Tax Enforcement and Tax Policy:
Evidence on Taxpayer Responses to EITC Correspondence Audits*

John Guyton	Kara Leibel	Day Manoli	Ankur Patel	Mark Payne	Brenda Schafer
IRS	IRS	UT-Austin	Treasury	IRS	IRS

March 2018

Abstract

Each year, the United States Internal Revenue Service (IRS) sends notices to selected taxpayers who claim Earned Income Tax credit (EITC) benefits to request additional documentation to verify those claims. This paper uses administrative tax data to examine the impacts of these correspondence audits on taxpayer behavior. The quasi-experimental research design compares randomly-selected audited taxpayers to taxpayers with similar risk scores who were not selected for a correspondence audit. The results indicate that, in the years following an audit, there are decreases in the likelihoods of claiming EITC benefits and filing returns. Taxpayers with self-employment income at the time of audit appear likely to increase wage employment following a correspondence audit, while taxpayers with wage income at the time of audit appear likely to decrease labor force participation following disallowance of EITC benefits. The results for wage earners indicate labor force participation elasticities of roughly 0.03.

* Guyton: Internal Revenue Service, 77 K St. NE, Washington, DC 20002 (john.guyton@irs.gov). Leibel: Internal Revenue Service, 77 K St. NE, Washington, DC 20002 (kara.e.leibel@irs.gov). Manoli: University of Texas at Austin, 2225 Speedway Stop C3100, Austin, TX 78712 (dsmanoli@austin.utexas.edu). Patel: United States Treasury, 1501 Pennsylvania Ave., Washington, DC 20005 (ankur.patel@treasury.gov). Payne: Internal Revenue Service, 77 K St. NE, Washington, DC 20002 (john.m.payne@irs.gov). Schafer: Internal Revenue Service, 77 K St. NE, Washington, DC 20002 (brenda.schafer@irs.gov).

Disclaimer: This research does not represent any official views or opinions of the Internal Revenue Service or any other government agency. Acknowledgements: Manoli gratefully acknowledges research funding from the Laura and John Arnold Foundation, and the authors thank Pat Langetieg, Lynne Morrison, Joel Slemrod, Alex Turk, and numerous colleagues, seminar and conference participants and for helpful comments and discussions.

I. Introduction

The Earned Income Tax Credit (EITC) has become the United States' largest wage subsidy anti-poverty program. The United States Internal Revenue Service (IRS) is charged with administering this program, and tax administration research within the IRS and in academic contexts has demonstrated that, each year, while a significant amount of EITC cash benefits subsidize working low-income households, there are also concerns about erroneous claims of EITC benefits.[1] Correspondence audits, conducted via mail, are a key enforcement tool to protect revenue and deter improper claims of EITC benefits. While a significant body of research has documented the role of EITC benefits and EITC expansions in successfully improving a variety of economic outcomes[2], less is known about the effects of this enforcement tool on taxpayers' economic outcomes. In this project, we contribute to the literature by examining the effects of EITC correspondence audits on taxpayers' behaviors. Moreover, because these correspondence audits often lead to the disallowance of EITC benefits for many individuals, we are able to examine how the disallowance of EITC benefits affects individuals' labor supply decisions.

We estimate the causal effects of EITC correspondence audits on taxpayer behavior by developing a quasi-experimental research design based on random variation within part of the audit selection process. All tax returns are assessed for noncompliance risk. Returns with the highest risk for an improper EITC claim are always selected for audit. Returns with low- and intermediate-risk scores are randomly selected for audit. By focusing on returns with low- and intermediate- risk scores for this study, we are able to estimate causal effects of EITC

[1] For evidence on EITC noncompliance and erroneous payments of EITC benefits, see Holtzblatt (1991), McCubbin (2000), Blumenthal, Erard and Ho (2005) and Leibel (2014). Related to this literature, Saez (2010), Chetty Friedman and Saez (2013) and Mortenson and Whitten (2018) present evidence on taxpayers reporting self-employment income to maximize EITC benefits and tax refunds.

[2] Prior research has examined the impacts of the EITC on health (Evans and Garthwaite 2014, Hoynes et al 2015, Strully et al 2010), child test scores (Dahl and Lochner 2012, 2017, Lundstrom 2017 and Chetty, Friedman and Rockoff 2011), college enrollment and educational attainment (Bastian and Michelmore 2018, Maxfield 2013, and Manoli and Turner 2018) and poverty (Hoynes and Patel 2017).

correspondence audits using a difference-in-difference estimation strategy. This strategy compares randomly-selected audited taxpayers to taxpayers who had similar risk scores but were randomly not selected for audit. Throughout the analysis, we refer to the former group as audited taxpayers and the latter group as "scored-but-not-audited" taxpayers, and we refer to the year in which taxpayers are randomly assigned to audit or non-audit groups as the "year of random assignment." Comparisons of the two groups can be made across various characteristics and behaviors both before and after the year of random assignment. In particular, we are able to examine behaviors prior to the audit to ensure comparability of the audited taxpayers to the scored but not audited taxpayers. Because the empirical analysis is based on EITC correspondence audits in 2010 through 2012, and administrative tax data are available covering 2001 through 2016, the data allow for analysis of short-term changes in behaviors one year after the audit, as well as persistent or longer-term changes in behaviors up to six years after the audit.

The results indicate significant changes in taxpayer behavior following an EITC correspondence audit. In the year after being audited, we estimate a decline in the likelihood of claiming EITC of roughly 0.30, or 30 percentage points. For the comparison group, baseline EITC claiming in the year after random assignment is about 0.65. The decrease in the likelihood of claiming EITC benefits persists for multiple years after the EITC correspondence audits, although the size of the effect is reduced over time: at four years after the EITC correspondence audits, we estimate a decline in EITC claiming of about 0.10, and baseline EITC claiming for the scored-but-not-audited taxpayers is about 0.40.

Much of the decline in claiming EITC benefits following an EITC correspondence audit appears driven by decreases in the likelihood of filing a tax return. We estimate a decrease in the likelihood of filing a tax return one year after the EITC correspondence audits of about 0.20. The fact that the decrease in the likelihood of filing a return is smaller than the estimated decrease in the likelihood of claiming EITC benefits highlights that, even conditional on filing a tax return,

the likelihood of claiming EITC benefits on the filed return appears to decline after the EITC correspondence audit. Similar to the decrease in claiming EITC benefits, the decrease in filing becomes slightly smaller and persists in the longer-term. Turning to refund amounts, we estimate that the average tax refund decreases by roughly $1,500 one year after the correspondence audits and by about $1,000 in each year in the longer-term. We also estimate changes in tax liabilities. For taxpayers who reported self-employment income on their audited tax returns ("Self-Employed"), we estimate a decrease in tax liability of roughly $300 in the year following the EITC correspondence audit, but the impacts on tax liability diminish over the longer-term. For taxpayers who did not report self-employment income on their audited tax return ("Wage Earners"), we do not estimate any significant changes in tax liability.

Using the difference-in-difference research design, we also examine labor supply responses to the EITC correspondence audits by comparing wage distributions for the audited and scored-but-not-audited taxpayers before and after the year of audit selection. For the Self-Employed, we estimate an increase in labor force participation (where labor force participation is defined in terms of having positive W-2 wage earnings[3]), possibly indicating some reallocation of labor supply from self-employment to wage employment. In contrast, for Wage Earners, we estimate a decrease in labor force participation following the EITC correspondence audits. These results for both groups appear to be driven by males as opposed to females, who demonstrate some increases in wage earnings at middle earnings levels.[4]

[3] Chetty, Friedman and Saez (2013) use administrative tax data and define working similarly. Prior studies using Current Population Survey data, such as Meyer and Rosenbaum (2001) and Hoynes and Patel (2017), focus on participation measures that are based on employee earnings which may correspond most closely to W-2 based earnings in the administrative tax data.

[4] The motivation for examining heterogeneity in labor supply responses to changes in EITC benefits comes from the prior literature on labor supply effects of EITC benefits, particularly for single mothers (see Eissa and Liebman 1996, Meyer and Rosenbaum 2001, Meyer 2010, Hoynes and Patel 2017). We acknowledge that earnings, the presence of children, and many other characteristics and dynamics could vary across gender as well (so gender may simply be a correlating factor and not a causal factor).

Our analysis informs the existing literature in several ways. First, prior research has examined the impacts of audits on taxpayer behavior to understand the effects of tax enforcement on taxpayers (see Slemrod 2016 for a survey of recent research on tax enforcement). DeBacker et al (2017) examine randomized research audits of EITC claimants and find evidence of persistent decreases in EITC claiming following the audits. Our analysis demonstrates that operational (non-research) audits lead to persistent decreases in EITC claiming as well. Advani et al (2017) examine effects of randomized audits in the United Kingdom and find notable increases in tax liability that persist but decay over subsequent years. Studying tax enforcement in Denmark, Kleven et at (2011) also find evidence of increased reporting of self-employment income following an audit or receipt of a threat-of-audit notice. These results support theories of taxpayer behavior in which audits increase taxpayers' perceived risk of incurring penalties or fines due to underreporting of income. Our results contrast with these earlier results in that we find decreases in reported self-employment income following EITC correspondence audits, primarily driven by nonfiling. Additionally, the current results differ from some results in these earlier studies in that we find changes in third-party reported income (wage earnings) following EITC correspondence audits, whereas Kleven et al (2011) find that audits and threat-of-audit notices had no impacts on third-party reported income. However, we note that the taxpayers studied in these other settings generally had higher income levels than the taxpayers observed in the current study. While higher income taxpayers in the other settings may perceive increased penalties from underreporting self-employment income, the current setting with lower-income individuals and EITC claiming may be different. Intuitively, some lower-income individuals may increase reported self-employment (non-third-party verified) income, possibly by choosing to disclose more income, invent income, or not disclose expenses, to claim the EITC, but if they are detected by audit, they may become averse to inventing self-employment income for purposes of claiming EITC and without this income they may not file a tax return. These taxpayers may perceive the payoff from not filing as better than the payoff from filing and correctly reporting income.

The analysis also relates to a large body of prior research that has examined the labor supply effects of the EITC (for examples, see Eissa and Liebman 1996, Meyer and Rosenbaum 2001, Hoynes and Patel 2017; for a survey of this literature, see Meyer 2010). Prior studies of the labor supply effects of EITC benefits have exploited variation in EITC benefits due to expansions of the EITC benefit schedule over time and across different household structures. These studies have developed quasi-experimental research designs and generally estimated positive effects of EITC benefits on labor force participation (the employment rate), particularly for single mothers, with estimates indicating an increase in labor force participation of about 0.07 percentage points per $1,000 of federal EITC benefits. In contrast to the variation used in these prior studies, we examine variation related to disallowance of EITC benefits following an EITC correspondence audit, and the results indicate smaller participation effects of roughly 0.03 percentage points per $1,000 of federal EITC benefits. Intuitively, transitions from employment to non-employment may be less elastic than transitions from non-employment to employment, and individuals may be less responsive to decreases in benefits than increases in benefits.

The remainder of this paper is organized as follows. Section II describes the institutional background on EITC correspondence audits and the administrative data used in the analysis. Section III describes the analysis of the effects of EITC correspondence audits on EITC claiming, tax filing and other tax outcomes. Section IV describes the analysis of changes in wage earnings following the EITC correspondence audits. Section V discusses the conclusions.

II. Institutional Background & Data

A. EITC Correspondence Audit Process

Each year, the IRS audits selected individual federal income tax returns to verify that income, deductions, or credits are being reported accurately. There are generally two types of audits: correspondence audits, which are conducted via mail, and field or face-to-face audits that are conducted at the taxpayer's home, place of business, tax preparer's office, or IRS office. Annual statistics on the number of correspondence and field audits are publicly available in the IRS Data Book and shown in Table 1.[5] As indicated by the IRS Data Book statistics for fiscal years 2010 to 2016, there are roughly 400,000 to 500,000 correspondence audits of returns where EITC is claimed each year, compared to roughly 40,000 to 50,000 face-to-face audits of returns where EITC is claimed, although these numbers have been declining over time due to reductions in the IRS budget.

The analysis in this paper focuses on a group of EITC correspondence audits that were selected for audit based on their risk score. While the exact criteria used to select tax returns for audit are not made public by the IRS, we summarize the process for EITC correspondence audit selection as follows. As part of standard tax return processing, all returns claiming children for the EITC undergo a series of checks that assess the reported tax return information and compare it with relevant third-party data and past tax filing history. Returns that are flagged with indicators of potential noncompliance are assigned one or more risk scores, depending on the nature of the flagged condition. Returns with the highest risk scores are selected for audits, while returns with intermediate- or low-risk scores may be randomly selected for correspondence audit.

Once an individual income tax return with EITC is assigned for a correspondence audit, a notification letter is automatically generated and sent to the taxpayer. This notice, which is typically a CP-75, informs the recipient that her tax return is being audited and requests the taxpayer submit more information or documentation to support claimed tax benefits, as

[5] The 2016 IRS Data Book is available online at https://www.irs.gov/pub/irs-soi/16databk.pdf . The IRS Data Books for fiscal years 2010 through 2015 can be found at the same link but with adjustments to the numbers to correspond to the desired fiscal year.

applicable, which may include EITC, other refundable credits, and dependency exemptions.[6] The type of supporting documentation requested depends on the issue that the taxpayer must substantiate, and examples of supporting documentation are provided on the notices. For example, recipients may be asked to show that a qualifying child (QC) meets the relationship requirement. In such a case, taxpayers may provide a birth certificate. School records may be used to demonstrate the residency requirement. Information on business income and expenses may be requested to verify self-employment businesses. The CP-75 notice informs the taxpayer that she has 30 days to respond and that her refund is on hold until the audit is resolved. CP-75 notices are typically sent within four to eight weeks after returns are filed.

As indicated in annual statistics reported in the IRS Data Book and shown in Table 1, each year roughly 85% to 90% of EITC correspondence audited returns result in changes to the tax returns. Prior reports (National Taxpayer Advocate 2007, Schneller Chilton and Bochum 2011 and Government Accountability Office 2014) have highlighted that non-response and insufficient response, potentially due to confusion, intimidation of the audit process or undelivered mail, are factors in some disallowances.

In most cases, when EITC benefits are disallowed, taxpayers are notified of the change via Notice CP-79. This notice explains to taxpayers that to claim EITC benefits in the future, they must include Form 8862 with the filed tax return for the year in which they first claim EITC again.[7] This form requires responses to multiple questions designed to verify that eligibility conditions for the EITC (and other applicable refundable tax credits) are met. Taxpayers may

[6] While the CP-75 notice explains that EITC, Additional Child Tax Credit (ACTC) and Premium Tax Credit benefits are on hold until the audit is resolved, CP-75A notices focus only on EITC benefits and do not impose a refund hold, and CP-75D notices specify holding only a portion of EITC benefits. Appendix Figure 1 presents an example of a CP-75 notice, and information on the notice, as well as an example, can be found on the IRS website at https://www.irs.gov/pub/notices/cp75_english.pdf.

[7] Appendix Figures 2 and 3 present examples of a CP-79 notice and a Form 8862 respectively. More information about the CP-79 notice is available on the IRS website at https://www.irs.gov/individuals/understanding-your-cp79-notice.

also be banned from claiming the EITC for the next two years (reckless disregard) or the next ten years (willful disregard).

B. Analysis Data

The empirical analysis in this paper is based on EITC correspondence audits conducted on returns filed for tax years 2010 through 2012. The analysis focuses on these years because this is the longest recent time period during which administrative audit selection criteria and audit selection data are stable. For all individuals with an EITC correspondence audit in one of the study tax years, we construct the analysis data by creating panel data for these individuals for tax years 2001 through 2016. The panel data is based on third-party reported tax documents (primarily the Form W-2) and filed tax returns (IRS Form 1040). Moreover, the panel data uses third-party reported information and administrative data to track whether these individuals appear on a filed tax return over time, even if their filing status changes on filed tax returns.

EITC correspondence audits can generally be separated into two categories: those that focus on issues related to self-employment income and those that focus on the eligibility of qualifying children. These categories of audits are processed separately from one another (and require different supporting documentation). In the empirical analysis below, the audits that focus on issues related to self-employment income apply to taxpayers in the Self-Employed analysis sample, and the audits that focus on the eligibility of qualifying children apply to the Wage Earner analysis sample.

III. Empirical Analysis 1: Impacts on EITC Claiming, Filing & Tax Outcomes

A. Research Design & Analysis Samples

We develop a quasi-experimental research design to identify the causal impacts of EITC correspondence audits on taxpayer behaviors. The ideal research design would compare audited taxpayers to identical non-audited taxpayers and examine behaviors of these groups before and after the correspondence audits. We approximate this ideal research design by focusing on tax returns with low- and intermediate-risk scores and exploiting random variation across these returns in the selection for EITC correspondence audits. We estimate the causal impacts of EITC correspondence audits by comparing taxpayers randomly selected for EITC correspondence audits to taxpayers who had similar risk scores but were randomly not selected for correspondence audits, and we compare behaviors for individuals in these groups before and after the year of random assignment. (The "year of random assignment" refers to the year that both audited and non-audited returns were scored, but only the audited returns were randomly assigned to be audited in that year.)

The implementation of this research design is based on comparing audited and non-audited taxpayers who received similar risk scores for their tax returns. More specifically, to construct the analysis sample for this research design, we calculate bins based on tax year and the various risk scores assigned to the returns. Within each bin, we calculate the fraction of returns selected for EITC correspondence audits. Bins and the fraction audited are calculated separately for the Self-Employed and Wage Earner samples. For both the Self-Employed and Wage Earner samples, we restrict the analysis samples to tax returns in bins that have between 15% and 85% of returns selected for correspondence audit. This sample restriction excludes bins that have very few returns selected for EITC correspondence audits as well as bins that have a lot of returns selected for EITC correspondence audits. Bins with the highest risk scores are excluded because these returns are always audited, making it not feasible to construct a control group for these returns. In the analysis below, we examine robustness to using alternative percentage cutoffs to define the analysis samples.

Tables 2 and 3 present summary statistics for the analysis samples of tax returns with self-employment income at the time of audit and tax returns without self-employment income at the time of audit respectively. The tables also present summary statistics for a random sample of EITC returns that are neither scored nor audited ("unscored returns") for the corresponding tax years used in the analysis. As mentioned above, EITC correspondence audits for the Self-Employed analysis sample primarily focus on issues of verifying self-employment income, whereas EITC correspondence audits for Wage Earners analysis sample primarily focus on issues of verifying eligibility of EITC qualifying children. These analysis samples are subsets of the full sample of EITC correspondence audits. The summary statistics in Tables 2 and 3 highlight that returns in the analysis samples tend to have lower earned income and higher EITC benefits than the random sample of unscored EITC tax returns.

Figure 1 further characterizes the analysis samples based on the distribution of earned income for each sample. For the Self-Employed, we examine the distribution of earned income relative to EITC Kink 1 (the lowest earned income level that maximizes EITC benefits while minimizing the amount of income tax and self-employment tax paid).[8] A significant body of prior research has shown that a disproportionate number of taxpayers with net self-employment income report earned income at EITC Kink 1 (see Saez 2010, Chetty Friedman and Saez 2013 and Mortenson and Whitten 2017).

The densities in Figure 1A indicate that the Self-Employed analysis sample of EITC correspondence audits consists of a higher fraction of individuals at EITC Kink 1 than the sample of unscored EITC returns and the scored-but-not-audited returns. Furthermore, the densities for the EITC correspondence audits and the scored-but-not-audited group indicate that higher fractions of the samples are at or near the maximum credit portion of the EITC benefit

[8] The exact values for EITC Kink 1 are available online through the Tax Policy Center at http://www.taxpolicycenter.org/statistics/eitc-parameters. The EITC Kink 1 values correspond to the values listed in the column titled "Minimum income for maximum credit."

schedule compared to the EITC population more generally. The densities for Wage Earners are shown in Figure 1C. These densities highlight that the analysis samples appear to have lower earned income levels and are also more concentrated at earned income levels corresponding to Kink 1 than the unscored EITC population. We emphasize that these characteristics apply for the analysis samples and not necessarily for the full EITC correspondence audit population since returns with the highest risk scores are omitted from the analysis samples.

Audit outcomes for the audited returns in the analysis samples are illustrated in Figures 1B and 1D. These figures demonstrate that, for the audited returns in both the Self-Employed and the Wage Earner samples, disallowance, nonresponse, and undelivered mail rates do not appear to vary significantly across reported earned income levels. In particular, for the Self-Employed, roughly 15 percent of audited returns in the analysis sample have undelivered mail, 50 percent have non-response, and 95 percent have the EITC disallowed. For Wage Earners, roughly 10 percent have undelivered mail, 40 percent have non-response, and 90 percent have the EITC disallowed.

B. Methodology

We estimate multiple regression specifications to implement the research design described above and estimate the causal impacts of EITC correspondence audits on taxpayer behaviors.

First, we estimate a linear regression specification to calculate weights for observations in the audited and scored-but-not-audited groups based on risk scores. These weights are calculated so that the treatment (audited) and control (scored-but-not-audited) groups have similar average risk scores. For example, if the audited analysis sample were to consist of 60 percent intermediate-risk returns and 40 percent low-risk return while the scored-but-not-audited analysis sample consisted of 40 percent intermediate-risk returns and 60 percent low-risk returns, the weights

would be calculated so that the weighted average risk scores for each group would be similar (placing 50 percent weight on the intermediate-risk returns and 50 percent weight on the low-risk returns).[9]

To formalize these ideas, we compute weights for individuals by pooling the samples of audited and scored-but-not-audited individuals, defining an indicator variable $\boldsymbol{A_i}$ that is equal to 1 if individual *i* was selected for an EITC correspondence audit, and then estimating the following regression

$$\boldsymbol{A_i = \beta R_i + u_i}$$

where $\boldsymbol{R_i}$ denotes a rich set of dummy variables for tax-year-specific risk score bins. We then obtain predicted values from this regression, $\boldsymbol{\widehat{p}_i = \widehat{Pr}(A_i = 1|R_i)}$ and use these predicted values to compute weights. We use weights $\boldsymbol{\widehat{w}_i = \frac{\widehat{p}_i}{1-\widehat{p}_i}}$ for the scored-but-not-audited individuals and $\boldsymbol{\widehat{w}_i = \frac{1-\widehat{p}_i}{\widehat{p}_i}}$ for the audited individuals. These weights put higher weight on scored-but-not-audited returns that have risk scores that are more similar to audited returns and on audited returns that have risk scores that are more similar to the scored-but-not-audited returns. (Appendix Figure 5 presents comparisons of the fraction claiming EITC with the weighting and without. Overall, the results do not change meaningfully, so we conclude that while the weighting improves comparability of the audited and scored-but-not-audited groups, it does not drive the main results.)

To implement the research design described above, we define event time as the years since the year of random assignment of audit status. Specifically, for individual *i* in year *t*, event time $\boldsymbol{e_{it}}$

[9] Controlling for risk scores in the regression accounts for correlation between audit status and risk scores, but since we aim to ensure that risk score distributions in the audited and scored-but-not-audited groups are similar, we use this weighting strategy rather than just including risk scores as control variables in the main regression specification.

is defined as $\boldsymbol{e_{it} = a_i - t}$ where $\boldsymbol{a_i}$ denotes the year that individual *i*'s tax return is scored and randomly assigned for an EITC correspondence audit or not assigned for an EITC correspondence audit. . Given this definition of event time, the impacts of EITC correspondence audits on an outcome *y* are estimated via the following regression specification:

$$\boldsymbol{y_{it} = \sum_{k=-7}^{4} \beta^k 1(e_{it} = k) + \sum_{k=-7}^{4} \delta^k A_i 1(e_{it} = k) + \gamma X_{it} + \varepsilon_{it}.}$$

In this regression specification, the coefficients $\boldsymbol{\beta^k}$ reflect the means of the outcome variable at each event time for the scored-but-not-audited group, and the coefficients $\boldsymbol{\delta^k}$ reflect the differences in the means for each event time for the audited group. The covariates $\boldsymbol{X_{it}}$ include tax year, age and gender fixed effects. We examine a variety of outcomes including claiming EITC benefits, filing a tax return, claiming EITC benefits conditional on filing a return, tax refund amounts, reporting self-employment income, paying taxes owed and receiving a refund. When estimating these regressions, observations are weighted using the weights described above.

C. Results

We present graphical evidence on the impacts of EITC correspondence audits for the Self-Employed and Wage Earners in Figures 2 and 3 respectively. (We do not include standard errors in Figures 2 and 3 to keep the plots clear; Tables 4 and 5 present the corresponding estimates illustrated in Figures 2 and 3 with standard errors). In each figure, we present four plots on claiming EITC benefits, filing a tax return (appearing on a filed tax return as a primary or secondary earner), the balance due amount (positive values indicate an amount due to be paid to the United States Treasury and negative values indicate a refund to be paid to the taxpayer), and tax liability. Furthermore, for each outcome variable for the Self-Employed or Wage Earner samples, each plot presents separate series for the audited group and scored-but-not-audited

groups and the series plot the estimated regression coefficients from the specification described above.

Figure 2A and 3A illustrate noticeable declines in claiming EITC benefits following an EITC correspondence audit. In particular, both the audited and scored-but-not-audited groups have similar trends in claiming EITC benefits across the pre-audit event times. Following the audit year, both groups exhibit some mean reversion (decline in claiming EITC benefits following the audit year in which they all claimed EITC benefits), but the audited group has a lower likelihood of claiming EITC benefits relative to the scored-but-not-audited group. The difference in claiming EITC benefits occurs in the first year after the audit. For both the Self-Employed and Wage Earners, the rate of claiming EITC benefits is almost 0.30 (30 percentage points) lower for audited taxpayers in the year after the audit relative to the scored-but-not-audited groups. The difference in claiming EITC benefits is also persistent, although it diminishes over time. Four years after the audit, the difference is 0.10 or 10 percentage points for both the Self-Employed and Wage Earner groups.

Figures 2B and 3B examine changes in the likelihood of filing tax returns for the Self-Employed and Wage Earner samples, respectively. Similar to the plots for claiming EITC benefits, these plots illustrate significant declines in the likelihood of filing tax returns following an EITC correspondence audit. The trends for the audited and scored-but-not-audited groups appear similar prior to the audits, but in the year after the EITC correspondence audits, the Self-Employed have roughly a 0.20 or 20 percentage point decline in the likelihood of filing relative to the scored-but-not-audited group, and Wage Earners have a lower likelihood of filing of roughly 0.15 or 15 percentage points. These declines are smaller than the declines in the rate of claiming EITC, which suggests that some of the audited taxpayers continue to file returns but stop claiming EITC benefits while others stop filing returns altogether.

In addition to these results on claiming EITC benefits and filing tax returns, we have also examined results on (1) having a W-2 and not claiming EITC benefits, (2) having a W-2 and not filing a tax return and (3) receiving an EITC eligibility notice (i.e. a CP-09 or CP-27 notice) from the IRS for filing a tax return and appearing to be eligible for EITC benefits but not claiming the EITC on the filed tax return. These results are presented in Appendix Figure 4. Following from the significant decreases in EITC claiming and tax filing observed in Figures 2A and 2B and 3A and 3B, these outcomes show that, following the EITC correspondence audits, audited taxpayers show (1) a significant increase in the likelihood of having a W-2 but not claiming EITC benefits, (2) a significant increase in the likelihood of having a W-2 and not filing a tax return and (3) an increase in the likelihood of receiving an EITC eligibility notice (a CP09 or CP27 notice) from the IRS. These results suggest the EITC correspondence audits may cause some taxpayers to not file tax returns or claim EITC benefits even when they appear eligible.

Figures 2C and 3C examine changes in the amounts of refunds for the Self-Employed and Wage Earners, respectively. These figures indicate declines in refund amounts following an EITC correspondence audit. For the Self-Employed sample, the average refund one year after the correspondence audit is roughly $1,500 lower for the audited group compared to the scored-but-not-audited group. Four years after the correspondence audit, the average refund is still almost $1,000 lower for the audited group. For the Wage Earners, average refunds are almost $1,800 lower for the audited group one year after the correspondence audit, and four years later the average refunds continue to be roughly $1,000 lower for the audited group. These results are consistent with the decreases in EITC claiming and filing; while other behaviors may also change, the decreases in EITC claiming and filing will both lead to decreases in tax refunds.

We present graphical evidence on changes in tax liability[10] in Figures 2D and 3D. Figure 2D illustrates that, for the Self-Employed analysis sample, there appears to be a decrease in reported tax liability following correspondence audits. In particular, tax liability is roughly $300 lower for the audited group one year after the correspondence audits, and roughly $100 lower four years after the correspondence audits. We note that the decrease in reported tax liability may be driven by the increase in nonfiling because nonfilers are assigned a value of zero for reported tax liability. For Wage Earners, Figure 3D illustrates that we do not see significant changes in tax liability following an EITC correspondence audit. This may be because wage earners are relatively unlikely to have self-employment income in the years before or after the EITC correspondence audit.

Given prior research on EITC bunching among taxpayers with self-employment income and the EITC bunching around EITC Kink 1 that we observe in the Self-Employed analysis sample (Figure 1A), we examine heterogeneity in EITC claiming before and after audit selection based on earnings (in the audit year) relative to EITC Kink 1. These results are presented in Figure 4. Plot A illustrates that prior to the audits, there is no detectable difference in EITC claiming across audited and scored-but-not-audited taxpayers, and furthermore, there is only a subtle decrease in the fraction of individuals claiming EITC for taxpayers with earned income in the audit selection year just around EITC Kink 1. Plots B and C present evidence on EITC claiming by earnings relative to EITC Kink 1 one and four years after audit selection respectively. Consistent with the average results shown in Figure 2A, audited taxpayers have lower EITC claiming rates than scored but not audited taxpayers. Focusing more specifically on heterogeneity across EITC Kink 1, we note that decreases in EITC claiming rates following the audits do not appear to vary across earnings relative to EITC Kink 1. Thus, we conclude that

[10] Tax liability is measured based on the total tax before payments (which include withholdings and refundable tax credits such as the EITC), corresponding to line 63 on IRS Form 1040.

EITC "bunchers" (or EITC "maximizers") respond similarly to an EITC correspondence audit as other audited EITC claimants with self-employment income on their tax returns.

D. Assessing the Magnitudes

We assess the magnitudes of the estimated impacts described above by considering the potential numbers of taxpayers and dollar amounts affected by the EITC correspondence audits. We start by noting that the estimates apply most directly to the analysis samples. The numbers of audited taxpayers for the Self-Employed and Wage Earner analysis samples are respectively 114,109 and 57,020. Based on these numbers of audited taxpayers a 0.30 decline in claiming EITC benefits in the year after the correspondence audit translates into 34,233 (=0.30*114,109) fewer Self-Employed taxpayers claiming EITC benefits in the year after the correspondence audits and 17,106 (=0.30*57,020) fewer Wage Earner taxpayers claiming EITC benefits one year after the audit. As noted above, the effects four years after random assignment indicate a 0.10 decline in claiming EITC benefits each year, and this translates into roughly 11,411 (=0.10*114109) fewer Self-Employed taxpayers claiming EITC benefits each year in the medium-term, and 5,702 (=0.10*57,020) fewer Wage Earner taxpayers claiming EITC benefits each year in the medium-term.

Next, we turn to dollar amounts based on the audited taxpayers in the analysis samples. For the Self-Employed, a decline in average refunds one year after the EITC correspondence audits of $1,500 translates into a reduction of roughly $171 million (=1,500*114,109) in refunds. For Wage Earners, a decline of $1,800 in average refunds one year after the EITC correspondence audits translates into roughly $102 million (=1800*57020) in reduced refunds. Moreover, in the longer-term (four years after the correspondence audits), there is a decline of roughly $1,000 in average refunds paid out to these taxpayers. This estimate translates into a reduction of roughly

$114 million (=1,000*114,109) in refunds to the Self-Employed each year, and a reduction of roughly $57 million (=1,000*57,020) in refunds to Wage Earners each year.

While these magnitudes are based on the audited taxpayers in the analysis samples, the estimated impacts of the EITC correspondence audits on audited taxpayers could apply to the larger population of all EITC correspondence audits if individuals in the larger correspondence audit population have similar behavioral responses as individuals in the smaller analysis samples.[11] In this case, the estimated effects would be based on the populations of EITC correspondence audits in each year. As indicated in Table 1, there are roughly 400,000 to 500,000 EITC correspondence audits each year. Based on a population size of 400,000 audited taxpayers, the estimates imply that correspondence audits cause 120,000 (=0.30*400,000) fewer taxpayers to claim EITC benefits one year after the EITC correspondence audit and 40,000 fewer taxpayers (=0.10*400,000) to claim EITC benefits four years after the audit, relative to the number who would have otherwise claimed the credit. Using an average decrease in refunds of $1500, there is an estimated reduction in refunds of $600 million (=1500*400,000) one year after the correspondence audits, and in subsequent years (up to at least six years based on the analysis), a reduction of roughly $400 million (=1000*400,000) in refunds each year.[12]

IV. Empirical Analysis II: Wage Earnings Responses

A. Methodology

[11] We acknowledge that it is not possible to provide direct evidence on whether taxpayers in the larger correspondent audit population would have similar behavioral responses as taxpayers in the smaller analysis samples. The larger correspondent audit population would include taxpayers with higher risk scores than those in the analysis samples, and since we do not have a comparable group of taxpayers with high risk scores who are not audited, we are not able to estimate the impacts of the EITC correspondence audits on taxpayers with high risk scores and test if their responses are similar to taxpayers with low or intermediate risk scores.

[12] The estimated effects discussed here are based on the direct impacts of EITC correspondence audits and do not include any possible spillover or network effects on other non-audited taxpayers. Boning, Guyton, Hodge, Slemrod, and Troiano (2018) present evidence on network effects of IRS tax enforcement for firms.

EITC correspondence audits present a unique opportunity to gain insights into how disallowance of EITC benefits and the experience of an EITC correspondence audit affect individuals' labor supply decisions. To do this, we develop a difference-in-differences estimation strategy to estimate changes in the distribution of wage earnings before and after an EITC correspondence audit. More specifically, in this estimation strategy, we estimate changes in the wage density for audited individuals in the years before and after the EITC correspondence audits, changes in the wage density for scored-but-not-audited individuals before and after the EITC correspondence audits (or year of being scored), and the differences in these changes. Intuitively, the identifying assumption to estimate causal effects with this difference-in-differences estimation strategy is that if there had been no EITC correspondence audit, audited individuals' wage earnings would have evolved similarly over time as observationally equivalent scored-but-not-audited individuals' wage earnings evolved. By including scored-but-not-audited individuals as a control group for the audited individuals, the estimation strategy accounts for potential mean reversion in wage earnings in years before and after the EITC correspondence audit and thus identifies causal effects of the EITC correspondence audits (and the disallowance of EITC benefits) on individuals' labor supply decisions.

The analysis of wage earnings responses is based on W-2 wage earnings. We focus on this measure of wage earnings for multiple reasons. First, W-2 wage earnings are third party reported (reported by employers to the IRS). This offers an advantage of self-reported measures of earnings, such as wages on filed tax returns, since individuals may mis-report their earnings, whereas administrative records from employers have less mis-reporting. Second, W-2 wage earnings can be observed regardless of whether or not an individual files a tax return. Given the changes in tax filing after the EITC correspondence audits, it is useful to measure earnings in a way that does not depend on filing a tax return. In contrast to W-2 earnings, most earnings from self-employment are not reported to the IRS, and hence, information about self-employment income is generally contingent on taxpayers filing a return. Even though the W-2 wage earnings

measure omits earnings from self-employment, this measure is likely to correspond to earnings measures used in past studies since most past studies have used data from the Current Population Survey that likely omits self-employment earnings because it focuses on "employee earnings." Lastly, while there may be some falsified or fraudulent W-2s, we note that there is little financial incentive to create a W-2 but not file a tax return. Thus, we expect that any post-audit W-2s are likely to be legitimate.

We compute changes in wage densities for audited and scored-but-not-audited individuals by estimating separate wage density regressions for the Self-Employed and Wage Earner groups. First, we specify a set of wage points $\boldsymbol{\Omega} = \{\mathbf{0}, \$\mathbf{5000}, \$\mathbf{10000}, \ldots, \$\mathbf{50000}\}$. At each wage point $\boldsymbol{d} \in \boldsymbol{\Omega}$, we define an indicator equal to one if individual *i*'s total annual W-2 earnings falls in an interval around the wage point, $\boldsymbol{y_{it}^{d}} = \mathbf{1}(\boldsymbol{d} - \$\mathbf{2500} \leq \boldsymbol{w_{it}} \leq \boldsymbol{d} + \$\mathbf{2500})$. Using this indicator variable, we estimate the following regression:

$$\boldsymbol{y_{it}^{d}} = \sum_{\boldsymbol{k=-7}}^{\mathbf{4}} \boldsymbol{\alpha_{k}^{d}} \mathbf{1}(\boldsymbol{e_{it}} = \boldsymbol{k}) + \sum_{\boldsymbol{k=-7}}^{\mathbf{4}} \boldsymbol{\beta_{k}^{d}} [\boldsymbol{A_{i}} * \mathbf{1}(\boldsymbol{e_{it}} = \boldsymbol{k})] + \boldsymbol{\gamma^{d}} \boldsymbol{\Gamma_{it}} + \boldsymbol{\varepsilon_{it}^{d,j}}.$$

In this regression specification, $\boldsymbol{\Gamma_{it}}$ denotes a set of covariates that includes dummies for tax year, age, state of residence at the time of the audit (or scoring), gender, and whether the individual was audited or not. The set of covariates are demeaned so that the regression coefficients $\boldsymbol{\alpha_{k}^{d}}$ capture the average wage density at wage value *d* across event times $\boldsymbol{e_{it}} = \boldsymbol{k}$ for scored-but-not-audited individuals, and the regression coefficients $\boldsymbol{\alpha_{k}^{d}} + \boldsymbol{\beta_{k}^{d}}$ capture the average wage density at wage value *d* across event times $\boldsymbol{e_{it}} = \boldsymbol{k}$ for the audited individuals.

Using these estimated regression coefficients, the difference-in-differences estimates for the changes in the wage densities at each wage point *d* can be expressed as shown below. We consider changes between event time -4 (before the audit) and +4 (after the audit), and we

examine robustness to different event times before and after the audit below. For the scored-but-not-audited group, the change in the wage density at wage point *d* before and after the audit (scoring) is given by

$$\boldsymbol{\delta_d^{Non-audited}} = [\boldsymbol{\alpha_4^d} - \boldsymbol{\alpha_{-4}^d}]$$

and for the audited group, the change in the wage density at wage point *d* before and after the audit is given by

$$\boldsymbol{\delta_d^{Audited}} = \left[\boldsymbol{\alpha_4^d} + \boldsymbol{\beta_4^d}\right] - [\boldsymbol{\alpha_{-4}^d} + \boldsymbol{\beta_{-4}^d}]$$

Thus, the difference-in-differences estimator for the changes in the wage density at each wage point $\boldsymbol{d} \in \boldsymbol{\Omega} = \{\mathbf{0}, \$\mathbf{5000}, \$\mathbf{10000}, \ldots, \$\mathbf{50000}\}$ is given by

$$\boldsymbol{\Delta_d} = \boldsymbol{\delta_d^{Audited}} - \boldsymbol{\delta_d^{Non-audited}} = \left[\boldsymbol{\beta_4^d}\right] - [\boldsymbol{\beta_{-4}^d}].$$

Standard errors for the wage density estimates are computed using 1,000 bootstrap replications. For each bootstrap replication, we randomly sample individuals with replacement estimate weights for the audited and scored-but-not-audited samples, estimate the wage density regressions, and compute the difference-in-differences estimates for each wage point. The standard errors for the wage density and difference-in-differences estimates are then computed as the standard deviations of the corresponding wage density and difference-in-differences estimates. Because the weights are re-estimated within each bootstrap replication, the standard errors for the estimates reflect statistical uncertainty in the estimated weights as well as statistical uncertainty in the wage density and difference-in-differences estimates.

B. Results

Figure 5 illustrates the difference-in-difference estimates for $\boldsymbol{\Delta_d}$, the changes in the wage density before and after the EITC correspondence audit, at wage points $\boldsymbol{d \in \Omega = \{0, \$5000, \$10000, \ldots, \$50000\}}$. (We do not include the standard errors for the estimates in Figure 5 to keep the plots clear. Table 6 presents the estimates for each wage bin with standard errors, and Appendix Figures 6 and 7 illustrate the estimates with standard errors.) Plots A and B correspond to the Self-Employed analysis sample and plots C and D correspond to the Wage Earner analysis sample. Plots A and C present the baseline difference-in-difference estimates using the regression coefficients at event times -4 and +1 when computing the differences before and after the audit selection. For the Self-Employed, the estimates indicate a decrease in the likelihood of individuals being in the zero wage bin. Specifically, the estimate at $0 illustrates roughly a 0.015 decrease in the likelihood of being in the zero W-2 wage earnings bin (implying that the likelihood of having positive W-2 wage earnings increases by 0.015). The estimates at higher earnings levels are smaller and suggest small increases in the fractions of individuals at middle income levels and small decreases in the fractions of individuals at income levels above $25,000. For Wage Earners, the estimates indicate a decrease in labor force participation following the EITC correspondence audits. Specifically, the fraction of individuals in the zero W-2 earnings bin increases by roughly 0.02. Similar to the estimates for the self-employed, the estimates at the higher income levels are relatively smaller.

Plots B and D in Figure 5 illustrate the dynamics of the labor supply responses to the EITC correspondence audits for both the Self-Employed and Wage Earner analysis samples, respectively. We examine the dynamics of the labor supply responses by holding event time set at -4 for the pre-audit event time and varying the post-audit event time between +1 and +5 when computing the difference-in-difference estimates at each wage point. The dynamics highlight that, for both the analysis samples, the largest labor supply responses (in absolute value) occur one year after the EITC correspondence audit. For the Self-Employed, the estimate for the zero

wage earnings bin is negative and more than three times larger at one year after the audits than at four years after the audits. For Wage Earners, the estimate for zero wage earnings is positive and more than two times larger at one year after the audits then at four years after the audits. For both groups, the estimates at the higher wage levels are small and relatively close to zero. At the middle wage levels, the estimates for the Self-Employed are slightly positive indicating higher fractions of individuals with wage earnings in these wage bins. The estimates for the Wage Earners are slightly negative indicating lower fractions of individuals with wage earnings in these bins. We interpret these findings to mean that some self-employed individuals who had zero wage earnings prior to the audit may have small positive wage earnings after the audit, and some wage earners who had small wage earnings prior to the audits may have zero wage earnings after the audit.

We next examine labor supply responses by gender for both the Self-Employed and Wage Earner analysis samples in Figures 6 and 7 respectively. This examination of heterogeneity in labor supply responses across gender is motivated by prior research on the labor supply effects of the EITC that has generally focused on single mothers (for examples, see Eissa and Liebman 1996, Meyer and Rosenbaum 2001, Meyer 2010, Hoynes and Patel 2017). We acknowledge that earnings, the presence of children, and many other characteristics and dynamics could vary across these groups as well (so gender may simply be a correlating factor and not a causal factor). In each figure, plots A and C present evidence on changes in average refunds by event time for females and males respectively, and plots B and D present the difference-in-difference estimates for the wage (labor supply) responses for females and males respectively. The plots for the changes in refunds illustrate that, for both the Self-Employed and Wage Earners, the decrease in refunds following the correspondence audit is relatively similar for females and males. However, the plots for the labor supply responses illustrate differences across gender. For the Self-Employed (Figure 6), the estimated decreases in the likelihood of having zero wages and the increases in the likelihood of having middle wage earnings levels appear driven by males. The

estimates for females indicate small increases in the likelihoods of having wage income levels in the middle- and high-eligibility ranges ($30,000 to $40,000). Similarly, in the findings for Wage Earners (Figure 7), the estimated increases in the fraction of individuals at zero wages appears to be driven by males, and the estimates for females suggest some smaller increases in the fractions of individuals at middle to high wage earnings levels.

C. Sensitivity

We have examined the sensitivity or robustness of the main results in multiple ways. First, the main results we have presented thus far are based on using the event time of four years prior to audit selection as the "before audit" event time and the event times of one or four years after audit selection as the "after audit" event time when computing the difference-in-difference estimates for the changes in the wage distribution following the EITC correspondence audits. While Figure 5 presents results based on using different event times for the "after audit" event times, Appendix Figure 8 presents labor force participation by event time for both the Self-Employed and Wage Earner analysis samples, and Appendix Figure 9 illustrates the difference-in-difference estimates when using alternative "before audit" event times but holding the after audit event time fixed at four years after random assignment. For both the Self-Employed and Wage Earner analysis samples, we note that while the difference-in-difference estimates change slightly when using the coefficients from different "before audit" event times in the calculations, the difference-in-difference estimates are generally robust to using alternative before audit event times.

We also examine sensitivity of the main results to an important sample restriction. Specifically, when creating the analysis samples for both the Self-Employed and the Wage Earners, we restricted the samples to taxpayers in low and intermediate risk score bins that contained both audited and non-audited taxpayers. This sample restriction was imposed based on calculating the

fraction of audited taxpayers in each risk score bin and then restricting the samples to individuals in risk score bins that had between 15% and 85% of the taxpayers in the bin being selected for audit. Appendix Figures 10 through 15 present results using alternative audit fraction cutoffs. For both the Self-Employed and Wage Earner analysis samples, the plots illustrate results for EITC claiming (Appendix Figures 10 and 13), difference-in-difference estimates based on one year after random assignment (Appendix Figures 11 and 14) and difference-in-difference estimates based on four years after random assignment (Appendix Figures 12 and 15). The plots using less restrictive audit fraction cutoffs generally indicate that the results are sensitive to including individuals in risk score bins that have lower fractions of taxpayers being selected for audit. This is not surprising since, intuitively, when including individuals in risk score bins in which nearly all taxpayers are selected for audit, there will be a very limited control group of comparable scored-but-not- audited individuals, and hence the identification strategy (research design) will no longer be valid. Alternatively, the results are generally robust to using more restrictive audit fraction cutoffs that ensure more comparable audited and scored-but-not-audited samples.

D. Participation Effects and Elasticities

We assess the magnitudes of the estimated changes in wage employment following disallowance of EITC benefits from EITC correspondence audits by computing two parameters that can be compared to estimates in the prior literature: (1) the percentage changes in labor force participation following a $1,000 disallowance of EITC benefits and (2) participation elasticities. Following Hoynes and Patel (2017), the percentage change in labor force participation is given by $\boldsymbol{\delta^{participation}} = \frac{\boldsymbol{\beta_4^0 - \beta_{-4}^0}}{\mathbf{1-(\alpha_{-4}^0 + \beta_{-4}^0)}}$ and change in average tax refunds following the EITC correspondence audits is given by $\boldsymbol{\delta^{refund}} = \frac{\boldsymbol{\beta_4^{refund} - \beta_{-4}^{refund}}}{\boldsymbol{\alpha_{-4}^{refund} + \beta_{-4}^{refund}}}$. The change in labor force participation per $1,000 of tax refunds is then given by $\boldsymbol{\Delta^{participation}} = \mathbf{1000} * \frac{\boldsymbol{\delta^{participation}}}{\boldsymbol{\delta^{refund}}}$.

Following Chetty, Guren, Manoli and Weber (2011), we compute extensive margin participation elasticities based on the changes in after tax income due to the disallowance of EITC benefits following the EITC correspondence audits. In this case, the change in after-tax income (ATI) is given by $\boldsymbol{\delta^{refund}} = \frac{\beta_4^{refund} - \beta_{-4}^{refund}}{\overline{ATI_{-4}}}$ where $\overline{\boldsymbol{ATI_{-4}}}$ denotes the average after-tax income (total income plus tax refunds) of the audited group at event time -4.

Table 7 presents the estimated participation effects and elasticities for both the Self-Employed and Wage Earner analysis samples. We present the estimated effects by gender and based on one year after random assignment and four years after random assignment. The estimated participation effects and elasticities for the self-employed are comparable in magnitude to those for Wage Earners, though of the opposite sign. Intuitively, the relevant labor supply margin for the self-employed may be moving from wage employment into self-employment so that when EITC benefits increase, these individuals are more likely to leave wage employment and increase self-employment. The magnitudes of the estimated effects suggest these transitions are of similar magnitudes to estimates based on moving in and out of wage employment. The estimates highlight statistically significant effects on year after random assignment that fade out (or become less statistically significant) over subsequent years.

The estimates for Wage Earners indicate participation effects between roughly 0.01 and 0.03, and the estimated participation elasticities are roughly in this range as well. To evaluate these effects in the context of the current results, we note that, as illustrated in Appendix Figure 8, labor force participation (defined as the fraction of individuals with W-2 wage earnings greater than $2500 (which is the cutoff for the zero wage bin) is roughly 0.4 for the Self-Employed and 0.85 for the Wage Earners. Compared to the prior literature, these estimates are slightly smaller than prior estimates in the literature. In particular, Hoynes and Patel (2017) present estimated participation effects of about 0.05 to 0.08 (see Online Appendix Table 7), and Chetty et al (2011)

present evidence on participation elasticities of roughly 0.25 (See Table 1). There could be several factors causing differences between the estimated participation effects and elasticities we present and corresponding estimates from the prior literature. One difference that we highlight relates to underlying sources of variation used in the analyses. Much of the prior literature has relied on quasi-experimental variation in EITC benefits due to federal and state EITC expansions and corresponding transitions from non-employment into employment. In contrast, we examine disallowances of EITC benefits (and other refundable credits), and corresponding transitions from employment to non-employment. It is possible that transitions from employment into non-employment could be less elastic than transitions from non-employment into employment and that disallowance of benefits may have different impacts than increases or expansions in benefits. We also note that much of the prior literature has highlighted participation effects and extensive margin elasticities for single mothers, whereas we find evidence of significant wage earnings responses for males.

D. Additional Outcomes

In addition to the outcomes described so far, we have also examined the impacts of the EITC correspondence audits on additional outcomes measured in the administrative tax data. Table 8 and Appendix Figure 16 present these results. First, we have examined impacts on non-employee income reported by third parties to the IRS on Form 1099-MISC. This form of income generally refers to non-employee contractor income, and it is reported by third parties to the IRS for each contractor paid by the third party. These results are presented in Appendix Figures 16 A and B. The results highlight that only about 10% to 15% of self-employed individuals and about 5% of wage earners have 1099-MISC income. Given the relatively low percentages of individuals in the analysis samples that have this form of income, it is not surprising that the results with these outcomes are statistically imprecise. Nonetheless, the plots illustrate that the results are generally consistent with the results based on W-2 wage earnings: for wage earners, the likelihood of

having 1099-MISC income appears to decrease slightly after the audits relative to the likelihood for non-audited individuals. Similarly, when examining average amounts of 1099-MISC income, the wage earner analysis sample shows a slight decrease in average 1099-MISC income for audited taxpayers after the audits relative to non-audited taxpayers.

Second, we have examined the impacts of the EITC correspondence audits on receipt of Social Security Disability Insurance benefits (SSDI, reported to the IRS by the Social Security Administration on Form 1099-SSA), receipt of Social Security Retirement benefits (also reported on Form 1099-SSA) and homeownership (based on receipt of a 1098 Mortgage Interest statement that is reported by lenders to the IRS for payments received from taxpayers). Intuitively, loss of EITC benefits following the EITC correspondence audits may cause individuals to take up other benefits and decrease homeownership. These results are presented in Appendix Figures 16 E through J. The results are statistically imprecise, but they indicate that the EITC correspondence audits may cause small increases in the likelihood of claiming SSDI benefits and small decreases in the likelihood of homeownership, particularly for Wage Earners.

Overall, the results based on these additional outcomes are small and statistically imprecise, but they are consistent with the impacts of the EITC correspondence audits on the other main outcomes described above.

V. Conclusions

This project examines how tax enforcement can affect taxpayer behavior and uses these results to gain insights into the impacts of tax policies on taxpayers. More specifically, we have examined how EITC correspondence audits affect taxpayer behaviors, including changes in claiming EITC, filing taxes and earning wages. We find significant reductions in EITC claiming and tax filing following an EITC correspondence audit. The reductions are largest one year after the audit and,

while they fade out somewhat in subsequent years, much of the effects persist up through six years after the audit. The results also highlight significant wage earnings responses for both the Self-Employed and Wage Earners. Following the disallowance of EITC benefits due to an EITC correspondence audit, taxpayers with self-employment income on their audited returns appear more likely to have wage earnings in the next year, perhaps to offset the loss of EITC as a financial resource. Wage earners appear to be less likely to have wage earnings after losing EITC benefits, which is consistent with prior studies highlighting the positive effects of the EITC on labor force participation.

Overall, the results indicate significant, persistent effects of tax enforcement on real economic activity of taxpayers. While we have focused on labor supply (wage earnings) responses to the EITC correspondence audits, given the prior research on the impacts of EITC benefits in other contexts, it is possible that EITC correspondence audits may also lead to impacts on other outcomes such as health or educational attainment.

References

Advani, A., Elming, W., & Shaw, J. (2017). The dynamic effects of tax audits (No. W17/24). Institute for Fiscal Studies.

Bastian, J., & Michelmore, K. (2018). The Long-Term Impact of the Earned Income Tax Credit on Children's Education and Employment Outcomes. Journal of Labor Economics, forthcoming.

Blumenthal, M., Erard, B., & Ho, C. C. (2005). Participation and compliance with the earned income tax credit. National Tax Journal, 189-213.

Boning, W. C., Guyton, J., Hodge, R. H., Slemrod, J., & Troiano, U. (2018). *Heard it Through the Grapevine: Direct and Network Effects of a Tax Enforcement Field Experiment* (No. w24305). National Bureau of Economic Research.

Chetty, R., Friedman, J. N., & Rockoff, J. E. (2011). New evidence on the long-term impacts of tax credits. IRS Statistics of Income White Paper.

Chetty, R., Friedman, J. N., & Saez, E. (2013). Using Differences in Knowledge across Neighborhoods to Uncover the Impacts of the EITC on Earnings. American Economic Review, 103(7), 2683-2721.

Chetty, R., Guren, A., Manoli, D., & Weber, A. (2011). Are micro and macro labor supply elasticities consistent? A review of evidence on the intensive and extensive margins. American Economic Review, 101(3), 471-75.

Dahl, G. B., & Lochner, L. (2012). The impact of family income on child achievement: Evidence from the earned income tax credit. American Economic Review, 102(5), 1927-56.

Dahl, Gordon B., and Lance Lochner. 2017. "The Impact of Family Income on Child Achievement: Evidence from the Earned Income Tax Credit: Reply." *American Economic Review*, 107(2): 629-31.

DeBacker, J., Heim, B. T., Tran, A., & Yuskavage, A. (2017). The Effects of IRS Audits on EITC Claimants, working paper.

Eissa, N., & Liebman, J. B. (1996). Labor supply response to the earned income tax credit. The Quarterly Journal of Economics, 111(2), 605-637.

Evans, W. N., & Garthwaite, C. L. (2014). Giving mom a break: The impact of higher EITC payments on maternal health. American Economic Journal: Economic Policy, 6(2), 258-90.

Government Accountability Office, (2014). "IRS Correspondence Audits: Better Management Could Improve Tax Compliance and Reduce Taxpayer Burden." Report to the Committee on Finance, U.S. Senate. GAO-14-479.

Holtzblatt, J. (1991). Administering Refundable Tax Credits: Lessons from the EITC Experience. In Proceedings of the Annual Conference on Taxation Held under the Auspices of the National Tax Association-Tax Institute of America (Vol. 84, pp. 180-186). National Tax Association.

Hoynes, H., Miller, D., & Simon, D. (2015). Income, the earned income tax credit, and infant health. American Economic Journal: Economic Policy, 7(1), 172-211.

Hoynes, Hilary W., and Ankur Patel. (2017) "Effective Policy for Reducing Poverty and Inequality? The Earned Income Tax Credit and the Distribution of Income." *Journal of Human Resources* forthcoming.

Kleven, H., Knudsen, M., Kreiner, C., Pedersen, S., & Saez, E. (2011). Unwilling or Unable to Cheat? Evidence from a Tax Audit Experiment in Denmark. *Econometrica*, 79(3), 651-692.

Leibel, K. (2014). "Tax Compliance and Sources of Error for the Earned Income Tax Credit Claimed on 2006-2008 Returns." Internal Revenue Service, Technical Paper.

Lundstrom, Samuel. 2017. "The Impact of Family Income on Child Achievement: Evidence from the Earned Income Tax Credit: Comment." *American Economic Review*, 107(2): 623-28.

Manoli, D., & Turner, N. (2016). Do Notices Have Permanent Effects on Benefit Take-up. Tax L. Rev., 70, 439.

Manoli, D., & Turner, N. (2018). Cash-on-Hand & College Enrollment: Evidence from Population Tax Data and the Earned Income Tax Credit. American Economic Journal: Economic Policy, forthcoming.

Maxfield, M. (2013). The effects of the Earned Income Tax Credit on child achievement and long-term educational attainment. Michigan State University Job Market Paper. November.

McCubbin, J. (2000). EITC noncompliance: The determinants of the misreporting of children. National Tax Journal, 1135-1164.

Meyer, B. D. (2010). The Effects of the Earned Income Tax Credit and Recent Reforms. *Tax policy and the economy*, *24*(1), 153-180.

Meyer, B. D., & Rosenbaum, D. T. (2001). Welfare, the earned income tax credit, and the labor supply of single mothers. The quarterly journal of economics, 116(3), 1063-1114.

Mortenson, J., & Whitten, A. (2017). "Bunching to Maximize Tax Credits: Evidence from Kinks in the US Tax Schedule." American Economic Journal: Economic Policy, forthcoming.

National Taxpayer Advocate (2007). "2007 Annual Report to Congress" Volume 2.

Saez, E. (2010). Do taxpayers bunch at kink points?. American Economic Journal: Economic Policy, 2(3), 180-212.

Schneller, J. P., Chilton, A. S., & Boehm, J. L. (2011). The Earned Income Tax Credit, Low-Income Workers, and the Legal Aid Community. Colum. J. Tax L., 3, 176.

Slemrod, J. (2016). "Tax compliance and enforcement: New research and its policy implications." University of Michigan,Ross School of Business working paper 1302.

Slemrod, J., Blumenthal, M., & Christian, C. (2001). Taxpayer response to an increased probability of audit: evidence from a controlled experiment in Minnesota. Journal of public economics, 79(3), 455-483.

Strully, K. W., Rehkopf, D. H., & Xuan, Z. (2010). Effects of prenatal poverty on infant health: state earned income tax credits and birth weight. American Sociological Review, 75(4), 534-562.

Table 1: IRS Audit Frequencies & Outcomes

Year	EITC Correspondence Audits		EITC Field Audits	
	Returns Examined	Percentage of Returns Examined with No Change	Returns Examined	Percentage of Returns Examined with No Change
2010	551,836	0.083	33,366	0.100
2011	536,174	0.105	38,198	0.101
2012	513,156	0.083	45,375	0.086
2013	492,251	0.091	46,311	0.076
2014	437,430	0.102	43,559	0.066
2015	439,862	0.092	38,170	0.101
2016	391,490	0.072	36,717	0.094

Notes: Statistics are taken from the IRS Databook for the corresponding years. The table reports data from Table 9a: Examination Coverage. The statistics reported in the table are based on total business and nonbusiness returns with Earned Income Credit benefits. Statistics are based on returns examined by fiscal year.

Table 2: Summary Statistics, Self-Employed

	Audited N = 114,109		Scored but Not Audited N = 110,601		1% Random Sample of EITC Returns N =164,644	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age	35.511	13.023	34.899	12.947	41.125	11.695
Fraction Male	0.643	0.479	0.646	0.478	0.583	0.493
Fraction with Filing Status = HOH	0.769	0.421	0.772	0.420	0.358	0.479
Fraction with Filing Status = MFJ	0.006	0.075	0.010	0.098	0.368	0.482
Fraction with Filing Status = SIN	0.225	0.418	0.218	0.413	0.273	0.446
Fraction with Filing Status = OTH	0.000	0.009	0.000	0.013	0.001	0.030
Fraction Filing with Paid Preparer	0.598	0.490	0.619	0.486	0.716	0.451
Fraction Filing with Software	0.991	0.095	0.950	0.218	0.931	0.253
Fraction Filing with VITA or IRS Centers	0.003	0.055	0.002	0.049	0.013	0.112
Fraction Self Prepared	0.008	0.090	0.033	0.178	0.033	0.178
Fraction with 1 Qualifying Child	0.719	0.449	0.808	0.394	0.303	0.460
Fraction with 2 Qualifying Children	0.228	0.419	0.158	0.365	0.269	0.444
Fraction with 3+ Qualifying Children	0.052	0.221	0.024	0.152	0.137	0.344
Fraction with Wage Income	0.479	0.500	0.436	0.496	0.513	0.500
Only Wages on Form 1040	-	-	-	-	-	-
Only Wages on Form 1040 & Consistent W2 Wages	-	-	-	-	-	-
Wages on F1040	4,956.72	9,434.17	4,651.66	9,668.02	8,527.58	14,976.52
Schedule C Income	7,875.25	7,796.90	8,311.13	8,249.63	7,822.58	14,943.53
Earned Income	12,280.61	4,151.98	12,262.30	4,761.12	15,794.54	11,565.92
Fraction on Phase-In	0.288	0.453	0.275	0.447	0.365	0.481
Fraction on Maximum Credit	0.600	0.490	0.560	0.496	0.313	0.464
Fraction on Phase-Out	0.111	0.315	0.165	0.371	0.322	0.467
AGI	12,679.68	7,534.18	12,775.77	10,988.99	15,361.67	34,285.98
Total Income	13,354.73	7,527.83	13,478.07	11,103.77	16,422.75	33,626.87
EITC	3,724.39	1,012.27	3,445.27	810.90	2,633.63	2,024.75
Balance Due (refund if negative)	-4,443.15	1,960.92	-4,233.05	1,896.90	-3,381.89	4,098.52

Notes: Dollar values are 98% winsorized to account for outliers and CPI adjusted to 2016 dollars. Statistics for audited returns are based on returns selected for EITC correspondence audits in tax years 2010 through 2012. Statistics for EITC returns are based on a 1% random sample of primary taxpayers on returns that claim the EITC in tax years 2010 through 2012, and the returns were not selected for risk scoring or audits.

Table 3: Summary Statistics, Wage Earners

	Audited N = 57,020		Scored but Not Audited N = 92,682		1% Random Sample of EITC Returns N =565,366	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age	36.821	13.749	36.367	13.601	37.572	11.855
Fraction Male	0.657	0.475	0.655	0.475	0.445	0.497
Fraction with Filing Status = HOH	0.790	0.407	0.799	0.401	0.489	0.500
Fraction with Filing Status = MFJ	0.007	0.085	0.010	0.100	0.223	0.416
Fraction with Filing Status = SIN	0.202	0.402	0.190	0.393	0.286	0.452
Fraction with Filing Status = OTH	0.000	0.017	0.000	0.019	0.001	0.033
Fraction Filing with Paid Preparer	0.512	0.500	0.552	0.497	0.587	0.492
Fraction Filing with Software	0.974	0.159	0.959	0.198	0.959	0.199
Fraction Filing with VITA or IRS Centers	0.012	0.107	0.013	0.115	0.033	0.180
Fraction Self Prepared	0.023	0.151	0.026	0.159	0.030	0.170
Fraction with 1 Qualifying Child	0.851	0.356	0.834	0.372	0.368	0.482
Fraction with 2 Qualifying Children	0.115	0.319	0.115	0.319	0.261	0.439
Fraction with 3+ Qualifying Children	0.033	0.178	0.028	0.166	0.119	0.324
Fraction with Wage Income	-	-	-	-	-	-
Only Wages on Form 1040	0.839	0.368	0.820	0.384	0.652	0.476
Only Wages on Form 1040 & Consistent W2 Wages	0.539	0.498	0.604	0.489	0.540	0.498
Wages on F1040	15,728.86	6,789.82	16,942.11	8,517.58	18,808.29	11,996.58
Schedule C Income	-	-	-	-	-	-
Earned Income	15,712.37	6,795.91	16,633.85	8,269.42	18,634.67	11,931.54
Fraction on Phase-In	0.163	0.369	0.170	0.376	0.338	0.473
Fraction on Maximum Credit	0.510	0.500	0.408	0.491	0.175	0.380
Fraction on Phase-Out	0.328	0.469	0.422	0.494	0.487	0.500
AGI	16,302.49	6,925.87	17,662.26	8,603.34	19,624.93	18,165.72
Total Income	16,354.03	6,929.78	17,724.46	8,634.46	19,746.75	18,163.05
EITC	3,099.17	772.48	2,810.11	803.08	2,223.70	1,774.75
Balance Due (refund if negative)	-5,251.55	1,699.84	-5,227.87	1,720.71	-4,654.47	3,061.91

Notes: Dollar values are 98% winsorized to account for outliers and CPI adjusted to 2016 dollars. Statistics for audited returns are based on returns selected for EITC correspondence audits in tax years 2010 through 2012. Statistics for EITC returns are based on a 1% random sample of primary taxpayers on returns that claim the EITC in tax years 2010 through 2012, and the returns were not selected for risk scoring or audits.

Table 4: Outcomes Before and After EITC Correspondence Audit
Self-Employed (Taxpayers with self-employment income at time of audit)

	Event Time (Years Since EITC Correspondence Audit)																	
	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
Panel A. Full Sample																		
Claiming EITC, Scored but Not Audited	0.017	0.036	0.053	0.069	0.088	0.110	0.139	0.181	0.231	0.326	0.453	1.000	0.772	0.638	0.598	0.572	0.567	0.558
	(0.007)	(0.006)	(0.005)	(0.005)	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.003)	(0.000)	(0.003)	(0.003)	(0.004)	(0.004)	(0.005)	(0.006)
Claiming EITC, Audited	0.031	0.037	0.046	0.061	0.077	0.099	0.126	0.167	0.216	0.293	0.417	1.000	0.460	0.467	0.486	0.495	0.497	0.503
	(0.006)	(0.006)	(0.005)	(0.005)	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.003)	(0.000)	(0.003)	(0.003)	(0.004)	(0.005)	(0.005)	(0.006)
Filing, Scored but Not Audited	0.319	0.324	0.325	0.329	0.336	0.348	0.369	0.394	0.425	0.494	0.584	1.000	0.772	0.677	0.656	0.637	0.636	0.623
	(0.009)	(0.008)	(0.007)	(0.006)	(0.005)	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)	(0.003)	(0.000)	(0.003)	(0.004)	(0.004)	(0.005)	(0.006)	(0.007)
Filing, Audited	0.302	0.314	0.313	0.318	0.325	0.336	0.353	0.377	0.408	0.460	0.540	1.000	0.554	0.565	0.581	0.588	0.588	0.586
	(0.008)	(0.007)	(0.006)	(0.006)	(0.005)	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)	(0.003)	(0.000)	(0.003)	(0.004)	(0.005)	(0.005)	(0.006)	(0.007)
Balance Due (Refund), Scored but Not Audited	-356.42	-404.80	-412.89	-463.36	-495.18	-558.44	-656.30	-787.45	-930.79	-1323.07	-1813.70	-4207.70	-3276.09	-2756.80	-2628.89	-2512.56	-2538.64	-2498.19
	(49.87)	(50.13)	(39.54)	(32.95)	(27.73)	(23.02)	(19.74)	(17.70)	(17.84)	(18.38)	(20.48)	(18.60)	(24.63)	(24.16)	(27.61)	(33.12)	(38.49)	(47.04)
Balance Due (Refund), Audited	-376.09	-403.67	-412.13	-452.97	-499.88	-568.64	-636.24	-768.70	-908.12	-1192.84	-1648.17	-4380.57	-1792.42	-1911.64	-2049.93	-2131.68	-2217.54	-2263.39
	(41.80)	(38.68)	(34.75)	(30.24)	(26.41)	(26.04)	(19.31)	(17.46)	(16.15)	(15.91)	(16.35)	(19.86)	(23.12)	(24.31)	(27.70)	(31.08)	(35.64)	(40.55)
Tax Liability, Scored but Not Audited	450.54	402.99	356.22	322.46	300.66	283.73	270.36	261.70	261.67	319.60	454.66	1179.58	772.11	630.99	597.87	574.68	568.93	553.98
	(24.91)	(19.31)	(16.47)	(14.00)	(11.68)	(9.79)	(8.02)	(6.76)	(5.90)	(5.84)	(6.38)	(6.96)	(8.08)	(9.07)	(10.75)	(12.54)	(15.32)	(17.61)
Tax Liability, Audited	326.07	348.81	312.18	283.13	257.19	231.07	214.85	195.32	191.68	222.42	309.85	1118.66	442.93	472.14	483.86	500.14	519.25	515.64
	(20.13)	(18.18)	(15.91)	(13.59)	(11.31)	(9.32)	(7.51)	(6.09)	(5.37)	(5.55)	(6.46)	(7.44)	(8.05)	(9.30)	(11.05)	(13.04)	(14.89)	(17.26)
Panel B. Men																		
Claiming EITC, Scored but Not Audited	-0.041	-0.027	-0.008	0.008	0.028	0.049	0.079	0.123	0.176	0.276	0.408	1.000	0.749	0.611	0.572	0.550	0.545	0.541
	(0.008)	(0.007)	(0.006)	(0.005)	(0.005)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.000)	(0.004)	(0.004)	(0.004)	(0.005)	(0.006)	(0.007)
Claiming EITC, Audited	-0.035	-0.024	-0.014	0.001	0.016	0.039	0.065	0.106	0.157	0.236	0.363	1.000	0.432	0.442	0.463	0.473	0.481	0.492
	(0.007)	(0.006)	(0.006)	(0.005)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.000)	(0.004)	(0.004)	(0.004)	(0.005)	(0.006)	(0.007)
Filing, Scored but Not Audited	0.298	0.297	0.294	0.296	0.302	0.312	0.330	0.356	0.387	0.461	0.553	1.000	0.750	0.650	0.633	0.620	0.622	0.613
	(0.011)	(0.009)	(0.008)	(0.007)	(0.006)	(0.005)	(0.004)	(0.003)	(0.003)	(0.003)	(0.004)	(0.000)	(0.004)	(0.005)	(0.005)	(0.006)	(0.008)	(0.009)
Filing, Audited	0.267	0.289	0.281	0.284	0.289	0.298	0.312	0.334	0.366	0.421	0.502	1.000	0.526	0.541	0.559	0.570	0.579	0.582
	(0.009)	(0.009)	(0.008)	(0.007)	(0.006)	(0.005)	(0.004)	(0.003)	(0.003)	(0.003)	(0.004)	(0.000)	(0.004)	(0.005)	(0.006)	(0.007)	(0.007)	(0.009)
Balance Due (Refund), Scored but Not Audited	-197.78	-231.17	-223.12	-279.33	-301.11	-361.80	-451.85	-587.24	-726.56	-1140.48	-1646.02	-4237.45	-3237.79	-2684.13	-2563.03	-2430.33	-2478.64	-2461.79
	(63.77)	(69.49)	(51.29)	(43.84)	(37.96)	(31.50)	(26.14)	(23.38)	(24.12)	(24.48)	(26.96)	(23.78)	(32.96)	(31.73)	(36.05)	(43.56)	(47.78)	(54.14)
Balance Due (Refund), Audited	-175.29	-224.63	-227.94	-268.44	-311.30	-384.56	-446.54	-585.82	-726.05	-1027.73	-1484.06	-4446.42	-1768.87	-1890.68	-2025.21	-2114.95	-2213.14	-2275.09
	(53.06)	(49.20)	(45.34)	(39.93)	(35.51)	(38.10)	(25.25)	(22.36)	(20.31)	(20.86)	(19.89)	(25.35)	(30.73)	(32.24)	(37.13)	(41.45)	(47.46)	(52.43)
Tax Liability, Scored but Not Audited	607.41	540.51	461.93	410.94	377.92	343.46	313.25	289.06	270.93	313.85	434.29	1134.15	734.74	594.68	576.22	561.98	559.73	552.07
	(36.12)	(28.17)	(23.72)	(20.26)	(17.07)	(13.97)	(11.31)	(9.13)	(8.19)	(8.12)	(8.77)	(9.53)	(11.01)	(12.31)	(14.72)	(17.54)	(21.17)	(24.28)
Tax Liability, Audited	443.94	486.52	414.57	370.99	325.78	282.70	250.40	212.73	190.84	199.89	260.55	1056.83	401.76	440.31	456.71	483.56	510.38	510.99
	(28.80)	(26.46)	(22.89)	(19.32)	(15.95)	(12.85)	(10.26)	(8.33)	(7.43)	(7.79)	(8.62)	(10.05)	(11.08)	(12.52)	(14.87)	(17.61)	(20.24)	(23.65)
Panel C. Women																		
Claiming EITC, Scored but Not Audited	0.125	0.153	0.166	0.182	0.200	0.224	0.251	0.290	0.336	0.422	0.536	1.000	0.808	0.682	0.638	0.607	0.600	0.585
	(0.014)	(0.011)	(0.010)	(0.009)	(0.008)	(0.006)	(0.005)	(0.005)	(0.004)	(0.004)	(0.005)	(0.000)	(0.006)	(0.006)	(0.007)	(0.008)	(0.010)	(0.012)
Claiming EITC, Audited	0.144	0.144	0.154	0.169	0.186	0.206	0.235	0.276	0.322	0.398	0.514	1.000	0.503	0.504	0.517	0.526	0.520	0.517
	(0.012)	(0.011)	(0.010)	(0.008)	(0.007)	(0.006)	(0.005)	(0.004)	(0.004)	(0.004)	(0.005)	(0.000)	(0.006)	(0.006)	(0.007)	(0.009)	(0.010)	(0.012)
Filing, Scored but Not Audited	0.369	0.386	0.391	0.399	0.407	0.423	0.444	0.468	0.497	0.557	0.639	1.000	0.804	0.715	0.685	0.656	0.649	0.630
	(0.016)	(0.013)	(0.011)	(0.010)	(0.008)	(0.007)	(0.006)	(0.005)	(0.004)	(0.004)	(0.005)	(0.000)	(0.006)	(0.006)	(0.007)	(0.009)	(0.010)	(0.012)
Filing, Audited	0.369	0.370	0.379	0.386	0.397	0.410	0.430	0.458	0.485	0.532	0.607	1.000	0.593	0.598	0.606	0.606	0.592	0.583
	(0.014)	(0.013)	(0.011)	(0.010)	(0.008)	(0.007)	(0.005)	(0.004)	(0.004)	(0.004)	(0.005)	(0.000)	(0.006)	(0.007)	(0.008)	(0.009)	(0.011)	(0.012)
Balance Due (Refund), Scored but Not Audited	-695.11	-762.68	-800.40	-833.80	-880.65	-947.95	-1050.79	-1170.20	-1310.23	-1664.31	-2110.94	-4143.73	-3314.62	-2852.86	-2706.78	-2621.59	-2611.02	-2545.69
	(68.32)	(58.03)	(52.14)	(45.81)	(39.25)	(33.52)	(29.58)	(27.12)	(24.66)	(27.22)	(25.74)	(26.66)	(32.36)	(35.99)	(41.10)	(47.41)	(62.45)	(88.13)
Balance Due (Refund), Audited	-751.78	-763.03	-776.06	-816.98	-868.12	-927.91	-998.95	-1113.59	-1245.17	-1489.51	-1933.60	-4257.80	-1794.44	-1903.17	-2049.31	-2117.34	-2190.41	-2233.33
	(61.33)	(56.95)	(50.69)	(44.65)	(38.59)	(32.91)	(28.73)	(25.06)	(23.12)	(22.40)	(25.98)	(29.51)	(32.39)	(35.94)	(41.38)	(48.45)	(55.78)	(66.03)
Tax Liability, Scored but Not Audited	183.05	185.30	185.39	179.26	170.61	180.66	190.64	203.98	233.57	319.79	484.52	1257.45	834.28	688.81	628.86	585.71	568.13	536.23
	(30.35)	(25.04)	(22.05)	(19.32)	(16.51)	(14.11)	(11.57)	(9.75)	(8.79)	(9.01)	(9.78)	(9.93)	(11.85)	(12.76)	(15.37)	(18.07)	(21.73)	(25.44)
Tax Liability, Audited	149.00	155.36	158.68	151.06	153.04	151.60	155.91	163.54	187.65	255.21	394.59	1227.39	513.39	524.25	526.59	519.25	519.38	506.58
	(24.95)	(23.62)	(21.09)	(18.22)	(15.76)	(13.17)	(10.95)	(9.18)	(8.33)	(8.67)	(9.76)	(10.78)	(11.77)	(13.07)	(15.37)	(18.33)	(21.53)	(25.42)

Notes: Estimates are based on regression coefficients from regressing the variable specified in the row heading on event time dummies, an indicator for being an audited individual, interactions between the event time dummies and audited indicator, and de-meaned covariates. The covariates include dummies for tax year, age, state of residence at the time of audit, and gender.

Table 5: Outcomes Before and After EITC Correspondence Audit
Wage Earners (Taxpayers with no self-employment income at time of audit)

	Event Time (Years Since EITC Correspondence Audit)																	
	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
Panel A. Full Sample																		
Claiming EITC, Scored but Not Audited	0.109	0.128	0.140	0.157	0.179	0.208	0.236	0.275	0.324	0.414	0.541	1.000	0.777	0.634	0.553	0.498	0.458	0.431
	(0.014)	(0.012)	(0.010)	(0.009)	(0.008)	(0.006)	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)	(0.000)	(0.006)	(0.007)	(0.009)	(0.010)	(0.012)	(0.015)
Claiming EITC, Audited	0.106	0.104	0.113	0.130	0.153	0.178	0.200	0.235	0.281	0.366	0.498	1.000	0.478	0.417	0.389	0.369	0.352	0.346
	(0.013)	(0.012)	(0.010)	(0.009)	(0.008)	(0.006)	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)	(0.000)	(0.006)	(0.007)	(0.008)	(0.010)	(0.011)	(0.013)
Filing, Scored but Not Audited	0.227	0.266	0.295	0.330	0.371	0.419	0.473	0.531	0.601	0.697	0.824	1.000	0.938	0.882	0.858	0.847	0.845	0.853
	(0.015)	(0.013)	(0.011)	(0.009)	(0.007)	(0.006)	(0.005)	(0.004)	(0.004)	(0.004)	(0.005)	(0.000)	(0.006)	(0.007)	(0.008)	(0.010)	(0.012)	(0.015)
Filing, Audited	0.224	0.238	0.264	0.295	0.333	0.374	0.424	0.482	0.544	0.636	0.761	1.000	0.778	0.747	0.740	0.740	0.739	0.751
	(0.014)	(0.012)	(0.011)	(0.009)	(0.008)	(0.006)	(0.005)	(0.004)	(0.004)	(0.004)	(0.005)	(0.000)	(0.006)	(0.007)	(0.008)	(0.010)	(0.012)	(0.014)
Balance Due (Refund), Scored but Not Audited	-30.73	-155.51	-228.66	-317.71	-454.96	-621.30	-819.71	-1082.01	-1397.47	-1956.79	-2607.22	-5581.02	-4044.91	-3461.94	-3198.40	-2982.75	-2863.18	-2857.38
	(84.52)	(77.85)	(67.49)	(56.65)	(50.04)	(43.54)	(38.58)	(35.58)	(34.99)	(30.98)	(38.78)	(39.50)	(44.38)	(48.70)	(59.93)	(77.30)	(91.59)	(110.96)
Balance Due (Refund), Audited	-8.48	-36.47	-104.91	-178.23	-305.84	-453.64	-627.59	-837.05	-1129.57	-1611.94	-2291.66	-5522.75	-2390.08	-2200.21	-2217.75	-2198.14	-2228.34	-2277.35
	(82.05)	(75.80)	(67.91)	(59.13)	(50.32)	(43.39)	(38.91)	(35.00)	(29.80)	(29.72)	(36.81)	(40.50)	(43.95)	(49.27)	(58.65)	(77.16)	(88.19)	(97.77)
Tax Liability, Scored but Not Audited	64.17	121.01	145.99	162.71	186.84	220.10	265.37	315.02	360.99	380.95	379.52	134.17	397.36	554.23	694.99	828.57	956.76	1097.80
	(40.67)	(33.87)	(28.93)	(24.78)	(20.43)	(16.79)	(13.38)	(10.74)	(9.34)	(9.55)	(11.59)	(13.51)	(15.25)	(18.51)	(22.65)	(27.33)	(32.56)	(41.44)
Tax Liability, Audited	43.04	100.02	135.83	151.91	176.30	203.44	243.50	289.20	336.76	358.45	360.04	105.40	514.28	631.96	740.11	842.93	943.25	1016.65
	(36.90)	(33.62)	(28.80)	(24.59)	(20.22)	(16.43)	(13.12)	(10.56)	(9.54)	(10.33)	(12.46)	(13.38)	(15.87)	(19.00)	(22.99)	(27.57)	(32.46)	(41.52)
Panel B. Men																		
Claiming EITC, Scored but Not Audited	-0.016	-0.002	0.017	0.039	0.066	0.099	0.136	0.183	0.245	0.353	0.495	1.000	0.778	0.637	0.558	0.508	0.469	0.448
	(0.015)	(0.013)	(0.011)	(0.010)	(0.008)	(0.007)	(0.006)	(0.005)	(0.005)	(0.005)	(0.006)	(0.000)	(0.007)	(0.008)	(0.009)	(0.011)	(0.013)	(0.015)
Claiming EITC, Audited	-0.022	-0.017	-0.003	0.016	0.042	0.075	0.104	0.148	0.206	0.308	0.457	1.000	0.466	0.415	0.393	0.380	0.369	0.364
	(0.013)	(0.012)	(0.011)	(0.010)	(0.008)	(0.007)	(0.006)	(0.005)	(0.005)	(0.005)	(0.006)	(0.000)	(0.007)	(0.008)	(0.009)	(0.011)	(0.012)	(0.014)
Filing, Scored but Not Audited	0.142	0.176	0.207	0.241	0.286	0.337	0.396	0.464	0.545	0.660	0.807	1.000	0.945	0.895	0.885	0.887	0.899	0.917
	(0.020)	(0.017)	(0.014)	(0.012)	(0.010)	(0.008)	(0.006)	(0.005)	(0.005)	(0.005)	(0.006)	(0.000)	(0.007)	(0.009)	(0.011)	(0.013)	(0.015)	(0.018)
Filing, Audited	0.126	0.150	0.176	0.206	0.244	0.291	0.346	0.413	0.486	0.597	0.741	1.000	0.772	0.752	0.760	0.774	0.789	0.798
	(0.018)	(0.016)	(0.014)	(0.012)	(0.010)	(0.008)	(0.006)	(0.005)	(0.005)	(0.005)	(0.006)	(0.000)	(0.008)	(0.009)	(0.011)	(0.013)	(0.015)	(0.018)
Balance Due (Refund), Scored but Not Audited	157.34	96.37	8.10	-65.84	-190.90	-352.44	-534.88	-801.14	-1120.76	-1721.93	-2387.58	-5605.73	-3935.29	-3325.81	-3058.21	-2835.64	-2686.04	-2698.48
	(99.26)	(94.06)	(83.44)	(69.29)	(60.09)	(52.79)	(48.31)	(44.49)	(44.56)	(36.24)	(46.99)	(46.57)	(53.23)	(57.72)	(77.44)	(91.20)	(123.02)	(145.45)
Balance Due (Refund), Audited	240.02	189.32	131.88	58.37	-38.44	-185.35	-354.08	-572.06	-874.36	-1408.07	-2103.90	-5520.10	-2248.60	-2049.06	-2056.64	-2034.04	-2065.47	-2105.64
	(97.60)	(91.20)	(81.12)	(67.45)	(59.79)	(54.16)	(48.64)	(43.70)	(37.66)	(36.26)	(41.37)	(47.62)	(52.27)	(58.25)	(69.95)	(96.86)	(120.31)	(134.16)
Tax Liability, Scored but Not Audited	244.47	309.73	306.88	297.99	309.85	328.53	353.02	387.84	417.00	423.74	407.94	106.58	392.28	547.55	691.73	826.60	964.72	1108.58
	(58.90)	(48.45)	(41.83)	(35.75)	(30.26)	(25.49)	(20.43)	(15.89)	(13.19)	(12.75)	(15.77)	(19.40)	(21.17)	(25.28)	(30.62)	(36.77)	(45.21)	(53.43)
Tax Liability, Audited	222.59	277.73	289.41	280.03	291.58	300.36	328.41	357.96	386.78	395.13	385.84	82.82	516.58	631.54	742.34	837.89	946.22	976.03
	(51.45)	(46.88)	(40.95)	(35.13)	(29.67)	(24.37)	(19.03)	(14.61)	(12.82)	(13.74)	(17.27)	(19.46)	(22.66)	(26.74)	(32.38)	(38.80)	(45.01)	(54.70)
Panel C. Women																		
Claiming EITC, Scored but Not Audited	0.259	0.287	0.295	0.316	0.336	0.366	0.389	0.424	0.463	0.539	0.659	1.000	0.799	0.651	0.567	0.502	0.458	0.420
	(0.029)	(0.026)	(0.023)	(0.019)	(0.016)	(0.013)	(0.010)	(0.008)	(0.009)	(0.010)	(0.012)	(0.000)	(0.014)	(0.016)	(0.019)	(0.022)	(0.025)	(0.033)
Claiming EITC, Audited	0.264	0.253	0.263	0.284	0.311	0.331	0.355	0.383	0.426	0.499	0.623	1.000	0.526	0.440	0.402	0.369	0.342	0.325
	(0.028)	(0.026)	(0.023)	(0.019)	(0.016)	(0.013)	(0.010)	(0.009)	(0.009)	(0.010)	(0.012)	(0.000)	(0.014)	(0.015)	(0.018)	(0.021)	(0.024)	(0.030)
Filing, Scored but Not Audited	0.352	0.395	0.424	0.462	0.501	0.548	0.595	0.641	0.697	0.767	0.867	1.000	0.930	0.859	0.815	0.784	0.759	0.741
	(0.028)	(0.024)	(0.021)	(0.017)	(0.014)	(0.011)	(0.009)	(0.008)	(0.008)	(0.009)	(0.010)	(0.000)	(0.012)	(0.014)	(0.017)	(0.020)	(0.024)	(0.032)
Filing, Audited	0.363	0.363	0.394	0.431	0.476	0.510	0.553	0.603	0.652	0.718	0.815	1.000	0.797	0.744	0.714	0.691	0.660	0.687
	(0.026)	(0.024)	(0.021)	(0.018)	(0.014)	(0.011)	(0.009)	(0.008)	(0.008)	(0.009)	(0.010)	(0.000)	(0.012)	(0.014)	(0.016)	(0.020)	(0.023)	(0.029)
Balance Due (Refund), Scored but Not Audited	-220.79	-414.35	-468.72	-595.35	-757.46	-953.89	-1199.77	-1485.84	-1818.92	-2358.72	-3149.80	-5765.85	-4413.14	-3849.96	-3569.05	-3354.56	-3264.30	-3223.34
	(144.26)	(130.76)	(116.34)	(100.46)	(83.98)	(70.36)	(58.12)	(53.88)	(52.38)	(59.05)	(65.03)	(66.28)	(76.16)	(87.18)	(105.32)	(128.33)	(142.31)	(184.73)
Balance Due (Refund), Audited	-271.96	-257.21	-356.64	-434.56	-634.46	-803.79	-1013.68	-1241.50	-1567.28	-2031.94	-2828.80	-5723.40	-2810.50	-2595.82	-2621.86	-2586.64	-2597.39	-2684.28
	(138.52)	(131.65)	(118.50)	(112.77)	(86.57)	(72.68)	(60.28)	(52.76)	(52.51)	(56.88)	(65.19)	(68.38)	(74.16)	(85.73)	(104.02)	(122.84)	(138.50)	(170.04)
Tax Liability, Scored but Not Audited	-93.77	-73.08	-25.38	9.25	35.59	79.30	138.25	194.70	244.87	269.64	278.46	131.46	367.90	523.88	647.81	760.08	848.78	953.10
	(57.30)	(47.37)	(40.26)	(35.19)	(28.76)	(23.07)	(19.15)	(16.25)	(15.82)	(17.40)	(19.30)	(20.72)	(22.49)	(26.79)	(32.57)	(40.12)	(48.86)	(69.84)
Tax Liability, Audited	-145.57	-83.79	-36.15	2.31	29.70	70.87	110.74	161.81	221.23	247.48	256.69	101.17	471.30	590.74	680.32	777.52	840.26	1019.80
	(50.88)	(46.99)	(40.76)	(34.90)	(28.66)	(23.62)	(19.55)	(16.09)	(15.76)	(17.19)	(19.57)	(20.93)	(23.19)	(27.11)	(32.71)	(40.38)	(47.26)	(69.28)

Notes: Estimates are based on regression coefficients from regressing the variable specified in the row heading on event time dummies, an indicator for being an audited individual, interactions between the event time dummies and audited indicator, and de-meaned covariates. The covariates include dummies for tax year, age, state of residence at the time of audit, and gender.

Table 6: Changes in Wage Earnings Densities
Difference-in-Difference Estimates

	Wage Bin										
	0	5000	10000	15000	20000	25000	30000	35000	40000	45000	50000
A. Self-Employed, Estimates Based on 1 Year After Random Assignment											
Full Sample	-0.015	0.008	0.004	0.004	0.001	0.000	-0.001	-0.001	0.000	0.000	0.000
	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)
Men	-0.016	0.009	0.004	0.006	0.002	0.000	-0.003	-0.001	-0.001	-0.001	0.000
	(0.003)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Women	-0.012	0.007	0.003	0.001	0.000	0.000	0.001	0.000	0.002	0.000	0.000
	(0.005)	(0.004)	(0.003)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
B. Self-Employed, Estimates Based on 4 Years After Random Assignment											
Full Sample	-0.004	0.001	0.001	0.001	0.002	0.000	0.000	-0.001	0.000	0.000	0.000
	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Men	-0.007	0.000	0.002	0.002	0.003	0.002	-0.001	-0.002	-0.001	0.000	0.000
	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Women	0.001	0.001	-0.001	-0.001	-0.001	-0.003	0.002	0.000	0.002	0.000	-0.002
	(0.005)	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
C. Wage Earners, Estimates Based on 1 Year After Random Assignment											
Full Sample	0.021	0.000	-0.007	-0.002	-0.002	-0.002	0.000	-0.003	-0.001	-0.001	0.000
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)
Men	0.026	-0.002	-0.002	0.000	-0.005	-0.010	0.000	-0.001	-0.002	-0.001	0.000
	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)
Women	0.016	0.000	-0.016	-0.002	0.005	0.005	0.002	-0.006	0.000	-0.002	0.000
	(0.006)	(0.005)	(0.005)	(0.005)	(0.005)	(0.004)	(0.004)	(0.003)	(0.002)	(0.001)	(0.001)
D. Wage Earners, Long-term Estimates Based on 4 Years After Random Assignment											
Full Sample	0.008	0.004	-0.001	-0.003	0.004	-0.003	0.000	0.001	-0.003	-0.003	-0.001
	(0.004)	(0.003)	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)
Men	0.016	0.002	0.001	-0.003	0.004	-0.007	-0.003	0.001	-0.003	-0.003	-0.001
	(0.005)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.001)
Women	-0.002	0.007	-0.004	-0.003	0.004	0.001	0.006	0.000	-0.003	-0.003	-0.001
	(0.007)	(0.005)	(0.005)	(0.005)	(0.005)	(0.004)	(0.004)	(0.003)	(0.002)	(0.002)	(0.001)

Notes: Difference-in-difference estimates are computed via the following steps. First, an indicator for having wages in a given wage interval is regressed on event time dummies, an indicator for being an audited individual, interactions between the event time dummies and audited indicator, and de-meaned covariates. The covariates include dummies for tax year, age, state of residence at the time of audit, and gender. Wage intervals for the wage indicators are based on +/-$2500 around 0, $5,000, $10,000…. Next, using the estimated regression coefficients for a given wage interval, the difference-in-difference estimate for that wage interval is calculated by calculating (a) the difference between the coefficients at event times before and after audit selection for the audited group, (b) the difference between the coefficients at event times before and after audit selection for the scored but not audited group, and finally the difference between these differences (a-b). For the estimates shown in this table, the estimated coefficients for event time -4 are used for the “before audit” coefficients and the estimted coefficients for event time +1 and +4 are used for the "after audit" coefficients.

Table 7: Participation Effects and Elasticity Estimates

	1 Year After Random Assignment		4 Years After Random Assignment	
	Participation Effect per $1,000	Elasticity	Participation Effect per $1,000	Elasticity
Self-Employed, Full Sample	-0.0102	-0.0230	-0.0122	-0.0275
	(0.002)	(0.004)	(0.008)	(0.017)
Self-Employed, Men	-0.0111	-0.0200	-0.0208	-0.0374
	(0.002)	(0.004)	(0.012)	(0.020)
Self-Employed, Women	-0.0082	-0.0247	0.0028	0.0085
	(0.003)	(0.009)	(0.011)	(0.031)
Wage Earners, Full Sample	0.0152	0.0290	0.0148	0.0283
	(0.002)	(0.005)	(0.007)	(0.013)
Wage Earners, Men	0.0176	0.0267	0.0281	0.0428
	(0.003)	(0.005)	(0.008)	(0.012)
Wage Earners, Women	0.0121	0.0282	-0.0033	-0.0076
	(0.005)	(0.010)	(0.014)	(0.031)

Notes: Participation effects reflect percentage point increases in labor force participation (i.e. the likelihood of having positive W-2 earnings) per $1000. Elasticity estimates are based on participation (extensive margin) elasticities.

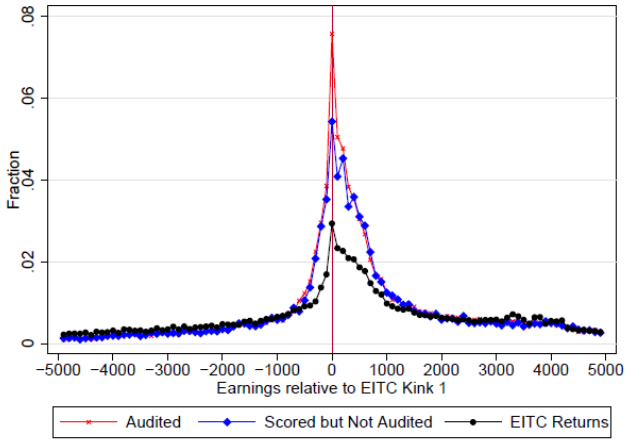
Table 8: Outcomes Before and After EITC Correspondence Audit

	Event Time (Years Since EITC Correspondence Audit)																	
	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
Panel A. Self-Employed (Taxpayers with Self-Employment Income on Audited Return)																		
Has 1099-MISC Income, Scored but Not Audited	0.091	0.092	0.093	0.092	0.093	0.096	0.098	0.102	0.108	0.118	0.136	0.184	0.152	0.133	0.119	0.112	0.107	0.099
	(0.006)	(0.006)	(0.005)	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.004)	(0.004)	(0.005)	(0.006)	(0.007)
Has 1099-MISC Income, Audited	0.085	0.089	0.086	0.086	0.088	0.088	0.091	0.096	0.103	0.115	0.136	0.200	0.148	0.127	0.115	0.107	0.103	0.096
	(0.006)	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.004)	(0.005)	(0.005)	(0.006)	(0.007)
1099-MISC Income Amount, Scored but Not Audited	1371.65	1489.44	1526.80	1541.89	1605.29	1658.17	1675.38	1700.82	1825.97	2021.68	2299.78	2900.42	2589.88	2350.47	2238.59	2264.66	2292.70	2087.85
	(318.08)	(277.11)	(249.09)	(226.89)	(200.22)	(172.06)	(141.38)	(115.54)	(97.69)	(91.96)	(92.89)	(103.23)	(136.88)	(169.38)	(207.43)	(248.55)	(298.36)	(341.55)
1099-MISC Income Amount, Audited	1108.91	1216.99	1164.90	1174.20	1123.12	1126.74	1119.72	1128.23	1197.39	1369.12	1564.01	2170.39	1810.37	1653.10	1614.34	1639.47	1704.13	1646.08
	(276.76)	(267.86)	(245.57)	(220.40)	(195.87)	(167.11)	(138.49)	(118.53)	(106.29)	(100.31)	(106.59)	(125.83)	(153.21)	(183.87)	(218.46)	(257.21)	(289.62)	(330.66)
Has SSDI Benefits, Scored but Not Audited	0.060	0.056	0.055	0.052	0.050	0.047	0.045	0.040	0.037	0.033	0.029	0.024	0.020	0.018	0.016	0.016	0.013	0.015
	(0.006)	(0.005)	(0.004)	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.003)	(0.003)	(0.004)	(0.005)	(0.006)
Has SSDI Benefits, Audited	0.057	0.053	0.052	0.050	0.048	0.045	0.041	0.037	0.033	0.029	0.024	0.019	0.015	0.013	0.011	0.009	0.008	0.007
	(0.005)	(0.005)	(0.004)	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.003)	(0.004)	(0.004)	(0.005)	(0.006)
Has Retirement Benefits, Scored but Not Audited	0.045	0.043	0.042	0.040	0.039	0.037	0.036	0.035	0.033	0.033	0.031	0.029	0.028	0.027	0.024	0.022	0.021	0.018
	(0.004)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)
Has Retirement Benefits, Audited	0.043	0.042	0.041	0.040	0.039	0.038	0.036	0.035	0.034	0.032	0.031	0.030	0.028	0.027	0.025	0.023	0.021	0.017
	(0.004)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
Has 1098 Mortgage Interest Statement, Scored but Not Audited	0.104	0.102	0.095	0.089	0.084	0.079	0.072	0.067	0.062	0.055	0.048	0.041	0.035	0.030	0.026	0.021	0.018	0.009
	(0.007)	(0.006)	(0.006)	(0.005)	(0.004)	(0.004)	(0.003)	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)	(0.003)	(0.003)	(0.004)	(0.005)	(0.006)	(0.006)
Has 1098 Mortgage Interest Statement, Audited	0.088	0.094	0.089	0.084	0.078	0.072	0.066	0.061	0.056	0.050	0.044	0.037	0.031	0.026	0.021	0.017	0.015	0.009
	(0.006)	(0.006)	(0.005)	(0.005)	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.004)	(0.004)	(0.005)	(0.006)	(0.006)
Panel B. Wage Earners (Taxpayers with No Self-Employment Income on Audited Return)																		
Has 1099-MISC Income, Scored but Not Audited	0.061	0.056	0.056	0.054	0.052	0.049	0.049	0.049	0.048	0.048	0.041	0.031	0.038	0.040	0.040	0.040	0.041	0.041
	(0.006)	(0.005)	(0.005)	(0.004)	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.004)	(0.004)	(0.005)	(0.006)	(0.007)
Has 1099-MISC Income, Audited	0.055	0.059	0.057	0.056	0.055	0.054	0.051	0.050	0.049	0.047	0.042	0.031	0.038	0.040	0.040	0.040	0.039	0.039
	(0.006)	(0.005)	(0.005)	(0.004)	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.004)	(0.004)	(0.005)	(0.006)	(0.007)
1099-MISC Income Amount, Scored but Not Audited	1149.62	1068.76	1054.02	972.63	889.02	844.85	857.96	842.17	805.28	760.87	638.06	527.06	599.36	623.93	653.47	653.87	653.00	730.78
	(345.46)	(306.86)	(270.90)	(238.07)	(201.54)	(166.93)	(138.16)	(117.98)	(94.37)	(90.97)	(103.66)	(128.85)	(162.58)	(202.69)	(248.28)	(296.22)	(354.12)	(428.44)
1099-MISC Income Amount, Audited	1055.57	1177.43	1081.90	1066.42	986.93	945.09	903.65	874.96	862.34	784.23	730.96	581.33	599.88	585.93	616.43	600.84	623.69	623.42
	(320.87)	(302.47)	(274.21)	(243.82)	(206.79)	(177.03)	(148.49)	(120.50)	(100.90)	(98.95)	(117.73)	(138.87)	(171.51)	(209.95)	(253.58)	(300.43)	(345.85)	(409.16)
Has SSDI Benefits, Scored but Not Audited	0.055	0.054	0.052	0.050	0.047	0.044	0.040	0.036	0.032	0.028	0.022	0.016	0.015	0.014	0.015	0.017	0.020	0.015
	(0.007)	(0.006)	(0.005)	(0.005)	(0.004)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.003)	(0.004)	(0.005)	(0.006)	(0.007)	(0.008)
Has SSDI Benefits, Audited	0.057	0.055	0.054	0.052	0.049	0.045	0.042	0.038	0.035	0.031	0.027	0.023	0.020	0.020	0.020	0.021	0.023	0.021
	(0.007)	(0.006)	(0.005)	(0.005)	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.004)	(0.005)	(0.006)	(0.007)	(0.008)
Has Retirement Benefits, Scored but Not Audited	0.053	0.049	0.048	0.046	0.043	0.041	0.039	0.038	0.037	0.037	0.035	0.034	0.031	0.029	0.027	0.026	0.025	0.022
	(0.005)	(0.005)	(0.004)	(0.004)	(0.003)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.004)	(0.005)	(0.006)
Has Retirement Benefits, Audited	0.050	0.048	0.048	0.046	0.044	0.041	0.039	0.039	0.037	0.037	0.036	0.035	0.032	0.030	0.028	0.026	0.023	0.020
	(0.005)	(0.005)	(0.004)	(0.004)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.004)	(0.005)	(0.005)
Has 1098 Mortgage Interest Statement, Scored but Not Audited	0.013	0.020	0.024	0.026	0.031	0.038	0.045	0.054	0.060	0.066	0.069	0.072	0.078	0.084	0.092	0.102	0.112	0.131
	(0.010)	(0.009)	(0.008)	(0.007)	(0.006)	(0.005)	(0.004)	(0.003)	(0.002)	(0.002)	(0.003)	(0.004)	(0.005)	(0.006)	(0.007)	(0.008)	(0.009)	(0.011)
Has 1098 Mortgage Interest Statement, Audited	0.015	0.021	0.022	0.026	0.030	0.035	0.042	0.051	0.057	0.063	0.067	0.069	0.073	0.079	0.085	0.093	0.103	0.107
	(0.010)	(0.009)	(0.008)	(0.007)	(0.006)	(0.005)	(0.004)	(0.003)	(0.002)	(0.003)	(0.003)	(0.004)	(0.005)	(0.006)	(0.007)	(0.008)	(0.009)	(0.011)

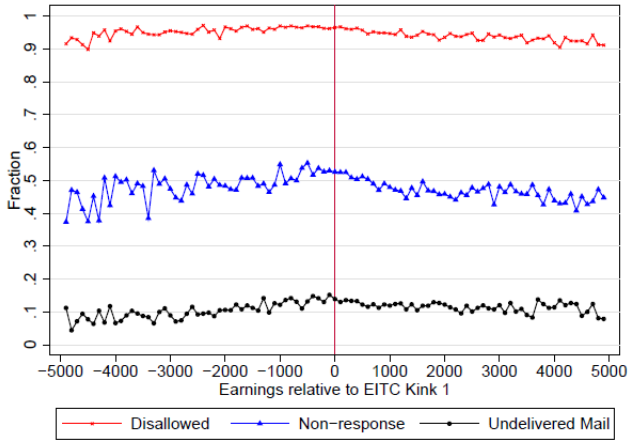
Notes: Estimates are based on regression coefficients from regressing the variable specified in the row heading on event time dummies, an indicator for being an audited individual, interactions between the event time dummies and audited indicator, and de-meaned covariates. The covariates include dummies for tax year, age, state of residence at the time of audit, and gender.

Figure 1.
Background on Audited and Scored but Not Audited Sample

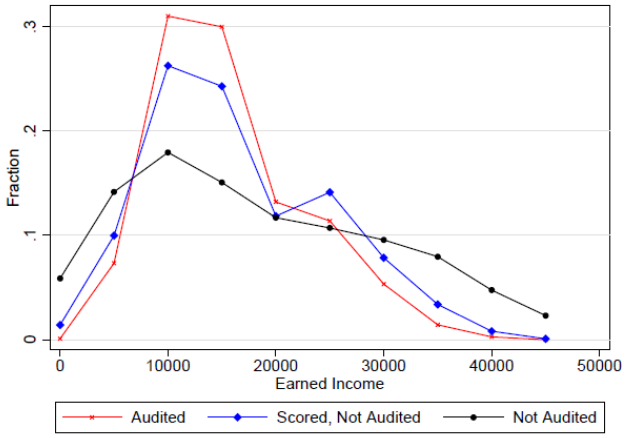
A. Density, Self-Employed



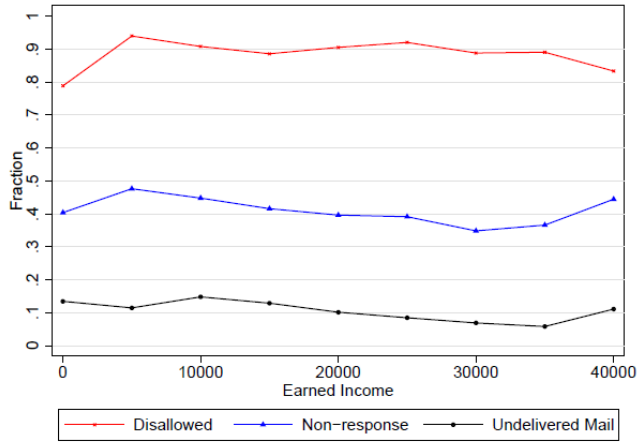
B. Disallowance Rate, Non-Response Rate, and Undelivered Mail Rate, Self-Employed



C. Density, Wage Earners

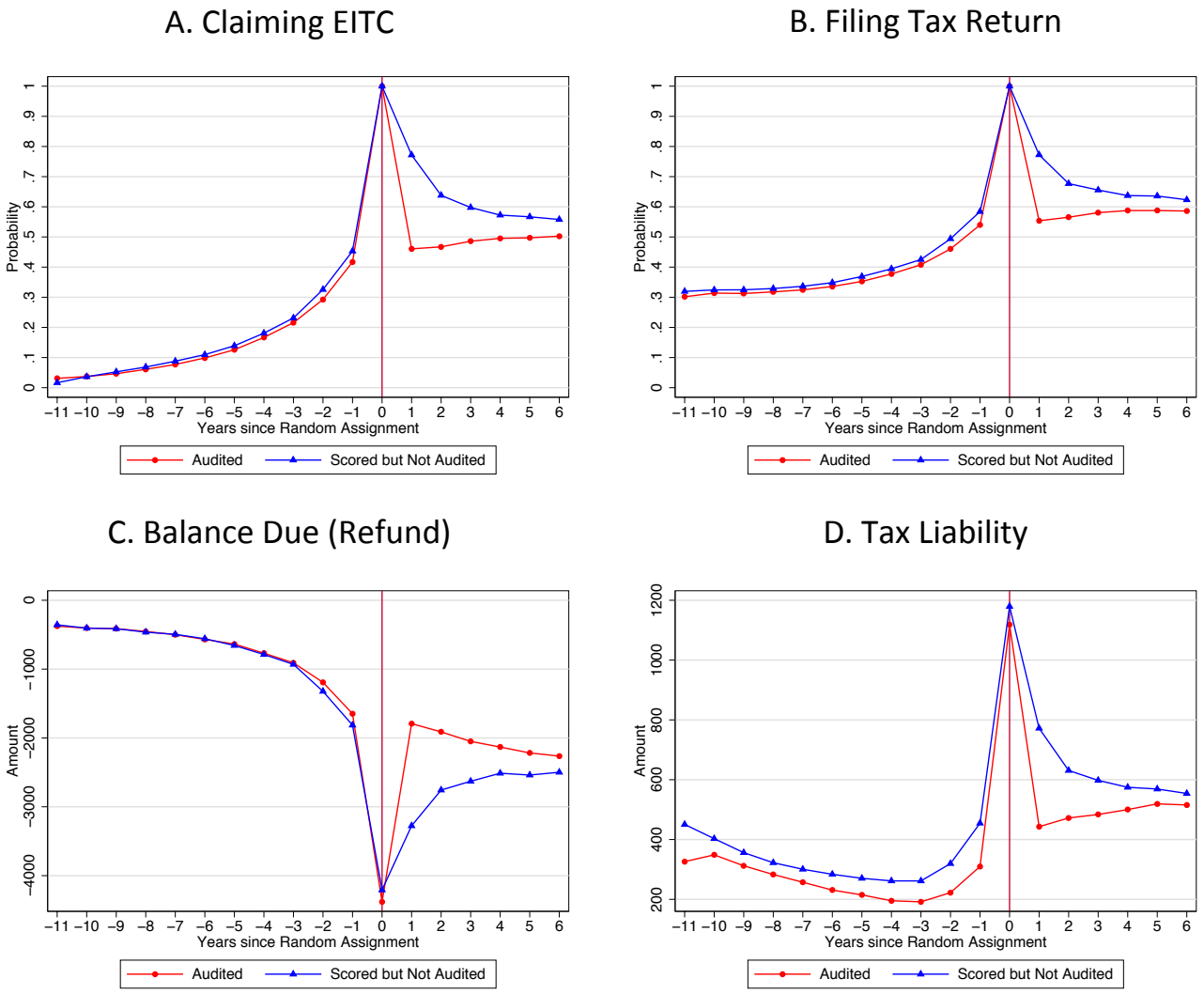


D. Disallowance Rate, Non-Response Rate, and Undelivered Mail Rate, Wage Earners



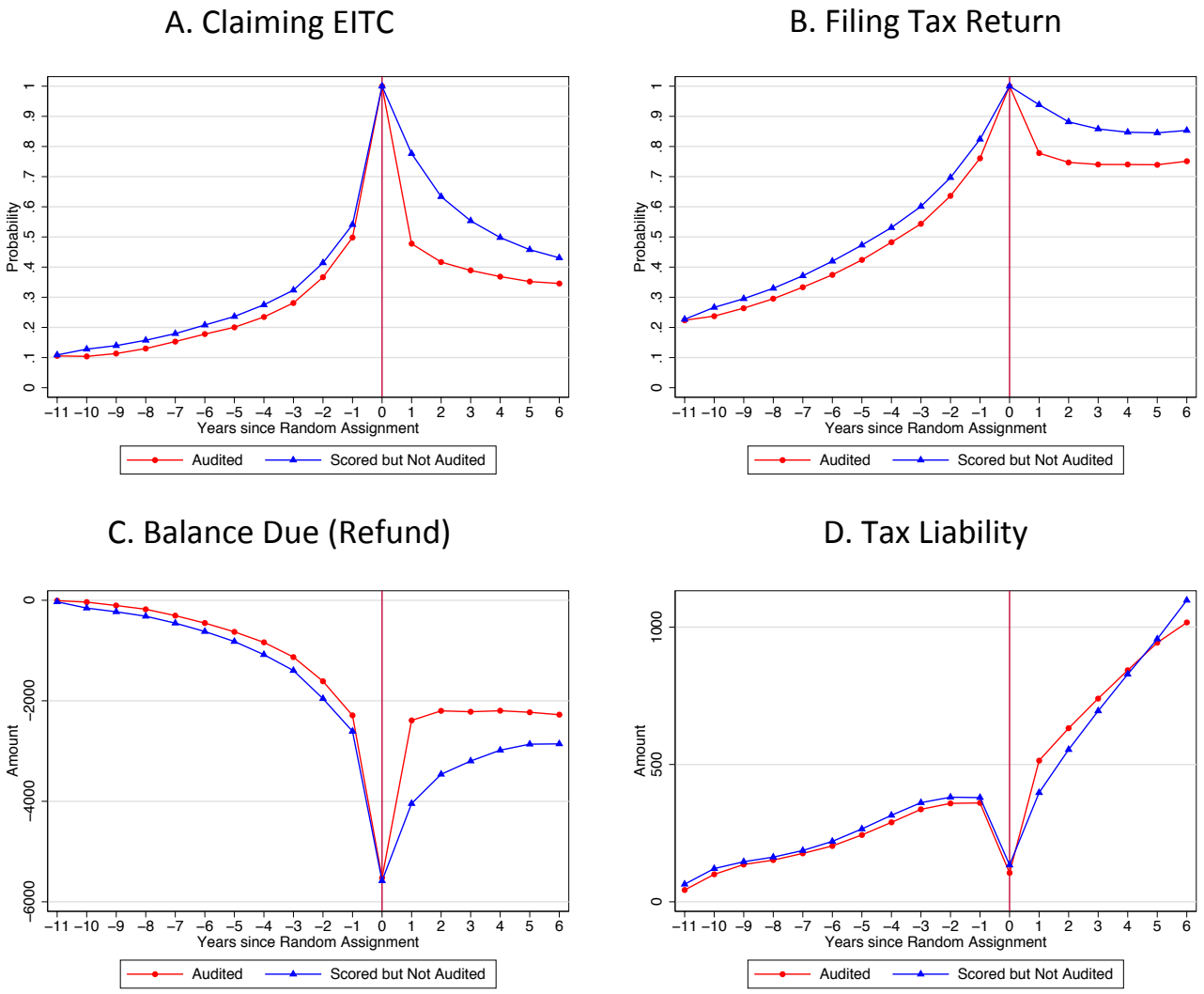
Notes: For the self-employed analysis sample, plots A and B illustrates the fraction of the sample, disallowance rate, non-response rate and undelivered mail rate based on $100 bins of earned income relative to EITC Kink 1, where EITC Kink 1 is defined as the minimum value of earned income that maximizes EITC benefits given the tax year and the taxpayer's filing status and number of qualifying children. For the wage earner analysis sample, plots C and D illustrates the fraction of the sample, disallowance rate, non-response rate and undelivered mail rate based on $5000 bins based on CPI-adjusted earned income. Earned income amounts are CPI-adjusted to 2016 dollars.

Figure 2.
Impacts of EITC Correspondence Audits, Self-Employed



Notes: Each plot illustrates estimated regression coefficients from regressing the variable specified in the plot title on event time dummies, an indicator for being an audited individual, interactions between the event time dummies and audited indicator, and de-meaned covariates. The covariates include dummies for tax year, age, state of residence at the time of audit, and gender.

Figure 3.
Impacts of EITC Correspondence Audits, Wage Earners

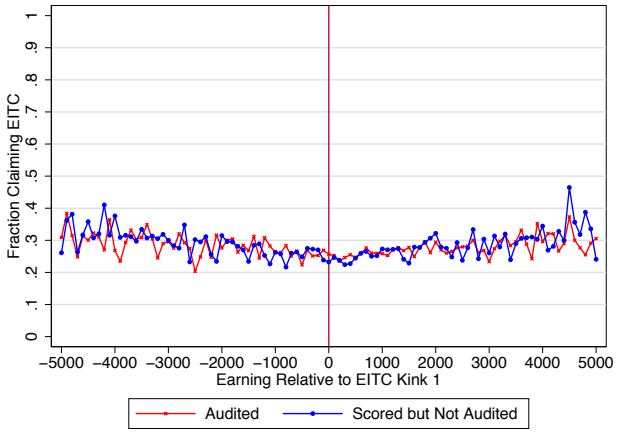


Notes: Each plot illustrates estimated regression coefficients from regressing the variable specified in the plot title on event time dummies, an indicator for being an audited individual, interactions between the event time dummies and audited indicator, and de-meaned covariates. The covariates include dummies for tax year, age, state of residence at the time of audit, and gender.

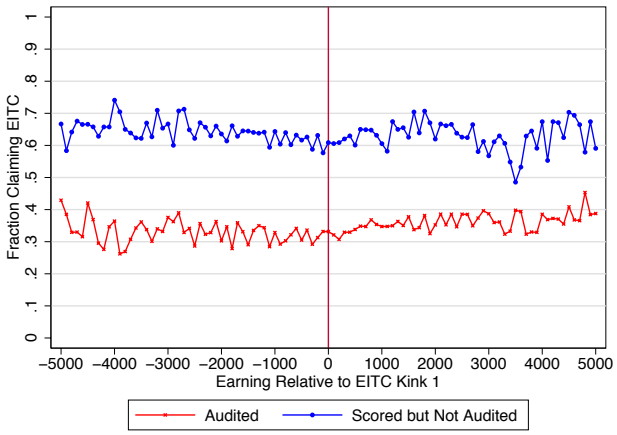
Figure 4.

EITC Claiming by Earnings Relative to EITC Kink 1, Self-Employed

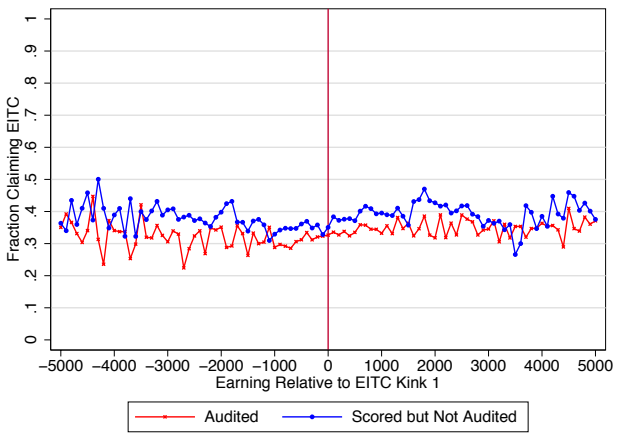
A. Four Years Prior to Random Assignment (e_t = -4)



B. One Year After Random Assignment (e_t = +1)



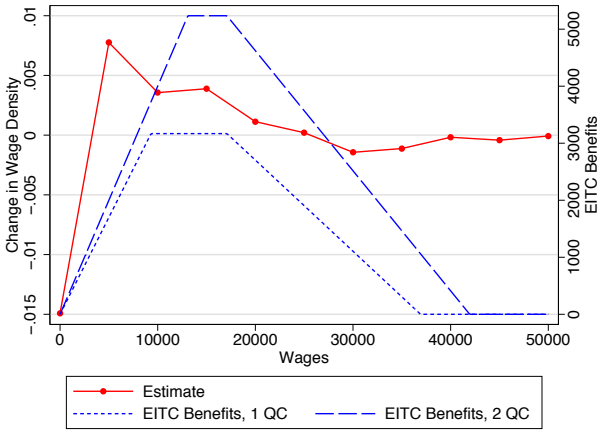
C. Four Years After Random Assignment (e_t = +4)



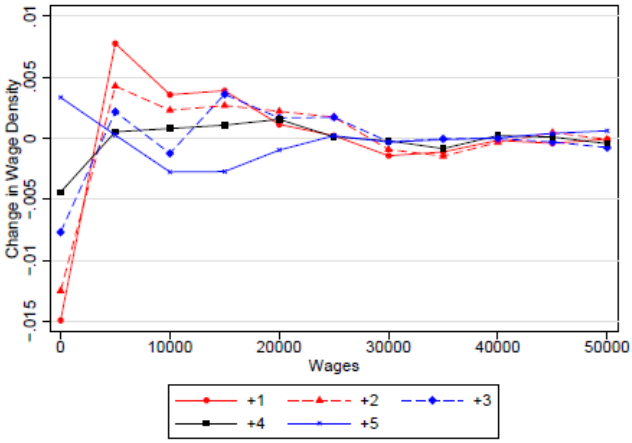
Notes: Plots A through C present the fractions of individuals claiming EITC by earnings relative to EITC Kink 1, which is defined as the lowest earned income level necessary to qualify for maximum EITC benefits. The value for EITC Kink 1 is determined by filing status, number of qualifying children and tax year.

Figure 5.
Wage Responses to EITC Correspondence Audits

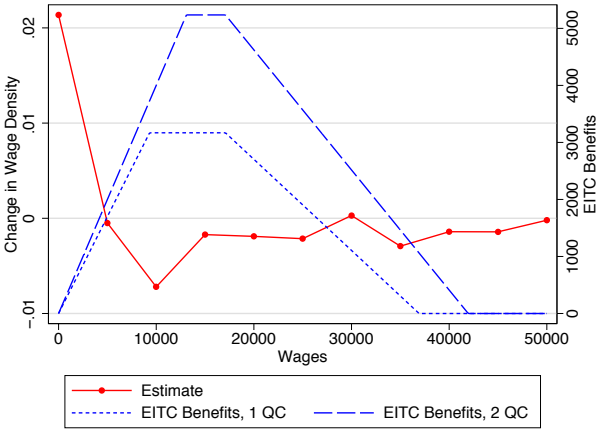
A. Difference-in-Difference Estimates vs EITC Schedule, Self-Employed



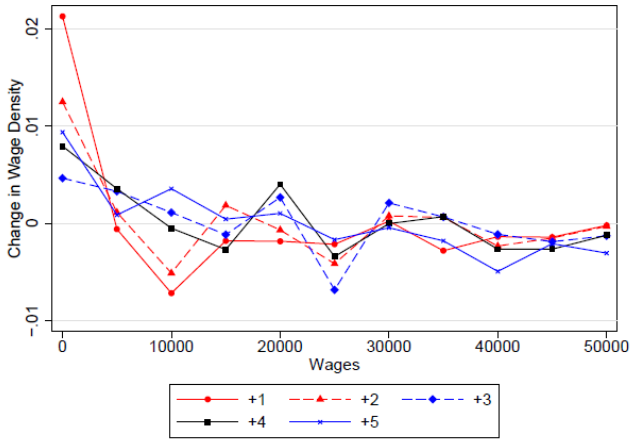
B. Dynamics: Estimates Using Alternative Post Audit Event Times, Self-Employed



C. Difference-in-Difference Estimates vs EITC Schedule, Wage Earners

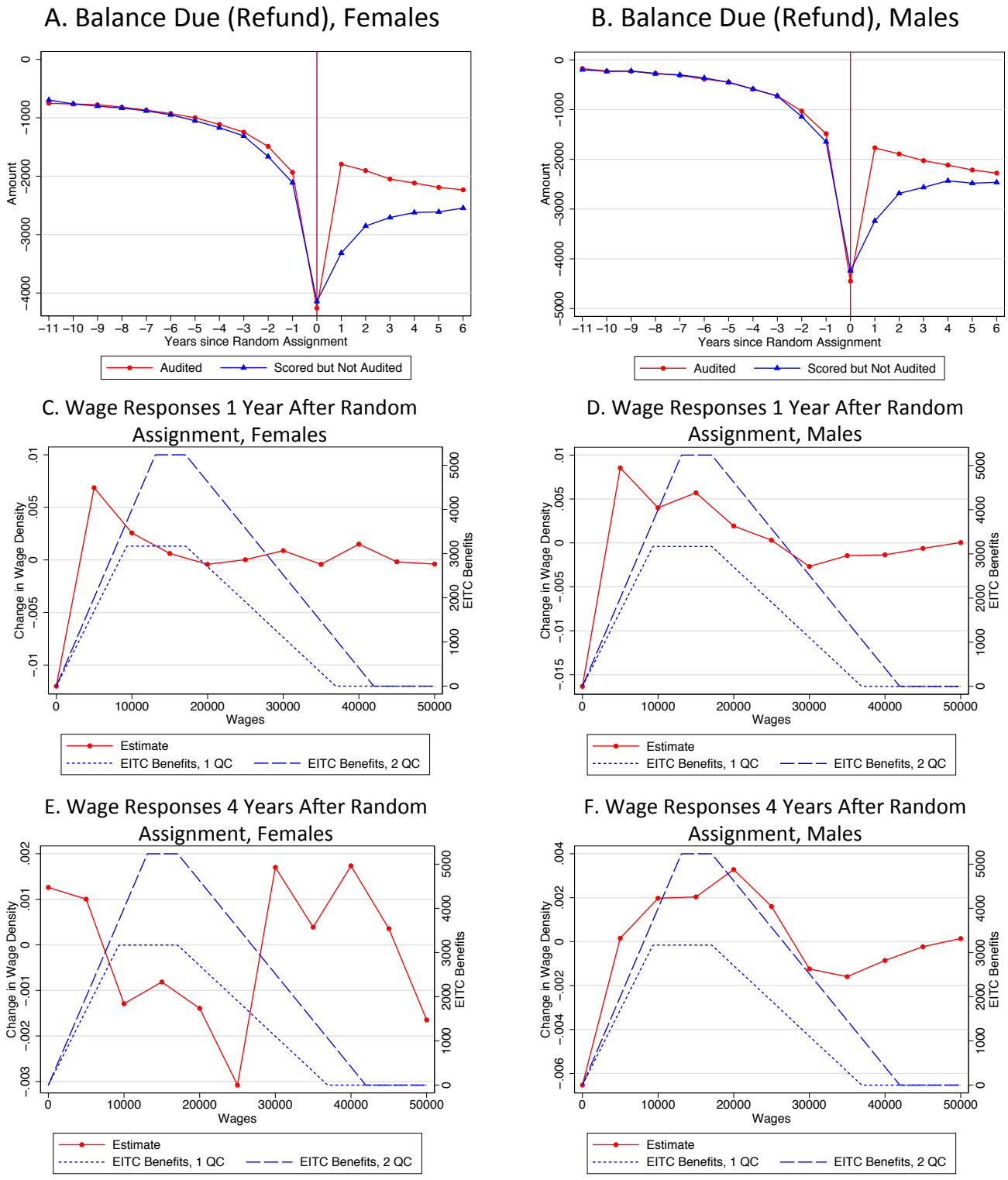


D. Dynamics: Estimates Using Alternative Post Audit Event Times, Wage Earners



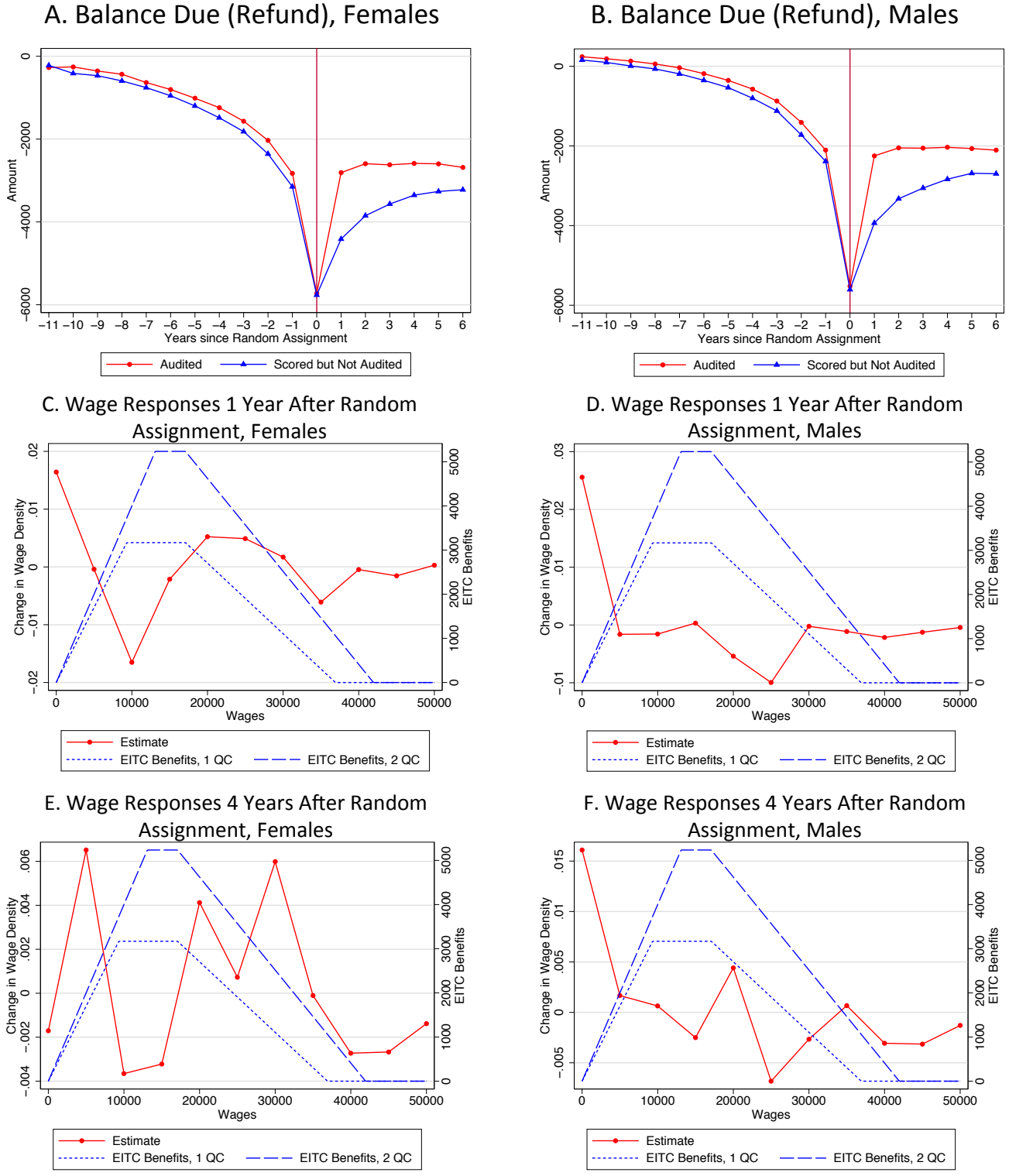
Notes: For each plot, difference-in-difference estimates are computed via the following steps. First, an indicator for having wages in a given wage interval is regressed on event time dummies, an indicator for being an audited individual, interactions between the event time dummies and audited indicator, and de-meaned covariates. The covariates include dummies for tax year, age, state of residence at the time of audit, and gender. Wage intervals for the wage indicators are based on +/-$2500 around 0, $5,000, $10,000…. Next, using the estimated regression coefficients for a given wage interval, the difference-in-difference estimate for that wage interval is calculated by calculating (a) the difference between the coefficients at event times before and after audit selection for the audited group, (b) the difference between the coefficients at event times before and after audit selection for the scored but not audited group, and finally the difference between these differences (a-b). For these plots, the estimated coefficients for event time -4 are used for the "before audit" coefficients. For plots A and C, the estimates coefficients at event time +4 are used for the "after audit" coefficients. Plots B and D illustrated the difference-in-difference estimates using different event times for the after audit coefficients. Plots A and C illustrate EITC schedules for Tax Year 2012.

Figure 6.
Impacts of EITC Correspondence Audits by Gender, Self-Employed



Notes: Plots A and B illustrate estimated regression coefficients from regressing the variable specified in the plot title on event time dummies, an indicator for being an audited individual, interactions between the event time dummies and audited indicator, and de-meaned covariates. The covariates include dummies for tax year, age, state of residence at the time of audit, and gender. Plots C through F illustrate difference-in-differences estimates that are computed using regression coefficients from multiple wage indicator regressions. The wage indicator regressions include the same independent variables as those listed for plots A and B. Wage responses are based on changes between four years prior to audit selection and either one year or four years after random assignment.

Figure 7.
Impacts of EITC Correspondence Audits by Gender, Wage Earners



Notes: Plots A and B illustrate estimated regression coefficients from regressing the variable specified in the plot title on event time dummies, an indicator for being an audited individual, interactions between the event time dummies and audited indicator, and de-meaned covariates. The covariates include dummies for tax year, age, state of residence at the time of audit, and gender. Plots C through F illustrate difference-in-differences estimates that are computed using regression coefficients from multiple wage indicator regressions. The wage indicator regressions include the same independent variables as those listed for plots A and B. Wage responses are based on changes between four years prior to audit selection and either one year or four years after random assignment.

Appendix Figure 1. Example of CP-75 Notice

Department of Treasury
Internal Revenue Service
5333 Getwell Road Stop 822
Memphis, TN 37501-0111

Notice	CP75
Tax year	2016
Notice date	October 15, 2017
Social Security number	999-99-9999
Your Caller ID	99999
To contact us	Phone 1-866-897-0161

Page 1 of 3

s01899954671s
ERIC D. JOHNSON
123 N HARRIS ST
HARVARD TX 12345

We're auditing your 2016 Form 1040

Supporting documentation requested

We need you to send us information to support items you claimed on your tax return.

We are holding the Earned Income Credit (EIC), and/or the Additional Child Tax Credit (ACTC) portion(s) of your refund pending the results of the audit. If you claimed the Premium Tax Credit (PTC), we may also hold all or a part of your refund due to a discrepancy with your PTC.

Be sure to respond within 30 days from the date of this notice or we'll disallow the items being audited, and you may owe additional tax.

What you need to do immediately

- Review the list of items we're auditing and provide copies of documentation to verify what you claimed on your tax return. See the enclosed forms for complete instructions for what you need to send.
- Complete the Response form at the end of this notice, and mail or fax it to us along with any documentation within 30 days from the date of this notice.
- If you can't get your documentation ready in time, call us at 1-866-897-0161 to discuss your options.

Items that require supporting documentation To qualify for:	The list below summarizes the items that require supporting documentation. For complete instructions on what to send, see the enclosed forms. You should:
Premium Tax Credit Form 1040	• Review the enclosed Form 14950, Premium Tax Credit Verification • Submit documentation to verify what you claimed on your return.

Appendix Figure 2. Example of CP-79 Notice

Department of the Treasury
Internal Revenue Service
PO Box 149342
Austin, TX 78714-9342

Notice	CP79
Tax year	2016
Notice date	January 26, 2017
Social security number	Nnn-nn-nnnn
To contact us	Phone: nnn-nnn-nnnn
Your caller ID	
Page 1 of 1	

ERIC D. JOHNSON
123 N HARRIS ST
HARVARD, TX 12345

We denied one or more of the credits claimed on your tax return

We recently denied the following credits you claimed on your 2016 income tax return:

- Earned Income Tax Credit (EIC)
- American Opportunity Tax Credit (AOTC)
- Child Tax Credit or Additional Child Tax Credit (CTC or ACTC)

As a result, the next time you claim the credits listed above, you must complete and attach Form 8862, Information To Claim Earned Income Credit, Child Tax Credit, Additional Child Tax Credit or American Opportunity Tax Credit After Disallowance, to your tax return.

What you need to do

- You don't need to take any action at this time.
- If you claim these credits in the future, make sure you meet all the qualifying rules to get every credit for which you're eligible.
- Keep a copy of this notice for your records.

Claiming the credits on future returns

In the future, if you claim the credits you must submit Form 8862 with your tax return. You will not receive the credits until we receive your Form 8862.

After we receive your Form 8862, we'll review your tax return. We may send you an audit letter asking for additional information to confirm you're eligible for the credits.

If we audit your return and deny the credits, we could impose a two-year ban on your claiming the credits if we find you recklessly or intentionally disregarded the rules. We could impose a ten-year ban if we find you fraudulently claimed the credits.

Additional information

- Visit www.irs.gov/cp79
- For tax forms or publications, visit www.irs.gov/formspubs or call 1-800-TAX-FORM (1-800-829-3676).
- The following publications may be helpful:
  - Publication 596, Earned Income Credit (EIC),
  - Publication 972, Child Tax Credit
  - Publication 970, Tax Benefits for Education

Appendix Figure 3. Example of Form 8862

Form **8862**
(Rev. December 2012)
Department of the Treasury
Internal Revenue Service
Name(s) shown on return

Information To Claim Earned Income Credit After Disallowance
► Attach to your tax return.
► Information about Form 8862 and its instructions is at www.irs.gov/form8862.

OMB No. 1545-0074
Attachment Sequence No. **43A**
Your social security number

Before you begin:
- ✓ See your tax return instructions or **Pub. 596**, Earned Income Credit (EIC), for the year for which you are filing this form to make sure you can take the earned income credit (EIC) **and** to find out who is a qualifying child.
- ✓ If you have a qualifying child, complete **Schedule EIC** before you fill in this form.
- ✓ **Do not** file this form if you are taking the EIC without a qualifying child **and** the only reason your EIC was reduced or disallowed in the earlier year was because it was determined that a child listed on **Schedule EIC** was not your qualifying child.

Part I All Filers

1 Enter the year for which you are filing this form (for example, 2012) . . . . . ► ☐☐☐☐

2 If the **only** reason your EIC was reduced or disallowed in the earlier year was because you incorrectly reported your earned income or investment income, check "Yes." Otherwise, check "No" . . . . ► ☐ **Yes** ☐ **No**

Caution. If you checked "Yes," **stop. Do not** fill in the rest of this form. But you must attach it to your tax return to take the EIC. If you checked "No," continue.

3 Could you (or your spouse if filing jointly) be claimed as a qualifying child of another taxpayer for the year shown on line 1? See the instructions before answering . . . . . ► ☐ **Yes** ☐ **No**

Caution. If you checked "Yes," **stop.** You cannot take the EIC. If you checked "No," continue.

Part II Filers With a Qualifying Child or Children

Note. Child 1, Child 2, and **Child 3** are the same children you listed as Child 1, Child 2, and Child 3 on **Schedule EIC** for the year shown on line 1 above.

4 Enter the **number of days** each child lived with you in the United States during the year shown on line 1 above:

a **Child 1** ► ☐☐☐ b **Child 2** ► ☐☐☐ c **Child 3** ► ☐☐☐

Caution. If you entered less than **183** (184 if the year on line 1 is a leap year) for any child, you cannot take the EIC based on that child, unless the special rule for a child who was born or died during the year shown on line 1 applies. See the instructions.

5 If your child was born or died during the year shown on line 1, enter the month and day the child was born and/or died. Otherwise, skip this line.

a **Child 1** ► **(1)** Month and day of birth (MM/DD) ► ☐☐/☐☐ **(2)** Month and day of death (MM/DD) ► ☐☐/☐☐
b **Child 2** ► **(1)** Month and day of birth (MM/DD) ► ☐☐/☐☐ **(2)** Month and day of death (MM/DD) ► ☐☐/☐☐
c **Child 3** ► **(1)** Month and day of birth (MM/DD) ► ☐☐/☐☐ **(2)** Month and day of death (MM/DD) ► ☐☐/☐☐

6 Enter the address where you and the child lived together during the year shown on line 1. If you lived with the child at more than one address during the year, attach a list of the addresses where you lived:

a **Child 1** ► Number and street _____
City or town, state, and ZIP code _____

b **Child 2** ► **If same as shown for child 1, check this box.** ► ☐ Otherwise, enter below:
Number and street _____
City or town, state, and ZIP code _____

c **Child 3** ► **If same as shown for child 1, check this box.** ► ☐ **Or if same as shown for child 2 (and this is different from address shown for child 1), check this box.** ► ☐ Otherwise, enter below:
Number and street _____
City or town, state, and ZIP code _____

7 Did any other person (except your spouse, if filing jointly, and your dependents under age 19) live with child 1, child 2, or child 3 for more than half the year shown on line 1? . . . . . ► ☐ **Yes** ☐ **No**

If "Yes," enter that person's name and relationship to the child below. If more than one other person lived with the child for more than half the year, attach a list of each person's name and relationship to the child:

a **Other person living with child 1:** Name _____
Relationship to child 1 _____

b **Other person living with child 2:** **If same as shown for child 1, check this box.** ► ☐ Otherwise, enter below:
Name _____
Relationship to child 2 _____

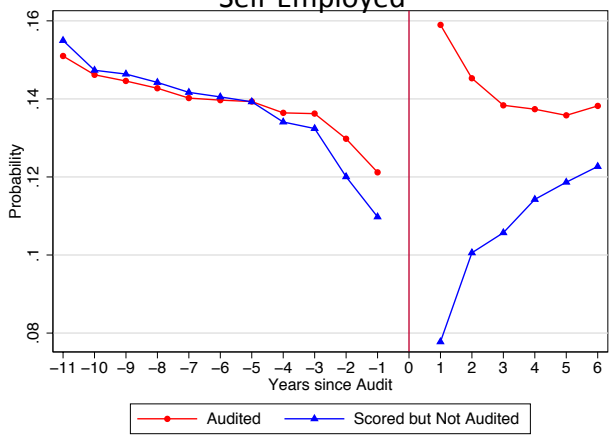
c **Other person living with child 3:** **If same as shown for child 1, check this box.** ► ☐ **Or if same as shown for child 2 (and this is different from the person living with child 1), check this box.** ► ☐
Otherwise, enter below:
Name _____
Relationship to child 3 _____

Caution. The IRS may ask you to provide additional information to verify your eligibility to claim the EIC.

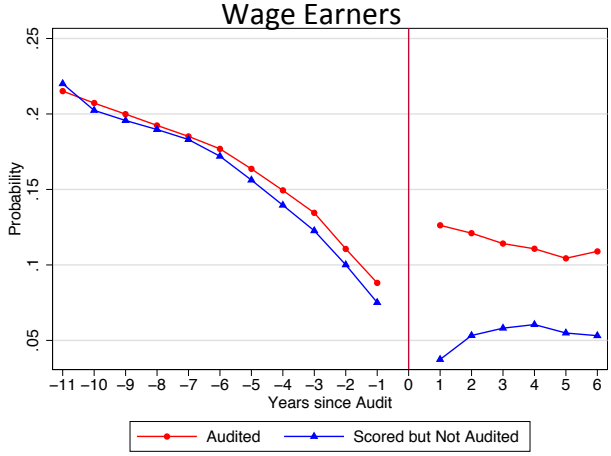
Appendix Figure 4.

Additional Analysis of Claiming EITC and Filing Tax Returns

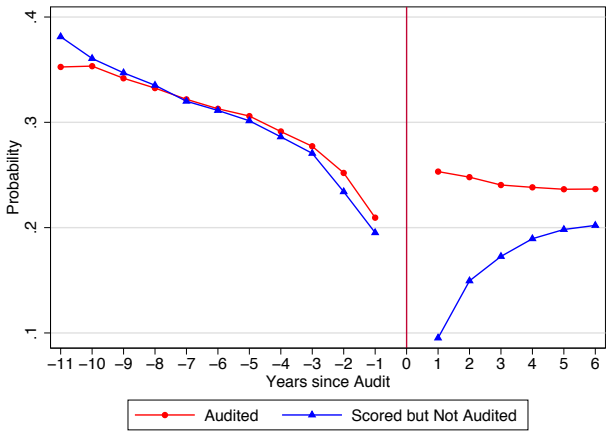
A. Has W-2 and Does Not File Tax Return, Self-Employed



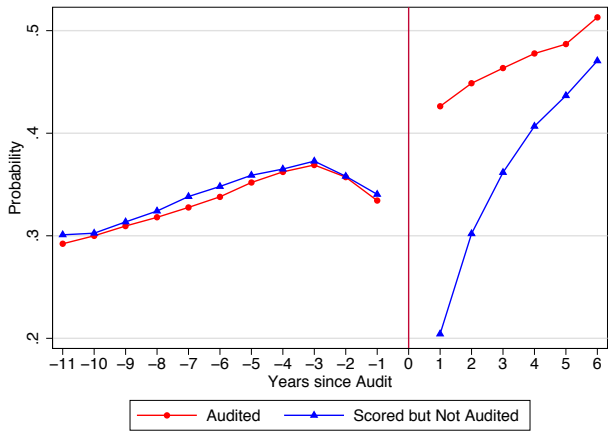
B. Has W-2 and Does Not File Tax Return, Wage Earners



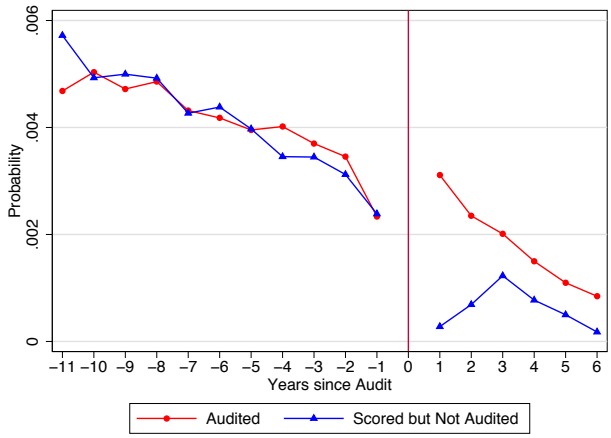
C. Has W-2 and Does Not Claim EITC, Self-Employed



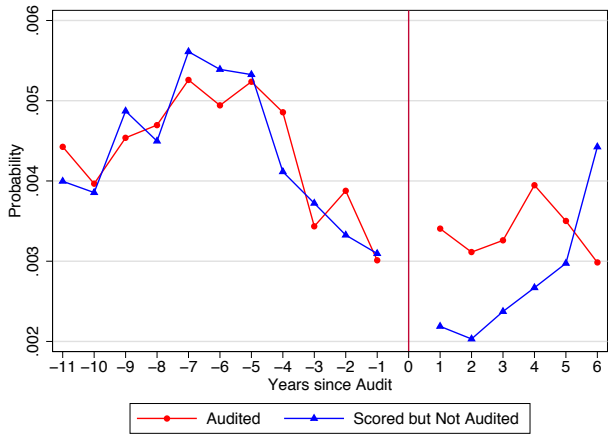
D. Has W-2 and Does Not Claim EITC, Wage Earners



E. Sent EITC Eligibility Notice, Self-Employed



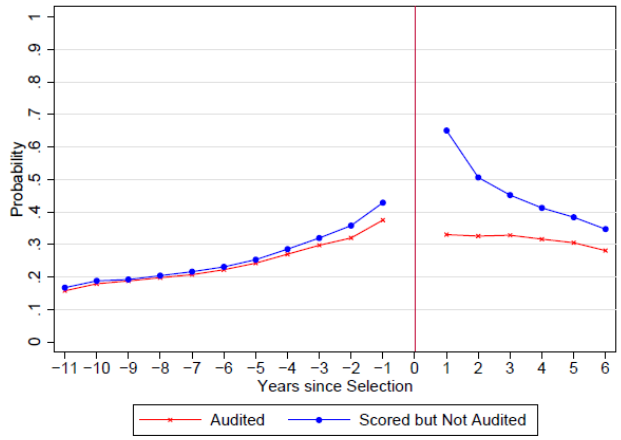
F. Sent EITC Eligibility Notice, Wage Earners



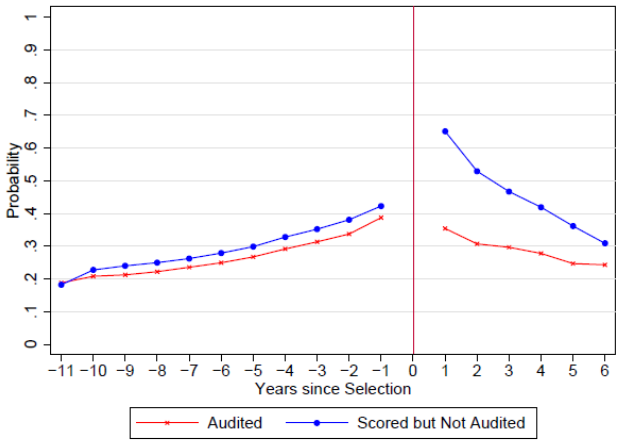
Notes: Each plot illustrates estimated regression coefficients from regressing the variable specified in the plot title on event time dummies, an indicator for being an audited individual, interactions between the event time dummies and audited indicator, and de-meaned covariates. The covariates include dummies for tax year, age, state of residence at the time of audit, and gender.

Appendix Figure 5.
Weighted vs. Unweighted Comparison for Claiming EITC

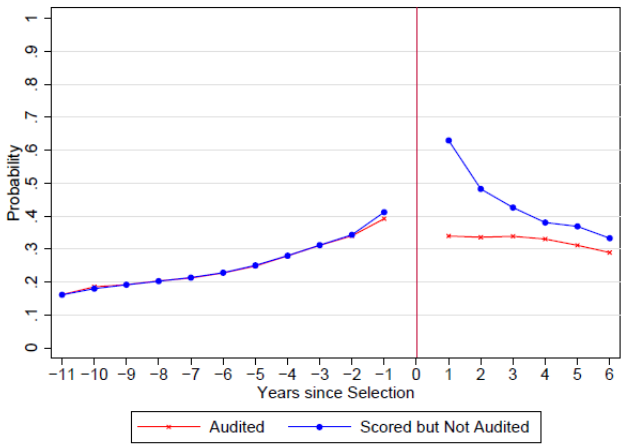
A. Unweighted, Self-Employed



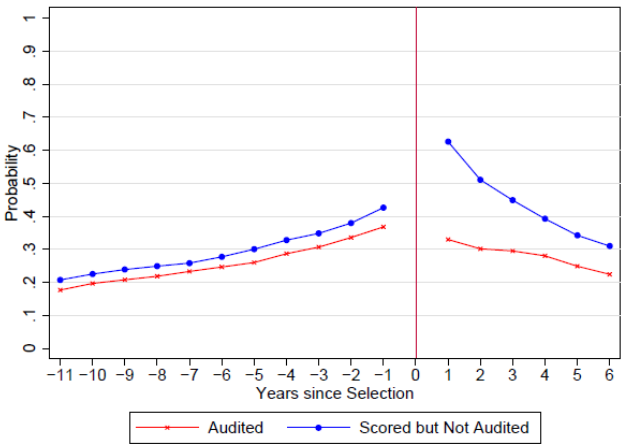
B. Unweighted, Wage Earners



C. Weighted, Self-Employed



D. Weighted, Wage Earners

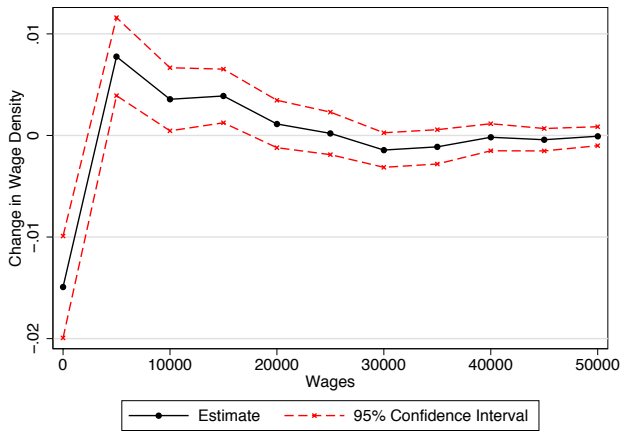


Notes: Plots A and B present the fractions of individuals claiming EITC by event time for the audited and scored but not audited groups. Plots C and D present the fractions of individuals claiming EITC by event time for the audited and scored but not audited groups, but observations for each group are weighted based on risk scores in each tax year. Weights are computed by pooling the audited and scored but not audited samples, regressing an indicator for being an audited individual on dummies for risk score bins in each tax year, and computing probability ratios based on the fitted values from the regression. In the audited sample, observations with higher predicted probabilities of being an audited individual are down-weighted and in the scored but not audited sample, observations with higher predicted probabilities of being audited are up-weighted.

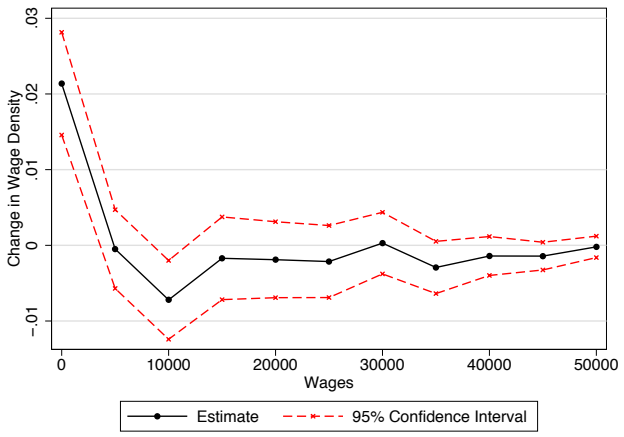
Appendix Figure 6.

Wage Responses 1 Year After Random Assignment Including Standard Errors

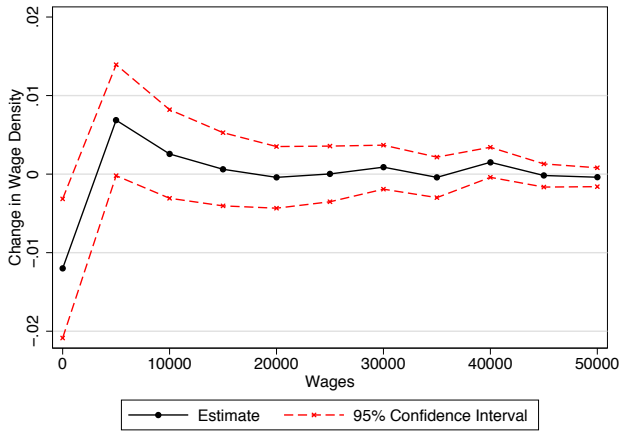
A. Self-Employed, Full Sample



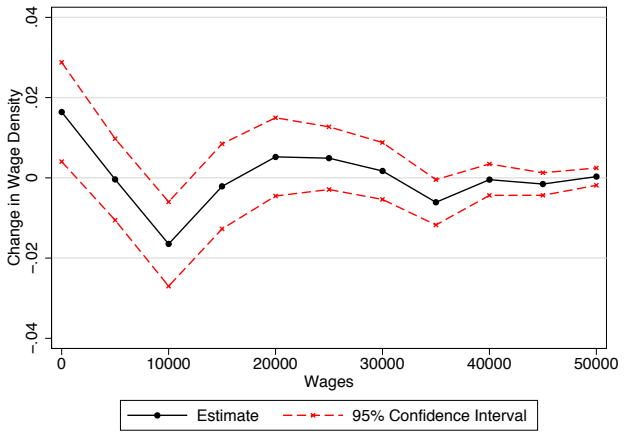
B. Wage Earners, Full Sample



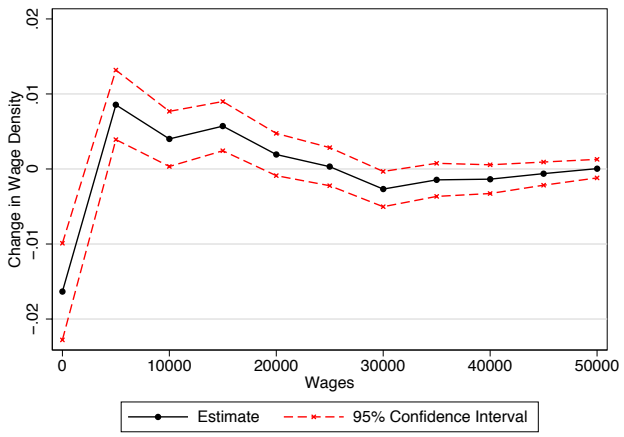
C. Self-Employed, Females



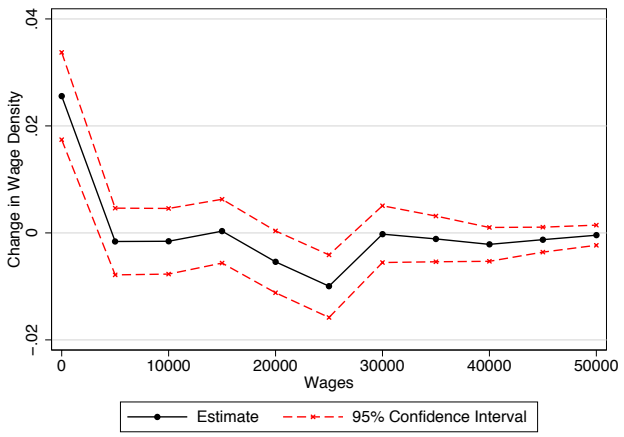
D. Wage Earners, Females



E. Self-Employed, Males



F. Wage Earners, Males

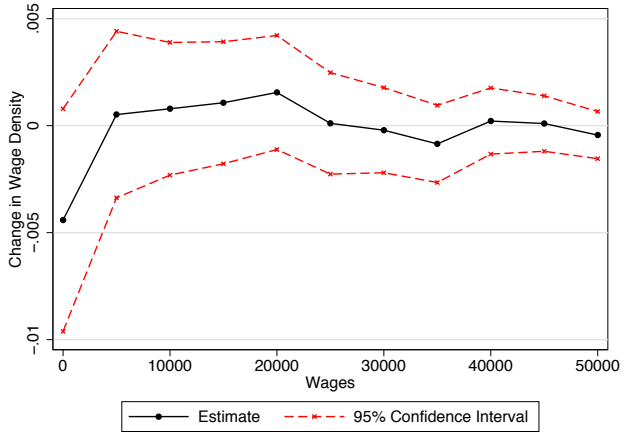


Notes: Estimated wage changes are computed using separate regressions for each wage interval and taking differences of regressions coefficients estimated for the audited and scored but not audited groups at event times -4 and +4. Standard errors are based on 1000 bootstrapped replications.

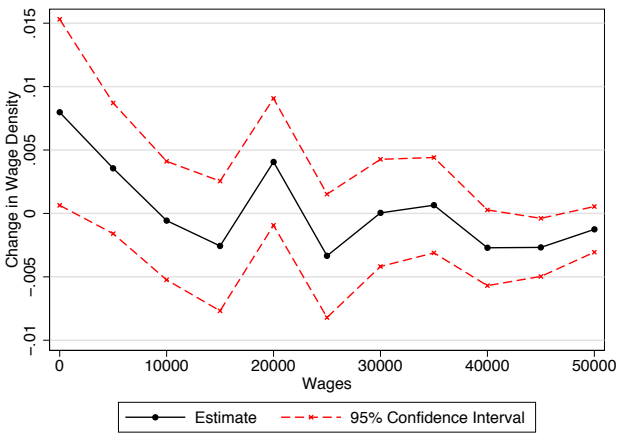
Appendix Figure 7.

Wage Responses 4 Years After Random Assignment Including Standard Errors

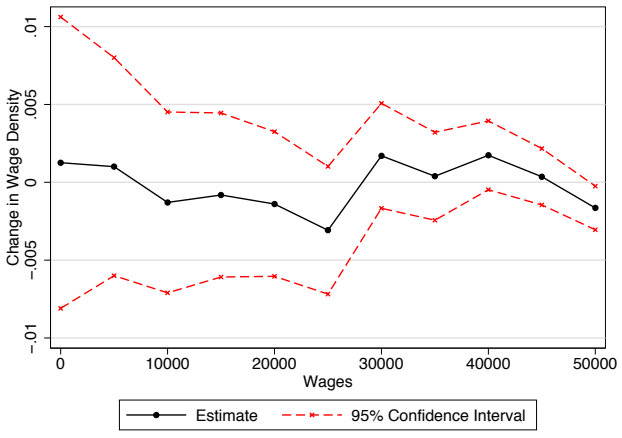
A. Self-Employed, Full Sample



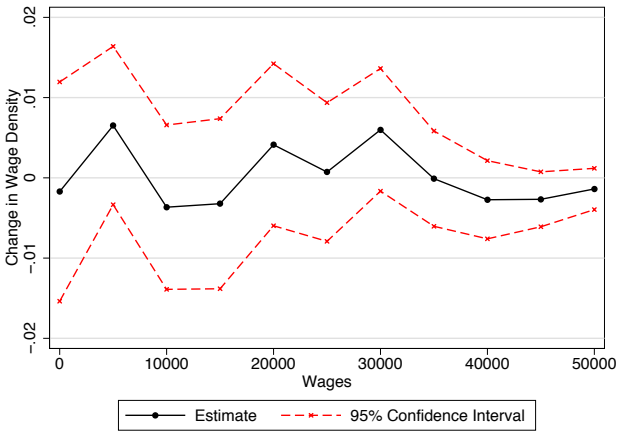
B. Wage Earners, Full Sample



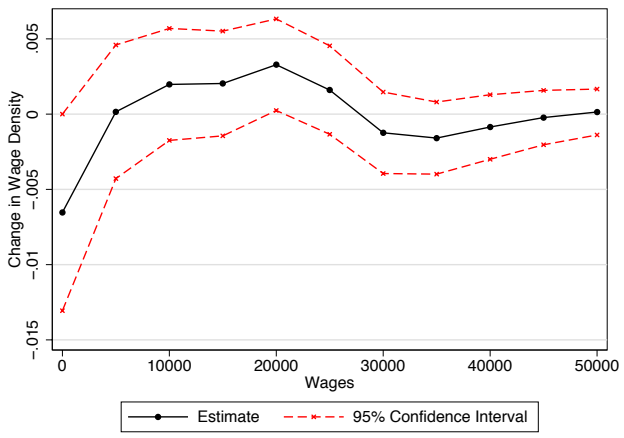
C. Self-Employed, Females



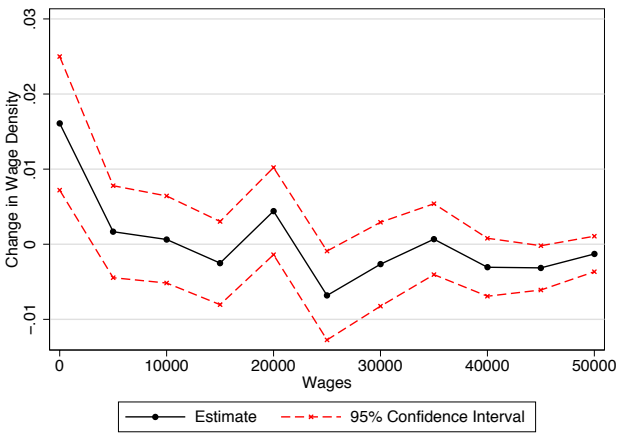
D. Wage Earners, Females



E. Self-Employed, Males



F. Wage Earners, Males

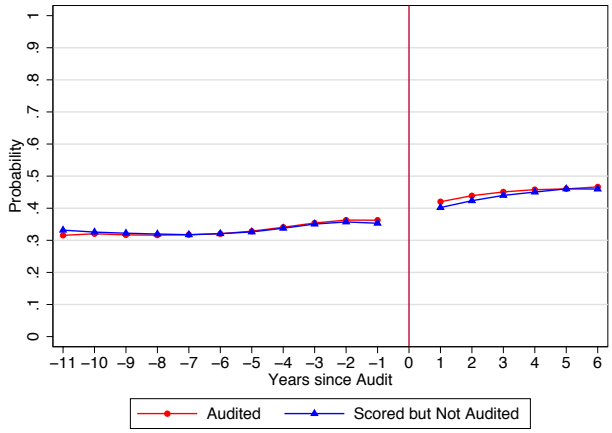


Notes: Estimated wage changes are computed using separate regressions for each wage interval and taking differences of regressions coefficients estimated for the audited and scored but not audited groups at event times -4 and +4. Standard errors are based on 1000 bootstrapped replications.

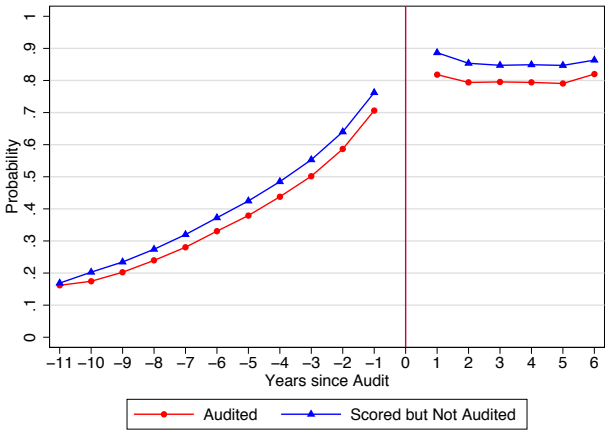
Appendix Figure 8.

Labor Force Participation by Event Time

A. Self-Employed



B. Wage Earners



Notes: Each plot illustrates estimated regression coefficients from regressing an indicator for having wage income below $2500 on on event time dummies, an indicator for being an audited individual, interactions between the event time dummies and audited indicator, and de-meaned covariates. The covariates include dummies for tax year, age, state of residence at the time of audit, and gender. Labor force participation is then calculated based on one minus the regression coefficients for the corresponding event time.

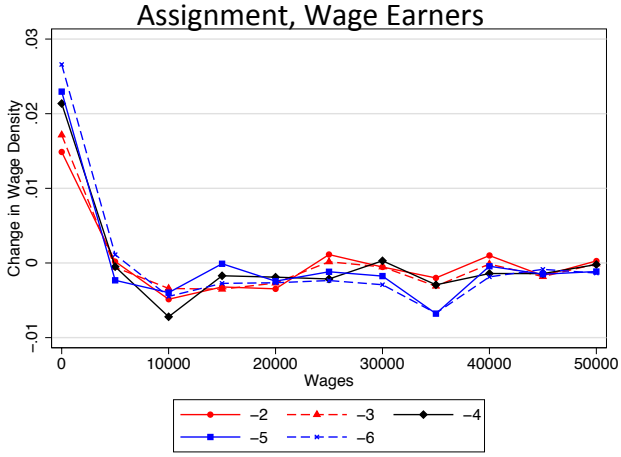
Appendix Figure 9.

Difference-in-Difference Estimates Using Alternative Pre-Random Assignment Event Times

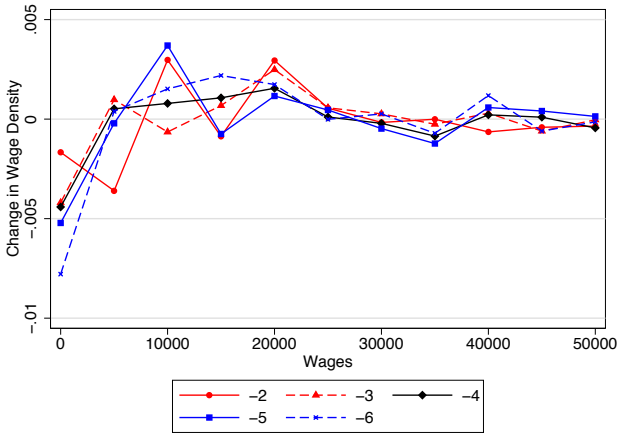
A. Wage Responses 1 Year After Random Assignment, Self-Employed



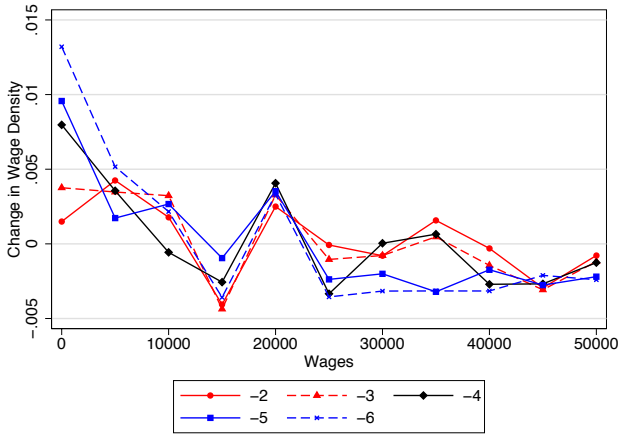
B. Wage Responses 1 Year After Random Assignment, Wage Earners



C. Wage Responses 4 Years After Random Assignment, Self-Employed



D. Wage Responses 4 Years After Random Assignment, Wage Earners



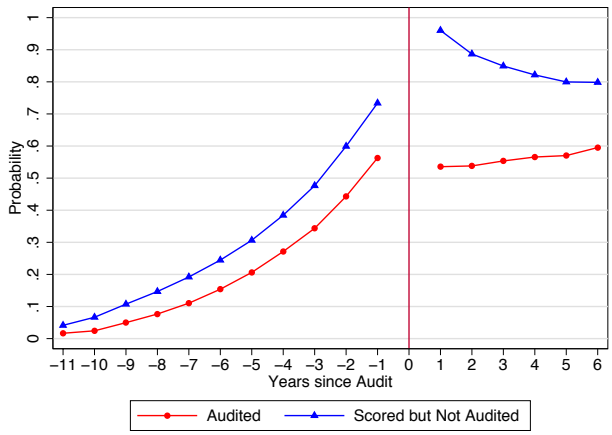
Notes: For each plot, difference-in-difference estimates are computed via the following steps. First, an indicator for having wages in a given wage interval is regressed on event time dummies, an indicator for being an audited individual, interactions between the event time dummies and audited indicator, and de-meaned covariates. The covariates include dummies for tax year, age, state of residence at the time of audit, and gender. Wage intervals for the wage indicators are based on +/-$2500 around 0, $5,000, $10,000…. Next, using the estimated regression coefficients for a given wage interval, the difference-in-difference estimate for that wage interval is calculated by calculating (a) the difference between the coefficients at event times before and after audit selection for the audited group, (b) the difference between the coefficients at event times before and after audit selection for the scored but not audited group, and finally the difference between these differences (a-b). For plots A and B, the estimated coefficients for event time +1 (one year after random assignment) are used for the “post-random assignment” coefficients. For plots C and D, the estimated coefficients for event time +4 (four years after random assignment) are used for the “post-random assignment” coefficients. Each of the plots specify the different event times uses for the “pre-random assignment” event times.

Appendix Figure 10.

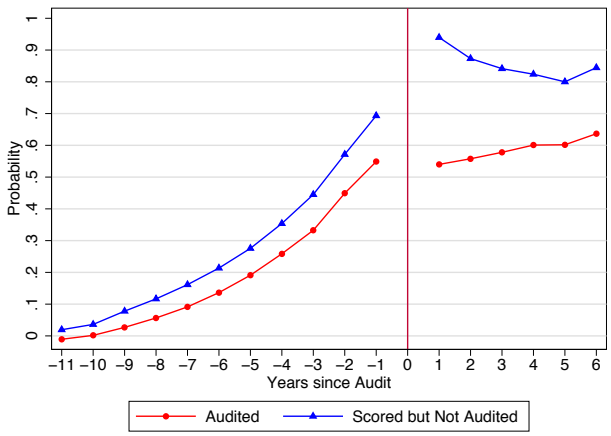
Using Different Audit Fraction Cutoffs to Determine Analysis Samples

Fraction Claiming EITC, Self-Employed

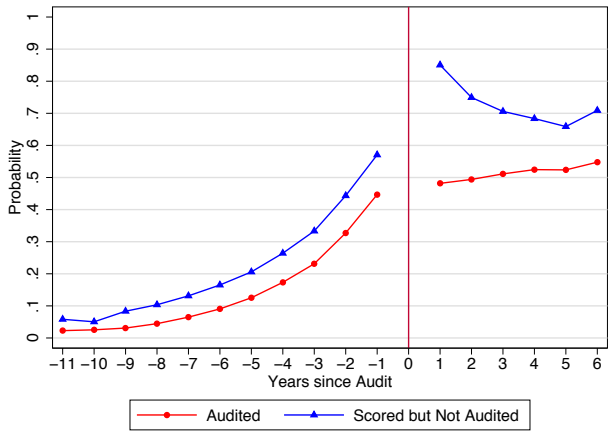
A. Fraction Audited: (0,1)



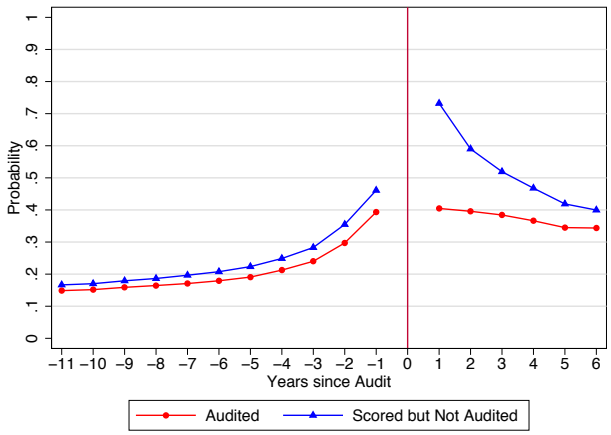
B. Fraction Audited: [0.01,0.99]



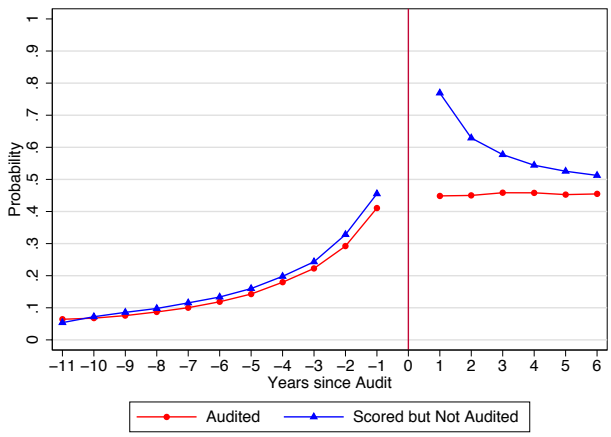
C. Fraction Audited: [0.05,0.95]



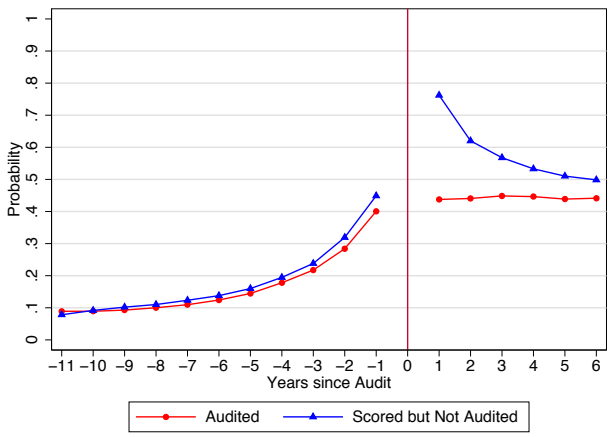
D. Fraction Audited: [0.10,0.90]



E. Fraction Audited: [0.20,0.80]



F. Fraction Audited: [0.25,0.75]

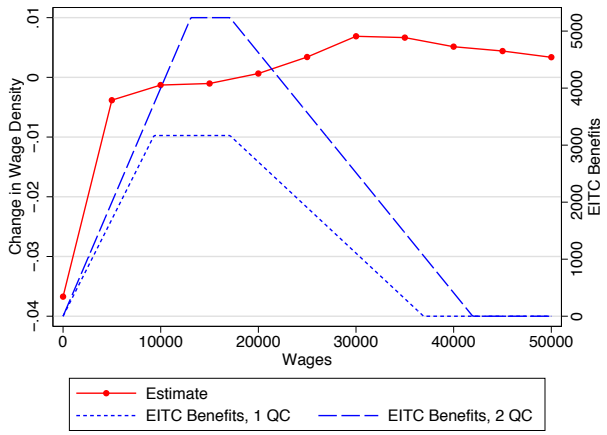


Notes: The analysis samples are defined to allow for comparisons between audited and scored but not audited taxpayers with similar risk scores. When defining these analysis samples, we create cells based on bins of risk scores in each tax year and then calculated the fraction of audited taxpayers in each cell. To ensure adequate sample sizes of audited and scored but not audited tax returns in each cell, we restrict the analysis sample to taxpayers with returns in cells in which the fraction audited is in a specified range. The sample sizes for the different samples defined using different cutoff thresholds are as follows: for (0,1) N=2171357, for [0.01,0.99] N=1570250, for [0.05,0.95] N=392082, for [0.10,0.90] N=265478, for [0.20,0.80] N=200580, for [0.25,0.75], N=184012.

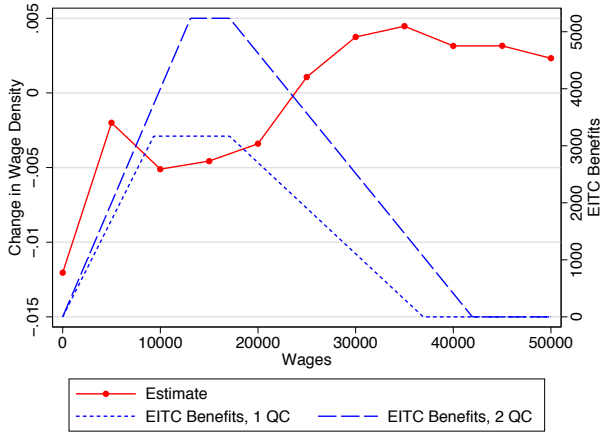
Appendix Figure 11.

Using Different Audit Fraction Cutoffs to Determine Analysis Samples
Wage Responses 1 Year After Random Assignment, Self-Employed

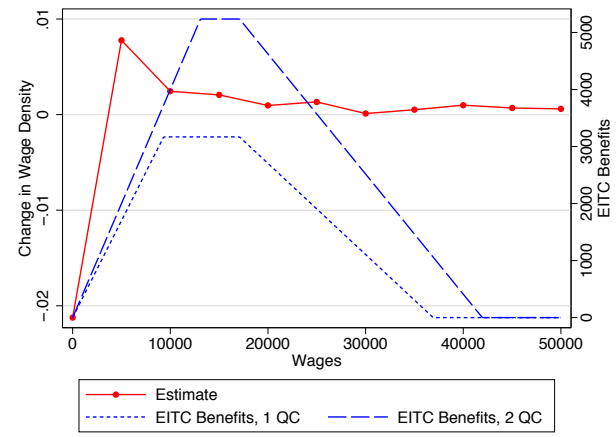
A. Fraction Audited: (0,1)



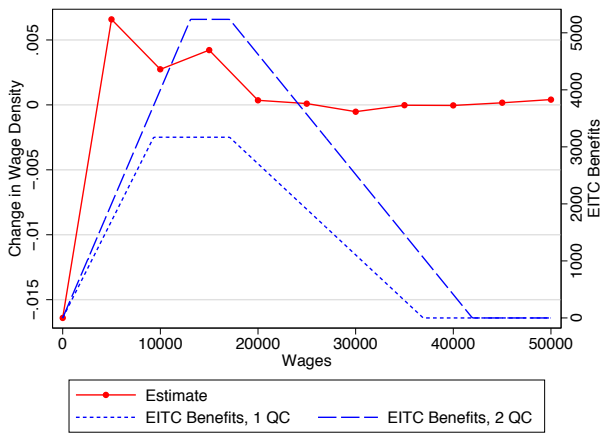
B. Fraction Audited: [0.01,0.99]



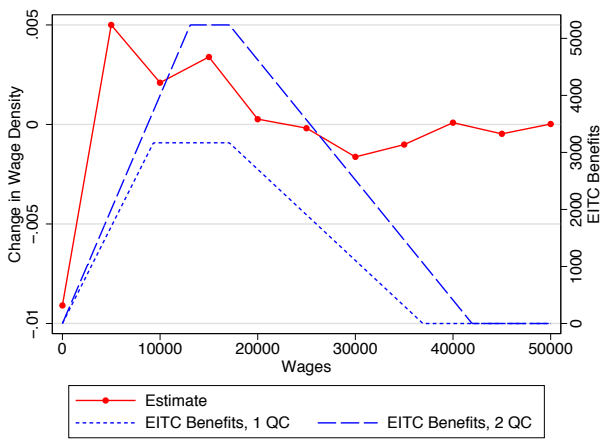
C. Fraction Audited: [0.05,0.95]



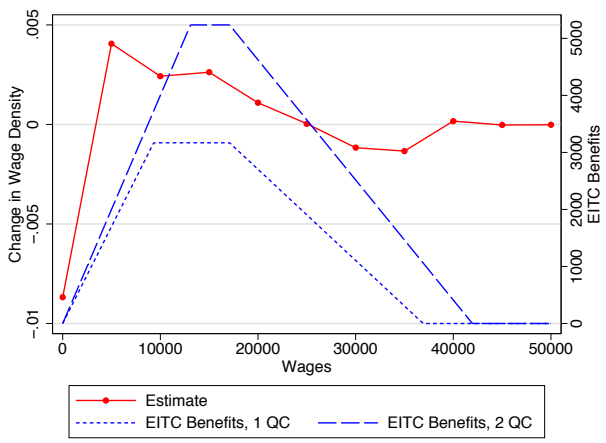
D. Fraction Audited: [0.10,0.90]



E. Fraction Audited: [0.20,0.80]



F. Fraction Audited: [0.25,0.75]

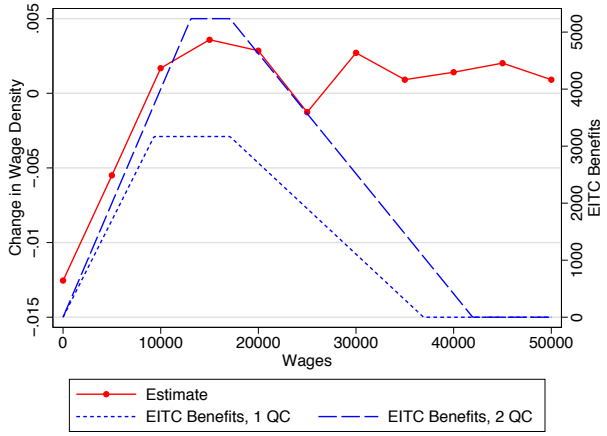


Notes: The analysis samples are defined to allow for comparisons between audited and scored but not audited taxpayers with similar risk scores. When defining these analysis samples, we create cells based on bins of risk scores in each tax year and then calculated the fraction of audited taxpayers in each cell. To ensure adequate sample sizes of audited and scored but not audited tax returns in each cell, we restrict the analysis sample to taxpayers with returns in cells in which the fraction audited is in a specified range. The sample sizes for the different samples defined using different cutoff thresholds are as follows: for (0,1) N=2171357, for [0.01,0.99] N=1570250, for [0.05,0.95] N=392082, for [0.10,0.90] N=265478, for [0.20,0.80] N=200580, for [0.25,0.75], N=184012.

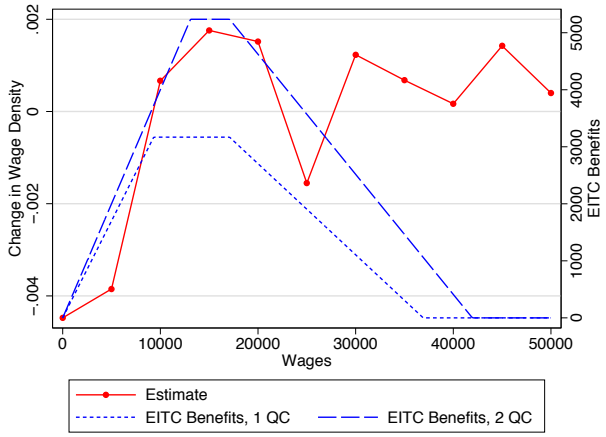
Appendix Figure 12.

Using Different Audit Fraction Cutoffs to Determine Analysis Samples
Wage Responses 4 Years After Random Assignment, Self-Employed

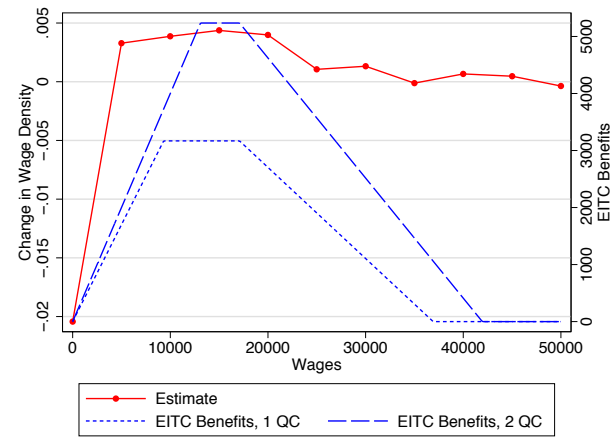
A. Fraction Audited: (0,1)



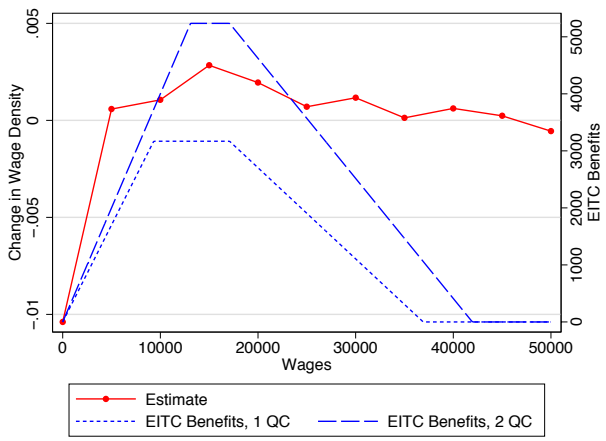
B. Fraction Audited: [0.01,0.99]



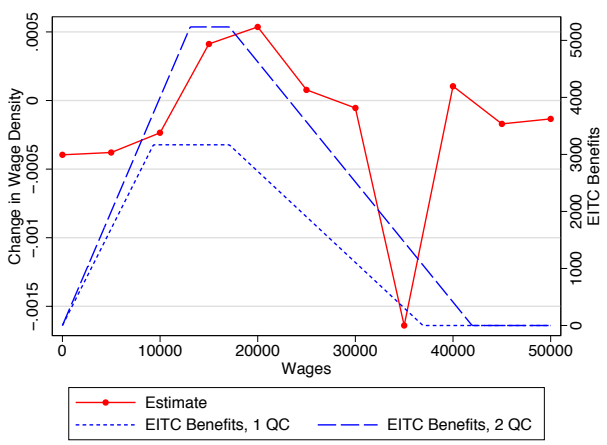
C. Fraction Audited: [0.05,0.95]



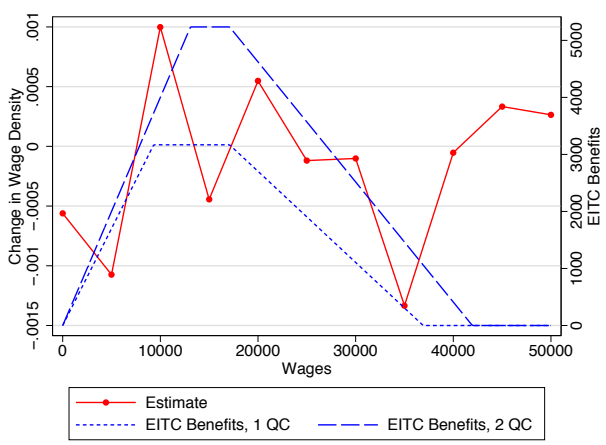
D. Fraction Audited: [0.10,0.90]



E. Fraction Audited: [0.20,0.80]



F. Fraction Audited: [0.25,0.75]

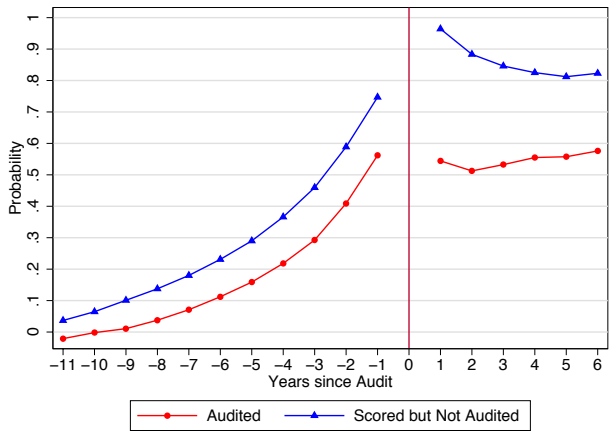


Notes: The analysis samples are defined to allow for comparisons between audited and scored but not audited taxpayers with similar risk scores. When defining these analysis samples, we create cells based on bins of risk scores in each tax year and then calculated the fraction of audited taxpayers in each cell. To ensure adequate sample sizes of audited and scored but not audited tax returns in each cell, we restrict the analysis sample to taxpayers with returns in cells in which the fraction audited is in a specified range. The sample sizes for the different samples defined using different cutoff thresholds are as follows: for (0,1) N=2171357, for [0.01,0.99] N=1570250, for [0.05,0.95] N=392082, for [0.10,0.90] N=265478, for [0.20,0.80] N=200580, for [0.25,0.75], N=184012.

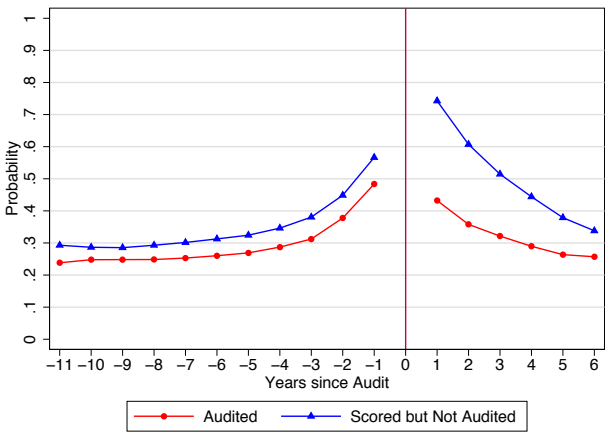
Appendix Figure 13.

Using Different Audit Fraction Cutoffs to Determine Analysis Samples
Fraction Claiming EITC, Wage Earners

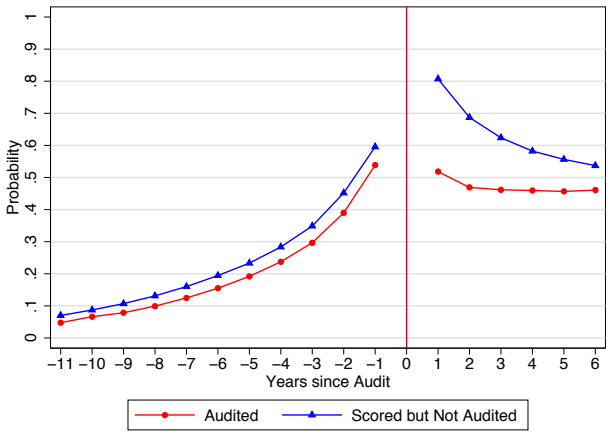
A. Fraction Audited: (0,1)



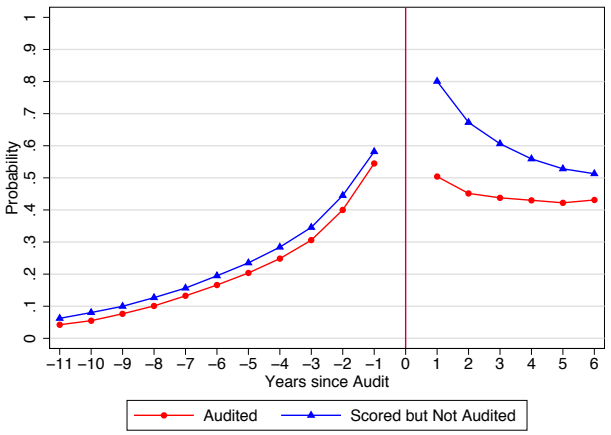
B. Fraction Audited: [0.01,0.99]



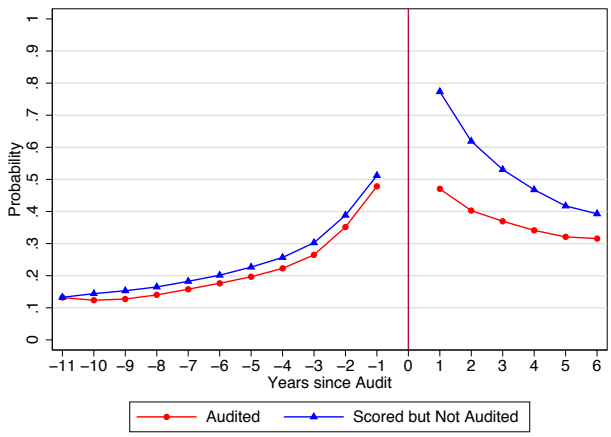
C. Fraction Audited: [0.05,0.95]



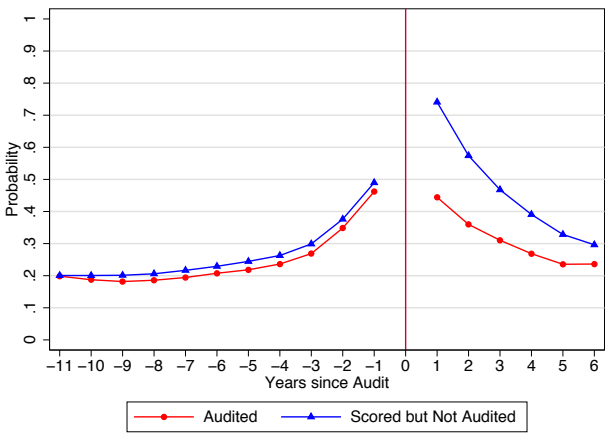
D. Fraction Audited: [0.10,0.90]



E. Fraction Audited: [0.20,0.80]



F. Fraction Audited: [0.25,0.75]

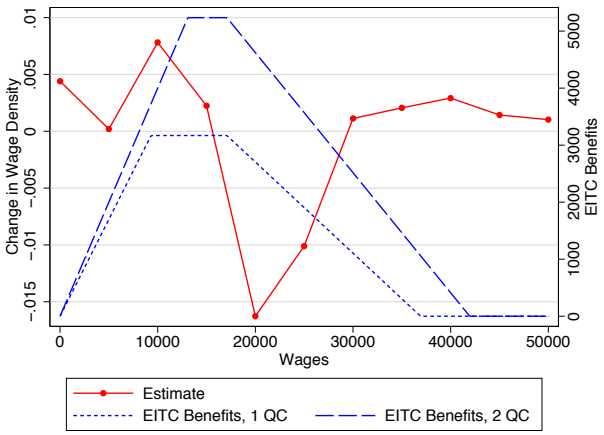


Notes: The analysis samples are defined to allow for comparisons between audited and scored but not audited taxpayers with similar risk scores. When defining these analysis samples, we create cells based on bins of risk scores in each tax year and then calculated the fraction of audited taxpayers in each cell. To ensure adequate sample sizes of audited and scored but not audited tax returns in each cell, we restrict the analysis sample to taxpayers with returns in cells in which the fraction audited is in a specified range. The sample sizes for the different samples defined using different cutoff thresholds are as follows: for (0,1) N=1945776, for [0.01,0.99] N=836016, for [0.05,0.95] N=522625, for [0.10,0.90] N=265478, for [0.20,0.80] N=103536, for [0.25,0.75], N=65557.

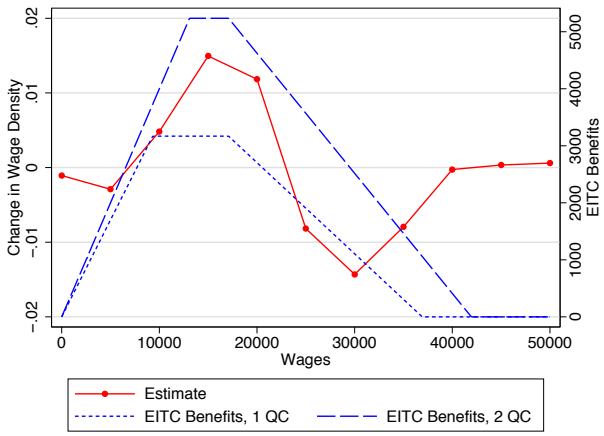
Appendix Figure 14.

Using Different Audit Fraction Cutoffs to Determine Analysis Samples
Wage Responses 1 Year After Random Assignment, Wage Earners

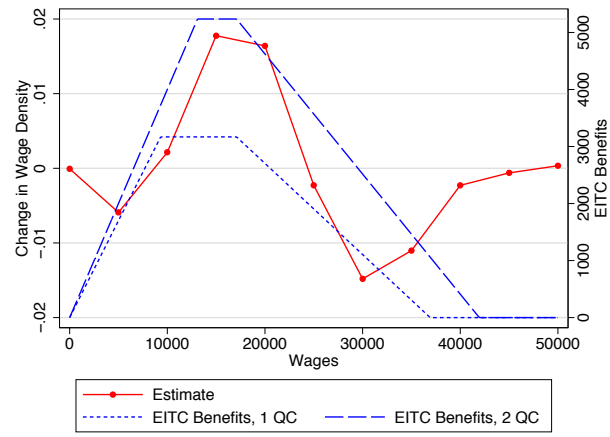
A. Fraction Audited: (0,1)



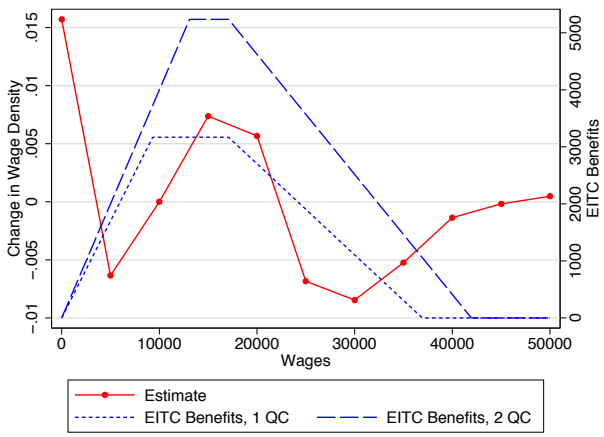
B. Fraction Audited: [0.01,0.99]



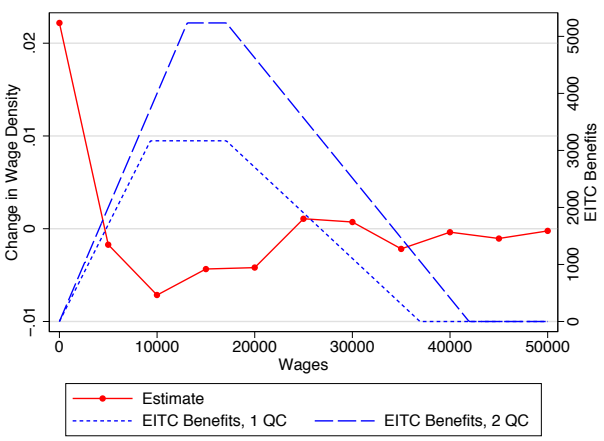
C. Fraction Audited: [0.05,0.95]



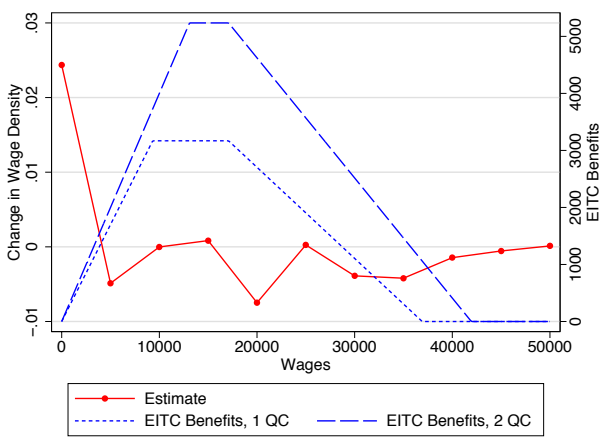
D. Fraction Audited: [0.10,0.90]



E. Fraction Audited: [0.20,0.80]



F. Fraction Audited: [0.25,0.75]

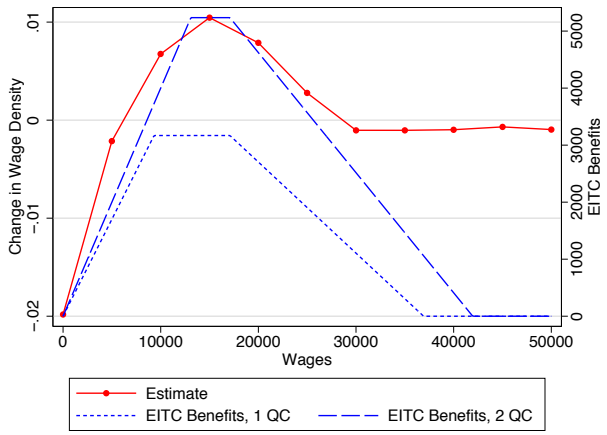


Notes: The analysis samples are defined to allow for comparisons between audited and scored but not audited taxpayers with similar risk scores. When defining these analysis samples, we create cells based on bins of risk scores in each tax year and then calculated the fraction of audited taxpayers in each cell. To ensure adequate sample sizes of audited and scored but not audited tax returns in each cell, we restrict the analysis sample to taxpayers with returns in cells in which the fraction audited is in a specified range. The sample sizes for the different samples defined using different cutoff thresholds are as follows: for (0,1) N=1945776, for [0.01,0.99] N=836016, for [0.05,0.95] N=522625, for [0.10,0.90] N=265478, for [0.20,0.80] N=103536, for [0.25,0.75], N=65557.

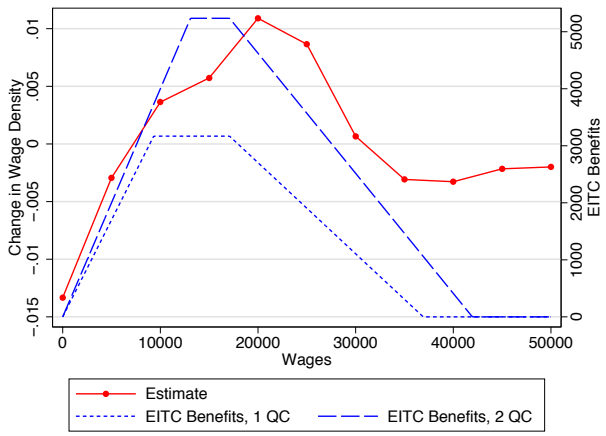
Appendix Figure 15.

Using Different Audit Fraction Cutoffs to Determine Analysis Samples
Wage Responses 4 Years After Random Assignment, Wage Earners

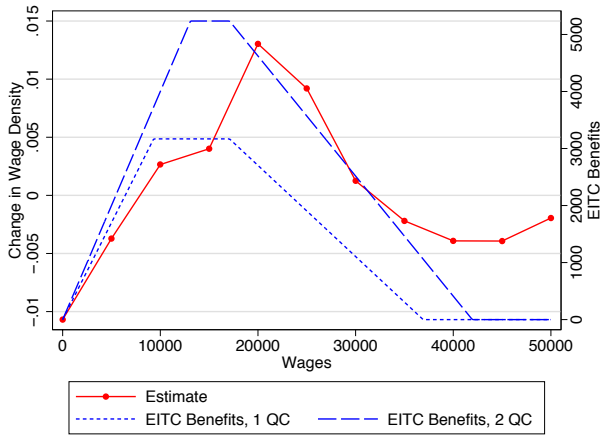
A. Fraction Audited: (0,1)



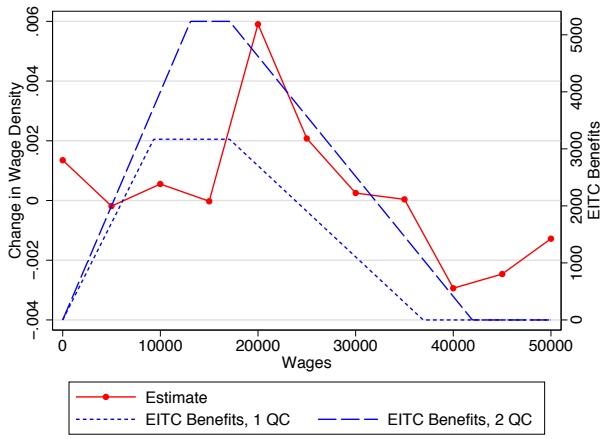
B. Fraction Audited: [0.01,0.99]



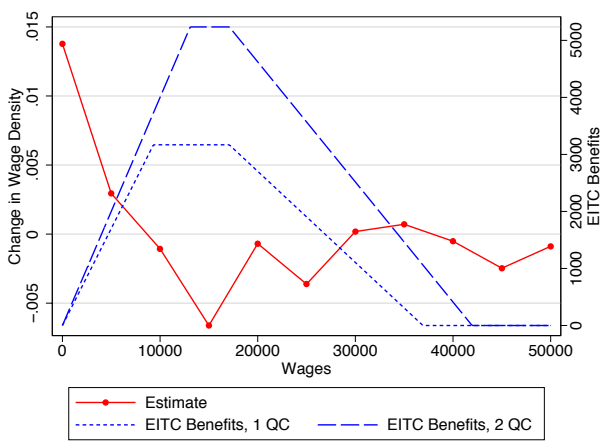
C. Fraction Audited: [0.05,0.95]



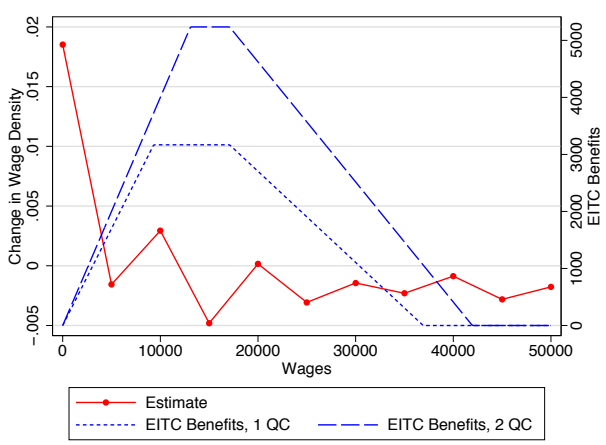
D. Fraction Audited: [0.10,0.90]



E. Fraction Audited: [0.20,0.80]



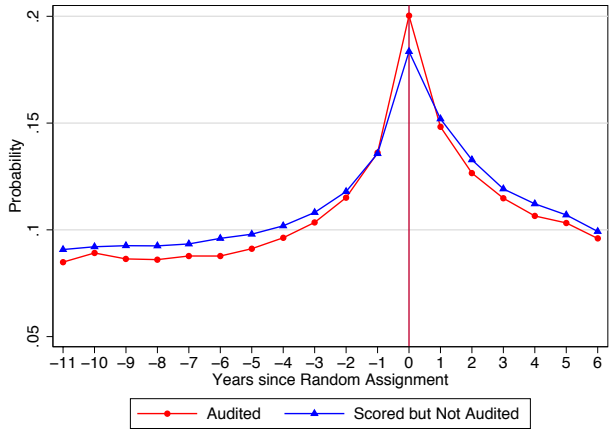
F. Fraction Audited: [0.25,0.75]



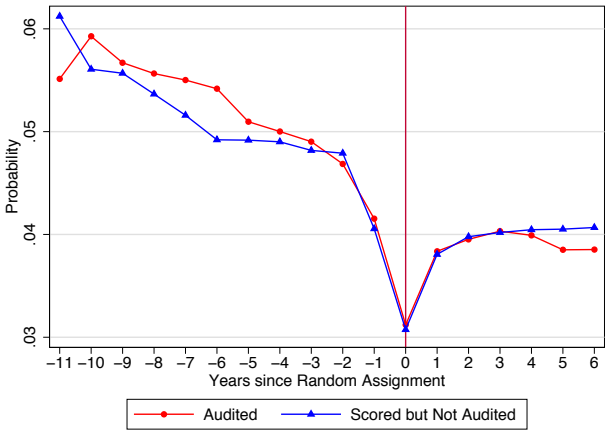
Notes: The analysis samples are defined to allow for comparisons between audited and scored but not audited taxpayers with similar risk scores. When defining these analysis samples, we create cells based on bins of risk scores in each tax year and then calculated the fraction of audited taxpayers in each cell. To ensure adequate sample sizes of audited and scored but not audited tax returns in each cell, we restrict the analysis sample to taxpayers with returns in cells in which the fraction audited is in a specified range. The sample sizes for the different samples defined using different cutoff thresholds are as follows: for (0,1) N=1945776, for [0.01,0.99] N=836016, for [0.05,0.95] N=522625, for [0.10,0.90] N=265478, for [0.20,0.80] N=103536, for [0.25,0.75], N=65557.

Appendix Figure 16.
Additional Outcomes

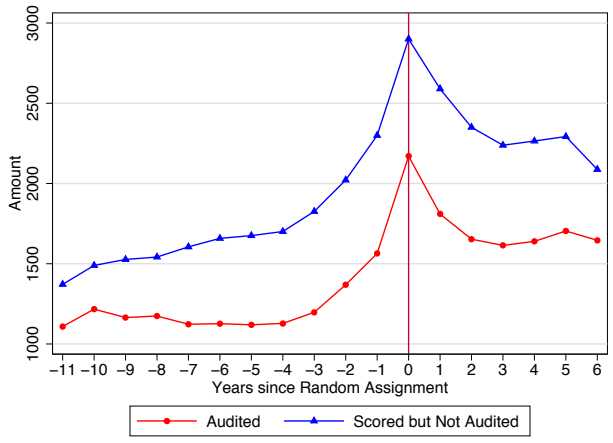
A. Has 1099-MISC Income, Self-Employed



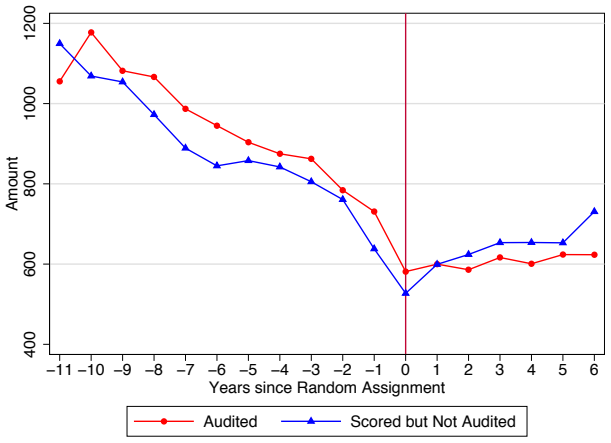
B. Has 1099-MISC Income, Wage Earners,



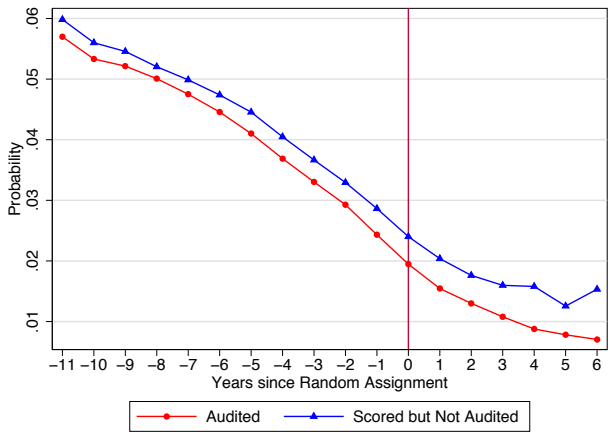
C. Amount of 1099-MISC Income, Self-Employed



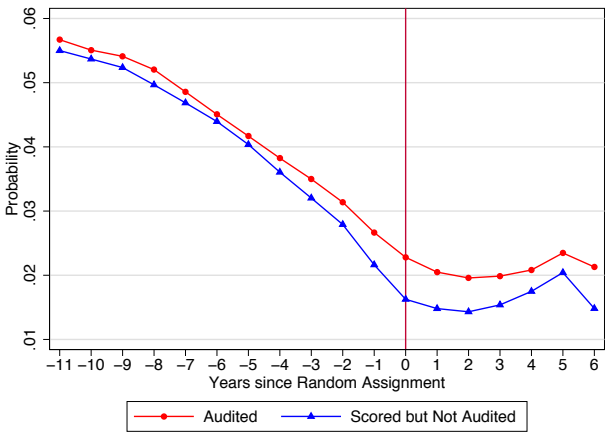
D. Amount of 1099-MISC Income, Wage Earners



E. Has 1099-SSA Disability Benefits, Self-Employed



F. Has 1099-SSA Disability Benefits, Wage Earners

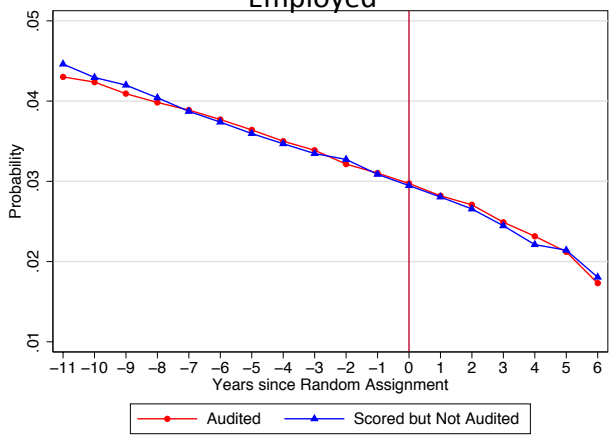


Notes: Each plot illustrates estimated regression coefficients from regressing the variable specified in the plot title on event time dummies, an indicator for being an audited individual, interactions between the event time dummies and audited indicator, and de-meaned covariates. The covariates include dummies for tax year, age, state of residence at the time of audit, and gender.

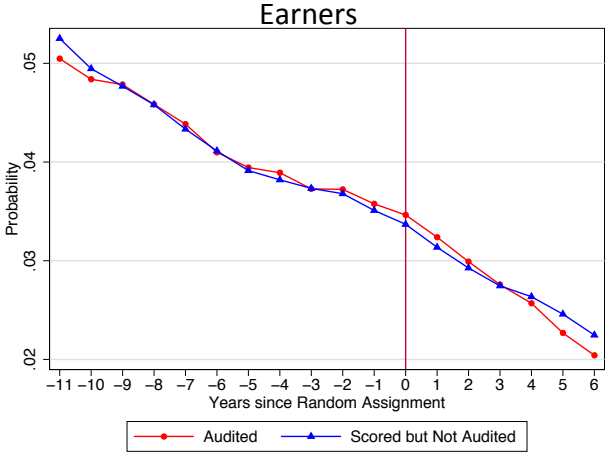
Appendix Figure 16. (continued)

Additional Outcomes

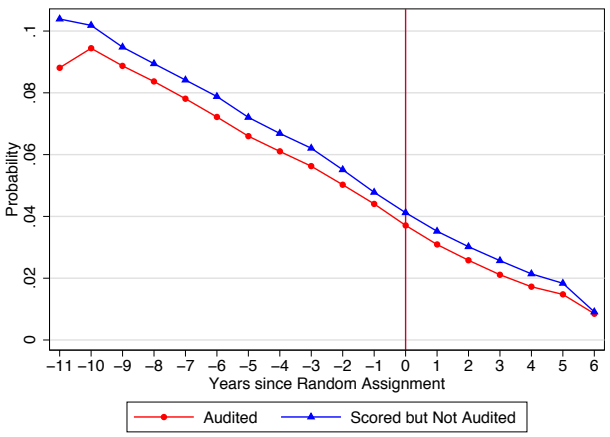
G. Has 1099-SSA Retirement Benefits, Self-Employed



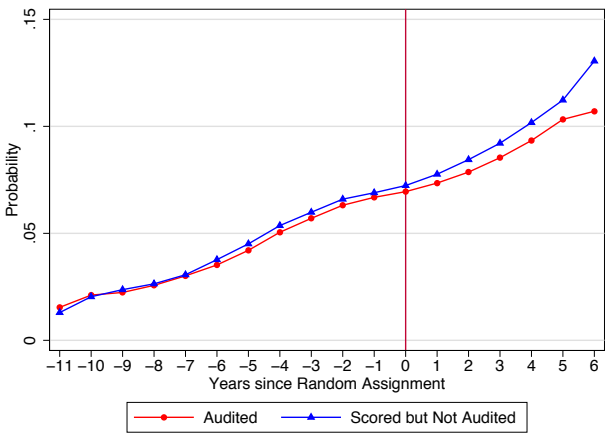
H. Has 1099-SSA Retirement Benefits, Wage Earners



I. Has 1098 Mortgage Statement, Self-Employed



J. Has 1098 Mortgage Statement, Wage Earners



Notes: Each plot illustrates estimated regression coefficients from regressing the variable specified in the plot title on event time dummies, an indicator for being an audited individual, interactions between the event time dummies and audited indicator, and de-meaned covariates. The covariates include dummies for tax year, age, state of residence at the time of audit, and gender.