Reducing Evasion Through Self-Reporting: Theory and Evidence from Charitable Contributions

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McMaster University

2015

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April 27, 2017

Abstract

Using a quasi-experimental design, I show that self-reported information requirements are effective at reducing evasion. I use a reform that simplified the reporting rules for tax deductions of noncash charitable contributions in the U.S. to show that weaker reporting requirements led to a large increase in the reported donations but that nearly 50% of these donations were untruthful. At the same time, individuals experienced a substantial reduction in their reporting costs, an average of $82 per person. Next, I provide a theoretical framework that accounts for the observed trade-off between evasion and compliance costs to determine the optimal information requirements. I show that reporting should only be imposed on individuals with reported donations above a pre-specified threshold and that the threshold is primarily governed by the type and magnitude of cheating. Model calibrations in the case of noncash charitable donation deductions show that an optimally chosen threshold would reduce the welfare loss due to compliance and evasion by 70%.

JEL Classification: D61, D64, H24, H26, H31
Keywords: Information Reporting, Evasion, Compliance Cost, Tax Filing, Charitable Giving

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I am grateful for guidance and support to my advisors: Emmanuel Saez, Alan Auerbach, and Hilary Hoynes. I also thank James Andreoni, Youssef Benzarti, Martin Farnham, Alexander Gelber, Silvio Städter, Danny Yagan, and seminar participants at UC Berkeley, McMaster University, IIPF Annual Congress and Canadian Public Economic Group meetings for helpful comments and advice. Finally, I thank Social Sciences and Humanities Research Council of Canada and Robert D. Burch Center for Tax Policy and Public Finance for financial support. Previously circulated under the title "Optimal Reporting Thresholds: Theory and Evidence from Charitable Contributions."

1 Introduction

It has been shown that third-party reporting is effective at reducing evasion, yet there are circumstances where it is not feasible or prohibitively costly.[1] For example, requiring all charitable organizations to report the details of received donations is not only costly but likely to be politically infeasible as many organizations are not required to disclose any information about how they acquire funds.[2] In these circumstances, tax authorities rely on self-reported information to access tax liability. However, we know little about the effectiveness of self-reporting requirements at reducing evasion. Can a requirement to provide unverifiable information reduce cheating? Moreover, welfare implications are also unclear: even the simplest compliance rules can prove to be costly and impose a burden not only on prospective cheaters but also on law-abiding individuals. This trade-off between evasion and compliance costs suggests that reporting should be imposed only on a subset of the population. Yet, current reporting requirements vary greatly across tax items and often impose all-or-nothing requirements: claiming of a cash donation deduction requires no reporting while claiming of the Child and Dependent Care Expenses Credit requires individuals to provide detailed descriptions regardless of the amount claimed.[3]

This paper develops a theoretical and empirical framework to study self-reporting requirements and reporting thresholds for claiming of deductions and expenses. I focus on the simplest form of self-reporting regulations – a requirement to provide self-reported details of claimed deductions with no requirement to attach receipts. Using a natural experiment, I document the effectiveness of self-reporting requirements against evasion and provide empirical evidence on the existence of a trade-off between compliance costs and evasion in the case of noncash charitable contributions in the U.S. I develop a theoretical framework to study the welfare implications of self-reporting and show that such requirements should only be imposed on individuals with reported donations above a pre-specified threshold. Finally, I find that setting information requirements optimally could lead to substantial welfare improvements.

Since 1917 charitable contributions have been subsidized by the federal government in the form of a tax deduction.[4] The favorable treatment makes charitable deductions highly susceptible to evasion. To limit potential misreporting the IRS has developed a set of rules that make evasion costlier. I use a regulation change in 1985 that relaxed self-reporting requirements for noncash charitable contributions. Prior to 1985 individuals had to submit a detailed statement regardless of the dollar value of the reported donations. Starting from 1985 a formal statement, Form 8283, is required only when reported noncash donations exceed \$500. Employing a novel identification approach, I non-parametrically identify the share of new donations due to lower compliance costs

[1] See Kopczuk and Slemrod (2006), Gordon and Li (2009) and Kleven et al. (2011) for evidence of the effectiveness of third-party reporting.

[2] Charities with annual gross receipts of \$50,000 or less, as well as all religious organizations are exempt from filing annual information returns. See instructions to Form 990 for a full list of exempt organizations.

[3] To claim the Child and Dependent Care Expenses Credit individuals must obtain and report the Social Security or Employer Identification Numbers and personal information of the provider and qualifying persons, as well as details of the expenses.

[4] For justifications of current tax treatment see Scharf (2000) and Lindsey (2002).

and the share of new donations due to evasion, and estimate the hassle cost of compliance. I find that relaxing reporting requirements led to a steady increase in reported donations but that nearly 50% of these new donations were untruthful. The tax revenue loss, however, was offset by substantial savings for taxpayers because reporting requirements impose substantial hassle costs: $82 (in 2015 dollars) on average per person. The empirical findings thus suggest that while self-reporting requirements are effective at reducing evasion they are burdensome, and therefore should be imposed on a subset of individuals. Relying on the empirical findings, I develop a framework which allows me to characterize optimal reporting thresholds. I show that the thresholds are primarily governed by the type and magnitude of cheating. A calibration of the model shows that setting a $350 threshold instead of a $500 threshold would increase welfare by 70%.

The empirical approach proceeds in two steps. To estimate the compliance costs associated with Form 8283, I compare the distributions of noncash donations before and after the reform above the reporting threshold. Since reporting requirements have not changed for taxpayers who wish to report more than $500, these individuals will choose to reduce their donations and report $500 only to avoid the hassle of filing Form 8283. Therefore, the size of the missing mass to the right of the $500 threshold allows me to estimate the distribution of compliance costs. I find that individuals are willing to forego an average of $82 (in 2015 dollars) in order to avoid filling out Form 8283. I also investigate the relationship between individuals' adjusted gross income (AGI) and compliance cost and find that richer individuals would pay less to avoid filing Form 8283. On the other hand, individuals who employ the help of tax preparers or report some self-employed income incur lower compliance costs. The magnitude of compliance costs is surprisingly high since it is unlikely that filling out Form 8283 would require more than half an hour of one's time. The cost estimate, however, is consistent with the findings of Benzarti (2015) who estimates that individuals forego $644 on average (in 2014 dollars) to avoid filing Schedule A (Itemized Deductions).

Next, I use my estimates of compliance cost to distinguish between truthful and untruthful donations. The 1985 reform increased the threshold from $0 to $500, which resulted in an increase in reported donations below the $500 threshold. To identify which portion of these new donations is due to evasion I must account for two effects. First, part of the increase in donations in the neighborhood of $500 is due to compliance costs: some taxpayers choose to reduce their donations and bunch at $500 to avoid the hassle of filling out Form 8283. To account for these individuals I adjust the post-reform distribution downward by redistributing just enough of the excess mass at $500 to fill in the missing mass above the threshold. Second, since all individuals had to submit a detailed statement before the reform, individuals with high compliance costs who wished to donate smaller amounts chose to report $0 to avoid the hassle of writing a statement. To account for these taxpayers (who are missing from the observed pre-reform distribution) I extrapolate the compliance cost found in step 1 to identify a "counterfactual" distribution of donations – this counterfactual distribution represents the number of truthful donations prior to the reform if there were no reporting and no evasion. Finally, I quantify evasion as the difference between the adjusted post-reform distribution and the counterfactual pre-reform distribution. Intuitively, once I have accounted for legitimate sources of increased donations (due to compliance burden before and after the reform), the remaining, unexplained increase in donations at the $500 threshold must be due to evasion.

Overall, I find that at least 48% of the new donations were untruthful. I explore whether cheating behavior changes with taxpayers' marital status, type and level of income, and whether they employ tax preparers. I find that evasion increases with one's income but otherwise I find similar levels of cheating. The overall level of evasion, however, is small and suggests that taxpayers find cheating very costly. Even 10 years after the reform, the number of donations below $500 remains small. The magnitude of evasion found in this study is generally consistent with evasion estimates from the 1982 Taxpayer Compliance Measurement Program (TCMP) study. Slemrod (1989) found that among taxpayers who claim a charitable deduction, 27% cheated and overstated their donation by approximately 9% which corresponds to an average of $96.4 (1982 dollars). My calibration of evasion behavior suggests that less than 16% of individuals have cheated with an average cheating amount of $330 (1986 dollars).[5]

My findings suggest that self-reporting rules are effective at reducing evasion but are also costly to taxpayers. This trade-off raises the question of whether the $500 threshold was chosen optimally. I develop a framework which allows me to characterize optimal reporting thresholds for claiming of deductions and expenses. I show that optimal reporting thresholds take into account the utility loss from self-reporting and a loss in externality benefits from charitable giving against the tax revenue loss generated by evasion. The main prediction of the model is that the reporting threshold is primarily governed by the type and magnitude of cheating. Moreover, as long as all evasion and compliance costs are finite, the optimal threshold is strictly positive and finite. Calibrations of the model show that setting the threshold at $350 instead of $500 would increase welfare by 70% for individuals with positive noncash donations.

The findings of this paper are policy-relevant for three reasons. First, the empirical results show that self-reporting requirements are effective against evasion. In circumstances where third-party reporting is not feasible or too costly, requiring individuals to fill out a form or provide self-reported accounts can reduce evasion. This is a striking result because it shows that merely asking individuals to provide more information – but requiring no proof – can reduce evasion. Second, the findings confirm the intuition that even these minimal requirements come at a cost and should not be ignored by policy makers. Individuals dislike tax paperwork and find it bothersome. Third, the theoretical model and calibration show that welfare can be substantially improved by setting reporting thresholds optimally. Moreover, the approach highlights a path to determining these thresholds: it is best to start with stringent requirements and ease them over time, as this allows for identification of compliance costs and evasion behavior. While the analysis of this paper focuses on noncash charitable donations, both the empirical approach and the theoretical framework can be directly applied to other settings, in particular to other tax deductions and credits, as well as business expenses.

[5]For a review of evasion literature see Slemrod (2007). For a discussion of cheating and charitable giving see Fack and Landais (2016a).

The paper contributes to four areas of research. First, this study contributes to the empirical literature that investigates the effectiveness of information reporting against evasion. While the literature has carefully documented the power of third-party reporting ((Kopczuk and Slemrod (2006), Gordon and Li (2009), Kleven et al. (2011)), little is known about the effectiveness of other approaches. In the U.S. and other OECD countries, tax liability often depends on self-reported measures of income and expenses, with varying levels of supporting documentation requirements.[6] This paper is the first to show that a simple requirement to provide self-reported details of transactions reduces evasion. Previous work has focused on stronger forms of reporting requirements, e.g. submitting proof of expenses (Fack and Landais (2016b)) or providing easily verifiable information (LaLumia and Sallee (2013)).[7]

Second, this paper contributes to a small literature that studies tax and regulatory thresholds.[8] Keen and Mintz (2004), Dharmapala et al. (2011) and Kanbur and Keen (2014) study the optimal choice of exemption thresholds for value-added, corporate, and income taxes respectively. This paper adds to this literature by considering thresholds that change self-reporting requirements for the claiming of deductions and business expenses. Exemption thresholds and self-reporting thresholds focus on different trade-offs. Self-reporting thresholds, trade off the compliance burden of individuals against tax revenue loss due to evasion. Since deductions reduce one's tax liability, individuals prefer to report larger expenses but are restricted by compliance requirements. Tax exemption thresholds, on the other hand, combine self-reporting requirements with changes in tax liability, thus leading to a trade off between enforcement expenses of the government and tax revenue loss due to the exemption. In this case, individuals prefer to report smaller incomes since doing so reduces both their tax liability and their compliance burden.

Third, the paper suggests a novel nonparametric approach to measuring evasion. Accurately estimating evasion is difficult because researchers cannot directly observe cheating behavior.[9] The approach used in this paper circumvents this problem by studying changes in aggregate distributions thus avoiding the need to tag individual cheaters. Several other papers studied changes in reporting requirements to identify cheating behavior, however, most of these studies cannot separate evasion responses from behavioral responses to compliance cost, e.g. Buchheit et al. (2005),

[6] See Lederman (2010) for a classification and a review of information reporting.

[7] See also studies of accounting regulations (Bergner and Heckemeyer (2015), Asatryan and Peichl (2016)), monitoring rules (Almunia and Lopez Rodriguez (2014)), electronic payments (Slemrod et al. (2015)), receipt incentives (Naritomi (2013)), and paper trails in general (Pomeranz (2015)).

[8] For an extensive review of tax administration issues see Slemrod and Gillitzer (2014). Also see Slemrod (2013) for a review of line-drawing in tax policy.

[9] For a comprehensive review of the literature on evasion see Andreoni et al. (1998), Slemrod and Yitzhaki (2002), Aaron and Slemrod (2004), Slemrod (2007), and Slemrod and Weber (2012). The literature has estimated evasion behavior in three general ways. The first approach directly quantifies evasion by looking at the results of tax audits, for examples see Clotfelter (1983), Klepper and Nagin (1989), Christian (1994). The second approach estimates evasion indirectly, by looking at discrepancies between reported values and actual spending, e.g. Pissarides and Weber (1989), Schuetze (2002), Feldman and Slemrod (2007), Johansson (2005), Artavanis et al. (2016). In this paper, I adopt the third approach which relies on compliance reforms. This approach has been used by Buchheit et al. (2005), Serocki and Murphy (2013), Ackerman and Auten (2011), and Fack and Landais (2016b) to study charitable donations, by LaLumia and Sallee (2013) to study claiming of dependents, and by Marion and Muehlegger (2008) to study evasion in the in the market for diesel fuel.

Ackerman and Auten (2011), Serocki and Murphy (2013), Fack and Landais (2016b).

Finally, the paper contributes to a literature that estimates the cost of complying with tax regulations. This paper is one of the few studies that rely on a revealed preference argument rather than survey evidence.[10] Pitt and Slemrod (1989) and recently Benzarti (2015) estimate the cost of filing Schedule A. Pitt and Slemrod (1989) find an average cost of $100 per itemizing taxpayer; using a different methodology Benzarti (2015) estimates that an average household foregoes approximately $644 to avoid filing Schedule A.[11]

2 Data and Institutional Background

2.1 The 1985 Reform

The Federal Tax Code allows individuals to include their charitable contributions on the list of itemized deductions.[12] With the exception of a short period in the 1980s no such deductions are allowed for those who claim the standard deduction.[13] Two types of deductions are allowed: donations made in the form of cash and in the form of assets. Noncash contribution deductions, which are the focus of this paper, are limited to 20% of AGI and any excess contributions can be carried over to future years.

To reduce the possibility of tax evasion, the tax authorities designed a set of regulations, summarized yearly as Publication 526, pertaining to what can be claimed as a charitable contribution and up to which amount. In this paper I focus on one of the most salient of these rules, namely the threshold beyond which individuals need to provide a detailed description of their donations. Prior to 1985 individuals had to attach a statement detailing their noncash donations for *any* amount of contributions. In particular, individuals had to specify the kind of property given, who it was given to and on which date, how the value was calculated and whether it was a capital gain or ordinary income property. If the total asset contribution exceeded $200, individuals also had to specify the address of the charitable organization, a description of the property, any conditions attached to the gift, how the individual initially obtained the property and more detailed information on the initial cost and current valuation of the property.[14] Starting from 1985, individuals

[10]See Blumenthal and Slemrod (1992), Slemrod and Sorum (1984), Tran-Nam et al. (2000), and European Commission (2013).

[11]Large compliance costs are consistent with the findings of Gillitzer and Skov (2014) and Kotakorpi and Laamanen (2016) who show that the use of pre-filled forms led to large changes in quantity and type of deductions. Similarly, Rehavi and Shack (2013) argue that a large portion of the tax-price elasticities of charitable giving represents changes in reporting as opposed to changes in actual donations. Finally, Harju et al. (2016) use quasi-experimental evidence to show that compliance requirements are costly not only to individual taxpayers, but also to small businesses.

[12]For a detailed historical review of the charitable contribution deduction see Lindsey (2002).

[13]In 1982 and 1983 those claiming the standard deductions could deduct 25% of their charitable contributions up to a maximum of $25. This limit increased to a maximum of $75 in 1984. In 1985 the policy changed by allowing individuals to deduct 50% of their charitable contributions with no upper limit. The rule became even more generous the following year: 100% of charitable contributions were deductible with no upper limit in 1986. The policy was cancelled in 1987.

[14]The following are the precise instructions in 1984: "If you gave property, attach a statement showing the kind of property you gave and the name of the organization you gave it to. Include the date you gave it, show how you figured its value at the time you gave it, and state whether it was capital gain or ordinary income property. If you

have to fill out and attach Form 8283 *only* if they claim *more* than $500 in noncash charitable donations. Otherwise no forms need to be filled out. Form 8283 requires individuals to provide the same information as when donating more than $200 in the past. Depending on the actual amount claimed and the type of items given further restrictions apply: for example, for very large donations a formal appraisal might be required. In this paper I focus on charitable contributions around the $500 threshold for which appraisals and other restrictions do not apply. The requirement to file Form 8283 is very salient: Schedule A explicitly states that "one must attach Form 8283 if over $500" next to the noncash donation box.

The remaining compliance requirements for charitable donations during the 1980s were minimal. Individuals did not need to attach written proof of their contributions but they were required to keep accurate records. While actual receipts and written statements were preferred, "reliable written records" were deemed appropriate for any amount of contributions. The instructions in Publication 526 state that "records may be considered reliable if they were made at or near the time of the contribution, were regularly kept by you, or if, in the case of small donations, you have buttons, emblems, or other tokens, that are regularly given to persons making small cash contributions." Records should include the name of the organization, the date of the contribution, and the amount of the contribution.[15]

The 1985 reform has been previously studied by Buchheit et al. (2005) and Serocki and Murphy (2013). Buchheit et al. (2005) were the first to document the persistent and increasing spike at the $500 threshold for noncash charitable donations. The authors argue that the sharp increase in charitable donations after the reform is a sign of evasion. However, the authors do not attempt to differentiate between bunching due to compliance costs, due to inflation and due to evasion. Serocki and Murphy (2013) focus on the introduction of appraisal requirement for noncash charitable donations above $5,000. Because this regulatory change increased compliance rules above the cutoff, the authors are not able to differentiate between evaders and individuals who find the need to obtain an appraisal too bothersome.[16] A related study by Fack and Landais (2016b) looks at a compliance reform in France in 1983. Prior to the reform charitable deductions were based

determine the value of a gift by an appraisal, also attach a signed copy of it for gifts for which you claim a deduction of over $200. For gifts valued over $200, also include the following on your attached statement: a. The address of the organization. b. A description of the property. c. Any conditions attached to the gift. d. How you got the property. e. The cost or other basis of the property if: 1. You owned it less than 5 year, or 2. You must reduce it by an ordinary income or capital gain that would have resulted if the property had been sold at its fair market value. f. How you figured your deduction if you chose to reduce your deduction for contributions of capital gain property. g. If the gift was a "qualifies conservation contribution" under section 170(h), also include the fair market value of the underlying property before and after the gift, the type of legal interest donated, and describe the conservation purpose furthered by the gift."

[15] The rules have since been tightened. Starting from 1994 an individual should have a receipt or a written statement for any *individual* gift of $250 or more. For noncash donations of less than $250 taxpayers "are not required to have a receipt where it is impractical to get one (for example, if you leave property at a charity's unattended drop site)." In 2005, the deductions for car, boat and airplane donations became generally limited to the gross proceeds from their sale by the organization. And starting from 2006 clothing and household items can be deducted if they were donated in good used condition or better.

[16] Ackerman and Auten (2011) study the effects of the 2005 reform that tightened the valuation process for donations of cars, boats and airplanes. They find that prior to the reform these types of donations were largely overstated and that the reform significantly reduced donations of cars, boats and airplanes.

on self-reported amounts (as in the USA), starting from 1983 deductions were limited to the total value of all donations for which individuals have obtained and *attached* receipts to the tax return. Fack and Landais (2016b) observe a large decrease in the number of charitable donations after the reform. Similarly to the previous studies, the authors cannot separate what percentage of this decline is due to a large increase in compliance costs.

2.2 Data

I use annual cross-sections of individual tax returns constructed by the Internal Revenue Service (IRS) and commonly known as the Statistics of Income (SOI) Public Use Files, for years 1970-2008. The annual cross sections are stratified random samples of approximately 80,000–200,000 tax returns per year with randomization over the Social Security Number (SSN). High-income taxpayers and those with business income are oversampled but weights are provided. In addition to the cross-sectional data I also look at a panel dataset that covers 1979-1990. This panel followed a random sample of taxpayers, randomly chosen over SSNs. The sample size of the panel data is significantly smaller, ranging from 9,000 to 46,000 observations per year. Since for the majority of years charitable deductions could only be claimed by itemizers, I restrict the sample to those individuals. Since noncash donations are limited to 20% of AGI, I further restrict the sample to taxpayers whose overall charitable contributions do not exceed 20% of AGI, which is the case for the vast majority of tax filers.[17]

The unweighted number of observations are provided in Panel A of Table 1. Panel B of Table 1 provides appropriately weighted summary statistics. In 1985, among taxpayers who filed a tax return and itemized, approximately 27% claimed noncash charitable donations for a total of $12.68 billion dollars and with a median donation of $435 (all in 2015 dollars). Among these, 95% reported contributions of less than $2,000. The average contribution for all individuals who donated a positive amount less than $2,000 is $655 with a median of $424. Overall, those who donated less than $2,000 accounted for 41% of the dollar value of noncash donations. The number of noncash contributions have substantially increased since 1985. In the latest year of data available, in 2008, approximately 48% of all itemizers reported noncash donations for a total of $39.78 billion dollars. Nevertheless, the majority of individuals – 90% – still donate less than $2,000 which corresponds to an average donation of $574. Panel B of Table 1 shows that the number of noncash donations has increased dramatically over the years, but the median and average donation amounts remained roughly the same.

[17] In 1985, less than 2% of individuals reported charitable donations that exceeded 20% of AGI, donating on average $11,522 (in 1985 dollars). I restrict the sample based on combined charitable giving to ensure the results are not affected by the need to substitute between cash and noncash deductions due to the binding limit.

3 Estimating Evasion and Compliance Costs

3.1 Suggestive Evidence

In this section I provide graphical evidence on the effects of the 1985 reform. To motivate the analysis, consider the distributions of reported noncash charitable donations from 1979 to 2008. Figure 1 shows the number of *positive* donations (unadjusted for inflation) in $100 bins, starting with (0,$100], as a percent of all itemizers. The vertical line marks the $500 reporting threshold introduced in 1985.[18] Three observations are striking. First, the 1985 reform, as originally documented by Buchheit et al. (2005), led to a persistent spike in the distribution of noncash donations at $500. Second, the observed bunching is concentrated just below the threshold, i.e. in the ($400,$500] range, suggesting that individuals are careful not to report donations above the threshold. Without further analysis it is not possible to determine whether the increase in donations is due to evasion or due to an increase in reported donations by taxpayers who have previously not reported or not donated because of compliance costs. Third, the excess mass at $500 has been steadily growing over the years. Given that the threshold has been nominally fixed since 1985 and since inflation pushes charitable donations rightward, at least part of the growth can be attributed to inflation rather than increased evasion (Buchheit et al. (2005)).

Figure 2 shows the distributions of reported noncash charitable donations in 1984 and 1985, and in 1984 and 1986, all unadjusted for inflation.[19] In addition to an increase in the number of reported donations below $500, Figure 2 documents a decrease in the number of donations above $500. Since the compliance requirements have not changed above the threshold, a decline in donations to the right of the threshold is a direct evidence of the existence of compliance costs. Intuitively, if individuals were willing to cheat under the old rules, they should be willing to cheat under the new rules. Hence, reductions in reported donations above the threshold represent attempts to avoid compliance cost rather changes in cheating behavior.[20] It is notable that the size of the spike has increased from 1985 to 1986. It is possible that taxpayers discovered about the compliance rule change only when they started preparing their tax return at which point donations have already been made. Alternatively, cheating may have increased over time as taxpayers became accustomed to the new rules.

In order to better understand an increase in donations in 1985, I focus on individuals who have donated in the past. In Figure 3(a), I use the panel sample to identify taxpayers who have made noncash contributions in 1984 and compare their donations prior to the reform, i.e. in 1984, to those after the reform, i.e. in 1985. Because these individuals had sufficiently low compliance costs to continue reporting noncash donations when the compliance threshold was set at zero, they should report approximately the same amount of noncash donations below the $500 threshold after the

[18] Information about the types of noncash donations is not available in the data. Ackerman and Auten (2011) examine Form 8283 filed in 2003 – 2005 and find that most often reported donations include clothing and household items, electronics, vehicles and food.

[19] The results are not sensitive to the choice of inflation adjustment. As Figure

[20] I discuss this in further detail in Sections 3.2 and 3.3.

reform as before the reform.[21] Instead we observe a decrease in the number of very small donations and an increase in donations in ($200, $500] range, suggestive of evasion.[22]

In Figure 3(b), I compare the post-reform donations of those who have donated prior to the reform in 1984, to those who have not donated in the immediate past, i.e. they have not donated in 1984. One would expect the donations of new donors to be more concentrated near zero because some of these donors might have chosen not to donate in the past because of the high cost of writing a statement. This is consistent with what we observe in Figure 3(b). New donors are more likely to donate smaller amounts, i.e. in the [$0, $200] range, while "experienced" donors are more likely to donate in the [$300, $500] range. Moreover, new donors are less likely to bunch at $500, potentially suggesting that evasion increases with experience.

Figure 4(a) plots the percent of itemizers who report noncash or cash donations over time and shows that the 1985 reform triggered a lasting increase in the number of reported noncash donations. The reform sharply increased the number of noncash donors in 1985 and led to a persistent growth of noncash donations until approximately 2003. At the same time, the overall number of donors slightly decreased over the years. Figure 4(a) shows that the reform primarily increased the number of donors who make both cash and noncash contributions. The number of "only noncash" donors has been steadily increasing but remains small: from less than 1% of itemizers in 1979 to over 6% in 2008, as shown in Figure 4(b). Several channels might be responsible for the lasting effect of the reform. On the one hand, the simplicity of noncash donations might have triggered charitable organizations to advertise and promote this type of donations. On the other hand, fewer reporting requirements made evasion simpler. Yet another explanation is the mix of the two: the reform might have led to a genuine increase in donations but claimed at the inflated values.

In Figure 5, I plot the 25th, 50th, and 75th percentiles of dollar value of contributions (all inflated to 2015 dollars). Figure 5 shows that an increase in noncash donations is unlikely to be due to the crowding out of cash contributions. All percentiles of cash donations have not decreased in 1985 and instead increased after the passing of the 1986 Tax Reform Act. Meanwhile, noncash donations have steadily grown in value.

Figure 6(a) shows even more clearly that there was no substitution between the two types of donations in 1985: the distribution of cash donations has not been affected by the 1985 reform. The distributions overlap very well, suggesting that the observed changes to the distribution of noncash donations are driven by the change in compliance rules, since any changes to the attractiveness of charitable giving or itemizing would affect both cash and noncash donations. Figure 6(b) confirms that it is also unlikely that such substitution happened in later years, since cash contributions remained relatively stable, with an increase in the amount of cash donations after the 1986 Tax Reform.

[21] This statement assumes that compliance costs are fixed and do not depend on the size of donations. I discuss this assumption in greater detail in Section 3.3.

[22] It is worth noting that some bunching at $200 might have occurred before 1985. Recall that for donations above $200 individuals had to submit a more detailed statement. Through visual observation of 1983 and 1984 distributions in Figure 1 I conclude that such bunching was very small and the missing mass was limited to [$200, $300] interval. The decrease in donations at $200 is too small to justify larger increases in reported contributions in the ($200, $400].

Finally, as a robustness check I plot the distributions of noncash donations prior to the reform in Figure 6(b). These distributions overlap closely – with the exception of the first bin – suggesting that while individual donations may vary substantially from year to year, aggregate donations are very stable. Therefore, the 1984 distribution represents an accurate counterfactual density to study the effect of the 1985 reform on noncash charitable giving.

3.2 Conceptual Framework

In this section, I present a theoretical framework that helps understand individuals' reporting decisions in presence of self-reporting requirements. The model makes four key predictions about the effects of the 1985 reform on reported donations. I then use these predictions to identify an empirical approach that allows me to disentangle increases in reported donations due to evasion and due to compliance costs.

To begin, assume there are no compliance costs and evasion is not possible. Consider an individual i who allocates his earnings Y_i between consumption C and charitable giving X by solving

$$\max_{C,X} \quad U_i(C,X) \quad \text{s.t.} \quad C = Y_i - X + \tau X, \tag{1}$$

where $U'_{xi} > 0, U''_{xi} < 0$, $U'_{ci} > 0, U''_{ci} \leq 0$ and τ is the tax subsidy provided by the government to support charitable giving. This individual will make charitable contributions by choosing an optimal allocation $(\hat{C}_i, \hat{X}_i)$ that satisfies

$$U'_{xi}(C,X) = (1-\tau) \cdot U'_{ci}(C,X). \tag{2}$$

Heterogeneity in tastes for charitable giving would lead to a smooth distribution of *positive* charitable donations.

Now suppose evasion is possible and regulations require an individual to fill out some paperwork if his reported charitable contributions exceed a pre-determined threshold T. Now the same individual may choose to report his true contributions, X, overstate his contributions by some amount $E > 0$, thus reporting $R = X + E$, or underreport contributions, $R < X$. I assume that an individual experiences fixed compliance cost ϕ_i only if he reports $R > T$, and he experiences evasion cost $h_{i0} + h_i(R - X)$ only if he reports $R > X$. The individual now maximizes

$$\max_{C,X,R} \quad U_i(C,X) \quad \text{s.t.} \quad C = Y_i - X + \tau R - [h_{i0} + h_i(R-X)]\mathbb{1}_{R-X>0} - \phi_i \mathbb{1}_{R>T}, \tag{3}$$

where $h_{i0} + h_i(\cdot)$ and $\phi_i(\cdot)$ are evasion and compliance costs respectively with $\phi_i \geq 0$, $h_{i0} \geq 0$, $h'_i \geq 0$, and $h_i(z) = \infty$ for all $z \geq T$.[23] The individual's optimal choice falls into two categories, which are best described relative to the individual's choice $\hat{X}_i$ in the baseline scenario (no evasion and no compliance costs).

[23] For the moment, we will assume that evasion is 100% detectable and thus unprofitable when individual reports $R > T$. We return to this assumption in Section 3.3.

1. $\hat{X}_i \leq T$. These individuals will not incur compliance costs, however, they have an opportunity to evade. The first order conditions imply that optimal (C_i^*, X_i^*, R_i^*) satisfy

$$\tau = h'(R - X), \tag{4}$$

$$U'_{xi}(C, X) = (1 - \tau) \cdot U'_{ci}(C, X), \tag{5}$$

and therefore

$$(X_i^*, R_i^*) = \begin{cases} (\hat{X}_i, \bar{R}_i) & \text{if } \tau(\bar{R}_i - \hat{X}_i) - h_{i0} - h(\bar{R}_i - \hat{X}_i) \geq 0 \text{ and } \bar{R}_i \leq T \\ (\hat{X}_i, T) & \text{if } \tau(\bar{R}_i - \hat{X}_i) - h_{i0} - h(\bar{R}_i - \hat{X}_i) \geq 0 \text{ and } \bar{R}_i > T \\ (\hat{X}_i, \hat{X}_i) & \text{if } \tau(\bar{R}_i - \hat{X}_i) - h_{i0} - h(\bar{R}_i - \hat{X}_i) < 0, \end{cases} \tag{6}$$

where $\bar{R}_i$ solves $\tau = h'(R - \hat{X}_i)$.

2. $\hat{X}_i > T$**.** Since evasion is not possible above the threshold, individuals with large baseline donations $\hat{X}_i$ will bear a loss in utility due to compliance requirements. Some individuals will choose to reduce reported donations, with optimal combination (C_i^*, X_i^*, R_i^*) satisfying

$$(X_i^*, R_i^*) = \begin{cases} (T, T) & \text{if } \bar{X}_i < T \text{ and } Y_i - (1-\tau)T > Y_i - (1-\tau)\hat{X}_i - \phi_i(\hat{X}_i) \\ (\bar{X}_i, T) & \text{if } \bar{X}_i \geq T \text{ and } Y_i - \bar{X} + \tau T > Y_i - (1-\tau)\hat{X}_i - \phi_i(\hat{X}_i) \\ (\hat{X}_i, \hat{X}_i) & \text{otherwise,} \end{cases} \tag{7}$$

where $\bar{X}_i$ solves $U'_{xi}(C, X) = U'_{ci}(C, X)$.

Thus the reporting requirements affect people differently. Equation (6) shows that individuals with true preferred donations (absent evasion and compliance) below the threshold would cheat by some positive amount as long as the fixed costs of evasion are small enough. The extent of evasion will depend on the relative magnitudes of the fixed and variable costs of evasion. On the other hand, individuals with true preferred donations above the threshold would either reduce their reported donations or donate the same amount as before, as follows from Equation (7). If their compliance cost ϕ_i is sufficiently low or their preference for charitable giving is very strong, they will continue donating $\hat{X}_i$ and bear the compliance cost ϕ_i. Otherwise, they will find compliance requirements too bothersome and will avoid the cost by reducing their reported donations to T.[24]

Equations (6) and (7) make four key predictions about the effects of the 1985 reform. Prior to 1985, the reporting threshold was set to zero – everybody had to submit a written statement as long as they reported a positive donation. Thus, the first prediction is that some taxpayers with a preference for giving "bunched" at \$0 (to avoid the compliance cost) and therefore the observed 1984 distribution of noncash charitable donations has a missing mass just above the 1984 reporting threshold, \$0. When the threshold was moved to \$500 in 1985, individuals who were previously bunching at \$0 would find it optimal to report their contributions as long as they do not exceed

[24]These individuals treat the subsidy as a fixed amount τT, hence, $\bar{X}_i$ determines how much individuals would donate if they received no deduction. Nevertheless, these individuals will want to donate at least T because doing so allows them to claim the subsidy τT, avoid the compliance cost ϕ_i, *and* derive utility from giving.

\$500. Thus the second prediction of the model, is that we should observe an increase in genuine donations in 1985 below \$500. At the same time, some individuals who donated more than \$500 in the past would now choose to bunch at \$500 to avoid the compliance cost. Hence, the third prediction is that we should observe a missing mass in the distribution of observed donations in 1985 above \$500 and a corresponding excess mass at \$500. Finally, because self-reporting rules were simplified in 1985 and evasion became possible, the fourth prediction stipulates that some of the donations below the \$500 in 1985 might be untruthful.

The four predictions suggest an identification strategy to disentangling increases in reported donations due to evasion from those due to compliance costs. Below I briefly summarize the empirical approach, more details are available in Sections 3.4 and 3.5. I proceed in three steps. First, using prediction #3, I measure the compliance costs associated with filing Form 8283. To do so, I compare the observed distribution of noncash donations in 1984 to the observed 1985 distribution *above* \$500. Since the rules above \$500 have not changed, it follows that the only reason individuals would switch from donating more than \$500 to donating precisely \$500 is to avoid the cost of filing Form 8283.[25] Therefore one can use the differences between the 1984 and 1985 distributions to back out compliance costs. Bunching by these individuals represents neither new donations, nor cheating donations. I account for this by removing just enough of the excess mass at \$500 to fill in the missing mass to the right of the threshold.

Second, I use my measure of compliance costs to estimate an increase in *genuine* donations due to simplified self-reporting requirements (predictions #1 and #2). To do so I make a simplifying assumption that the cost of writing a statement in 1984 was equivalent to the cost of filling out Form 8283 in 1985.[26] The assumption relies on the fact the content of the statement is essentially equivalent to Form 8283, thus both actions should require approximately the same amount of effort. If the two costs are equivalent then the proportion of taxpayers who chose to forego the deduction in 1984 should correspond to the proportion of taxpayers who chose to bunch in 1985, bin by bin. Thus I can estimating the number of individuals who would have reported in 1984 if self-reporting was not required, by appropriately scaling the observed 1984 distribution upward.[27]

Third, I measure evasion as the difference between the total observed increase in donations after the reform minus the estimated increase in genuine donations from step 2 (prediction #4). In other words, I define evasion as the difference between the adjusted 1985 distribution – which removes bunching at \$500 from the right – and the counterfactual 1984 distribution – which accounts for an increase in genuine donations due to simplified reporting rules. Intuitively, once we have accounted for legitimate sources of increased donations below the threshold, the remaining excess donations represent evasion.

[25] This statement relies on the assumption that cheating is not possible above the self-reporting threshold. I discuss this assumption in greater detail in the following section.

[26] I discuss this assumption in greater detail in the following section.

[27] The actual approach works as follows. Suppose 70% of taxpayers who reported between \$500 and \$600 dollars in 1984 chose to bunch at \$500 in 1985. I then adjust the first bin, \$0 to \$100, of the observed 1984 distribution by multiplying the number of donors in that bin by $1/(1-0.7)$ to account for the 70% of missing donors. I repeat this procedure for the next bin, etc. The adjustment stops when the proportion of taxpayers who chose to bunch at \$500 instead of reporting the actual number of donations in 1985 is zero.

3.3 Identification Assumptions

The approach described in the previous section relies on several assumptions. In what follows, I briefly discuss the validity of each assumption.

Assumption 1. Absent of reform, the distribution of noncash donations in 1985 would resemble the distribution in 1984. This assumption has been verified in Figure 6(c) which shows that prior to 1985, the distributions of noncash donations remained very stable with minimal variation across years. Moreover, Figure 6(a) confirms that the observed increase in noncash donations in 1985 was caused by the 1985 reform since the distribution of cash donations was unaffected. Together, these results show that the 1984 distribution of noncash donations can be used as a counterfactual for the 1985 distribution of noncash donations if the reform had not taken place.

Assumption 2. Compliance costs are fixed and the distribution of compliance cost is similar across individuals. The cost of filling out Form 8283 is likely to depend on the number of items described rather than the overall dollar value. Unfortunately, the available data does not provide details on the type and number of donations made. Since there is no reason to believe that individuals who make larger donations necessarily give more items rather than the same number of items but of higher value, one can reasonably assume that the cost of compliance is fixed, but heterogeneous. Individuals who bunched at $0 in 1984 are poorer, had lower MTRs and lower opportunity cost of time than individuals who bunched at $500 in 1985. Thus the chosen approach is likely to *overestimate the compliance cost* of writing a statement in 1984 and therefore *underestimate the amount of evasion*. Therefore, the results in this study generate a lower bound on the true amount of evasion generated by the 1985 reform. If compliance cost heterogeneity is driven by income differences, I partially circumvent this concern by estimating compliance and evasion responses separately for each quartile of adjusted gross income in Section 3.6.

Assumption 3. Cheating is only possible below the threshold. If filling out Form 8283 does not prevent taxpayers from cheating, then the described approach underestimates the magnitude of total evasion. The main concern to my identification strategy is the possibility that some individuals experienced an increase both in compliance and evasion costs at $500, in which case my estimate of compliance cost is biased upward and the results again generate a lower bound on the true amount of evasion.[28] While this is possible, the magnitude of the bias is likely to be small for two reasons. First, only decreases in *fixed* costs of evasion would persuade individuals to reduce their reported donations, since for individuals who report more than $500 the *marginal* cost of evasion does not change (both before and after the reform they had to fill out Form 8283). Second, the results in Section 3.5 will show that while individuals reported many untruthful noncash donations after the reform, the overall magnitude of cheating was rather small, suggesting that even when self-reporting is not required, the fixed and marginal costs of evasion are high enough to discourage individuals from cheating. If the cost of cheating is even higher in the presence of self-reporting, the number of

[28]This would be the case if evasion cost is fixed and depends on the level of self-reporting requirements: low when no reporting is required and high when some reporting is necessary.

evaders prior to the 1985 reform is likely to be very low. Both arguments imply that while a change in compliance requirements affected all individuals – those who cheated and those who did not cheat – the change in evasion cost would only affect a small group of cheaters. Therefore, it is reasonable to assume that changes in the cost of evasion are of second order to the changes in compliance costs experienced by these individuals. It then follows that relaxing the third assumption and allowing for cheating above the self-reporting thresholds does not change the validity of the results, merely the interpretation. If self-reporting does not prevent individuals from cheating, this study estimates evasion by taxpayers who are influenced by the self-reporting requirement – the ultimate group of interest from the policy perspective – and disregards individuals who cheat regardless of reporting requirements.

Finally, it is possible that individuals choose to bunch at the compliance threshold because they think that the probability of being audited is higher if their reported donations exceed the threshold, regardless of whether these individuals cheat on charitable donations or not. With this possibility in mind, the *comliance costs* should be interpreted broadly and encompass both the opportunity cost of time of filling out Form 8283, the psychological hassle cost of doing so, and the expected cost of future audits, if any of these change at the threshold.[29]

3.4 Empirical Results: Identifying Evasion

It is likely that individuals learnt about the compliance change in the beginning of 1986, when they began preparing their 1985 tax return but after they have already made their 1985 donations. For this reason I study changes in noncash donations both in 1985 and 1986.[30] When comparing the 1984 and 1985 distributions I choose not to adjust for inflation. It is unlikely that a 3.4% inflation in that year affected the size of donations. However, when comparing 1984 and 1986 distributions, I do adjust for inflation (a combined increase of 5.1%). The results, however, are not sensitive to inflation adjustments. Below I explain my approach to estimating evasion using 1984 and 1985 distributions (I use the same approach to estimate evasion in 1986).

I start by comparing the number of individuals with donations above \$500 in 1985 and in 1984 using the results from Figure 2(a). Let $b_{84}(i)$ and $b_{85}(i)$ identify the percent of itemizers with noncash donations of $i = (\$0, \$100], (\$100, \$200]$, etc. in 1984 and 1985 respectively. First, I fit a fractional polynomial of degree 3 through the bins $b_{84}(i)$ and $b_{85}(i)$ with $i = (500, 600], .., (\$N, \$N + \$100]$ and $N = 2000$, resulting in smoothed counts $Poly_{84}(i)$ and $Poly_{85}(i)$.[31,32] Next I adjust the 1985 distribution to the right of the threshold upward by "filling in" the missing mass for all bins where the difference between the smoothed polynomials is positive. I do so by multiplying the number of

[29]For the majority of taxpayers who are not self-employed, the probability of being audited is very small and is less than 0.5%. There is also no empirical evidence that indicates that the probability of audit increases if one submits Form 8283.

[30]It is, however, problematic to extend the analysis to later years because of Tax Reform Act of 1986.

[31]N determines the width of the window used to fit the 3rd degree polynomial. Since the 1984 and 1985 distributions are relatively smooth, the results are robust to most choices of N.

[32]The implemented approach can be applied directly to the observed counts of noncash donations in 1984 and 1985. However, using polynomial approximation results in more accurate estimates of compliance costs, described in Section 3.5.2.

donors in each bin $b_{85}(i)$ by $\text{Poly}_{84}(i)/\text{Poly}_{85}(i)$ until the first bin for which $\text{Poly}_{84}(i)/\text{Poly}_{85}(i) \leq 1$. At the same time I reduce the size of the spike at \$500 by subtracting the respective amounts from the \$500 bin. This procedure results in an adjusted 1985 distribution b_{85}^{adj} that satisfies

$$b_{85}^{adj} = \begin{cases} b_{85}(i) & \text{if } i = (\$0,\$100]),...,(\$300,\$400] \\ b_{85}(i) - \sum_{j=(\$500,\$600]}^{(\$J,\$J+\$100]} b_{85}(j)\left[\frac{\text{Poly}_{84}(j)}{\text{Poly}_{85}(j)} - 1\right] & \text{if } i = (\$400,\$500] \\ b_{85}(i) * \frac{\text{Poly}_{84}(i)}{\text{Poly}_{85}(i)} & \text{if } i = (\$500,\$600],..,(\$J,\$J+\$100] \\ b_{85}(i) & \text{if } i = (\$J+\$100,\$J+\$200],..,(\$N,\$N+\$100], \end{cases}$$

where $\$J$ is such that $\frac{\text{Poly}_{84}(i)}{\text{Poly}_{85}(i)} > 1$ for all $(\$500,\$600] \leq i \leq (\$J,\$J+\$100]$ and $\frac{\text{Poly}_{84}(i)}{\text{Poly}_{85}(i)} \leq 1$ for $i = (\$J+\$100,\$J+\$200]$.

The results of this adjustment procedure are shown in Figure 7(a). The dashed-diamond line and the solid-triangles line are reproductions from Figure 2(a). The solid-X line is the adjusted 1985 density: it matches the original distribution up to \$500 and approximately above \$1100. But it shows a much smaller spike at \$500 and approximately matches the observed 1984 distribution between \$500 and \$1100. Note that the persisting spike at \$500 is the first sign of evasion. If all of the excess mass at \$500 was due to the cost of filing Form 8283, the adjusted 1985 distribution would be smooth with no bunching at \$500. Figure 8(a) shows similar results for 1986, but the remaining excess mass at \$500 is larger.

The next step is to recreate the counterfactual 1984 distribution to account for the missing genuine donations close to \$0. Recall that prior to 1985 all individuals who reported any amount of noncash contributions had to submit a written statement detailing their donations. Since the content of the statement is essentially equivalent to Form 8283, both actions should require approximately the same amount of effort. As described in Section 3.3, I make a simplifying assumption that the cost of writing a statement in 1984 is equivalent to the cost of filling out Form 8283 in 1985. If the two costs are equivalent then the proportion of taxpayers who chose to forego a deduction of \$50 in 1984 should correspond to the proportion of taxpayers who chose to reduce reported donations from \$550 to \$500 in 1985, since in both cases individuals forego \$50 worth of deductions. This means that I can account for the missing donations in 1984, by multiplying the observed distribution $b_{84}(i)$ by $\text{Poly}_{84}(i)/\text{Poly}_{85}(i)$. The counterfactual distribution $b_{84}^{counter}$ then satisfies

$$b_{84}^{counter} = \begin{cases} b_{84}(i) * \frac{\text{Poly}_{84}(i)}{\text{Poly}_{85}(i)} & \text{if } i = (\$0,\$100],..,(\$J-\$500,\$J-\$400] \\ b_{84}(i) & \text{if } i = (\$J-\$400,\$J-\$300],..,(\$N,\$N+\$100], \end{cases}$$

The recovered counterfactual – dashed-circle line – is presented in Figure 7(b). The adjustment procedure grossly overestimates the number of potential new donors in the (\$0, \$300] region. Two explanations are possible. First, compliance costs of these individuals might be significantly lower than assumed, leading to an overestimate of missing donations. I discuss this possibility when I perform the heterogeneity analysis in Section 3.6. A more likely explanation is that some taxpayers do not bother reporting all charitable donations they make even when compliance requirements are low. Both explanations imply that the estimated counterfactual represents an upper bound on donations that would have been reported in 1984 if individuals were not required to write a statement and could not cheat.

The adjustment procedure suggests that all new donations below \$400 in 1985 are likely to be genuine. In other words, individuals who found it too costly to write a statement in 1984, have started to report donations in 1985. However, in the [\$400, \$500] region the redistributed 1985 density is greater than the recovered counterfactual 1984 density. This suggests that even after removing the excess mass from \$500 (to account for those who bunch from the right) and after accounting for legitimate new donors (who found it too costly to report in 1984) there remains an "unexplained" excess mass at \$500. These individuals must be cheating.

Figure 8(b) repeats the above procedure using the 1984 and 1986 distributions. The results are similar, but the magnitude of evasion is much larger. This finding is not surprising in light of a large increase in donations around the \$500 threshold in 1986. Figures 7 and 8 suggest that the 1985 reform led to a substantial increase in evasion. At the same time, the reform also led to an increase in genuine charitable donations and saved time and money for many individuals who donate less than \$500. I quantify the results of the reform in the next section.

The counterfactuals shown in Figures 7 and 8 generate a lower bound on the true amount of evasion. In an attempt to estimate an upper bound on evasion I compute alternative counterfactuals shown in Figure 9. To construct these counterfactuals, I use the same adjustment procedure as when I construct $b_{84}^{counter}$ but scale each adjustment so that the total number of counterfactual donations matches the number of observed donations below the threshold in 1985 or 1986 respectively. In other words,

$$b_{84}^{preferred\ counter} = \begin{cases} b_{84}(i)\frac{\text{Poly}_{84}(i)}{\text{Poly}_{85}(i)}\frac{\sum_{j=(0,100]}^{(400,500]} b_{85}^{adj}(j)}{\sum_{j=(0,100]}^{(400,500]} b_{84}^{counter}(j)} & \text{if } i = (\$0, \$100], .., (\$J - \$500, \$J - \$400] \\ b_{84}(i) & \text{if } i = (\$J - \$400, \$J - \$300], .., (\$N, \$N + \$100]. \end{cases}$$

This counterfactual is built on the assumption that some share of individuals in the population choose not to report their donations, regardless of the compliance rules. The main advantage of this counterfactual is that it matches the number of actual observed donations after the reform.

3.5 Empirical Results: Quantifying Compliance Costs and Evasion

The 1985 reform had several effects. First, it removed compliance costs for individuals donating less than \$500. This decrease in compliance costs also led to an increase in genuine donations. Second, it decreased the number of donations above \$500 and led to more evasion. Table 2 summarizes the results of this cost-benefit analysis with bootstrapped standard errors based on 1000 replications. The results presented are based on a conservative counterfactual shown in Figures 7 and 8 (lower bound) and my preferred counterfactual shown in Figure 9 (upper bound).

From the "lower bound" panel of Table 2 follows that the reform generated approximately $321–$360 million of new genuine donations, which are calculated as the area between the adjusted 1985/1986 distribution and the original 1984 distribution (in 1985/1986 dollars). The results from the "upper bound" panel show smaller levels of new genuine donations and higher level of evasion, particularly in 1985. At the same time the reform led to approximately $70 million fewer reported donations in the [$500,$2000] range, calculated as the area between the adjusted 1985/1986 distribution and observed 1985/1986 distribution. Unfortunately, there is no way to know whether individuals actually reduced the amount of charitable giving or merely chose to forego part of the subsidy.

3.5.1 Quantifying Evasion

Quantifying evasion requires an additional assumption as one cannot observe how much, if at all, the evaders have actually donated. I assume that each evader has donated $100, which is approximately equivalent to assuming that evaders are actual donors, coming from the observed 1984 distribution.[33] Using the lower bound counterfactual, I find that the reform led to $78 million of false donations in 1985 and $235 million in 1986. This suggests that 21% of the observed increase in donations in 1985 and 48% in 1986 were due to evasion.[34] The share of untruthful donations would be even larger, if we assume that cheaters donated $0. The upper bound estimates imply slightly higher levels of evasion – 61-65%.

While a higher reporting threshold led to evasion, the overall magnitude of observed cheating is rather small. If reporting requirements are the only barrier to cheating, one would expect most individuals to report noncash donations of approximately $500 or more, with nobody reporting donations of less than $500. Yet, this is not what we observe in Figure 2. The relatively small increase in donations in 1985 and 1986 (and even future years) suggests that individuals find cheating painful and are not willing to cheat by large amounts, thus lending support to the third assumption in Section 3.3. One way to model the observed behavior is to assume that individuals experience both a fixed cost of evasion, which requires them to cheat by at least some positive amount to make it worthwhile the effort, and a variable cost, which prevents individuals from cheating by large amounts.

The results also suggest that cheating behavior is mostly prevalent among experienced "donors." Given that only 20% of individuals reported noncash donations in 1984 (due to personal preferences or because of compliance requirements), one would expect a surge in cheating donations over time, since individuals who make $0 noncash donations could cheat by some positive amount. Yet, as can be seen in Figure 4, even 10 years after the reform, less than 45% of itemizers

[33] The median donation among individuals who donated less or equal to $300 in 1984 is $125.

[34] It may seem counterintuitive as to why these numbers are so large while the shaded areas in Figures 7(b) and 8(b) are small. The answer is simple: the majority of genuine new donations are small – less than $200. The cheating donations, on the other hand, are concentrated in the [$400,$500] region. Thus even after subtracting the assumed genuine portion – $100 – the cheating per donor is large.

report noncash donations. One possible explanation is that taxpayers are unaware of this evasion channel because they are not familiar with the reporting rules. However, this justification is partially inconsistent with the fact that more than 80% of itemizers report cash donations and therefore must be somewhat familiar with the regulations associated with the charitable giving deduction.

While the observed levels of cheating are generally consistent with the findings from other studies (see Slemrod (2007) for a review), the low levels of cheating are particularly surprising because charitable giving is not third-party reported and the likelihood of getting caught is extremely low. As was described in greater detail in Section 2.1, in contrast to cash donations for which receipts are generally required, receipts are not required for noncash donations if "it is impractical to get one (for example, if you leave property at a charity's unattended drop site)." Thus in case of audit, it would be virtually impossible for the IRS to accuse a taxpayer reporting $500 worth of noncash donations of cheating.

3.5.2 Quantifying Compliance Costs

One major benefit of the 1985 reform was the removal of compliance costs for all individuals who donate $500 or less. To calculate the cost of filing Form 8283, I again turn to Figure 7(a). Individuals who have chosen to bunch at $500 either reduced donations, thus foregoing some utility from giving, or reported less, thus foregoing part of the tax deduction. Unfortunately I cannot observe which of the two approaches they have followed. So I consider both.[35] The first approach – assuming individuals choose to forego the subsidy – generates an upper bound on the cost of compliance, since reducing the actual donations by some amount would increase individuals' utility by increasing their own consumption. The advantage of the first approach, however, is in its simplicity, since it relies on a revealed preference argument to estimate compliance costs and requires no parametric assumptions. The second approach – assuming individuals actually reduce donations – generates a more accurate prediction of compliance costs, but requires an estimate of foregone utility due to the suboptimal amount of donations made. In both cases, I assume that charitable giving is a small share of the overall income and therefore individuals' utility can be approximated with a quasilinear utility function, i.e. $U_i(C, X) = C + u_{xi}(X)$.

Case 1: Individuals do not reduce donations.
From (3) and (7) follows that a taxpayer i will choose to donate X_i^* but report $500 if the utility from doing so is higher than donating and reporting X_i^*:

$$Y_i - (1-\tau)X_i^* + u_{xi}(X_i^*) - \phi_i \le Y_i - X_i^* + 500\tau + u_{xi}(X_i^*) \quad \text{or} \quad \phi_i \ge \tau(X_i^* - 500). \tag{8}$$

Therefore I can estimate the distribution of compliance cost $\phi_i \sim F_\phi$ by quantifying the amount of foregone deductions above $500 in 1985 as compared to 1984. From (8) follows that the percentage of people who continue to contribute in 1985 gives us the values of the cumulative distribution

[35] As discussed in Section 3.2 taxpayers might also choose to donate an amount between $500 and $$X^*$ and report $500. I omit this possibility.

function of compliance cost, F_ϕ, since for each bin $b_j = (\$500, \$600]$, $(\$600, \$700]$, etc. with average donation $j = \$550, \$650$, etc. we have

$$\frac{\text{Poly}_{85}(b_j)}{\text{Poly}_{84}(b_j)} = Prob\left(\phi_i \leq \tau(j-500)\right) = F_\phi(\tau(j-500)). \tag{9}$$

Case 2: Individuals reduce donations. Alternatively, taxpayer i will report *and* donate \$500 if the utility from doing so is higher than reporting and donating X^*:

$$Y_i - (1-\tau)X_i^* + u_{xi}(X_i^*) - \phi_i \leq Y_i - 500(1-\tau) + u_{xi}(500) \quad \text{or} \quad \phi_i \geq u_{xi}(X_i^*) - u_{xi}(500) - (1-\tau)(X_i^* - 500).$$

Assume $u_{xi} = A_i\, X^\varepsilon$. Then using a Taylor expansion of $u_{xi}(\cdot)$ around X_i^* and equations (3) – (7) we find[36]

$$u_{xi}(500) \approx u_{xi}(X_i^*) - (1-\tau)(X_i^* - 500) + \frac{1}{2}(1-\tau)(\varepsilon-1)\frac{(X_i^* - 500)^2}{X_i^*}.$$

Therefore, taxpayer i will report and donate \$500 if $\phi_i \geq \frac{1}{2}(1-\tau)(1-\varepsilon)\frac{(X_i^*-500)^2}{X_i^*}$. Thus for bins b_j with average donations j we have

$$\frac{\text{Poly}_{85}(b_j)}{\text{Poly}_{84}(b_j)} = Prob\left(\phi_i \leq \frac{1}{2}(1-\tau)(1-\varepsilon)\frac{(j-500)^2}{j}\right) = F_\phi\left(\frac{1}{2}(1-\tau)(1-\varepsilon)\frac{(j-500)^2}{j}\right). \tag{10}$$

Equations (9) and (10) specify two approaches to estimating the cost of compliance. The first approach assumes donations remained the same but claiming decreased, while the second approach assumes both donations and reporting decreased. In 1985, individuals who reported noncash donations in the range of [\$500, \$1000] had an average marginal tax rate of 29.4%, while in 1986, the average tax rate was 30.08%. I use these tax rates to back out the cumulative distribution of compliance cost using formulas (9) and (10). To estimate the cost of compliance using (10) I set $\varepsilon = 0.23$ which corresponds to an estimate of elasticity of charitable giving of -1.3.[37,38]

Table 2 presents the results of these calculations. Under the first assumption I find that individuals are willing to forego up to \$90–\$99 on average in order to avoid filling out Form 8283 (in 1985/1986 dollars). Under the second assumption, I calculate an average cost of filling out Form 8283 to be \$40-51. In addition to the average cost of filing, Table 2 also shows cumulative savings from simplified compliance requirements. These savings rely on the number of donors in 1984 (unadjusted) and accounts for the fact that these individuals self-selected into donating

[36]Differentiation yields $u'_{xi} = A_i \varepsilon x^{\varepsilon-1}$ and therefore $u''_{xi} = u' \cdot (\varepsilon - 1)/x$.

[37]For utility $u_{xi} = A_i\, X^\varepsilon$ with $\varepsilon \in (0,1)$, optimality condition (2) implies $A_i \varepsilon X^{\varepsilon-1} = 1-\tau$. Hence elasticity of charitable giving with respect to net-of-tax rate is $1/(\varepsilon-1)$.

[38]See Andreoni (2006) for a recent review of elasticities of charitable giving. There is some disagreement about the magnitude of the price elasticity of charitable giving (Hungerman and Ottoni-Wilhelm (2016)). The chosen value is at the upper bound of the distribution which implies that the estimated compliance costs are at the lower bound of possibilities. I choose a more conservative measure of compliance cost to complement the upper bound estimates derived from the first approach.

and therefore had lower-than-average compliance costs. The results show that even under a more conservative assumption (using (10)), the 1985 reform decreased compliance costs by \$18-42 million (1985/1986 dollars).

The estimates of compliance cost – \$40-51 in 1985/1986 dollars or \$82-105 in 2015 dollars – are rather high considering the content of Form 8283. It is unlikely that filling out Form 8283 will take more than an hour of one's time. Several explanations are possible. First, filling out Form 8283 might be time-consuming because doing so requires taxpayers to learn about the rules, obtain Publication 526, request and organize receipts. Second, individuals might procrastinate on filing tax returns until the deadline at which point the cost of filing any additional tax forms can be particularly high. Third, individuals might choose to not exceed the reporting threshold because they think that doing so will increase the probability of being audited.[39,40] In this study I am not able to differentiate between these alternative explanations. However, the results of Benzarti (2015), who studies the decision to itemize and explores various explanations for the high estimated cost of filing Schedule A, suggest that high hassle costs and procrastination are the most likely explanation for the observed behavior.

3.6 Empirical Results: Response Heterogeneity

In this section I explore whether evasion is more prevalent among some demographic groups and whether the cost of filing Form 8283 varies across individuals. The results are presented in Tables 3 and 4 are based on the distributions of noncash donations in 1984 (inflation adjusted) and in 1986, and are calculated with the assumption that individuals reduce their donations above the \$500 threshold.[41]

I start by breaking down itemizers by quartiles of income in Figure 10 (lower bound) and Table 3.[42] Two observations are notable from Figure 10. First, richer individuals make substantially larger donations than poorer individuals. Second, richer individuals evade more. Estimates in Table 3 suggest that individuals in the top quartile of adjusted gross income (AGI) evade about 1.5 times more than individuals in the bottom 2 quartiles of AGI. In general, evasion appears to increase monotonically with AGI, however, the difference between the top and the first two quartiles is not statistically significant. However, calculations in Table 3 do not account for differences in tax rates.

[39] There is no practical evidence that reporting over \$500 will trigger auditing. IRS provides very little information on the likelihood of being audited, but according to the 2012 IRS Data Book (available at http://www.irs.gov/pub/irs-soi/12databk.pdf) only 0.4% of nonbusiness returns without EITC and without Schedules C, E, F or Form 2106 have been audited. This probability increases to no more than 3.6% when individuals file the above-mentioned Schedules or claim EITC. It is unlikely that tax preparers recommend reducing reported donations either, because tax preparers are not allowed to provide their clients with the likelihoods of being audited and strategize the return accordingly.

[40] It can further be argued that the fear of being audited should one submit Form 8283 is somewhat counterintuitive. It is imaginable that an individual who reports \$550 worth of noncash donations and provides a detailed description on Form 8283 would appear more trustworthy than somebody who reports \$490 and provides no details.

[41] Table 4 shows the results using the lower bound counterfactual. Similar results using the upper bound counterfactual are available in Table B.1 in the appendix. Similarly, all Figures that rely on the upper bound counterfactual are available in the appendix.

[42] The first two quartiles are pooled together as most of these individuals report noncash donations of less than \$500.

Since individuals in the top quartile received larger deductions per dollar of donation, the lost of revenue increases sharply with the AGI.

I use (10) to estimate compliance costs and find that the cost of filing Form 8283 decreases with income. Top quartile individuals experience a cost of filing Form 8283 that is nearly twice lower than that of individuals in the bottom 2 quartiles. A possible explanation is that individuals in the top quartile of AGI are more likely to employ a tax preparer and doing so appears to reduce the cost of filing Form 8283, as discussed below.

Figure 10 also allows me to investigate the validity of the adjustment procedure used in Section 3.4: recall that under assumption 2, discussed in Section 3.3, I assume that individuals who donate less than $500 experience similar compliance costs as individuals who donate $500 or more. Table 3 clearly shows that there is substantial heterogeneity in the population by AGI. At the same time, Figure 10 also shows that even when restricted to a quartile of AGI, the adjustment procedure grossly overestimates the number of individuals who would have reported positive donations in 1984 if there were no reporting requirements. The most likely explanation for the observed behavior is that many individuals choose not to deduct noncash charitable donations when these amounts are small. It could be that taxpayers are not aware about the existence of noncash deduction or do not find it worthwhile to learn about the rules.

Next, I explore how responses differ depending on whether individuals use tax preparers, report some self-employment income and whether they are single or married. Table 4 summarizes the results, graphical evidence is available in Figure 11 (lower bound counterfactuals). I find little variation in the amount of evasion across groups, with no differences being statistically significant. However, there is substantial variation in the perceived costs of filing Form 8283. Individuals who use a tax-preparer incur nearly twice lower costs of filling out Form 8283 than those who do not use a tax preparer. Similarly, individuals who have to file Schedules C, E or F show a lower cost than those who do not file self-employment income schedules. Finally, single individuals experience slightly larger costs than joint tax filers. Unfortunately, the observed differences are not statistically significant due to large standard errors. Observed heterogeneity suggests that the perceived cost of compliance is likely to be smaller for individuals who are used to filing tax forms, e.g. self-employed individuals, and for taxpayers who use tax preparer assistance.

4 Optimal Reporting Thresholds

The results in the previous section show that information reporting can be effective at reducing evasion. It follows then that self-reporting requirements generate a trade off between the compliance costs experienced by individuals (and possibly by government agencies) and the levels of cheating. In this section I study how the government should decide on the size of self-reporting thresholds. At the end of the section, I calibrate my model and show that it would have been more optimal to set the noncash charitable donation threshold at approximately $350 instead of $500.

The model is based on the individuals' preferences described in Section 3.2. To derive the optimal threshold, I assume the government maximizes a social welfare function which accounts for individual utilities, externalities from charitable giving and the cost of providing the subsidy. While the model focuses on charitable giving, the framework can be easily extended to other deductions and expenses, e.g. childcare costs, medical and dental expenses, business expenses, etc.

4.1 Baseline Model: No Evasion and No Compliance Costs

To begin, assume there are no compliance costs and evasion is not possible. Consider an individual i who solves (1), or

$$\max_{C,X} \quad U_i(C,X) \quad \text{s.t.} \quad C = Y_i - X + \tau X,$$

where C is consumption, X is charitable giving and τ is the tax subsidy provided by the government to support charitable giving, This individual will make charitable contributions by choosing an optimal allocation $(\hat{C}_i, \hat{X}_i)$ given by condition (2).

The government's problem is to choose an optimal subsidy rate τ to maximize social welfare, which is a sum of individual welfare and externality benefits from charitable giving, minus the cost of raising funds to support the subsidy. Formally,

$$\max_{\tau} W = \int g_i U_i(\hat{C}_i(\tau), \hat{X}_i(\tau))dF_i + \int B \cdot \hat{X}_i(\tau)dF_i - \int C_F \cdot \tau\hat{X}_i(\tau)dF_i, \tag{11}$$

where g_i is individual's social welfare weight, B is the positive externality introduced by charitable giving, C_F is the marginal cost of providing the subsidy and F_i is the cumulative distribution of individuals type i. At the optimum the government will pick the subsidy rate τ that equalizes the sum of marginal private and social benefits of charitable giving to the marginal cost of acquiring the funding.[43]

4.2 Model with Compliance Costs and Evasion

Now suppose evasion is possible and current regulations require an individual to fill out some paperwork if his reported charitable contributions exceed a pre-determined threshold T. Now the individual may choose to report his true contributions, X, overstate his contributions by an amount E, thus reporting $R = X + E$, or underreport contributions, $R < X$. As in Section 3.2, I focus on the case where evasion is 100% detectable whenever $R > T$.[44] The individual now solves (3), or

$$\max_{C,X,R} \quad U_i(C,X) \quad \text{s.t.} \quad C = Y_i - X + \tau R - [h_{i0} + h_i(R-X)]\mathbb{1}_{R-X>0} - \phi_i(X)\mathbb{1}_{R>T},$$

[43] In reality, the externality from giving, B, is likely to decrease in the total amount of donations, while the cost of acquiring funds, C_F, is likely to increase. The goal of this paper is to focus on optimal determination of reporting thresholds, rather than the level of optimal subsidy τ. For this reason, I assume B and C_F are fixed.

[44] Two justifications for this choice. First, if additional paperwork does not deter some individuals from evasion, the composition of this population and evasion behavior should not affect the choice of the threshold (though it would suggest that the chosen compliance regulations are not effective). Second, under some compliance rules evasion is in fact not possible above the threshold. For example, third party reporting of wage income is equivalent to setting the threshold at zero for this type of income. Underreporting of wage income would then immediately trigger an audit.

where $h_{i0} + h_i(\cdot)$ and $\phi_i(\cdot)$ are evasion and compliance costs respectively, and R is the reported amount of charitable contributions. Further, I assume that with some probability p the individual is caught and has to pay a penalty θ. Therefore the evasion cost $h_{i0} + h_i(R - X)$ accounts for the psychological cost of cheating $h_{i0} + h_i(R - X) - p\theta\tau(R - X)$ and for the monetary punishment $p\theta\tau(R - X)$ if caught.

The government problem (11) remains unchanged, except that now the government wants to determine both the optimal level of subsidy τ and the optimal threshold T.

4.2.1 The Individual Decision

As described in Section 3.2, the individual's optimal choice falls into two categories. Individuals with small baseline donations $\hat{X}_i \leq T$ choose to evade if the benefit of evasion is greater than the cost of evasion. Optimal triple (C_i^*, X_i^*, R_i^*) satisfies (6). These individuals' indirect utility exceeds the baseline indirect utility by $\Delta U_i^E(\tau, T)$, which measures an increase in utility due to evasion:

$$U_i(C_i^*, X_i^*, R_i^*)(\tau, T) = U_i(\hat{C}_i(\tau), \hat{X}_i(\tau)) + \Delta U_i^E(\tau, T). \tag{12}$$

Individuals with large baseline donations $\hat{X}_i > T$ bear a loss in utility due to compliance requirements. Some of these individuals choose to reduce their donations, with the optimal triple (C_i^*, X_i^*, R_i^*) satisfying (7). These taxpayers's indirect utility is lower than the baseline indirect utility by $-\Delta U_i^\phi(\tau, T)$, which measures a decrease in utility due to compliance costs:

$$U_i(C_i^*, X_i^*, R_i^*)(\tau, T) = U_i(\hat{C}_i(\tau), \hat{X}_i(\tau)) + \Delta U_i^\phi(\tau, T). \tag{13}$$

4.2.2 Government Decision and Optimal Threshold Determination

Using (12) and (13) we can now write down the government decision problem in terms of the baseline model (11). Let $\Delta X_i^* = X_i^* - \hat{X}_i$ represent the changes in the amount of donations relative to the baseline case and $\Delta R^* = R_i^* - \hat{X}_i$ represent the changes in the reported donations relative to the baseline model. Then the government wishes to maximize

$$\begin{aligned}
\max_{\tau,T} \quad W = & \underbrace{\int g_i U_i(\hat{C}(\tau), \hat{X}(\tau)) dF_i + \int B \cdot \hat{X}_i(\tau) dF_i - \int C_F \cdot \tau \hat{X}_i(\tau) dF_i}_{\text{Baseline } W} \\
& - \underbrace{\int C_F (1 - p\theta \mathbb{1}_{\Delta R_i^* > 0}) \cdot \tau \Delta R_i^*(\tau, T) dF_i}_{\text{Funding Cost Change due to Evasion and Compliance}} + \underbrace{\int B \cdot \Delta X_i^*(\tau, T) dF_i}_{\text{Externality Change due to Compliance}} \\
& + \underbrace{\int g_i \Delta U_i^\phi(\tau, T) dF_i}_{\text{Utility Loss due to Compliance}} + \underbrace{\int g_i \Delta U_i^E(\tau, T) dF_i}_{\text{Utility Gain due to Evasion}}.
\end{aligned} \tag{14}$$

The welfare maximization problem (14) now accounts for the changes in the individuals' utilities due to evasion and compliance costs, for the changes in externality benefits and the changes in the cost of funds required to sustain the subsidy. Note that because $\Delta X_i^* \leq 0$, whenever $T < \infty$, externality benefits are lower than in the baseline case since some individuals choose to reduce donations to avoid compliance costs. Changes in the funding costs are in principle ambiguous, since $\Delta R^* \geq 0$ for individuals with $\hat{X}_i \leq T$ and $\Delta R^* \leq 0$ for individuals with $\hat{X}_i > T$, and therefore will depend on the distribution of individuals' tastes for giving.

The first part of the equation (14) is identical to the baseline maximization problem (11) and does not depend on T. Thus if the government is interested in finding the optimal threshold T, it is sufficient to minimize:

$$\begin{aligned}\min_{T} \quad \Delta W = \; & \underbrace{\int C_F(1 - p\theta \mathbb{1}_{\Delta R_i^* > 0}) \cdot \tau \Delta R_i^*(\tau, T) dF_i}_{\text{Funding Cost Change due to Evasion and Compliance}} \; - \; \underbrace{\int B \cdot \Delta X_i^*(\tau, T) dF_i}_{\text{Externality Change due to Compliance}} \\ & - \underbrace{\int g_i \Delta U_i^{\phi}(\tau, T) dF_i}_{\text{Utility Loss due to Compliance}} \; - \; \underbrace{\int g_i \Delta U_i^{E}(\tau, T) dF_i}_{\text{Utility Gain due to Evasion}}.\end{aligned} \tag{15}$$

4.3 Optimal Threshold Properties

In this section I discuss properties of the optimal reporting threshold T^* relying on minimization problem (15). Proofs are available in appendix A.

Proposition 1. *If $g_{cheaters} \leq 1$ and $C_F \geq 1$, then the optimal threshold $T^* = 0$ whenever compliance costs are zero, i.e. $\phi_i = 0$ for all types of individuals i, and cheating costs are finite, i.e. $h_{i0} + h_i(\cdot) < \infty$ for some individuals i.*
If the government does not want to redistribute towards individuals who cheat, if the subsidy provision is costly and if there are no compliance costs, then the optimal threshold should be set at zero to reduce evasion behavior. From the government's point of view, evasion is inefficient because the utility from evasion is reduced by cheating costs.

Proposition 2. *If evasion costs are infinitely large (either fixed or variable), i.e. $h_{i0} + h_i(\cdot) = \infty$ for all individuals i, then the optimal threshold $T^* = \infty$.*
Absent cheating, a finite reporting threshold decreases the individuals' utility due to compliance costs and reduces externalities from giving, and therefore is not optimal.

Proposition 3. *If all individuals experience a positive fixed cost of evasion, i.e. $h_{0i} > 0$ for all individuals i, then the optimal threshold should be strictly positive, i.e. $T^* \geq \frac{\min_i h_{0i}}{\tau}$.*
Fixed costs prevent individuals from cheating by very small amounts. Therefore setting the threshold to $\frac{\min_i h_{0i}}{\tau}$ is preferred to a zero threshold, as it eliminates evasion completely while reducing compliance costs.

Let F_X represent the resulting cumulative distribution function of noncash donations under the baseline mode, i.e. when individuals are not able to cheat and do not experience compliance costs. Let f_X denote the corresponding probability density function.

Proposition 4. *For any distribution F_X with $f''_X > 0$, the optimal threshold $T^* < \infty$ as long as $h_{i0} + h_i(\cdot) \neq 0$ for some individuals i.*
As the optimal threshold increases towards infinity, the marginal gain from less compliance is outweighed by an increase in evasion when f_X is decreasing rapidly.

Proposition 5. *The optimal threshold T^* increases in the welfare weight on cheaters $g_{cheaters}$. The optimal threshold T^* increases in B and decreases in C_F when the probability density of donations f_X is strictly decreasing.*
When the welfare weight on cheaters is high, evasion is less wasteful and is equivalent to a transfer of utility from society to evaders. Note that even for $g_{cheaters} = 1$, evasion generates some deadweight loss unless evasion costs are zero. A higher marginal cost of funds makes evasion costlier and hence calls for a lower threshold, at the same time it reduces expenditures due to reduction in truthful donations. For a decreasing density, the first effect will dominate and the optimal threshold decreases with C_F. A similar logic follows for externality benefits – an increase in the threshold decreases externality losses whenever f_X is decreasing.

Proposition 6. *For most distributions, the optimal threshold T^* increases in the variable cost of evasion and in the compliance cost. The optimal threshold T^* decreases in the fixed cost of evasion if f_X is strictly decreasing and the optimal T^* is not a corner solution, and increases in the fixed cost of evasion otherwise.*
Higher variable costs of evasion lead to less cheating and allow for a higher threshold. Higher compliance costs make reporting particularly painful and thus call for a higher threshold. However, the magnitude of fixed costs affects only a small portion of individuals – individuals who cannot cheat by the ideal amount. Higher value of fixed costs makes evasion less profitable for these individuals, reducing cheating. For a decreasing distribution, it is therefore optimal to slightly decrease the threshold in order to take advantage of a larger fraction of individuals who are unable to cheat. The opposite is true when the distribution f_X is increasing. However, when evasion levels are much higher than compliance costs, optimal thresholds are driven by minimum evasion amounts and thus increase in the fixed costs of evasion.

To summarize, propositions 1 through 6 suggest that it is almost never optimal to set infinitely large or zero self-reporting thresholds. The optimal thresholds should be large when compliance costs are high and small when evasion costs are low. In many cases, it might be optimal to set a low threshold if doing so reduces the number of cheaters because of high fixed costs of evasion.

4.4 Calibration

4.4.1 Simplifying Assumptions

To solve (15) I make the following simplifying assumptions.

Assumption 1. I assume a quasilinear utility function

$$U_i(C, X) \equiv C + A_i X^{\varepsilon},$$

with heterogeneous tastes for charitable giving $A_i \sim F_A$. This heterogeneity in tastes maps into heterogeneity in ideal donations $\hat{X}_i$. In other words in absence of evasion and compliance costs the distribution of charitable tastes F_A can be translated into a distribution of donations F_X.

Assumption 2. I assume that the probability of getting caught is zero, i.e. $p = 0$. Given the very low probabilities of audit and the difficulty of demonstrating that donations are fraudulent, this assumption appears to be innocuous.[45]

Assumption 3. I assume that the cost of compliance is fixed and equal to

$$\phi_i(X) \equiv \phi_i \geq 0, \quad \phi_i \sim F_\phi.$$

I choose to focus on the fixed cost of compliance because this cost is likely to vary with the type of donations rather than the dollar value of donations.

Assumption 4. I set the evasion cost $h_{i0} + h_i(\cdot)$ to be a quadratic function of the amount of evasion $R - X$, i.e.

$$h_i(R - X) \equiv \begin{cases} 0 & \text{if } E = 0 \\ \gamma_{1i} + \gamma_{2i}(R - X)^2 & \text{if } E > 0 \text{ and } R \leq T \\ +\infty & \text{if } E > 0 \text{ and } R > T \end{cases} \tag{16}$$

with $(\gamma_{1i}, \gamma_{2i}) \sim F_\gamma$. From (16) follows that an individual experiences zero costs when he does not evade, a fixed plus a quadratically increasing cost when he evades, and an infinitely large cost if he evades and reports deductions above the threshold T. From (4) follows that the ideal cheating amount is $R_i^* - X_i^* = \tau/(2\gamma_{2i})$. However, one must ensure that evasion is profitable considering the fixed cost of evasion, i.e.

$$\tau \cdot \frac{\tau}{2\gamma_{2i}} - \gamma_{1i} - \gamma_{2i}\left(\frac{\tau}{2\gamma_{2i}}\right)^2 > 0 \quad \text{or} \quad \frac{\tau^2}{4\gamma_{2i}^2} - \gamma_{1i} > 0.$$

Therefore individuals will cheat by

$$R_i^* - X_i^* = \begin{cases} \frac{\tau}{2\gamma_{2i}} & \text{if } \frac{\tau^2}{4\gamma_{2i}^2} - \gamma_{1i} > 0 \text{ and } T - \hat{X}_i \geq \frac{\tau}{2\gamma_{2i}} \\ T - \hat{X}_i & \text{if } \frac{\tau^2}{4\gamma_{2i}^2} - \gamma_{1i} > 0,\ (T - \hat{X}_i) > \frac{\tau}{2\gamma_{2i}} - \sqrt{\frac{\tau^2}{4\gamma_{2i}^2} - \frac{\gamma_{1i}}{\gamma_{2i}}} \text{ and } T - \hat{X}_i < \frac{\tau}{2\gamma_{2i}} \\ 0 & \text{otherwise.} \end{cases} \tag{17}$$

From (17) follows that if the fixed cost $\gamma_{1i} = 0$, individuals will always evade and the amount of evasion will depend on the variable cost γ_{2i}. On the other hand, if $\gamma_{2i} = 0$ then individuals would

[45] For the majority of taxpayers who are not self-employed, the probability of being audited is very small and is less than 0.5%.

want to evade infinitely much but would not be able to because of the threshold T. Instead they will evade $T - \hat{X}_i$ as long as $T - \hat{X}_i > \gamma_{1i}/\tau$. Since the framework is interesting only when people can evade, I assume condition $\frac{\tau^2}{4\gamma_{2i}^2} - \gamma_{1i} > 0$ is satisfied. Define $E_i = \frac{\tau}{2\gamma_{2i}}$ and $ME_i = E_i - \sqrt{E_i^2 - \frac{\gamma_{1i}}{\gamma_{2i}}}$, then E_i determines the *ideal* amount by which an individual would like to cheat and ME_i the *minimum* amount of cheating an individual would be willing to do.

Assumption 5. I assume that individuals who wish to avoid compliance costs and bunch at the threshold will reduce donations to T and set $X_i^* = R_i^* = T$.[46]

Assumption 6. I estimate the forgone utility of these individuals using a Taylor approximation. Specifically, for $u_{xi}(X) = A_i X^{\varepsilon}$, I approximate $u_{xi}(T) - u_{xi}(\hat{X}_i) \approx (1-\tau)(T - \hat{X}_i) + \frac{1}{2}(1-\tau)(\varepsilon - 1)\frac{(T-\hat{X}_i)^2}{\hat{X}_i}$ as was done in Section 3.5.2.[47] Define $TC_i = T + \frac{\phi_i}{(1-\tau)(1-\varepsilon)} + \sqrt{T\frac{2\phi_i}{(1-\tau)(1-\varepsilon)} + \frac{\phi_i^2}{(1-\tau)^2(1-\varepsilon)^2}}$, then individuals with optimal donations $\hat{X}_i \in [T, TC_i]$ choose to bunch at the threshold, while those with $\hat{X}_i > TC_i$ donate optimally and bear the full cost of compliance ϕ_i.[48]

Assumption 7. I assume that compliance cost ϕ_i, evasion costs γ_{1i} and γ_{2i} and the preferences for charitable giving $\hat{X}_i$ are mutually independent.

Finally, let $g_i = 1$ if the person is not an evader, and $g_i = \Omega$ if the person is an evader. Setting $\Omega = 0$ thus allows us to disregard the positive utility derived from evasion. The seven assumptions allow me to write problem (15) in terms of the distribution of truthful donations F_X (taking subsidy rate τ as given) and distributions of compliance and evasion costs. Specifically, the change of externality benefits is given by

$$\underbrace{\int B \cdot \Delta X_i^*(\tau, T) di}_{\text{Externality Change due to Compliance}} = -\mathbb{E}_{\phi}\left[\int_T^{TC} B(X-T)dF_X.\right] \tag{18}$$

The utility loss due to compliance can be calculated as

$$\underbrace{\int g_i \Delta U^{\phi}(\tau, T) di}_{\text{Utility Loss due to Compliance}} = \mathbb{E}_{\phi}\left[\int_{TC}^{\infty} \phi dF_X + \int_T^{TC} u(X) - u(T) - (1-\tau)(X-T)dF_X\right], \tag{19}$$

$$\approx \mathbb{E}_{\phi}\left[\int_{TC}^{\infty} \phi dF_X + \int_T^{TC} \frac{1}{2}(1-\tau)(1-\varepsilon)\frac{(X-T)^2}{X}dF_X\right], \tag{20}$$

The amount of funding needed to support the subsidy increases due to evasion and decreases due

[46] In other words, I disregard the possibility that some individuals will chose to partially reduce their donations and donate between T and $\hat{X}_i$.

[47] The approximation relies on the fact that $u'_{xi} = (1-\tau)$ and that $u''_{xi} = u'_{xi}(\varepsilon - 1)/\hat{X}_i$.

[48] Note that individuals who choose to donate $\hat{X}_i$ and bear the compliance cost ϕ_i enjoy utility $Y_i - (1-\tau)\hat{X}_i + u_{xi}(\hat{X}_i) - \phi_i$, while those who reduce donations to T enjoy utility $Y_i - (1-\tau)T + u_{xi}(T)$. TC_i thus solves $\phi_i = \frac{1}{2}(1-\tau)(1-\varepsilon)\frac{(TC_i - T)^2}{TC_i} = u_{xi}(TC_i) - u_{xi}(T) - (1-\tau)(TC_i - T)$.

to fewer donations reported above the threshold and is equal to

$$\underbrace{\int C_F\cdot\tau\Delta R^*(\tau,T)di}_{\text{Funding Cost Change}} = \mathbb{E}_\gamma\left[\int\limits_0^{T-E} C_F\tau E dF_X + \int\limits_{T-E}^{T-ME} C_F\tau(T-X)dF_X\right] - \mathbb{E}_\phi\left[\int\limits_T^{TC} C_F\tau(X-T)dF_X\right]. \tag{21}$$

Finally, the utility gain from evasion can be calculated as

$$\underbrace{\int g_i\Delta U^E(\tau,T)di}_{\text{Utility Gain due to Evasion}} = \mathbb{E}_\gamma\left[\int\limits_0^{T-E}\Omega[\tau E-\gamma_1-\gamma_2E^2]dF_X + \int\limits_{T-E}^{T-ME}\Omega[\tau(T-X)-\gamma_1-\gamma_2(T-X)^2]dF_X\right]. \tag{22}$$

The optimal threshold can be determined by substituting equations (19)-(22) into problem (15):

$$T^* = \arg\min_T\left\{\mathbb{E}_\phi\left[\int\limits_{TC}^{\infty}\phi dF_X + \int\limits_T^{TC}(B-C_F\tau)(X-T)+\frac{1}{2}(1-\tau)(1-\varepsilon)\frac{(X-T)^2}{X}dF_X\right]\right.$$
$$\left. +\ \mathbb{E}_\gamma\left[\int\limits_0^{T-E}C_F\tau E-\Omega[\tau E-\gamma_1-\gamma_2E^2]dF_X + \int\limits_{T-E}^{T-ME}C_F\tau(T-X)-\Omega[\tau(T-X)-\gamma_1-\gamma_2(T-X)^2]dF_X\right]\right\}. \tag{23}$$

4.4.2 Calibration Results

Optimal threshold determination requires knowledge of the distribution of ideal donations F_X, as well as knowledge of the distributions of compliance cost ϕ and evasion costs γ_1 and γ_2. The calibration in this section relies on the preferred counterfactual distribution of noncash donations derived in Section 3.4 as a proxy for F_X and on the distribution of compliance costs derived in Section 3.5.2 as a proxy for ϕ. To calibrate evasion costs I rely on several insights discussed in Section 3.5.1. First, individuals who have not donated in the past, were unlikely to cheat in 1986. This observation stems from the fact that only 20% of itemizers claimed noncash donations in 1984. Since cheating is most profitable for individuals with small truthful donations, expected levels of cheating would be significantly larger if non-donors cheated in 1986. Second, because a large number of individuals continued to report donations of \$200 or less in 1986, it follows that a substantial share of individuals experience large costs of evasion that prevent them from cheating. Relying on these two insights, I calibrate γ_1 and γ_2 by minimizing the squared differences between the observed distribution of donations in 1986 (with bunching from the right due to compliance costs removed) and the predicted bunching based on true donations F_X and evasion costs γ_1 and γ_2. I perform this calibration procedure under 3 scenarios. First, I assume that only a small share of individuals cheat and that these individuals experience homogeneous evasion costs γ_1 and γ_2 (preferred specification). Under the second scenario, I assume that cheaters experience only homogeneous fixed costs γ_1. Third, I assume that all individuals experience homogeneous evasion costs γ_1 and γ_2. All three calibrations implicitly assume that only individuals who made positive donations in 1986 have cheated. Further, note that for ideal evasion amounts $E = \tau/(2\gamma_2) > \$100$, the ratio of individuals with donations (\$0,\$100] in the observed distribution to the counterfactual distribution of donations F_X gives us the share of non-cheating individuals.[49]

Figure 12 shows the results of the calibrations under the three scenarios. As expected, the first scenario provides the best fit to the observed behavior and suggests that roughly 16% of individuals cheat, and those who do cheat, exaggerate their donations by approximately \$330. The second scenario provides a worse fit which is consistent with the results in Section 3.5.2 that show an excess mass both in the (\$300,\$400] range and at the threshold: bunching substantially below the threshold cannot be rationalized by fixed evasion costs alone. The best fit suggests 14% of individuals cheat as long as they can cheat by at least \$350. The third scenario provides a poor fit since it cannot rationalize a large number of reported donations in the (\$0,\$100] range. Focusing on the amount of bunching at the threshold, the best fit is obtained when each individual cheats by \$70. Because of the small average cheating amount, it is not possible to determine the minimum cheating amount ME.

So what should the threshold be in case of noncash charitable donations in the U.S.? Table 5 summarizes the calibration results, all measured in 1986 dollars. I assume a deduction rate of $\tau = 0.25$ and a marginal cost of funds $C_F = 1.16$.[50] As before, I assume the elasticity of charitable giving is equal to $1/(1-\varepsilon) = 1.3$. I vary the externality benefit $B - C_F\tau$ and the weight on the utility of cheaters Ω. I consider several choices for the compliance cost ϕ. In columns (1)-(4) I assume the compliance cost is fixed for all individuals and is equal to \$40 – an estimate of compliance cost based on analysis in Section 3.5.2. Second, I consider how the threshold changes if all individuals experience a higher compliance cost – equal to \$90 – which corresponds to the average upper bound on compliance cost, again derived in Section 3.5.2. Finally, I consider the full distribution of compliance cost as estimated in Section 3.5.2 (this full distribution implies an average compliance cost of \$40). My preferred specifications are columns (1) and (9).

Several observations follow from Table 5. First, the preferred specification suggests that the optimal threshold $T^* = \$350$ is lower than the threshold chosen by the government $T = \$500$. Second, the results confirm that optimal thresholds increase with the cost of compliance. Highest estimates of the threshold T^* are observed in columns (5)-(8) which assume a large compliance cost $\phi = 90$. Third, the results highlight the importance of corner solutions: under many scenarios the threshold is close to the minimum evasion amount ME or the ideal evasion amount E. Fourth, the relationship between the optimal threshold and evasion costs is less straightforward. Compare Panel A columns (5) and (8). Since $16\% \cdot \$330 < \$70$, it would appear that the average cheating amount per person is lower in column (5) and therefore the optimal threshold should be higher in column (5) than in column (8). However, this simple intuition omits the fact that optimal thresholds

[49] If cheaters exaggerate their reported donations by \$100 or more, their reported donations would fall outside of the (\$0,\$100] bin. Therefore, the share of remaining individuals equals the share of non-cheating individuals.

[50] Marginal tax rate of 25% corresponds to the median MTR experienced by noncash donors in 1986. Marginal cost of funds is based on the estimates of MCF by Kleven and Kreiner (2006) for the UK.

are determined based on marginal changes in welfare rather than absolute levels. Because of the large minimum evasion amount ME, the optimality condition in column (5) is driven by changes in $f_X(T - \$330)$, while column (8) depends on changes in $f_X(T - \$70)$. Since the observed distribution of donations is decreasing, $f_X(T - \$330) > f_X(T - \$70)$ and therefore increased levels of threshold generate substantially more evasion in column (5) than in column (8), leading to a lower optimal threshold. A similar logic explains a higher threshold in column (3) as compared to column (4) of Panel B: higher minimum evasion amounts in column (4) lead to higher marginal changes at the threshold and thus to a lower optimal threshold. Fifth, optimal threshold increases with relative externality benefits B and utility weight on cheaters Ω. Finally, setting self-reporting thresholds optimally could reduce welfare losses from evasion and compliance costs by more than 70% based on preferred specifications in columns (1) and (9).

To better illustrate how the optimal threshold depends on parameter values, I calculate optimal threshold T based on the counterfactual distribution of donations F_X and for various values of homogenous evasion and compliance costs in Figure 13. Figure 13(a) assumes all individuals experience zero fixed costs of evasion. For a low level of compliance the optimal threshold is small but jumps discontinuously as the compliance cost increases. In Figure 13(b) I consider similar levels of variable cost of cheating but assume that individuals experience large fixed costs of evasion, forcing them to donate precisely and only E. For small levels of evasion, I observe similar patterns of optimal threshold as in (a), however, for high levels of evasion, the optimal threshold can be set precisely at the minimum evasion level thus preventing cheating completely. This result, in large part, stems from the properties of the distribution F_X: since f_X is decreasing, setting a reasonably low threshold is efficient because the share of individuals above the threshold is low. The optimal threshold is likely to be different if the distribution of donations were closer to a normal distribution. Figure 13(c) further zooms in on the relationship between optimal threshold and the fixed costs of evasion. Figure 13(c) confirms the non-linear relationship between the fixed costs of evasion and the optimal self-reporting thresholds: higher fixed costs of evasion and hence higher levels of minimum evasion can lead to lower rather than higher optimal reporting thresholds.

5 Conclusion

The results of this paper highlight the effectiveness of self-reporting requirements agains evasion. In circumstances where third-party reporting is not feasible or too costly, requiring individuals to fill out a form or provide self-reported accounts can reduce evasion, even if the provided information is unverifiable. At the same time, the results call attention to the cost of complying with such self-reporting regulations and caution policy-makers against excessive requirements. My estimates of compliance costs suggest that individuals are willing to forego up to \$82 on average not to provide a simple account of their noncash donations. More complicated forms of self-reporting are likely to be even costlier.[51]

[51] For example, Benzarti (2015) shows that individuals are willing to forego upt to \$644 to avoid the hassle of filing Schedule A (itemized deductions).

I also show that despite low probabilities of audit and straightforward opportunities to cheat, many individuals choose not to exaggerate their noncash charitable contributions. Even 20 years after the reporting rules were simplified, less than 50% of itemizers report any amount of noncash donations. This finding suggests that individuals are likely to experience high fixed and variable costs of evasion, in line with previous studies that document low levels of evasion (e.g. Slemrod (2007)). The low rate of cheating is unlikely to be due to lack of information: nearly 90% of itemizers report making cash contributions and therefore are likely to be somewhat familiar with tax rules. Altogether, the high value of hassle costs and low levels of cheating imply that the government should not impose self-reporting requirements on all citizens but only on part of the population. My calibration analysis suggests that setting the self-reporting threshold optimally would increase welfare of affected individuals by 70%.

The approach employed in this paper highlights a path to determining optimal levels of self-reporting: it is best to start with stringent requirements and ease them over time, as this allows for identification of compliance costs and evasion behavior. While the analysis of this paper focuses on noncash charitable donations, both the empirical approach and the theoretical framework can be directly applied to other settings, in particular to other tax deductions and credits, as well as business expenses. The external validity of my results and recommendations for optimal thresholds in other settings will largely depend on what drives the evasion behavior. Policymakers would need to understand how cheating behavior depends on the nature of self-reporting requirements, likelihood of being caught, visibility of evasion channel, and ethical considerations.

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Table 1: Summary Statistics

	1984	1985	1986	2008
Panel A: Number of Observations				
Number of returns	79,556	108,840	75,400	139,651
Number of itemizers	54,976	76,908	54,411	86,929
Number of donors	52,518	73,650	52,118	78,333
Number of noncash donors	18,412	28,404	21,279	39,286
Core sample	12,981	20,818	14,604	29,658
AGI 1st quartile	935	1,316	815	2,971
AGI 2nd quartile	984	1,358	990	2,471
AGI 3rd quartile	1,760	2,677	2,343	2,827
AGI 4th quartile	8,922	14,838	9,997	19,675
Number of cash donors	51,799	73,085	51,684	76,068
Core sample	28,713	38,863	26,587	25,744
Panel B: Summary Statistics				
Total noncash donations (in 2015 $)	$12.68 bil.	$13.88 bil.	$21.79 bil.	$39.78 bil.
Median donation (in 2015 $)	$435	$420	$464	$540
Median donation (infl unadj)	$200	$200	$225	$490
Core sample (less than $2000):				
Mean donation (in 2015 $)	$655	$592	$623	$574
Mean donation (infl unadj)	$301	$282	$302	$521
Median donation (in 2015 $)	$424	$420	$438	$523
Median donation (infl unadj)	$195	$200	$212	$475
% of noncash donors	95%	96%	96%	90%
% of noncash donations $	41%	43%	32%	30%

Notes: Number of itemizers, donors, noncash donors, and cash donors: unweighted number of individuals in the SOI samples who itemize, donate cash or assets, donate assets, or donate cash respectively. Core samples: individuals with positive noncash (cash) donations of less or equal to $2000 (inflation unadjusted) and whose overall charitable donations do not exceed 20% of AGI. AGI quartile subsamples only include single and joint filers from the core sample. AGI quartiles determined for single and joint filers separately, for each year. *Source*: Cross-sectional data from SOI Public Use Tax Files.

Table 2: Evasion and Compliance Cost Savings

	Lower Bound		**Upper Bound**	
	1985	**1986**	**1985**	**1986**
New Donations (in mil. $)	359.90	321.38	193.45	231.63
	(139.79)	(56.6)	(171.93)	(39.43)
(Potentially) Lost Donations (in mil. $)	70.17	69.54	70.17	69.54
	(28.4)	(12.4)	(28.4)	(12.4)
Evasion (in mil. $)	77.98	235.45	194.98	301.28
	(140.98)	(61.68)	(91.2)	(43.25)
Assuming donations above $500 are reduced				
Percent Evasion (%)	21.21	48.32	61.27	65.02
	(32)	(10)	(28)	(6)
Average Cost of Filing Form 8283 (in $)	51.08	39.72	51.08	39.72
	(20)	(10)	(20)	(10)
Compliance Cost Saved (in mil. $)	18.19	35.71	18.19	35.71
	(4.83)	(4.74)	(4.83)	(4.74)
Assuming donations above $500 are not reduced				
Percent Evasion (%)	17.81	42.28	50.20	56.54
	(32)	(10)	(28)	(6)
Average Cost of Filing Form 8283 (in $)	98.52	89.86	98.52	89.86
	(31)	(14)	(31)	(14)
Compliance Cost Saved (in $)	124.04	179.47	124.04	179.47
	(20.86)	(15.73)	(20.86)	(15.73)
Average Tax Rate 1985	29.4	30.08	29.4	30.08

Notes: New donations: dollar amount of all donations in excess of the 1984 distribution. Evasion donations: dollar amount of untruthful donations. Average cost: cost of filing Form 8283, in 1985 and 1986 dollars respectively. Average tax rate: for individuals who donate noncash contributions in the range of $500-$1000. Compliance Cost Saved: dollar amount of the compliance cost saved because of the reform. Percent evasion: percent of untruthful donations among "new" donations in 1985 or 1986. Based on noncash contributions of individuals who have itemized deductions and whose overall charitable contributions did not exceed 20% of AGI. *Source*: Cross-sectional data from SOI Public Use Tax Files. See complete description in Section 3.5.

Table 3: Evasion and Compliance Cost Savings in 1986: Results by Quartile of AGI

	Lower Bound				Upper Bound			
	All AGI	**1st & 2nd quartile**	**3rd quartile**	**4th quartile**	**All AGI**	**1st & 2nd quartile**	**3rd quartile**	**4th quartile**
New Donations (in mil. $)	321.38	150.69	65.63	59.83	231.63	100.43	44.26	52.58
	(56.6)	(47.17)	(23.92)	(20.2)	(39.43)	(47.93)	(45.9)	(35.78)
(Potentially) Lost Donations (in mil. $)	69.54	26.27	12.72	20.58	69.54	26.27	12.72	20.58
	(12.4)	(9.89)	(5.24)	(5.83)	(12.4)	(9.89)	(5.24)	(5.83)
Evasion (in mil. $)	235.45	81.31	83.30	81.40	301.28	117.95	97.64	86.73
	(61.68)	(45.43)	(25.41)	(22.63)	(43.25)	(37.73)	(32.82)	(23.77)
Percent Evasion (%)	48.32	39.52	61.16	67.47	65.02	61.40	75.58	73.05
	(10)	(20)	(16)	(13)	(6)	(19)	(27)	(19)
Average Cost of Filing Form 8283 (in $)	39.72	38.23	21.26	20.30	39.72	38.23	21.26	20.30
	(10)	(20)	(12)	(6)	(10)	(20)	(12)	(6)
Compliance Cost Saved (in mil. $)	35.71	23.13	9.43	5.69	35.71	23.13	9.43	5.69
	(4.74)	(5.03)	(2.13)	(1.35)	(4.74)	(5.03)	(2.13)	(1.35)
Average Tax Rate 1986	30.08	19.70	29.67	38.93	30.08	19.70	29.67	38.93

Notes: Based on SOI Public Use Tax Files, 1984–1986. Average tax rate: for individuals who donate noncash contributions in the range of $500-$1000. Average cost: cost of filing Form 8283, in 1985 and 1986 dollars respectively. Percent evasion: percent of untruthful donations among "new" donations in 1985 or 1986. New donations: dollar amount of all donations in excess of the 1984 distribution. Evasion donations: dollar amount of untruthful donations. Compliance Cost Saved: dollar amount of the compliance cost saved because of the reform. Based on noncash contributions of individuals who have itemized deductions and whose overall charitable contributions did not exceed 20% of AGI. Cross-sectional data from SOI Public Use Tax Files. See complete description in Section 3.5.

Table 4: Evasion and Compliance Cost Savings: Heterogeneity Analysis

	Filed Sch. C, E, or F	**No Sch. C, E, or F**	**Singles Only**	**Joint Only**	**Used Tax Prepaper**	**No Tax Preparer**
New Donations (in mil. $)	28.62	33.90	74.29	210.86	132.57	188.48
	(12.28)	(14.66)	(25.94)	(45.5)	(43.97)	(44.45)
(Potentially) Lost Donations (in mil. $)	9.14	9.72	7.33	56.63	33.58	33.93
	(3.65)	(4.04)	(3.37)	(11.7)	(11.9)	(7.6)
Evasion (in mil. $)	37.82	44.60	68.64	159.65	99.65	140.69
	(15.31)	(17.09)	(25.25)	(51.28)	(47.24)	(45.59)
Percent Evasion (%)	66.00	64.85	50.62	50.86	50.17	47.65
	(17)	(17)	(18)	(13)	(18)	(13)
Average Cost of Filing Form 8283 (in $)	15.38	28.94	27.02	37.09	23.57	39.46
	(6)	(12)	(47)	(10)	(9)	(18)
Compliance Cost Saved (in mil. $)	2.97	2.71	8.35	25.99	20.04	15.63
	(0.93)	(0.88)	(1.76)	(4.15)	(4.8)	(2.69)
Average Tax Rate 1986	39.30	38.31	27.25	30.45	30.31	29.65

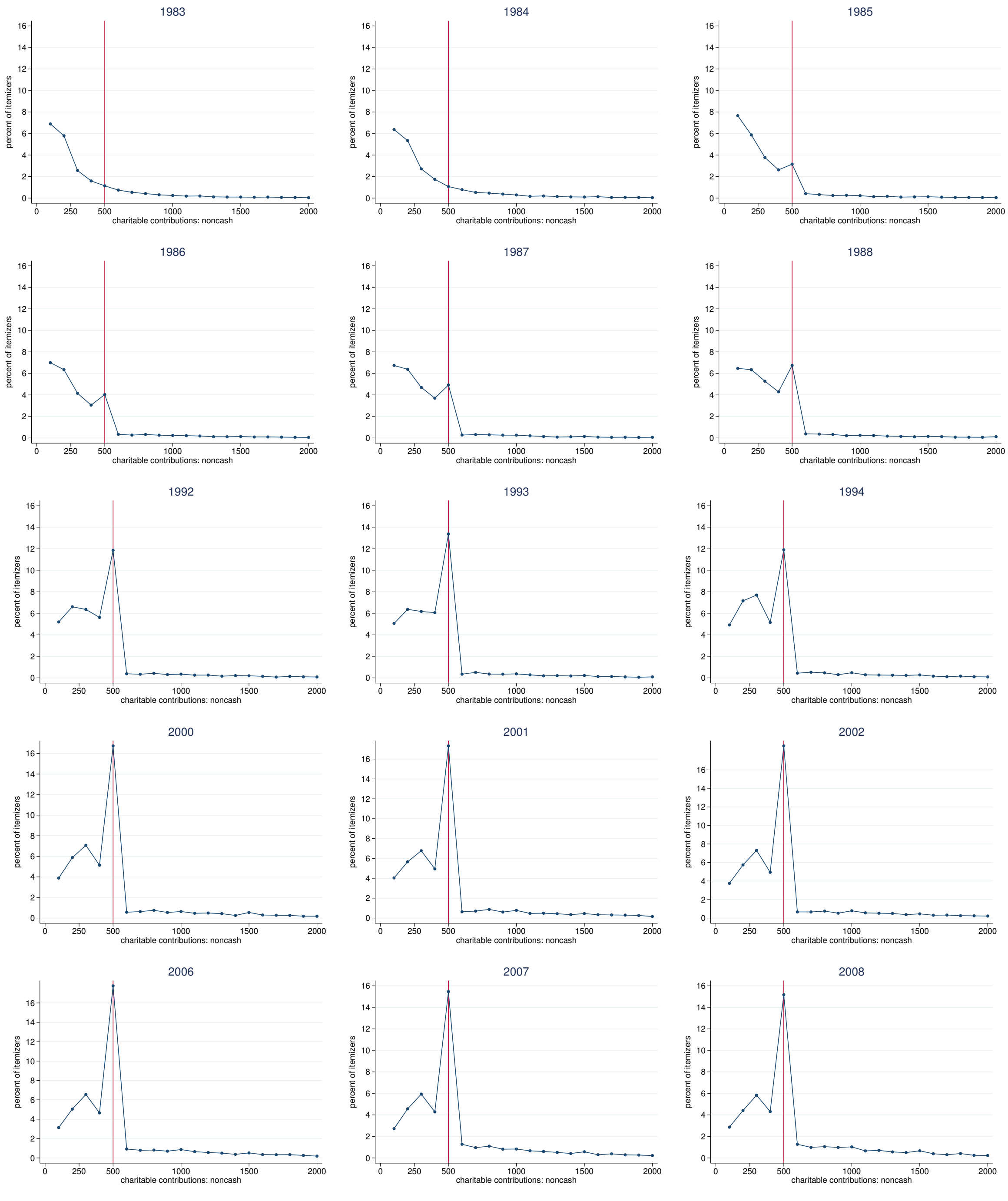
Notes: Based on SOI Public Use Tax Files, 1984–1986, lower bound counterfactual. Average tax rate: for individuals who donate noncash contributions in the range of $500-$1000. Average cost: cost of filing Form 8283, in 1985 and 1986 dollars respectively. Percent evasion: percent of untruthful donations among “new” donations in 1985 or 1986. New donations: dollar amount of all donations in excess of the 1984 distribution. Evasion donations: dollar amount of untruthful donations. Compliance Cost Saved: dollar amount of the compliance cost saved because of the reform. Based on noncash contributions of individuals who have itemized deductions and whose overall charitable contributions did not exceed 20% of AGI. Cross-sectional data from SOI Public Use Tax Files. See complete description in Section 3.5.

Table 5: Optimal Thresholds: Calibration

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel A: Utility Weight on Cheaters $\Omega = 0$, Externality - MCF$\cdot$ MTR $= 0$												
Compliance Cost ϕ	Homogenous $\phi = 40$				Homogenous $\phi = 90$				Homogenous ϕ distribution[b]			
Percent cheaters p	16	14	100	100	16	14	100	100	16	14	100	100
Optimal Evasion E	330	0	70	70	330	0	70	70	330	0	70	70
Minimum Evasion Amount ME	330	350	0	70	330	350	0	70	330	350	0	70
Externality B^a	0	0	0	0	0	0	0	0	0	0	0	0
Utility Weight on Cheaters Ω	0	0	0	0	0	0	0	0	0	0	0	0
Optimal Threshold	350	370	110	110	360	380	9120	9110	350	370	70	100
Reduction in Welfare Loss	73%	75%	15%	27%	71%	72%	45%	45%	71%	72%	12%	24%
Panel B: Utility Weight on Cheaters $\Omega = 0$, Externality - MCF$\cdot$ MTR $= 0.2 \cdot C_F\tau$												
Compliance Cost ϕ	Homogenous $\phi = 40$				Homogenous $\phi = 90$				Homogenous ϕ distribution[b]			
Percent cheaters p	16	14	100	100	16	14	100	100	16	14	100	100
Optimal Evasion E	330	0	70	70	330	0	70	70	330	0	70	70
Minimum Evasion Amount ME	330	350	0	70	330	350	0	70	330	350	0	70
Externality B^a	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Utility Weight on Cheaters Ω	0	0	0	0	0	0	0	0	0	0	0	0
Optimal Threshold	350	380	9690	110	360	380	9690	9690	350	370	70	100
Reduction in Welfare Loss	72%	73%	19%	26%	70%	72%	52%	52%	70%	71%	11%	23%
Panel C: Utility Weight on Cheaters $\Omega = 1$, Externality - MCF$\cdot$ MTR $= 0.2 \cdot C_F\tau$												
Compliance Cost ϕ	Homogenous $\phi = 40$				Homogenous $\phi = 90$				Homogenous ϕ distribution[b]			
Percent cheaters p	16	14	100	100	16	14	100	100	16	14	100	100
Optimal Evasion E	330	0	70	70	330	0	70	70	330	0	70	70
Minimum Evasion Amount ME	330	350	0	70	330	350	0	70	330	350	0	70
Externality B^a	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Utility Weight on Cheaters Ω	1	1	1	1	1	1	1	1	1	1	1	1
Optimal Threshold	360	380	9960	9810	9850	380	9960	9810	360	370	9960	9730
Reduction in Welfare Loss	72%	73%	88%	54%	79%	72%	93%	72%	70%	71%	84%	36%

Notes: Marginal tax rate $\tau = 0.25$, elasticity of charitable giving $1/(1-\varepsilon) = 1.3$, marginal cost of funds $C_F = 1.16$. This table shows optimal thresholds based on the calibration of the model described in Section 4.4.2. [a] Externality benefits measured as a share of $\tau \cdot C_F$. [b] Distribution of cost of filing Form 8283 based on results from Section 3.5.2 and assuming individuals reduce donations above the threshold.

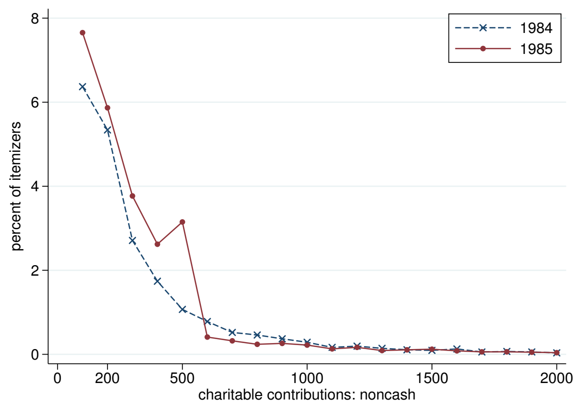
Figure 1: Noncash Contributions in Select Years



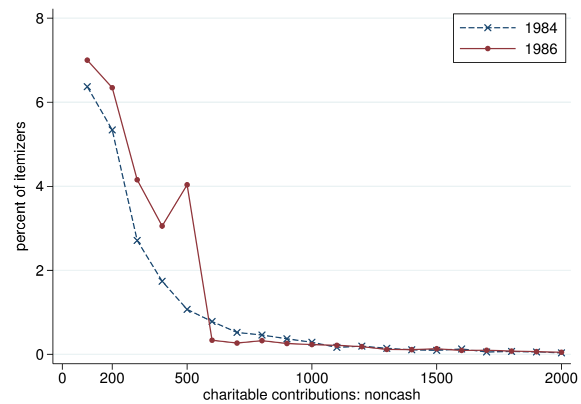
Notes: Distributions of noncash contributions of individuals who have itemized deductions and whose overall charitable contributions did not exceed 20% of AGI. Unadjusted for inflation $100 bins: ($0,$100],..,($1900,$2000]. Vertical line marks the $500 reporting threshold introduced in 1985. *Source*: Cross-sectional data from SOI Public Use Tax Files.

Figure 2: Noncash contributions in 1984–1986

(a) 1984 vs. 1985



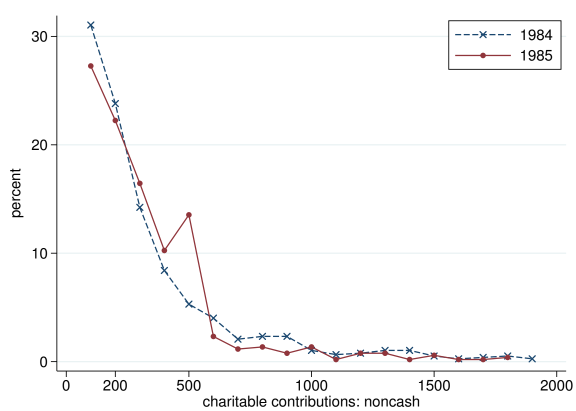
(b) 1984 vs. 1986



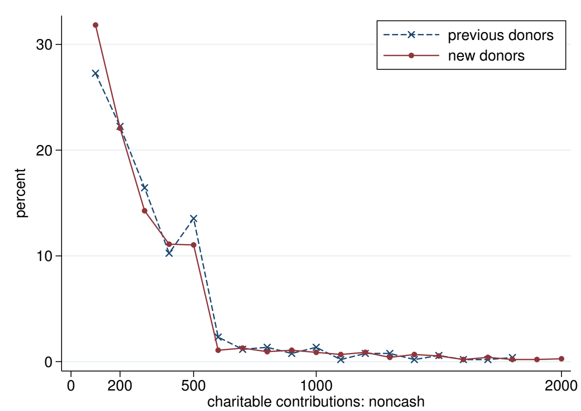
Notes: Distributions of noncash contributions of individuals who have itemized deductions and whose overall charitable contributions did not exceed 20% of AGI. Unadjusted for inflation \$100 bins: (\$0,\$100],..,(\$1900,\$2000]. *Source*: Cross-sectional data from SOI Public Use Tax Files.

Figure 3: Previous Donors and New Donors

(a) Year-to-Year Donors: in 1984 and 1985



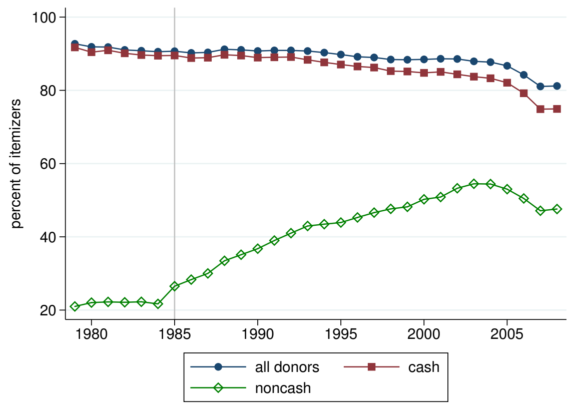
(b) Year-to-Year vs. New Donors in 1985



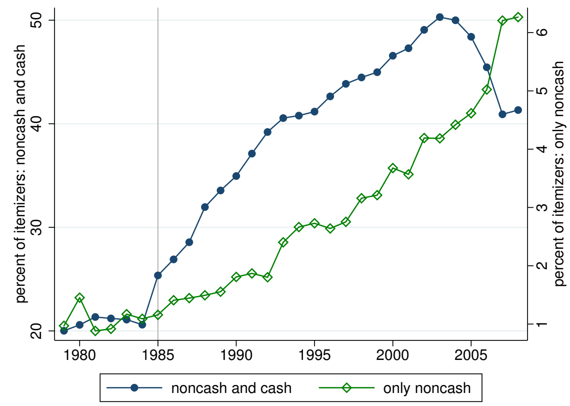
Notes: Distributions of noncash contributions of individuals who have itemized deductions and whose overall charitable contributions did not exceed 20% of AGI. Unadjusted for inflation \$100 bins: (\$0,\$100],..,(\$1900,\$2000]. (a) Charitable contributions in 1984 and in 1985 of individuals who *have* donated in 1984. (b) Charitable contributions in 1985 of individuals who have donated in 1984 and those who have not donated in 1984. *Source*: Panel data from SOI Public Use Tax Files. Number of observations: 773 donations in 1984, 517 donations by the previous donors and 1486 donations by new donors in 1985.

Figure 4: Type of Donations

(a) Donations by Type



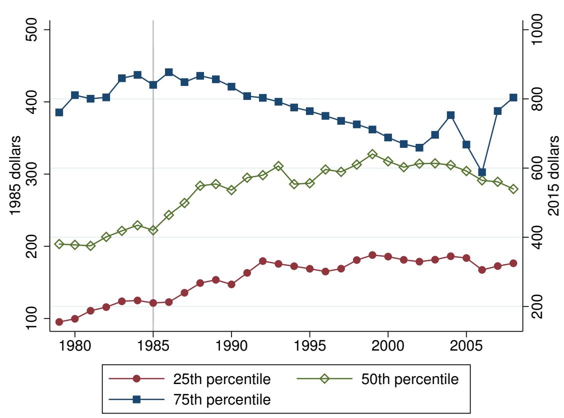
(b) Noncash Donations



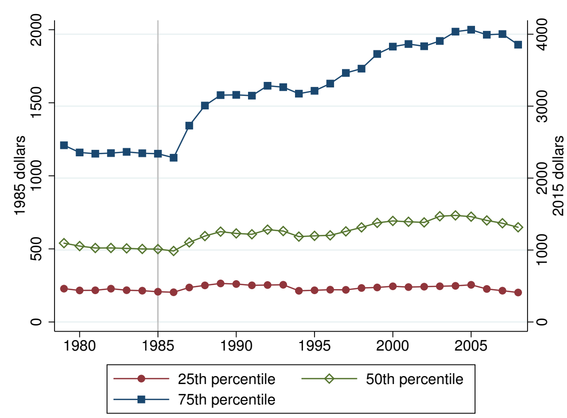
Notes: (a) Percent of itemizers who make noncash, cash or both types of contributions. (b) Percent of itemizers who report noncash or cash donations, or only noncash contributions. *Source*: Cross-sectional data from SOI Public Use Tax Files.

Figure 5: Quartiles of Donations

(a) Noncash donations



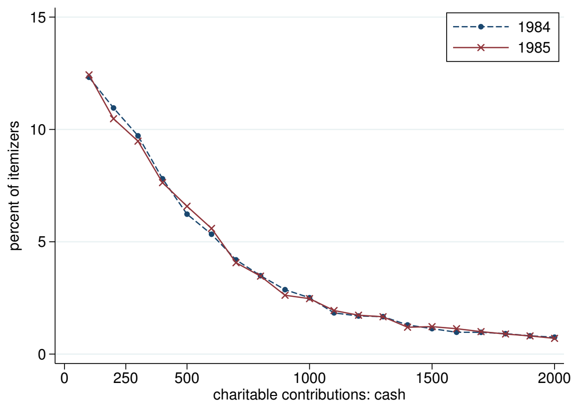
(b) Cash Donations



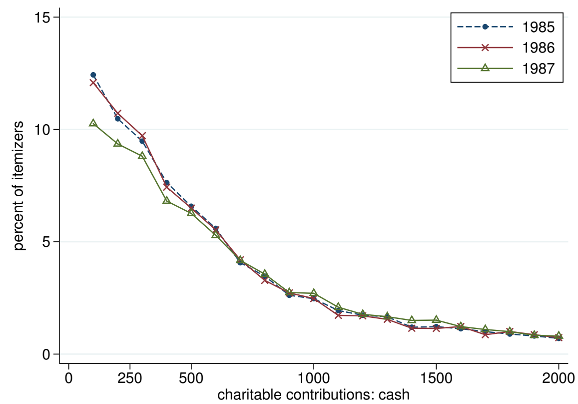
Notes: Quartiles of cash and noncash donations by year, in 1985 and 2015 dollars. *Source*: Cross-sectional data from SOI Public Use Tax Files.

Figure 6: Robustness Checks

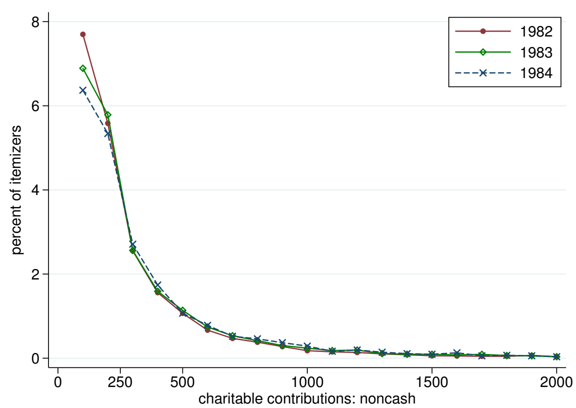
(a) Cash Donations Before and After Reform



(b) Cash Donations After Reform



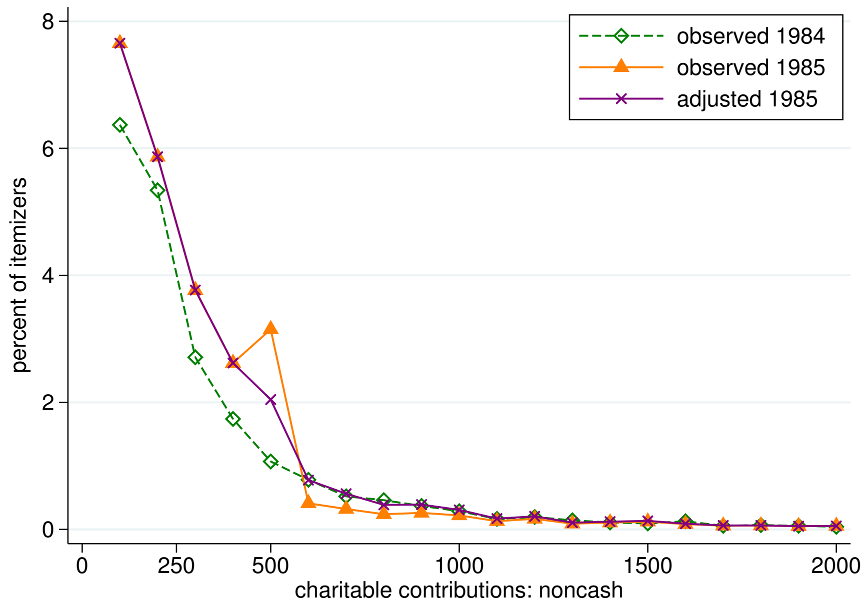
(c) Noncash Donations Before Reform



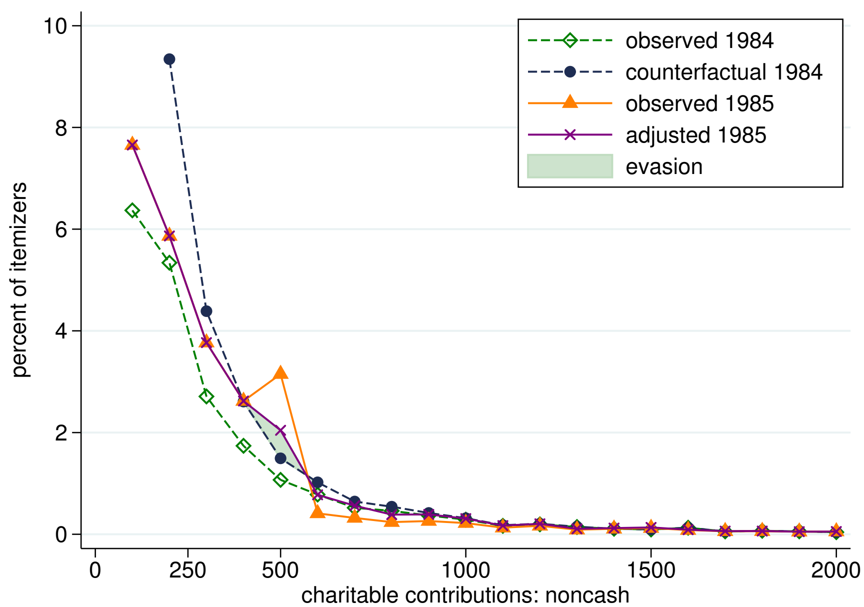
Notes: Noncash and cash contributions of individuals who have itemized deductions and whose overall charitable contributions did not exceed 20% of AGI. Unadjusted for inflation $100 bins: ($0,$100],..,($1900,$2000]. *Source*: Cross-sectional data from SOI Public Use Tax Files.

Figure 7: Comparing the 1984 and 1985 Distributions of Donations

(a) Redistributed 1985 Density



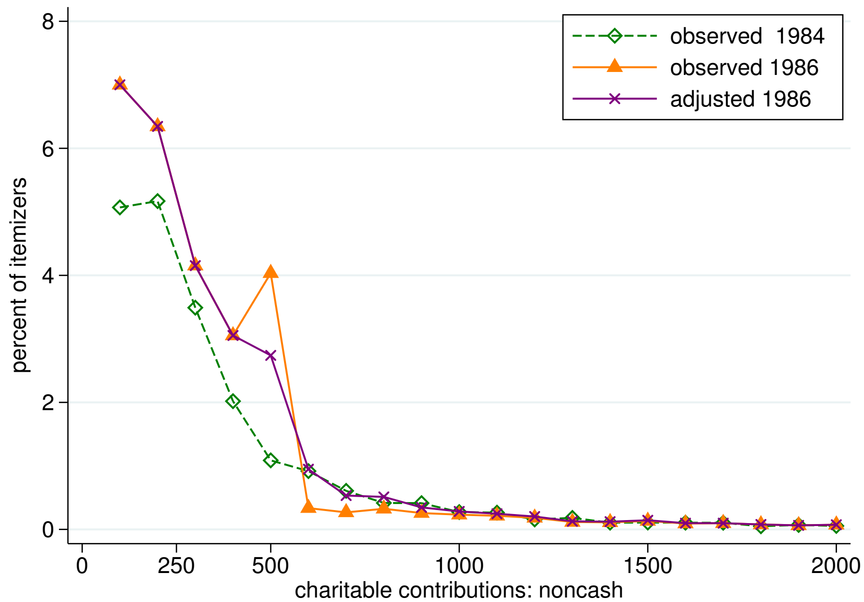
(b) Evasion



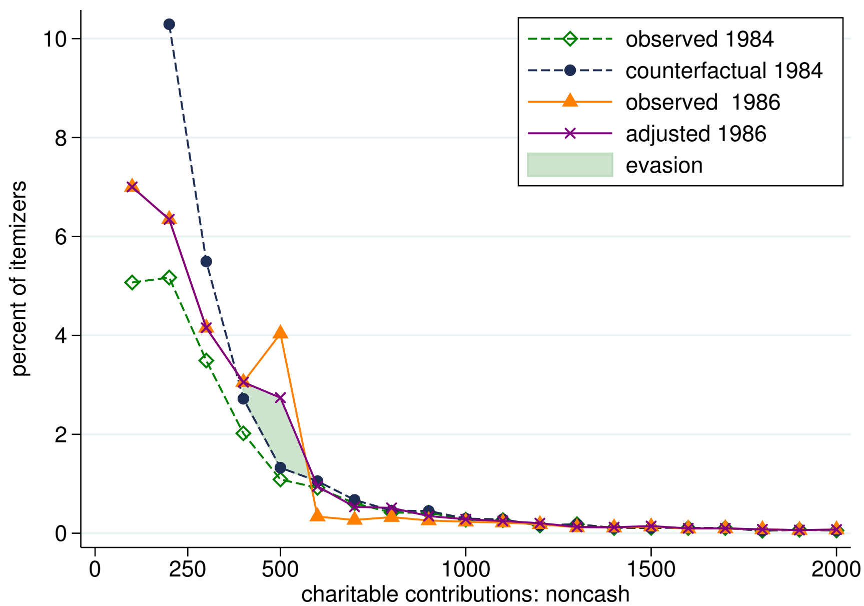
Notes: Noncash contributions of individuals who have itemized deductions and whose overall charitable contributions did not exceed 20% of AGI. Unadjusted for inflation $100 bins: ($0,$100],..,($1900,$2000]. The adjusted 1985 distribution accounts for bunching at the $500 threshold from the right by redistributing part of the excess mass to fill in the missing mass between the observed 1985 and 1984 distributions to the right of $500. The counterfactual 1984 distribution (bin ($0,$100] is omitted) accounts for missing donations around the $0 threshold by inflating the reported donations in 1984 by the fraction of missing filers based on compliance cost estimates (lower bound counterfactual). For a detailed explanation see Section 3.4. Cross-sectional data from SOI Public Use Tax Files.

Figure 8: Comparing 1984 and 1986 Donations

(a) Redistributed 1986 Density



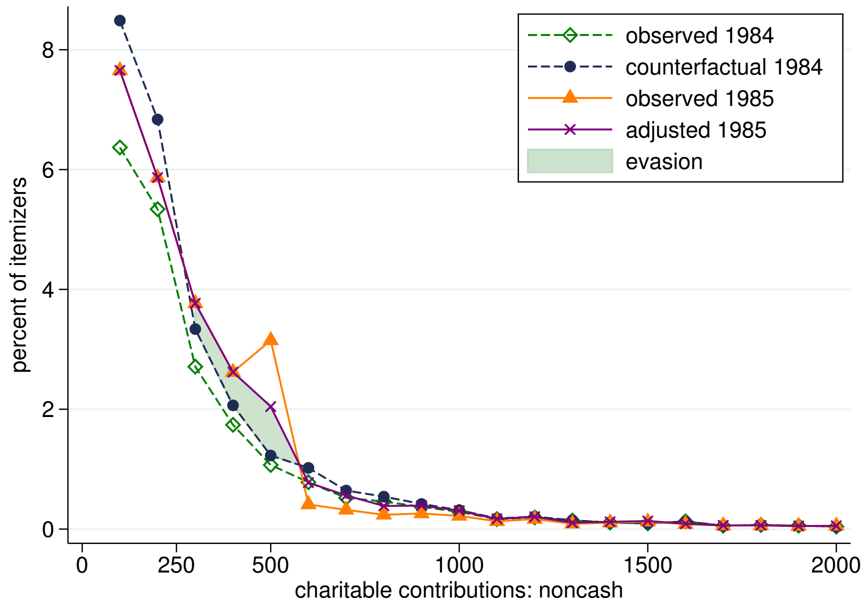
(b) Evasion



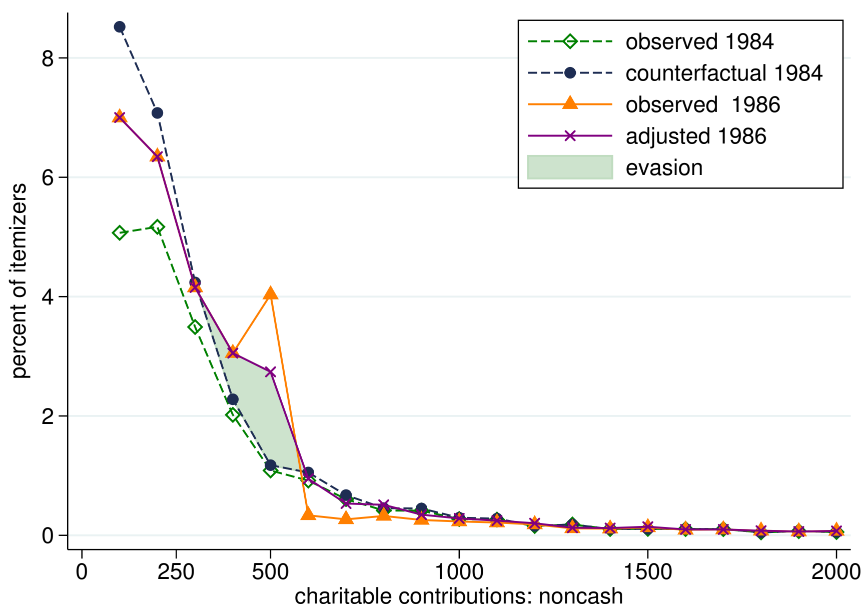
Notes: Noncash contributions of individuals who have itemized deductions and whose overall charitable contributions did not exceed 20% of AGI. Adjusted for inflation $100 bins: ($0,$100],..,($1900,$2000]. The adjusted 1986 distribution accounts for bunching at the $500 threshold from the right by redistributing part of the excess mass to fill in the missing mass between the observed 1986 and 1984 distributions to the right of $500. The counterfactual 1984 distribution (bin ($0,$100] is omitted) accounts for missing donations around the $0 threshold by inflating the reported donations in 1984 by the fraction of missing filers based on compliance cost estimates (lower bound counterfactual). For a detailed explanation see Section 3.4. Cross-sectional data from SOI Public Use Tax Files.

Figure 9: Evasion: Preferred Counterfactual

(a) 1984 – 1985



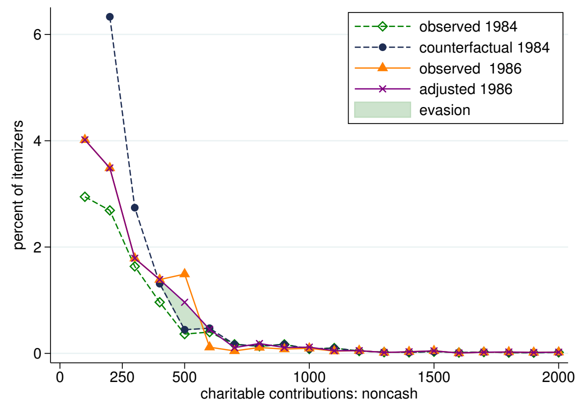
(b) 1984 – 1986



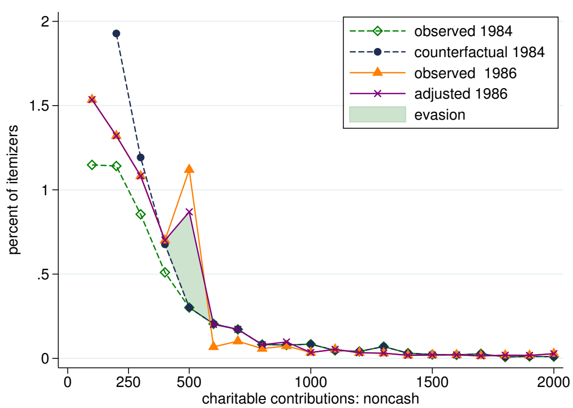
Notes: Noncash contributions of individuals who have itemized deductions and whose overall charitable contributions did not exceed 20% of AGI. Adjusted for inflation \$100 bins: (\$0,\$100],..,(\$1900,\$2000]. The adjusted 1986 distribution accounts for bunching at the \$500 threshold from the right by redistributing part of the excess mass to fill in the missing mass between observed the 1986 and 1984 distributions to the right of \$500. The counterfactual 1984 distribution accounts for missing donations around the \$0 threshold by inflating the reported donations in 1984 by the fraction of missing filers based on compliance cost estimates (upper bound counterfactual). For a detailed explanation see Section 3.4. Cross-sectional data from SOI Public Use Tax Files.

Figure 10: Noncash Contributions in 1984–1986 by Income Quartiles.

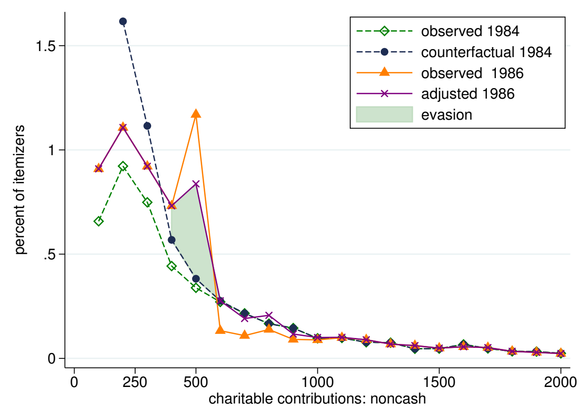
(a) First and Second Quartiles



(b) Third quartile

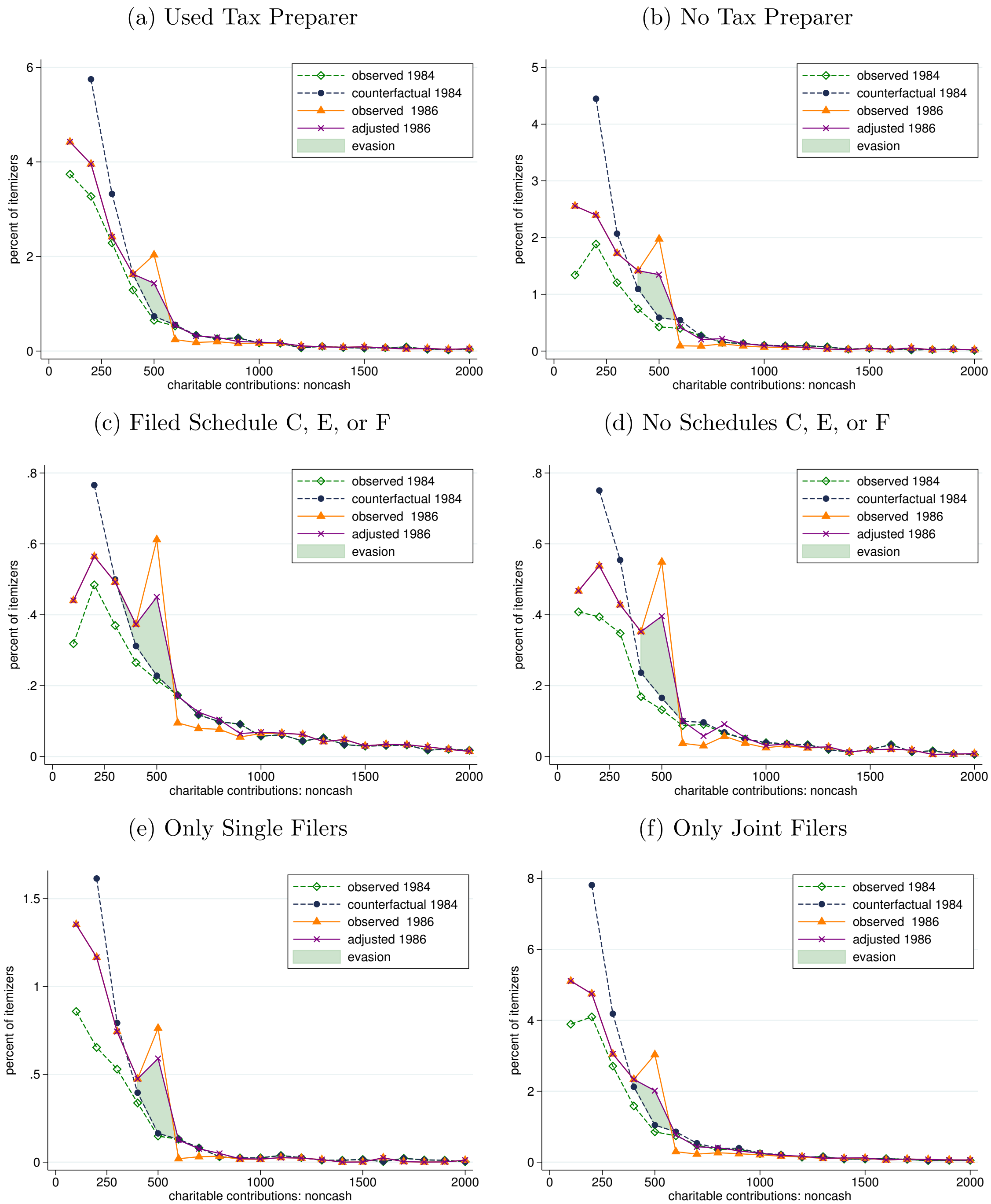


(c) Fourth quartile



Notes: Noncash contributions of individuals who have itemized deductions and whose overall charitable contributions did not exceed 20% of AGI. Adjusted for inflation $100 bins: ($0,$100],..,($1900,$2000]. The adjusted 1986 distribution accounts for bunching at the $500 threshold from the right by redistributing part of the excess mass to fill in the missing mass between observed the 1986 and 1984 distributions to the right of $500. The counterfactual 1984 distribution (bin ($0,$100] is omitted) accounts for missing donations around the $0 threshold by inflating the reported donations in 1984 by the fraction of missing filers based on compliance cost estimates (lower bound counterfactual). For a detailed explanation see Section 3.4. Cross-sectional data from SOI Public Use Tax Files.

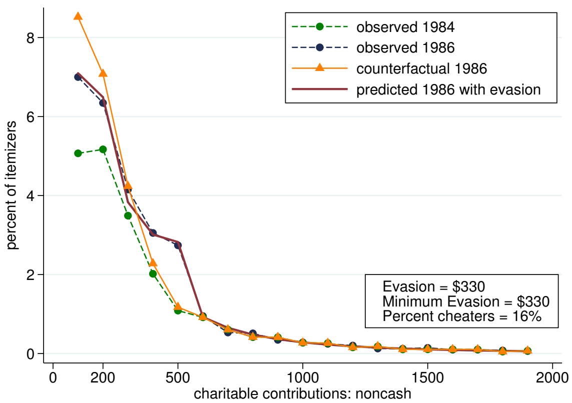
Figure 11: Noncash Contributions in 1984 and 1986: Heterogeneity Analysis.



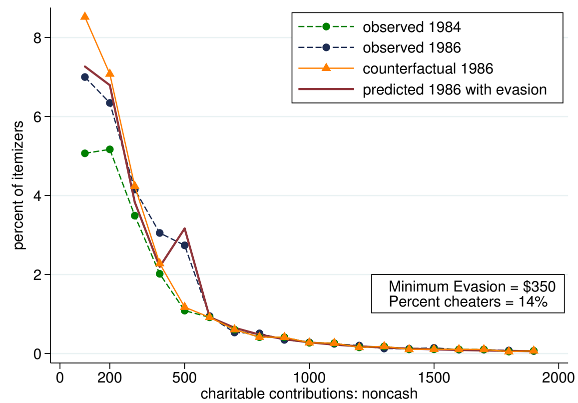
Notes: Noncash contributions of individuals who have itemized deductions and whose overall charitable contributions did not exceed 20% of AGI. Adjusted for inflation $100 bins: ($0,$100],..,($1900,$2000]. The adjusted 1986 distribution accounts for bunching at the $500 threshold from the right by redistributing part of the excess mass to fill in the missing mass between observed the 1986 and 1984 distributions to the right of $500. The counterfactual 1984 distribution (bin ($0,$100] is omitted) accounts for missing donations around the $0 threshold by inflating the reported donations in 1984 by the fraction of missing filers based on compliance cost estimates (lower bound counterfactual). For a detailed explanation see Section 3.4. Cross-sectional data from SOI Public Use Tax Files.

Figure 12: Calibration of Cheating Behavior

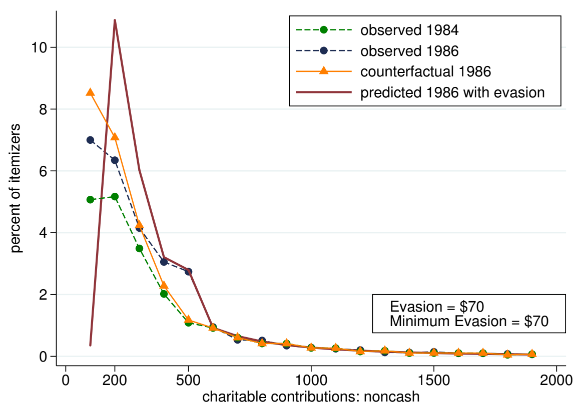
(a) Scenario 1: only p% cheat, homogenous variable and fixed costs of evasion



(b) Scenario 2: only p% cheat, homogenous fixed costs of evasion



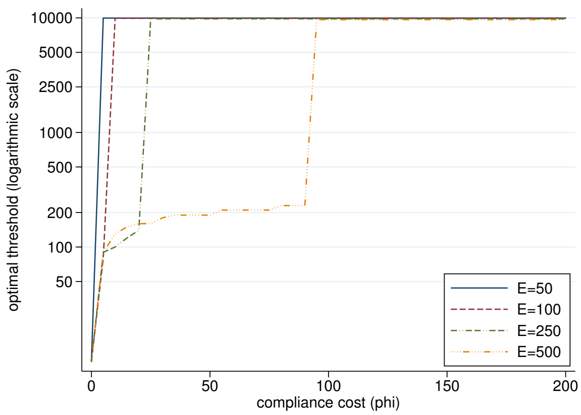
(c) Scenario 3: everbody cheats, homogenous variable and fixed costs of evasion



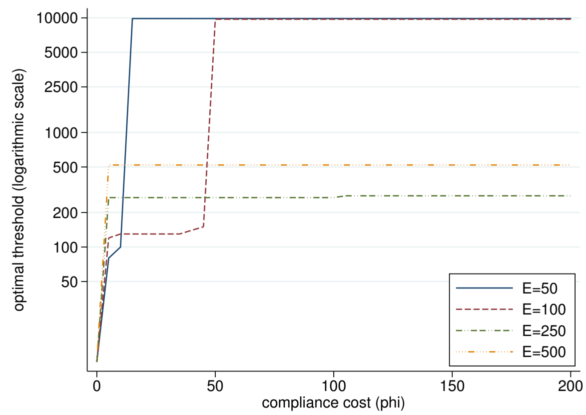
Notes: This table shows the observed 1984 distribution, the observed 1986 distribution adjusted for bunching from above the $500 threshold, the counterfactual distribution of donations derived in Section 3.4 and the distribution of predicted donations given the assumptions listed. Based on SOI Public Use Tax Files, 1984–1985. Noncash contributions of individuals who itemized deductions whose overall charitable contributions did not exceed 20% of AGI.

Figure 13: Optimal Thresholds

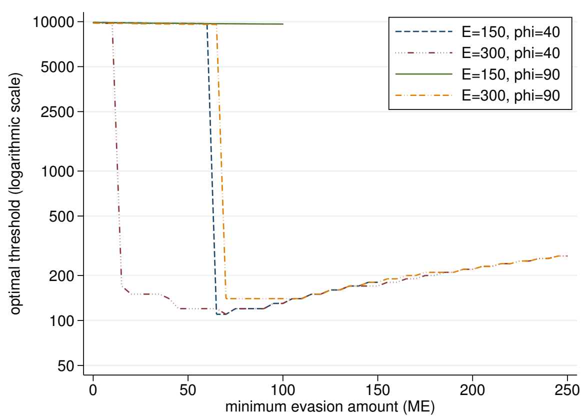
(a) T^* as a function of ϕ and assuming $ME = 0$



(b) T^* as a function of ϕ and assuming $ME = E$



(c) T^* as a function of ME



Notes: This table shows the optimal thresholds based on the calibration of the model described in Section 4.4.2 for various levels of evasion costs γ_1 and γ_2 and compliance cost ϕ. I assume a marginal tax rate $\tau = 0.25$, an elasticity of charitable giving $1/(1-\varepsilon) = 1.3$, a marginal cost of funds $C_F = 1.16$, an externality from giving $B = 1.2 \cdot C_F \tau$, utility weight on cheaters $\Omega = 1$. Note that $E = \frac{\tau}{2\gamma_2}$ and $ME = E - \sqrt{E^2 - \frac{\gamma_1}{\gamma_2}}$, therefore E determines the *ideal* amount by which an individual would like to cheat and ME the *minimum* amount of cheating an individual would be willing to do.

APPENDIX

A Proofs of Propositions 1–3

Recall welfare minimization problem (15) (repeated here for convenience):

$$\begin{aligned}\min_T \quad \Delta W = & \underbrace{\int C_F(1-p\theta \mathbb{1}_{\Delta R_i^*>0})\cdot \tau \Delta R_i^*(\tau,T)dF_i}_{\text{Funding Cost Change due to Evasion and Compliance}} - \underbrace{\int B\cdot \Delta X_i^*(\tau,T)dF_i}_{\text{Externality Change due to Compliance}} \\ & - \underbrace{\int g_i \Delta U^\phi(\tau,T)dF_i}_{\text{Utility Loss due to Compliance}} - \underbrace{\int g_i \Delta U^E(\tau,T)dF_i.}_{\text{Utility Gain due to Evasion}} \ .\end{aligned} \tag{24}$$

Proof of Proposition 1. With no compliance costs, welfare loss (15) reduces to

$$\min_T \quad \Delta W = \int C_F(1-p\theta)\cdot \tau \Delta R_i^*(\tau,T)dF_i - \int g_i \Delta U_i^E(\tau,T)dF_i.$$

Note that because of positive evasion costs, $\Delta U_i^E(\tau,T) < \tau \Delta R_i^*$. Then from assumptions $C_F \geq 1$ and $g_{cheaters} \leq 1$ follows that $\min_T \Delta W$ is increasing in T and therefore optimal $T^* = 0$.

Proof of Proposition 2. With no evasion, welfare loss loss (15) reduces to

$$\min_T \quad \Delta W = \int C_F \cdot \tau \Delta R_i^*(\tau,T)dF_i - \int B\cdot \Delta X_i^*(\tau,T)dF_i - \int g_i \Delta U^\phi(\tau,T)dF_i,$$

with $\Delta R_i^* = \Delta X_i^* < 0$. Since $C_F\tau - B < 0$ and $\Delta U^\phi < 0$ it follows that $\min_T \Delta W$ is decreasing in T and therefore optimal $T^* = \infty$.

Proof of Proposition 3. Setting the threshold below $\min_i h_{0i}$ is inefficient since it increases compliance costs and does not reduce evasion.

Proof of Proposition 4. The marginal change in the number of cheaters depends on the number of individuals to the left of the threshold, while the marginal change in compliance burden depends on the number of individuals to the right of the threshold. For a decreasing distribution of truthful donations f_X with $f''(\cdot) > 0$, the first effect will dominate the second effect for a sufficiently high threshold. Therefore it is never optimal to set T^* at infinity.

Proof of Proposition 5. Since $\partial \Delta U_i^E(\tau,T)/\partial T > 0$, then $dT^*/dg_{cheaters} > 0$ and therefore optimal threshold increases when the utility weight on cheaters increases. If the distribution of donations f_X is decreasing, then $\partial \left(\int \Delta X_i^*(\tau,T)dF_i\right)/\partial T < 0$. Hence, $dT^*/dB > 0$ and optimal threshold increases with B. Similarly, for a decreasing f_X, evasion increases with T while reductions in truthful donations decrease, so the overall change $d(\int C_F \cdot \tau \Delta R_i^*(\tau,T)dF_i)/dT > 0$ because it is dominated by changes in evasion. This implies $dT^*/dC_F < 0$ and the optimal threshold is lower for high values of C_F. When a pdf f_X is increasing the opposite holds true for externality benefits B, but the effect of marginal cost of funds C_F on optimal threshold is unclear.

Proof of Proposition 6. An increase in ϕ increases the welfare loss because of the decreased utility from compliance costs and increased losses from the reduced externality benefits. As long as $B - C_F\tau > 0$, $dT^*/d\phi > 0$ and the optimal threshold increases in compliance costs. An increase in T increases total evasion through two separate effects. First, it leads to an increase in the number of individuals who can cheat by the ideal amount. Second, it changes the number of individuals who cheat by less than the ideal amount. For a decreasing distribution, the second term is negative, however, the first effect necessarily dominates the second effect. An increase in variable cost of evasion therefore increases the amount of donation per individual, but for a decreasing distribution of donations affects fewer donors because marginal donors are concentrated around $T - E$, where E is the ideal amount of cheating. For most distributions, the mechanical increase in the amount of cheating per person will dominate the change in the number of affected individuals, i.e. $d^2\left[\int C_F(1 - p\theta\mathbb{1}_{\Delta R_i^*>0}) \cdot \tau\Delta R_i^*(\tau, T)dF_i + \int g_i\Delta U^E(\tau, T)dF_i\right]/dT/dh_{1i} < 0$ and hence $dT^*/dh_{1i} > 0$. The fixed costs of evasion, on the other hand, affects only a small subset of individuals – individuals with sufficiently large truthful donations that prevent them from cheating by the ideal amount E. For a decreasing distribution of truthful donations,
$d^2\left[\int C_F(1 - p\theta\mathbb{1}_{\Delta R_i^*>0}) \cdot \tau\Delta R_i^*(\tau, T)dF_i + \int g_i\Delta U^E(\tau, T)dF_i\right]/dT/dh_{0i} > 0$ because the number of marginal individuals individuals increases. The opposite is true for an increasing distribution. Finally, when evasion costs are very large relative to compliance costs, a corner solution is optimal. In this case the optimal threshold is equal to the minimum evasion amount, and naturally increases when the minimum evasion amount increases, i.e. when the fixed costs of evasion increase.

B Appendix Figures and Tables

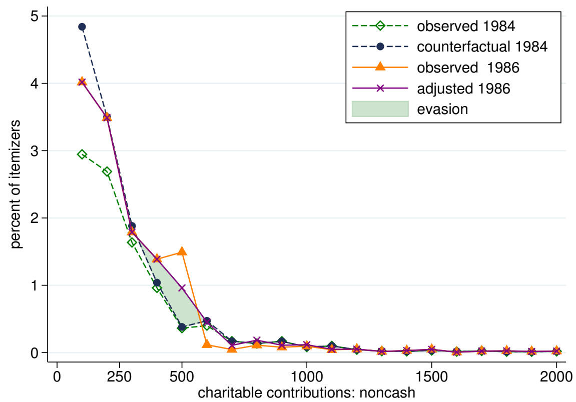
Table B.1: Evasion and Compliance Cost Savings in 1986: Heterogeneity Analysis

	Filed Sch. C, E, or F	**No Sch. C, E, or F**	**Singles Only**	**Joint Only**	**Used Tax Prepaper**	**No Tax Preparer**
New Donations (in mil. $)	27.69	26.67	39.07	137.18	88.62	129.51
	(25.28)	(28.41)	(38.96)	(41.48)	(63.8)	(39.31)
(Potentially) Lost Donations (in mil. $)	9.14	9.72	7.33	56.63	33.58	33.93
	(3.65)	(4.04)	(3.37)	(11.7)	(11.9)	(7.6)
Evasion (in mil. $)	38.47	49.94	87.14	213.73	131.74	182.26
	(16.18)	(18.54)	(29.71)	(37.47)	(42.35)	(35.95)
Percent Evasion (%)	67.46	74.66	73.30	72.63	70.54	65.60
	(28)	(27)	(26)	(10)	(22)	(11)
Average Cost of Filing Form 8283 (in $)	15.38	28.94	27.02	37.09	23.57	39.46
	(6)	(12)	(47)	(10)	(9)	(18)
Compliance Cost Saved (in mil. $)	2.97	2.71	8.35	25.99	20.04	15.63
	(0.93)	(0.88)	(1.76)	(4.15)	(4.8)	(2.69)
Average Tax Rate 1986	39.30	38.31	27.25	30.45	30.31	29.65

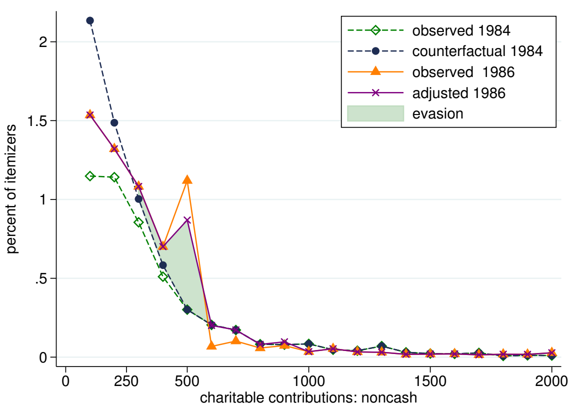
Notes: Based on SOI Public Use Tax Files, 1984–1986, upper bound counterfactual. Average tax rate: for individuals who donate noncash contributions in the range of $500-$1000. Average cost: cost of filing Form 8283, in 1985 and 1986 dollars respectively. Percent evasion: percent of untruthful donations among "new" donations in 1985 or 1986. New donations: dollar amount of all donations in excess of 1984 distribution. Evasion Donations: dollar amount of untruthful donations. Compliance Cost Saved: dollar amount of the compliance cost saved because of the reform. Based on noncash contributions of individuals who have itemized deductions and whose overall charitable contributions did not exceed 20% of AGI. Cross-sectional data from SOI Public Use Tax Files. See complete description in Section 3.5.

Figure B.1: Noncash Contributions in 1984–1986 by Income Quartiles.

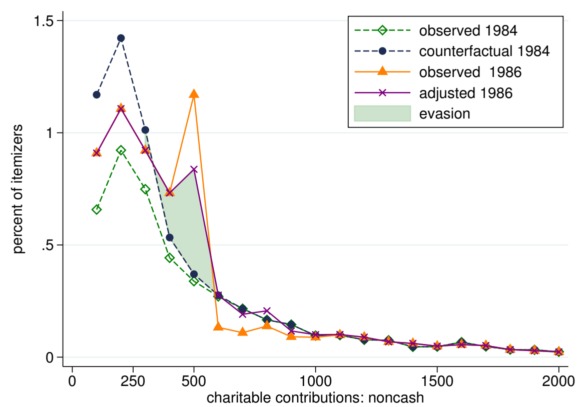
(a) First and Second Quartiles



(b) Third quartile



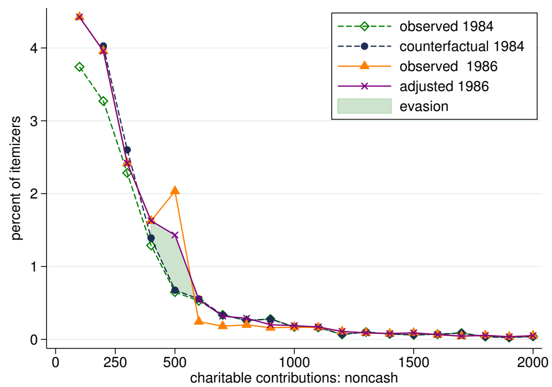
(c) Fourth quartile



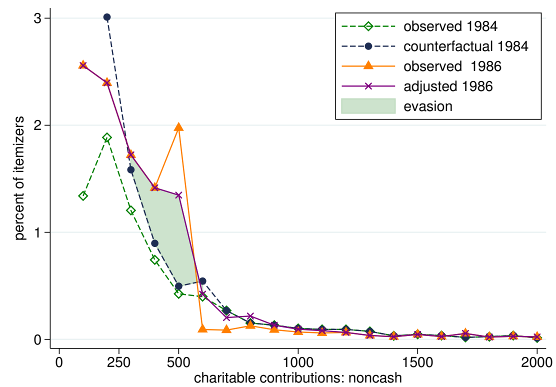
Notes: Noncash contributions of individuals who have itemized deductions and whose overall charitable contributions did not exceed 20% of AGI. Adjusted for inflation \$100 bins: (\$0,\$100],..,(\$1900,\$2000]. Adjusted 1986 distribution accounts for bunching at the \$500 threshold from the right by redistributing part of the excess mass to fill in the missing mass between observed the 1986 and 1984 distributions to the right of \$500. Counterfactual 1984 distribution accounts for missing donations around the \$0 threshold by inflating the reported donations in 1984 by the fraction of missing filers based on compliance cost estimates (upper bound counterfactual). For detailed description see Section 3.4. Cross-sectional data from SOI Public Use Tax Files.

Figure B.2: Noncash Contributions in 1984 and 1986: Heterogeneity Analysis.

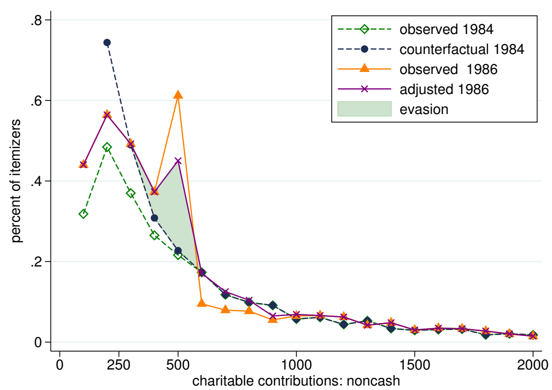
(a) Used Tax Preparer



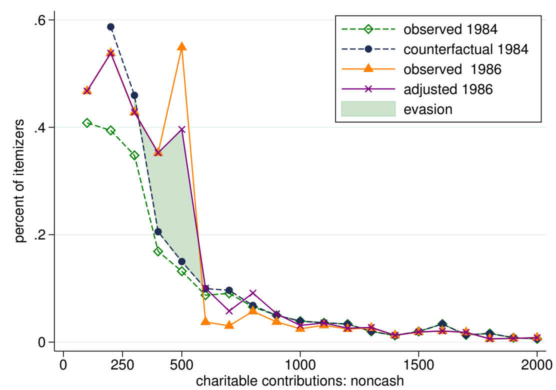
(b) No Tax Preparer



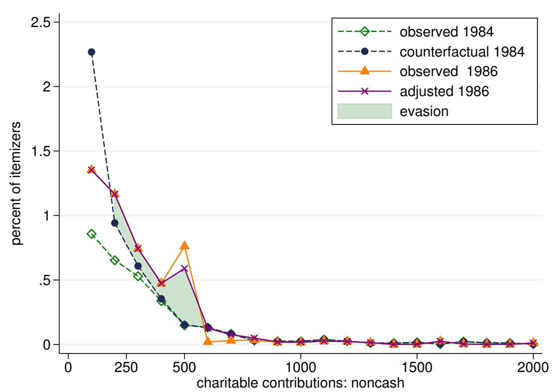
(c) Filed Schedule C, E, or F



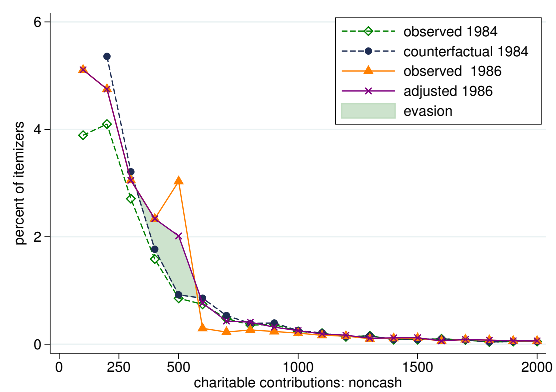
(d) No Schedules C, E, or F



(e) Only Single Filers



(f) Only Joint Filers



Notes: Noncash contributions of individuals who have itemized deductions and whose overall charitable contributions did not exceed 20% of AGI. Adjusted for inflation $100 bins: ($0,$100],..,($1900,$2000]. Adjusted 1986 distribution accounts for bunching at the $500 threshold from the right by redistributing part of the excess mass to fill in the missing mass between observed the 1986 and 1984 distributions to the right of $500. Counterfactual 1984 distribution (bin ($0,$100] is omitted) accounts for missing donations around the $0 threshold by inflating the reported donations in 1984 by the fraction of missing filers based on compliance cost estimates (upper bound counterfactual). For detailed description see Section 3.4. Cross-sectional data from SOI Public Use Tax Files.