The Impact of Third-Party Reporting on Tax Compliance: Evidence from Gig Workers*

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Abstract

The rise of platform gig work in recent years has meant more self-employed workers are receiving 1099-information returns reporting their income to the worker and IRS. In 2017, many gig workers suddenly and unexpectedly stopped receiving a 1099 for their work activity, providing an opportunity to study the impact of third-party reporting on tax compliance for gig workers. We first exploit exogenous variation in receiving a 1099 information return using a border-county design in two states where all workers continued to receive their 1099. We find that platform gig workers who received an information return reported on average $1,858 more in self-employment profits. Our estimates imply approximately 1.4 billion was unreported in profits due to the 1099-K gap in 2018. However, the overall revenue implications are small, since gig workers have low profits after expenses and are often eligible for refundable credits.

*All results presented in this work using IRS data are drawn from the IRS Statistics of Income working paper "The Evolution of Platform Gig Work, 2012–2023" (Garin, Jackson, Koustas, and Miller, 2024), which is publicly available on the IRS SOI website at https://www.irs.gov/pub/irs-soi/23rpevolutionofplatformgigwork.pdf. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors and do not necessarily reflect the views or the official positions of the U.S. Department of the Treasury or the Internal Revenue Service. All results have been reviewed to ensure that no confidential information is disclosed.

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1 Introduction

Work mediated by online platforms has emerged as a widespread phenomenon over the last decade (Collins, Garin, Jackson, Koustas, and Payne, 2019; Garin, Jackson, Koustas, and Miller, 2024) and as self-employed independent contractors, workers are responsible for determining their own tax liability. Most gig workers have their gross receipts reported on a third-party information return, known as a "1099." Such third-party reporting has been shown to be important in ensuring tax compliance among employees (Kleven, Knudsen, Kreiner, Pedersen, and Saez, 2011), and this applies more broadly to small businesses that may choose to under-report gross receipts absent third-party reporting incentives.

Many firms in the online platform economy (OPE) use the form "1099-K". Technically, the 1099-K has a higher filling threshold of $20,000 compared to $600 for other 1099s. However, early on, many OPE firms continued to voluntarily report receipts at lower thresholds. A key "disruption" occurred beginning in 2017, when major OPE firms switched to the higher threshold, thus creating a gap in reporting among workers who were accustomed to receiving third-party reporting at the lower threshold. In this paper, we examine the effect of taking away third-party reporting for platform workers on their subsequent tax filing. This is policy relevant as the Federal 1099-K threshold will begin to be lowered beginning in 2025, and there remains considerable uncertainty (and misunderstanding) about the consequences.[1]

The tax-reporting compliance rate among self-employed is notoriously low (Slemrod, 2016). Tax compliance is far from perfect even among gig workers in the online

[1]The Federal 1099-K threshold was originally supposed to be lowered in tax year 2022 from $20,000 and 200 transactions to $600 with no minimum transactions as part of the American Rescue Plan Act of 2021 (ARP); however, this rule was not initially implemented, in part due to concerns about compliance burden, and also due to an incorrect assumption that information reporting represents a tax increase. For some examples of the incorrect narrative that information reporting is an increase in taxes, see, The Editorial Board, "The IRS Goes After Your Side Hustle," *Wall Street Journal*, Dec 7, 2022; The Editorial Board, "The IRS's Act of $600 Mercy," *Wall Street Journal*, Nov 21, 2023. In the latter article, the WSJ Editorial Board writes, "The reporting mandate contradicts the Administration's assurance that the IRS wouldn't use the additional $80 billion it received from the inflation reduction Act to target non-affluent Americans." The rule is now set to be implemented in 2025 for transactions in the tax year 2024 that exceed a $5,000 threshold.

platform economy (OPE) (Collins, Garin, Jackson, Koustas, and Payne, 2019; Garin, Jackson, Koustas, and Miller, 2024), despite the receipt of 1099s. While wage workers receive information reporting on a W2, workers who engage in self-employed services for a firm receive a 1099, as long as the dollar amount of those services is above the reporting threshold. From 1986 until the mid-2010s, the reporting threshold on 1099s reporting non-employee labor income was $600. From the mid-2010s, some OPE firms began to report income on a 1099-K subject to a higher reporting threshold of $20,000 (and 200 transactions). As we will show, this led to a dramatic drop in 1099s reported to the IRS from gig firms, affecting the ability to fully measure this work in tax data. This is known as the "1099-K gap." At the time of our writing, nine states have since lowered state 1099-K reporting thresholds down, typically to $1,000 or $600. This shift in reporting created a disruption in third-party reporting for the OPE. It provides a natural experiment that allows us to ask what is the effect of discontinuing third-party reporting for individuals who previously received these forms.

This paper makes two main contributions to the literature on tax compliance and third-party reporting. First, we explore the effects of 1099 reporting on the reporting of self-employment earnings of gig workers using a novel quasi-experimental design. To examine whether receiving an information return affects tax filing behavior, we use a border design to compare tax outcomes of platform gig workers in two states with state laws that closed the 1099-K gap, with neighboring states where the federal threshold was binding. We explore the spillovers of changes in 1099-K reporting to individual reporting of self-employment earnings on Form 1040 Schedules C and SE. We find that platform gig workers who received an information return reported on average $1,858 more in self-employment profits. While previous work has examined the introduction of the 1099-K on tax reporting, but has not focused on platform gig work specifically (Slemrod, Collins, Hoopes, Reck, and Sebastiani, 2017; Adhikari, Alm, and Harris, 2021; Adhikari, Alm, Collins, Sebastiani, and Wilking, 2022). Many platform gig workers are part-time self-employed and/or new to self-employment, which may provide new challenges for tax administration.

Next, this paper extends the analysis of Collins, Garin, Jackson, Koustas, and Payne (2019) by focusing on the evolution of platform work between 2016 through 2018.[2] A central challenge in measuring platform work after 2016 is the shift towards reporting platform payments on 1099-K subject to much higher $20,000 reporting threshold beginning in 2017.

In order to assess the size of any resulting reporting gap, we make a methodological improvement over our previous work by incorporating state information returns with lower reporting thresholds, allowing us to "see" activity missing in federal returns, which previously had been a major drawback to measuring gig work in tax data after 2016. We merge state 1099-K information returns from Massachusetts and Vermont that are subject to a lower reporting threshold to the federal tax return data. We use the information available from these two states to impute the national trend in platform work beyond 2016, assuming that they would have evolved in parallel. Our imputation methodology suggests raw counts underestimate platform work by approximately 770,000 workers by 2018.

Taking these two points together, multiplying 770,000 by $1,858 yields an estimated 1.4 billion in national unreported profits due to the 1099-K gap. However, overall revenue losses are small, since gig workers have low profits after expenses and are often eligible for refundable credits.

This paper is organized as follows: In the next section, we discuss the IRS data used in this paper, and introduce new state-level returns that have not been previously used to study the platform economy. We next outline an empirical strategy to estimate the impacts of receiving a third-party information return, Form 1099-K, on self-employment tax filing for platform gig workers, and Section 3 presents results and

[2]Other recent empirical research drawing on tax return data and other survey or administrative data sources has made strides in measurement of platform work (Jackson, Looney, and Ramnath, 2017; Farrell and Greig, 2016, 2018; Bracha and Burke, 2021; Lim, Miller, Risch, and Wilking, 2019; Greig and Sullivan, 2020), and we now have more research examining how and why workers use the platform economy (Koustas, 2018, 2019; Garin, Jackson, Koustas, and McPherson, 2020; Jackson, 2022). An alternative to tax data, bank account data, such as that used by JPMC, also has new challenges for measuring gig work going forward, as up to 70 percent of drivers may now use debit cards provided by the platforms, and thus would not appear in banking data (Chen, Feinerman, and Haggag, 2024). Income earned on debit cards would still show up in tax reporting, provided it exceeds the reporting threshold.

heterogeneity. Section 4 shows raw and imputed trends for the overall size of platform work in the U.S. leveraging what we learn from state-level data. We discuss the implication of these effects for the tax gap in Section 4.4 and Section 5 concludes.

2 Data and Methodology

In this section, we first discuss the federal and state tax data we rely on in this paper. Crucially, state returns allow us to see platform activity that may be missing from federal returns after 2016. After describing these data and the various reporting requirements, we then describe how we combine the federal and state datasets to impute national estimates of platform work.

2.1 IRS data

In this work, we focus on gig workers who supply labor on platforms that primarily mediate labor activity, as opposed to selling or leasing platforms. For tax purposes, platform-based gig-economy workers are technically self-employed independent contractors. Crucially for our work, payments by *firms*–including online platforms—to self-employed contractors are reported directly to the IRS on 1099 information returns. Collins, Garin, Jackson, Koustas, and Payne (2019) provides an in-depth discussion of these forms and how they can be used to measure activity in the gig economy.

We measure participation in platform work based on receipt of an information return from a payer known to be an online platform. We focus on a list of over 90 different labor platforms that account for the overwhelming majority of payments to gig workers over the period studied (Garin, Jackson, Koustas, and Miller, 2024). We observe payments to gig workers on two different types of information returns. First, firms have been required to report all compensation of $600 or more to self-employed independent contractors in Box 7 of Form 1099-MISC ("nonemployee compensation").[3]

[3]Non-employee compensation was reported on Form 1099-MISC through 2019. Beginning in 2020, nonemployee compensation was reported on the new Form 1099-NEC.

Until 2011, all "freelance" or "gig" work done for firms or for clients through online intermediaries was reported as nonemployee compensation on 1099-MISC. In 2011, a new law went into effect requiring companies that processed credit cards, electronic payments, or other transactions to report each recipient's payments on Form 1099-K. Subsequently, several large platforms began issuing Form 1099-K instead of Form 1099-MISC non-employee compensation. We track the total payments individuals receive from these companies that are reported on either a 1099-K or on a 1099-MISC as non-employee compensation.

A potentially important limitation to studying the Form 1099-K is that platform companies classifying themselves as third-party networks are only required to file this form if the total amount of such transactions exceeds $20,000 and the aggregate number of such transactions exceeds 200. In practice, this did not impact previous analysis through 2016, as most of the major platforms voluntarily issued 1099-Ks to all platform participants, regardless of the earnings level, and/or issued a 1099-MISC. Beginning in 2017, however, some large platforms have announced changes in their reporting policies and have moved to only report income on the 1099-K if it met the higher reporting threshold legally required for the 1099-K. This gap in information returns for platform work below the reporting threshold is known as the "1099-K" gap. It creates a key challenge to measure platform gig work that falls in the "1099-K" gap. The American Rescue Plan Act of 2021 lowered the 1099-K reporting threshold to $600 with no minimum number of transactions beginning in tax year 2022, effectively bringing reporting back in line with the 1099-MISC. However, it was announced in December 2022 that implementation of this new rule would be delayed.

2.2 State 1099-K data

Despite the high reporting thresholds for Federal 1099-K reporting, several states have passed laws requiring state-level 1099-K reporting subject to lower thresholds. In the past five years, at least 9 states have introduced legislation to reduce state filing requirements for third-party settlement organizations who make payments to in-state

residents, which would include online platforms. These states include California, Illinois, Massachusetts, Maryland, New Jersey, and Virginia. Details differ slightly across states, and we list these states and the detail of their policies in Appendix Table B.1.

One important note is that in most cases, these federal and state laws affect a broader swath of economic activity beyond just platform gig work. Most activity captured on the 1099-K is not platform gig labor income, but instead reflects credit card transactions by small businesses. However, for the most part, these laws affect reporting equally. The one exception is California, which explicitly lowered the reporting threshold only for "app-based drivers."

We use state-level 1099-K data from Massachusetts and Vermont, states which have entered into data-sharing agreements with the IRS for tax years 2017 and 2018. Starting in 2017, both states require platforms to file state-level 1099-Ks to all payees with $600 or more in revenues.

The scope of the 1099-K reporting gap is illustrated in Figure 1, which compares state-level 1099-K reporting and federal 1099-K reporting by online platforms to workers in MA/VT to other states. Through 2016, the distribution in MA/VT looked similar to the rest of the country. This changes beginning in 2017. While the distributions of both types of returns is nearly identical above the $20,000 threshold, there is a sharp drop in the number of federal returns—but not state returns—below the threshold. The fact that there is any mass below $20,000 reflects some platforms voluntarily report below the $20,000 threshold. By 2018, some federal reporting still voluntarily occurs below $20,000 in MA/VT, but not elsewhere in the country. The difference between the two data series represents the federal reporting gap resulting from the higher threshold.

2.3 Empirical Strategy

In principle, the taxes owed by platform workers are invariant to the 1099 reporting rules. Someone who makes profits as a platform worker is still required to report their earnings to the IRS on Form 1040 Schedule C, regardless of whether they receive

the 1099 information return. In practice, however, platform gig workers with gross revenues below the 1099-K reporting thresholds might be less likely to report their platform income on a 1040 return—for instance, such workers may not be aware that such income is subject to federal taxes if they do not receive an information return. Thus, an important question for tax policy is whether gaps in 1099-reporting impact taxpayer filing behavior and tax revenues in practice.

In this section, we examine the impact of the 1099-K gap on individual tax filing behavior. To do this, we compare the behaviors of workers living in Massachusetts near the state border with workers living on the other side of the border in adjacent states around the introduction of state 1099-K in 2017.[4] On the Massachusetts side of the border, workers continued to have all payments from platforms over $600 reported on an information return, while workers who live in adjacent states largely ceased to receive 1099-Ks for their platform earnings starting in 2017. Meanwhile, platform workers close to the border on either side operate in the same labor market and face identical labor conditions. Since states may have other differences in policy, we employ a difference-in-differences border design that compares differential evolution of outcomes on each side of the border around 2017. The identifying assumption is that there are no differential changes in policy or market conditions on opposite sides of the border around 2017 besides the introduction of the state 1099-K reporting.

In our baseline analysis, we focus on individuals in the workforce in 2016 who had earnings less than $20,000 reported on a federal 1099-K in 2016. This is the group most likely to be impacted by changes in 1099-K reporting in 2017. The MA law does not just affect 1099-K reporting for gig workers, but for a broader set of economic activity, mainly by small businesses. We also conduct a similar analysis on a broader set of workers who had any reported wage or self-employment income in 2016. Massachusetts is a relatively small state with large counties; Figure A.1 shows that, for any county, the largest distance between a zipcode and the border is under

[4]We do not include Vermont in our baseline analysis, given the small counts of total platform workers living near borders. However, we include Vermont in robustness results in the Appendix and find qualitatively similar results.

60 miles, but some counties, like Worcester county, extend from the top to the bottom of the state, and clearly reflect different labor markets. In our baseline specification, we restrict to workers who lived in zipcodes with a centroid within 15 miles of the border in 2016 and assign "treatment" status by their state of residence in 2016. Table B.2 shows descriptive statistics. Column (1) reports descriptive statistics for 2016 gig workers in our baseline sample, while Column (2) compares descriptive statistics for the broader 2016 tax workforce.

Our main individual-level specification is given as follows:

$$y_{it} = \beta \mathbb{I}\{State_i = MA\} * Post_t + \delta_i + \zeta_{p(i),t} + \epsilon_{it} \tag{1}$$

where the subscript i indexes an individual. The individual fixed effects δ_i captures any fixed difference in policy or sample composition across states. We include county border pair by year fixed effects, $\zeta_{p(i),t}$, which limits our comparisons to sets of individuals in pairs of counties that border each other, but happen to be in different states by absorbing trends common to everyone in the county pair.[5] We conduct our analysis on data from 2014 to 2018, and the "post" period is defined as 2017 and 2018. We also estimate dynamic versions of the same specification with year-specific effects (relative to the omitted pre-year 2016) in order to examine whether there were differential pre-trends across the border. We examine a balanced panel of individuals and code outcomes as zeros whenever no tax information is present.

3 Effects of the 1099-K Gap on Tax Reporting

3.1 Main Results

Table 1 reports the "first-stage" effects of the introduction of the low-threshold state 1099-K in Massachusetts in 2017 on the information returns individuals receive from

[5]Note: one county can appear in more than one matched county pair, so the final dataset used in this analysis expands based on the number of county pairs. Each individual therefore appears once per border county pair their 2016 county of residence is a part of; we cluster at the individual level to account for this potential repetition of individuals.

gig platform companies. Incumbent platform workers in Massachusetts are about 20 percentage points more likely to receive a 1099-K, and 18 percentage points more likely to receive any information return from a gig work platform in 2017 and 2018 than individuals on the other side of the border—including zero observations, this amounts to a $2,100–$2,500 increase in reported revenues on OPE 1099s on average. Panels A and B of Figure 2 show how these effects evolved over time. Importantly, we observe that the 1099-reported earnings of platform workers trend in parallel until 2017 when a sharp change in reporting occurs around the introduction of the state 1099-K in MA, supporting our identifying assumption.

We examine the downstream implications for individual reporting in Table 2. We find that introduction of the state 1099-K and the corresponding 20 percentage increase in the share of individuals getting a 1099-K return resulted in 1.4 and 2.8 percentage point increases in the likelihoods of filing Schedule C and Schedule SE on a federal 1040 return, respectively. We observe that individuals report about $700 more gross receipts on Schedule C—about 30 percent of the increase in 1099-reported receipts. However, affected individuals also increase their reported expenses on Schedule C, resulting in a $420 increase in net Schedule C profits and a $328 increase in Schedule SE profits on average. Reassuringly, we find no estimated effect on third-party reported W-2 earnings, which should not be impacted by 1099-K reporting in any way. Panels C and D of Figure 2 show that these outcomes also evolve in parallel up until 2017, where reporting increases suddenly among individuals on the MA side of the border.

To benchmark the magnitudes of these individual reporting effects to the "first-stage" effects on receiving a 1099-K, we estimate two-stage least squares specifications in which we treat the receipt of a 1099-K or the amount reported on the 1099-K as the explanatory variable using $\mathbb{I}\{State_i = MA\} * Post_t$ as an instrument. The estimates from these specifications, which are presented in Table 3, quantify the pass-through of information return reporting to individual reporting on form 1040. We find that issuing a state 1099-K to an individual increases the probability of filing any Schedule

C and Schedule SE by 6.4 and 12.3 percentage points respectively.[6] In dollar amounts, we find that each additional dollar reported on a state 1099-K that would have gone unreported otherwise raises receipts reported on Schedule C by 28 cents, Schedule C net profits after expenses by 17 cents, and Schedule SE earnings by 13 cents.[7] To explore whether these pass-through rates differ across different types of files, we present subgroup analysis in Appendix Table B.4. Interestingly, we find that continuing to have platform payments reported on a state 1099-K had bigger impacts on Schedule C receipts of higher earners with a more established history of filing Schedule C in the past.

These results show that state-level 1099-K reporting made incumbent platform workers more likely to report greater amounts of earnings on Schedule C. However, the increase in Schedule C reporting relative to the increase in 1099-K reporting is fairly small. One likely possibility is that many experienced platform workers outside of Massachusetts continued to file Schedule C despite not receiving any 1099-K (though perhaps reporting lower levels of receipts than they might have otherwise). It is unclear, however, whether new entrants into gig work in 2017 and 2018 who *never* had experience receiving a 1099-K would have the same familiarity with their reporting obligations—in that case, the tax filing behavior of new entrants to platform might be more sensitive to 1099-K reporting than their more experienced counterparts. Moreover, many small businesses received a 1099-K reporting receipts, which could have had broader impacts on tax reporting in MA.

3.2 Robustness

In Appendix Table B.3, we show robustness to our sample restrictions. For each table, in Panel A we show results using the border counties for Massachusetts, and in Panel B we expand to include Vermont border counties. Comparing Panel A and B illustrates

[6]The impact on Schedule SE filing is larger because higher reported Schedule C profits increase the likelihood of exceeding the $433 Schedule SE filing threshold.

[7]Due to winsorizing of extreme positive values of receipts and expenses—which are only reported in positive amounts—and winsorizing of both positive and negative values of Schedule C net profits, the estimates in Column 4 are slightly different than the difference in the estimates in Columns 2 and 3.

that our results are robust to including individuals in Vermont border counties. Each column shows robustness to restricting individuals to different distances (in miles) from the border. In our baseline specification, we restrict to workers who lived in zipcodes with a centroid within 15 miles of the border in 2016, but Appendix Table B.3 show our "first-stage" effects of receiving an OPE 1099 are robust to a wide range of distance restrictions.

4 Stylized facts about Tax Reporting in the Gig Economy and Implications of the 1099-K Gap

4.1 Trends in Federal and State 1099 Data

A key question raised by the raw data is how much of the platform workforce is missing from the Federal 1099 data due to the high 1099-K reporting thresholds. One way to learn about the size of the reporting gap is using available state-level 1099-K return data from MA and VT, which are subject to a $600 threshold consistent with the 1099-MISC. We explore these data in Figure A.3, which compares the share of the tax workforce—individuals with any labor income—with platform earnings in excess of $600 reported on 1099s in MA and VT in comparison to the rest of the US.[8] Outside of MA and VT, we measure the prevalence of platform work using only Federal information return data, displayed in the solid black line. For MA and VT residents, we measure the prevalence of platform work using both Federal data and state-level 1099-K data in 2017 and 2018. To examine the bite of the 1099-K reporting thresholds, we break out the subset of individuals in each year who receive at least one 1099-MISC from a platform or have a 1099-K with more than $20,000, whose would be counted as platform worker irrespective of the $20,000 1099-K threshold.

[8]Following Collins, Garin, Jackson, Koustas, and Payne (2019), we define the tax workforce as all individuals with labor earnings reported on a W-2 return or on 1040 Schedule SE as well as 1040 filers with contract work payments on 1099 returns. The components of the tax workforce through 2022 are provided in Garin, Jackson, Koustas, and Miller (2024) in Tables 1a and 1b.

The dashed lines in Figure A.3 show that that in both MA/VT and the US more broadly there was steady growth in the share of workers with platform earnings not affected by 1099-K reporting thresholds (either because their 1099-K earnings exceeded the threshold or because their platform earnings were reported on 1099-MISC). While this share was always slightly larger in MA/VT than the rest of the country, the shares grew at similar rates in both regions between 2014 and 2018. However, when examining overall reporting of platform work (the solid lines), shares in MA/VT grow in parallel to the rest of the US (albeit at a higher level) through 2016, after which there is a clear divergence——while the share of workers with platform payments reported on 1099 returns plateaus in 2017 in the broader US, there is continued growth in MA and VT where the 1099-K reporting threshold is $600. The observed trend in MA and VT after 2016 suggests that, had platforms consistently reported payments under $20,000 in the broader US, one would likely also have observed continued growth in the share of workers with platform earnings throughout the US beyond 2016. The similarity of the growth rates (thought not the levels) of the shares in MA/VT and the rest of the US through 2016 suggests one might obtain a reasonable estimate of the national prevalence of platform work in 2017 and 2018 by extrapolating the observed 2017 and 2018 growth in the platform worker share in 2017 and 2018 to the rest of the US, which we explore next.

4.2 Imputation of National 1099-K Gap: Methodology

We leverage the lower reporting threshold in MA and VT on State 1099-K forms in 2017-2018 to impute how these trends would have continued nationally if all states were subject to a lower $600 reporting threshold. In Figure 3a, for Massachusetts and Vermont, we show trends in the receipt of 1099 forms (1099-MISC from any payer or 1099-K from an OPE platform) as a share of the overall tax workforce, which is defined as individuals with wages and/or self-employment on Schedule SE, or individuals filing a 1040 with a 1099-MISC or 1099-K from a gig platform. First, the share of the workforce with either a Federal 1099-K (from OPE platforms) and/or a Federal 1099-

MISC is shown in black. In red, we restrict to individuals receiving a 1099-K of greater than $600. In practice, this restriction appears to only be binding in years 2014 and later, when some gig platforms start issue forms starting at $1. Finally, in the dashed red line we additionally include individuals who receive a state 1099-K from MA or VT. Starting in 2017 and 2018, the State 1099-K forms capture an additional fraction of the workforce who are earning between $600-$20,000 from gig platforms that no longer appear on Federal 1099Ks, as seen by the divergence of the red and dashed red line in Figure 3a.

Our exact methodology for imputing national trends builds on the sub-components plotted in Figure 3a and works as follows. When considering trends in OPE as a share of the workforce, the receipt of a 1099-K affects both our numerator (the 1099 workforce) and the denominator (the overall tax workforce); therefore, we must adjust both components accordingly. This affects the overall tax workforce (the denominator) because we include individuals in our tax workforce definition if they file a tax return, Form 1040, and have 1099 earnings even with no wages (W-2) nor self-employment profit (Schedule SE). Thus, absent the receipt of a 1099, we are not capturing them in the tax workforce definition, and so we need to account for both the change to the 1099 and tax workforce.

We define two groups of states: (1) those with state 1099-Ks, i.e. Massachusetts and Vermont (denoted "MA" for short in all equations that follow), and (2) all states nationally (denoted "NAT" in all equations). Our calculation proceeds in two steps. First, for 2017 and 2018, we impute how much the 1099 workforce grew relative to 2016. Second, we impute how much the "gig only" subgroup of the overall tax workforce grew —these are the only individuals that would not otherwise be counted (i.e. individuals with only a 1040 and gig 1099-K, and no W-2s, 1099-MISCs nor SE) —denote these $TWmultiplier_{2017}^{NAT}$ and $TWmultiplier_{2018}^{NAT}$. For both parts, we assume the groups grew nationally at the same rates in 2017 and 2018 as we observed in MA and VT.

4.2.1 Imputation Part 1: Adjust 1099 Workforce

First, we impute and adjust the 1099 workforce. In both MA/VT and nationally at baseline (in 2016), we calculate the ratio of the overall 1099 workforce including those receiving 1099-Ks (from OPE platforms) to the overall 1099 workforce excluding those receiving 1099-Ks (from OPE platforms). By calculating this at baseline, this flexibly allows for the possibility that 1099-Ks account for a different fraction of the 1099 workforce in MA and VT than they do nationally. These multipliers can be interpreted as how much times larger would the 1099 workforce be when you include 1099-Ks (from gig platforms) versus exclude them.

$$1099multiplier_{2016}^{NAT} = \frac{\text{1099 Workforce including 1099-Ks}_{2016}^{NAT}}{\text{1099 Workforce excluding 1099-Ks}_{2016}^{NAT}}$$
$$1099multiplier_{2016}^{MA} = \frac{\text{1099 Workforce including 1099-Ks}_{2016}^{MA}}{\text{1099 Workforce excluding 1099-Ks}_{2016}^{MA}}$$
$$1099multiplier_{2017}^{MA} = \frac{\text{1099 Workforce including 1099-Ks}_{2017}^{MA}}{\text{1099 Workforce excluding 1099-Ks}_{2017}^{MA}}$$
$$1099multiplier_{2018}^{MA} = \frac{\text{1099 Workforce including 1099-Ks}_{2018}^{MA}}{\text{1099 Workforce excluding 1099-Ks}_{2018}^{MA}}$$

At the national level, we can only calculate this ratio in 2016 due to the K-gap, however we can calculate this ratio in all years for MA and VT. We then assume that the share of the 1099 workforce receiving 1099-Ks grows nationally at the same rate as in MA/VT. We also account for different baseline (in 2016) 1099 multipliers in MA/VT and nationally in case 1099-Ks made up a different share initially. Therefore, nationally, we estimate the 1099-K workforce multiplier in 2017 or 2018 as the following:

$$1099multiplier_{2017}^{NAT} = \left(\frac{1099multiplier_{2017}^{MA}}{1099multiplier_{2016}^{MA}}\right) * 1099multiplier_{2016}^{NAT}$$
$$1099multiplier_{2018}^{NAT} = \left(\frac{1099multiplier_{2018}^{MA}}{1099multiplier_{2016}^{MA}}\right) * 1099multiplier_{2016}^{NAT}$$

Finally, we use the actual observed 2017 and 2018 national data on the 1099 workforce (excluding 1099-Ks), and our above multipliers to back out the size of the national

1099 workforce including 1099-Ks:

$$\textbf{Adjusted } 1099 \text{ Workforce including } 1099\text{-Ks}_{2017}^{NAT} =$$
$$1099multiplier_{2017}^{NAT} * 1099 \text{ Workforce excluding } 1099\text{-Ks}_{2017}^{NAT}$$
$$\textbf{Adjusted } 1099 \text{ Workforce including } 1099\text{-Ks}_{2018}^{NAT} =$$
$$1099multiplier_{2018}^{NAT} * 1099 \text{ Workforce excluding } 1099\text{-Ks}_{2018}^{NAT}$$

4.2.2 Imputation Part 2: Adjust Tax Workforce

In this second step, we account for the under-counting of the tax workforce size when we add in additional 1099-K recipients through the imputation. In practice, this change to the tax workforce is quite small as it only affects an already small subset of the tax workforce, the group we denote as gig only: individuals with only a 1040 and gig 1099-K or 1099-MISC, and no wages (W-2) or self-employment profits (Schedule SE). Our methodology is identical to above when we calculate the 1099 workforce multipliers. We compare the ratio of the gig only subset of the tax workforce when you include 1099-Ks to when you exclude the 1099-Ks. This multiplier tells you how much larger the gig-only tax workforce group is when you include 1099-Ks versus exclude them at baseline (in 2016).

$$TWmultiplier_{2016}^{NAT} = \frac{\text{Gig Only including } 1099\text{-Ks}_{2016}^{NAT}}{\text{Gig Only excluding } 1099\text{-Ks}_{2016}^{NAT}}$$
$$TWmultiplier_{2016}^{MA} = \frac{\text{Gig Only including } 1099\text{-Ks}_{2016}^{MA}}{\text{Gig Only excluding } 1099\text{-Ks}_{2016}^{MA}}$$
$$TWmultiplier_{2017}^{MA} = \frac{\text{Gig Only including } 1099\text{-Ks}_{2017}^{MA}}{\text{Gig Only excluding } 1099\text{-Ks}_{2017}^{MA}}$$
$$TWmultiplier_{2018}^{MA} = \frac{\text{Gig Only including } 1099\text{-Ks}_{2018}^{MA}}{\text{Gig Only excluding } 1099\text{-Ks}_{2018}^{MA}}$$

Again in 2017 and 2018, we observe in MA and VT how this multiplier grows relative to 2016. We assume similar growth nationally in this "gig only" group as we observe in MA and VT. We also account for baseline (in 2016) differences in the multipliers.

Then in a similar method to above, we then can calculate the national multiplier for this gig only group in the tax workforce:

$$TW multiplier^{NAT}_{2017} = \left(\frac{TW multiplier^{MA}_{2017}}{TW multiplier^{MA}_{2016}}\right) * TW multiplier^{NAT}_{2016}$$
$$TW multiplier^{NAT}_{2018} = \left(\frac{TW multiplier^{MA}_{2018}}{TW multiplier^{MA}_{2016}}\right) * TW multiplier^{NAT}_{2016}$$

Finally, we can estimate the size of the gig only tax workforce in 2017 and 2018 with by using our multipliers and the actual observed size of the "gig only" group excluding 1099-Ks.

Adjusted Gig only $\text{Workforce}^{NAT}_{2017} = TW multiplier^{NAT}_{2017} * \text{Gig Only excluding 1099-Ks}^{NAT}_{2017}$

Adjusted Gig only $\text{Workforce}^{NAT}_{2018} = TW multiplier^{NAT}_{2018} * \text{Gig Only excluding 1099-Ks}^{NAT}_{2018}$

We then calculate the size of the tax workforce using the adjusted "Gig only" workforce above rather than the actual observed "Gig only" workforce counts. In practice, this means we use the measures for Gig only $\text{Workforce}^{NAT}_{2017}$ and Gig only $\text{Workforce}^{NAT}_{2018}$ in the tax workforce count when we sum up all the subgroups of the tax workforce. This leaves us with the final adjusted tax workforce numbers: **Adjusted** $\text{Tax Workforce}^{NAT}_{2017}$ and **Adjusted** $\text{Tax Workforce}^{NAT}_{2018}$.

4.2.3 Imputation Part 3: Final Steps to Create Imputed Series

We now combine the imputed values calculated in part 1 and part 2 in order to create our adjusted trends. The first imputed series that we create is the "adjusted 1099 Workforce share" - this is the share of the workforce with a 1099. The second imputed series that we create is the subset of the 1099 workforce that are platform gig workers.

The first imputed series is a simple fraction combining part 1 and part 2. The series demonstrates what share of the tax workforce is a 1099 worker. We take the "**Adjusted** 1099 Workforce including 1099-Ks", calculated in part 1, and divide this by the adjusted Tax Workforce, calculated in part 2 using our imputed "Gig Only"

workforce group.

$$\textbf{Adjusted } 1099 \text{ Workforce Share}_{2017}^{NAT} = \frac{\textbf{Adjusted } 1099 \text{ Workforce including 1099-Ks}_{2017}^{NAT}}{\textbf{Adjusted } \text{Tax Workforce}_{2017}^{NAT}}$$

$$\textbf{Adjusted } 1099 \text{ Workforce Share}_{2018}^{NAT} = \frac{\textbf{Adjusted } 1099 \text{ Workforce including 1099-Ks}_{2018}^{NAT}}{\textbf{Adjusted } \text{Tax Workforce}_{2018}^{NAT}}$$

The end result of our national extrapolation method, the share of the tax workforce who receive a 1099, is reported in Figure 3b. Appendix C, we discuss alternative imputation procedures for estimates of platform work.

In our second imputed series, we break down the 1099 workforce into the subset who engage with an OPE platform. Recall from section 2, online platforms in the OPE issue 1099-Ks. Thus, 1099 individuals who do not engage in online platform work are not affected by the reporting thresholds as all such work is reported on 1099-MISCs. We accurately observe the 1099 Workforce Share *excluding* OPE workers in all years. Therefore, we can back out the imputed growth in the OPE as a share of the workforce as follows:

Adjusted 1099 OPE workforce share =

Adjusted 1099 Workforce Share − 1099 Workforce Share *excluding* OPE

The end result of this series is presented in figure 4, in levels, and is discussed in the next section.

4.3 Imputed Trends in Platform Work, 2012-2018

Panel A of Figure 4 displays our estimates of the size of the platform workforce in 2017 and 2018 in the US, letting the share of the national workforce with platform gig earnings grow at the same rate as in MA and VT from 2016 to 2018.[9] Two important takeaways from these estimates stand out: First, the number of platform workers in

[9]To examine the validity of extrapolating national trends from MA and VT data, we also display the predicted trend using this method going back to 2014 in the dotted line in Panel A of Figure 4. Reassuringly, the prediction prior to 2016 closely matches the observed national growth.

the workforce continued to grow through 2018 and exceeded 2 million in that year. Second, 770,000, or nearly one-third of platform workers in 2018, were missing in the federal 1099 data because of the high 1099-K reporting threshold. These individuals would appear in the data if the federal 1099-K had been subject to a $600 threshold.

To shed further light on the nature of platform work, Panel B of Figure 4 breaks down the platform workforce by whether their platform earnings come exclusively from transportation platforms. A striking finding is that nearly all platform work observed in the 1099 data is on transportation platforms, comprising ride-hailing and delivery apps. In each year since 2014, less than 10 percent of the platform-based workforce did something besides transportation-related work.[10] Panel B further breaks down transportation platform workers by whether they make more than $20,000 in *gross* earnings totaled across all platforms.[11] In each year, only a small minority of workers on transportation apps make more than that amount.[12] Collins, Garin, Jackson, Koustas, and Payne (2019) show in greater detail that typical earnings in the platform economy are small—particularly when one takes into account that the typical platform worker reports expenses equal to 40-60 percent of gross revenues.

We use our imputed series to extend the main trend analysis from Collins, Garin, Jackson, Koustas, and Payne (2019) through 2018 in Appendix Figure A.4. In our analysis, we define the "workforce" as all individuals who receive any wage (W-2) earnings, 1099-reported contract earnings, or Schedule SE self-employment earnings.[13] To high-

[10]Outside of transportation related platforms, OPE labor platforms include a wide variety of services including home repair services, creative platforms, tutoring, and social media content creation.

[11]We utilize our imputed series in calculating this breakdown, and we have to make a couple of assumptions to split the earnings above and below the $20,000 threshold among transportation related workers. The individuals with any other activity we observe directly. We also observe directly individuals with *gross* earnings over $20,000 from a single platform. Thus, the remaining individuals come from our imputation in Panel A. All imputed individuals do not have total *gross* earnings below $20,000 because a subset may work for multiple platforms and have a total of $20,000 from multiple platforms despite no single platform paying them more than $20,000. In 2016, we calculate the share of individuals with only 1099-K returns between $600-$20,000 *but* had total gross earnings of $20,000 or more, i.e. they worked for multiple platforms. We impose this breakdown in 2017 and 2018 as a way of splitting the imputed workers across the subgroups.

[12]The number of workers with platform-based income from activities other than transportation tasks who make more than $20,000 is very small and would be imperceptible in the figure.

[13]Following Collins, Garin, Jackson, Koustas, and Payne (2019), we only include individuals with 1099-reported contract earnings in the workforce when they receive a W-2 or file a tax return.

light the contribution of the online platform economy, the figure breaks out individuals who have 1099-reported contract earnings from online platform companies.[14] Contract workers may also have wage/salary earnings reported on W-2 returns. To highlight which contract workers depend primarily on such work for their livelihoods over the year, we break out contract workers into the subset who are primarily self-employed (i.e. those whose self-employment net profits on Schedule SE exceed their W-2 earnings) and contract workers whose self-employment profits supplement W-2 earnings over the year.[15] The baseline series only include 1099 returns issued to individuals' TINs, but we also display the series including 1099 returns issued to EINs linked to individual TINs using Schedule C for years 2007 onward in dashed lines. Panel A displays the prevalence in the full workforce, while Panel B restricts to individuals in the full-time workforce.

We observe substantial growth in the share of the workforce with earnings from online platform work in both panels of Figure A.4 beginning after 2012. By 2018, over one percent of the overall workforce in Figure A.4 Panel A had received payments for work on platforms. However, when we break out platform workers by whether their Schedule SE profits exceed their W-2 earnings, we find that in a large majority of cases such workers moonlight in the gig economy and derive the majority of their labor earnings from W-2 work.

4.4 Discussion

Finally, we combine our results in section 4 with our results from the border design to estimate the national tax gap resulting from the 1099-K gap. We estimated that 770,000 workers did not receive an information return due to the 1099-K gap. Multiplying 770,000 by $1,858, our estimate of increased Schedule C profits reported on the

[14] A minority of online platform economy participants broken out in Figure A.4 also have contract payments on 1099-MISC for work outside the online platform economy.

[15] We cannot directly measure the share of net earnings workers derive from their independent contract work, because 1099 returns only report gross payments and not net income. Net income after expenses is determined on Schedule C; however, revenues reported or not reported on 1099 returns are not broken out separately so it is not possible to isolate the net earnings from 1099-reported contract work.

MA side of the border, yields an estimated 1.4 billion in national unreported profits due to the 1099-K gap.

5 Conclusion

One challenge for measuring platform gig work in tax data after 2016 is the so called "1099-K gap," where many platform gig workers earning less than $20,000 no longer received an information return. We combine federal tax return data with returns from states that introduced lower reporting thresholds to study the effects of this change. Incorporating state information returns in this setting allow us to make two key contributions in this paper: we quantify the size of the 1099-K gap and analyze how receipt of a 1099-K affects tax compliance.

First, we evaluate to what extent receipt of a 1099-K form affects tax compliance. This is policy relevant as The American Rescue Plan Act of 2021 lowered the 1099-K reporting threshold to $600 with no minimum number of transactions but is to be implemented starting in 2025. To examine whether receiving an information return affects tax filing behavior, we use a border design to compare tax outcomes of platform gig workers in two states with state laws that closed the 1099-K gap, with neighboring states where the federal threshold was binding. We explore the spillovers of changes in 1099-K reporting to individual reporting of self-employment earnings on Form 1040 Schedules C and SE. We find that platform gig workers who received an information return reported on average $1,858 more in self-employment profits.

Second, we present a new framework using returns from states that have lower reporting thresholds to provide a more complete estimate of total platform work. In order to assess the size of any resulting reporting gap, we merge state 1099-K information returns from Massachusetts and Vermont that are subject to a lower reporting threshold to the federal tax return data. We use the information available from these two states to impute the national trend in platform work beyond 2016 assuming they would have evolved in parallel. Our imputation methodology suggests raw counts underestimate

platform work by approximately 770,000 workers by 2018.

Taken together, our estimates imply approximately 1.4 billion was unreported in profits due to the 1099-K gap in 2018. However, the overall revenue implications are small, since gig workers have low profits after expenses and are often eligible for refundable credits.

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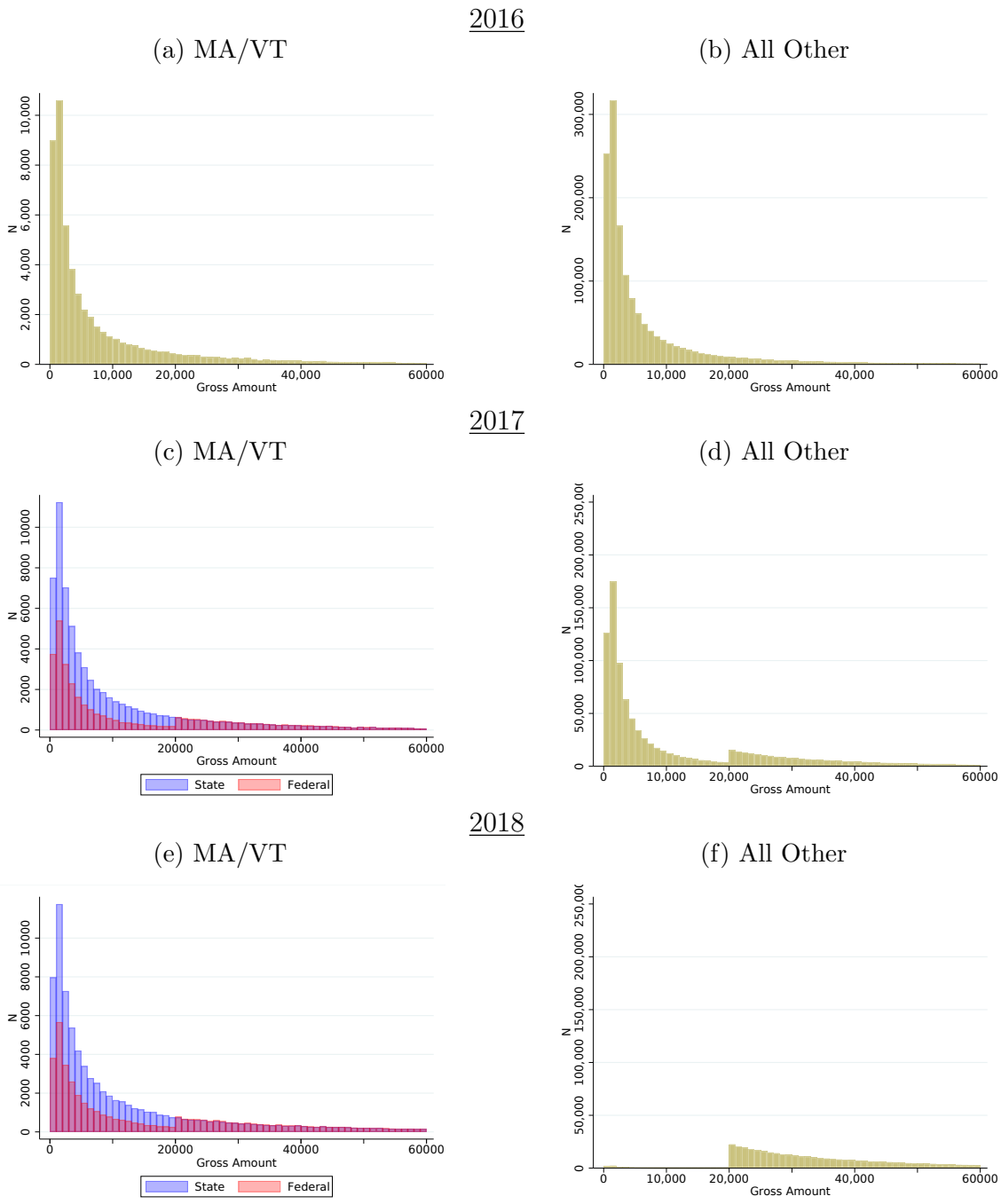
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Figures

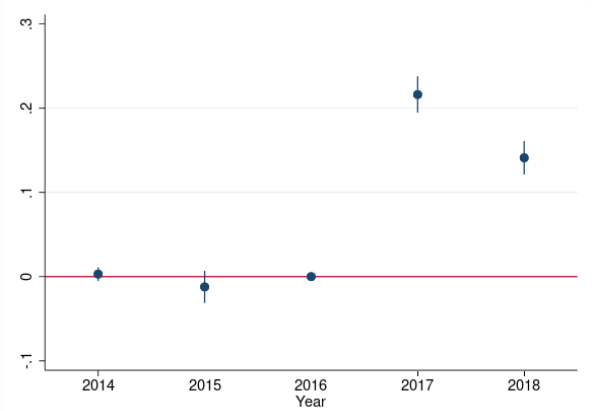
Figure 1: Distribution of Online Platform Economy 1099-Ks Issued to MA/VT Residents, Federal versus State Data



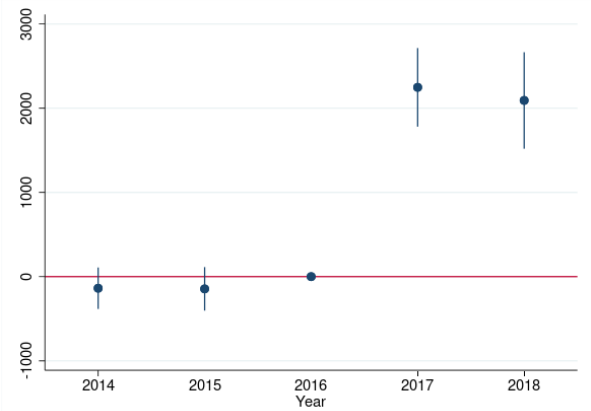
Note: The histograms document the distribution of 1099-K amounts $\geq$ \$600 in 2016-2018 for platform gig payers. Left-hand panels restrict to the states of Massachusetts and Vermont. The red distribution represents the Form 1099-Ks issued at the Federal level, while the blue distribution represents those issued by the states of Massachusetts and Vermont in 2017-2018. All other panels show federal 1099-K data only.

Figure 2: Event Studies Around Introduction of M-1099K

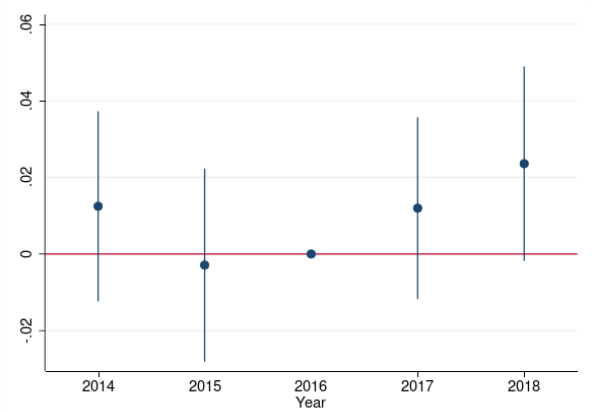
(a) Has OPE Gig 1099 (MISC or K)



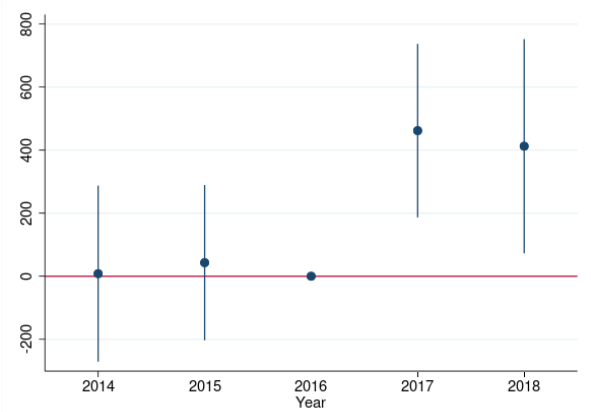
(b) OPE Gig 1099s $ Amount



(c) Files Schedule C



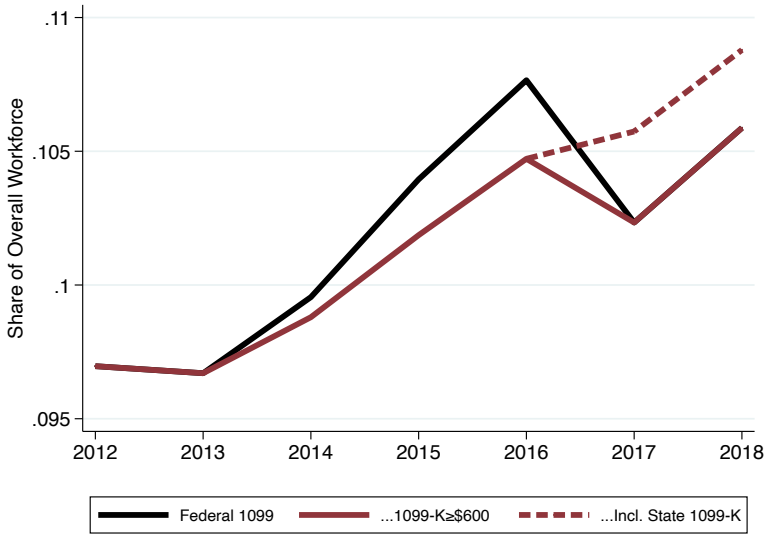
(d) Schedule C Profits/Loss



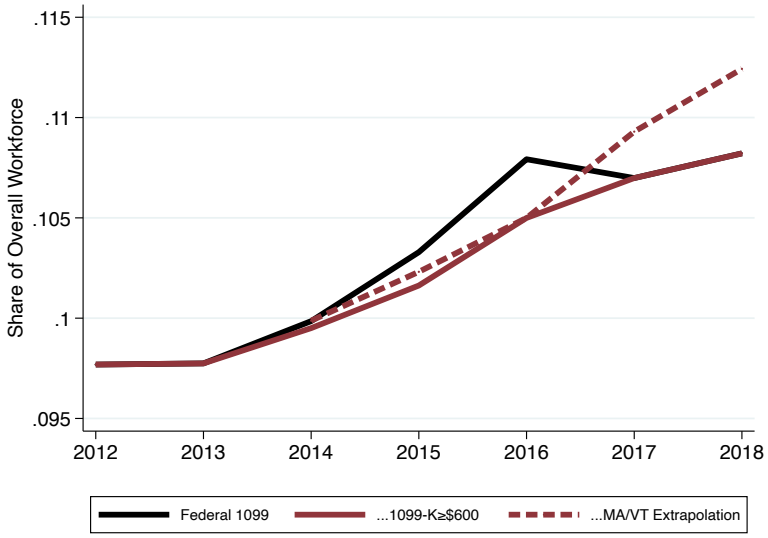
Note: Note: Figures report coefficients from running a county border regression around the introduction of the M-1099-K in 2017. The sample is restricted to the border-county pairs between Massachusetts, and the following states: Connecticut, New York, New Hampshire, and Rhode Island. Within border-counties we restrict to individuals living zipcodes within 15 miles of the border. All regressions include individual fixed effects, and border-pair x year fixed effects. Results are clustered at the individual level. The sample is a balanced panel of all individuals who were OPE gig workers in 2016 in one of the border counties, and we hold constant their 2016 border county for all years.

Figure 3: Estimating National Prevalence of all Contract work in 2017 and 2018, Using MA and VT

(a) **MA and VT, Actual Data**



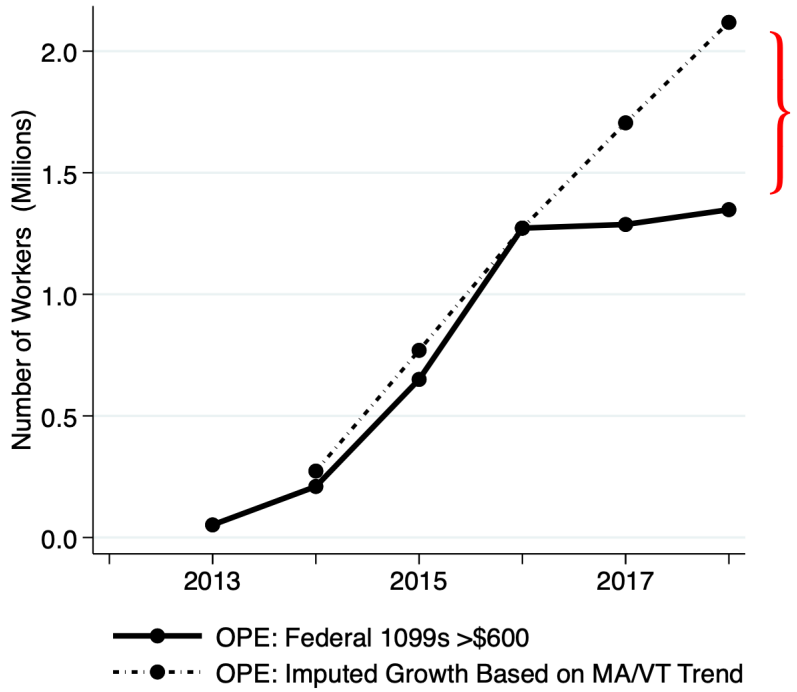
(b) **National, Extrapolation Method for Platform Work:**



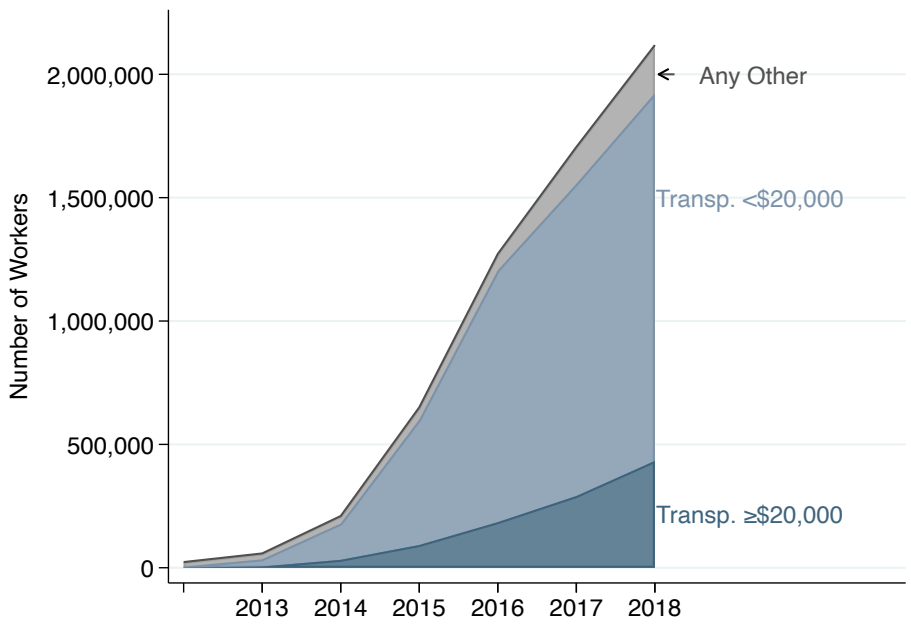
Note: Subfigure (a) shows data only for MA and VT. In solid black, we show the share of the workforce receiving a any 1099-MISC or an OPE 1099-K. In solid red, we exclude individuals with less than $600 in payments from an online platform firm on a 1099-K. The dashed red line displays the share of such individuals in the State MA-1099-K data in 2017 and 2018. In subfigure (b) we show similar trends at the national level. Here the dashed line imputes growth in the share of the workforce with 1099 work after 2016 based on observed growth in Massachusetts and Vermont.

Figure 4: The Rise of Online Platform Work

(a) Measures Using Federal and State Data



(b) Breakdown by Activity and Amount



Note: Subfigure (a) shows the number of individuals participating in online platform work with at least $600 in payments from an online platform firm on a 1099-K or 1099-MISC form. The solid line displays the count of such individuals in the federal 1099 return data. The dashed line imputes growth in the share of the workforce with OPE income after 2016 based on observed growth in Massachusetts and Vermont incorporating the state-level 1099-K returns subject to a lower $600 threshold in those states. The difference between the solid and the dashed black lines in 2017 and 2018 represents the estimated size of the 1099-K gap. Additionally, we show prior to 2016 how closely the imputation tracks with the actual federal data during the period where the 1099-K is not a problem. Subfigure (b) breaks down the OPE participants in Subfigure (a) based on whether their OPE earnings were solely from transportation work. The individuals whose OPE earnings solely come from transportation work are further subdivided based on whether their total OPE gross earnings are above or below $20,000.

Table 1: Border Design Regression Results Around Introduction of M-1099-K (2016 Gig Workforce Sample): Effects on Receipt of 1099Ks

	(1) Has OPE Any 1099	(2) Has OPE 1099-K	(3) Has OPE 1099-MISC	(4) K Amount OPE	(5) All OPE Amount	(6) Has Any 1099-K	(7) K Amount Any
Post x MA	0.182***	0.206***	0.0305***	2107.1***	2264.2***	0.226***	2491.5***
	(0.00980)	(0.00955)	(0.00736)	(228.5)	(250.6)	(0.00976)	(247.1)
Distinct i	10363	10363	10363	10363	10363	10363	10363
Distinct c	22	22	22	22	22	22	22
Dep. Means							
MA Pre	0.4178	0.4140	0.0713	2,110	2,250	0.4371	2,357
MA Post	0.4353	0.4210	0.2068	5,953	6,590	0.4499	6,466
Oth Pre	0.4234	0.4218	0.0330	2,123	2,190	0.4432	2,397
Oth Post	0.2498	0.2037	0.1489	3,677	4,158	0.2126	3,986
R^2	0.574	0.589	0.311	0.343	0.351	0.565	0.374

Note: Table reports results from running a county border regression around the introduction of the M-1099-K in 2017, specification 1. The sample is restricted to the border-county pairs between Massachusetts, and the following states: Connecticut, New York, New Hampshire, and Rhode Island. Within border-counties we restrict to individuals living zipcodes within 15 miles of the border. All regressions include individual fixed effects, and border-pair x year fixed effects. Results are clustered at the individual level. The sample is a balanced panel of all individuals who were OPE gig workers in 2016 in one of the border counties, and we hold constant their 2016 border county for all years. Presented outcomes relate to the receipt of 1099s. Columns (1)-(5) are restricted to 1099-Ks and 1099-MISCs from gig platforms. Columns (6) and (7) refer to 1099-Ks issued by all payers.

Table 2: Border Design Regression Results Around Introduction of M-1099-K (2016 Gig Workforce Sample): Effects on Schedule C and Schedule SE Filing

	(1) Files Sched C	(2) # Sched Cs	(3) Receipts	(4) Expenses	(5) Profits/Loss	(6) Files SE	(7) SE Earnings	(8) W2 Wages	(9) Files 1040
Post x MA	0.0146	0.0184	692.8[a]	214.4	420.0**	0.0279**	328.3*	-250.9	0.00180
	(0.00954)	(0.0124)	(381.0)	(308.8)	(132.7)	(0.00865)	(128.9)	(411.6)	(0.00697)
Distinct i	10363	10363	10363	10363	10363	10363	10363	10363	10363
Distinct c	22	22	22	22	22	22	22	22	22
Dep. Means									
MA Pre	0.3652	0.4191	4,942	3,691	1,217	0.2419	1,638	25,561	0.8530
MA Post	0.4235	0.5077	9,571	7,477	2,095	0.2749	2,694	28,099	0.8359
Oth Pre	0.3859	0.4459	4,825	3,597	1,190	0.2517	1,603	23,903	0.8631
Oth Post	0.4226	0.5051	8,804	7,154	1,638	0.2569	2,328	26,838	0.8472
R^2	0.455	0.484	0.596	0.582	0.499	0.394	0.555	0.753	0.484

Note: Table reports results from running a county border regression around the introduction of the M-1099-K in 2017, specification 1. The sample is restricted to the border-county pairs between Massachusetts, and the following states: Connecticut, New York, New Hampshire, and Rhode Island. Within border-counties we restrict to individuals living zipcodes within 15 miles of the border. All regressions include individual fixed effects, and border-pair x year fixed effects. Results are clustered at the individual level. The sample is a balanced panel of all individuals who were OPE gig workers in 2016 in one of the border counties, and we hold constant their 2016 border county for all years. Panel A presents outcomes related to the effect on filing Schedule C and Schedule SE. Panel B presents outcomes related to filing Form 1040.

Table 3: IV Estimates: Pass-through of 1099-K Reporting to Amounts Reported by Tax Filers
2016 Gig Workforce Sample

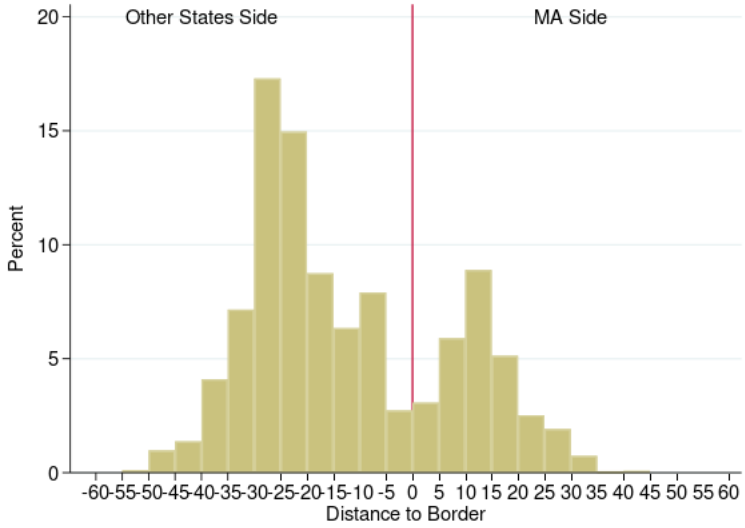
	(1) Files Sched C	(2) # Sched Cs	(3) Receipts	(4) Expenses	(5) Profits/Loss	(6) Files SE	(7) SE Earnings	(8) W2 Wages	(9) Files 1040
Has Any K = (Post x MA)	0.0644	0.0813				0.123***			0.00795
	(0.0409)	(0.0532)				(0.0366)			(0.0307)
All K Amount = (Post x MA)			0.278*	0.0861	0.169**		0.132**	-0.101	
			(0.141)	(0.120)	(0.0513)		(0.0493)	(0.163)	
Distinct i	10363	10363	10363	10363	10363	10363	10363	10363	10363
Distinct c	22	22	22	22	22	22	22	22	22
Dep. Means									
MA Pre	0.3652	0.4191	4,942	3,691	1,217	0.2419	1,638	25,561	0.8530
MA Post	0.4235	0.5077	9,571	7,477	2,095	0.2749	2,694	28,099	0.8359
Oth Pre	0.3859	0.4459	4,825	3,597	1,190	0.2517	1,603	23,903	0.8631
Oth Post	0.4226	0.5051	8,804	7,154	1,638	0.2569	2,328	26,838	0.8472
R^2	0.0415	0.0398	0.131	0.0530	0.0603	0.0494	0.0763	0.0180	0.0000754

Note: Table reports results from running a county border regression around the introduction of the M-1099-K in 2017, specification 1. The sample is restricted to the border-county pairs between Massachusetts, and the following states: Connecticut, New York, New Hampshire, and Rhode Island. Within border-counties we restrict to individuals living zipcodes within 15 miles of the border. All regressions include individual fixed effects, and border-pair x year fixed effects. Results are clustered at the individual level. The sample is a balanced panel of all individuals who were OPE gig workers in 2016 in one of the border counties, and we hold constant their 2016 border county for all years. Panel A presents outcomes related to the receipt of 1099s. Columns (1)-(5) are restricted to 1099-Ks and 1099-MISCs from gig platforms. Columns (6) and (7) refer to 1099-Ks issued by all payers. Panel B presents outcomes related to the effect on filing Schedule C and Schedule SE.

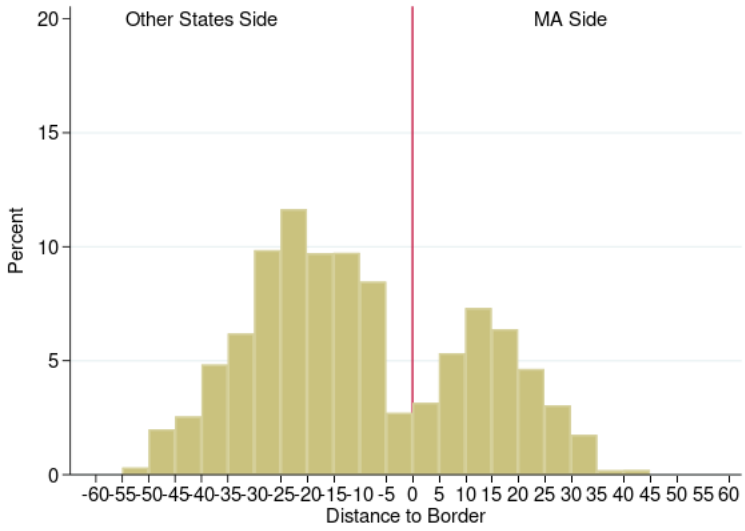
A Appendix Figures

Figure A.1: Distribution of Distance between Closest Zipcode Centroids In Neighboring Border Counties

(a) Platform Gig Workers, Massachusetts and Vermont

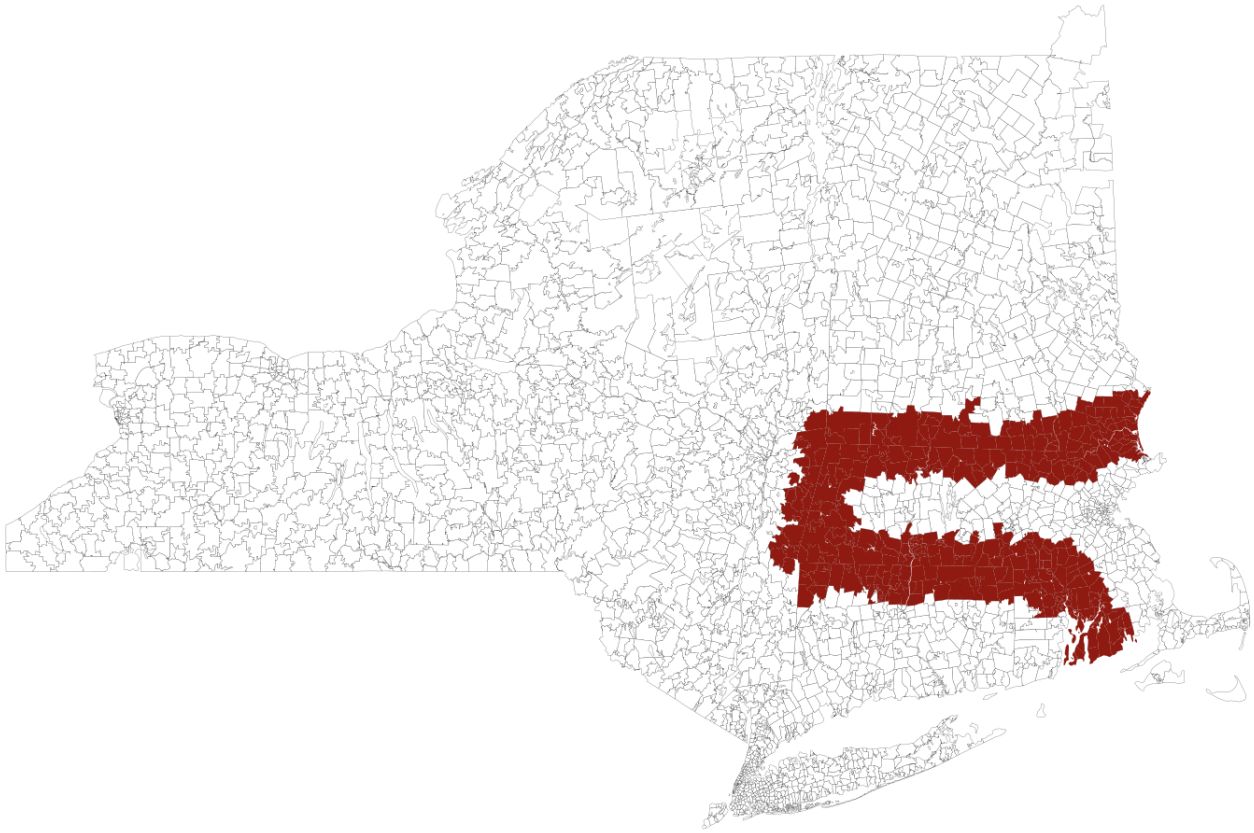


(b) Tax Workforce, Massachusetts and Vermont



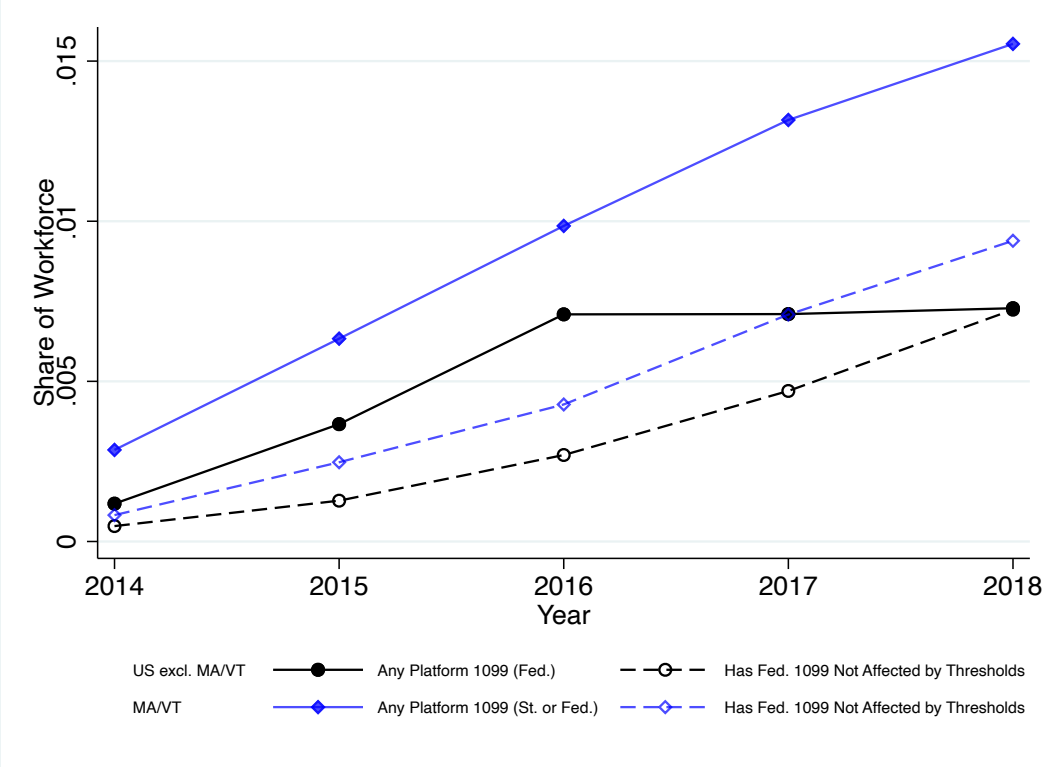
Notes: Figure shows distance between closest zipcode centroid on opposite side of the state border for the indicated sample.

Figure A.2: Zipcodes in Main Estimation Sample



Notes: Figure shows Massachusetts Borders, 15 Mile Spatial Bandwidth

Figure A.3: Share of Workforce with Platform 1099, MA and VT Versus Rest of US

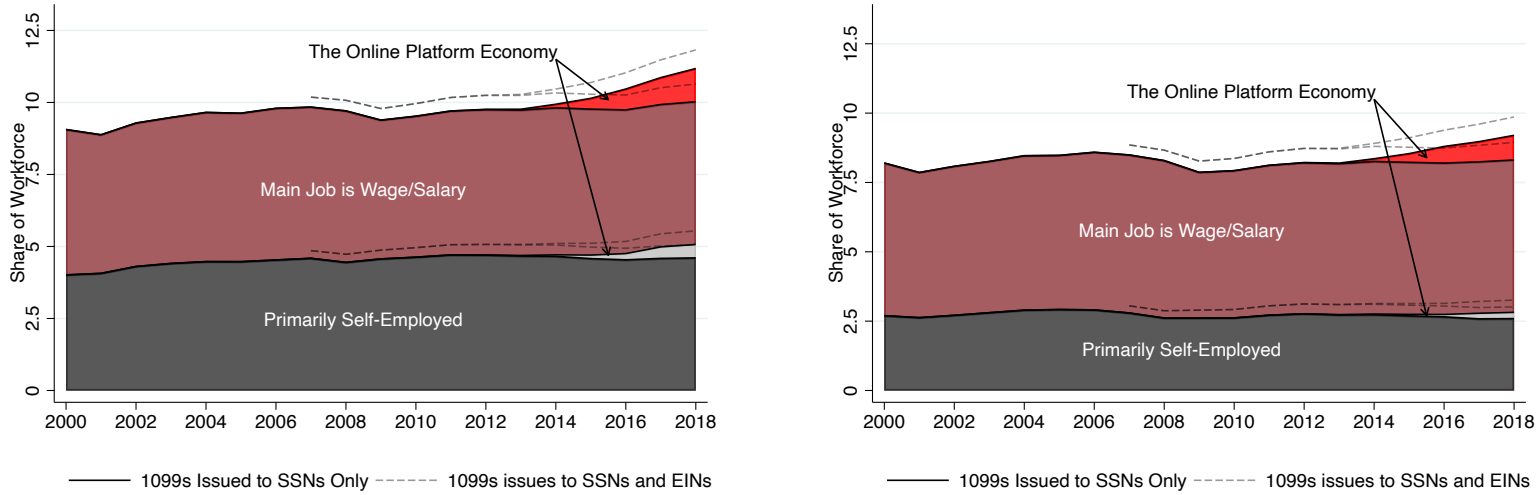


Following Collins, Garin, Jackson, Koustas, and Payne (2019), we define the tax workforce as all individuals with labor earnings reported on a W-2 return or on 1040 Schedule SE as well as 1040 filers with contract work payments on 1099 returns. For MA and VT residents we use both the federal data and 2017 and 2018 state-level 1099-K data, and in the rest of the US we use only federal data. Any platform work is defined as receive at least one 1099-MISC or a 1099-K with more than $20,000 from a platform. Restricts to amounts ≥ 600.

Figure A.4: Overall Prevalence of Contract Work through 2018, With Platform Economy Imputation in 2017 and 2018

(a) All Workforce Participants

(b) With Earnings $\geq$ \$15,000 (\$2015)



Notes: Figure shows the share of individuals in the workforce with firm-reported payments for contract labor are reported on a 1099 Information Return. The workforce is defined as all individuals appearing on a 1040 return in a year who have labor income reported on a W-2 return, a 1099 return, or on Schedule SE as well as individuals individuals with positive earnings on either a W-2 who do not file Form 1040. Panel A shows rates in the total workforce, while Panel B restricts to the workforce with at least \$15,000 in labor earnings reported on Form W-2 and Schedule SE combined. Following the method in Collins, Garin, Jackson, Koustas, and Payne (2019), we separately break out the subset of independent contractors with 1099-reported payments from online platform economy firms. "Earnings Primarily from Self-Employment" defined as having the majority of wage plus Schedule SE earnings coming from Schedule SE; "Earnings Primarily from Wages" is defined as the complement. The baseline series only includes 1099 returns issued to individual SSNs; for years beginning 2007, we also display each series including all 1099s issued to EINs listed on individual Schedule Cs in dashed lines.

B Appendix Tables

Table B.1: State 1099-K Reporting Requirements

State	Minimum Transaction Value	Minimum Transaction Count	Date Effective/Applicable
Vermont	Gross payments exceed or are equal to $600 in calendar year	No minimum	Applies to all payments on or after January 1, 2017
Massachusetts	Gross payments exceed, or are equal to $600 in calendar year	No minimum	Applies to all payments on or after January 1, 2017. May be filed using MA-1099-K.
Illinois	Gross payments exceed $1,000 in the calendar year	AND 4 or more transactions	New de minimis thresholds effective January 1, 2020. 1099-Ks required to be filed with IL from January 1, 2019.
Virginia	Gross payments exceed or are equal to $600	No minimum	January 1, 2020.
Maryland	Gross payments exceed or are equal to $600	No minimum	June 1, 2020
Missouri	Gross payments exceed or are equal to $1,200	No minimum	Timing uncertain.
Arkansas	Gross payments exceed or are equal to $2,500	No minimum	Timing uncertain.
California	App-based driver, gross payments of $600 or more	No minumum	January 1, 2021
New Jersey	Gross payments exceed or are equal to $1,000	No minimum	January 1, 2021.

Notes: States with mandatory 1099-K reporting, but no change in minimum reporting threshold: Florida (effective 2021), Kansas, Tennessee, Iowa, Connecticut, and Oregon.

Table B.2: Summary Statistics for MA Border Sample

	(1)	(2)
	Gig Workforce 2016 Sample	Tax Workforce 2016 Sample
Age	39.03	42.15
Female	0.20	0.49
Has a OPE Gig 1099 ANY	1.00	0.01
Has a OPE Gig 1099-K	1.00	0.01
Has a OPE Gig 1099-MISC	0.12	0.00
$ Amount OPE 1099-K	4,732.20	45.58
$ Amount OPE 1099-MISC	196.38	4.73
$ Amount OPE 1099	4,948.86	50.75
Files Schedule C	0.68	0.12
# Schedule Cs	0.79	0.13
Schedule C Receipts	6,632.39	6,192.54
Schedule C Expenses	5,134.38	4,373.63
Schedule C Profits/Loss	1,497.87	1,803.19
Files Schedule SE	0.43	0.10
Schedule SE Earnings	2,115.21	2,505.86
W-2 Wages	24138.61	39689.75
Total Earnings	26279.05	42180.39
Files Form 1040	0.89	0.93
Observations	16,465	3,515,253

Notes: Table reports summary statistics in 2016 for the samples in our county border regression around the introduction of the M-1099-K in 2017, specification 1. The sample is restricted to the border-county pairs between Massachusetts, and the following states: Connecticut, New York, New Hampshire, and Rhode Island. Within border-counties we restrict to individuals living zipcodes within 15 miles of the border. Column (1) includes the sample of all individuals who were OPE gig workers in 2016 in one of the MA border counties. Column (2) includes the sample of all individuals in the tax workforce in 2016 in one of the MA border counties.

Table B.3: Bandwidth Robustness for Distance to the Border (2016 Gig Workforce Sample)

(a) Massachusetts Border Sample

	(1) Has OPE All Zips	(2) Has OPE Zips < 50	(3) Has OPE Zips < 40	(4) Has OPE Zips < 30	(5) Has OPE Zips < 25	(6) Has OPE Zips < 20	(7) Has OPE Zips < 15	(8) Has OPE Zips < 10	(9) Has OPE Zips < 5
Post x MA	0.184***	0.184***	0.185***	0.183***	0.182***	0.179***	0.182***	0.182***	0.144***
	(0.00709)	(0.00709)	(0.00711)	(0.00709)	(0.00745)	(0.00848)	(0.00980)	(0.0133)	(0.0211)
Distinct i	28084	28084	28084	26537	19484	13669	10363	7791	2556
Distinct c	22	22	22	22	22	22	22	20	16
Dep. Mean	0.4224	0.4224	0.4227	0.4210	0.4082	0.3939	0.3885	0.3959	0.3910
R^2	0.555	0.555	0.554	0.551	0.561	0.573	0.574	0.548	0.538

(b) Massachusetts + Vermont Borders Sample

	(1) Has OPE All Zips	(2) Has OPE Zips < 50	(3) Has OPE Zips < 40	(4) Has OPE Zips < 30	(5) Has OPE Zips < 25	(6) Has OPE Zips < 20	(7) Has OPE Zips < 15	(8) Has OPE Zips < 10	(9) Has OPE Zips < 5
Post x MA	0.185***	0.185***	0.186***	0.184***	0.182***	0.180***	0.183***	0.186***	0.151***
	(0.00705)	(0.00705)	(0.00707)	(0.00705)	(0.00742)	(0.00844)	(0.00975)	(0.0132)	(0.0210)
Distinct i	28477	28477	28477	26935	19879	14060	10657	7952	2578
Distinct c	36	36	36	36	36	36	36	33	21
Dep. Mean	0.4220	0.4221	0.4225	0.4208	0.4083	0.3946	0.3891	0.3960	0.3906
R^2	0.556	0.556	0.555	0.551	0.561	0.574	0.574	0.548	0.538

Note: Table reports results from running a county border regression around the introduction of the M-1099-K in 2017, specification 1. We show robustness to what mile distance we restrict on within border-counties, each column restricts to individuals living in zipcodes within X miles (denoted by column header) of the border. All regressions include individual fixed effects, and border-pair x year fixed effects. Results are clustered at the individual level. The sample is a balanced panel of all individuals who were OPE gig workers in 2016 in one of the border counties, and we hold constant their 2016 border county for all years. Panel A shows robustness among the MA border counties. Panel B additionally includes Vermont border counties.

Table B.4: Heterogeneity in Instrumental Variable Pass-Through Estimates:
Border Design Regression Results Around Introduction of M-1099-K
2016 Gig Workforce

(a) Files Schedule C

	(1) All	(2) Female	(3) Male	(4) Older	(5) Younger	(6) Higher AGI	(7) Lower AGI	(8) Filed C 2014-16	(9) No C in 2014-16	(10) High C Expenses 2016	(11) Low C Expenses 2016	(12) Filer 2016	(13) Non-filer 2016	(14) Has Any NEC in 2017-18	(15) Has no NEC in 2017-18
Has Any K															
= (Post x MA)	0.0644	0.128	0.0513	0.0673	0.0621	0.106*	0.00319	0.0686	-0.0185	0.0317	0.0909[a]	0.0585	0.106	0.0176	-0.0584
	(0.0409)	(0.0908)	(0.0460)	(0.0472)	(0.0794)	(0.0508)	(0.0677)	(0.0471)	(0.0752)	(0.0589)	(0.0549)	(0.0447)	(0.0883)	(0.0643)	(0.0609)
Distinct i	10363	1936	8717	6291	5335	5000	5363	7549	2814	3332	7031	9191	1172	4061	6302
Distinct c	22	20	22	22	22	22	21	21	22	20	22	22	19	20	22
Dep. Means															
MA Pre	0.3652	0.3397	0.3711	0.3977	0.3380	0.4069	0.3273	0.5129	0.0000	0.6029	0.2598	0.4063	0.0637	0.4494	0.3091
MA Post	0.4235	0.3596	0.4373	0.4487	0.3935	0.4662	0.3848	0.5352	0.1473	0.6955	0.3030	0.4632	0.1324	0.6961	0.2422
Oth Pre	0.3859	0.3742	0.3894	0.4235	0.3482	0.4235	0.3554	0.5270	0.0000	0.6103	0.2759	0.4249	0.0613	0.4665	0.3419
Oth Post	0.4226	0.3689	0.4367	0.4585	0.3748	0.4584	0.3934	0.5226	0.1490	0.6823	0.2951	0.4591	0.1185	0.7006	0.2706
R^2	0.0415	0.0517	0.0350	0.0439	0.0357	0.0779	-0.000301	0.0528	-0.0178	0.0247	0.0496	0.0404	0.0385	0.00772	-0.0417

(b) # of Schedule Cs Filed

	(1) All	(2) Female	(3) Male	(4) Older	(5) Younger	(6) Higher AGI	(7) Lower AGI	(8) Filed C 2014-16	(9) No C in 2014-16	(10) High C Expenses 2016	(11) Low C Expenses 2016	(12) Filer 2016	(13) Non-filer 2016	(14) Has Any NEC in 2017-18	(15) Has no NEC in 2017-18
Has Any K															
= (Post x MA)	0.0813	0.0667	0.0854	0.0990	0.0480	0.159*	-0.0260	0.0820	0.0158	0.0634	0.0947	0.0767	0.120	0.0444	-0.0957
	(0.0532)	(0.121)	(0.0596)	(0.0610)	(0.106)	(0.0650)	(0.0899)	(0.0624)	(0.0909)	(0.0834)	(0.0681)	(0.0584)	(0.108)	(0.0952)	(0.0719)
Distinct i	10363	1936	8717	6291	5335	5000	5363	7549	2814	3332	7031	9191	1172	4061	6302
Distinct c	22	20	22	22	22	22	21	21	22	20	22	22	19	20	22
Dep. Means															
MA Pre	0.4191	0.3930	0.4253	0.4666	0.3777	0.4586	0.3834	0.5887	0.0000	0.7319	0.2806	0.4666	0.0713	0.5356	0.3416
MA Post	0.5077	0.4242	0.5257	0.5382	0.4708	0.5540	0.4658	0.6438	0.1714	0.8607	0.3514	0.5559	0.1547	0.8747	0.2636
Oth Pre	0.4459	0.4338	0.4496	0.4934	0.3980	0.4803	0.4180	0.6089	0.0000	0.7456	0.2989	0.4914	0.0668	0.5677	0.3794
Oth Post	0.5051	0.4520	0.5192	0.5446	0.4533	0.5332	0.4823	0.6277	0.1695	0.8330	0.3442	0.5491	0.1384	0.8751	0.3028
R^2	0.0398	0.0196	0.0436	0.0484	0.0205	0.0871	-0.0148	0.0469	0.00396	0.0354	0.0425	0.0398	0.0376	0.0151	-0.0576

(c) Schedule C Receipts

	(1) All	(2) Female	(3) Male	(4) Older	(5) Younger	(6) Higher AGI	(7) Lower AGI	(8) Filed C 2014-16	(9) No C in 2014-16	(10) High C Expenses 2016	(11) Low C Expenses 2016	(12) Filer 2016	(13) Non-filer 2016	(14) Has Any NEC in 2017-18	(15) Has no NEC in 2017-18
All K Amount															
= (Post x MA)	0.278*	-0.342	0.339*	0.300[a]	0.0244	0.575***	-0.190	0.335*	0.0558	0.259	0.318[a]	0.259[a]	0.758	0.166	-0.197
	(0.141)	(0.434)	(0.153)	(0.158)	(0.319)	(0.147)	(0.304)	(0.158)	(0.239)	(0.202)	(0.187)	(0.147)	(0.489)	(0.243)	(0.293)
Distinct i	10363	1936	8717	6291	5335	5000	5363	7549	2814	3332	7031	9191	1172	4061	6302
Distinct c	22	20	22	22	22	22	21	21	22	20	22	22	19	20	22
Dep. Means															
MA Pre	4,942	3,048	5,336	6,611	3,293	4,752	5,114	6,941	0.0000	12,560	1,567	5,468	1,082	7,886	2,984
MA Post	9,571	5,239	10,460	10,818	7,964	9,727	9,431	12,469	2,408	20,109	4,904	10,454	3,099	19,011	3,293
Oth Pre	4,825	3,372	5,197	6,254	3,317	4,706	4,922	6,588	0.0000	11,296	1,650	5,285	993	7,174	3,541
Oth Post	8,804	6,113	9,492	9,942	7,267	8,364	9,162	11,207	2,230	17,849	4,366	9,574	2,388	17,553	4,021
R^2	0.131	-0.219	0.153	0.134	0.0117	0.231	-0.124	0.147	0.0446	0.114	0.147	0.128	-0.0867	0.0900	-0.0718

(d) Schedule C Expenses

	(1) All	(2) Female	(3) Male	(4) Older	(5) Younger	(6) Higher AGI	(7) Lower AGI	(8) Filed C 2014-16	(9) No C in 2014-16	(10) High C Expenses 2016	(11) Low C Expenses 2016	(12) Filer 2016	(13) Non-filer 2016	(14) Has Any NEC in 2017-18	(15) Has no NEC in 2017-18
All K Amount = (Post x MA)	0.0861	-0.179	0.102	0.0724	0.0478	0.313**	-0.262	0.107	0.0825	0.0359	0.170	0.0803	0.350	-0.0582	-0.302
	(0.120)	(0.363)	(0.130)	(0.137)	(0.250)	(0.119)	(0.264)	(0.136)	(0.181)	(0.178)	(0.151)	(0.125)	(0.333)	(0.209)	(0.257)
Distinct i	10363	1936	8717	6291	5335	5000	5363	7549	2814	3332	7031	9191	1172	4061	6302
Distinct c	22	20	22	22	22	22	21	21	22	20	22	22	19	20	22
Dep. Means															
MA Pre	3,691	2,223	3,996	5,006	2,388	3,542	3,827	5,184	0.0000	10,066	868	4,086	795	5,853	2,253
MA Post	7,477	4,059	8,178	8,534	6,109	7,838	7,150	9,743	1,874	16,204	3,612	8,203	2,153	14,526	2,789
Oth Pre	3,597	2,305	3,927	4,763	2,367	3,827	3,411	4,912	0.0000	9,086	905	3,930	828	5,105	2,773
Oth Post	7,154	4,510	7,828	8,343	5,540	7,379	6,971	9,144	1,708	15,139	3,236	7,776	1,973	13,841	3,499
R^2	0.0530	-0.128	0.0623	0.0425	0.0292	0.174	-0.210	0.0618	0.0819	0.0178	0.104	0.0508	0.0377	-0.0498	-0.135

(e) Schedule C Profits and Losses

	(1) All	(2) Female	(3) Male	(4) Older	(5) Younger	(6) Higher AGI	(7) Lower AGI	(8) Filed C 2014-16	(9) No C in 2014-16	(10) High C Expenses 2016	(11) Low C Expenses 2016	(12) Filer 2016	(13) Non-filer 2016	(14) Has Any NEC in 2017-18	(15) Has no NEC in 2017-18
All K Amount = (Post x MA)	0.169**	-0.0723	0.199***	0.193***	0.000377	0.220***	0.0809	0.200***	-0.0176	0.201**	0.130[a]	0.160**	0.317	0.155[a]	0.125
	(0.0513)	(0.163)	(0.0557)	(0.0580)	(0.117)	(0.0616)	(0.0913)	(0.0582)	(0.0916)	(0.0733)	(0.0701)	(0.0530)	(0.216)	(0.0892)	(0.100)
Distinct i	10363	1936	8717	6291	5335	5000	5363	7549	2814	3332	7031	9191	1172	4061	6302
Distinct c	22	20	22	22	22	22	21	21	22	20	22	22	19	20	22
Dep. Means															
MA Pre	1,217	824	1,299	1,515	929	1,118	1,307	1,709	0.0000	2,379	702	1,340	313	1,970	716
MA Post	2,095	1,234	2,273	2,237	1,906	1,867	2,302	2,725	539	3,942	1,278	2,260	886	4,487	505
Oth Pre	1,190	1,072	1,222	1,428	940	790	1,515	1,625	0.0000	2,092	748	1,310	189	1,979	759
Oth Post	1,638	1,572	1,657	1,590	1,710	978	2,175	2,050	510	2,706	1,113	1,780	456	3,725	497
R^2	0.0603	-0.0494	0.0591	0.0457	-0.00234	0.0594	0.0456	0.0610	-0.0294	0.0481	0.0667	0.0654	-0.348	0.0623	0.0125

(f) Files Schedule SE

	(1) All	(2) Female	(3) Male	(4) Older	(5) Younger	(6) Higher AGI	(7) Lower AGI	(8) Filed C 2014-16	(9) No C in 2014-16	(10) High C Expenses 2016	(11) Low C Expenses 2016	(12) Filer 2016	(13) Non-filer 2016	(14) Has Any NEC in 2017-18	(15) Has no NEC in 2017-18
Has Any K = (Post x MA)	0.123***	0.113	0.126**	0.159***	0.0464	0.178***	0.0504	0.136**	0.0180	0.137*	0.116*	0.129**	0.0678	0.0837	0.0344
	(0.0366)	(0.0840)	(0.0410)	(0.0423)	(0.0722)	(0.0448)	(0.0615)	(0.0430)	(0.0597)	(0.0562)	(0.0474)	(0.0400)	(0.0754)	(0.0668)	(0.0477)
Distinct i	10363	1936	8717	6291	5335	5000	5363	7549	2814	3332	7031	9191	1172	4061	6302
Distinct c	22	20	22	22	22	22	21	21	22	20	22	22	19	20	22
Dep. Means															
MA Pre	0.2419	0.2217	0.2464	0.2634	0.2239	0.2516	0.2330	0.3372	0.0062	0.3776	0.1817	0.2685	0.0464	0.3117	0.1954
MA Post	0.2749	0.2297	0.2846	0.2893	0.2588	0.2740	0.2757	0.3455	0.1002	0.4460	0.1991	0.2988	0.0997	0.5120	0.1171
Oth Pre	0.2517	0.2470	0.2533	0.2801	0.2227	0.2492	0.2538	0.3423	0.0038	0.3763	0.1906	0.2780	0.0325	0.3248	0.2118
Oth Post	0.2569	0.2359	0.2626	0.2705	0.2390	0.2301	0.2787	0.3169	0.0927	0.4030	0.1853	0.2787	0.0759	0.4926	0.1281
R^2	0.0494	0.0290	0.0524	0.0575	0.0183	0.0703	0.0198	0.0598	0.00650	0.0515	0.0464	0.0531	0.0208	0.0260	0.0127

(g) Schedule SE Earnings

	(1) All	(2) Female	(3) Male	(4) Older	(5) Younger	(6) Higher AGI	(7) Lower AGI	(8) Filed C 2014-16	(9) No C in 2014-16	(10) High C Expenses 2016	(11) Low C Expenses 2016	(12) Filer 2016	(13) Non-filer 2016	(14) Has Any NEC in 2017-18	(15) Has no NEC in 2017-18
All K Amount = (Post x MA)	0.132**	0.0464	0.143**	0.170**	-0.0447	0.191**	0.0334	0.153**	0.0103	0.166*	0.0943	0.123*	0.291	0.130	0.00920
	(0.0493)	(0.152)	(0.0532)	(0.0546)	(0.118)	(0.0587)	(0.0893)	(0.0560)	(0.0848)	(0.0689)	(0.0694)	(0.0510)	(0.211)	(0.0845)	(0.0980)
Distinct i	10363	1936	8717	6291	5335	5000	5363	7549	2814	3332	7031	9191	1172	4061	6302
Distinct c	22	20	22	22	22	22	21	21	22	20	22	22	19	20	22
Dep. Means															
MA Pre	1,638	1,256	1,719	2,037	1,254	1,578	1,693	2,286	35	3,468	827	1,802	436	2,514	1,055
MA Post	2,694	1,804	2,878	2,932	2,378	2,647	2,736	3,492	721	5,218	1,576	2,925	1,001	5,399	895
Oth Pre	1,603	1,407	1,654	1,918	1,266	1,314	1,837	2,184	12	3,100	868	1,760	292	2,470	1,129
Oth Post	2,328	2,069	2,397	2,399	2,243	1,913	2,666	2,935	667	4,121	1,448	2,535	607	4,692	1,036
R^2	0.0763	0.0180	0.0816	0.0678	-0.0566	0.0976	0.0254	0.0810	0.00983	0.0691	0.0663	0.0790	-0.295	0.0718	0.00220

(h) W2 Wages

	(1) All	(2) Female	(3) Male	(4) Older	(5) Younger	(6) Higher AGI	(7) Lower AGI	(8) Filed C 2014-16	(9) No C in 2014-16	(10) High C Expenses 2016	(11) Low C Expenses 2016	(12) Filer 2016	(13) Non-filer 2016	(14) Has Any NEC in 2017-18	(15) Has no NEC in 2017-18
All K Amount = (Post x MA)	-0.101	-0.583	-0.0151	-0.0987	-0.128	-0.364[a]	0.275	-0.0421	-0.486	-0.165	-0.107	-0.0683	-0.356	0.223	-0.128
	(0.163)	(0.519)	(0.176)	(0.178)	(0.365)	(0.211)	(0.272)	(0.171)	(0.485)	(0.179)	(0.277)	(0.168)	(0.702)	(0.213)	(0.449)
Distinct i	10363	1936	8717	6291	5335	5000	5363	7549	2814	3332	7031	9191	1172	4061	6302
Distinct c	22	20	22	22	22	22	21	21	22	20	22	22	19	20	22
Dep. Means															
MA Pre	25,561	21,695	26,405	26,944	24,378	39,421	13,005	26,959	22,104	25,259	25,695	27,381	12,220	23,208	27,126
MA Post	28,099	23,952	28,998	27,848	28,559	41,989	15,515	29,477	24,691	25,741	29,143	30,213	12,597	22,207	32,018
Oth Pre	23,903	20,785	24,721	24,519	23,327	37,441	12,894	24,851	21,308	23,697	24,004	25,427	11,191	20,053	26,007
Oth Post	26,838	23,879	27,620	26,250	27,741	41,075	15,262	27,658	24,593	25,475	27,507	28,619	11,996	18,841	31,209
R^2	0.0180	0.0205	0.00200	0.0147	0.0280	0.0406	-0.109	0.00778	0.0256	0.0301	0.0145	0.0129	-0.00462	-0.111	0.00562

(i) Files 1040

	(1) All	(2) Female	(3) Male	(4) Older	(5) Younger	(6) Higher AGI	(7) Lower AGI	(8) Filed C 2014-16	(9) No C in 2014-16	(10) High C Expenses 2016	(11) Low C Expenses 2016	(12) Filer 2016	(13) Non-filer 2016	(14) Has Any NEC in 2017-18	(15) Has no NEC in 2017-18
Has Any K = (Post x MA)	0.00795	0.0126	0.0201	0.0106	0.00447	0.0000691	0.0107	0.0144	-0.0171	0.0114	0.00281	0.0198	-0.0909	0.0524	-0.0401
	(0.0307)	(0.0556)	(0.0336)	(0.0371)	(0.0464)	(0.0291)	(0.0603)	(0.0306)	(0.0901)	(0.0376)	(0.0447)	(0.0301)	(0.134)	(0.0468)	(0.0488)
Distinct i	10363	1936	8717	6291	5335	5000	5363	7549	2814	3332	7031	9191	1172	4061	6302
Distinct c	22	20	22	22	22	22	21	21	22	20	22	22	19	20	22
Dep. Means															
MA Pre	0.8530	0.9097	0.8436	0.7992	0.9191	0.9603	0.7558	0.9233	0.6792	0.9341	0.8171	0.9285	0.2994	0.8545	0.8520
MA Post	0.8359	0.8878	0.8276	0.7929	0.9012	0.9372	0.7441	0.9074	0.6590	0.9243	0.7967	0.9085	0.3032	0.8624	0.8182
Oth Pre	0.8631	0.9260	0.8485	0.8042	0.9292	0.9609	0.7836	0.9254	0.6926	0.9372	0.8267	0.9317	0.2920	0.8638	0.8627
Oth Post	0.8472	0.9187	0.8305	0.8049	0.9112	0.9429	0.7694	0.9092	0.6775	0.9285	0.8073	0.9105	0.3200	0.8607	0.8398
R^2	0.0000754	-0.00797	0.00147	0.000349	-0.00325	-0.00262	-0.000764	0.00219	-0.00496	-0.000218	-0.00143	0.00267	-0.0215	0.00183	-0.00929

Note: Table reports results from running a county border regression around the introduction of the M-1099-K in 2017, specification 1. The sample is restricted to the border-county pairs between Massachusetts, and the following states: Connecticut, New York, New Hampshire, and Rhode Island. Within border-counties we restrict to individuals living zipcodes within 15 miles of the border. All regressions include individual fixed effects, and border-pair x year fixed effects. Results are clustered at the individual level. The sample is a balanced panel of all individuals who were OPE gig workers in 2016 in one of the border counties, and we hold constant their 2016 border county for all years. Each panel represents a different outcome variable from Table 3 which are related to the receipt of 1099s. We present in column (1) the main results from Table 3 and heterogeneity by subgroups in each of the columns (2)-(15).

C Imputation Procedure as a Share of the Tax Workforce

In this Appendix, we provide multiple alternative imputation methodologies for measuring platform work, and the 1099-K gap. Some alternative imputations are more sophisticated and require more assumptions than others, and so we present all alternatives here for completeness. These alternatives highlight the potential range of values that the true underlying trends may exhibit.

C.1 Alternative Imputation 1

Our main alternative imputation leverages raw counts of 1099 OPE work and the gross amounts on the 1099-Ks rather than utilizing the share of the workforce engaged in 1099 work. We build on our imputation methodology described in section 4.2, and incorporate a third key component: 1099-K dollar *gross* amounts.

We combine the 1099-K returns based on the *gross amounts* into two groups: amounts of $600-20,000 and more than $20,000, as we observe the latter group in all years for all states. Thus, we calculate the ratio of 1099-Ks with gross amounts $\in [600, 20,000)$ to gross amounts $\geq 20,000$ in the base year 2016, and for both types of states (MA and VT, versus all other states). Note that we normalize all of our count measures, C_y, to be counts of 1099-Ks per 1,000 population in year y to make them comparable across state groups (MA and VT, versus all other states). We will later re-inflate the counts per 1,000 population to a total count. We use 2016 as a base year, since it's the closest year to our imputed years and therefore we think most comparable.

We define the following ratio R_{2016}, where C_y is defined to be counts of 1099-K per 1,000 population in year y:

$$R_{2016} = \frac{C_{2016}^{(MA,600-20k)}}{C_{2016}^{(MA,20k+)}} * \frac{C_{2016}^{(Other,600-20k)}}{C_{2016}^{(Other,20k+)}}. \tag{2}$$

For each year y (where $y \in 2017, 2018$) the value for other states can be imputed using ratio R_{2016} as follows:

$$C_y^{(Other,600-20k)} = \frac{1}{R_{2016}} * \frac{C_y^{(Other,20k+)} * C_y^{(MA,600-20k)}}{C_y^{(MA,20k+)}} \tag{3}$$

Finally, since C_y is a count per 1,000 population in year y, we use state populations to aggregate these counts to a total state level count rather than a per 1,000 population measure:

$$[\textbf{Imputed Count of 1099K}]_y^{(Other,600-20k)} = C_y^{(Other,600-20k)} * \frac{\text{population}}{1000} \tag{4}$$

In summary, for years where we have complete information we use the available data, and for years where we are missing data then we use the imputation. Thus, for all years we use true counts for 1099-Ks $\geq$ $20,000, and from 2017 onwards we use our imputed values for 1099-Ks $\in [600, 20000)$ in states for which we do not have state

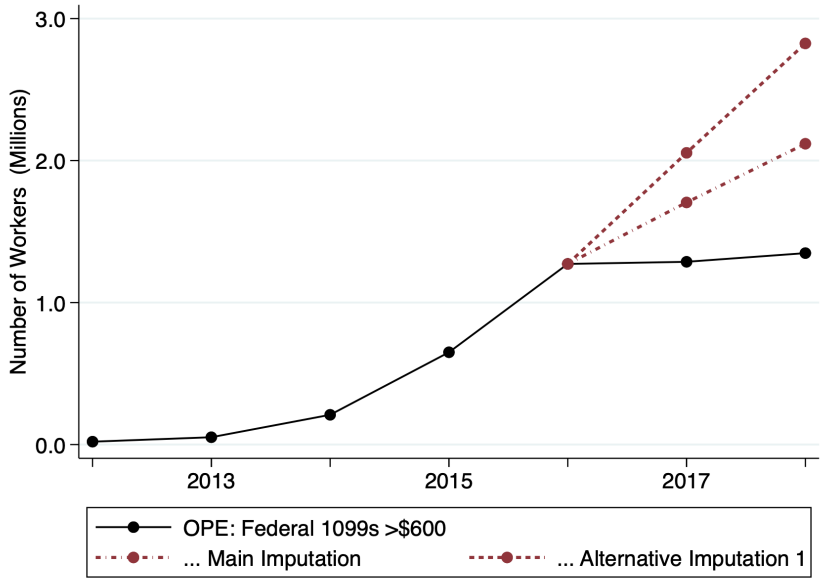
1099-K data (i.e. all states other than MA and VT). We are then able to fill in the missing components of our imputation.

Finally, when considering how these imputed 1099-K measures translate into new platform work counts at the individual level, we need to consider that some of the individuals we are imputing to have 1099-Ks between [600,20000) may have also received a 1099-MISC from a platform and thus are already accounted for on the extensive margin. We calculate this share in 2016, our base year. Only 25.56% of individuals with 1099-Ks also had a 1099-MISC. Thus to get the overall number of individuals with OPE work, we discount our 1099-K imputed count by (1-.2556) and add this to the OPE 1099-MISC counts. Putting this all together, we get a final adjusted number of OPE works as follows:

$$\begin{aligned}\textbf{Adjusted Count of OPE}_y = (\text{Count with OPE MISC})_y^{All} + (1-.2556) * [(\text{Count of 1099K})_y^{(MA,20k+)} \\ + (\text{Count of 1099K})_y^{(MA,600-20k)} + (\text{Count of 1099K})_y^{(Other,20k+)} \\ + (\textbf{Imputed Count of 1099K})_y^{(Other,600-20k)}]\end{aligned}$$

In Figure C.1, we present the trend of this alternative imputation, labeled "Alternative Imputation 1", and compare it with our main imputation described in Section 4.2, labeled "Main Imputation". This alternative specification predicts a larger K-gap, and suggests our main imputation is more conservative.

Figure C.1: Alternative Specification for MA/VT Imputation



Note: We show trends in the number of individuals participating in online platform work with at least $600 in payments from an online platform firm on a 1099-K or 1099-MISC form. The solid line displays the count of such individuals in the Federal 1099 return data. The two dashed lines impute growth in the share of the workforce with OPE income after 2016 based on observed growth in Massachusetts and Vermont incorporating the state-level 1099-K returns subject to a lower $600 threshold in those states. The "Main Imputation" is described in Section 4.2 and "Alternative Imputation 1" is described in Append Section C.

C.2 Various Other Imputation Alternatives

We also present two simple imputations as a comparison to our main imputation. While these imputations require less assumptions, as we will show, they do not perform as well in terms of pre-trends.

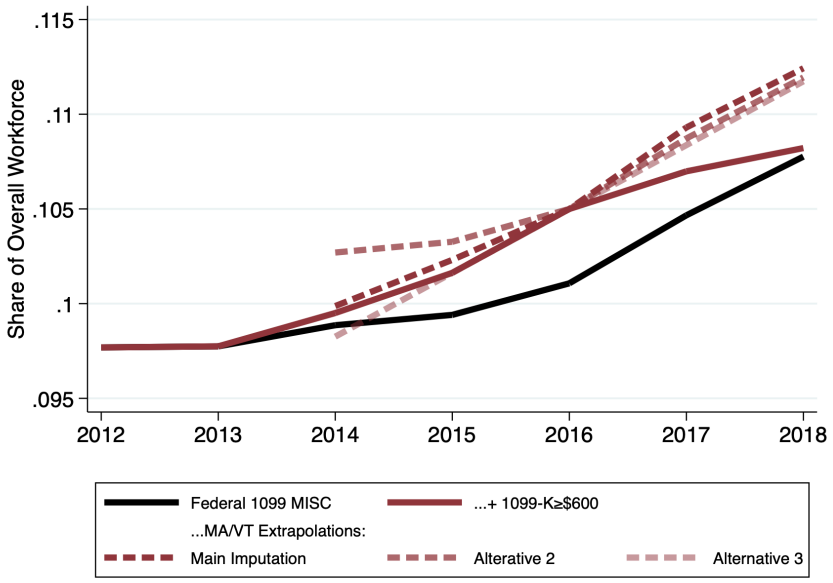
In our "Alternative 2" imputation, we assume that the 1099 workforce grew in parallel to the Federal 1099 MISC series, which is the subset of the 1099 workforce who does not receive an OPE 1099-K. This methodology imposes what share of the 1099 workforce receives an OPE 1099-K in the base year (2016), and inflates the Federal 1099 MISC series accordingly. In Figure C.2a, one can see that the "Alternative 2" line is parallel to the Federal 1099 MISC series.

In "Alternative 3", we impute the 1099 workforce in 2017 and 2018 by assuming that the 1099 Workforce grows linearly, the solid red line. We extrapolate a linear trend from 2015 to 2016 forward into 2017 and 2018.

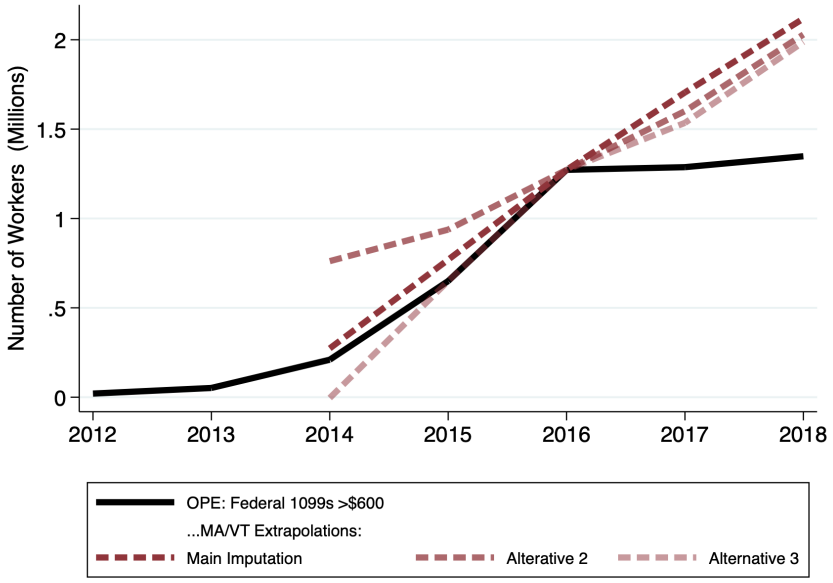
In figure C.2a, we show these two alternative imputations along with the main imputation to highlight the potential range of values that the true underlying trends may exhibit. Despite these alternative imputations being calculated as a share of the workforce, we also present these alternative series with OPE counts in Figure C.2b.

Figure C.2: Measures of the 1099 Workforce: Alternative Imputations

(a) As a Share of the Workforce



(b) In Counts



Note: We show trends in the number of individuals participating in online platform work with at least $600 in payments from an online platform firm on a 1099-K or 1099-MISC form. The solid line displays the count of such individuals in the Federal 1099 return data. The two dashed lines impute growth in the share of the workforce with OPE income after 2016 based on observed growth in Massachusetts and Vermont incorporating the state-level 1099-K returns subject to a lower $600 threshold in those states. The "Main Imputation" is described in Section 4.2 and "Alternative 2" and "Alternative 3" are described in Appendix Section C. In Panel B, we transform the imputations in Panel A which are measured as a share of the workforce to be in counts of individuals with OPE work.