Heterogeneous Effects of Refund Savings on Participation in the Gig Economy: Findings from a Field Experiment

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Background

Nearly one tenth of American workers earn money through the "gig economy" – the segment of the labor market in which workers find very short-term contractual employment through websites and online applications (Smith, 2016). Since these contracts usually extend over very short time periods (e.g., a fifteen-minute Uber ride), the gig economy offers workers flexible hours and has relatively low barriers to entry and exit (Dokko and Schanzenbach, 2015). Gig workers tend to have lower incomes than other workers and, without a traditional employer, they usually do not have access to many employment benefits like medical insurance, matched retirement savings, and paid time off (Prudential, 2017). This segment of the labor force is expected to continue to grow for the foreseeable future (Intuit, 2017). As the proportion of households directly affected by the gig economy continues to grow, there is an increased need to understand the factors that can promote or discourage participation in the gig economy.

Although traditional job markets often require workers to invest in human capital prior to employment, they rarely require workers to make significant physical capital investments before they can begin working. One unique characteristic of the gig economy is that it often requires different kinds of up-front physical capital investment. For example, before they can start earning a paycheck, Uber drivers need to pay for background checks, safety and emissions tests, and other car maintenance, TaskRabbit workers may have to purchase tools, and Etsy users may need to purchase raw materials that they use in their art. All gig economy workers need to have regular access to a computer or smartphone to access the online platforms through which money can be earned. If a worker does not have access to the physical capital required to work in the gig economy, she may need access to liquidity in order to make those capital investments. However, the capital requirements for certain types of gig work can be costly (Koustas, 2018) and potentially prohibitive for liquidity-constrained households.

This study investigates the relationship between access to liquidity and participation in the gig economy for low- and moderate-income (LMI) households. By leveraging a tax refund savings experiment that resulted in an exogenous shift of tax refund deposits from consumption accounts to savings accounts, we can identify the effects of refund savings on labor supplied in the gig economy by LMI households. These households often have substantial liquid asset constraints relative to the general population, and the tax refund can provide an infusion of liquidity into their balance sheets. Theory does not clearly point to an expected direction of the effect of saving the tax refund on gig economy participation. On one hand, increased levels of refund savings may assure some workers that their necessities will be covered, reducing the incentive to work in the gig economy. However, access to savings may give some workers (particularly liquidity-constrained workers) the means to cover some costs of gig work and allow them to access this market. To understand the various roles that access to savings plays in the decision to participate in the gig economy, we examine the effects of refund savings for several subsets of our sample.

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Data and Methods

This study uses data from the 2017 Household Financial Surveys (HFS), which were administered as part of the Refund to Savings Initiative. The first wave of the HFS was offered to a random subset of TurboTax Freedom Edition[6] LMI tax filers immediately after tax filing. In addition to questions about respondents' financial circumstances and characteristics, the survey included questions about the respondent's participation in the gig economy. Six months after tax filing, a follow-up wave of the survey was administered.

In 2017, users of TurboTax Freedom Edition also participated in a randomized controlled trial testing the effectiveness of four low-touch behavioral interventions on the decision to deposit their tax refunds into a less liquid savings vehicle rather than a relatively liquid checking account. These interventions, which used combinations of a choice architecture emphasizing savings and a pre-commitment to save, were highly targeted and had a strong impact on their intended outcome of encouraging tax-filers to deposit their refund into a savings vehicle. Those who were randomized into a treatment group were about 90% more likely to deposit their refund into a savings account than those who were randomized into a control group. Data indicating whether the survey taker was assigned into the treatment or control group were merged with survey responses. Our analytical sample consists of the 4,761 individuals who received refunds and completed both waves of the 2017 HFS.

The successful randomization of tax filers into treatment and control groups combined with the large behavioral shifts observed for the treatment groups allow us to rigorously identify the relationship between tax refund savings deposits and downstream participation in the gig economy. To assess this relationship, we present findings from intent-to-treat and treatment-on-treated analyses. Equation (1) shows the basic intent-to-treat model:

$$(1)\quad GigWork_i = \beta_0 + \beta_1 Treat_i + U_i$$

In this equation, $GigWork_i$ is a binary indicator of whether respondent i reported working in the gig economy in six months after tax filing. $Treat_i$ is another binary indicator of whether respondent i was randomly assigned to one of the savings experiment's treated groups. U_i is an error term. The coefficient β_1 can thus be interpreted as the average effect of random assignment into one of the savings-focused experiment's treatment groups on participation in the gig economy six months after tax filing.

In the treatment-on-treated analysis we use random assignment into the experiment's treatment group as an exogenous instrument for the decision to deposit the refund into a savings vehicle. These savings interventions serve as a valid instrument because they were highly targeted to refund savings, predictive of depositing the refund into a savings account, and randomly assigned. To estimate the effect of refund savings on participation in the gig economy over the six months following tax filing, we use a two-stage least squares (2SLS) instrumental variable approach. The first stage of the two-stage least squares model is shown in Equation (2):

$$(2)\quad SavedRefund_i = \gamma_0 + \gamma_1 Treat_i + DateFE_i + StateFE_i + Controls_i + V_i$$

The outcome, $SavedRefund_i$, is a binary indicator of whether or not survey respondent i deposited their federal tax refund into a savings account or US Savings Bonds. $Treat_i$ is a binary variable indicating whether or not respondent i was randomized into one of the four treatment groups that emphasized saving of the tax refund. $DateFE_i$ is a set of fixed-effects for date of tax-filing for respondent i, and $StateFE_i$ is a set of fixed-effects for the state of residence for respondent i. $Controls_i$ represents a vector

[6] In order to qualify for this free tax program, a tax household had to meet at least one of three conditions: (1) Have an adjusted gross income of no greater than $33,000, (2) be a recipient of the Earned Income Tax Credit, or (3) have a member who is active duty military and have an adjusted gross income of no more than $64,000. Only a very small percentage of the sample qualifies through military service. Over 95 percent of the sample has an adjusted gross income of $35,000 or less.

of controls for respondent i. These controls include indicators for respondent i's race and ethnicity, gender, age, educational attainment, annual income, household size, ownership of durable assets, federal refund size, employment status during the first wave of the survey, and experience of an unexpected financial shock in the six months after tax filing. V_i represents an error term for respondent i. The second stage of the general 2SLS model is shown in Equation (3):

(3) $$GigWork_i = \beta_0 + \beta_1 \widehat{SavedRefund_i} + DateFE_i + StateFE_i + Controls_i + U_i$$

In this equation the outcome $GigWork_i$ is an indicator of whether or not respondent i worked in the gig economy in the six months after filing their taxes. $\widehat{SavedRefund_i}$ represents the probability that respondent i deposited their entire tax refund into a savings vehicle (e.g.,, a savings account or a US Savings Bond). This predicted value is generated using the results from Equation (2). Since this predicted probability is determined by exogenous variation in random assignment to either the treatment or the control group, β_1 represents the marginal effect of saving the tax refund on participation in the gig economy in the six months after tax filing. $DateFE_i$, $StateFE_i$, and $Controls_i$ represent the same covariates in Equation (3) that they represent in Equation (2). U_i is an error term.

Preliminary Findings

We find statistically insignificant intent-to-treat and treatment-on-treated effects in the analyses of our full LMI sample. However, we find strong heterogeneous effects of refund savings on the labor supplied to the gig economy for different subsets of our sample. For LMI students, refund savings reduced the likelihood of working in the gig economy in the six months after tax-filing. For liquidity-constrained LMI non-students, however, saving the tax refund increased the likelihood of working in the gig economy.

Implications

These findings speak to the importance of liquid assets for LMI households. By saving the refund, LMI students are less likely to work in the gig economy. For these students, saving the refund may serve as a substitute for seeking additional income through the gig economy by allowing them to cover necessary expenses and buffering them against income shortfalls. Our findings also speak to the importance of liquid assets in the households of non-students. Although the gig economy may have relatively low barriers to entry, these results suggest that these barriers may still be preventing liquidity-constrained segments of the population from participation in the gig economy and that saving the refund may help these households better manage the fixed costs of gig economy participation.

These findings have important implications for researchers, policymakers, and private companies who are interested in understanding this emerging segment of the labor force and addressing the needs of its workers. When considering these findings, policymakers and gig economy employers should look for ways to help potential workers build liquid assets and mitigate the risks of giving up their liquidity buffers to make capital investments in gig work.

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