



The “Gig Economy” and Independent Contracting: Evidence from California Tax Data

Annette Bernhardt
UC Berkeley

Allen Prohofsky
Franchise Tax Board

Jesse Rothstein*
UC Berkeley & NBER

August 2019

Abstract

We use de-identified data from California personal income tax returns to measure the frequency and nature of independent contracting work in California. We identify independent contractors by the presence of a Schedule C on the tax return. We estimate that 16% of California workers aged 18-64 report some Schedule C income; about two-thirds of these do not have traditional jobs generating W-2s and get all of their earnings from Schedule C work. There has been little change in the prevalence of Schedule C work since 2012. We explore the characteristics of independent contractors and their distribution across family type, geography, and industry.

* Corresponding author. E-mail: rothstein@berkeley.edu. We are grateful to Chris Campos, Charles Davis, Nick Gebbia, John Iselin, Patrick Kennedy, Ian Eve Perry, Sarah Thomason, and Dario Tortarolo for excellent research assistance, and to Aparna Ramesh for project management. We are also grateful to Julie Moreno, Sean McDaniel, Chad Angaretis, Xudong Chen, Bud Flynn, and Jeff McTygue for helping us understand the tax data. This project was funded in part by the United States Department of Labor Scholars Program (under contract DOL-OPS-15-C-0060), the Alfred P. Sloan Foundation, and the Ewing Marion Kauffman Foundation. Nothing in this paper is an official position of the Franchise Tax Board. The contents of this publication and views expressed are solely the responsibility of the authors and should not be attributed to FTB, DOL, or other funders, nor does mention of trade names, commercial products, or organizations imply endorsement of same by the U.S. Government or other funders.

Introduction

Most labor market policy in the United States is designed for long-term employment relationships. Self-employed workers, including independent contractors and on-demand platform (“gig”) workers, are excluded from labor market protections such as wage and hour laws, occupational safety and health regulations, unemployment insurance, and employer-provided health insurance and retirement programs.

These exclusions may contribute to reduced economic security and chronic instability in incomes and work lives. To develop solutions that will address workers’ needs, policymakers need to understand the prevalence of independent contracting and other non-traditional employment relationships, and in what parts of the labor market they are most concentrated. For example, an understanding of the industries where independent contracting is most prevalent would help point to potential misclassification problems and sectors where there may be a need for stronger enforcement. In addition, to make sure that policies support workers and meet their needs for economic security, we need to understand how workers at different points of the income distribution are using independent contracting (as a main job or as supplemental income). The lack of unemployment insurance for independent contracting relationships would not be problematic if these relationships typically consisted of side jobs held by workers with high earnings and stable employment on their main, W-2 jobs, but would indicate a much larger problem if independent contractors typically have low and volatile incomes and no covered job to fall back on.

Unfortunately, to date we have very little consistent, rigorous evidence about the prevalence and nature of independent contracting or its consequences for workers’ economic security (Casselman 2018; Bernhardt and Thomason 2017; Government Accountability Office 2015). Commonly-used labor market datasets are based on worker surveys, which contain significant reporting error on employment status (Abraham et al. 2017). As we discuss below, the primary worker survey on this

topic, the Bureau of Labor Statistics' Contingent Worker Survey, may miss a substantial fraction of independent contractor work. Employer surveys and many administrative data sources are of little help, as they are oriented toward traditional jobs.

This paper uses tax data to provide an alternative lens on many of the outstanding empirical questions about independent contracting. Tax data provide important advantages over other sources (Bernhardt and Thomason 2017). In particular, they distinguish clearly between earnings from traditional jobs, reported on W-2 forms, and those from sole proprietorships, reported on Schedule Cs. The tax distinction aligns closely with the core distinction in US employment and labor laws between employees, who are covered by a wide range of employment protections, regulations, and safety net programs, and independent contractors, who are not. Tax data also include information about earnings from both traditional and non-traditional employment for a given tax filer, both within a year and over time. This makes it possible to measure how workers combine traditional and independent contracting work, a topic that cannot be fully explored in survey data that ask only about the main job at a point in time. The implications of a side gig as an Uber driver, on top of a main job with an employer, are different from the implications of workers relying on independent contracting as their main source of income. Similarly, the implications of a short six-month spell as an Uber driver are different from multi-year reliance on independent contracting income.

For these reasons, tax data are crucial to advancing our understanding of the new world of work. We follow several previous studies (e.g., Collins et al., 2019; Jackson et al., 2017) in using these types of data to understand the dimensions of the independent contracting economy.

We employ de-identified, individual-level data from California personal income tax returns for tax years 2012 and 2017 to measure the prevalence and nature of self-employment and independent contracting. We use Schedule C filings, used to report profits and losses from businesses, to identify non-traditional jobs. We explore the prevalence of Schedule C (hereafter, "independent contracting,"

though there are other types of income that can generate Schedule Cs) earnings, how individuals combine this work with traditional jobs, and how participation in independent contracting varies with individual demographics and geography.

California is a particularly interesting location to study independent contracting. It is the birthplace of on-demand platforms and adoption in the state occurred earlier and at higher rates than in other parts of the country, yielding richer information on this emerging form of work (Farrell and Greig 2016b). California is also the world's fifth largest economy (if viewed as a nation) and is home to roughly 40 million people, a larger population than the smallest 21 states combined. Nevertheless, we must caution that, while of independent interest, patterns in California may not exactly match those elsewhere.

A second caution is that we rely in this paper on individual tax filings, so in particular do not observe income that taxpayers choose not to report. This is a federal and state crime, but nevertheless occurs with some prevalence. The IRS estimates that 16% of taxes that should be owed are not paid (Internal Revenue Service 2016). Independent contracting income is more likely to go missing than are earnings from traditional jobs. This is in part because third-party reporting is more systematic and clearer for traditional jobs, which generate W-2s, than for independent contracting jobs. The IRS estimates that only 1% of traditional wage and salary earnings are not reported, but that nearly two-thirds of income without third-party reporting is not (Internal Revenue Service 2016). While much independent contracting income leads to a 1099 report from the employer to the tax authorities, there are many independent contracting relationships for which 1099s are not required, and conversely there are many circumstances in which 1099 recipients are not required to file Schedule C or Schedule SE, the main places where this income appears. Collins et al. (2019) find that 29 percent of individuals who received 1099-MISCs (typically indicative of self employment work) do not file Schedule C. Our results thus are likely to understate the prevalence of independent contracting. In future work, we

plan to use third-party reporting of independent contracting income, via 1099s, to estimate the frequency of underreporting and its impact on our results here.

Literature Review

Public concern over the “future of work” is rising and many predict that the jobs of the future will involve short-term relationships with little loyalty between worker and firm (Katz and Krueger 2019; Government Accountability Office 2015; Vinik 2018). It has been surprisingly difficult, however, to verify the prevailing perception that “gig” work is a large or rapidly growing component of the labor market. Part of the problem is that researchers use very different definitions of gig work; some use the term specifically for on-demand platforms such as Uber and TaskRabbit, while others use the term broadly to denote any type of work that is precarious or contingent – with many definitions (such as independent worker) in between.

Confounding the definitional problem is the use of surveys or datasets where samples are not representative, and conflicting estimates when researchers compare worker self-reports to other data sources. The result is very different estimates of the number of gig workers in the US, ranging from 600,000 to 55 million.¹ The Bureau of Labor Statistics’ 2017 Contingent Worker Survey release highlights the issue, finding 10.6 million independent contractors in total – a smaller share of the workforce than in the same survey in 2005 and many fewer than in other analyses (Bureau of Labor Statistics 2018). However, an important limitation of the Contingent Worker Survey is that it focused on workers’ main jobs; independent contracting work done to supplement another job, as with many Uber drivers, is explicitly excluded (Bernhardt 2018).

¹ For a sample of key studies, see Farrell and Greig 2016b; Katz and Krueger 2016; Freelancers Union, Upwork, and Edelman Intelligence 2016; Burson-Marsteller and The Aspen Institute 2016; Manyika et al. 2016; Smith 2016; Robles and McGee 2016; Intuit and Emergent Research 2016; Mishel 2015, 2018; MBO Partners 2016; Hathaway and Muro 2016; US Government Accountability Office 2015; Bureau of Labor Statistics 2005, 2018; Board of Governors of the Federal Reserve Board 2018; Collins et al., 2019.

We draw on our previous research on the changing organization of work (e.g., Bernhardt and Thomason 2017). Based on that work, our primary analytic and empirical object is independent contracting.² This aligns with the fundamental distinction between employees and independent contractors in US employment and labor laws, determining access to a wide range of rights, benefits and social insurance programs for workers. The category of independent contractors includes both online platform work (such as driving for Uber or finding jobs through TaskRabbit) as well as traditional independent contractor work (such as construction workers, real estate brokers, and hair stylists).

Even with this clarifying definition, however, research still generates significant differences in estimates of both prevalence and trends over time. One part of this difference is the underlying data source. In an important ongoing project, Abraham et al. (2017) analyze differences between worker survey data (the Current Population Survey) and federal tax data, documenting significant error in workers' self-reports of independent contractor income, especially when they also hold a W-2 job.³ This limits the ability of the Bureau of Labor Statistics' Contingent Worker Survey to accurately and fully characterize independent contracting work.

Our assessment of this and other research is that, on balance, tax data are currently the best, though by no means perfect, source for measuring independent contracting, given high error rates in workers' ability to identify their employment relationship in response to current survey questions (though improving those questions is an important area of development). In using tax data for this project, we build on the work of US Treasury researchers Jackson, Looney, and Ramnath (2017), who measure W-2 and sole proprietor earnings as a percentage of total earnings for individual tax filers. However, these authors focus mainly on implications for tax collections. Our work complements and

² For other useful ways of classifying new forms of work, see Cappelli and Keller (2013) and Kalleberg (2011).

³ See also Dey, Houseman, and Polivka (2009) who document similar reporting error in worker survey estimates of the prevalence of temp work, when compared to payroll data.

extends theirs by analyzing independent contracting work for its industry composition, its use over the life span, and its role in workers' employment portfolios, and by presenting estimates specific to California.

We also relate closely to a contemporaneous analysis by Collins et al. (2019) of IRS data. Collins et al. focus on understanding “online platform” work, for companies such as Uber and Lyft, where we are more comprehensive, including all forms of independent contracting. Moreover, where Collins et al. (2019) emphasize measuring trends in the size of the online platform and independent contracting sectors, we focus more on understanding the role that this work plays in the labor market – how workers mix independent contracting with traditional jobs, and the distribution of independent contracting work across workers of different ages, family structures, incomes, industries, and geographies within California.

A second source of differences in estimates of the prevalence and trends in independent contracting is whether researchers are accurately distinguishing between independent contracting conducted as a main source of income or as a supplement to a traditional job. The failure to make this distinction is the source of much of the confusion about prevalence estimates. For example, surveys such as the “Freelancing in America” survey conducted by the Freelancers Union and Upwork (2016) count anyone who had any amount of independent contracting income, no matter how small, as a “gig” worker. By contrast, the 2017 BLS Contingent Worker Survey counts only those for whom independent contracting is the main job. Recent evidence indicates that many workers who have independent contractor income use it to supplement or smooth income from main W-2 jobs (Manyika et al. 2016; Farrell and Greig 2016a; Koustas 2018). These workers may have health insurance, unemployment insurance, and retirement benefits via their W-2 employer— a major difference from those who work exclusively as independent contractors and who are unlikely to have access to any of these.

Understanding nuances in how independent contractors rely on their income is incredibly important for public policy and enforcement. In recent years, some policy makers in California and at the federal level have underscored the need to strengthen workplace protections and the availability of benefits such as health, retirement, and unemployment insurance for independent contractors. However, if evidence suggests that such work is predominantly a supplemental source of income, rather than a primary source, there may be little need for such laws or regulations. Proposals to broaden eligibility for or develop entirely new Unemployment Insurance systems (e.g. McKay, et al 2018) may be appropriate if income from independent contracting makes up a large share of income for those participating; however, it may be reasonable to exclude independent contractors (as suggested by Harris and Krueger 2015) if these workers are generally moonlighting from traditional jobs that provide access to unemployment insurance and other worker protections. Understanding exactly which workers are excluded from these benefits and protections will allow policy makers to tailor proposals to specific and better-understood gaps and ensure that resources are dedicated to those who are left out of workplace protections and benefits.

The distinction between workers for whom independent contracting is the main occupation and workers who do some independent contracting on the side may help to explain the conflicting findings on trends in independent contracting over time. National studies using the Current Population Survey (CPS) find that the rate of unincorporated self-employment as a main job has declined slightly over the past several decades (Bureau of Labor Statistics 2017). But studies using tax data to examine the number of 1099 forms or Schedule C filings show clear increases since the early 2000s (Katz and Krueger 2016, 2019; Abraham et al. 2017; Collins et al. 2019). One potential explanation, not yet fully tested, is that independent contracting for supplemental income has increased, while the rate of independent contracting as a main job has remained steady. Collins et al. (2019) present evidence consistent with this hypothesis, showing that independent contracting has grown as a share of all

employment but that the growth is less impressive if only relationships paying above some minimal level are counted.

Finally, because academic researchers are largely focused on questions of measurement, deeper substantive analyses of the characteristics and work patterns of independent contractors are less common. For example, little research exists on the industry and income distribution of independent contracting, largely because of data limitations. Individual tax data allows us to identify the industries in which independent contractors and sole proprietors operate, where high rates of use or recent spikes in use might signal misclassification. Tax data also enables us to construct a profile of how the use and patterning of independent contracting varies across the age, family structure, and income distributions.

In sum, this work builds upon important work by many researchers to understand the multiple problems in measuring independent contracting. We drill down into tax data to conduct an in-depth substantive analysis of the scale, scope, and nature of independent contracting in California. In particular, we hope to contribute to our collective understanding of how workers use independent contracting in their income generation, how that varies across the income distribution and over the life cycle, and the industry profile of independent contractors and the businesses that use them.

Data:

Our analysis uses data on the population of individual tax returns in California over several years, as maintained by the Franchise Tax Board, the state’s tax authority.⁴ We link together information from several different tax forms. The “backbone” of our database is the California tax return, the 540 form (or variants, such as the 540-2EZ). This is our source for family structure, age, and

⁴ We exclude non-resident and part-year resident filers.

total family income. To this, we link data from all W-2s filed by employers, separately to the taxpayer and his/her spouse (if present), to construct earnings from traditional jobs.

Our evidence on independent contracting comes from the Schedule C, a part of the federal return. The Schedule C contains detailed information about self employment and sole proprietor income, expenses, and profits. It also contains information about the nature of the business, which we use to categorize independent contractors by industry. We have access to the federal tax return, including the Schedule C, only for those who e-file their taxes. Accordingly, most of our analysis is restricted to e-filers. We discuss implications of this below.

All data are de-identified, but linkable across sources and over time via new IDs created to replace Social Security Numbers (SSNs), Employer Identification Numbers (EINs), and other identifiers. Because the data sets cover the state of California and are sizeable, sampling error is not a concern – any difference among groups large enough to be substantively meaningful is sure to be statistically significant.

Our primary measure of independent contracting is the filing of a Schedule C. We tabulate this at the individual level, distinguishing between the taxpayer and the spouse. We use the reported net earnings as our measure of the amount of independent contracting income, excluding those Schedule Cs that show zero or negative net profit.⁵ We focus exclusively on the 18-64 year old population, excluding those younger and older.⁶

⁵ We focus on net profits because gross income for independent contractors, who often must pay substantial expenses out of their income, are not comparable to the pre-tax wages and salaries of traditional employees. If tax filers compute their business expenses correctly, net profits should be comparable to wages and salaries – they are the pre-tax resources available for personal consumption. (A more careful treatment would deduct half of the self-employment tax from net income.) However, if independent contractors overstate their business expenses, net reported profits may understate resources available for consumption. In future work, we plan to explore sensitivity of our results to this. A particularly difficult issue is how to handle Schedule Cs reporting zero or negative net profits, as there is no equivalent in a traditional job. We exclude them on the grounds that, as reported, the return gives no claim of earnings from independent contracting work. Again, future work will explore sensitivity to this.

⁶ In filing unit-level analyses, we include households in which either the taxpayer or his/her spouse is between 18 and 64.

There are several limitations of our data for measuring independent contracting. First, Schedule C earnings are not identical to independent contracting earnings; we may also be capturing some small business owners.

Second, we have federal tax returns (including Schedule Cs) only for those who e-file. This represents 88% of the tax filing universe in 2016. For those who file paper returns, we do not observe the Schedule C, but we do have an indicator, at the level of the filing unit (rather than the individual), for the *presence* of a Schedule C.

Table 1 shows mean characteristics of e-filer and paper-filer tax units. Paper filers are a bit older and have lower incomes than e-filers. They are less likely to file married tax returns, and more likely to be single. The two groups are distributed roughly similarly across the state's major metropolitan areas.

The lower panel of the table shows return-level (i.e., for each filing unit) summaries of the types of earnings reported. This is notably different for the two groups – paper filers are substantially less likely to have any employment income (from a W-2 or Schedule C) than are e-filers. Conditional on having positive earnings, however, they are more likely to have a Schedule C. Most of the statistics that we present are for the population of e-filers. However, the results here suggest that this may lead us to understate the prevalence of Schedule C work. Fortunately, however, because only 11% of returns are paper filed, the e-filer population closely resembles the overall population of tax filers (shown in the fourth column).

Nevertheless, while the differences between the e-filer and the all-filer distributions are small, they are not zero. To further narrow these differences, we use a strategy based on weighting the e-filer subpopulation to match the full population on observable characteristics. Specifically, we fit a model to predict whether a return will be filed on paper or electronically, using only variables observed

for both as predictors.⁷ We then use estimated probabilities of paper filing to reweight the e-filer population to match first the paper filer population, in column 3 of Table 1, and then the full population, in column 5. The reweighted e-filer population closely resembles the all-filer means. We present estimates based on this reweighting below to measure the sensitivity of our main results to selection into e-filing.

A third, and most serious, limitation to our Schedule C-based definition of independent contracting is that we are reliant on taxpayers' self reports for our measure of independent contracting participation and earnings. Non-employee compensation is notoriously underreported.⁸ This underreporting arises both from failure to report gross earnings and from overstatement of expenses, which are subtracted from gross earnings to obtain net income. We expect that underreporting is less common for those with substantial independent contracting income, for which third-party reporting should be more effective. This is only speculation, however, and in any event third-party reporting does nothing to guard against over-statement of business expenses.

Coexisting with substantial underreporting is documented *over-reporting* of net independent contracting income for a particular group of workers. Because of the federal EITC, many single parents with children face negative tax rates at the margin: The more they report earning, the larger their tax refund. Chetty et al. (2013) document that many people seem to report just enough Schedule C income

⁷ We use a logistic regression, where the outcome is an indicator for a paper filer. Explanatory variables are number of dependents, filing status indicators, metropolitan area indicators (for Los Angeles, San Diego, and San Francisco), fraction of filers in the zip code who paper file, amount of W-2 income, and flexible polynomials in age and AGI, all interacted with marital status. Importantly, we do not use information about Schedule C earnings as predictors. We generate a predicted probability, p , for each observation in the e-filer subsample, representing the share of individuals with similar characteristics who paper filed. When reweighted by $p/(1-p)$, the e-filer subpopulation matches the observed characteristics of the paper filers; when reweighted by $1/(1-p)$, it matches the all-filer characteristics.

⁸ Employers of independent contractors are supposed to generate 1099-MISCs for all contractors with more than \$600 in earnings. Many platform employers do not generate 1099-MISCs, but rather 1099-Ks, a form designed for use by payment processors. The threshold is much higher for these – they are required only when payments exceed \$20,000.

to qualify for a maximal EITC. That this is exclusively found among those with Schedule C income suggests that it is unlikely to be a true labor supply response, but it is not clear whether it reflects actual overreporting or just lessened incentive to underreport income (or overreport expenses) to get below the EITC-maximizing level. In any event, its prevalence is measurable by the extent of “bunching” of reported income at the EITC-maximizing level. We present analyses below that discount self-reported independent contracting income right at this point, with little effect on our overall conclusions. Certainly with this adjustment, and even without it, we expect that independent contracting is on average under-reported, with perhaps more underreporting of secondary jobs or low-earning independent contracting roles than of primary employment earnings. Our estimates should thus be seen as a lower bound on the amount of independent contracting in the labor market, and, more speculatively, as an upper bound to the share of independent contractors for whom this work constitutes the primary source of earnings.

Finally, although we focus on tax year 2016, we use data from other years for two purposes: To measure time trends, and to understand mobility patterns. The analysis of how workers mix independent contracting with traditional jobs is a central focus of our investigation. A worker who mixes Schedule C and W-2 income could do so in multiple ways: She might have worked in a traditional job for part of the year before switching to an independent contracting role, or she might have spent the entire year devoting part of her time to each position. The structure of our data provides a useful way to distinguish these. We are able to link individuals over time, so can measure the same individual’s income mix in successive years. This helps to reveal apparent income mixing that arises from transitions between jobs in different sectors.

Research Questions and Methods:

We consider four primary research questions.

1) *How prevalent is independent contracting?*

A fundamental question for California and national policy makers concerns the prevalence of independent contracting. We use W-2s to measure traditional jobs and Schedule Cs (excluding those reporting zero or negative net income) to measure independent contracting. Using these, we are able to measure the distribution of workers across the two sectors.

2) *Do independent contractors use it as a supplemental or main source of income?*

We consider total income as W-2 plus reported net Schedule C income, a denominator similar to those employed by recent papers exploring similar questions (Collins, et. al 2019). We examine how workers with Schedule C income are distributed across four mutually exclusive categories:

- 1) Solely Schedule C earners, with no W-2 income
- 2) Primarily Schedule C earners, with some W-2 income that consists of less than 15% of total earnings
- 3) Mixed earners, with both Schedule C and W-2 income and each accounting for more than 15% of the total; and
- 4) Primarily W-2 earners, with some Schedule C income but more than 85% of total earnings coming from W-2 work.

In some analyses, we collapse categories 1 and 2, and combine the “primary W-2” earners with those who obtain all of their earnings from W-2 jobs. This yields three categories: W-2 workers, mixed earners, and Schedule C workers.

3) *What are the demographic characteristics of independent contractors?*

We examine variation in the above questions across age, geography, family structure, individual earnings, and tax unit (household) total income.

4) *How do patterns of independent contracting vary by industry?*

Schedule Cs include a field for taxpayers to report the industry in which the business operates. We use this to categorize independent contracting by industry. About 20% of Schedule Cs do not include a valid industry code, and are excluded from this analysis.

Results:

Prevalence of independent contracting

Table 2 presents evidence on the overall prevalence of independent contracting in 2016. It shows the shares of individual taxpayers who receive W-2s, who file Schedule Cs, both, and neither. Overall, 79% of 18-64 year old tax filers receive W-2s while 12% file Schedule Cs. 16% have no reported earnings, while 7% (included in the two earlier categories) have earnings from both W-2 jobs and Schedule C. Forty-five percent of those receiving Schedule C income combine it with W-2 earnings in the same tax year. It is important to remember that the mixing here does not necessarily correspond to mixing at any point in time; it could reflect people who transition from a W-2 job early in the year to a Schedule C “job” later, or vice versa. We return to this below. Roughly 8% of California earners have only Schedule C income, a slightly higher proportion than what others find nationally (Collins et. al 2019, Jackson et al 2017). This is not surprising; results from the CPS suggests that the proportion of workers that are self-employed as their main job is higher in California than nationally.

Figure 1 shows the distribution of the share of all earnings coming from self-employment, among those with both W-2s and positive Schedule C net earnings. Most workers with both sources of earnings obtain the vast majority of their income from their W-2 jobs; for the median worker, shown by the vertical line, Schedule C earnings make up much less than 20% of total earnings. There is substantial heterogeneity here, however; a long tail of workers obtains much larger shares from Schedule C work.

Table 3 shows the share of workers who are primarily W-2 workers with some independent contracting work on the side; the share who are the reverse; the shares of “pure” types; and the share who have substantial amounts of both W-2 and Schedule C work. We classify a worker who earns 85% of his or her earnings from W-2 work as primarily a W-2 worker, one who earns over 85% from Schedule C as primarily a sole proprietor, and those who earn both types of income but below the 85% threshold as “mixed” earners. As in Table 2, nearly half of all workers who file Schedule C also have at least some W-2 income. Importantly, when they do have both types of income, over half derive more than 85% of their earnings from their W-2 jobs, and only supplement this with Schedule C work. The share who earn most of their income from Schedule C work and only supplement it with W-2 earnings is much smaller. Only 3% of earners obtain more than 15% of their earnings from each type of work. Finally, when we reweight the e-filer sample to resemble the full filing population, these numbers do not change appreciably.

As noted above, blending of the two sources of income in a single tax return could reflect transitions between sectors for workers who never blend the two at any point in time. To assess this, we examine year-to-year stability of the earnings shares. In **Table 4**, we tabulate workers’ status in tax year 2015 against their status in tax year 2016, using the same five categories as in Table 3 plus non-employment. The first row shows workers with just W-2 income in 2015: 94% of these workers remain in the same status in 2016, while a plurality of the remainder have no earnings at all in 2016. Less than four percent have any independent contracting income in 2016; of these, over half obtain less than 15% of their 2016 earnings from independent contracting. The story is similar for those who had only Schedule C earnings in 2015. Only about 12% of these workers had any W-2 earnings in 2016, and a large share of those had transitioned out of independent contracting.

The middle categories are the most interesting, and speak to the interpretation of mixed incomes in the cross section. Of the individuals who earned between 15% and 85% of their income from

independent contracting in 2015, only about one-third were still in this category the following year. Nearly as many shifted to exclusively W-2 work, while another sizable share shifted to exclusively Schedule C. This suggests that the mixed-income category dramatically overstates, by a factor of two to three, the share of workers who are truly mixing the two types of work rather than simply transitioning from one sector to the other.

Figure 2 also takes advantage of the longitudinal nature of our data to show the share of taxpayers with independent contracting income over time. Here, in contrast to other analyses, we include taxpayers of all ages. While our data only cover six years, from 2012 to 2017, the picture is remarkably stable. The share of workers with Schedule C's rose slightly over this period, from 14.3 percent to 15.1 percent, while the share whose earnings came exclusively from Schedule Cs stayed between 6.6 and 6.7 percent between 2012 and 2017.

Who are the independent contractors?

Table 5 divides the population by various demographic characteristics. For parsimony, we show only four categories, combining those who have only Schedule C earnings with those who have both Schedule C and W-2 earnings but derive more than 85% of the total from the first.

The first panel shows age breakdowns. Somewhat surprisingly, Schedule C income is much more prevalent among older than among younger workers. There is no indication of the “disappearance of [traditional] work” for young people, at least, 93% of whom earn all of their money from W-2 jobs. There is little difference across age groups in the rate of mixing work in the two sectors; the entire age difference comes from those who have little or no W-2 earnings.

The second panel shows results by filing status. There are few big differences here. Married workers are slightly more likely to work as independent contractors. The third panel shows results by

metropolitan area. Independent contracting is somewhat more prevalent in the Los Angeles area than elsewhere in the state, but the differences are not enormous.

The fourth panel shows results by filing unit Adjusted Gross Income, adjusted for family size,⁹ while the fifth panel shows results by individual earnings. In each case, we divide the sample into quartiles. Independent contractors are vastly overrepresented among low-earnings workers and low-income households.

Figure 3 shows a map of the Schedule C prevalence by zip code across the state (without regard to the share of total earnings from this source). Schedule Cs are overrepresented in suburbs and exurbs. Especially notable are Marin County near San Francisco, Palm Springs to the east of Los Angeles, the San Fernando Valley, and the sparsely populated Sierra Nevada. Many of these are relatively high income areas.

Figure 4 shows that the impression obtained from Figure 3 is not an optical illusion. Here, we divide zip codes into twenty groups based on the average AGI of filers in the zip code, and plot the share of tax payers with Schedule C income in each group. This is strongly rising with zip code mean income: The highest income zip codes have Schedule C rates about one-quarter higher, on average, than the lowest income zip codes. Means for each of four quintiles are shown as the bottom panel of Table 5. Unlike the other contrasts seen in the table, the differences here are driven by those with small shares of their earnings coming from Schedule C; there is no gradient in the share exclusively Schedule C across the zip code income distribution.

Figure 5 shows smoothed versions of the Schedule C-zip code mean AGI relationship separately for each of our major geographic areas. We see that Los Angeles has higher independent

⁹ Following common practice, we equalize incomes across families of different sizes by dividing by the square root of the number of people in the filing unit.

contracting rates throughout the income distribution, but that independent contracting is rising with zip code mean income in every area.

Finally, **Figure 6** shows estimates of the relationship between Schedule C income and zip code mean income, separately for families in different quartiles of the family-level income (AGI) distribution. This resolves the ecological paradox seen in Table 5: While all income groups are more likely to have independent contracting income when they live in higher-income zip codes, the lower income families within any zip code are notably overrepresented among independent contractors in both high- and low-income zip codes.

Last, we investigate the distribution of independent contractors across industries. In **Table 6**, we use industry codes provided by taxpayers on their Schedule Cs to classify independent contractors by industry, comparing these to the industry distribution of traditional employment from the Quarterly Census of Employment and Wages collected by the Bureau of Labor Statistics. Independent contractors are concentrated in just a few industries, with the top five (professional services, personal and laundry services, administrative services, health care and social assistance, and construction) accounting for over half of all independent contractors but only one-third of W-2 workers. Industries vary in whether independent contractors are generally doing this as their sole job (e.g., in construction, where 78% of independent contractors rely on this work for more than 85% of their total earnings) or are mixing with traditional jobs (e.g., professional services and the arts, where the shares are much lower). One can see the influence of platform ridesharing here as well: Ground transportation accounts for 6 percent of independent contractors, with only 40% of them – the lowest across all sectors – relying on independent contracting for nearly all of their earnings.

Is overreporting biasing our estimates?

As noted above, all of our estimates are derived from tax returns, not from information reports. This means that our independent contracting estimates may be biased by misreporting. We are unable to assess the impact of underreporting; in future work, we hope to use 1099 information reports (given by employers to those to whom they pay “non-employee compensation”) to check the accuracy of Schedule C self reports.

At this time, we do not have any information about underreporting. But we can assess a particular type of overreporting. As noted earlier, Chetty et al. (2013; see also Saez 2010) find that many taxpayers seem to report just enough independent contracting income to qualify for the maximum available Earned Income Tax Credit. While it is possible that this reflects people managing their work effort to just reach the maximum EITC, the evidence indicates that this is more about reporting than actual work effort. Overreporting one’s income, or underreporting expenses, to obtain a larger EITC may be rational – the tax authorities have very little ability to police overreporting, and the EITC that a taxpayer can obtain by overstating income is larger than the payroll taxes that will be owed on that income. (Note that for our purposes, it is not necessary that people over-report income to get to the EITC kink; they could also be underreporting by less than they otherwise would in the absence of the EITC.)

Figure 7 shows the distribution of total reported income, separately for returns with and without reported Schedule C income and by the number of reported dependents. The EITC is more generous for families with more children; each panel indicates the point at which the maximum EITC is obtained under the relevant schedule. We can see here that there are substantially more families with incomes just at the point where the EITC is maximized than just above or just below that point, and that this bunching is exclusively seen among those with Schedule C income. Although Chetty et al. (2013) find that this bunching sometimes reflects real work responses, the dramatic differences between Schedule C and non-Schedule C returns strongly suggest that much of the bunching in the

former reflects income reporting rather than real work responses. This may distort our estimates of the prevalence of independent contracting.

Chetty et al (2013) document substantial geographic variation in the rate of this type of overreporting. **Figure 8** shows a scatterplot of the share of returns with Schedule C income against Chetty et al.'s (2013) measure of bunching frequency, at the 3-digit zip code group level. We see more Schedule Cs in high-bunching zip codes, consistent with the idea that a fraction of the Schedule Cs that we count are misreported. It is not possible to know from our data, however, exactly which returns they are, nor whether they have overstated income, understated expenses, or manufactured an independent contracting income source that did not exist at all.

To assess the impact of EITC-related misreporting on our estimates, we conduct an exercise where we down-weight returns showing Schedule C income right near the EITC kink. We identify the excess density right near the EITC-maximizing threshold, and weight returns with Schedule C near this threshold by the ratio of the expected density (based on a polynomial fit to points away from the threshold) to the observed density. Downweighting to eliminate this density is an extreme approach, as it in effect assumes that the overreported returns would have had zero earnings without the overreporting. **Table 7** reproduces the analysis from Table 3 with this adjustment. It has little effect on our overall conclusions – while overreporting is prevalent, it is not a large enough share of Schedule C returns to make much difference overall.

Conclusion:

This paper uses tax data to overcome previous measurement issues associated with understanding the prevalence of independent contracting. By categorizing jobs by the presence of self-employment income, the share of the worker's total earnings, the type of work, and the industry in which it is performed, we provide important context on the extent to which workers rely on

independent contracting in addition to other sources of income. Tabulations of these measures by region and examination of their variation over time shed light on the growth and distribution of independent contracting in California.

This work has important policy implications for both tax administration and labor regulation. Identifying trends in which firms use particular tax forms can help tax authorities devise policies to enforce better reporting of compensation for independent workers. By providing new evidence on the number of workers excluded from traditional labor market protections due to their participation in non-standard work arrangements, our work can also inform efforts to change labor regulations to better serve such workers. Of course, the work can only provide strong support for such changes in California, to which its results apply – but the lessons may point the way toward similar investigations in other states.

The primary limitation in our work is that we rely on individual self reports to identify independent contractors. Collins et al. (2019) take a different approach, relying primarily on information reports provided by employers. Although they find that many workers who receive 1099s do not file Schedule Cs, their conclusions about the overall prevalence of independent contracting work are similar to ours, suggesting that underreporting is not likely to bias our conclusions too greatly. Nevertheless, a high priority objective for future work should be to obtain better estimates of the impact of underreporting on tax-based measures of the prevalence and nature of independent contracting.

Bibliography

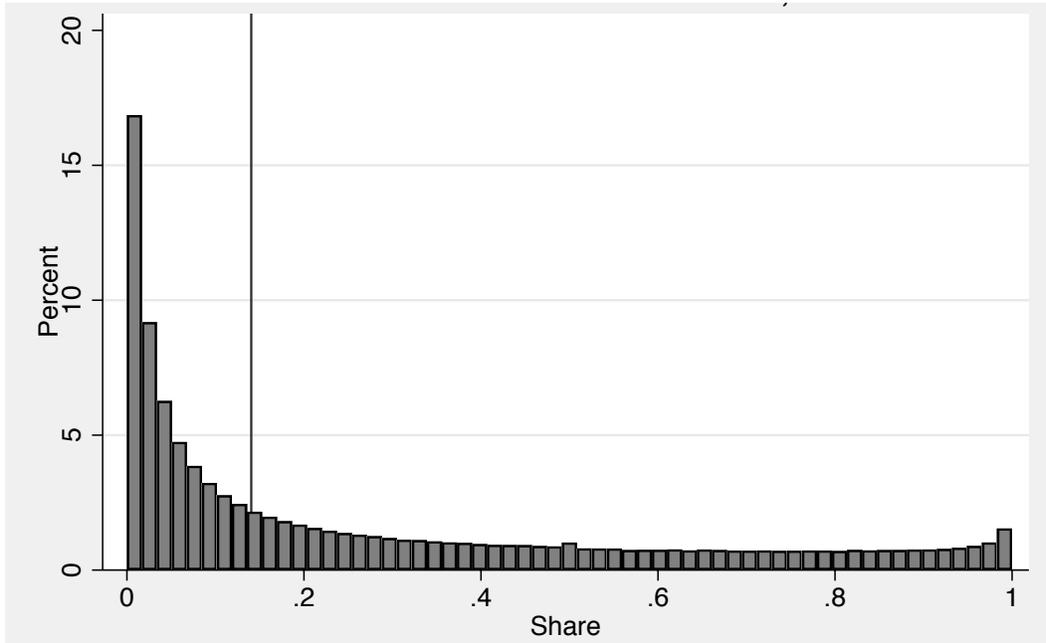
- Abraham, Katherine G., John C. Haltiwanger, Kristin Sandusky, and James R. Spletzer. 2017. "Measuring the Gig Economy: Current Knowledge and Open Issues." Working paper. https://nber15.nber.org/confer/2017/CRIWs17/program.html.Abraham_Haltiwanger_Sandusky_Spletzer.pdf.
- Bernhardt, Annette. 2018. "Making Sense of the New Government Data on Contingent Work." Center for Labor Research and Education. <http://laborcenter.berkeley.edu/making-sense-new-government-data-contingent-work/>.
- Bernhardt, Annette, and Sarah Thomason. 2017. "What Do We Know About Gig Work in California? An Analysis of Independent Contracting." Center for Labor Research and Education. <http://laborcenter.berkeley.edu/what-do-we-know-about-gig-work-in-california/>.
- Board of Governors of the Federal Reserve Board. 2018. "Report on the Economic Well-Being of U.S. Households in 2017." <https://www.federalreserve.gov/publications/files/2017-report-economic-well-being-us-households-201805.pdf>.
- Burckner, Caroline and Thomas Hungerford. 2019. "Failure to Contribute: An Estimate of the Consequences of Non- and Underpayment of Self-Employment Taxes by Independent Contractors and On-Demand Workers on Social Security." <https://crr.bc.edu/working-papers/failure-to-contribute-an-estimate-of-the-consequences-of-non-and-underpayment-of-self-employment-taxes-by-independent-contractors-and-on-demand-workers-on-social-security/>.
- Bureau of Labor Statistics. 2005. "Contingent and Alternative Employment Arrangements, February 2005." Press Release. <https://www.bls.gov/news.release/pdf/conemp.pdf>.
- Bureau of Labor Statistics. 2018. "Contingent and Alternative Employment Arrangements, May 2017." <https://www.bls.gov/news.release/conemp.toc.htm>.
- Burson-Marsteller, and The Aspen Institute. 2016. "Forty-Five Million Americans Say They Have Worked in the On-Demand Economy, While 86.5 Million Have Used It, According to New Survey." Press Release. <http://www.burson-marsteller.com/press-release/forty-five-million-americans-say-they-have-worked-in-the-on-demand-economy-while-86-5-million-have-used-it-according-to-new-survey/>.
- California Franchise Tax Board. 2018. "Sole Proprietorships By Major Industry." California Franchise Tax Board Open Data. May 17, 2018. https://www.ftb.ca.gov/Data/Individuals/sole_proprietorships_by_major_industry_table.shtml.
- Cappelli, P., and J. Keller. 2013. "Classifying Work in the New Economy." *Academy of Management Review* 38 (4): 575–96.
- Casselmann, Ben. "Maybe the Gig Economy Isn't Reshaping Work After All." *The New York Times*, 7 June 2018. [NYTimes.com, https://www.nytimes.com/2018/06/07/business/economy/work-gig-economy.html](https://www.nytimes.com/2018/06/07/business/economy/work-gig-economy.html)

- Chetty, Raj, John N. Friedman, and Emmanuel Saez. 2013. "Using Differences in Knowledge Across Neighborhoods to Uncover the Impacts of the EITC on Earnings." *American Economic Review*, 103(7), 2683-2721.
- Collins, Brett, Andrew Garin, Emilie Jackson, Dmitri Koustas, and Mark Payne. (2019) "Is Gig Work Replacing Traditional Employment? Evidence from Two Decades of Tax Returns." Internal Revenue Service. <https://www.irs.gov/pub/irs-soi/19rppgigworkreplacingtraditionalemployment.pdf>
- Dey, Matthew, Susan N. Houseman, and Anne E. Polivka. 2009. "What Do We Know about Contracting Out in the United States? Evidence from Household and Establishment Surveys." W.E. Upjohn Institute. http://research.upjohn.org/up_workingpapers/157.
- Farrell, Diana, and Fiona Greig. 2016a. "Paychecks, Paydays, and the Online Platform Economy: Big Data on Income Volatility." JP Morgan Chase & Co Institute. <https://www.jpmorganchase.com/corporate/institute/document/jpmc-institute-volatility-2-report.pdf>.
- . 2016b. "The Online Platform Economy: Why Growth Has Peaked." JP Morgan Chase & Co Institute. <https://www.jpmorganchase.com/corporate/institute/document/jpmc-institute-online-platform-econ-brief.pdf>.
- Freelancers Union, Upwork, and Edelman Intelligence. 2016. "Freelancing in America: 2016." Business. <https://www.slideshare.net/upwork/freelancing-in-america-2016/1>.
- Harris, Seth D., and Alan B. Krueger. 2015. "A Proposal for Modernizing Labor Laws for Twenty-First Century Work: The "Independent Worker." The Hamilton Project. http://www.hamiltonproject.org/assets/files/modernizing_labor_laws_for_twenty_first_century_work_krueger_harris.pdf
- Hathaway, Ian, and Mark Muro. 2016. "Tracking the Gig Economy: New Numbers | Brookings Institution." Brookings Institution. <https://www.brookings.edu/research/tracking-the-gig-economy-new-numbers/>.
- Internal Revenue Service. 2016. "Federal Tax Compliance Research: Tax Gap Estimates for Tax Years 2008-2010." <https://www.irs.gov/pub/irs-soi/p1415.pdf>
- Intuit, and Emergent Research. 2016. "Dispatches From The New Economy: The On-Demand Economy And The Future of Work." Business. <http://www.slideshare.net/IntuitInc/dispatches-from-the-new-economy-the-ondemand-workforce-57613212>.
- Jackson, Emilie, Adam Looney, and Shanthi Ramnath. 2017. "The Rise of Alternative Work Arrangements: Evidence and Implications for Tax Filing and Benefit Coverage." Working Paper 114. Department of the Treasury, Office of Tax Analysis.
- Kalleberg, Arne L. 2011. *Good Jobs, Bad Jobs: The Rise of Polarized and Precarious Employment Systems in the United States, 1970s to 2000s*. American Sociological Association's Rose Series in Sociology. New York: Russell Sage Foundation.
- Katz, Lawrence F., and Alan B. Krueger. 2016. "The Rise and Nature of Alternative Work Arrangements in the United States, 1995-2015." NBER Working Paper No. 22667. National Bureau of Economic Research. <http://www.nber.org/papers/w22667>.

- Katz, Lawrence F., and Alan B. Krueger. 2019. "Understanding Trends in Alternative Work Arrangements in the United States." NBER Working Paper No. 25425. National Bureau of Economic Research. <https://www.nber.org/papers/w25425.pdf>
- Koustas, Dmitri. 2018. "Consumption Insurance and Multiple Jobs: Evidence from Rideshare Drivers." Working paper, October 31.
- Manyika, James, Susan Lund, Jacques Bughin, Kelsey Robinson, Jan Mischke, and Deepa Mahajan. 2016. "Independent Work: Choice, Necessity, and the Gig Economy." McKinsey Global Institute. <http://www.mckinsey.com/global-themes/employment-and-growth/independent-work-choice-necessity-and-the-gig-economy>.
- MBO Partners. 2016. "America's Independents, A Rising Economic Force: 2016 State of Independence in America Report." https://www.mbopartners.com/uploads/files/state-of-independence-reports/2016_MBO_Partners_State_of_Independence_Report.pdf.
- McKay, Conor, Ethan Pollack and Alastair Fitzpayne. Modernizing Unemployment Insurance for the Changing Nature of Work. The Aspen Institute, Jan. 2018, https://assets.aspeninstitute.org/content/uploads/2018/01/Modernizing-Unemployment-Insurance_Report_Aspen-Future-of-Work.pdf.
- Mishel, Lawrence. 2015. "Uber Is Not the Future of Work." The Atlantic, November 16, 2015.
- . 2018. "Uber and the Labor Market: Uber Drivers' Compensation, Wages, and the Scale of Uber and the Gig Economy." Economic Policy Institute. <https://www.epi.org/publication/uber-and-the-labor-market-uber-drivers-compensation-wages-and-the-scale-of-uber-and-the-gig-economy/>.
- Nelson, Susan C. 2008. Tax Policy and Sole Proprietorships: A Closer Look, National Tax Journal, 61:3, pp. 421-433. <https://www.ntanet.org/NTJ/61/3/ntj-v61n03p421-433-tax-policy-sole-proprietorships.html>
- Robles, Barbara, and Marysol McGee. 2016. "Exploring Online and Offline Informal Work: Findings from the Enterprising and Informal Work Activities (EIWA) Survey." Finance and Economics Discussion Series 2016-089. Board of Governors of the Federal Reserve System. <http://www.federalreserve.gov/econresdata/feds/2016/files/2016089pap.pdf>.
- Saez, Emmanuel. 2010. "Do Taxpayers Bunch at Kink Points?" American Economic Journal: Economic Policy, 2(3), 180-212.
- SherpaShare. n.d. "The Top Demographic Trends of the On-Demand Workforce - Appendix." 2016. <https://www.sherpashare.com/share/the-top-demographic-trends-of-the-on-demand-workforce-appendix/>.
- Smith, Aaron. 2016. "Gig Work, Online Selling and Home Sharing." Pew Research Center. <http://www.pewinternet.org/2016/11/17/gig-work-online-selling-and-home-sharing/>.
- US Government Accountability Office. 2015. "Contingent Workforce: Size, Characteristics, Earnings, and Benefits." Report to the Committee on Health, Education, Labor, and Pensions, US Senate Report #GAO-15-168R. <http://www.gao.gov/assets/670/669766.pdf>.
- Vinik, Danny. 2018 Jan. "The Real Future of Work." POLITICO Magazine, <http://politi.co/2CEVoLM>.

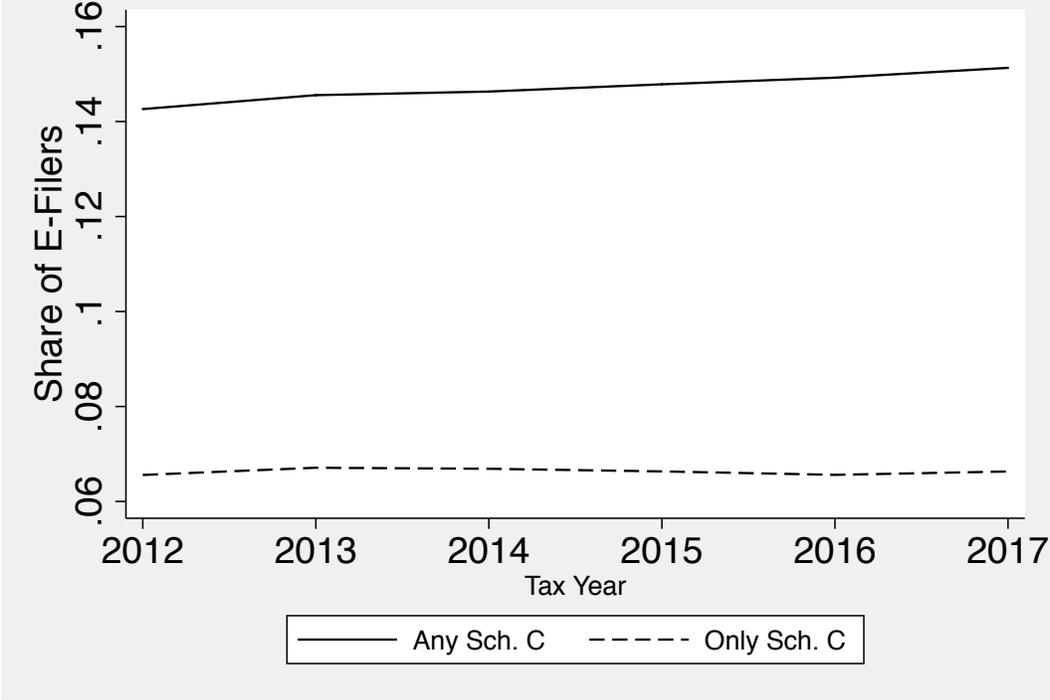
Tables and Figures

Figure 1. Distribution of share of earnings from Schedule C, among those with both W-2 and Schedule C earnings



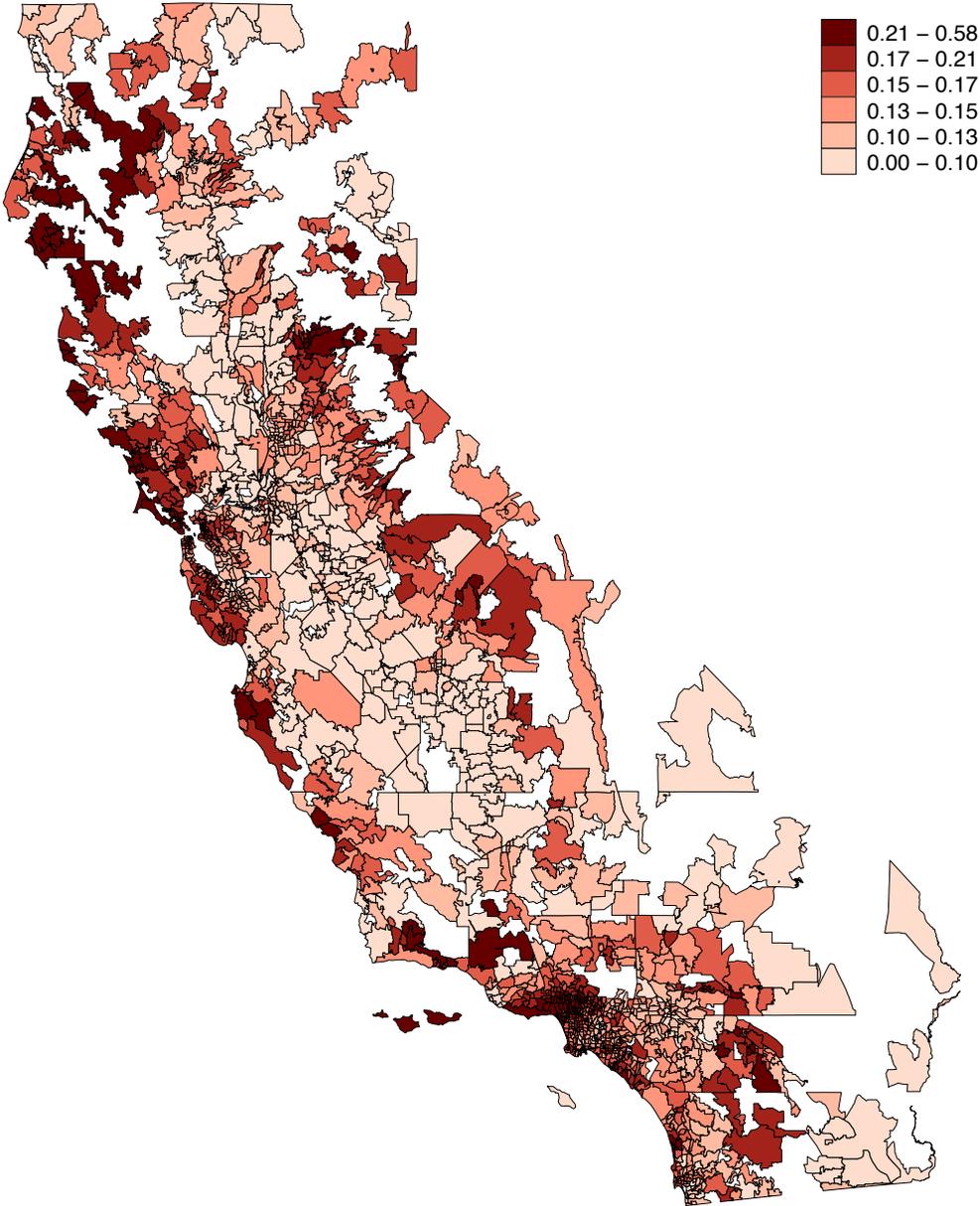
Notes: Sample consists of 894,000 individuals with both W-2 earnings and positive net Schedule C income in 2016. "Share" represents the share of total earnings coming from the Schedule C. Vertical line indicates the sample median.

Figure 2: Share with Schedule C income, 2012-2017



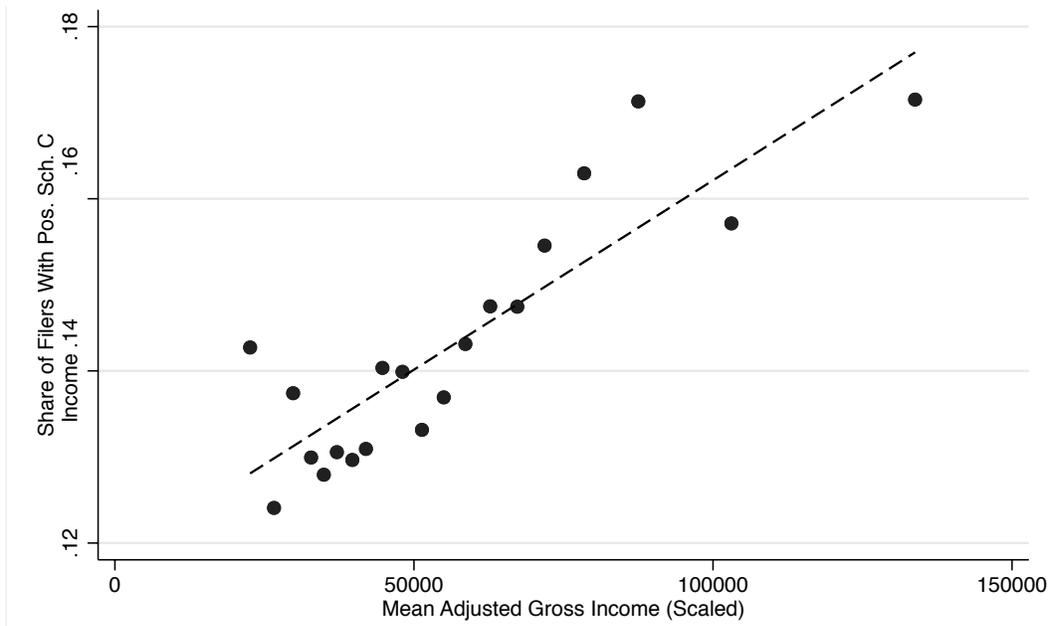
Notes: Sample is limited to those with positive earnings, of all ages. Schedule Cs with zero or negative net income are excluded.

Figure 3. Schedule C prevalence by zip code



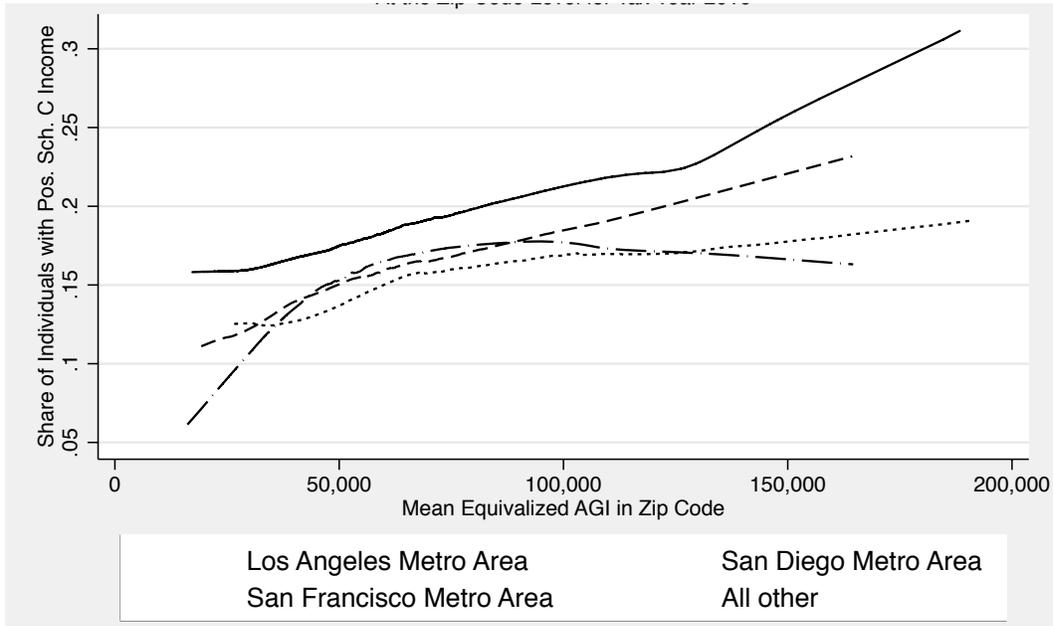
Notes: Map shows the fraction of individuals with positive earnings in each zip code who file a Schedule C with positive net income. Zip codes with fewer than 100 returns are excluded.

Figure 4. Fraction with Schedule C by zip code mean AGI



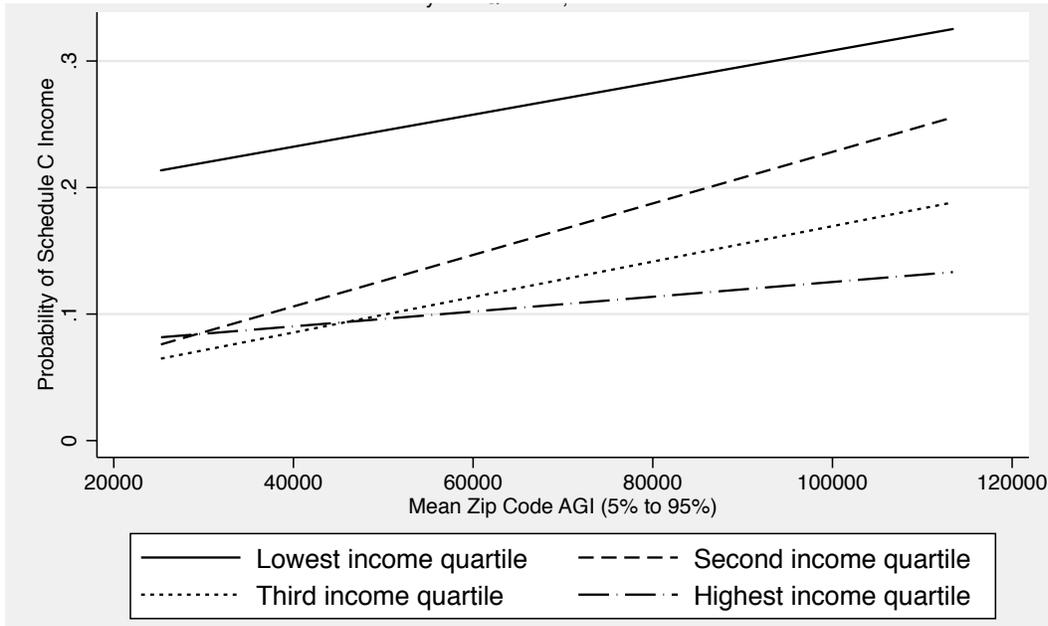
Note: Schedule Cs with zero or negative net income are excluded, as are individuals with zero W2 or Schedule C earnings. Each point represents the mean for one-twentieth of zip codes, sorted by equivalized AGI and weighted by number of individuals in the sample in the zip code. AGI is equivalized across families of different sizes by dividing by the square root of the number of people in the filing unit (taxpayer, spouse, and dependents).

Figure 5. Fraction with schedule C by metropolitan area and zip code mean AGI.



Notes: Schedule Cs with zero or negative net income are excluded, as are individuals with zero W2 or Schedule C earnings. AGI is equalized across families of different sizes by dividing by the square root of the number of people in the filing unit (taxpayer, spouse, and dependents). Series are lowess fits to zip-code-level means, weighted by the number of individuals in the sample in the zip code.

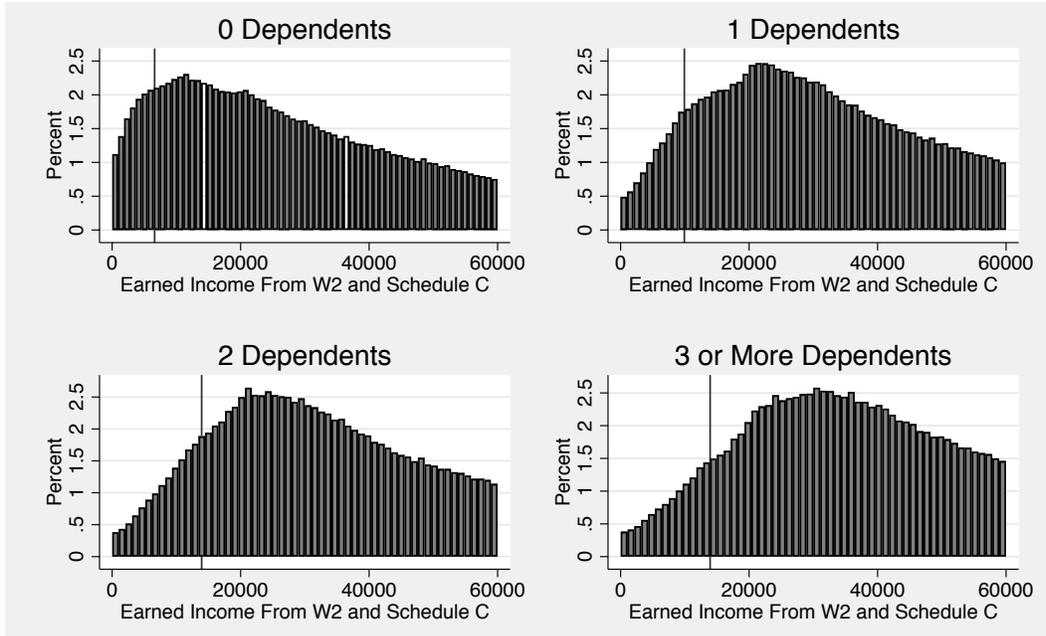
Figure 6. Fraction with Schedule C by own and zip code mean AGI



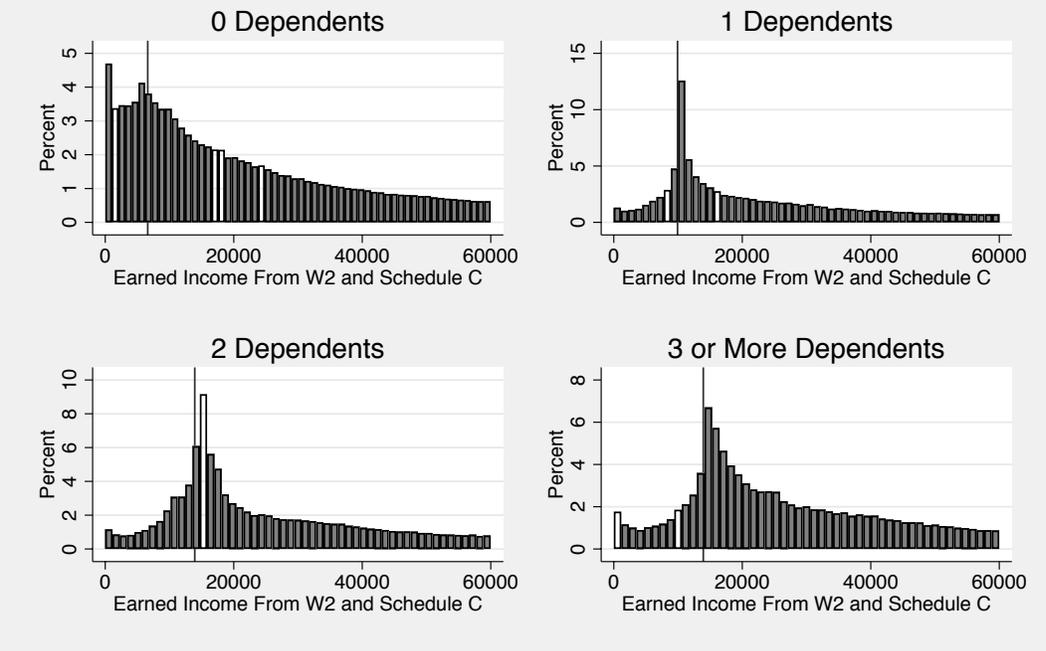
Notes: Schedule Cs with zero or negative net income are excluded, as are individuals with zero W2 or Schedule C earnings. AGI is equalized across families of different sizes by dividing by the square root of the number of people in the filing unit (taxpayer, spouse, and dependents). Series are linear fits to zip-code-level means, weighted by the number of individuals in the sample in the zip code. The x-axis range corresponds to the 5th to 95th percentiles of zip code mean AGI.

Figure 7. Distribution of earned income, by number of dependents and presence of a Schedule C

Panel A: Returns without Schedule C

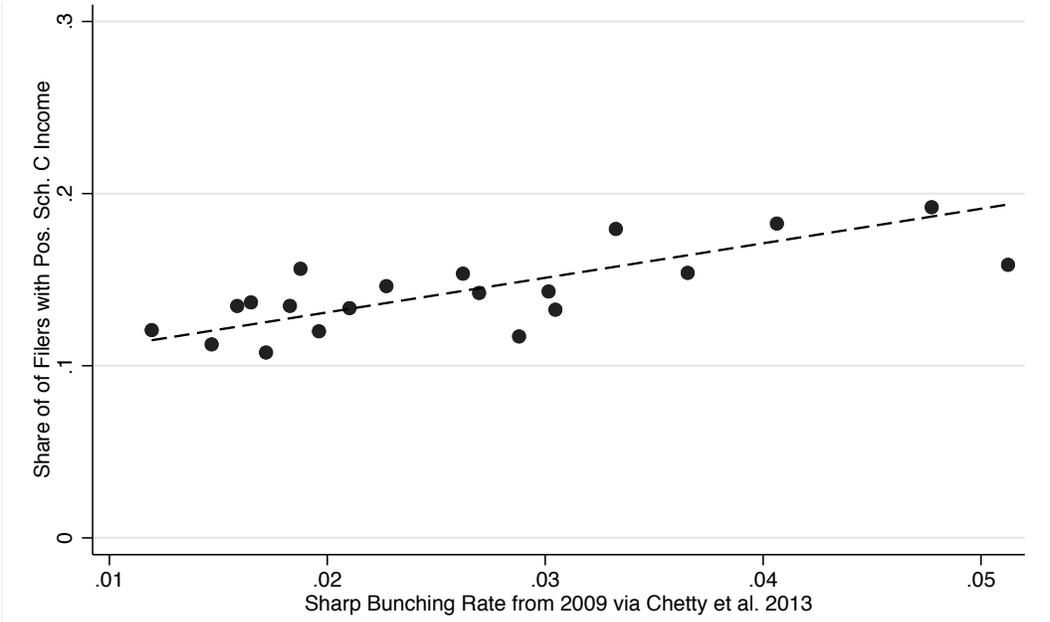


Panel B: Returns with Schedule C



Notes: Histograms are computed over households with earnings (including W-2 and net positive Schedule C earnings, for both the taxpayer and spouse) above \$0 and below \$60,000. Vertical lines show the lowest earnings at which the unit qualifies for the maximum EITC.

Figure 8. Share of individuals with Schedule Cs, by Chetty et al. (2013) sharp bunching rate for zip code



Notes: Sharp bunching rate is drawn from Chetty et al. (2013). Schedule Cs with zero or negative net income are excluded. Each point represents a mean for one-twentieth of zip codes, sorted by the sharp bunching rate (at the zip-3 level) and weighted by the number of returns in the sample.

Table 1. Summary statistics for e-filers and paper filers, tax year 2016

	E-Filers (89%)	Paper filers (11%)	E-Filers reweighted to match paper-filers	All filers
Age				
Mean	41	42	43	41
SD	[13]	[13]	[13]	[13]
Federal AGI				
Mean	85,398	76,797	79,667	84,357
SD	[101,700]	[92,847]	[100,841]	[100,709]
Family Status				
Single	35%	39%	37%	35%
Married	53%	50%	51%	53%
Head of Household	12%	11%	11%	12%
MSA				
Los Angeles	42%	41%	41%	42%
San Francisco	15%	16%	16%	15%
San Diego	9%	8%	8%	8%
Rest of state	35%	35%	35%	35%
Types of earnings (filing unit level)				
Any W2	87%	50%	56%	82%
Any Schedule C	20%	16%	31%	19%
W2 only	74%	43%	46%	70%
Schedule C only	7%	9%	21%	7%
W2 and Schedule C	13%	7%	9%	12%
Neither W2 or Schedule C	7%	41%	23%	11%

Notes: See text for discussion of reweighting procedure.

Table 2: Prevalence of traditional and independent contracting in 2016, working-age e-filers

Form filed in 2016	N *	% of those with positive earnings	
		%	%
No W2 or Schedule C	2,573,000	16%	
W2 only	11,919,000	72%	86%
W2 and Schedule C	894,000	7%	6%
Schedule C only	1,093,000	5%	8%
Total (age 18-64)	16,479,000		

Notes: Sample consists of all California resident e-filers in tax year 2016 aged 18-64. Schedule Cs with zero or negative net profit are excluded. Observation counts are rounded to the nearest 1,000 for privacy.

Table 3: Proportion of earned income from schedule C

Earned Income Source	E-filers		E-filers reweighted to match all filers
	N*	%	%
W2 only	11,919,000	86%	84%
Primarily (>=85%) W2	458,000	3%	3%
Mixed earners (15-85% W2)	365,000	3%	3%
Primarily (>=85%) Schedule C	71,000	0.5%	0.6%
Schedule C only	1,093,000	8%	10%
Total (age 18-64)	13,906,000	100%	100%

Notes: Sample excludes individuals with zero earnings. Schedule Cs with zero or negative net profits are excluded. Observation counts are rounded to the nearest 1,000 for privacy.

Table 4: Transitions across years

2015 status (row %)	2016 status						Total
	W2 only	Primarily W2 (>85%)	Mixed W2 & Schedule C	Primarily Schedule C (>85%)	Schedule C only	No earnings	
W2 only	94	2	1	0.1	0.5	3	100
Primarily W2	48	39	9	0.6	3	1	100
Mixed	31	12	36	4	14	2	100
Primarily Sched. C	16	4	20	23	34	3	100
Schedule C only	5	1	5	2	79	8	100
No earnings	11	0.2	0.3	0.1	4	85	100

Notes: Sample is individuals who e-filed in 2015 and 2016. Entries show row percentages. "Schedule C only" workers have positive Schedule C profits but no W-2 income. Primarily Schedule C, mixed earner, and primarily W2 earners have both Schedule C profits and W-2 income, with the proportion from W-2 <15%, 15-85%, or >85%, respectively. Schedule Cs showing zero or negative net profits are ignored. "No earnings" includes individuals with neither a W-2 nor a Schedule C (after dropping those with negative net income).

Table 5: Who are the independent contractors?

	Number with positive earnings	Share of total (%)	Exclusively W-2	Primarily W-2	Mixed	Primarily / exclusively Schedule C
	Row %					
Age						
18-25	2,366,000	17	93	2	2	3
26-40	5,033,000	36	87	4	3	7
41-55	4,505,000	32	83	4	3	11
56-64	2,003,000	14	81	3	3	13
Filing status						
Single	5,373,000	39	87	3	3	7
Married	6,684,000	48	84	4	3	10
Head of household	1,849,000	13	87	3	3	8
Region (MSA)						
Los Angeles	5,876,000	42	84	4	3	10
San Francisco	2,072,000	15	85	4	3	8
San Diego	1,198,000	9	87	3	2	8
Rest of state	4,757,000	34	88	3	2	7
Family income (AGI, equivalized)						
1st quartile	3,403,000	25	76	2	5	18
2nd quartile	3,403,000	25	88	3	2	7
3rd quartile	3,403,000	25	89	4	2	5
4th quartile	3,403,000	25	89	4	2	5
Individual earnings						
1st quartile	3,477,000	25	74	2	4	19
2nd quartile	3,476,000	25	87	3	3	7
3rd quartile	3,477,000	25	91	4	2	4
4th quartile	3,477,000	25	90	5	2	3
Zip code mean AGI (equivalized)						
1st quartile	3,478,000	25	87	2	2	9
2nd quartile	3,479,000	25	87	3	2	8
3rd quartile	3,478,000	25	86	4	3	8
4th quartile	3,472,000	25	84	4	3	9

Notes: Adjusted gross incomes (AGIs) are equivalized across families of different sizes by dividing by the square root of the number of people in the filing unit (taxpayer, spouse, and dependents). “Exclusively W-2” are individuals with no Schedule C with positive net income. “Primarily W-2” have both W-2 and net Schedule C income, but derive over 85% of their earnings from the W-2 job(s). “Mixed” derive between 15 and 85% of their earnings from W-2 jobs. “Primarily/exclusively Schedule C” derive less than 15% of their earnings from W-2 jobs. Row percentages are of those with positive earnings.

Table 6: Independent contractors by industry

Industry (NAICS code)	Industry share of Schedule Cs (%)	Industry share of W-2 workers (QCEW, %)	Industry share of primarily / exclusively Schedule C earners (%)	Industry share of other Schedule Cs (%)	Share of Schedule Cs in industry who obtain >85% of earnings from Schedule C (%)
Professional Services (54)	16	7	14	20	52
Personal and Laundry Services (812)	15	1	17	12	70
Administrative Services (56)	9	7	10	7	70
Health Care and Social Assistance (62)	9	14	9	9	60
Construction (23)	8	5	10	5	78
Ground Passenger Transportation (485)	6	1	4	9	40
Retail Trade (44-45)	6	10	6	5	64
Real Estate and Rental and Leasing (53)	6	2	6	5	69
Arts, Entertainment, and Recreation (71)	6	2	4	9	42
Transportation and Warehousing (48-49)	5	3	6	3	74
Repair and Maintenance (811)	4	1	5	2	78
Educational Services (61)	2	8	1.3	4	35
Finance and Insurance (52)	2	3	2	2	58
Accommodation and Food Services (72)	2	10	2	2	66
Information (51)	2	3	1.2	3	42
Wholesale Trade (42)	1.4	4	1.5	1.2	67
Manufacturing (31-33)	1.2	8	1.3	1.0	67
Agriculture (11)	0.5	3	0.5	0.5	65
Mining, Oil, and Gas (21)	0.1	0.1	0.0	0.1	40
Utilities (22)	0.0	1	0.0	0.0	55
Other	0.7	8	0.6	0.8	57

Notes: Numbers in parentheses indicate NAICS industry codes. We use two-digit industries, but break out Personal and Laundry Services (NAICS code 812), Repair and Maintenance (NAICS code 811), and Ground Passenger Transportation (NAICS code 485), and group together some others (Transportation and Warehousing, which does not include Ground Passenger Transportation, and Manufacturing). 21% of Schedule Cs are missing an industry code, and are excluded. Industry composition of W-2 workers is drawn from the Quarterly Census of Employment and Wages (QCEW).

Table 7. Proportion of earned income from Schedule C, reweighting to reduce influence of EITC overclaiming

Earned Income Source	E-filers		E-filers reweighted to remove bunching	
	N*	%		%
W2 only	11,919,000	86%		86%
Primarily (>=85%) W2	458,000	3%		3%
Mixed earners (15-85% W2)	365,000	3%		2%
Primarily (>=85%) Schedule C	71,000	0.5%		0.5%
Schedule C only	1,093,000	8%		7%
Total (age 18-64)	13,906,000	100%		100%

Note: Observation counts are rounded to the nearest 1,000. Sample excludes individuals with zero earnings. Schedule Cs with zero or negative net profits are excluded. "Reweighted" column reweights returns with Schedule Cs and earnings near the EITC kink to eliminate the excess density there; see text for details.