bunching of self-employed taxpayers at the first kink in the EITC schedule to tax evasion.

process their own charitable deductions under the self-reporting regime). Although we find the increase in the share of taxpayers claiming a deduction in the post-reform period to be particularly large for some groups of taxpayers, this variation appears related to underlying giving propensity, rather than a differential effect of hassle cost across taxpayer types.

Our findings suggest that the use of information reports to pre-populate tax-deduction line items may result in a loss in revenue. The use of information reports alone need not though: a tax authority could use third-party reports to flag for further investigation taxpayers who overclaim on their charitable contributions, but not amend tax returns for underclaiming. Unlike pre-population of sources of income line items, automatic crediting of deductions increases tax expenditures on taxpayers who would otherwise neglect to claim deductions for which they are eligible. The introduction of information reporting and pre-population of charitable deductions in Denmark coincided with an increase in the value of charitable tax expenditures of DKK35.4 million. Absent a change in giving behavior, the reform is socially desirable only if it lowers taxpayer compliance costs by more than an appropriately weighted sum of the increase in administrative expense and tax benefits. We outline a simple modeling framework that can be used to weight these costs and benefits.

In what follows, section 2 provides background information on relevant aspects of Denmark's tax system, section 3 uses data from a pre-reform tax audit experiment to investigate reporting behavior before the policy change, and section 4 discusses the change in reporting behavior when information reporting and pre-population of charitable deductions was introduced in 2008. Section 5 presents evidence indicating that there was no change in charitable giving—as opposed to reporting of charitable gifts—around the time of the policy change, and section 6 uses a notch created by the pre-2012 charitable gift eligibility rules to investigate taxpayer awareness of incentives for charitable giving. In section 7 we outline a simple normative model of the optimal reporting regime for charitable tax deductions, using our empirical findings to inform judgment on the social desirability of the policy change. We offer some concluding remarks in section 8.

2 Background

Denmark's individual-income tax system features broad use of information reporting across various sources of income. For most taxpayers, information reports made by third parties for the tax year ending in December arrive at the tax authority for processing by late January. Most information reports correspond to payments from which tax has been withheld, but some do not. Making use of the information in these reports, and other known information such as place of residence, SKAT prepares pre-populated (pre-filled) returns that are mailed to taxpayers each year in mid-March.⁶ Taxpayers have until May 1 to amend their pre-populated return to reflect sources of income not subject to information reports, any income for which information reports were not received in a timely manner by the tax authority, and any self-reported deductions for which the taxpayer is eligible.⁷ All income-tax-liable people in Denmark are required to file a tax return, which is approximately 88 percent of the population (Kleven et al., 2011).⁸

All taxpayers file as individuals, unlike in the U.S. where married couples generally elect to pool their income and file a joint tax declaration. The subsidy rate for tax deductible charitable contributions varies only (slightly) by region of residence—and so does not depend on a taxpayer's marginal tax rate. Assuming married couples live in the same tax region, this means that there is no tax advantage gained from shifting the claiming of charitable deductions between husband and wife depending on who faces the higher marginal tax rate. Because there is no difference in tax treatment of charitable deductions between singles and couples, our unit of analysis is individual taxpayers. Even if taxpayers have no tax liability, they are able to receive tax benefits for their charitable contributions.

According to government documents, the principal stated motivation for the introduction of information reporting and pre-population for charitable deduction was a desire to limit perceived abuse of charitable deductions and to lower taxpayer compliance costs. The tax

⁶Taxpayers can also access their pre-filled tax returns electronically.

⁷Taxpayers can amend their pre-populated return electronically, by phone, or by mail. Self-employed filers have until July 1 to submit their final tax return.

⁸The bulk of those not required to file are children under the age of 16.

authority also appears to have been aware that pre-population would lead to some taxpayers receiving tax benefits they previously neglected to claim. No net change in charitable tax expenditures was expected prior to the reform. To ease their transition to the new policy regime, charitable organizations received a subsidy for expenses associated with implementing the new compliance procedures.

Charitable deductions fall into three tax-relevant categories, each with different requirements for tax favored treatment. The bulk of charitable contributions are regular gifts, for which there was a somewhat complicated eligibility requirement before 2012. Only total annual gifts to each eligible charity of DKK500 or more qualified for tax deductibility, and in calculating the total tax deduction for each taxpayer the first DKK500 in gifts was excluded.⁹ We discuss the incentives created by this policy design in detail in Section 6. Information reporting *and* pre-population of deductions for regular gifts was introduced in 2008. With the introduction of information reporting and pre-population for regular gifts, the tax authority also *locked* this line item for most taxpayers. This means taxpayers are prevented from changing the charitable deduction recorded on their pre-populated return. If the taxpayer finds an error on their pre-populated return they must contact the relevant charity and request a revised message be sent to the tax authority. Deductions are also capped, and thus so is the maximum value of charitable tax benefits. The maximum value of regular deductions eligible for tax deductibility has increased over time: from 1997-2004 the cap was DKK5,000, but the cap was lifted to DKK6,400 in 2005, and to DKK6,600 in 2006; in 2007 the upper threshold more than doubled to DKK13,600, and has increased modestly since, to DKK14,000 in 2008, and to its current DKK14,500 level in 2011.

The second category of charitable donations corresponds to giving contracts with a minimum 10-year length, for which information reporting and pre-population of deductions was also introduced in 2008. This category permits donors to deduct the larger of DKK15,000 or 15 percent of taxable income each year. A third category was introduced in 2008 for gifts to

⁹In 2012 the lower threshold was abolished, making gifts of less than DKK500 eligible for tax deductibility. In addition, the 2012 reform no longer requires subtracting the first DKK500 in gifts from total eligible deductions.

cultural and research organizations, and for which information reporting was introduced in 2010. Because this type of gift was not tax deductible before 2008, we exclude this category from our analysis entirely. For the two categories of gift we study (regular and long-term charitable gifts), only cash contributions are eligible for a tax deduction.¹⁰

In 2011 the number of taxpayers claiming a deduction for regular, long-term, and cultural and research gifts was 360,527, 44,399, and 23,477, respectively. Total gifts for each category was DKK747m, DKK261m, and DKK20m, respectively. Before 2008 regular and long-term gifts were self-reported together on one tax return line item, but from 2008 forward each category corresponds to a separate line item. Because we do not observe each category of donation separately before 2008, we group regular and long-term gifts together to form one consistent series for charitable giving.

There was little change in the number of charities reporting charitable gifts in the years before and after the 2008 policy change. In 2008 there were 796 organizations approved by SKAT to receive tax-deductible contributions, only slightly higher than 790 in 2007 (see Table 1). This represents the equal second smallest year-to-year increase for the years 1998-2011. In both 2007 and 2008 the fraction of eligible organizations making an annual report to the tax authority was 93 percent. This fraction has been stable, but had an upward trend over our sample period.

Most donations were collected from the following groups of charitable organizations: international aid organizations (e.g., UNICEF, Red Cross); religious organizations (e.g., Catholic Church); national social and humanitarian organizations (e.g., Blue Cross Denmark); nature, environment, and animal welfare organizations (e.g., Danish Society for Nature Conservation); and disease fighting and disability organizations (e.g., Cancer Society).

In the next section we investigate reporting behavior prior to the introduction of information reporting and pre-population of deductions.

¹⁰Non-monetary gifts to cultural organizations have been eligible for a tax deduction since 2005. There was no upper threshold for these gifts, but as for regular gifts only contributions with a value greater than DKK500 were eligible to receive tax-deductibility. In 2008, the first year in which we observe data specifically for cultural and research organization gifts, there were only 11 such gifts made.

3 Pre-Reform Misreporting of Charitable Gifts

Before investigating the effect of the policy change in the next section, we first draw on data from the Kleven et al. (2011) audit experiment to ascertain the level of misreporting of charitable gifts in Denmark prior to the reform. A random sample of about 20,000 taxpayers was subjected in 2007 to an unannounced extensive and thorough audit of their 2006 tax returns. The overall misreporting rate for charitable contributions was small: of the 872 taxpayers in the audit sample who reported any charitable contribution, only 7 percent were found upon audit to have overclaimed charitable deductions, while 3 percent were found to have underclaimed, combining, with rounding, to give a gross misreporting rate of 11 percent. For the 7 percent of taxpayers who overclaimed, the median value of excess charitable deductions reported was DKK1,100, and for the 3 percent of taxpayers in the audit sample found to have underclaimed, the median value of missing deductions was DKK1,975. The value of underclaiming offset about half the value of overclaiming, giving a net evasion rate (net overclaiming as a share of deductions that should have been claimed) of 2.3 percent conditional on having initially reported a non-zero charitable gift, and about 0.1 percent as a share of all taxpayers in the audit sample. This evasion rate is trivial compared to the 37 percent evasion rate found by Kleven et al. (2011) for self-reported sources of income. Evidently, those seeking to evade income taxes do not view overstatement of charitable contributions as a high expected benefit-to-cost evasion opportunity.

In light of these audit results, our finding of a surge in reported tax-deductible charitable contributions following the introduction of third-party information reporting and pre-population may seem surprising. If so many taxpayers neglected to claim their tax deductible contributions under the self-reporting regime, why did the auditors in the Kleven et al. (2011) study detect such little underclaiming? We have ascertained from discussions with SKAT officials that auditors did not investigate line items for which no deductions were claimed.¹¹ This is most probably a sensible audit policy rule for the tax authority: the social value of finding unclaimed deductions for taxpayers is arguably less than the social cost of auditors' time.

¹¹We would like to thank Søren Pedersen for sharing this detail of SKAT's audit procedure with us.

But it means that the Kleven et al. (2011) audit sample results cannot be used to accurately measure the fraction of taxpayers with unclaimed tax-deductible charitable gifts. The only way in which the audit process could have resulted for a taxpayer in a higher post-audit than pre-audit charitable deduction was if the audit process prompted the taxpayer to review their records and discover charitable deductions they had not reported. However, we have been told by SKAT that some audits in the Kleven et al. (2011) audit study involved only computerized cross-checking of information reports, in which case the taxpayer was unaware that their tax return had been audited; for example, a taxpayer with no self-reported income or deductions would have had their third-party reported information cross-checked electronically, but would have only been contacted as part of the audit process if a discrepancy was discovered.

Having established that there was negligible charitable evasion under the pre-reform self-reporting regime, in the next section we describe the change in reporting behavior due to the introduction of information reporting and pre-population of charitable deductions in 2008.

4 Effect of the Reform on Reporting Behavior

4.1 Aggregate Data

Figure 1 reports the number and average size of charitable tax deductions reported over the period 1997-2011.¹² As foreshadowed in section 1, the introduction of information reporting and pre-population for charitable deductions coincided with a near doubling in the number of taxpayers claiming a charitable tax deduction: 150,311 taxpayers reported a charitable tax deduction in 2007 under the self-reporting regime, and 300,122 taxpayers had a charitable deduction in 2008 following the policy change (see Table 2). There was an accompanying rise in the value of tax deductions claimed between 2007 and 2008, but the rise was a relatively

¹²Before 1997 charitable gifts were reported on the same tax return line item as a standard deduction available to fishermen, and a special childcare deduction. Since 1997 these deductions have been reported separately from charitable gifts.

modest 15.3 percent. As discussed in detail below, we find that the bulk of the new claims were small in value. Accordingly, the mean value of tax deductions claimed fell sharply between 2007 and 2008, from DKK4,671 to DKK2,697 (see Table 2).

Interestingly, the mean value of contributions was higher in the year before the reform than in earlier years. Between 1997 and 2006 the mean value of charitable tax deductions claimed was between DKK3,859 and DKK4,029, lower than the DKK4,671 mean value recorded in 2007. This change can be mostly explained by a relaxation in the upper threshold for eligible regular gifts: in 2007 taxpayers were permitted to deduct up to DKK13,600 in regular charitable tax deductions, compared to only DKK6,600 in 2006. As described in section 2, this threshold has increased over time, but the 2007 increase was by far the largest over our sample period. The number of taxpayers with total tax deductions greater than DKK10,000 rose by 6,344 between 2006 and 2007, and there was a corresponding 6,350 fall in the number of taxpayers with total tax deductions in the range DKK5001-10,000. There was a further modest rise in the upper eligibility threshold for regular tax deductions in 2008, but this does not meaningfully affect our analysis. The bulk of the increase in tax deductions due to the policy reform were small in value, so our focus is on the lower tail of the distribution of claims, that is largely unaffected by changes to the upper eligibility threshold.

We have access to taxpayer level microdata beginning in 2006, and can compute the median tax deduction reported in each year (see Table 2). Because most claims are small in value, the median value of claims is only a little more than half the mean contribution for the years 2007-2011. The relaxation in the upper threshold for regular gifts in 2007 was relevant for a relatively small number of taxpayers making large donations, explaining why the median deduction rose by only DKK70 between 2006 and 2007, compared to the DKK638 rise in the mean value of contributions.

To gain further insight on the effect of the reform, we investigate changes in tax deductions reported by claim size. Table 3 reports these data for each year 2006-2011, and Figure 2 presents these data graphically. Note that claim size is the tax deductible amount on individual tax returns, not the total value of contributions, which is larger because of the

exemption limits that existed before 2012. For example, a taxpayer who gave a total of DKK600 to one charity would qualify for a tax deduction of DKK100 and be counted in the category DKK0-500 in Table 3 and Figure 2. As previewed earlier, the surge in the number of charitable deductions claimed between 2007 and 2008 were primarily small in value; there was an almost ten-fold increase in the number of claims less than DKK500, and a more than doubling in the number of claims in the range DKK500-DKK1,500. In contrast, there was little change in the number of claims larger than DKK3,000.

For the two years before and after the policy change, Figure 3 presents a finer picture for the distribution of claims less than DKK5,000. The surge in small claims in 2008 when information reporting and pre-population of deductions was introduced is particularly evident here. Abstracting from the policy change, the distribution of claims is very stable: Figure 3 shows that the pre-reform 2006 and 2007 distribution of tax deductions claimed are almost identical, as are the post-reform 2008 and 2009 distributions. This makes us confident that the pronounced change in the left tail of the claim distribution between 2007 and 2008 is not in part accounted for by regular variation in the distribution of claims over time.

If we attribute all the change in charitable tax deductions between 2007 and 2008 to a decline in unreported claims, the value of forgone charitable deductions in 2007 was DKK717. However, this is an imprecise estimate of the value of deductions forgone under the self-reporting regime. Any change in the number of large tax deductions between 2007 and 2008 is probably unrelated to the policy change: those with large deductions forgo a substantial amount of money from not reporting their eligible deductions and so are unlikely to have not done so under the self-reporting regime. Informed by the distribution of claims data presented in Figure 3, we estimate the value of forgone deductions under the self-reporting regime by restricting our attention only to the increase in claims less than DKK2,500. Between 2007 and 2008 the total number of tax deductions claimed amounting to less than DKK2,500 increased from 77,046 to 226,855, and the total value of these deductions increased from DKK116 million to DKK234 million. This implies an average value of DKK786 for forgone deductions, which corresponds to DKK262 in after-tax income. This calculation is not particularly sensitive to

the upper threshold of DKK2,500 used in this calculation (see Figure 11 in the appendix, and the notes therein for details on this calculation). Had the reform not occurred, our estimated value of previously unreported deductions implies that we would have observed a mean value of tax deductions equal to DKK4,601 in 2008, rather than the actual value of DKK2,697.

These estimates implicitly assume that there would have been no change in average giving behavior had the reform not occurred, which absent a control group (the reform affected all taxpayers at the same time) we cannot formally test. Although this assumption is almost certainly violated, the magnitude of the change in reporting behavior pre- and post-reform is several orders of magnitude larger than the usual year-to-year variation in reporting behavior (see Figures 1 and 3); hence, any error in our estimate due to trend changes in average giving behavior is likely to have only a minor effect on our estimate of the change in reporting behavior due to the reform.

Interestingly, the bulk of the increase in charitable deductions claimed after 2008 appear to be associated with regular, rather than occasional, donors who did not claim their eligible tax benefits under the prior self-reporting regime. Of the 152,857 taxpayers who claimed a charitable tax deduction in 2008 (under the information reporting and pre-population regime) but not in 2006 or 2007 (under the self-reporting regime), 68 percent claimed a deduction in each subsequent year 2009-2011. The share claiming zero, one, and two further tax deductions between 2009 and 2011 was 13, 9, and 10 percent, respectively (see Table 8). This suggests that foregone tax benefits under the self-reporting regime were concentrated among regular donors who systematically did not claim eligible charitable deductions, rather than a larger group of donors who occasionally did not claim their eligible deductions. Although the typical amount of forgone tax benefits appears to have been modest in any given year, our finding that many taxpayers repeatedly failed to claim eligible tax benefits indicates that the cumulative amount of forgone deductions and tax savings may have been substantial for a sizable fraction of charitable donors.

4.2 Effect of the Reform by Type of Taxpayer

In this section we look for evidence of differential response to the policy change by type of taxpayer. We present estimates for the following OLS panel data regression using the universe of tax returns for the period 2006-2011:

$$D_{it} = \sum_{j=1}^k \beta_j X_{ijt} + \gamma_j post_t X_{ijt} + \varepsilon_{ijt}, \quad (4.1)$$

where $D_{it} = \{0, 1\}$ is an indicator for person i claiming a charitable deduction in year t , X_{ijt} is characteristic j for taxpayer i in year t , and $post$ is an indicator variable taking the value unity in the post-reform period 2008-2011.¹³ The vector of characteristics X_{ijt} includes the following variables: age, personal income (the sum of labor income, transfers, pensions, and other adjustments), gender, marital status, self-employment status, a Copenhagen location dummy variable, and a linear time trend. We do not include a taxpayer fixed effect because many of the covariates of interest are constant or vary little at the taxpayer level over our data sample. We report robust standard errors and, because we have access to the universe of tax returns, all but a few point estimates are highly statistically significant. The full set of regression results is reported in Table 7 in the appendix.

The coefficient on the $post$ variable, shown in Figure 4, indicates the estimated pre- to post-reform change in probability of claiming a charitable tax deduction, for a taxpayer with the baseline set of characteristics (the baseline set of characteristics represents a male taxpayer aged 46-65, in 50-75th income percentile, single, residing outside Copenhagen, and not self-employed); the coefficients on the $post \times income$ interaction terms, also shown in Figure 4, indicate estimated variation in post-reform claiming behavior by income percentile. There is a clear positive income gradient evident for the $post \times income$ interaction terms shown in Figure 4, indicating that the increase in the share of high-income taxpayers claiming a charitable deduction in the post-reform period was large relative to low income groups. But,

¹³We restrict our analysis to the sample of taxpayers who filed a tax return in each year 2006-2011 (only two percent of taxpayers who claimed a charitable tax deduction in 2008 did not file a tax return in each year 2006-2011).

because high income earners were also more likely to claim a charitable deduction in the pre-reform period (shown by the main effect coefficients in Figure 4), the proportional increase in likelihood of claiming a deduction following the reform is similar for high income groups; the regression estimates are consistent with a roughly constant fraction of taxpayers in high-income groups neglecting to claim eligible deductions in the pre-reform period. For below-median income earners, the regression results indicate a small fall in the probability of claiming a deduction post-reform; this most likely reflects their underlying very low propensity to claim a charitable deduction, and variation unrelated to the reform.

Figure 5 displays the analogous coefficient estimates by age category. The likelihood of claiming a charitable deduction post-reform increased for each age category: the increase is estimated to have been largest for young taxpayers (under 25), and smallest for taxpayers aged 26-45. The change in likelihood of claiming a deduction post-reform for selected other taxpayer characteristics is reported in Figure 6. The increase in post-reform claiming probability was particularly large for female taxpayers, and those residing in Copenhagen—both groups with a high propensity relative to other taxpayers of claiming a deduction in the pre-reform period (indicated by the main effect coefficients shown in Figure 6). Post-reform claiming behavior appears unrelated to employment status, and married taxpayers were a little less likely to claim a charitable deduction in the post- than pre-reform period.

In summary, the increase in the share of taxpayers claiming a charitable deduction in the post-reform period was particularly large for high income groups, female taxpayers, and those residing in Copenhagen. But because these groups of taxpayers had an above-average likelihood of claiming a deduction in the pre-reform period, the share of unclaimed deductions under the self-reporting regime is unlikely to have been particularly large for these groups of taxpayers.

5 Charitable Giving Propensity

To this point, we have not addressed the possibility that the policy change coincided with—or caused—a change in actual giving behavior, rather than the reporting propensity. One possibility is that the introduction of information reporting and pre-population of charitable deductions reduced the compliance cost for taxpayers, and so the effective cost of charitable giving, by enough to induce an increase in actual donations. To investigate whether there was a change in giving propensity coinciding with the policy change in 2008, we make use of annual administrative reports received by SKAT from charities eligible to collect tax-favored contributions. These filings are required in order for charities to maintain their tax-favored status, and contain, among other information, reports on the total value of contributions received and the number of contributing members (donations) for each charity. These data correspond to donations that, provided they were of at least DKK500, qualify for a charitable tax deduction.

Given our main finding—that there was a surge in the *number*, but less so in the *value*, of charitable tax deductions following the policy reform—we first investigate whether there was any change in the number of contributing members reported by charities following the policy change. We restrict our attention here to the ten largest charities, measured by the *number* of information reports received by SKAT over the period 2008-2011. These ten charities together represent about 60 percent of the information reports received from all charities. We exclude small charities to avoid our findings being influenced by potentially misleading reporting behavior of some small charities: a few small organizations did not file reports in each year, and, in some circumstances, reported implausible year-to-year changes in their number of donors. The line labeled “Tax Return Data” in Figure 7 shows the number of information reports received (aggregated by charity for each taxpayer) from the top-ten charities for the period 2008-2011 (the information reporting period), and the line labeled “Charity Data” in Figure 7 reports the number of charitable donors reported by these top-ten charities for the period 2001-2011.¹⁴ The number of donors reported by these charities exceeds the number

¹⁴All results that follow are qualitatively the same if we consider instead the 25 largest charities, measured by

of information reports received by SKAT from these organizations, most probably because some charitable donors do not provide their tax identification together with their gift; for gifts less than DKK500 this is not surprising: they do not result in a tax deduction. A few other factors are likely to contribute to the divergence between these series: transfer of funds via cell phone SMS (short message service) has become widespread in Denmark for popular giving campaigns, for which donations appear in charity records, but not tax records; “tin rattling” and church day donations are collected without tax identification; and some taxpayers may prefer to give anonymously. Between 2007 and 2008, when information reporting and pre-population was introduced, the number of charitable tax deductions claimed doubled, but, as Figure 7 shows, the number of donations received by large charities was almost unchanged. This is consistent with the notion that the surge in the *number* of tax deductions claimed in 2008 was due to a change in reporting behavior, not actual giving behavior.

We are further persuaded that the policy change affected reporting but not giving behavior by the fact that there was no apparent change in the trend value of donations collected before and after the policy change. Mirroring Figure 7, the line labeled “Tax Return Data” in Figure 8 shows the total value of charitable contributions reported on information reports sent to SKAT by the top-ten charities (with charity size measured by the number of donors, as above), and the line labeled “Charity Data” shows the total value of donations collected by the top-ten charities for each year 2001-2011. Apart from the spike in donations in 2005 (see Figure 8), most likely due to giving campaigns following the Indian Ocean tsunami in December 2004, growth in the total value of donations has been stable. The fraction of total donations reported to SKAT via information reports has also been stable over the information reporting period 2008-2011. Given that there was almost no change in the *number* of donations made pre- and post- reform, the data in Figure 8 indicate that there was no intensive margin giving response coinciding with the policy change either.

Supporting our claim that the reform did not affect giving behavior, there was little difference in the growth rate of mean charitable deductions in the post-reform period between taxpayers

the number of information reports received from each charity (per taxpayer) over the period 2008-2011.

who claimed a deduction in the pre-reform period and those who claimed for the first time in 2008. For the group of taxpayers who claimed a charitable tax deduction in 2008 (the first year of the reform), but not in either of 2006 or 2007 (the pre-reform period), growth in mean contributions over the period 2008-2011 averaged 2.2 percent, only slightly more than the 0.8 percent average growth rate for the group of taxpayers who claimed a charitable deduction in 2008 and in at least one of the two pre-reform years 2006 or 2007.¹⁵

Having established that there was no meaningful change in giving propensity around the time of the policy change, we attribute the surge in charitable tax deductions claimed between 2007 and 2008 to a change in reporting behavior. Before 2008, many taxpayers appear to have neglected to report their tax deductible charitable contributions, but since 2008 information reports have been used to automatically credit charitable deductions on taxpayers' behalf. Recall that the randomized audit experiment found only negligible amounts of charitable overclaiming.

6 Awareness of Giving Incentives

Our finding of substantial underclaiming of eligible charitable tax benefits points to the existence of pervasive frictions affecting reporting behavior. One potential friction is a lack of awareness of the tax incentives created by charitable giving. We investigate this further by examining an aspect of Denmark's charitable giving rules, in existence before 2012, that created a region of strictly dominated giving choices.

We begin by formally describing the incentives created by the pre-2012 regime, under which only total annual gifts per charity of DKK500 or more were eligible to tax deductibility, and in calculating the total amount of eligible tax deductions, the first DKK500 in contributions was excluded. Supposing taxpayer i can donate to N charities eligible for regular charitable deductions, the amount of their total charitable deductions, up to a maximum of 14,500, is

¹⁵The calculation includes those who did not claim a charitable deduction in some years 2009-2011, for both groups. We also restrict the sample to those taxpayers who filed a return in each year 2006-2011.

given by

$$S_i = \max \left\{ \left[\sum_{n=1}^N g_{i,n} 1(g_{i,n} \geq 500) - 500 \right], 0 \right\}, \quad (6.1)$$

where $g_{i,n}$ is taxpayer i 's total annual gifts to charity n , and $1(\cdot)$ is an indicator function taking the value one for gifts of DKK500 or more. The amount of tax benefits received is the tax deductible amount multiplied by the one-third subsidy rate.¹⁶ The examples provided in Table 5 are provided in order to help clarify this formula. For simplicity, we assume there are $N = 3$ charities in this example. Taxpayer A's gift is less than DKK500, so she receives no tax deductions for her charitable contributions. Taxpayer B makes one gift of DKK700, exceeding the DKK500 threshold, and so is eligible to receive tax preferences for this gift, but because the first DKK500 in gifts receives no tax benefit she has only DKK200 in charitable tax deductions. Taxpayer C is eligible to receive tax preferences on both her gifts of DKK500, and receives a total tax deduction of DKK500, after taking the exemption limit into account. Even though taxpayer D gave an additional DKK400 to charity number three compared to taxpayer C, and has given more than DKK500 in total, she receives no more tax deductions than taxpayer C because her gift to charity number three is less than DKK500.

For a taxpayer contemplating a gift to a single charity, the S_i function reduces to a kinked subsidy scheme with a DKK500 threshold. But once a taxpayer has made at least one charitable gift of DKK500 or more they face a *notched* subsidy for gifts to all other charities. The first gift meets the DKK500 exemption threshold, so all subsequent gifts to other charities are eligible for full tax deductibility if each gift is DKK500 or more. Suppose that a taxpayer's largest gift is $g_1 \geq 500$, Figure 9 shows the budget set facing the taxpayer for all *subsequent* gifts in the current tax year. Any second or subsequent gift to the value of $g \in (\underline{g}, \bar{g})$ is strictly dominated because a gift of $\bar{g} = 500$ affords a higher level of charitable contributions at no, or less, cost to the taxpayer. With the tax subsidy rate $\tau = \frac{1}{3}$ and $\bar{g} = 500$ then the lower limit on the strictly dominated region is $\underline{g} = \bar{g}(1 - \tau) = DKK333$.

¹⁶In the text we refer to a one-third subsidy rate for simplicity, but there is slight variation based on the taxpayer's place of residence.

To illustrate the incentives created by this notched subsidy scheme with an example, consider taxpayer D in Table 5, whose gift of DKK400 to charity number three is a dominated choice: either of her first two gifts meets the DKK500 exemption threshold, so each subsequent gift is eligible for tax deductibility provided it is to the value DKK500 or more. If she raised her donation to charity number three by DKK100 to DKK500, this gift would be eligible for tax deductibility, giving her a tax saving of DKK166 (given the one-third subsidy rate), leaving her with DKK66 more in after-tax income (plus any utility gain from higher charitable contributions).

Fortunately, under the information reporting regime charities report to the tax authority all gifts above *and below* the DKK500 eligibility threshold for each taxpayer, allowing us to investigate taxpayer awareness of the incentives created by the kinked-and-notched subsidy scheme. Figure 10 plots the number of charitable gifts made in 2011 by claim size for taxpayers with a maximum gift of DKK500 or more. The distribution for the years 2008-2010 is similar to the distribution shown in Figure 10 for 2011. All of these taxpayers face the budget set shown by Figure 9: each second or subsequent gift qualifies for full tax deductibility if it is DKK500 or more. The black bars in Figure 10 indicate the number of gifts made in the strictly dominated region. Only a few taxpayers made more than one dominated giving choice, so almost all these observations represent unique taxpayers; in total, 11,624 taxpayers made a gift in the strictly dominated region in 2011. There is a clear mass point at DKK500, at the upper limit of the notch, suggesting that many taxpayers understood the budget set created by the subsidy scheme, and were induced to raise their donations to DKK500. As a share of all taxpayers claiming a charitable deduction, only about 2 to 3 percent of taxpayers made strictly dominated giving choices in each year 2008-2011. However, the number of gifts in the dominated region DKK333-500 in 2011 was about one-quarter the number in the range DKK500-666, and a little less in earlier years.

A clustering of donations in DKK100 multiples is evident, with the mass point at DKK600 even larger than that at DKK500. Because many taxpayers make gifts via automatic deduction on a monthly basis, we conjecture that the DKK600 mass point corresponds to taxpayers

choosing an integer DKK50 per month charitable deduction: DKK50 is the smallest multiple of 10 that results in annual contributions qualifying for a subsidy, suggesting that the location of this mass point is influenced by the notch.

The economic significance of these dominated giving choices depends on the frequency with which individual taxpayers make such errors. Making a dominated choice in any one year results in a relatively small loss, and a taxpayer may make a mistake in any given year for idiosyncratic reasons. But for taxpayers making repeated mistakes, the cost may cumulate to a substantial amount, providing perhaps more persuasive evidence of ignorance of tax incentives for giving. To examine the frequency of dominated giving choices, Table 6 reports, for the data sample available 2008-2011, the number of taxpayers who made dominated choices in each given and subsequent year. For example, in 2008 5,927 taxpayers made a dominated choice, and of those 2,050 also made a dominated choice in 2009; 1,878 made a dominated choice in each year 2008-2010, and so on. For each year on the diagonal, about one-third of the taxpayers making a dominated choice do so again the following year. And of those taxpayers making a dominated choice in 2008, about 25 percent made a dominated choice in each of the next three years.

Taken together, these results provide evidence that a sizable minority of taxpayers did not understand the complex giving incentives created by the notched subsidy scheme in place before 2012. A non-trivial fraction of those making dominated choices did so repeatedly. However, a majority many taxpayers made giving choices just above the dominated region, indicating a high degree of awareness of the complex giving incentives in place before 2012.

7 Optimal Reporting Regime

Was the rise in the value of charitable tax deductions claimed as a result of the reform—given no increase in actual charitable giving— socially desirable or undesirable? On the one hand, between 2007 and 2008 (before and after the policy change), there was an increase in charitable tax expenditures of about DKK35m. However, the reduction in net revenue

collected alone, even conditional on no change in giving behavior, tells us nothing about the welfare implications of the reform. The reduction in net revenue represents a transfer among citizens, not lost resources. Given an unchanged government revenue requirement, there is a social cost if the revenue shortfall must be raised by reliance on a distortionary tax instrument. On the other hand, the introduction of information reporting and pre-population is likely to have reduced compliance costs borne by taxpayers.

To examine these arguments more closely, we next outline a simple normative model, drawing on Mayshar (1991), that can be used to evaluate the social welfare implications of moving from a self-reporting regime for charitable gifts to an information reporting and pre-population regime. The model is written with reference to charitable deductions but, with some minor relabeling, it could be used to inform the choice of reporting regime for a variety of other tax deduction line items.

We consider a social planner choosing tax-system parameters affecting charitable giving and reporting behavior to maximize social welfare. The chosen tax system parameters are summarized by the policy vector $\theta \in \{R, \tau\}$, where R is the reporting regime, and τ is the subsidy rate on eligible charitable contributions. We let $R_{i,p}$ denote an information reporting and pre-population of deductions regime for charitable gifts, and R_s a self-reporting regime.

Taxpayer i is assumed to derive warm-glow utility from their own charitable gifts $g_i(\theta)$ that depend on the tax-system policy θ , the total amount of public goods funded by charitable gifts $G(\theta) = \int g_i(\theta) di$, and consumption of all other goods. For simplicity we assume quasi-linear utility, with consumption of all other goods the numeraire. This assumption is not limiting because most taxpayers make only small charitable contributions, in which case income effects due to changes in charitable giving are not important. There is an exogenous government revenue requirement unaffected by variation in charitable giving tax system parameters, and all charitable tax-expenditures and administrative costs must be funded using a distortionary tax instrument.¹⁷ These assumptions allow us to specify the following simple money-metric

¹⁷We exclude the possibility of levying lump-sum taxes by assumption as in, for example, the Ramsey optimal commodity tax literature. More generally, administrative and compliance cost considerations can endogenize the absence of lump-sum tax instruments, even where there are no distributional concerns (see, for example,

utilitarian social welfare function given tax policy θ :

$$W(\theta) = \alpha + bG(\theta) - m(\theta) - (MECF - 1)TE(\theta) - (MECF)A(\theta), \quad (7.1)$$

where α is the component of social welfare unrelated to charitable giving and unaffected by the charitable giving policy vector θ , b is the constant marginal social value of all charitable contributions made, $m(\theta)$ is the dollar cost borne by taxpayers in complying with tax-system θ , $TE(\theta)$ are tax expenditures on charitable tax deductions claimed, $A(\theta)$ are administrative costs, and $MECF$ is the marginal efficiency cost of funds for the tax instrument used to raise revenue to fund charitable tax expenditures and administrative costs. The marginal social value of charitable contributions, b , captures both private (warm-glow) and public utility gained from charitable giving. Tax expenditures represent a transfer between households, so the social cost of raising revenue to fund charitable deductions comprises only the efficiency cost of raising that revenue: $(MECF - 1)TE(\theta)$. In contrast, administrative expenses have a resource cost, and reduce our money-metric social welfare function by $(MECF)A(\theta)$. The term $m(\theta)$ comprises compliance costs borne by individual taxpayers directly and by charities on behalf of taxpayers; this is important for the policy change we study because part of the reduction in compliance costs from the introduction of information reporting may have been shifted onto charities.

Some taxpayer may engage in evasion by overclaiming charitable tax deductions. Total charitable tax expenditures are equal to:

$$TE(\theta) \equiv \tau G^r(\theta), \quad (7.2)$$

where $G^r(\theta)$ is the value of all *reported* deductions, and τ the subsidy rate.

Letting $\Delta X(\theta_1, \theta_0) \equiv X(\theta_1) - X(\theta_0)$ represent the change in variable X due to a discrete change in the tax-system policy vector θ , the welfare effect of moving from a self-reporting

Yitzhaki 1979).

regime to an information reporting and pre-population regime for charitable deductions is equal to:

$$\begin{aligned} \Delta W(\theta_{i,p}, \theta_s) &= b\Delta G(\theta_{i,p}, \theta_s) - \Delta m(\theta_{i,p}, \theta_s) - (MECF - 1)\Delta TE(\theta_{i,p}, \theta_s) \\ &\quad - (MECF)\Delta A(\theta_{i,p}, \theta_s), \end{aligned} \quad (7.3)$$

where $\theta_{i,p} = \{R_{i,p}, \tau\}$ and $\theta_s = \{R_s, \tau\}$. Introducing an information reporting and pre-population regime increases social welfare if $\Delta W(\theta_{i,p}, \theta_s) > 0$. By rearrangement of Equation (7.3), it can be seen that welfare rises if:

$$b\Delta G(\theta_{i,p}, \theta_s) - \Delta m(\theta_{i,p}, \theta_s) \geq (MECF - 1)\Delta TE(\theta_{i,p}, \theta_s) + (MECF)\Delta A(\theta_{i,p}, \theta_s). \quad (7.4)$$

The first term on the left-hand-side of Equation (7.4) is the social benefit from any increase in charitable giving, and the second term is the social benefit from any reduction in compliance costs. On the right-hand-side, the first term measures the increase in the social cost of transferring income among taxpayers via charitable tax expenditures, and the second term measures the social cost of an increase in administrative expenses. Administrative costs receive a higher social weight than compliance costs because they are funded from after-tax revenue raised using distortionary taxes.

We find no evidence of an increase in charitable giving accompanying the introduction of information reporting and pre-population of deductions in 2008, in which case $\Delta G(\theta_{i,p}, \theta_s) \simeq 0$. Hence, the introduction of information reporting and pre-population of deductions is socially desirable only if the reduction in compliance costs for taxpayers is greater than the appropriately weighted sum of any additional administration cost and the net social cost of funding increased transfers among taxpayers via charitable tax deductions.

Denmark's tax system has long featured widespread information reporting, so the marginal increase in administrative costs from extending its use to charitable giving is likely to be very small. Similarly, any reduction in audit costs from the use of information reporting for

charitable tax deductions is likely to be negligible, relative to the other terms in Equation (7.4). Less than one percent of tax returns are routinely examined by an auditor, and the fraction of all taxpayers reporting any charitable tax deductions under the self-reporting regime was only about 3.5 percent. Compared to some sources of income line items, auditing charitable tax deductions is not particularly costly for the tax authority, requiring only cross-checking of taxpayer provided receipts against reported deductions. Together, these considerations imply that any change in administrative costs due to the policy change is an order of magnitude smaller than the social benefit of reduced compliance costs and the social cost of increased charitable tax expenditures. Hence, our framework indicates that the policy change increased social welfare iff $-\frac{\Delta m}{\Delta TE} \gtrsim (MECF - 1)$.

The *MECF* has been estimated in numerous empirical studies (see, for example, Ballard et al., 1985, Gruber and Saez, 2002) and we have estimated the change in charitable tax expenditures due to the reform, but we must estimate the change in compliance costs. One measure of the reduction in compliance costs borne by taxpayers due to the policy change is the average value of forgone tax deductions under the self-reporting regime. This approach, used by Pitt and Slemrod (1989) to estimate the magnitude of compliance costs for the U.S. income tax system, provides a valid estimate under the assumptions that i) taxpayers correctly estimate their cost of reporting charitable tax deductions; ii) the magnitude of compliance costs is unrelated to the size of a taxpayer's eligible charitable deduction, and iii) taxpayers only fail to report their deductions when it is privately optimal to do so (when compliance costs exceed tax benefits forgone). Under these assumptions, the *average* value of forgone tax deductions provides an estimate of the *average* compliance cost borne by those who did claim their charitable tax benefits under the self-reporting regime: in section 4, we estimated the average value of forgone tax deductions to be DKK262 per taxpayer. Were there no increase in compliance costs borne by charities, then the aggregate reduction in compliance costs is estimated to be $-\Delta m = DKK262 \times 150,311 \simeq DKK39.4m$ (the average value of compliance costs multiplied by the number of taxpayers claiming a deduction under the self-reporting regime in 2007). The estimated increase in the value of tax expenditures

caused by the reform is the increase between 2007 and 2008 in the after-tax value of claimed tax deductions that were no more than DKK2,500: $\Delta TE \simeq DKK40m$. Hence, $-\frac{\Delta m}{\Delta TE} \simeq 1$ and the optimality condition $-\frac{\Delta m}{\Delta TE} \gtrsim (MECF - 1)$ is easily satisfied for standard estimates of the *MECF*, indicating that the policy change was desirable under these assumptions.

Some of the reduction in compliance costs directly borne by taxpayers was undoubtedly shifted to charities. Nevertheless, the shift in compliance cost from taxpayers to charities is likely to have resulted in a reduction in overall compliance costs because of charities' expertise compared to taxpayers, and any economies of scale, in record keeping. Any marginal increase in compliance costs imposed on charities by the information reporting requirement is likely to be small because charities routinely record the names of donors and the size of their gifts to aid their own fundraising efforts and, in any case, charities eligible to receive tax-favored contributions had to maintain similar records prior to the policy change in order to comply with SKAT's annual reporting requirements. Perhaps more problematically, the value of forgone deductions may overstate the magnitude of compliance costs borne by taxpayers under the self-reporting regime: taxpayers may fail to claim eligible deductions for reasons other than a rational cost-benefit calculation, such as inattention, which do not provide evidence on the magnitude of compliance costs for those who did claim charitable deductions under the self-reporting regime.

8 Conclusion

This paper provides evidence of substantial underclaiming of charitable tax deductions under the self-reporting regime that existed in Denmark before 2008; the introduction of information reporting and pre-population of charitable deductions coincided with a doubling in the number of deductions claimed. We estimate the after-tax value of unclaimed charitable tax deductions to have been about DKK262 per taxpayer per-year, but that the total value of forgone benefits to be larger because many taxpayers systematically did not claim their eligible deductions under the self-reporting regime. We document that there was negligible

evasion under the self-reporting regime, and that there was no change in giving behavior at the time of the reform. Most taxpayers making multiple charitable gifts appear to have understood the giving incentives created by the notched subsidy scheme in place before 2012, but a still sizable minority made dominated giving choices, in some cases repeatedly. Our results caution researchers using tax return data to measure real behavioral response to be aware of simultaneous (and possibly endogenous to the behavioral response) changes in reporting behavior; we have demonstrated that this is an important concern for low-value tax deductions.

For tax administrators, perhaps the most surprising finding is that the introduction of information reporting for a tax deduction line item can result in a loss in revenue—unlike sources of income line items, for which information reporting has proven to be very successful at limiting evasion opportunities and thus raising revenue collections (see Kleven et al., 2011, and Slemrod, 2007). Nevertheless, even if it generates a revenue loss, such a reform may be socially desirable, even if it has no effect on charitable giving; we have laid out a simple modeling framework that shows how to appropriately weight the social cost of changes in compliance and administrative cost due to such tax reporting reform.

References

- Ballard, Charles L., John B. Shoven, and John Whalley (1985). General Equilibrium Computations of the Marginal Welfare Costs of Taxes in the United States. *American Economic Review* 75(1): 128–138.
- Besley, Timothy and Stephen Coate (1992). Understanding Welfare Stigma: Taxpayer Resentment and Statistical Discrimination. *Journal of Public Economics* 48(2): 165–183.
- Bhargava, Saurabh and Dayanand S. Manoli (2011). Why Are Benefits Left on the Table? Assessing the Role of Information, Complexity, and Stigma on Take-up with an IRS Field Experiment. Working Paper, University of California, Los Angeles.

- Carroll, Gabriel D., James J. Choi, David Laibson, Brigitte C. Madrian, and Andrew Metrick (2009). Optimal Defaults and Active Decisions. *Quarterly Journal of Economics* 124(4): 1639–1674.
- Chetty, Raj (2012). Bounds on Elasticities with Optimization Frictions: A Synthesis of Micro and Macro Evidence on Labor Supply. *Econometrica* 80(3): 969–1018.
- Chetty, Raj, John N. Friedman, Soren Leth-Petersen, Torben Nielsen, and Tore Olsen (2012). Active vs. Passive Decisions and Crowdout in Retirement Savings Accounts: Evidence from Denmark, NBER Working Paper No. 18565.
- Fack, Gabrielle and Camille Landais (2011). Charitable Giving and Tax Policy in the Presence of Cheating: Theory and Evidence from the U.S. and France, Working Paper, London School of Economics.
- Gruber, Jonathan and Emmanuel Saez (2002). The Elasticity of Taxable Income: Evidence and Implications. *Journal of Public Economics* 84(1): 1–32.
- Kleven, Henrik J., Martin B. Knudsen, Claus T. Kreiner, Soren Pedersen, and Emmanuel Saez (2011). Unwilling or Unable to Cheat? Evidence from a Tax Audit Experiment in Denmark. *Econometrica* 79(3): 651–692.
- Kleven, Henrik J. and Wojciech Kopczuk (2011). Transfer Program Complexity and the Take Up of Social Benefits. *American Economic Journal: Economic Policy* 3(1): 54–90.
- Kleven, Henrik J. and Mazhar Waseem (2013). Using Notches to Uncover Optimization Frictions and Structural Elasticities: Theory and Evidence from Pakistan. *Quarterly Journal of Economics* 128(2): 669–723.
- Kotakorpi, Kaisa and Jani-Petri Laamanen (2013). Complexity, Saliency and Income Tax Filing Behavior: Evidence From a Natural Experiment, Working Paper, University of Turku.

- Mayshar, Joram (1991). Taxation with Costly Administration. *Scandinavian Journal of Economics* 93(1): 75–88.
- Organization for Economic Co-operation and Development (OECD). (2006). Using Third Party Information Reports to Assist Taxpayers Meet their Return Filing Obligations: Country Experiences With the Use of Pre-Populated Personal Tax Returns. Paris, France.
- Pitt, Mark M. and Joel Slemrod (1989). The Compliance Cost of Itemizing Deductions: Evidence from Individual Tax Returns. *American Economic Review* 79(5): 1224–1232.
- Rehavi, Marit (2010). Partial Reporting: An Example from Charitable Giving, Working Paper, University of British Columbia.
- Saez, Emmanuel (2010). Do Taxpayers Bunch at Kink Points? *American Economic Journal: Economic Policy* 2(3): 180–212.
- Slemrod, Joel (1989). Are Estimated Tax Elasticities Really Just Tax Evasion Elasticities? The Case of Charitable Contributions. *Review of Economics and Statistics* 71(3): 517–522.
- Slemrod, Joel (2007). Cheating Ourselves: The Economics of Tax Evasion. *Journal of Economic Perspectives* 21(1): 25–48.
- Yitzhaki, Shlomo (1979). A Note on Optimal Taxation and Administrative Costs. *American Economic Review* 69(3): 475–480.

Table 1: Number of Charitable Organizations

	Approved Organizations	Reporting Organizations
2000	695	579
2001	716	642
2002	752	682
2003	772	704
2004	778	702
2005	792	715
2006	756	698
2007	790	736
2008	796	743
2009	813	780
2010	817	782
2011	833	809

Notes: *Approved Organizations* refers to the number of organizations SKAT recognizes as eligible to receive tax deductible charitable gifts. *Reporting Organizations* refers to the subset that made an annual declaration to SKAT in each year.

Table 2: Taxpayers Reporting a Charitable Deduction: Summary Statistics

	2006	2007	2008	2009	2010	2011
Number of Deductions	162,983	150,311	300,122	325,525	365,167	388,976
Regular gifts			270,826	294,912	336,571	360,527
Long-Term Contracts			44,381	46,069	44,676	44,399
Mean Value (DKK)	4,033	4,671	2,697	2,689	2,650	2,593
Regular gifts			2,026	2,071	2,098	2,074
Long-Term Contracts			6,009	5,740	5,850	5,879
Median Value (DKK)	2,400	2,470	1,500	1,500	1,500	1,375
Regular gifts			1,350	1,375	1,300	1,280
Long-Term Contracts			2,526	2,400	2,500	2,500
Total Value (DKK, '000)	657,310	702,103	809,429	875,337	967,693	1,008,615
Regular gifts			548,693	610,763	706,126	747,733
Long-Term Contracts			260,676	264,436	261,355	261,010

Notes: *Number of Deductions* is the number of taxpayers reporting a charitable deduction in each year shown. For 2008 and after, charitable gifts were reported in two categories. Information reporting and pre-population of deductions was introduced in 2008 for both regular and long-term gifts. The total number of taxpayers claiming a charitable tax deduction in each year is less than the sum of the two groups because some taxpayers claimed deductions in both categories.

Table 3: Number of Tax Deductible Claims: By Claim Size

Claim Size (DKK)	2006	2007	2008	2009	2010	2011
0-500	8,931	7,356	80,170	88,181	103,558	110,701
501-1,500	34,468	30,276	71,103	75,896	83,344	93,948
1,501-3,000	60,536	56,085	89,407	96,082	103,297	105,273
3,001-5,000	24,379	21,931	25,260	27,547	32,122	34,467
5,001-10,000	25,434	19,084	18,027	20,482	23,838	25,123
> 10,000	9,235	15,579	16,155	17,337	19,008	19,464
Mean	4,033	4,671	2,697	2,689	2,650	2,593
Median	2,400	2,470	1,500	1,500	1,500	1,375

Notes: Claim size is the amount of tax deductions received. Information reporting and pre-population was introduced in 2008.

Table 4: Charitable Tax Deductions Claimed: 2008

	Number
Total deductions claimed in 2008	300,122
Filed a return 2006-2011	293,134
No deduction 2006-2007	152,857
3 deductions 2009-2011	104,197
2 deductions 2009-2011	15,571
1 deductions 2009-2011	13,961
0 deductions 2009-2011	19,128

Notes: *Filed a return* is the number of taxpayers who claimed a charitable tax deduction in 2008 and filed a tax return in each year 2006-2011. *No deduction 2006-2007* is the subset who did not claim a charitable tax deduction in 2006 or 2007. The *No deduction 2006-2007* group is split into four mutually exclusive groups according to the number of charitable tax deductions claimed in the years 2009-2011.

Table 5: Tax Value of Regular Gifts

Taxpayer	Charity			Tax Deductible
	1	2	3	Amount
A	400	0	0	0
B	0	700	0	200
C	500	500	0	500
D	500	500	400	500

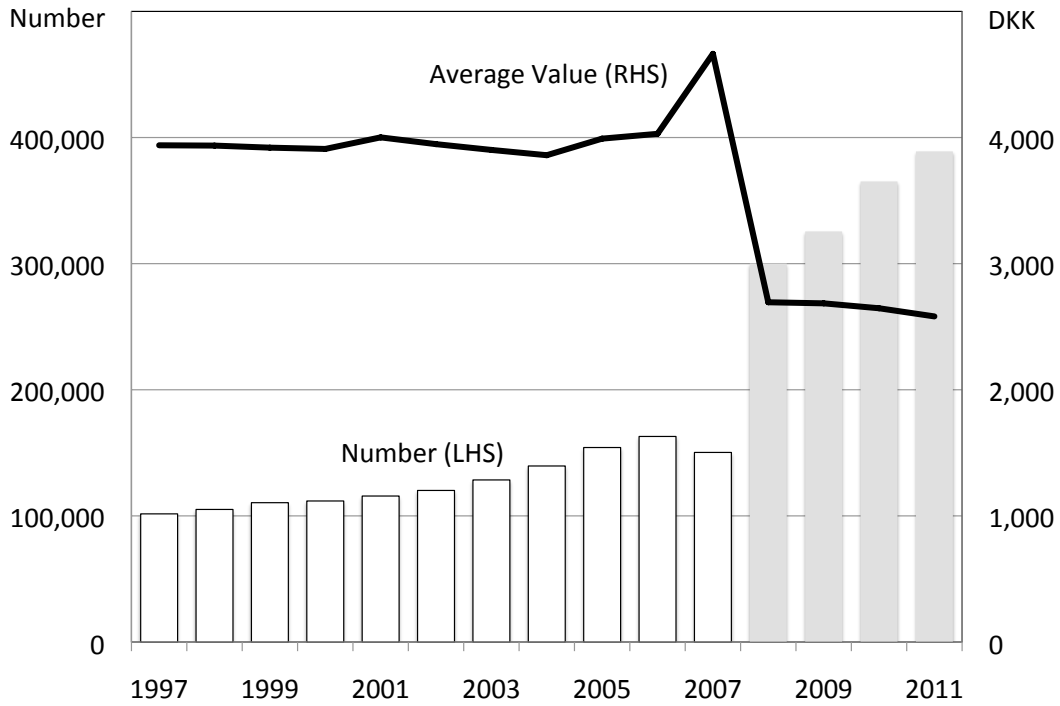
Notes: This table shows the amount of regular tax deductions received by four hypothetical taxpayers. Only annual gifts of DKK500 or more per charity qualified for a tax deduction before 2012, and the first DKK500 in total gifts is excluded in calculating the total value of regular tax deductions. The value of charitable deductions is equal to the deductible amount multiplied by the one-third subsidy rate.

Table 6: Dominated Giving Choices

	2008	2009	2010	2011
2008	5,927	2,050	1,878	1,480
2009		7,350	2,421	1,925
2010			9,743	3,168
2011				11,624
Total	270,826	294,912	336,571	360,527

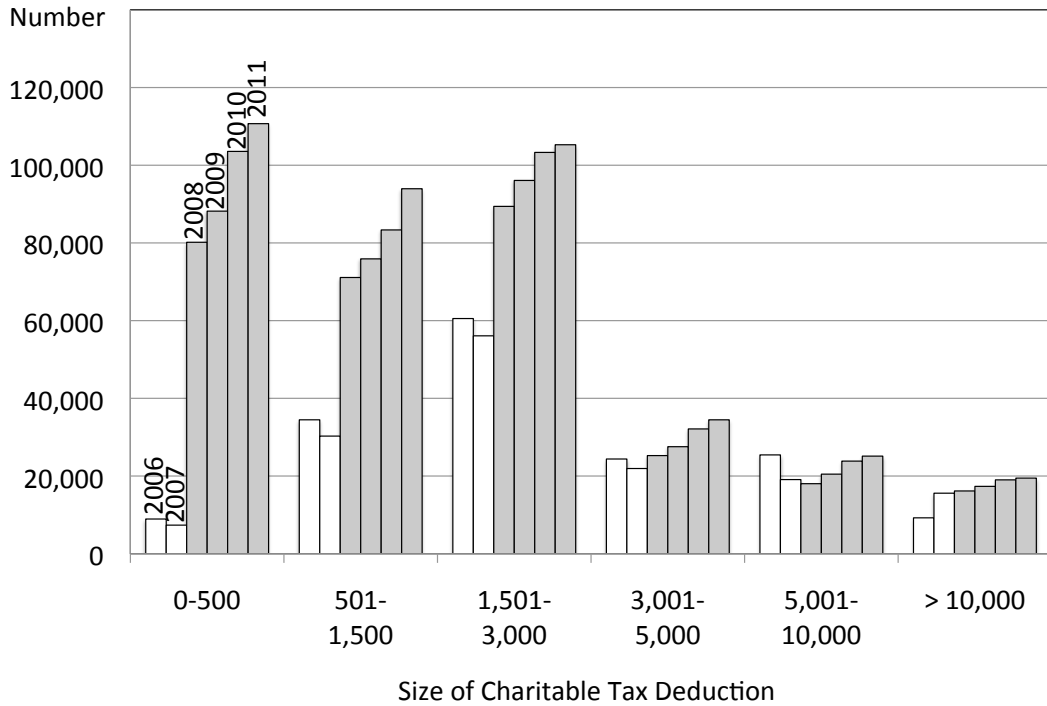
Notes: The diagonal elements report the number of taxpayers making a dominated giving choice in that year; the off-diagonal elements report the number of those taxpayers who made a dominated giving choice in each subsequent year. For example, 5,927 taxpayers made a dominated choice in 2008, and of those 1,878 also made a dominated choice in 2009 and 2010. *Total* is the number of taxpayers claiming a regular charitable tax deduction in each year.

Figure 1: Number and Average Value of Charitable Deductions Claimed



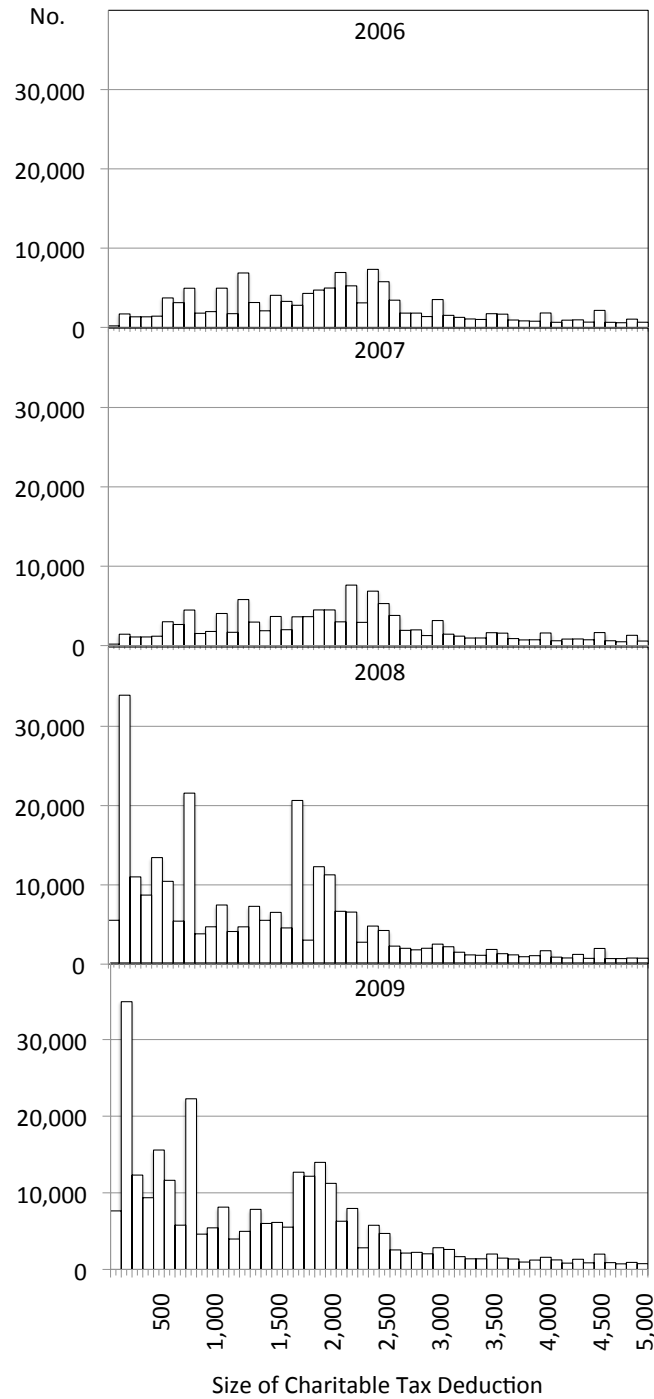
Notes: The columns in this figure show the number of taxpayers reporting a charitable deduction for the years 1997-2011, on the left-hand scale. The line shows the mean value of tax deductions claimed, on the right-hand scale. The shaded columns are for years in which there was information reporting and pre-population of deductions for regular and long-term gifts.

Figure 2: Number of Tax-Deductible Claims: By Claim Size and Year



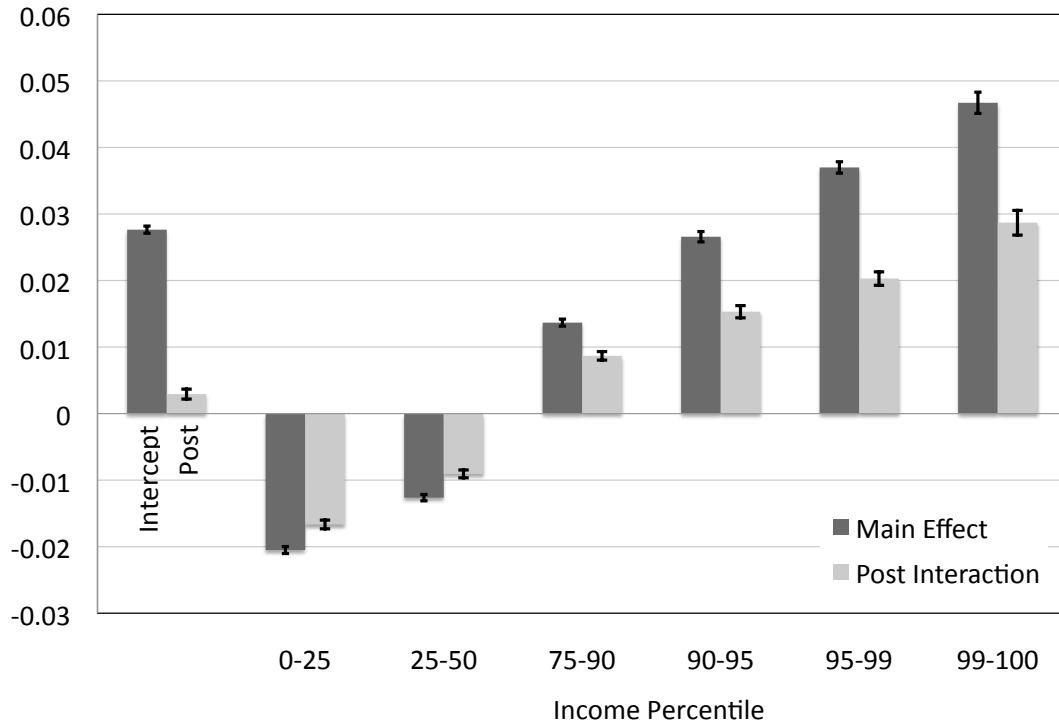
Notes: This figure shows the number of taxpayers reporting a charitable deduction for the years 2006-2011, by size of reported tax deduction. The claim size on the x-axis is the amount of tax deduction claimed, not the total value of charitable gifts made. Years for which there was information reporting and pre-population of deductions for regular and long-term gifts correspond to the shaded bars.

Figure 3: Distribution of Tax Deductions Claimed



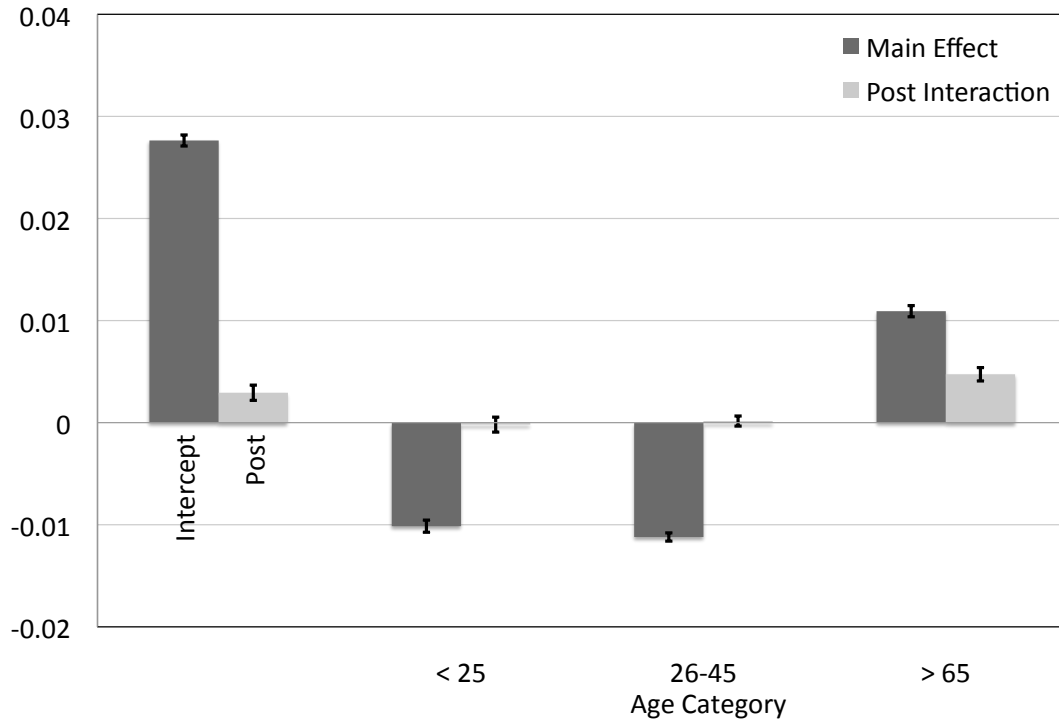
Notes: This figure shows the distribution of tax deductions claimed for the years 2006-2009. Information reporting and pre-population for regular and long-term charitable gifts was introduced in 2008.

Figure 4: Regression Parameter Estimates: Income Percentile



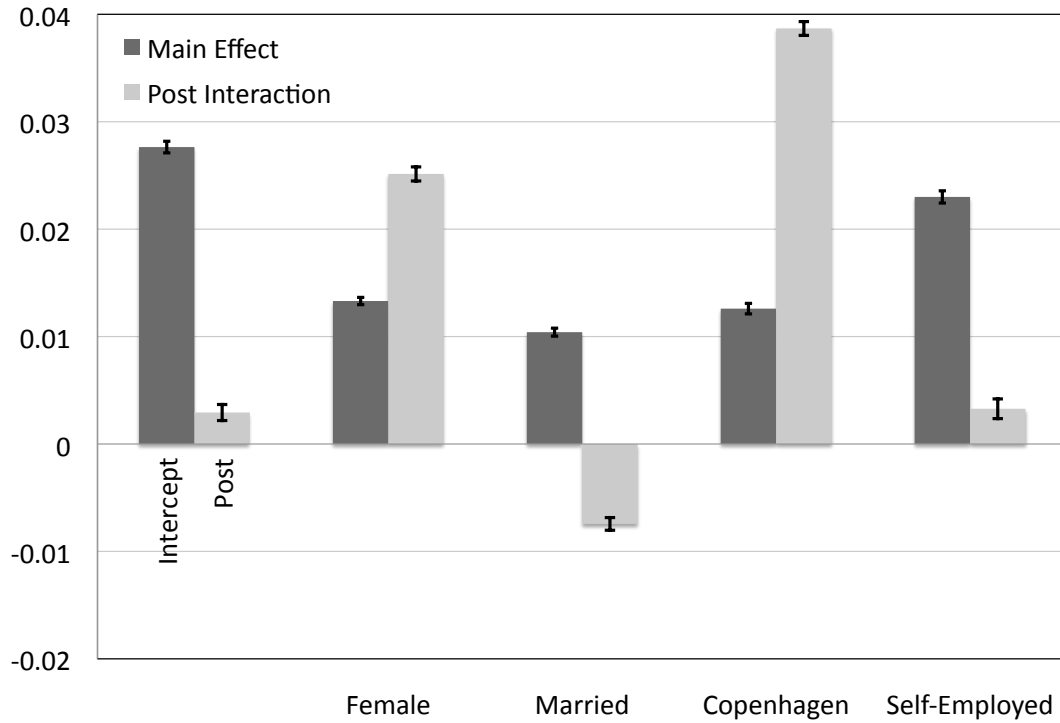
Notes: This figure reports OLS parameter estimates for the regression specification shown by Equation (4.1). The error bars show a 95 percent confidence interval for each parameter estimate. The intercept term indicates the probability that a taxpayer with the baseline set of characteristics claimed a charitable tax deduction in the pre-reform period: the baseline set of characteristics is a male taxpayer aged 46-65, in 50-75th income percentile, single, residing outside Copenhagen, and not self-employed.

Figure 5: Regression Parameter Estimates: Age



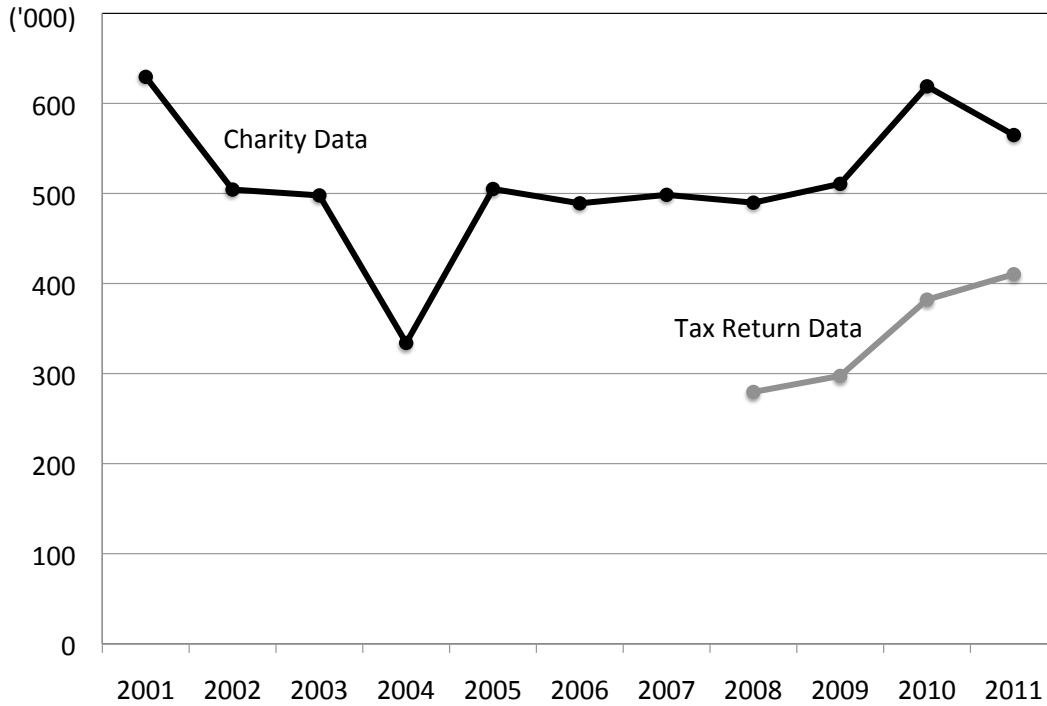
Notes: This figure reports OLS parameter estimates for the regression specification shown by Equation (4.1). The error bars show a 95 percent confidence interval for each parameter estimate. The intercept term indicates the probability that a taxpayer with the baseline set of characteristics claimed a charitable tax deduction in the pre-reform period: the baseline set of characteristics is a male taxpayer aged 46-65, in 50-75th income percentile, single, residing outside Copenhagen, and not self-employed.

Figure 6: Regression Parameter Estimates: Selected Characteristics



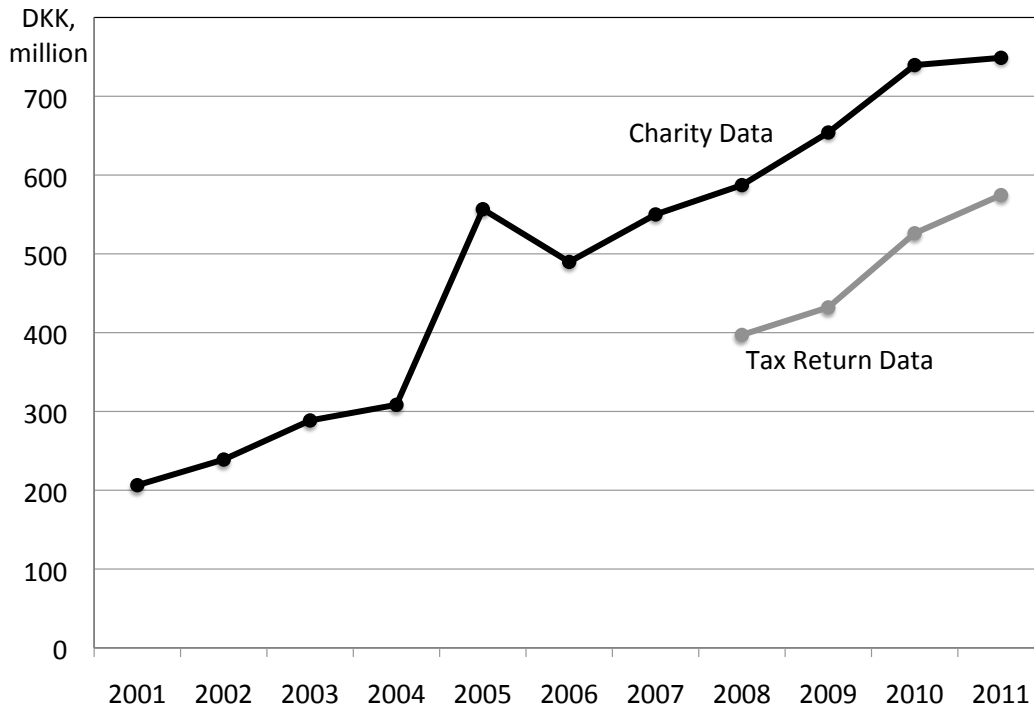
Notes: This figure reports OLS parameter estimates for the regression specification shown by Equation (4.1). The error bars show a 95 percent confidence interval for each parameter estimate. The intercept term indicates the probability that a taxpayer with the baseline set of characteristics claimed a charitable tax deduction in the pre-reform period: the baseline set of characteristics is a male taxpayer aged 46-65, in 50-75th income percentile, single, residing outside Copenhagen, and not self-employed.

Figure 7: Number of Charitable Donations: Ten Largest Charities



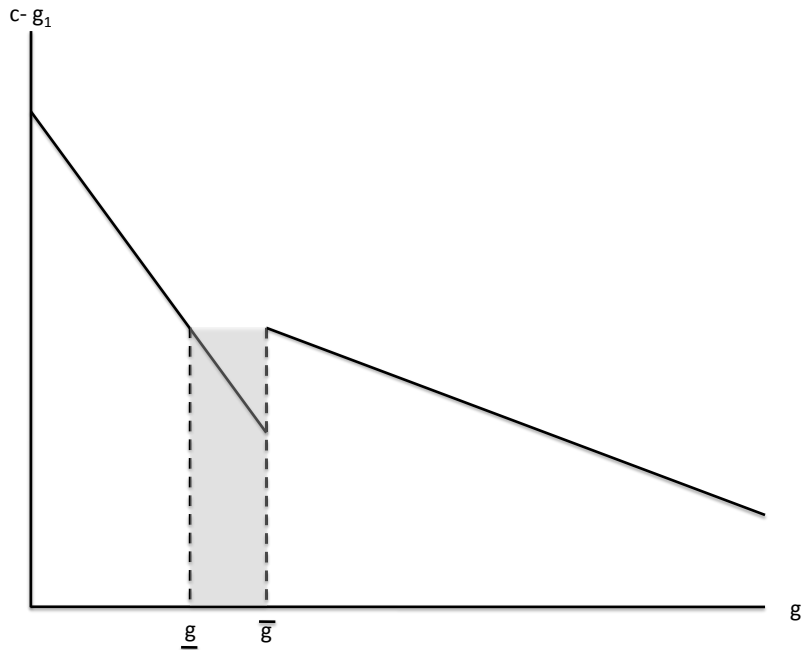
Notes: The *Tax Return Data* line indicates the total number of information reports received by SKAT from the 10 largest charities (aggregated by charity for each taxpayer), where charity size is measured by the total number of information reports received by SKAT over the period 2008-2011 (information reporting and pre-population for regular and long-term charitable gifts was introduced in 2008). The *Charity Data* line indicates the number of contributing members reported by those 10 charities. The dip in 2004 is due to a sharp drop in the number of donors reported by one large charity. Because there was no accompanying drop in the value of donations reported, we suspect this to be a reporting error.

Figure 8: Value of Charitable Donations: Ten Largest Charities



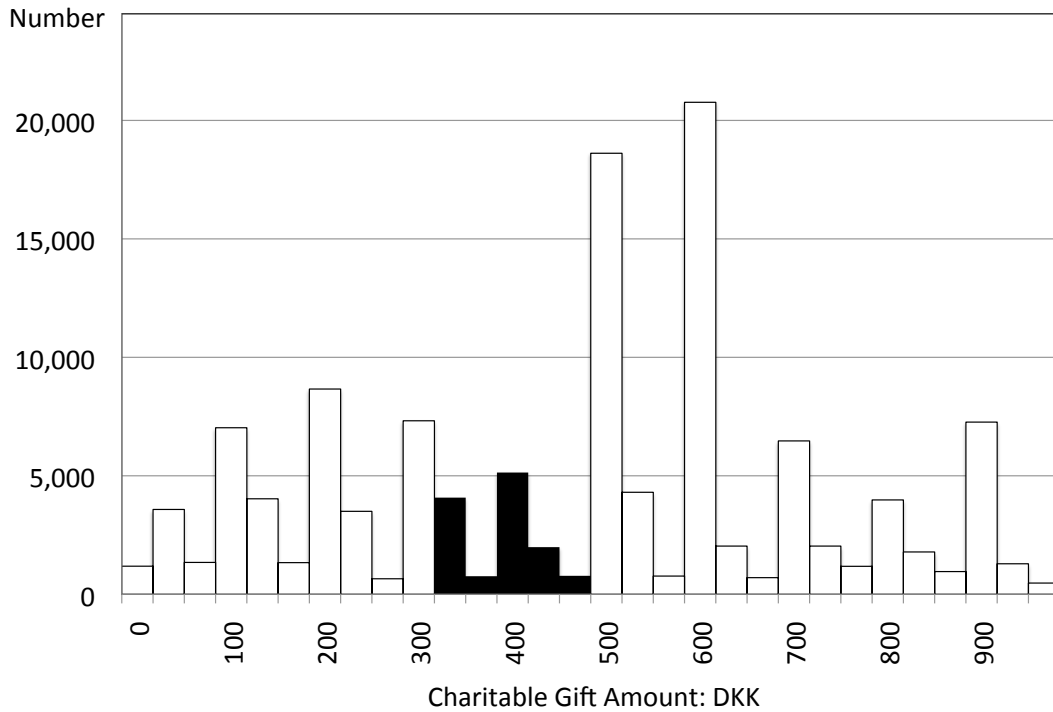
Notes: The *Tax Return Data* line indicates the total value of charitable donations contained in information reports received by SKAT from the 10 largest charities, where charity size is measured by the total number of information reports received by SKAT over the period 2008-2011 (information reporting and pre-population for regular and long-term charitable gifts was introduced in 2008). The *Charity Data* line indicates the total value of donations collected by those 10 charities.

Figure 9: Notched Budget Set



Notes: This figure shows the budget set for regular gifts, for a taxpayer with total annual gifts of DKK500 or more to a particular charity. All subsequent gifts to other charities qualify for tax deductibility provided they are of DKK500 or more per year. Any gift in the shaded region $g \in [\underline{g}, \bar{g}]$ is a strictly dominated choice for a taxpayer because a gift of \bar{g} results in a higher level of charitable contributions and either the same or a higher level of consumption of all other goods. At the one-third subsidy rate, $\bar{g} = 500$ and $\underline{g} = 333$. The y-axis measures consumption on all non-charitable items, less the largest charitable donation in excess of the DKK500 threshold (g_1).

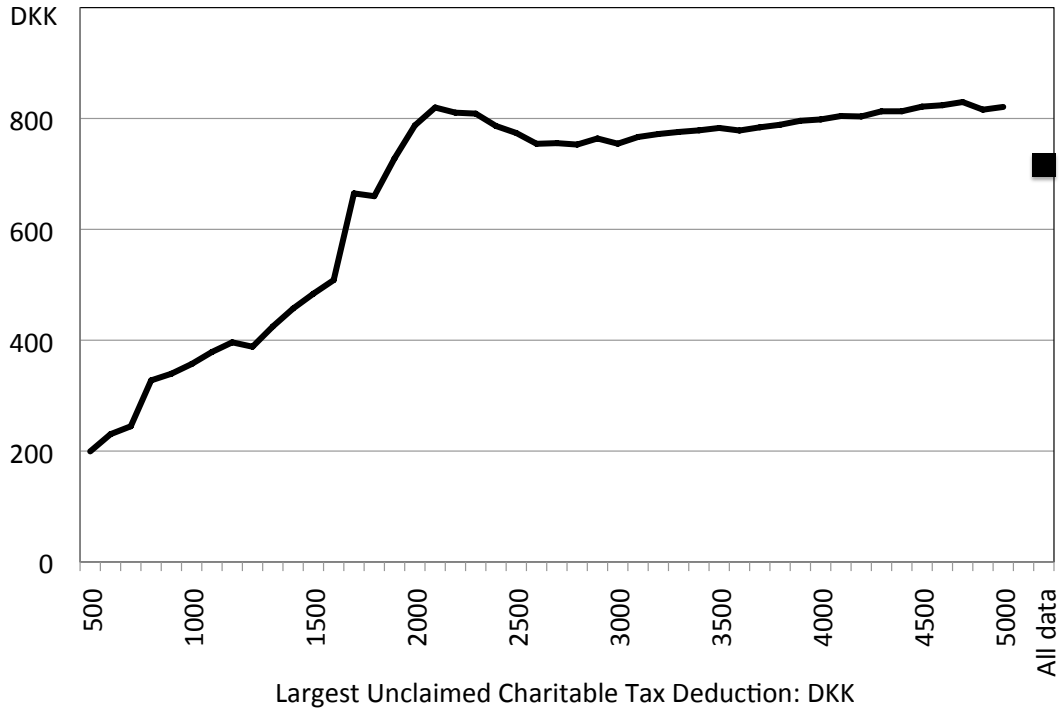
Figure 10: Distribution of Charitable Gifts in 2011: Dominated Choices



Notes: For the group of taxpayers with a maximum regular gift greater than or equal to DKK500, this figure shows the number of other regular gifts made in 2011 (on the y-axis) by gift amount (on the x-axis). Gift amounts are in bins of DKK33.3, with tick mark labels corresponding to the lower limit of each bin. The solid bars show the number of strictly dominated charitable gift choices made in 2011. A taxpayer makes a strictly dominated choice if they make total annual gifts to at least one charity of DKK500 or more, and any further total annual gifts to other charities of more than DKK333 but less than DKK500. Raising any gift strictly inside the range DKK333-500 to DKK500 affords a higher level of charitable contributions at either no or less cost to the taxpayer. A few taxpayers made more than one strictly dominated choice, each of which is shown in the figure. The distribution is similar for the years 2008-2010 in which data are available.

A Appendix

Figure 11: Average Value of Unclaimed Deductions



Notes: The black line shows the average value of the change in charitable deductions claimed between 2007 and 2008 for claims having a value no more than the upper limit shown on the x-axis. That is, the mean value (m) of net new contributions between 2007 and 2008 conditional on claimed gifts (g) being no more than x is $(m|g < x) = [(V_{2008}|g < x) - (V_{2007}|g < x)] / [(N_{2008}|g < x) - (N_{2007}|g < x)]$, where $(V_t|g < x)$ is the total value of tax deductions less than x in value claimed in year t , and $(N_t|g < x)$ is the number of tax deductions with a value no more than x claimed in year t . The solid dot sets x to its maximum observed value: $x = x_{max}$.

Table 7: Regression Results for Equation (4.1)

Dependent Variable: Claimed a Tax Deduction			
	Coefficient	Std. Error	t-Statistic
Intercept	0.02764	0.00027068	102.11
Female	0.01331	0.00016898	78.77
Married	0.01041	0.00018638	55.86
Copenhagen	0.01260	0.00024514	51.39
Self-Employed	0.02300	0.00028487	80.74
Time	-0.00398	0.00016266	-24.45
Age: <25	-0.01014	0.00029713	-34.14
Age: 26-45	-0.01120	0.00020158	-55.55
Age: >65	0.01092	0.00027426	39.81
Income: 0-25th Percentile	-0.02050	0.00026347	-77.82
Income: 25-50th Percentile	-0.01263	0.00023914	-52.83
Income: 75-90th Percentile	0.01367	0.00026402	51.78
Income: 90-95th Percentile	0.02658	0.00039014	68.13
Income: 95-99th Percentile	0.03699	0.00042990	86.05
Income: Top Percentile	0.04671	0.00079829	58.51
Post	0.00293	0.00037333	7.86
Post \times Female	0.02514	0.00020635	121.84
Post \times Married	-0.00744	0.00022603	-32.93
Post \times Copenhagen	0.03868	0.00029907	129.35
Post \times Self-Employed	0.00328	0.00034702	9.46
Post \times Time	0.00961	0.00017064	56.30
Post \times Age: <25	-0.00019246	0.00036645	-0.53
Post \times Age: 26-45	0.00015791	0.00024668	0.64
Post \times Age: >65	0.00474	0.00032730	14.48
Post \times Income: 0-25th Percentile	-0.01666	0.00032806	-50.78
Post \times Income: 25-50th Percentile	-0.00906	0.00029509	-30.71
Post \times Income: 75-90th Percentile	0.00868	0.00032131	27.03
Post \times Income: 90-95th Percentile	0.01531	0.00045837	33.39
Post \times Income: 95-99th Percentile	0.02029	0.00050629	40.07
Post \times Income: Top Percentile	0.02868	0.00092872	30.88

Notes: This table reports OLS regression output for Equation (4.1). The data consists of the universe of taxpayers (4.37 million) observed over the years 2006-2011. *Time* is a linear time trend, and the R-squared statistic for the regression is 0.0265. The omitted category represents a male taxpayer aged 46-65, in 50-75th income percentile, single, residing outside Copenhagen, and not self-employed. Robust standard errors have been used.