

# Can IRS Move Paper Filers to Assisted Tax Preparation?

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## Background

Prior to the computer and Internet boom in the mid-1990s, only about 8 percent of taxpayers used software to self-prepare their tax returns (Guyton, *et al.* (2005)) and no taxpayers filed electronically as it was not yet available. Between 1998 and 2007, households with Internet access increased from 375,000 to 74 million; during this same period, electronic filing increased from 18 percent to 61 percent (Gunter (2016)).

Today, approximately 4 percent of taxpayers still self-prepare their Federal income tax returns on paper. Of the 6 million Tax Year (TY) 2015 paper filers, over two-thirds were eligible to use at least one free assisted tax preparation method. However, only 2 to 3 percent of these apparently-eligible taxpayers used a free assisted preparation method. Despite the high rate of eligibility, surveys (like the one conducted by United Way Worldwide in November 2015)<sup>2</sup>, suggest a low utilization rate can be attributed to a lack of awareness due to sparse advertising for these methods. This study was a collaboration between the Internal Revenue Service (IRS) Office of Research, Applied Analytics, and Statistics (RAAS), the Refundable Credits Administration (RCA), the U.S. Department of the Treasury, and academic partners at Stanford University and New York University. It was developed to use postcard communications to encourage the use of free assisted tax preparation methods as well as electronic filing for taxpayers filing their TY2016 returns. The various free assisted preparation methods detailed in these communications are described below.

The **Voluntary Income Tax Assistance** (VITA) program is an in-person tax assistance program providing free tax help from IRS-certified volunteers for taxpayers whose adjusted gross income (AGI) was less than or equal to \$54,000 for TY2016 individual income tax returns filed during the 2017 tax filing season. VITA offers free basic income tax return preparation, which includes assisting with filing a return for Form W-2, various Form-1099s, Earned Income Tax Credit (EITC), Child Tax Credit, and ACA Statements. A full list of included services, as well as excluded services, can be found in IRS Publication 3676-B. Select sites with the “Self-Prep” listing also allow taxpayers to use free Web-based tax preparation software to prepare and electronically file their return.

Another free tax preparation method is the **Free File** program (FF), a partnership between the IRS and the Free File Alliance. The Free File Alliance includes several private tax software companies, such as H&R Block, TurboTax, and TaxAct, among others. The program offers free online tax preparation software and electronic filing services via commercial partners for taxpayers whose AGI is less than or equal to \$64,000 (TY2016). A similar free online software, sponsored by the United Way, is provided through MyFreeTaxes.com (MFT). Taxpayers whose AGI is less than or equal to \$64,000 (TY2016) can use this software to prepare and file their taxes electronically.

There are many advantages to using an assisted tax preparation method for both the taxpayer and the IRS, which include the above-mentioned free methods, other software, or a paid preparer. Assisted methods provide expertise on tax laws, guidance on tax benefits, and a means for automatic step-by-step calculations.

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<sup>1</sup> The views and opinions presented in this paper reflect those of the authors. They do not necessarily reflect the views or the official position of the Internal Revenue Service or the U.S. Department of the Treasury.

<sup>2</sup> The survey conducted for United Way Worldwide on November 18-23, 2018, found that 72 percent of Americans making \$62,000 or less were unaware that they qualified for free assisted tax preparation. Participants included 1,000 American adults with income of \$62,000 or less. The margin of error for the sample was +/- 4 percent with a 95 percent confidence level.

Taxpayers using an assisted preparation method are less likely to make math errors; in 2015, the IRS sent only half a percent of taxpayers who used an assisted preparation method a math error notice, whereas, over 16 percent of paper filers were sent one. Additionally, research suggests that the introduction of electronic filing significantly increased take up of the EITC (Kopczuk and Pop-Eleches (2007)). Electronic submissions also reduce processing time, so a taxpayer may receive a potential refund within 5 days of submission, while the time to receive a refund for a paper return can be almost 3 weeks. In addition to faster processing time for filing electronically, the cost for the IRS reduces drastically from an average of around \$4.00 for processing a paper return to roughly \$0.25 for processing an electronic return.

We designed an experiment in which selected taxpayers would receive informational postcards describing one or two free assisted tax preparation methods during the January to April 2017 tax filing season. This paper reports preliminary results on the effect of the outreach on the use of assisted methods for the full sample population and key subgroups, as well as the type of assisted method these taxpayers used.

## Related Research

Several outreach studies have been conducted to measure taxpayers' responses to different types of messages sent using postcards or letters. This section highlights a few key studies related to our experiment.

Bhargava and Manoli (2015) conducted a field experiment to examine the effect of tailored outreach on take-up of the EITC. The experimental population included 35,050 apparently-eligible EITC taxpayers from California who did not claim EITC on their TY2009 return. In this study, the taxpayers received a letter in November 2010 with a second chance to claim the credit. The letters contained multiple treatment groups with varied messaging based on the potential explanations for not claiming the tax credit.<sup>3</sup> Study results showed that 22 percent of taxpayers in the sample claimed the EITC after they received any letter, compared to 14 percent of taxpayers in the control group who did not receive a letter. Additionally, taxpayers who received a letter that outlined generic EITC benefits had an even higher take-up rate of 31 percent. There was no significant increase relative to the control group for letters that had messaging aimed to reduce program stigma.

Orlett, *et al.* (2017) examined the effect of informational communications to encourage nonfilers to file their TY2015 tax returns as an alternative to more-costly enforcement. The outreach was conducted during the 2016 tax filing season and was divided into two pilots. The first pilot consisted of a base population of taxpayers who had resolved a nonfiler case through the Automated Substitute for Return (ASFR) process in Calendar Year 2015. There were two treatment groups: one group received a reminder postcard and one group received a reminder letter. Results showed that both reminders resulted in higher filing rates when compared to a control group that received no mailing. The second pilot focused on a population of taxpayers who had identified as nonfilers for TY2013, but for whom the IRS had not yet begun working their cases. These treatment group members received one or two postcards with either a simple postcard design or a postcard with detailed information about online resources. All treatment groups resulted in a positive increase in response, with the largest increases coming from the higher priority cases that received two mailings of the simple postcard.

A third key outreach study was conducted in the United Kingdom by Hallsworth, *et al.* (2017). In this study, social norms messaging was used to measure tax payment response among taxpayers who had declared a tax liability, but who had not yet paid the balance due. There were five treatment groups, each receiving some variation of the following messaging in a base letter: "Nine out of ten people pay their taxes on time." A sample of 101,471 taxpayers was used for this experiment, which was conducted in August 2011. The overall effect of the combined treatment groups was an increase of 7.1 percentage points in the likelihood of making a tax payment.

Our study contributes to the research discussed above and other taxpayer behavior-related outreach pilots to show when and how outreach interventions can be a valuable and economical tool to reach taxpayers and encourage certain behaviors.

<sup>3</sup> The potential explanations for not claiming EITC include the lack of awareness or confusion about the program benefits, complexity of claiming, and program stigma. Refer to Marcuss, *et al.* (2013) for further research on the issue of complexity and how it impacts compliance burden.

## Methodology

During the 2017 tax filing season, we conducted a randomized control trial to test the impact of providing information on free assisted tax preparation methods on return preparation and filing method selection.

**Criteria for Base Population:** In addition to filing a paper return for TY2015, we applied the criteria below to define the study population:

- Did not file a computer-generated paper return (“V-coded” returns);
- Had an AGI of \$54,000 or less;
- Did not have any Schedule C (sole proprietor) losses;
- Did not file Form 8606, Form 8615, or Form 8962 Parts IV and V;
- Did not use a preparer;
- Lived within 30 miles of two VITA sites.<sup>4</sup>

A total of 2,041,537 taxpayers were in the study population.

The unassisted paper filing population in the study had some very distinct characteristics. The median household income for these taxpayers was approximately \$31,500, while the median for other taxpayers was over \$36,000. The median age of an unassisted taxpayer was 57 years—13 years older than the median for assisted taxpayers. Although the unassisted taxpayer group had a higher median age, there was also a large group of younger taxpayers who had generally lower incomes and/or simpler tax situations. While all taxpayers in our study filed by paper in TY2015, half of the unassisted paper filers filed a paper-prepared return every year in the previous 3 years as well.

## Experimental Design

Wave 1 of the experiment included five treatment groups with an approximate sample of 80,000 taxpayers each. In January 2017, treatment group members were sent one of the five postcards described below (see Appendix A for figures of the five postcards).

- **Treatment 1:** FF and VITA, including address and contact information for the two closest VITA sites
- **Treatment 2:** FF and VITA (no address or contact information)
- **Treatment 3:** VITA only, including addresses and contact information for the two closest VITA sites
- **Treatment 4:** FF only
- **Treatment 5:** MFT only

Each treatment group was randomly assigned after stratifying by TY2014 filing method, liability/refund status for TY2015, and whether a math error was found on the taxpayer’s TY2015 return. Additionally, a group of approximately 91,000 taxpayers who were apparently eligible for EITC but who did not claim the credit on their TY2015 return were oversampled and distributed randomly among the treatment groups and control group so that approximately 12 percent of each treatment group was likely to be EITC-eligible.

Wave 2 of the experiment sent an additional group of taxpayers one of three postcards (Treatments 2, 4, and 5) in March 2017. As in Wave 1, approximately 80,000 taxpayers were randomly assigned to each of the three treatment groups with the Wave 2 treatment samples derived from the Wave 1 control group. Additional criteria for this wave included taxpayers who had not yet filed their TY2016 return and who had filed their TY2015 return after mid-March 2016.

From the base population of 2,041,537, a total sample of 627,268 taxpayers were distributed among the five treatment groups in Wave 1 and the additional three treatment groups in Wave 2. The remaining 1,414,269 taxpayers were assigned to the control group.

<sup>4</sup> There are VITA sites in the U.S. territories, but those are excluded from the sample.

## Experiment Issues

This experiment was initially designed to have only one mailing in January 2017 for the five treatment groups (Wave 1). However, several distribution-related issues occurred during this mailing. The Treatment 1 postcard was mailed to half of that group twice; no postcard was mailed to the other half. Also, the State data for the postcards with VITA addresses (Treatments 1 and 3) were not properly formatted. As a result, taxpayers whose closest VITA sites were in different bordering states contained errors. Formatting errors related to printing URLs caused the URLs to truncate. In addition, the print quality for all postcards was poor with frequent ink smears as well as some tearing. Because these errors likely reduced the impact of the first mailing, a second mailing (Wave 2) was scheduled for March 2017. In contrast to the first mailing, the postcards in the second mailing were black and white, 4"x6" postcards (as opposed to 5"x7") that were printed on high-quality paper rather than on cardstock.

We also encountered a few issues related to data collection. First, FF and MFT returns are identified in the administrative data as using a software-assisted method, but the specific software used was not reliably distinguishable. Because of this, we present results of the experiment for overall software assisted preparation rather than by software type. The second issue is that software-prepared paper-filed returns ("V-coded" returns) were not properly coded for the first half of the tax season when the bulk of returns are filed. As a result, an estimated two million returns that were likely prepared using an assisted tax preparation method are coded as unassisted paper-filed returns.

## Analysis and Modeling

This section describes our empirical methodology. In most analyses, our outcome of interest is the taxpayer's TY2016 filing method. While we are interested in the effect of receiving a postcard, simply regressing the outcome variable on indicators for the various treatments would not estimate this relationship, given that some of the individuals who were randomly assigned to receive a postcard did not end up receiving one because a fraction of the postcards mailed were undelivered. Although we observe whether a postcard was returned to sender as undeliverable, we do not know which individuals in the control group would have had their postcards returned as undeliverable had they (counter-factually) been assigned to the treatment group instead. Hence, we rely on an instrumental variables analysis; the explanatory variable of interest is an indicator for a successful postcard delivery, and we instrument for it with an indicator for whether the taxpayer was assigned to the corresponding treatment group.

Specifically, our analysis takes the form:

$$y_i = \beta \text{Postcard}_i + \delta X_i + \varepsilon_i$$

$$\text{Postcard}_i = \beta' \text{Treated}_i + \delta' X_i + \varepsilon'_i$$

where  $y_i$  denotes the TY2016 filing method of taxpayer  $i$ ,  $\text{Postcard}_i$  indicates whether  $i$  received a postcard (i.e., whether delivery was successful),  $\text{Treated}_i$  and  $\varepsilon'_i$  indicates whether  $i$  was assigned to the treatment group. As detailed below,  $X_i$  is a vector of taxpayer-specific characteristics.

In addition, our analysis accounts for the fact that our study differed from a typical randomized experiment in several dimensions. First, as described above, a population of taxpayers who appeared eligible for the EITC, but who had not claimed it in prior years, was over-sampled into the treatment groups for both Wave 1 and Wave 2 (although the rate of over-sampling differed between the waves). Absent an adjustment for this over-sampling, the estimated effect of the treatment would be conflated with inclusion in this population. To eliminate this source of bias, in all specifications we include a control variable that indicates whether a taxpayer is a member of this population. In addition, each regression is weighted to account for this over-sampling so that our estimates are reflective of the overall population of unassisted paper filers.

Second, as described above, the criteria for inclusion in the overall sample differed from the criteria for inclusion in Wave 2. Specifically, taxpayers who were already observed to have filed their returns at the date that Wave 2 was sent out, as well taxpayers who were early filers in prior years, were not eligible for the Wave 2 treatments. Without adjustments, comparing the Wave 1 and Wave 2 treatments within a single regression

would yield estimates that are conflated with these differing inclusion criteria. As above, we adjust for this feature of our experimental data by controlling for indicators for the criteria used to determine Wave 2 eligibility, as well as interactions among those indicators. Even with these control variables, however, the estimated treatment effects corresponding to Waves 1 and 2 reflect different subpopulations of paper filers.

Finally, to deal with the fact that approximately one-half of Treatment 1 in Wave 1 did not receive postcards, we simply exclude this group from the main analyses. For the regressions that test the effect of address information on filing behavior (the question that the treatment was designed to help answer), we included this group after making further adjustments (described below) to address the fact that selection into the group was nonrandom.

Undeliverable mail data were collected by a contractor and all other data were collected using the IRS Compliance Data Warehouse (CDW).

## Preliminary Results

This section presents preliminary results on the effect of the treatment communications on the use of assisted tax preparation methods. All specifications combine the effects of the two waves of the experiment, though we consider the effects of the two waves separately in one part of our analyses. Additionally, Appendix B presents the treatment effects on the use of any assisted tax preparation by treatment type and wave.

## Main Results

We begin by considering the effects of our “base treatment” (Treatment 2), which provided general information on both free in person (VITA) and online (FF) preparation methods. Column 1 of Table 1 shows the base treatment’s effect on assisted tax preparation. Just under 22 percent of the control group members used an assisted tax preparation method in TY2016. Those who received a base treatment postcard were 0.63 percentage points more likely to use an assisted method—a modest yet significant 3-percent increase. Breaking out our measure of assisted tax preparation by method type shows that most taxpayers who switched to an assisted tax preparation method chose to use software to self-prepare their tax returns. While the increase in VITA use was smaller than the increase in software use (0.20 versus 0.56 percentage points), the VITA usage rate among control group members was just 1 percent, making this estimate a 20-percent increase in the use of VITA. Additionally, for the taxpayers who used an assisted preparation method, there was a small reduction in the use of a likely costlier paid preparer. Specifically, the likelihood of using a paid preparer decreased by 0.14 percentage points. Additionally, for taxpayers who received a base treatment postcard, there was a significant decrease of 0.19 percentage points in the likelihood of not filing at all.

**TABLE 1. Base Treatment Effects on Assisted Tax Preparation and Nonfiler Status**

Item	Any Assisted	Software	VITA	Paid Preparer	Nonfiler
T2: Base Treatment (VITA Info & FF)	0.629 *** (0.125)	0.558 *** (0.103)	0.203 *** (0.032)	-0.136 * (0.079)	-0.188 ** (0.095)
Control Mean	21.70	13.10	1.00	7.50	12.20
N	2,041,537				

Outcomes are indicator variables with a scale of 0-100. Standard errors reported in parentheses.

Source: IRS, Compliance Data Warehouse. Individual Return Transaction File. TY2016 Returns. Data extracted November 2017.

\* 90 percent significance, \*\* 95 percent significance, \*\*\* 99 percent significance

While the base treatment group included information about both VITA and FF, two additional sets of postcards included information about only one free tax preparation method: either VITA (Treatment 3)<sup>5</sup> or online services (Treatments 4 and 5). Table 2 considers how the treatment effects differed when only one of the free tax preparation methods was included on the postcard.

<sup>5</sup> One additional difference between the base treatment and the VITA-only treatment is that the VITA-only treatment included personalized information about the location of the two VITA sites closest to the taxpayer. Table 3 addresses the impact of this additional information.

**TABLE 2. Assisted Preparation Method by Messaging Type**

Item	Software	VITA	Paid Preparer	Any Assisted
T2: Base Treatment	0.581 ***	0.214 ***	-0.199 *	0.606 ***
	(0.114)	(0.035)	(0.088)	(0.139)
T4&T5: Online only (FF or MFT)	0.570 ***	0.022	-0.132	0.464 ***
	(0.091)	(0.027)	(0.071)	(0.112)
T3: VITA only	0.200	0.563 ***	-0.018	0.730 ***
	(0.136)	(0.049)	(0.108)	(0.168)
Control Mean	13.10	1.00	7.50	21.70

Outcomes are indicator variables with a scale of 0-100. Standard errors reported in parentheses.

Source: IRS, Compliance Data Warehouse. Individual Return Transaction File. TY2016 Returns. Data extracted November 2017.

\* 90 percent significance, \*\*\* 99 percent significance.

The effects of the online-only treatments on the likelihood of using tax preparation software are nearly identical to the effect of the base treatment; unsurprisingly, the software-only treatment did not lead to an increase in VITA use. The online-only treatments also led to a small shift away from the use of paid preparers, though the decrease was not statistically significant. The VITA-only treatment led to a significant increase in VITA use—three times that of the base treatment group—and, as might be expected, had no effect on the use of tax preparation software. Taken together, the three treatment types had similar effects on the likelihood of using any assisted preparation method (either software or VITA), but the specific preparation method referred to on the postcard strongly influenced which type of preparation assistance the taxpayer chose.

In addition to the four treatments described above, the experiment included a version of the base treatment postcard that included both information on FF and VITA, as well as information on the address, phone number, and hours of the taxpayer's two closest VITA sites (Treatment 1).<sup>6</sup> Table 3 tests for the additional effect of the information on the specific VITA sites on the likelihood of using VITA by separately estimating the effect of the general information (included in Treatment 2) and the effect of the personalized VITA site information (included in Treatment 1).<sup>7</sup> Column 1 shows that receiving the base treatment information significantly increased the likelihood of using VITA by 0.25 percentage points. Including personalized VITA site information increases VITA use by an additional 0.14 percentage points. Columns 2 through 4 repeat this analysis, but restrict the sample to taxpayers who lived within ten, five, and two miles of a VITA site, respectively. These results suggest that living closer to a VITA site increased VITA use when the postcards included information on the site location. Specifically, while the inclusion of personalized VITA site information significantly increased VITA use for taxpayers who did not live near a site, the impact of the postcard on VITA use more than doubled for taxpayers who lived within two miles of a VITA site when the postcard included the site information.

<sup>6</sup> As mentioned above, due to a mailing error, half of the taxpayers assigned to Treatment 1 received two postcards, while the other half received none. Therefore, we cannot disentangle the effect of receiving two postcards from the effect of the additional VITA site information. The sample in Table 3 is restricted to taxpayers who would have received the mishandled treatment.

<sup>7</sup> As mentioned above, Treatment 3 also includes information on the two closest VITA sites; however, there is no treatment postcard that presents VITA-only information without this additional site-specific information. Therefore, this analysis focuses on a comparison of Treatments 1 and 2.

**TABLE 3. Impact of VITA Location Information on VITA Use**

Item	VITA Office Location			
	Any Distance	<10 Miles	<5 Miles	<2 Miles
T2: Base Treatment	0.255 *** (0.062)	0.272 *** (0.283)	0.283 *** (0.082)	0.236 ** (0.118)
T1: Base Treatment + Addresses	0.397 *** (0.065)	0.420 *** (0.072)	0.481 *** (0.087)	0.591 *** (0.134)
Control Mean	0.94	0.97	1.03	1.11
N	994,421	832,373	622,304	294,901

Treatment 1 sample restricted to individuals who received the treatment.

Outcomes are indicator variables with a scale of 0-100. Standard errors reported in parentheses.

Source: IRS, Compliance Data Warehouse. Individual Return Transaction File. TY2016 Returns. Data extracted November 2017.

\*\*95 percent significance, \*\*\*99 percent significance

## Intervention Timing

The intervention took place in two waves, the first wave was conducted in January and the second wave was conducted in March. While the number of treatments included in each wave differed slightly along with the quality of the postcards (as mentioned above), comparing the impacts of the two waves sheds light on differences in the effectiveness of the postcards when sent at different times during the filing season. To make an accurate comparison, Table 4 combines Treatment Groups 2, 4, and 5 by wave to measure the effects of receiving a postcard at the beginning of the filing season to the effects of receiving a postcard closer to the filing deadline. The postcards sent in the first wave of the intervention significantly increased the use of VITA and tax preparation software while decreasing the use of paid preparers. The second wave also significantly reduced the likelihood of not filing at all.

**TABLE 4. Effects of Timing**

Item	Any Assisted	Software	VITA	Paid Preparer	Nonfiler
Treated	0.674 ***	0.594 ***	0.16 ***	-0.071	-0.14
(Early Intervention)	-0.131	-0.11	-0.033	-0.081	-0.109
Treated	0.591 ***	0.518 ***	0.067 **	0.018	-0.2 **
(Late Intervention)	-0.108	-0.09	-0.026	-0.067	-0.089
Control	22.7	14.2	1.1	7.4	14.5
N	1,164,748				

Restricted to Treatments 2, 4, and 5 and to taxpayers who would have been eligible for late intervention.

Outcomes are indicator variables with a scale of 0-100. Standard errors reported in parentheses.

Source: IRS, Compliance Data Warehouse. Individual Return Transaction File. Data extracted November 2017.

\*\*95 percent significance, \*\*\*99 percent significance.

## Subgroup Analyses

Unlike the age distribution of assisted filers, the distribution of age for unassisted paper filers is sharply bimodal. Appendix C presents the age distribution for assisted versus unassisted filers, which demonstrates that unassisted filers in TY2015 largely fell into two age groups: an age 30 or younger group and an over age 60 group. Table 5 considers the effect of the treatment postcards on tax preparation method by taxpayers who were age 30 or younger and taxpayers who were over age 30. Column 1 shows that the treatment effect on the likelihood of using any assisted tax preparation method did not differ by age; both age groups were just over half a percentage point more likely to use an assisted method as a result of the treatment. However, the method of tax assistance significantly differed across the two groups. Although both age groups saw a significant increase in both the use of software and VITA, younger taxpayers saw a significantly larger increase in the use of software, while older taxpayers saw a larger increase in the use of VITA. Additionally, the decrease in the use of

a paid preparer was twice as large for older taxpayers, while only younger taxpayers experienced a decrease in the likelihood of not filing at all. Lastly, unassisted paper return preparation decreased by twice the magnitude for older taxpayers than for younger taxpayers.

**TABLE 5. Treatment Effects on Sample by Age**

Item	Any Assisted	Software	VITA	Paid Preparer	Unassisted	Nonfiler
Any Treatment (Age ≤30)	0.614 ***	0.739 ***	0.074 ***	-0.191 **	-0.280	-0.335 ***
	(0.147)	(0.131)	(0.023)	(0.095)	(0.156)	(0.107)
Any Treatment (Age >30)	0.554 ***	0.383 ***	0.194 ***	-0.022	-0.535 ***	-0.019
	(0.080)	(0.061)	(0.025)	(0.052)	(0.095)	(0.066)
Control Mean	21.70	13.10	1.00	7.50	66.00	12.20

Outcomes are indicator variables with a scale of 0-100. Standard errors reported in parentheses.

Source: IRS, Compliance Data Warehouse. Individual Return Transaction File. TY2016 Returns. Data extracted November 2017.

\*\*95 percent significance, \*\*\*99 percent significance

As mentioned above, the experimental population oversampled taxpayers who appeared to be EITC-eligible but who did not claim the credit on their TY2015 returns. Table 6 presents the effect of receiving any treatment postcard for only the apparently-eligible EITC taxpayers. The results show that the postcards led to a large and statistically significant increase of almost half a percentage point in the likelihood of using VITA, a 33 percent increase. The treatments also led to a small increase in the use of software, a decrease in the use of a paid preparer and a small decrease in the likelihood of not filing, but these changes were not statistically significant.

**TABLE 6. Treatment Effects on Apparently-Eligible EITC Sample**

Item	Any Assisted	Software	VITA	Paid Preparer	Nonfiler
Treated	0.175	0.219	0.461 ***	-0.471	-0.171
	(0.456)	(0.352)	(0.142)	(0.307)	(0.483)
Control Mean	21.10	11.10	1.40	8.50	24.90
N	90,605				

Outcomes are indicator variables with a scale of 0-100. Standard errors reported in parentheses.

Restricted to only taxpayers that were apparently-eligible for EITC

Source: IRS, Compliance Data Warehouse. Individual Return Transaction File. Data extracted November 2017.

\*\*\*99 percent significance

## Conclusions and Future Research

The overall results suggest that the outreach experiment was effective in increasing the use of assisted tax preparation methods among taxpayers who previously filed a paper return. Follow-up work will assess whether receipt of a postcard has a persistent impact on filing behavior by considering treatment effects in subsequent tax years.

This study focuses on the effect of communications regarding free tax preparation methods to unassisted paper filers. Further research will allow us to test the effectiveness of different messaging. It will help us understand whether the outreach can help individuals discover that they do not have a filing requirement and have no other reason to file. If that is the case, not filing a return would be considered a positive outcome. The research can also be expanded to prior-year nonfilers for whom the expected cost of assisted tax preparation may be the primary barrier to filing.

Because this study also found that the effect of providing VITA site addresses was particularly effective for individuals who lived near a VITA site, future research could evaluate how using a VITA site is affected by urbanicity (urban, suburban, or rural).

## References

- Bhargava, Saurabh, and Dayanand Manoli. 2015. "Psychological Frictions and the Incomplete Take-Up of Social Benefits: Evidence from an IRS Field Experiment." *American Economic Review*, 105(11):3489–3529.
- Gunter, Samara. 2016. "Your Biggest Refund, Guaranteed? Internet Access, Tax Filing Method, and Reported Tax Liability." Colby College.
- Guyton, John L., Adam K. Korobow, Peter S. Lee, and Eric J. Toder. 2005. "The Effects of Tax Software and Paid Preparers on Compliance Costs." *National Tax Journal*, 58(3).
- Hallsworth, Michael, John List, Robert Metcalfe, and Ivo Vlaev. 2017. "The Behavioralist as Tax Collector: Using Natural Field Experiments to Enhance Tax Compliance." *Journal of Public Economics*, 148(C): 14–31.
- Kopczuk, Wojciech, and Cristian Pop-Eleches. 2007. "Electronic Filing, Tax Preparers, and Participation in the Earned Income Tax Credit." *Journal of Public Econometrics*, 91(7-8), 1351–1367.
- Marcuss, Rosemary, George Contos, John Guyton, Patrick Langetieg, Allen Lerman, Susan Nelson, Brenda Schafer, and Melissa Vigil. 2013. "Income Taxes and Compliance Costs: How Are They Related?" *National Tax Journal*, 66(4): 833–854.
- Orlett, Stacy, Rizwan Javaid, Vicki Koranda, Maryamm Muzikir, and Alex Turk. 2017. "Impact of Filing Reminder Outreach on Voluntary Filing Compliance for Taxpayers with a Prior Filing Delinquency." 2017 *IRS Research Bulletin, 7th Annual Joint Research Conference on Tax Administration*, 83–98.

## Appendix A. Samples of Treatments

### Address Side of Postcard (P5270, P5270-A, P5270-B, P5270-C, P5270-D)

 <p>Internal Revenue Service c/o Westat 1600 Research Blvd. RW2634 Rockville, MD 20850-3129 <u>RETURN SERVICE REQUESTED</u></p>	<p>PRESORTED FIRST-CLASS MAIL POSTAGE &amp; FEES PAID IRS PERMIT NO. G-48</p>
 <p>2 out of 3 people qualify for <b>FREE</b> tax preparation services!</p>	 112200000011 ATTN: JOY JUMPINGFOR 14 WESTOVER STREET APT 4505 HARRISONBURG, VA 22801-1101 

### TREATMENT 1: VITA Addresses and FF Info (P5270)

<p><i>Here are 2 easy options for <b>FREE</b> Tax Preparation</i></p>	
<p><b>Option 1</b></p>  <b>File Online</b>	<p>Free tax software helps you prepare your return from home.</p> <ul style="list-style-type: none"> <li>&gt; People with income below \$64,000 qualify</li> <li>&gt; Prepare your return from home</li> <li>&gt; Free tax software</li> </ul> <p>Step-by-step directions at: <a href="http://www.irs.gov/FreeFile" style="color: #0070C0;">www.irs.gov/FreeFile</a></p>
<p><b>Option 2</b></p>  <b>File In-Person</b>	<p>IRS-certified volunteers prepare your taxes for free at a <b>Volunteer Income Tax Assistance</b> site</p> <ul style="list-style-type: none"> <li>&gt; Most people with income below \$54,000 qualify</li> </ul> <p>Please bring with you:</p> <ul style="list-style-type: none"> <li>&gt; Photo Identification</li> <li>&gt; Social Security Card(s)</li> <li>&gt; Tax Documents (e.g., W-2, 1099-MISC)</li> </ul> <p>Find locations at: <a href="http://www.irs.gov/vita" style="color: #0070C0;">www.irs.gov/vita</a> or call <b>800-906-9887</b></p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>Locations near you:</b></p> <p><b>Community Activities Center</b> 305 S Dogwood Dr Harrisonburg, VA 22801-1926 "Opens 2/1/2017; SUN: 9:00AM - 12:00PM; TUE: 8:30AM - 11:30AM, 12:30PM - 3:30PM; SAT: 9:00AM - 12:00PM"</p> <p><b>James Madison University VITA</b> Lake View-Bluestone Drive Harrisonburg, VA 22807-0000 Opens 1/28/2017; FRI: 4:00PM - 8:00PM</p> </div>
<p>Publication 5270 (12-2016) Catalog Number 69330F Department of the Treasury Internal Revenue Service <a href="http://www.irs.gov">www.irs.gov</a></p>	

**TREATMENT 2: VITA Info and FF Info (P5270-A)**

*Here are 2 easy options for **FREE** Tax Preparation*

<p><b>Option 1</b></p>  <p><b>File Online</b></p>	<p>Free tax software helps you prepare your return from home.</p> <ul style="list-style-type: none"> <li>&gt; People with income below \$64,000 qualify</li> <li>&gt; Prepare your return from home</li> <li>&gt; Free tax software</li> </ul> <p>Step-by-step directions at: <a href="http://www.irs.gov/FreeFile">www.irs.gov/FreeFile</a></p>
<p><b>Option 2</b></p>  <p><b>File In-Person</b></p>	<p>IRS-certified volunteers prepare your taxes for free at a <b>Volunteer Income Tax Assistance</b> site</p> <ul style="list-style-type: none"> <li>&gt; Most people with income below \$54,000 qualify</li> </ul> <p>Please bring with you:</p> <ul style="list-style-type: none"> <li>&gt; Photo Identification</li> <li>&gt; Social Security Card(s)</li> <li>&gt; Tax Documents (e.g., W-2, 1099-MISC)</li> </ul> <p>Find locations at: <a href="http://www.irs.gov/vita">www.irs.gov/vita</a> or call <b>800-906-9887</b></p>

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**TREATMENT 3: VITA Addresses (P5270-B)**

*Here is an easy option for **FREE** Tax Preparation*

 <p><b>File In-Person</b></p>	<p>IRS-certified volunteers prepare your taxes for free at a <b>Volunteer Income Tax Assistance</b> site</p> <ul style="list-style-type: none"> <li>&gt; Most people with income below \$54,000 qualify</li> </ul> <p>Please bring with you:</p> <ul style="list-style-type: none"> <li>&gt; Photo Identification</li> <li>&gt; Social Security Card(s)</li> <li>&gt; Tax Documents (e.g., W-2, 1099-MISC)</li> </ul> <p>Find locations at: <a href="http://www.irs.gov/vita">www.irs.gov/vita</a> or call <b>800-906-9887</b></p>	<p><b>Locations near you:</b></p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p>Buker Community Center 22 Armory St Augusta, ME 04330-1234 Appointment Only (207) 582-3053</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p>Millinocket Timber Cruisers Snow Mobile Club Northern Timber Cruise Trail Millinocket, ME 04462-1234 Opens 2/1/2017; TUE: 10:00AM - 3:00PM; WED: 10:00AM - 3:00PM</p> </div>
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**TREATMENT 4: FF Info (P5270-C)**

*Here is an easy option for **FREE** Tax Preparation*



**File Online**

- People with income below \$64,000 qualify
- Prepare your return from home
- Free tax software

Step-by-step directions at: [www.irs.gov/FreeFile](http://www.irs.gov/FreeFile)

IRS Free-File is a partnership between the IRS and the Free File Alliance, a group of industry-leading commercial tax preparation companies that have agreed to provide free commercial online tax preparation and electronic filing. IRS does not endorse any individual Free File Alliance company or retain any taxpayer information entered on the Free File Site.

Publication 5270-C (12-2016) Catalog Number 69334X Department of the Treasury **Internal Revenue Service** [www.irs.gov](http://www.irs.gov)

**TREATMENT 5: MFT Info (P5270-D)**

*Here is an easy option for **FREE** Tax Preparation*



**File Online**

- People with income below \$64,000 qualify
- Prepare your return from home
- Free tax software

Step-by-step directions at: [www.MyFreeTaxes.com](http://www.MyFreeTaxes.com)

MyFreeTaxes is a free online tax preparation service provided by the United Way (a non-profit organization). IRS does not endorse MyFreeTaxes or retain any taxpayer information entered on the MyFreeTaxes site.

Publication 5270-D (12-2016) Catalog Number 69336T Department of the Treasury **Internal Revenue Service** [www.irs.gov](http://www.irs.gov)

## Appendix B. Treatment Effects by Wave and Treatment

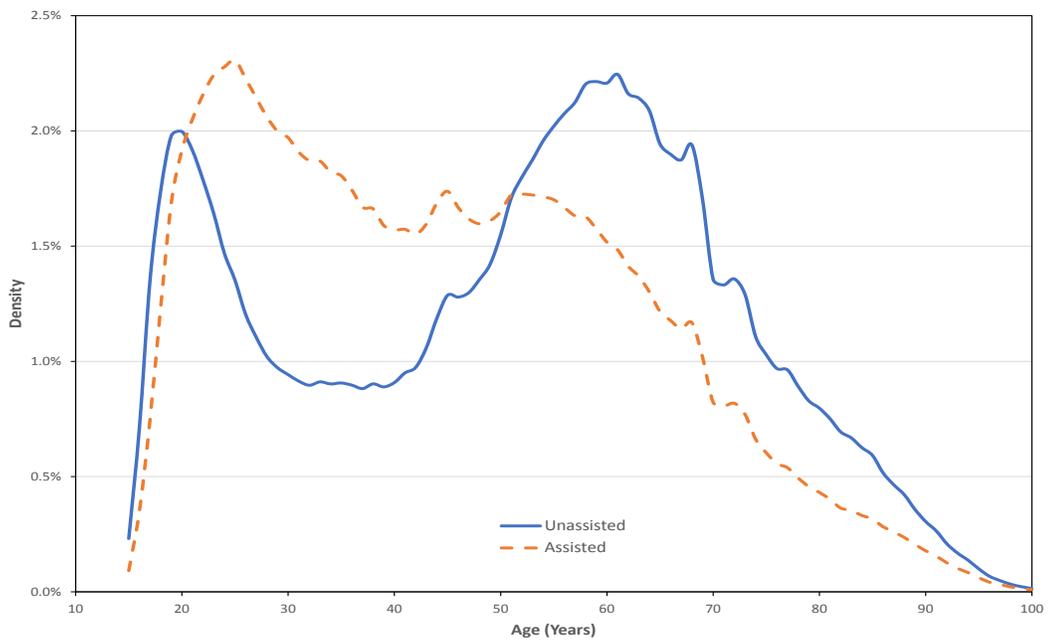
Wave	Any Assisted	Unassisted
January T1: VITAAddresses and FF	0.853 ** (0.344)	-0.810 ** (0.388)
January T2: VITA Info and FF	0.499 *** (0.168)	-0.341 * (0.189)
January T3: VITAAddresses	0.730 *** (0.168)	-0.750 *** (0.190)
January T4: FF	0.275 (0.167)	-0.286 (0.189)
January T5: MFT	0.760 *** (0.169)	-0.547 *** (0.190)
March T2: VITA Info and FF	0.823 *** (0.172)	-0.587 *** (0.196)
March T4: FF	0.484 *** (0.171)	-0.317 (0.196)
March T5: MFT	0.401 ** (0.167)	-0.218 (0.191)
Control	21.90	65.90
N	2,041,537	

Outcomes are indicator variables with a scale of 0-100. Standard errors reported in parentheses.

Source: IRS, Compliance Data Warehouse. Individual Return Transaction File. TY2016 Returns. Data extracted November 2017.

\*90 percent significance, \*\*95 percent significance, \*\*\*99 percent significance

### Appendix C. Age Distribution of TY2015 Filers



Source: IRS, Compliance Data Warehouse. Individual Return Transaction File. TY2015 Returns. Data extracted November 2017.