

# Uber and the labor market

## Uber drivers' compensation, wages, and the scale of Uber and the gig economy

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### Summary and key findings

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There has been a continuing, strong debate about the size of the gig economy and the pay earned by gig economy workers—specifically as gig work scope and pay relates to Uber, the leading gig economy firm. The debate has been fueled by a number of recent studies using differing and misleading measures of Uber pay and the size of the gig economy. For example, some pay studies present measures of driver earnings that do not deduct Uber commissions, or driver's expenses, or the cost of benefits Uber drivers must fund on their own (as they are classified as contract workers, not “employees”). Some scope studies look at the raw number of drivers but don't account for the fact that most ride-hailing drivers drive far fewer than 40 hours a week and only for a few months a year.

This paper seeks to provide clarity by offering a framework for understanding various pay and size concepts and a common terminology. Then, using newly available administrative data on Uber drivers, it answers two key questions: (1) what is the hourly pay earned by Uber drivers comparable to hourly wages or compensation of payroll employees (i.e., driver net income after accounting for Uber commissions and fees, vehicle expenses, payroll employees' benefits, and the interaction of expenses and benefits with the tax code)?; and (2) what is the scale of Uber, and gig work, in the overall economy?

The findings reinforce our skepticism that Uber, and “gig work” more broadly, represent the “future of work.” Our results indicate that Uber drivers earn low wages and compensation and the total hours and compensation in the gig economy represent a very small share of total hours and compensation in the overall economy. These findings—and the fact that many Uber and other workers who provide personal services via a digital platform do so on a part-time basis primarily as a way to earn supplementary income—argue for a change in perspective. There has been much hype around Uber and the gig economy. But in our assessment, in any conference on the future of work, Uber and the gig economy deserve at most a workshop, *not* a plenary.

#### **Following are our key findings regarding Uber driver pay:**

- About a third of what passengers pay goes to Uber in the form of fees (commissions and the booking fee per trip).
- Uber driver compensation—the income drivers get after deducting Uber fees and driver vehicle expenses from passenger fares—averages \$11.77 an hour. This average Uber driver hourly compensation is substantially less than the \$32.06 average hourly compensation of private-sector workers and less than the \$14.99 average hourly compensation of workers in the lowest-paid major occupation

(service occupation workers).

- Uber driver “discretionary compensation”—the income drivers get after deducting Uber fees and vehicle expenses *and* the mandatory extra Social Security/Medicare taxes that self-employed drivers must pay—averages \$10.87 an hour. Discretionary compensation, as developed by our analysis, measures the maximum income available to a driver for consumption by assuming that drivers do not provide themselves the equivalent of the health and retirement benefits or social insurance programs (workers’ compensation or unemployment insurance) that regular employees (“W-2 employees”) receive.
- The Uber driver “wage”—comparable to the wages (reported for employees on federal tax Form W-2) earned by regular W-2 employees—averages \$9.21 an hour. (We calculate this W-2 equivalent wage by deducting the following in order, from passenger payments: all Uber fees, such as booking fees and commissions; vehicle expenses; and the cost of a modest benefits package, including mandatory employer-side payroll taxes. Our estimate also takes into account expense and benefit interactions with the federal tax code).
- The Uber driver W-2 equivalent hourly wage is roughly at the 10th percentile of all wage and salary workers’ wages, meaning Uber drivers earn less than what 90 percent of workers earn. The Uber driver W-2 equivalent hourly wage falls below the mandated minimum wage in the majority of major Uber urban markets (13 of 20 major markets, which include 18 cities, a county, and a state). The Uber driver “no benefits” hourly wage or discretionary compensation—the hourly compensation adjusted for an assumption that Uber drivers pay the extra payroll taxes that the self-employed must pay but do *not* provide a standard benefits package for themselves—falls below the mandated minimum wage in nine of 20 major markets, including the three largest (Chicago, Los Angeles, and New York).

Uber and the gig economy both exhibit a clear duality. On the one hand, these platforms engage many participants, though most do so for supplementary income on a very part-time basis and frequently for a limited time. On the other hand, these platforms have a core group who are full-time and year-round workers who provide a large share of the services to consumers provided by these platforms. When assessing the scale of the gig economy and Uber driving, it is necessary to account for this duality: the raw number of participants indicates a far greater size than their actual economic weight—measured as a share of total work hours or compensation.

**Following are our key findings regarding the scale of Uber and the gig economy:**

- Uber drivers have high turnover and, on average, work only part of the year (an average of three months) and part time (an average of 17 hours per week). This means that an Uber driver provides roughly 12.5 percent as much “employment,” or total hours of work in a year, as a full-time, full-year worker.
- There are about 833,000 Uber driver participants in a year. If one weights participants by their weeks worked and their weekly hours, then Uber drivers amount to 133,000 full-time, full-year equivalent (FTE) workers and account for just 0.07 percent of national FTE employment. We scale this proportion by Uber’s two-thirds share of the gig economy (according to research by Seth Harris of Cornell University

and Alan Krueger of Princeton University) and find that the entire gig economy—online platform employment—accounts for just 0.1 percent of national FTE employment. Uber and the entire gig economy are not a significant portion of the national economy despite several years of rapid growth.

- Our full-time-equivalent employment-based estimate of the scale of Uber and the gig economy is far lower than “head count” estimates, which do not account for the fact that Uber drivers and other gig workers work part time and for less than a full year. For example, Uber “driver participants” account for 0.56 percent of total employment, eight times the 0.07 percent share of total full-time-equivalent employment derived when accounting for limited weekly hours and annual weeks worked.
- Uber drivers’ aggregate compensation, based on total hours worked and hourly compensation, is roughly \$5.0 billion, or 0.022 percent of aggregate national compensation (one-fifth of 0.1 percent). Adjusting for Uber’s two-thirds share of the gig economy, we find that the total compensation for the entire gig economy—online platform employment—accounts for just 0.034 percent of total national compensation.

## Introduction

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There has been a continuing, strong interest in Uber and its role as the emblematic central player in the overall “gig economy.” This paper addresses two continuing items of interest concerning the gig economy but focuses on Uber, the leading gig economy firm.

Specifically, the paper seeks to answer: (1) what is the hourly net income earned by Uber drivers—comparable to hourly wages or compensation of payroll employees—after accounting for Uber commissions/fees, vehicle expenses, benefits, and the interaction of expenses and benefits with the federal tax code?; and (2) what is the scale of Uber, and gig work, in the overall economy? The answers to these questions are now possible because of newly available Uber administrative data on Uber drivers provided in a research paper on gender equity of Uber driver earnings (Cook et al. 2018). Our analyses also contribute to the discussion of Uber pay by providing a framework for understanding various pay concepts and offering a terminology to advance discussion of Uber pay.

The examination of Uber drivers’ pay has recently reemerged due to a new report from MIT’s Center for Energy and Environmental Policy Research (Zoepf et al. 2018), which initially claimed that Uber drivers’ “median profit from driving is \$3.37/hour before taxes, and 74% of drivers earn less than the minimum wage in their state.” Jonathan Hall, Uber’s research director, claimed in a *Medium* article that the MIT CEEPR study has a “flawed methodology that results in hourly earnings numbers that are far, far below what any previous study has found” (Hall 2018). In response, one of the MIT CEEPR study’s authors, Stephen Zoepf of Stanford University’s Center for Automotive Research, issued revised estimates of Uber wages, using two methods and Uber median net profits, to ranging from \$8.55 to \$10.00 (Zoepf 2018).

This paper articulates a conceptual and rhetorical framework that, hopefully, can facilitate a more productive discussion in the media and among researchers. In addition, this paper draws on Uber administrative data to derive the hourly compensation and wages of Uber

drivers after deducting commissions, fees, and driver expenses. That is, this paper's findings shed new light on Uber driver pay and, perhaps more importantly, delineate the issues that must be addressed to derive such estimates.

In regard to Uber's scale, I have long been skeptical that Uber or "gig work" represents the "future of work" ever since it was clearly established that most Uber drivers do not drive as their main source of income, but instead do so to supplement other income sources (see Plouffe 2015a, 2015b; Mishel 2015). Uber in 2017 and 2018 has even taken to advertising for potential drivers by offering them the ability to "get your side hustle on" and arguing that "these days everybody needs a side hustle" (Uber 2016, 2017). Given the supplementary nature of Uber driving, and assuming that people will still need to earn a living in the "future of work," it is hard to see why Uber—a company that heavily relies on workers who supply irregular and short hours—would loom very large in "future of work" discussions. This is not just an observation about Uber. Data about non-Uber on-demand employers (King and Ockels 2015; Intuit 2016) also indicate that most people work through these platforms on a part-time basis, primarily as a way to earn supplementary income.

Researchers in the past have attempted to scale the size of the entire gig economy by estimating the scale of Uber and making data-informed assumptions about what share of the gig economy is accounted for by Uber. This was the approach of Harris and Krueger (2015) who, based on Google Trends data, determined that Uber represents two-thirds of the total "gig economy" (on-demand labor platforms). EPI's paper here uses Uber administrative data on the number of drivers and their weeks worked and weekly hours to scale Uber and the "gig economy." Likewise, we use an estimate of Uber driver compensation to assess Uber drivers' share of total economywide compensation. We then follow the Harris and Krueger 2015 approach in assuming that Uber accounts for two-thirds of the total gig economy. The following sections detail our findings, which indicate that the employment and compensation in the gig economy represent a very small share of total full-time-equivalent employment or compensation. This leads to our assessment that in any conference on the future of work, Uber and the gig economy deserve at most a workshop and not a plenary.<sup>1</sup> This is especially the case if one considers that discussions of the future of work should focus on how people will earn their living. In that light, a focus on Uber and the gig economy's ability to provide "side hustles," or supplementary income, is not very central to the topic.

## Uber wages and compensation

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What do Uber drivers earn from driving and how does that compare with possible alternatives in the labor market? This is the central question we address in this section of the report. The situation of Uber drivers differs in many dimensions from that of workers in other, more conventional employer–employee work situations, and we need to find a way to account for these differences to make proper comparisons. For example, there are several key differences that arise because Uber drivers are paid as independent contractors, not W-2 employees. Because they are not W-2 employees, Uber does not pay into social insurance programs such as unemployment insurance or workers' compensation, meaning drivers do not qualify for unemployment insurance benefits or workers' compensation—legally mandated benefits provided to W-2 employees.<sup>2</sup> Uber drivers also must pay a self-

employment tax to cover the full Social Security and Medicare taxes of 15.3 percent per worker, whereas W-2 workers pay just half of the total taxes for Social Security and Medicare (with employers contributing the other half).

Uber deducts fees and commissions from the fares, and drivers have to pay for vehicle and other driving-related expenses. Uber does not contribute to benefits such as health insurance or pensions for their drivers.

The analysis later in this section of the report starts with Uber administrative data on the fares generated per hour worked (from Cook et al. 2018) and then makes progressive adjustments to derive an “hourly wage” equivalent for Uber drivers. It aims to compute the hourly compensation and hourly wages Uber drivers “take home” that are comparable to those earned by W-2 workers and therefore suitable for comparisons using Bureau of Labor Statistics (BLS) wage surveys.

But before we conduct our analysis, it is worth illustrating how the measures in previous studies do not provide the clarity on this topic that is needed and what steps could provide the needed clarity.

## Identifying distinct concepts of earnings, compensation, and wages and how past studies have conflated these concepts

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One difficulty in comparing what various studies report is that there is no established and consistent terminology that precisely describes the array of pay measures we identify. To make proper comparisons and exchange views, analysts must be clear about *what* is being measured and use a common basic terminology. One goal of this paper is to precisely identify concepts of pay *and* suggest a basic terminology for the concepts that hopefully facilitates intellectual engagement and clarity of measurement.

**Table 1** presents five key concepts related to Uber driving and Uber driver pay and seeks to place the results of four recent studies accordingly. The point of the table is to display the disparate array of pay concepts and terminology used in the current literature in order to illustrate the difficulty this creates for discussions of Uber pay. We present our own pay concepts and an empirical estimate of each in the next section.

Table 1

## Definitions of Uber hourly pay

Row	Cook et al. 2018	Hall and Krueger 2016	Rideshare Guy blog (Campbell 2017b)	Zoepf et al. 2018
<b>1. Total passenger fares</b>				
<b>Less booking fees:</b>				
<b>2. Fares, including commissions</b>	\$21.07	–	–	–
<b>Less commission (25%):</b>				
<b>3. Earnings before expenses</b>	–	\$20.19	\$15.68	–
<b>Less vehicle expenses:</b>				
<b>4. Compensation /net profit</b>	–	–	–	\$8.55–\$10.00
<b>Less benefits:</b>				
<b>5. Wages</b>	–	–	–	–
<b>Sources</b>	<b>Definitions of pay</b>			
<b>Cook et al. 2018, 9–10</b>	“All earnings are gross earnings. Costs such as gas, car depreciation, and Uber’s service fee have not been subtracted from the earnings we present.”			
<b>Hall and Krueger 2016, 21–22</b>	“Reported earnings here are net of Uber’s fees but do not adjust for driver-partners’ expenses.”			
<b>Campbell 2017b</b>	“Uber drivers reported earning \$15.68 per hour, but since drivers are also responsible for gas, maintenance and depreciation, that number is likely less.”			
<b>Zoepf et al. 2018; Zoepf 2018</b>	“‘Median profit’: Earning less expenses”			

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Row 1 presents “total passenger fares,” a measure of the total fares Uber drivers generate. This measure would include not only what Uber drivers take home as income, but also all of the various commissions and fees that accrue to Uber (a booking fee assessed per trip and commissions assessed as a share of passenger fees excluding the booking fee). As we note below, none of the studies on the components of Uber pay provide this measure of total passenger fares. Despite this absence, it is useful to start with this metric because Uber collects from passengers both commissions and a booking fee assessed for each trip and measurements should be explicit about what fees/commissions are included or not in their metrics and what share of total passenger fees are received by Uber.

Row 2 presents “Fares excluding booking fees,” indicating that booking fees have been subtracted though Uber’s commission fees have not been subtracted. This is the pay measure presented in Cook et al. 2018.

Row 3 presents drivers’ “earnings before expenses,” which excludes all of Uber’s fees and commissions but does not deduct driver vehicle expenses. This is a natural starting point for using Uber administrative data since Uber does not know individual driver’s expenses. This is also the information that Uber drivers receive from Uber.

Row 4 deducts drivers’ vehicle expenses from earnings to present “compensation/net profit.” This is the income to the driver that approximates the total wages and benefits of W-2 workers. This category of pay is *not* comparable to the W-2 wages earned by employees and presented in data sets derived from various BLS surveys, because the employers of W-2 wage earners must by law pay a portion of the payroll taxes paid on the wages and salaries of employees to finance social insurance programs (Medicare, Social Security, workers’ compensation, and unemployment insurance). Employers of W-2 earners also often provide health insurance and retirement benefits. Uber treats its drivers as independent contractors and provides them with no benefits and does not pay any payroll taxes toward any of the social insurance programs. Therefore, comparisons of Uber driver earnings after expenses to the wages earned by W-2 employees—such as those made by Uber Research Director Jonathan Hall and Alan B. Krueger of Princeton University (Hall and Krueger 2016, 25)—are not apples-to-apples comparisons.<sup>3</sup> This measure, though called “net profit,” actually overstates the income available to drivers because it does not deduct the mandatory extra payroll taxes (7.65 percent) for Social Security and Medicare that self-employed workers must pay.

Finally, Row 5 presents “wages.” Making valid comparisons of Uber drivers’ pay to the wages of other workers requires accounting for the fact that wages for other workers are, on average, just a portion (about 80 percent) of their overall compensation package. For Uber drivers, who receive no employer contribution to nonwage compensation, their entire pay package is their “compensation” or “net profit.” To account for this absence of employer-provided benefits and derive a measure of “wages” that can be compared with wages of other workers, we will need to estimate the benefits package (including both nonwage benefits and social insurance payroll taxes) that Uber drivers would have to purchase on their own to secure the average benefits received by other workers. We then need to subtract that benefits estimate from “compensation” in Row 4 to provide an estimate of wages comparable to W-2 workers, as presented in Row 5. None of the studies listed in Table 1 derive a measure of Uber pay that deducts benefits to obtain a measure of “wages,” which is the appropriate metric for comparisons to the minimum wage or the wages of other occupations, including taxi drivers.

The key estimates of the four studies are placed accordingly in Table 1. We see that none of the studies derive a measure of Uber pay that is comparable to the wages of other occupations because none take benefits into account. In fact, a review of each study’s key measure in the table and of the spread of concepts and measures identified in the recent literature indicates why recent discussions of Uber pay have been so problematic: the pay concepts are inconsistent, confusing, and potentially misleading.

The recent public discussion of Uber driver pay generated by the recent MIT CEEPR study (Zoeplf et al. 2018) provides an illustration.

Hall's response to the CEEPR study (Hall 2018) notes,

A study we conducted with Alan Krueger of Princeton found that drivers across 20 of Uber's largest US markets earned an average of \$19.04 per hour, in October 2015. A more recent study with Stanford professors estimated gross hourly earnings of \$21.07 for all US drivers between January 2015 and March 2017.

Hall's language is inconsistent. Cook et al. 2018 is the "more recent study" that Hall references. But Cook et al. 2018 (9–10) instead notes, "All earnings are gross earnings. Costs such as gas, car depreciation, and *Uber's service fee* [emphasis added] have not been subtracted from the earnings we present." That is, one study's pay measure excludes Uber's commissions while the other does not.

Hall (2018) goes on to compare these two studies to results of a 2017 survey of rideshare drivers conducted by and published on the *Rideshare Guy* blog (Campbell 2017b), which found "earnings" of \$15.68. That survey asked drivers, "How much did you earn before expenses?" This measure excludes commissions Uber deducts from drivers' take-home pay so it is comparable to findings in Hall and Krueger (2016), and thus placed in Row 3 in Table 1, but not to Cook et al. 2018. Hall (2018) compares these various findings to that of the Zoeplf et al. (2018) study, which—using the *Rideshare Guy* survey of hourly earnings—conducts a comprehensive analysis of driver expenses and deducts driver expenses to obtain a measure of "compensation" or "net profits" (entered in Row 4 in Table 1).

As this discussion about the varied terms used to describe the concepts of pay identified in Table 1 shows, confusion and inconsistencies abound. The use of "earnings" may cause particular confusion. For instance, the Cook et al. 2018 study refers to its metric as "earnings," the same as the Hall and Krueger 2016 study, even though one deducts commissions and the other does not. Moreover, the term "earnings" does not seem like an apt description of the specific pay measures that are being discussed. "Earnings" is defined by the Bureau of Labor Statistics' online glossary as "Remuneration (pay, wages) of a worker or group of workers for services performed during a specific period of time" (BLS 2016a). Given this definition, "earnings" would not seem a good fit for a metric of pay that includes commissions that Uber receives rather than drivers (in the case of Cook et al. 2018), or that deducts commissions but does not account for driver vehicle expenses (in the case of Hall and Krueger 2016 and Campbell 2017b). That is why Table 1 labels Row 3 as "earnings before expenses." It might be best if the term "earnings" is qualified as "gross" or "earnings before expenses."

There are a few ways researchers can be clearer in their descriptions of various metrics for Uber driver pay. One is to be explicit about the "Uber fees" that are either included or excluded from a pay measure (i.e., booking fees and commissions, or just commissions). For instance, when these studies reference "earnings net of fees," they are not explicit about whether either or both commissions and the booking fees are excluded.

Second, if a pay measure does not exclude Uber fees and commissions then it should be identified as "fares generated" and not described as "earnings." It might be best if the



concept of earnings, unless suitably qualified, is not used at all since it has the potential for being mistaken as a pay measure of “wages.” Researchers should clarify how including (rather than excluding) commissions and fees in their metric of driver pay advances their research. It is unclear to us why those using Uber administrative data do not automatically deduct Uber commission fees from any metric of Uber driver pay since commission information is clearly available to Uber and its drivers.

Third, a measure of driver pay that deducts Uber booking fees and commissions as well as driver vehicle expenses could be described as “compensation” or “net profit.”

Fourth, any metric of Uber driver wages or earnings should explicitly take into account employer-side social insurance taxes and employer voluntary nonwage benefits (such as health and pension benefits).

## Computing Uber driver compensation and wages

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Our analysis examines all of the dimensions required to assess Uber drivers’ hourly compensation and wage “equivalents,” measures that are comparable to that of W-2 workers and the wage and compensation data presented in various Bureau of Labor Statistics (BLS) surveys of employers and workers. This requires starting from the fares generated per hour and deducting Uber’s commissions and fees, drivers’ expenses, the costs of fringe benefits that Uber drivers do not receive but that W-2 employees do, and adjusting the resulting computation for relevant tax issues.

**Table 2** provides data directly from Cook et al. (2018), who present Uber administrative data on drivers, fares generated, weekly hours, trips made, etc. As noted earlier, Jonathan Hall, Uber’s research director, was one of the co-authors. The data are for all UberX/UberPool driver-weeks in the United States from January 2015 to March 2017. The top panel presents these basic data and the bottom panel presents “derived” data—our computations of Uber driver pay concepts and, specifically, Uber driver compensation and wages. The table identifies the sources of the data used in our computations and the formulas involved. After discussing this table’s results and comparing our compensation and wage estimates with benchmarks such as the minimum wage, we will examine the sensitivity of our results to our choices for handling expenses, taxes, and benefits.

Table 2

## Uber driver average fares, compensation, and wages, 2015 –2017 first quarter

Row	Author's terminology	Source	Terminology	Data
<b>Basic data*</b>				
1	Number of drivers	Cook et al. 2018, Table 1	Number of drivers	1,873,474
2	Number of driver-weeks	Cook et al. 2018, Table 1	Number of driver-weeks	24,832,168
3	Weekly fares	Cook et al. 2018, Table 1	Weekly earnings	\$376.38
4	Hours per week	Cook et al. 2018, Table 1	Hours per week	17.06
5	Gross fares/hour, person-weighted	Cook et al. 2018, Table 1	Hourly earnings	\$21.07
<b>Derived fare data</b>				
6	Gross fares/hour, hours-weighted	Row 3/Row 4		\$22.06
7	Fares/hour, net of commission (25%)	$0.75 \times \text{Row 6}$		\$16.55
<b>Derived expense data</b>				
8	Pretax**	\$0.32/mile; 20 miles/hour		\$6.40
9	After-tax expenses (marginal tax, 25.3%)***	$\text{Row 8} \times (1.0 - 0.253)$		\$4.78
10	Hourly compensation	$\text{Row 7} - \text{Row 9}$		\$11.77
11	Less mandatory benefits****	$0.0765 \times \text{Row 10}$		\$0.90
12	Net profit/discretionary compensation	$\text{Row 10} - \text{Row 11}$		\$10.87
13	Less standard voluntary benefits*****	$0.141 \times \text{Row 10}$		\$1.66
14	W-2 equivalent wage	$\text{Row 12} - \text{Row 13}$		\$9.21

\* Cook et al. 2018, Table 1

\*\* Zoepf et al. 2018, 15; Cook et al. 2018, 35–36

\*\*\* Payroll tax, 15.3%; income tax, 10%

\*\*\*\* Extra Social Security/Medicare tax of 7.65% paid by self-employed

\*\*\*\*\* Health/retirement, workers' compensation, and unemployment insurance driver would have to purchase to obtain benefits comparable to those provided to W-2 employees

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Before delving into estimates of Uber driver pay, however, it is important to note that one of the complexities in examining anything about Uber drivers is the duality of driver

experiences. The majority of Uber drivers work part-time, driving less than 10 hours a week (Plouffe 2015a). On the other hand, a core group of Uber drivers work full time (35 hours a week or more) and provide about half the rides offered by Uber. Given this duality, it is useful to be explicit about who we are referring to when we discuss measures of pay. Given the fact that Uber is often put forward as the exemplar of the “future of work,” we focus on the pay of Uber drivers working full time and relying on the job as their main source of income. This dictates that we evaluate Uber pay for someone who requires basic benefits and probably has a car whose main use is Uber driving. A driver seeking only supplemental income might require less in benefits (for example, if the driver’s main employer or a spouse’s employer provides health benefits) and might be assumed to suffer just the costs of driving more miles (i.e., the driver may be able to ignore some of the fixed costs of driving, such as for insurance, that are present no matter how many miles are driven).

The starting point is what Cook et al. (2018) identify as “hourly earnings” of \$21.07 in the basic data provided by Cook et al. (2018, Table 1). Yet this measure of “hourly earnings” is not really earnings, but Uber’s payments per hour, or fares *generated* per hour for the average driver.

This measure of hourly earnings actually understates the actual *hourly* fares generated because it is the average across *drivers* not across *hours worked*.<sup>4</sup> Since fares generated per hour are greater among those who work more hours, the hours-weighted gross fares per hour (“weekly earnings” divided by weekly hours) entered in Table 2, Row 6, is our preferred measure, \$22.06.<sup>5</sup>

Next, we have to deduct both Uber commissions and driver vehicle expenses to derive a measure of Uber driver hourly income closer to that of a comparable W-2 worker’s compensation. With respect to deducting commissions, we know that Uber takes a 25 percent commission from the fares after deducting a “booking fee” per trip of roughly \$1.55.<sup>6</sup> Correspondence with Uber researchers indicates that booking fees were excluded from the fare data from Cook et al. 2018, Table 1, and entered into Rows 3 and 5 in our Table 2 above. Therefore, accounting for commissions is simple: we multiply the gross fares generated per hour in Row 6 in our Table 2 by 75 percent, which leaves \$16.55 of fares generated per hour net of Uber’s commission and booking fee. This measure, entered in Row 7 of our Table 2, is comparable in concept to the *Rideshare Guy* blog survey (Campbell 2017b) measure of “earnings before expenses” although the actual earnings estimates don’t exactly match. And, as noted earlier, the measure of earnings before expenses is the driver income reported by Uber in regular reports.

To estimate drivers’ expenses, we need an estimate of expenses per mile driven and knowledge of how many miles an Uber driver drives each hour. The MIT CEEPR research (Zoepf et al. 2018) estimates that driver expenses average \$0.32 per mile. The costs captured in the MIT CEEPR study include insurance, maintenance and repair costs, depreciation, and fuel. Uber’s Hall, in his 2018 critique of the MIT CEEPR study’s estimates of net profits, notes general acceptance of Zoepf et al.’s estimates of driver expenses: “It is important to note that we do not take issue with the paper’s estimation of costs. They are very much in line with previously-reported costs associated with driving” (Hall 2018).

The estimate of an Uber driver's average miles per hour comes from Cook et al. (2018), who note, "A typical Uber driver covers about 20 miles in one hour" (36). Thus our measure of driver expenses, based on drivers logging 20 miles per hour with \$0.32 expenses per mile, is \$6.40 (see Table 2, Row 8). These expenses, however, are tax-deductible. So if an Uber driver has a marginal tax rate for income and self-employment taxes of 25.3 percent, the cost, net of tax treatment, of expenses is \$0.239 per mile or \$4.78 an hour (Table 2, Row 9).<sup>7</sup>

If one subtracts both Uber commissions and drivers' expenses (net of tax treatment) from the gross fares, one obtains our measure of the "compensation" of Uber drivers, \$11.77 an hour (Table 2, Row 10). This facilitates a comparison of Uber driver compensation to that of other workers. For instance, Uber driver compensation of \$11.77 is substantially less than the \$32.06 hourly compensation (including both wage and nonwage compensation) reported for the average private-sector worker by the Bureau of Labor Statistics in its Employer Costs for Employee Compensation (ECEC) series for March 2016, the midpoint of the period covered by the data in Table 2; even workers in the lowest-paid major occupational group, the service occupational group, had average compensation of \$14.99, which is 27 percent higher than Uber driver compensation (BLS 2016b, Table 5). Service occupations include "Food preparation, building and grounds cleaning and maintenance occupations, healthcare support, and personal care and service occupations plus security guards" (BLS 2001).<sup>8</sup> This analysis ignores tips, as do all the other studies.

Uber drivers lack benefits both to cover the programs provided by employer-paid social insurance taxes—Social Security, Medicare, unemployment insurance, and workers' compensation—and nonwage benefits such as health insurance and pensions. Therefore they must pay for these benefits out of their "compensation" received. Uber driver "wages" are what remain from compensation after paying for a benefits package. Therefore, to measure Uber wages equivalent to that of a W-2 wage earner, we must estimate the cost of a benefits package to subtract from Uber drivers' average compensation.

The first step toward estimating the Uber driver W-2 equivalent wage is to subtract the mandatory benefits, which are the employer-side payroll taxes for Social Security and Medicare—the additional 7.65 percent that every driver must pay by virtue of being an independent contractor rather than a W-2 employee. These taxes amount to \$0.90 per hour on compensation of \$11.77. The remaining income after deducting these mandatory benefits, or taxes, is labeled "net profit" or discretionary compensation: this income reflects the maximum a driver can yield from driving toward meeting living expenses, assuming the driver forgoes having a health care or retirement plan or replacing the social insurance programs (workers' compensation, unemployment insurance) that W-2 employees are provided.

The second step toward estimating the Uber driver W-2 equivalent wage is to deduct the remaining "voluntary benefits": the benefits for employer-side unemployment insurance and workers' compensation taxes as well as the benefits voluntarily provided by employers such as health and life insurance and retirement. The BLS ECEC series allows us to compute a cost of these other benefits as a share of total compensation. These remaining benefits account for 14.1 percent of private-sector compensation and 11.9 percent of the compensation of private-sector service occupation workers (BLS 2016b, Table 5). These

BLS data reflect a pool of workers who have decent benefits, limited benefits, or no benefits at all. We use the private-sector benefit rate as our measure of a “standard benefits package,” since Uber drivers have above-average educations, far different than those in service occupations.<sup>9</sup> Thus we deduct \$1.66 from the discretionary compensation of \$10.87.

The Uber driver W-2 equivalent wage shown in the last row of Table 2 therefore reflects adjusting hourly compensation of \$11.77 for the total benefit rate we employ, 21.75 percent—the sum of the rates for Social Security/Medicare (7.65 percent) and for other benefits (14.1 percent). If Uber drivers had to finance these benefits out of their hourly earnings, this would imply that average wages of Uber drivers net-of-all benefits, mandatory and voluntary—Uber drivers’ average “W-2 equivalent wages”—are \$9.21 per hour (their hourly compensation, \$11.77, minus a total benefits package, \$2.56).

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## Comparing Uber driver wages with wages of other workers

One of the motivations for pursuing the analysis above is to facilitate wage comparisons between Uber drivers and other workers or opportunities. We offer a few benchmarks below.

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### The overall wage scale

One benchmarking exercise is to identify where Uber drivers’ average hourly wage falls within the overall wage scale. The 10th-percentile hourly wage—the wage earned by workers who make less than what 90 percent of all wage and salary workers earn but more than what 10 percent of all workers earn—was \$9.54 in 2016 (EPI 2018). This means that Uber drivers, had they been employees and been provided a standard benefits package, would have earned less than what 90 percent of other earners did. However, since Uber drivers are primarily in higher-wage urban areas, this comparison understates how low Uber driver wages are relative to other, comparable workers. On the other hand, workers earning at the 10th percentile may have a lesser package of voluntary benefits than we have assumed for Uber drivers, and so it would “cost” Uber workers less to finance a benefits package equivalent to what workers at this wage level receive, on average, from their employers.

---

### The minimum wage

Another possible benchmark is the minimum wage in the locations where Uber drivers work. Unfortunately, we can only compare the minimum wage in a city with the average hourly Uber wage and the average hourly Uber compensation across cities rather than the actual Uber wage in each city. Uber drivers are not entitled to earn the guaranteed minimum wage in their city or state because they are independent contractors. The comparison with the minimum wage thresholds therefore lets us gauge whether drivers would be provided with minimum wage protections if they indeed were employees. Zoepf et al. (2018) compare their metric for driver net profit per hour, which is conceptually comparable to our measure of hourly compensation, to minimum wage thresholds. However, as noted above, a driver’s compensation has to cover extra payroll taxes, replacements for workers’ compensation and unemployment insurance, and various health

insurance and retirement benefits. We use our data to make two different comparisons to minimum wage benchmarks and present the comparisons in **Figure A**. One comparison assumes that drivers use their compensation to pay the extra payroll taxes but do not provide any other benefits to themselves, essentially taking a “wage” of \$10.87 (identified as “discretionary compensation” in Table 2 and Figure A).<sup>10</sup> The other comparison is to our estimated driver hourly wage, \$9.21, which assumes drivers have a full standard benefits package as costly as what other workers receive on average from their employers.

Figure A

How Uber driver wages and compensation rank relative to major urban market minimum wages, January 2018

City	Wage
Atlanta	\$7.25
Austin	7.25
Dallas	7.25
Houston	7.25
Philadelphia	7.25
Miami	8.25
New Jersey	8.60
Uber wages	9.21
Baltimore	9.25
Minneapolis	9.65
Denver	10.20
Phoenix	10.50
Uber discretionary compensation*	10.87
Boston	11.00
Chicago	11.00
Orange County	11.00
San Diego	11.50
Los Angeles	12.00
Washington, D.C.	12.50
New York City	13.00
San Francisco	14.00
Seattle	15.45

ChartData

\* Compensation after paying extra Social Security/Medicare tax of 7.65 percent paid by self-employed

**Source:** Table 2 in this report and EPI minimum wage tracker for January 2018

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Figure A compares these two Uber driver wage measures with the minimum wages (as of

January 2018) in 20 major Uber markets—the 18 cities, one county, and one state that were included in the Uber-sponsored Benenson Strategy Group survey of Uber drivers in 2014 (BSG 2015). Fifteen of the 20 jurisdictions in Figure A have established their own minimum wage above the federal minimum wage of \$7.25, which has not been updated since 2009. Figure A shows the average Uber driver wage of \$9.21 is less than the minimum wage in 13 of the 15 jurisdictions and more than the minimum wage set by Miami, New Jersey, and the five cities (four major Southern cities and Philadelphia) that apply the federal government minimum wage. If we look at the Uber driver hourly discretionary compensation wage that excludes only extra payroll taxes but not other benefits from compensation, then Uber driver pay is still below the minimum wage set by nine of the 20 jurisdictions, including the three largest ones: Chicago, Los Angeles, and New York. As noted earlier, the minimum wage does not apply to Uber drivers because they are currently considered independent contractors rather than employees. If they had been employees, the average wages of Uber drivers in these major cities would have had to be higher to comply with minimum wage laws.

It would also be useful to consider the distribution of wages of Uber drivers, as Zoepf et al. (2018) do. Unfortunately, we do not have distributional data to draw on.

## Using differing assumptions to derive Uber compensation and wages

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There are other possible choices for an analysis such as in Table 2. Specifically, other options that would yield higher compensation and wage estimates in our analysis could include: (a) excluding car insurance costs from drivers' expenses because Uber provides insurance; (b) assuming that drivers claim the IRS standard deduction, which was \$0.54/mile in 2016, for miles driven, which would yield a sizable tax subsidy; and (c) assuming a lesser benefits package than the 21.75 percent of compensation benefits package employed in Table 2.

### Excluding rideshare car insurance expenses

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Cook et al. (2018, 36) use the Zoepf et al. 2018 estimates of expenses per mile driven that are used in Table 2, but they exclude the costs of driver rideshare insurance. Instead, they use \$0.25 per mile for “costs other than insurance—Uber covers drivers' insurance costs while driving” (36). This implies that including Uber's provision of car insurance for its drivers reduces the average driver's pretax expenses (of \$0.32 per mile) by \$0.07 per mile (or \$1.40 per hour), which would raise the estimated wage (adjusted for the tax treatment of expenses) by \$0.82 to \$10.03.<sup>11</sup>

However, we should note that other observers are critical of the limitations of the insurance Uber provides and argue that drivers are taking substantial risks if they don't have rideshare insurance. In particular, Harry Campbell (2017a) of the *Rideshare Guy* blog argued in August 2017 that



Uber and Lyft only cover rideshare drivers during Periods 2 and 3. Period 2 starts once you accept a ride request and are en route to your passenger, and Period 3 starts once your passenger gets into your car. BUT when you're online and waiting for a request during Period 1, you have no collision coverage from Uber or Lyft and much lower liability limits. So as a rideshare driver, you're most at risk during Period 1 since you won't get any collision coverage from rideshare companies and your personal insurer likely won't cover you during this time either. Rideshare insurance solves this gap by covering drivers during Period 1, and additionally they won't drop you for being a rideshare driver. Some policies will even cover you during Periods 2 and 3 so you won't be subject to Uber's \$1,000 collision deductible and Lyft's \$2,500 collision deductible.

Uber describes its insurance, as of March 2018, as providing liability insurance for Period 1 but not providing collision and comprehensive insurance and uninsured motorist insurance (Scott 2018). That is a problem for drivers.

It would be helpful to have information on what insurance full-time drivers actually purchase and to base the costs on drivers' actual use of insurance. Without such information, it seems reasonable to assume that a driver would want to be fully covered during Period 1 and to have a deductible lower than \$1,000.

There is nothing simple about the choices drivers face regarding insurance. In his introduction to the *Rideshare Guy* blog's "11 FAQs about Rideshare Insurance," Harry Campbell notes that "Rideshare insurance is one of the topics we get asked about most frequently here on the blog" (Knobe 2017). A review of that insurance FAQs blog post illustrates the complexity of the issues.

Cook et al. (2018) do not provide a source for their assumed estimate of insurance costs of \$0.07 per mile. Is that a good estimate? Zoepf et al. (2018, 10) identify insurance, maintenance, and repair costs as approximately \$0.15/mile. If insurance costs were \$0.07/mile, as Cook et al. (2018) assume, then that assumes \$0.08/mile for maintenance and repair costs. That accords with AAA's estimate of "maintenance, repair and tires" for a medium sedan of \$0.08 per mile (AAA 2017, 6).

We can also benchmark Zoepf et al.'s (2018) estimate of vehicle expenses to AAA's comparable effort. AAA provides estimates of driving costs for the following: fuel; maintenance, repair, and tires; insurance; license, registration, and fees; depreciation; and financing. Extrapolating from their estimates for a medium sedan used for 20,000 miles (\$0.4712/mile) provides an estimated cost for driving 40,000 miles of \$0.361 per mile.<sup>12</sup> The AAA estimate includes more costs than Zoepf et al.'s 2018 does—such as license, registration, and fees; and financing—so it is not surprising that AAA's estimated costs are a bit higher (\$0.36 versus \$0.32).

Last, we can benchmark our estimate of vehicle expenses against the vehicle expenses estimated by Hall and Krueger (2016, 27), who estimate the hourly vehicle costs for a full-time driver (35,000 miles per year) using a medium sedan (with registration costs) at \$5.33. Hall and Krueger (2016) find costs for full-time drivers ranging from \$3.76 to \$6.46 per hour. That is lower than the \$6.40 in our analysis in Table 2. However, our analysis examines the

after-tax costs of expenses, \$4.78, essentially the same as the \$4.79 per hour costs identified by Hall and Krueger for a full-time driver (assuming no registration costs) driving a medium sedan.

### Using the standard deduction for mileage for taxes

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The calculations in Table 2 presume that drivers secure their tax deductions by submitting their actual expenses on Form 1040, Schedule C, rather than using the standard expense allowed by the IRS, \$0.54 per mile in 2016. The use of the standard expense deduction rather than actual mileage expense would provide a tax subsidy for drivers. If an Uber driver used this standard expense deduction of \$0.54 per mile, this would average \$10.80 an hour (at 20 miles driven per hour) rather than the actual expense of \$6.40 an hour. This would confer a tax benefit of \$1.11 an hour, equivalent to the marginal tax rate (the tax paid on the last dollar earned) of 0.253 percent times the excess \$4.40 of expenses per hour obtained by using the IRS standard expense rather than what we have estimated for Uber drivers. That implies a sizable boost to a driver's bottom line.

Except for incorporating the tax treatment of expenses, we choose to focus on actual pretax wages and compensation, as do Hall and Krueger (2016). This produces estimates of Uber pay that are comparable to pay in alternative W-2 occupations. Wage comparisons do not regularly incorporate tax consequences, such as including the implied earned income tax credit, when comparing occupational wage differences.

### Using different valuations of benefits

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The analysis in Table 2 assumes that drivers have hourly compensation of \$11.77 but must purchase benefits that cost \$2.56 per hour. Is this excessive? Or is it not enough to cover what a full-time driver requires or would receive in an alternative occupation? A major challenge for any Uber driver is what every independent contractor faces: it is difficult to obtain replacements for social safety net benefits and expensive for individuals to purchase potential replacements.

It is easy to demonstrate that our assumption of benefit costs is not excessive. This is illustrated by computing what remains from the \$2.56 allotted for benefits after deducting for Medicare/Social Security taxes, workers' compensation taxes, and health insurance.

First, a driver needs \$0.90 per hour to pay the employer-side Social Security/Medicare tax, leaving \$1.66 an hour, or \$287 per month, available for other purchases.

Workers' compensation is an important protection in a dangerous occupation like taxi driving, so self-employed drivers are wise to obtain such coverage on their own. The New York state legislature recognized this when it created the Black Car Fund to provide workers' compensation benefits for contract drivers injured on the job (NPR 2018). In New York, the Black Car Fund provides such insurance by adding a 2.5 percent surcharge onto passenger fares (Black Car Fund n.d.). That's the equivalent of \$0.62 per hour.<sup>13</sup> That leaves \$1.04 an hour, or \$180 per month, for other purchases.

Health insurance alone will absorb most of what remains. The cost for purchasing the second-lowest silver plan through the Affordable Care Act (ACA) exchange is \$444 each

month, or \$2.56 per hour worked (using a suburb of St. Louis as the driver's location). Tax subsidies are available, and a single driver earning about \$25,000 annually (\$11.77 for 2,080 hours) would receive a "premium tax credit" of \$307 monthly, or \$1.77 an hour. In this case, the net cost to the driver is \$0.79 an hour. This can be benchmarked against what those in the lowest-paid occupations, the service occupations, receive from their employers: employer expenditures for these workers total, on average, \$0.92 an hour for life, health, and short- and long-term disability insurance, with \$0.89 devoted to health insurance alone (BLS 2016b, Table 5). Importantly, these service occupation figures are averages for workers who receive and do not receive employer-provided health insurance, indicating that the cost for those workers actually being covered would be substantially greater.

So, after spending on ACA subsidized health care, there is only \$0.25 available (\$1.04 less \$0.79) in the benefits package to cover retirement, unemployment insurance, life insurance, and liability insurance. It does not appear that the amount of benefits assumed in our Table 2 is all that generous.

## Computing Uber's full commission rate

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Uber administrative data on the fares generated per hour worked (from Cook et al. 2018) can also be used to compute Uber's full commission rate, the share of passengers' fares that Uber claims in fees and commissions and that do not go to drivers. Uber's commission rate is frequently discussed as if it were 25 percent but it is actually 33.2 percent, meaning Uber retains a third of Uber passenger fares.

The relevant data are presented in **Table 3**. While the table first presents the Cook et al. 2018 data on numbers of drivers and weekly fares, our analysis essentially starts with what passengers are paying the drivers. Note that the hours-weighted gross fare per hour (Row 6 in Table 2 and Row 11 in Table 3) does not reflect what riders provide in fares because it excludes the booking fee they pay for each trip. So we need to add the booking fees charged per hour to the fares generated per hour from Table 2 to obtain the total amount riders pay Uber per hour; the booking fees per hour are derived in Rows 7 through 10.

Table 3

## Estimating Uber fees and commission rate per hour

Row	Item	Source	Data
1	Number of driver participants	Cook et al. 2018, Table 1	1,873,474
2	Number of driver-weeks	Cook et al. 2018, Table 1	24,832,168
3	Weekly fares	Cook et al. 2018, Table 1	\$376.38
4	Gross fares/hour, person-weighted	Cook et al. 2018, Table 1	\$21.07
5	Trips per week	Cook et al. 2018, Table 1	29.83
6	Hours per week	Cook et al. 2018, Table 1	17.06
7	Booking fee per trip		\$1.55
8	Trips	Row 5 × Row 2	740,743,571
9	Trips per hour	Row 5/Row 6	1.75
10	Booking fees per hour	Row 9 × Row 7	\$2.71
11	Gross fare/hour, hour-weighted	Row 3/Row 6	\$22.06
12	Total passenger fare/hour	Row 10 + Row 11	\$24.77
13	Commission/fees on total fare	Row 10 + (Row 12 – Row 10) × 0.25	\$8.23
14	Commission/fee rate	Row 13/Row 12	33.2%

**Source:** Analysis of Cook et al. 2018, Table 1

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To derive booking fees per hour, we pull data from Cook et al. 2018 (Table 1) on the number of trips each week (29.83) and the hours worked each week (17.06), and we enter these figures in Rows 5 and 6 in Table 3. Given this, we know that drivers average 1.75 trips per hour (Row 9 in our Table 3). To compute booking fees per hour, we multiply the 1.75 trips per hour by an Uber booking fee of \$1.55 per trip,<sup>14</sup> which means that Uber earns \$2.71 in booking fees for every hour worked by a driver.

Adding the \$2.71 in booking fees per hour (Row 10 in our Table 3) to the hours-weighted gross fare per hour of \$22.06 (Row 11 in our Table 3) tells us that total passengers' fares paid to Uber each hour average \$24.77 (Row 12).

So how much of the \$24.77 collected by Uber each hour is taken as commissions and fees? As we have established, Uber collects \$2.71 in booking fees per hour plus 25 percent of the hours-weighted gross fare per hour of \$22.06 in commissions. So we multiply 0.25 by \$22.06 and add the resulting \$5.52 to the \$2.71 in booking fees and find that Uber's commission and fees total \$8.23 per hour, which represents 33.2 percent of the \$24.77 in total passenger fares per hour, not the 25 percent frequently discussed.

Uber driver hourly compensation is \$11.77 an hour. An Uber driver's yield from \$24.77 in total passenger fares, after taking into account all Uber fees/commissions (\$8.23) and driver expenses (\$4.78), is just 47.5 percent of what passengers pay ( $\$11.77/\$24.77$ ).

## Scaling Uber and the gig economy

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There has been much discussion of the employment share of the gig economy and Uber's portion of the entire gig economy. Harris and Krueger (2015) were pioneers in this effort:

*There has been much speculation about the size and growth rate of the gig economy. We are particularly interested in the number of workers participating in the “online gig economy,” because this sector is growing rapidly and often involves workers that fall in the gray area between employees and independent contractors. As we are defining it, the online gig economy involves the use of an Internet-based app to match customers to workers who perform discrete personal tasks, such as driving a passenger from point A to point B, or delivering a meal to a customer's house. (10)*

Harris and Krueger creatively used the scale of Uber to estimate the overall scale of the gig economy. Their first step was to assess the cumulative Google searches for Uber and 25 other prominent gig economy firms. This assessment found that these other firms accounted for only about half the searches that were made for Uber. Lyft was the third most searched firm, at 12.4 percent of the Uber searches. If one assumes that “the number of workers providing services through an intermediary is proportional to the number of Google searches” (Harris and Krueger 2015, 12), then Uber is roughly two-thirds of the gig economy or, equivalently, the entire gig economy is about 50 percent larger than Uber. Harris and Krueger estimate that Uber had 400,000 active partners in the fall of 2015, implying that there were 600,000 gig workers overall in 2015, representing 0.4 percent of total employment that year. In later work, the share of gig workers in total employment was estimated to be 0.5 percent (Katz and Krueger 2016).

In this section, we update this analysis using the administrative data provided in Cook et al. 2018 (Table 1) for the period from January 2015 through the first quarter of 2017 (the 2015–2017:1 period). **Table 4** presents the relevant Cook et al. 2018 data and our computations. The Cook et al. data on Uber drivers apply to Uber's “peer-to-peer services,” UberX and UberPOOL. This is the same driver group examined in Hall and Krueger 2016 and used in Harris and Krueger's (2015) estimates. This data set, however, does not include drivers for UberXL, UberBLACK, or UberEATS. There is no information available on the number of drivers excluded and the consequent undercount of Uber's overall employment.

Table 4

## Scaling Uber driving as share of total compensation and employment, 2015–2017 first quarter

Row	Item	Source	Data
1	Number of driver participants	Cook et al. 2018, Table 1	1,873,474
2	Number of driver-weeks	Cook et al. 2018, Table 1	24,832,168
3	Hours per week	Cook et al. 2018, Table 1	17.06
4	Uber hourly compensation	Table 2, Row 10	\$11.77
<b>Compensation share</b>			
5	Uber weekly compensation	Row 3 × Row 4	\$200.80
6	Uber aggregate compensation (\$ millions)	Row 5 × Row 2/1,000,000	\$4,986
7	Cumulative U.S. compensation (\$ millions)	BEA NIPA 2.1	\$22,228,478
8	Uber compensation share	Row 6/Row 7	0.022%
9	Gig economy (1.5 × Uber) share of compensation	1.5 × Row 8	0.034%
<b>Employment shares</b>			
10	Total employment, full-time and part-time, 2016	BEA NIPA 6.4D	148,658,000
11	Number of driver participants, per year	Row 1/2.25	832,655
12	Uber driver participants' share of employment	Row 11/Row 10	0.56%
13	Driver-weeks per year	Row 2/2.25	11,036,519
14	Uber full-year driver equivalent employment	Row 13/52	212,241
15	Uber full-time, full-year equivalent (FTE) employment	(Row 3/40) × Row 14	90,521
16	Full-time, full-year equivalent (FTE) employment, 2016	BEA NIPA 6.5D	132,752,000
17	Uber share of FTE employment	Row 15/Row 16	0.07%
18	Uber share of employment	Row 14/Row 10	0.14%
19	Gig economy share of FTE employment	1.5 × Row 17	0.10%
20	Gig economy share of employment	1.5 × Row 18	0.21%

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The analysis below expands on Harris and Krueger's earlier effort in two ways. First, we provide estimates that adjust the employment data to account for the part-year and part-time nature of much of Uber driving. Second, we use the Uber hourly compensation figure derived above to assess the Uber and gig economy share of total compensation.

These adjustments are needed to align the concepts of employment in the numerator and

denominator of calculations of Uber's size. It is natural to use national employment as the denominator. However, in counts of national employment, an estimate of 100 people employed in a particular year essentially reflects 100 people working in every month during a year. This is not consistent with how Uber drivers are counted in research relying on Uber administrative data: these studies instead count driver *participants*, essentially counting every person who drove for Uber during a year or part of a year for a threshold number of rides, which can be as little as four trips a month. That driver-participants number is a mismatch with an annual employment count that reflects 12 months of employment. This matters because the administrative data in Table 4 imply that the average Uber driver works for Uber an average of three months (and thus, taking this part-year work into account, represents just 0.25 of a full-year job).<sup>15</sup> This should not be surprising since we know that Uber has very high driver turnover (Cook et al. 2018).<sup>16</sup> We also know that Uber drivers work for less than half of each week (17.06 hours each week). Combining the two pieces of information on Uber drivers' part-year and part-week work hours tells us that an Uber driver participant provides in a year roughly 12.5 percent as much "employment," or total annual hours of work, as a full-time, full-year worker does. This motivates our analysis, which seeks to align the numerator and denominator of calculations determining Uber's scale in the economy.

Research indicates that non-Uber gig economy firms similarly rely on people who are working to supplement their main income and work for only a limited number of hours each week. Draw on an Intuit survey (Intuit 2016) of workers in the gig economy (which Intuit calls the "on-demand economy"), King and Ockels (2015) state,

*The majority work part-time in the On-Demand Economy (ODE): the average ODE worker works about 12 hours per week working for their ODE partner company; 43% have either a traditional full-time job (29%) or part-time job (14%) in addition to their ODE work; and, the average ODE worker earns 22% of their household income via ODE work.*

Computations of the role of the whole gig economy in the overall economy, therefore, must also be careful to align the numerator and denominator of the calculation.

## Scaling Uber's total compensation

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The easiest way to scale Uber's size is to compute the total compensation of Uber drivers relative to national compensation. Given the average Uber driver hourly compensation of \$11.77 (Table 2 above), we know the weekly compensation and the total driver-weeks driven over the 2015–2017:1 period. This provides a measure of the total compensation earned over this period, shown in Row 6 of Table 4. The equivalent aggregate compensation in the nation is available from the National Income and Product Accounts (NIPA) data maintained by the Bureau of Economic Analysis (BEA 2018). This allows a computation of the share of Uber compensation in the total economy of 0.022 percent—this is roughly one-fifth of 0.1 percent. Recall that earlier we show that the gig economy is about 50 percent larger than Uber. Thus, the entire gig economy's compensation is 0.034 percent of the total economy's compensation.

This estimate of the entire gig economy's share of total economy compensation is less than 10 percent of the scale of the gig economy as measured by the "head count" of gig

employment relative to total employment, 0.4 to 0.5 percent. Why is the compensation-based measure of gig economy scale so much smaller than the head count measure despite the growth of the gig economy since the fall of 2015? The size of the gig economy is far smaller in this relative total compensation metric because we are accounting for the low compensation (one-third the average) in the gig economy and the limited annual hours of gig economy participants (recall that in the discussion of Table 2 we showed that Uber driver compensation of \$11.77 is substantially less than the \$32.06 hourly compensation reported for the average private-sector worker). The “head count” measure accurately reflects the simple number of participants in the gig economy. But the share of total compensation accounted for by gig economy compensation reflects the “economic weight,” or *economic scale*, of the gig economy relative to the total economy.

### Scaling Uber’s total employment and full-time-equivalent employment

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A comparable exercise is possible for employment on an annual basis. The bottom panel of Table 4 and **Figure B** presents our estimates of Uber and gig economy employment as a share of total full-time, full-year employment in 2016, which we derive by converting the driver data for the 2015–2017:1 period into annualized data by dividing by 2.25, since the data cover two full years plus three months. Our first measure is simply the number of Uber drivers in a year (“participants” in Row 11) as a share of total employment (Row 10), yielding 0.56 percent in Row 12. This is a comparable measure to what Harris and Krueger (2015) computed but is twice as large, reflecting Uber growth.<sup>17</sup>



Figure B

Uber share using various definitions of employment, 2016

	Uber share of employment
All driver participants/Total employment*	0.56%
Full-year-equivalent drivers/Total employment**	0.14%
Full-year, full-time equivalent (FTE) drivers/Total FTE***	0.07%

ChartData

\* All drivers (before adjusting for the fact that drivers drive only three months per year and only 17 hours per week) divided by total full- and part-time employment in the economy

\*\* Counts driver-weeks and divides by 52 to come up with a number of full-year-equivalent drivers and divides by total full- and part-time employment in the economy

\*\*\* Adjusts full-year drivers to full-time weekly hours and divides by total number of full-time, full-year equivalent employment

**Note:** See Table 4 in this report for sources and calculations.

**Source:** Author’s calculations of Cook et al. 2018 and Bureau of Economic Analysis National Income and Products Accounts

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The next measure adjusts for the number of weeks driven per year by Uber drivers by calculating Uber employment as the number of driver-weeks divided by 52, producing an estimate of “full-year drivers” as shown in Row 14. This measure of Uber employment is comparable to an annual employment measure, and the share of Uber in total employment is 0.14 percent (Row 18). The size of Uber measured in full-year employment, 0.14 percent, is one-fourth its size when measured as “participants” (0.56 percent in Row 12). This makes sense because the “full-year” employment measure simply takes account of the fact that the average driver works for just one-fourth of the year, three months.

The last adjustment we make is to take account of the part-time nature of Uber driving. Converting “full-year” employment into “full-time-equivalent” employment simply requires multiplying the full-year data by the share of full-time hours an Uber driver works (17.06/40, or 42.7 percent), as shown in Row 15. Uber’s annual full-time-equivalent employment was 90,521, or 0.07 percent of national full-time-equivalent employment (Row 17). This is less than half the Uber share of full-year employment because Uber work hours are less than half a 40-hour week.

Using these estimates of Uber’s scale, we estimate that the gig economy accounts for 0.21 percent of total employment (Row 20). Harris and Krueger’s estimate for fall 2015 was 0.4 percent and would be 0.84 percent if updated with Table 4 data.<sup>18</sup> Our estimate that the gig economy constitutes 0.21 percent of employment is far smaller than the share estimated by Harris and Krueger because, again, we account for the fact that gig economy

participants (like Uber drivers) work partial years (three months) on average. And we estimate that the gig economy represents an even smaller 0.10 percent of total *full-time-equivalent employment* (Row 19) after adjusting not only for part-year employment but also for part-week employment.

## Conclusion

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This paper provides a framework and suggests a terminology for understanding the hourly pay (or its equivalent) of Uber drivers. Too often, discussions of Uber workers' pay have been marred by apples-to-oranges comparisons and confusing terminology. We find in this paper that hourly pay, net of Uber fees and driver vehicle expenses, is essentially on par with the 10th percentile of private-sector wages, or less than what 90 percent of Americans earn per hour in their jobs.

We also find that the gig economy represents just 0.10 percent of total full-time, full-year equivalent employment, a much smaller scale than scale estimates made without considering the part-year and part-time nature of most work in the gig economy. The basic lesson is that Uber and the gig economy are much larger when one measures participation than when they are scaled as a share of the economy. That is, there are a large number of people seeking to supplement their regular incomes by working in the gig economy for a short time or as very part-time workers. These “short-hour” participants do work alongside the minority of participants who rely on the gig economy work for their living—this is the basic duality of the gig economy. Nevertheless, as a share of the economy, Uber and the gig economy are rather small.

Unfortunately, the role of the gig economy is frequently exaggerated and by quite a bit. Consider this blog reporter's summary of a main theme in a position paper from the advocacy group Third Way:

A third of the country benefits from the tail winds of automation and the gig economy while the other two-thirds are sailing against head winds. (Hohmann 2018)

In summary, there is no basis for saying the gig economy is a major driver of economic trends.

## Acknowledgments

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The author wishes to acknowledge receiving helpful comments from Josh Bivens; Harry Campbell; Jason Dowlatabadi; Steve Greenhouse; Jonathan Hall; Alan Krueger; Ethan Pollack; Michael Reich; Alex Rosenblat; Shelly Steward; and Stephen Zoepf. Lora Engdahl did a thorough edit and Zane Mokhiber prepared the tables and figures. John Carlo Mandapat prepared infographics.

## Endnotes

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1. Likewise, Ross Eisenbrey and I (2016) have written on why we consider Uber drivers to be employees rather than independent contractors and why the nature of driving for Uber does not require some third in-between category of worker status.

2. Many regular W-2 employees, a large plurality, do not receive employer-provided health and pension benefits either. The difference is that Uber drivers, all of them, need to provide their own benefits since they are independent contractors.

3. Hall and Krueger (2016, 25) write, “Although we cannot look at earnings specifically for taxi drivers, taxi drivers, limo drivers, and chauffeurs are classified together in the Occupational Employment Statistics (OES) survey, which reports earnings for drivers who are employees (in contrast to Uber’s drivers, who are independent contractors). Taxi drivers, limo drivers, and chauffeurs who are on payroll probably do not bear expenses for gasoline, vehicle maintenance, depreciation, etc., which are incurred by Uber driver-partners (although deductible from income taxes in many cases). As a consequence, we subsequently present estimates of drivers’ expenses to facilitate a comparison of net earnings.” They do not consider employer voluntary benefits, like health and retirement, or employer-paid payroll taxes. The wage comparison is explicitly to taxi drivers who are “employees.”

4. As an example, consider that there are only two drivers. One works 12.5 hours each week at \$20 an hour. The other works 35 hours each week at \$30 an hour. The wage of the average driver is \$25 (averaging \$20 and \$30). This is the person-weighted average wage. The wage for the average hour driven is \$27.40, based on the total weekly wages of \$1,300 generated by 47.5 total hours worked ( $\$1,300/47.5=\$27.40$ ). This is the hours-weighted average wage.

5. This is computed by dividing weekly earnings of \$376.38 by 17.06 hours worked per week (from Cook et al. 2018, Table 1, and entered in Rows 3 and 4 in our Table 2).

6. The booking fee differs by city. This is a low estimate.

7. The marginal tax rate assumed is the sum of the self-employment tax, 15.3 percent, and a marginal income tax rate of 10 percent.

8. The services group also includes “protective services,” which includes police and firefighters. Those are primarily public-sector jobs and their compensation is not included in the \$14.99 figure.

9. Nearly half of Uber drivers have a four-year college degree or an advanced degree, far more than the share of the workforce with similar education. See Hall and Krueger 2016, Table 1.

10. This is the hourly compensation of \$11.77 minus 0.0765 percent of \$11.77.

11. Lower driving expenses would also raise hourly compensation to \$12.81 and the presumed benefits package to \$2.79.

12. This estimate relies on the same annual fixed costs of \$4,252, the same per mile costs of \$0.1697, but greater depreciation of \$1,620 relative to the 20,000-mile driver.

13. This is 2.5 percent of \$24.77, our estimate of total passenger fares per hour. This includes the gross fares per hour in Table 2, \$22.06, plus our estimate of booking fees per hour, \$2.71

14. The current booking fee is \$1.75, but \$1.55 was a common booking fee from 2015 to 2017:1 (though the fee was higher in some cities).

15. The annual number of drivers is in Row 11 and the cumulative number of driver-weeks is in Row 13, which implies an annual employment count (by dividing by 52 weeks) of 212,241, as shown in Row 14. This annual employment count is just 25 percent of the annual number of drivers, which tells us that the average driver works for a fourth of the year, or three months.

16. Cook et al. (2018, 10) note, “More than 60% of those who start driving are no longer active on the platform six months later.”

17. Harris and Krueger’s estimate is a gig economy employment share of 0.4 percent, so the Uber share of total employment would be roughly 0.27 percent in the fall of 2015, about half of the 0.56 percent shown in Table 4.

18. Calculated as 1.5 times the 0.56 percent in Row 12.

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