

Working Paper Series

The Economics of Ride Hailing: Driver Revenue, Expenses and Taxes

STEPHEN ZOEPEF, STELLA CHEN, PAA ADU, AND GONZALO POZO



FEBRUARY 2018

CEEPR WP 2018-005

The Economics of Ride-Hailing: Driver Revenue, Expenses and Taxes

Stephen Zoepf* Stella Chen Paa Adu Gonzalo Pozo†

2/1/2018

Abstract

We perform a detailed analysis of Uber and Lyft ride-hailing driver economics by pairing results from a survey of over 1100 drivers with detailed vehicle cost information. Results show that per hour worked, median profit from driving is \$3.37/hour before taxes, and 74% of drivers earn less than the minimum wage in their state. 30% of drivers are actually losing money once vehicle expenses are included. On a per-mile basis, median gross driver revenue is \$0.59/mile but vehicle operating expenses reduce real driver profit to a median of \$0.29/mile. For tax purposes the \$0.54/mile standard mileage deduction in 2016 means that nearly half of drivers can declare a loss on their taxes. If drivers are fully able to capitalize on these losses for tax purposes, 73.5% of an estimated U.S. market \$4.8B in annual ride-hailing driver profit is untaxed.

Keywords: Transportation, Gig Economy, Cost-Benefit Analysis, Tax policy, Labor

*Center for Automotive Research at Stanford

†Stanford University Graduate School of Business

1 Introduction

Since the start of the ride-hailing business in 2009, Uber, Lyft, Didi, Ola and dozens of other smaller competitors have collectively taken millions of customers on billions of rides. These companies, also referred to as Transportation Network Companies (TNCs), operate mobile platforms which match drivers and riders in real time. To provide service, these companies rely on hundreds of thousands of individual drivers who typically operate as independent contractors. These drivers acquire their own vehicles, choose when and where to drive, and assume risks and expenses of operating a vehicle.

Both the revenue and costs of driving for a ride-hailing company are complex. Base driver revenue is determined by a fare structure similar to that of a taxi, with a fixed minimum fare and variable pricing based on time and distance. However, at least three other factors may change what a driver earns: A) fare multipliers which raise prices in real time based on supply and demand of drivers, B) pooled rides in which a driver makes multiple pickups and drop-offs in a single route, and C) elaborate bonus structures which offer drivers either reduced commission or cash bonuses for driving longer hours. On the cost side, drivers must bear all expenses associated with vehicle operation including depreciation, insurance, maintenance, repairs and fuel, which may vary widely from driver to driver or vehicle to vehicle.

Estimating the economics of ride-hail driving at a large scale presents a number of challenges. TNC operators know exactly what they pay each driver, but they do not know whether drivers earn additional wages from a competitor and they know nothing about what drivers actually spend to operate their vehicles. An individual

driver can precisely observe his or her own operational costs, but does not know whether those costs are representative of other drivers or other vehicles. Researchers and policymakers are at a further disadvantage since they neither know specific revenues nor do they know the year, make and model of vehicles driven to make informed estimates of costs.

To address these gaps in knowledge, we worked together with therideshareguy.com (Harry Campbell), who interacts with tens of thousands of drivers each year, to develop a more detailed picture of profit for a large number of drivers. In this paper we combine the self-reported revenue and vehicle choices from over 1,100 Uber and Lyft drivers with detailed vehicle operational cost parameters from vehicle data aggregators Edmunds and Kelly Blue Book to estimate costs, profit and tax rates for ride-hail drivers.

2 Literature Review

Uber had initially publicized estimates of driver profits as high as \$90,000 per year, but Harshbarger (2014), Rogers (2015) and others have written publicly skeptical accounts of these numbers. Other reports have indicated that between 50% (Rosenblat and Stark 2016) and 96% (McGee 2017) of drivers quit after brief periods of employment, suggesting that true incomes might be lower.

In existing studies, estimates of driver profits are largely based on small numbers of interviews based on a few example vehicles (Preston 2017) or make coarse assumptions (Singer-Vine and O'Donovan 2016) of vehicle-related expenses. Oth-

ers (Earnest 2017) calculate monthly income for a variety of peer-to-peer platforms including ride-hailing, but calculations of costs are done using coarse estimates.

A number of studies co-authored by Uber employees use Uber-sourced data to calculate parameters such as price elasticity (Hall et al. 2017), consumer surplus (Cohen et al. 2016), and inefficiency of long deadhead rides. (Castillo et al. 2017) However, these studies focus exclusively on earnings. In particular Hall et al. (2017) provide evidence that increasing fares do not result in increased earnings because consumer demand also falls. However, these studies ignore the marginal impact of additional miles traveled on driver operational costs.

Results of this survey have initially been reported in an article by Campbell (2017) and in a thesis by Henao (2017). A general limitation of all of these studies is that they are either (A) based on very small numbers of vehicles, (B) used averages for vehicle operating costs rather than unique calculations for each vehicle type, or both. Public reports indicate that ride-hailing drivers in the U.S. now number in excess of 600,000. (Bosa and Balakrishnan 2017)

To calculate tax burden we use the standard mileage deduction (\$.54 in 2016) because this is the recommended practice from multiple sources. Uber’s website provides tax tips for its drivers that includes a list of items for deductions and a recommendation to “speak with a tax advisor”. Both online and brick-and-mortar tax advisors offer comprehensive, online guides specifically for ride-share driver tax reporting. This can be seen as secondary evidence that many rideshare drivers use tax advisory services to report their taxes. Online forums or blogs also provide similar guides that help drivers understand their options for deduction. On Intuit’s

tax forum (Intuit 2017) the top answer to the question “What can an Uber driver deduct?” advises “*You would be at a gross disadvantage if you chose to deduct your actual car maintenance expenses as indicated in the long post above. Uber drivers are better off (almost always) if they deduct the standard mileage rate.*”

3 Data and Analysis

The initial driver data for this paper comes from a survey run by therideshareguy.com from January 2 - 9, 2017. The vast majority of responses came from approximately 30,000 email subscribers who received an email invitation to participate in the survey. Additional respondents found the survey through a banner ad and social media links. Survey participants were offered the chance to win several small prizes, including Amazon gift cards, hats and free consultations. 1,121 unique individuals responded to the survey, representing a response rate of approximately 3.7%.

3.1 Driver Revenue

Data from this survey included self reported driver earnings in several formats, which were normalized into point values and adjusted by reported revenue fraction in the following manner. Responses to Question 14 “How much money do you make in the average month?” determined monthly revenue for each driver using the expected

value of fitted lognormal distributions for responses for each driver i:

$$MonthlyRevenue_i = \begin{cases} \$331.84 & \text{if } \$0 - \$500 \\ \$736.21 & \text{if } \$500 - \$1000 \\ \$1420.63 & \text{if } \$1000 - \$2000 \\ \$2428.37 & \text{if } \$2000 - \$3000 \\ \$4964.16 & \text{if } \$3000+ \\ \text{NA} & \text{if "Prefer not to say"} \end{cases}$$

Responses to Question 15 “How much of your total monthly income comes from driving?” determined revenue fraction for each driver using the midpoints of response bins for each driver i:

$$RevenueFraction_i = \begin{cases} 0 & \text{if Very little of your income} \\ .25 & \text{if Less than half of your income} \\ .5 & \text{if Around half of your income} \\ .75 & \text{if Most of your income} \\ 1 & \text{if All, or almost all, of your income} \end{cases}$$

Monthly Driving Revenue is defined as the product of total monthly revenue and fraction of revenue from driving for each driver i:

$$MonthlyDrivingRevenue_i = MonthlyRevenue_i * RevenueFraction_i$$

Some drivers did not report monthly revenue but did report hourly wages in

response to Questions 18 and 22, “How much do you earn per hour before expenses?”

for each service. Hourly revenue for driver i using service j is defined as:

$$Revenue_{ij} = \begin{cases} \$4.41 & \text{if wage} = \text{“less than \$5/hour”} & , \text{primary service} = \text{“Uber”} \\ \$8.22 & \text{if wage} = \text{“\$5 to \$9.99/hour”} & , \text{primary service} = \text{“Uber”} \\ \$12.49 & \text{if wage} = \text{“\$10 to \$14.99/hour”} & , \text{primary service} = \text{“Uber”} \\ \$17.26 & \text{if wage} = \text{“\$15 to \$19.99/hour”} & , \text{primary service} = \text{“Uber”} \\ \$23.70 & \text{if wage} = \text{“\$20 to \$29.99/hour”} & , \text{primary service} = \text{“Uber”} \\ \$33.61 & \text{if wage} = \text{“\$30 to \$39.99/hour”} & , \text{primary service} = \text{“Uber”} \\ \$46.23 & \text{if wage} = \text{“Over \$40/hour”} & , \text{primary service} = \text{“Uber”} \\ \$4.44 & \text{if wage} = \text{“less than \$5/hour”} & , \text{primary service} = \text{“Lyft”} \\ \$8.35 & \text{if wage} = \text{“\$5 to \$9.99/hour”} & , \text{primary service} = \text{“Lyft”} \\ \$12.60 & \text{if wage} = \text{“\$10 to \$14.99/hour”} & , \text{primary service} = \text{“Lyft”} \\ \$17.33 & \text{if wage} = \text{“\$15 to \$19.99/hour”} & , \text{primary service} = \text{“Lyft”} \\ \$23.89 & \text{if wage} = \text{“\$20 to \$29.99/hour”} & , \text{primary service} = \text{“Lyft”} \\ \$33.73 & \text{if wage} = \text{“\$30 to \$39.99/hour”} & , \text{primary service} = \text{“Lyft”} \\ \$46.76 & \text{if wage} = \text{“Over \$40/hour”} & , \text{primary service} = \text{“Lyft”} \end{cases}$$

Drivers reported hours worked in response to Question 11, “How many hours per week do you work on average? Combine all of the on-demand services that you work

for.” These binned responses were also fitted to a lognormal distribution:

$$HoursWorked_{ij} = \begin{cases} 7.66 & \text{if “Less than 10”} \\ 15.09 & \text{if “11-20”} \\ 24.62 & \text{if “21-30”} \\ 34.53 & \text{if “31-40”} \\ 44.53 & \text{if “41-50”} \\ 71.19 & \text{if “50+”} \end{cases}$$

For drivers who did not report Monthly Revenue, we calculated one month of revenue for each driver i as follows:

$$MonthHourlyRevenue_i = 4.35 \sum_j HoursWorked_{ij} * HourlyRevenue_{ij}$$

As shown in Figure 1, revenue for most drivers does not exceed \$2000/month, consistent with the large number of drivers who work part time (approximately 80% of drivers in the sample work fewer than 40 hours per week). Figure 2 shows revenue divided by working travel distance, which indicates most drivers earn less than \$1/mile before expenses, with a median of \$0.592/mile before expenses.

3.2 Driver Expenses and Cost Allocation

To calculate net profit (π) for each driver we estimate operational costs, which consist of five factors: fuel, insurance, maintenance, repairs and depreciation. Each respondent provided year, make and model information for up to three vehicles. We

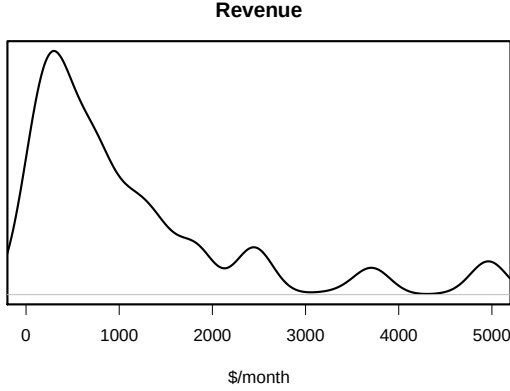


Figure 1: Distribution of revenue per month from ride-hailing

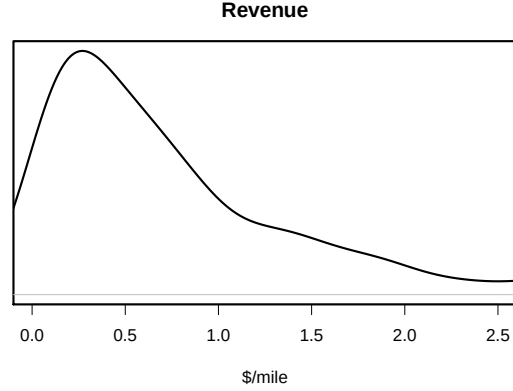


Figure 2: Distribution of revenue per mile from ride-hailing

assume that the driver currently operates the vehicle type reported in question 38 or, if provided, 39 (see Appendix A). Drivers reported 852 unique combinations of vehicle make, model, and year, 696 of which are vehicles currently in operation.

We find that the vast majority of drivers accrue miles primarily in ride-hailing use, with a median of 78% of miles driven for work and 22% for personal use. Heavy ride-hailing use also corresponds to greater number of reported hours worked (Figures 3 and 4). We primarily calculate costs on a per-mile basis and allocate based on work miles driven. Insurance costs are fixed and allocated based on the percentage of total monthly miles that are ride-hailing related.

3.3 Insurance, Maintenance and Repair Costs

Edmunds provided insurance, maintenance and repair costs for 802 of the 852 unique vehicles, all made in 2011 or later. All values were based on US national averages and the mean of all variants in the Edmunds database. For each vehicle in our survey,

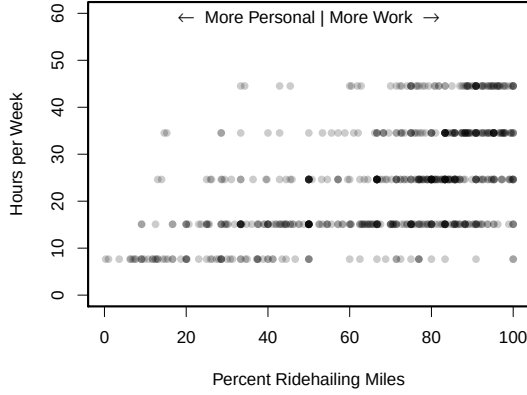


Figure 3: Vehicle miles driven for work by work schedule

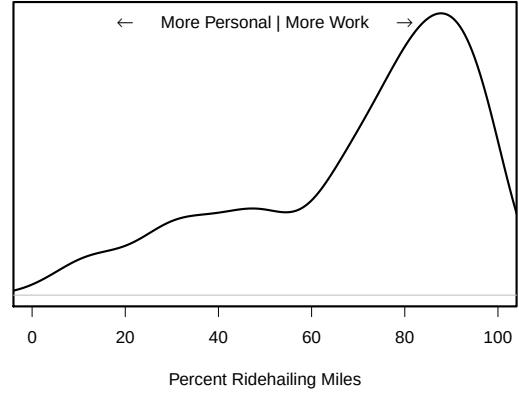


Figure 4: Percentage of vehicle miles driven for ridehailing

we estimate costs for one month in 2017 as summarized in Table 2.

Edmunds data included ten years of estimated insurance and maintenance costs and five years of estimated repair costs for each vehicle. We extrapolate these costs linearly to a 15 year service life after evaluating 2nd order and logarithmic fits. Cost information for some vehicle year-make-model combinations (primarily those older than 2011) was unavailable from Edmunds, For those models, the average cost of cars with the same make and model (but different years) were used to approximate their insurance, maintenance, and repair cost. For each vehicle in the survey dataset, we identify the age of the vehicle in 2017, and use the age to pick the corresponding IMR cost for the vehicle from the processed Edmunds dataset. Maintenance and repair costs were scaled proportionally to the ratio of monthly work miles. Thus repair costs would be scaled up for vehicles whose owners report work miles in excess of 1250 miles, and scaled down for owners reporting fewer work miles.

As shown in Figure 5, insurance, maintenance and repair costs increase with

Table 1: Cost allocation for vehicle operation expenses.

Expense	Source	Allocation
Insurance	Edmunds	Annual cost provided. Converted to monthly, scaled by fraction of miles driven for work
Maintenance	Edmunds	Annual cost provided based on 10,000 mile use. Converted to per mile cost.
Repair	Edmunds	Annual cost provided based on 15,000 mile use. Converted to per mile cost
Fuel	Survey, EPA	Calculated per mile using adjusted EPA fuel economy and state average fuel price
Depreciation	KBB	Calculated per mile using value before and after last month of driving

the age of the vehicle. For many vehicles which are less than 2 years old, repair and maintenance costs are zero or nearly zero and expenses are mostly attributable to insurance. Per mile, insurance, maintenance and repair costs have a median of approximately \$0.13/mile and a mean of approximately \$0.15/mile (Figure 6).

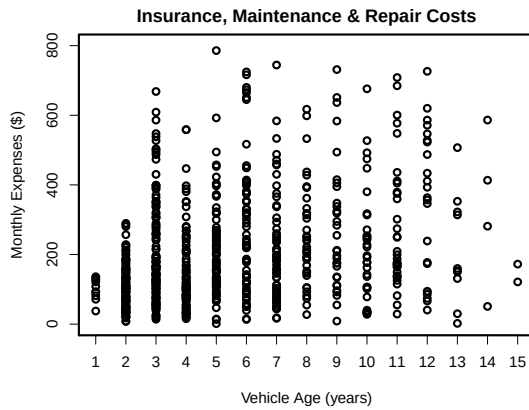


Figure 5: Insurance, maintenance and repair costs by vehicle age

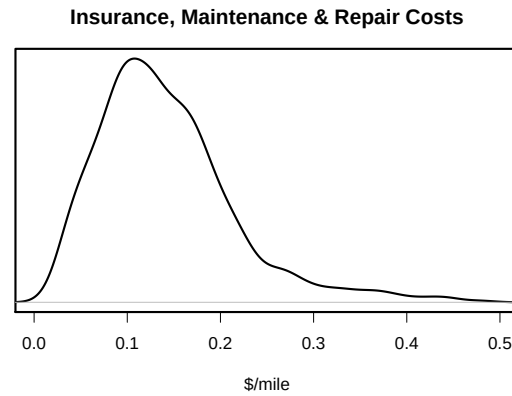


Figure 6: Distribution of insurance, maintenance and repair costs

Table 2: Summary of data sources for vehicle operating expenses.

Data	Years	Source
Insurance	10	Insurance data is based off a predefined driver profile with an assumed annual mileage of 15,000 miles for each of the represented 'Year of Service'
Maintenance	10	Maintenance data is based off an annual mileage of 10,000 miles for each of the represented 'Year of Service' (10 years/100K Mile estimates provided). These estimates do not factor in any free maintenance programs offered by their respective manufacturers.
Repair	5	Repair data is based off an annual mileage of 15,000 miles for each of the represented 'Year of Service'. Edmunds were only able to provide estimated Repair data for up to 75,000 miles. Each vehicle also assumes that 15,000 miles have been accrued for each year it has been in service since vehicle was available for sale as a new vehicle. (eg., 2015 Honda Accord is considered 2 years old and will already have 30K miles. Model year 2016 and 2017 are all considered New Vehicles and it is assumed they have zero miles)

4 Depreciation

To estimate vehicle depreciation, we calculate the estimated loss of value of each vehicle as a result of one month of use as a ride-hailing vehicle. For each vehicle, two resale values were gathered from Kelly Blue Book based on two different odometer readings.

$$Resale_{start} = KBB(make, model, year, mileage_{start}, trim, options, color, condition)$$

$$Resale_{end} = KBB(make, model, year, mileage_{end}, trim, options, color, condition)$$

$Resale_{start}$ corresponds to the value of a car after it has been purchased and used for ridesharing. The key parameter here is $mileage_{start}$, which is defined as follows:

$$mileage_{start} = \left(\sum_{i=1}^{age \text{ at purchase}} NHTSA_i \right) + Mileage_{month} * Tenure_{months}$$

$mileage_{start}$ is an estimate for the number of miles on a given vehicle based on its age (using values provided by the National Traffic Highway Safety Administration) and the total miles driven while working for a rideshare company. $ResaleValue_{end}$ corresponds to the resale value of a car after an additional month of driving usage for a rideshare company. $mileage_{end}$ includes the miles driven for work (i.e. a rideshare company), but not personal use (See Appendix A 35-36):

$$Mileage_{end} = Mileage_{start} + Mileage_{month}$$

Vehicle make, model, and year were input from the survey responses. All vehicles were assumed to be configured for the cheapest trim level. Vehicle options (such as engine, transmission, drivetrain, headlights, comfort options, wheels, etc.) were assumed to all be standard configurations, in black and in good condition.

In total, resale values were gathered for 1182 of the 1394 vehicles. Responses that were not able to be gathered were primarily due to missing or ambiguous responses from the survey (e.g the user provided a vehicle make and model, but not year) or missing vehicles in the KBB database.

Vehicle depreciation per mile was calculated for all vehicles where resale values

were gathered:

$$Depreciation = \frac{ResaleValue_{start} - ResaleValue_{end}}{Mileage_{month}}$$

Two conditions were applied to these depreciation values to determine if they were valid. First, vehicles had to have only accumulated between 10 and 10,000 miles in a month for work. This served to eliminate inactive drivers and drivers that had reported an unreasonable number of miles driven in a month. 46 vehicles had less than 10 miles driven per month and 24 vehicles had over 10,000 miles driven per month. Second, vehicles that averaged over 60 mph over the course of a month were invalidated. Average mph was calculated using reported miles driven in a month for work and hours spent working per week (Question 11). 47 vehicles averaged over 60 mph in a month. In total, 1089 vehicles had valid depreciation costs per mile which were used for further analysis.

As seen in Figure 7, depreciation cost per month are related to vehicle age. As expected, newer vehicles depreciate faster than older vehicles. As shown in Figure 8, median depreciation costs are below \$.05/mile and nearly 90% of vehicles have depreciation costs less than \$.10/mile, both consistent with a fleet of used vehicles being used at high rates.

5 Fuel Costs

Fuel costs are calculated using the product of reported fuel price and the fuel economy of each vehicle. Per month fuel expenses are the product of per-mile costs and the

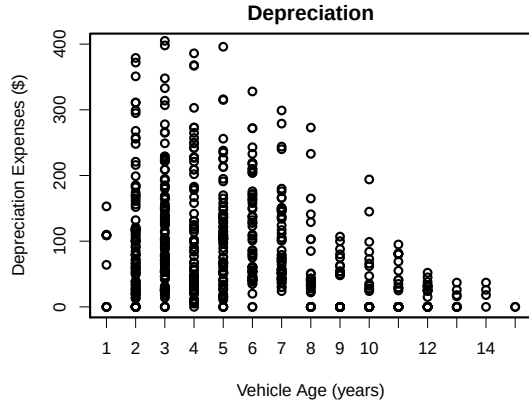


Figure 7: Depreciation costs by vehicle age

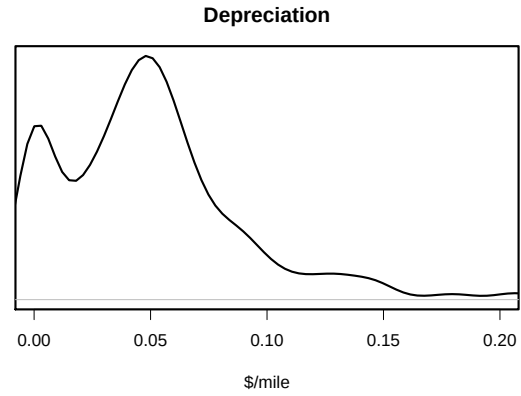


Figure 8: Distribution of depreciation costs per mile

reported monthly working miles driven. To eliminate outliers in reported fuel prices both calculations use the median reported fuel price for each state.

Vehicle fuel economy was obtained from the Environmental Protection Agency fuel economy trends database. For vehicle models with multiple variants, the harmonic mean of the fuel efficiency for all the versions was used, and when respondents provided additional engine, transmission or trim information this was used to match a specific vehicle variant. EPA Fuel economy values were cross-checked with values scraped from KBB. Rated fuel economy values were reduced 20% to reflect on road performance.

Drivers averaged just over \$200 in monthly fuel expenses. All drivers spent between \$.05 and \$0.27 per mile on fuel costs. A secondary peak in fuel costs below \$.10/mile indicates the large number of drivers operating a hybrid vehicle, primarily the Toyota Prius.

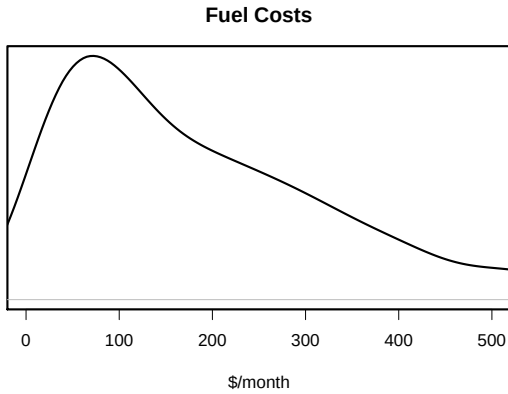


Figure 9: Distribution of fuel costs per month

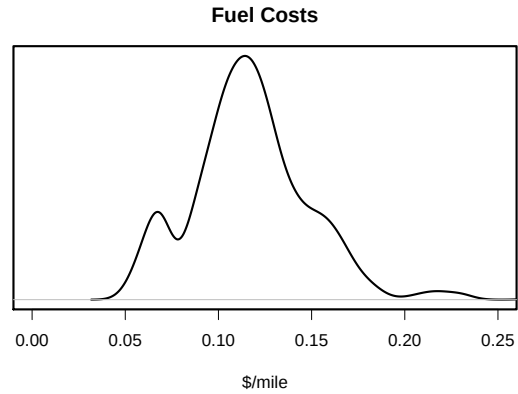


Figure 10: Distribution of fuel costs per mile

6 Results

For the median driver, total costs are approximately \$0.30 per mile, and few drivers experience costs which exceed \$0.50/mile. Driving revenues vary more widely but rarely exceeds \$1.00/mile. This variation in revenue is presumably due to drivers who work primarily for premium services with larger vehicles, a hypothesis which is supported by a weak correlation between driving costs and driving revenues.

Profit before taxes varies widely across drivers, with a median of approximately \$0.29/mile. Once costs of driving are fully factored in, only 70% of drivers are actually making money, as shown in Figures 12 and 13.

Drivers are able to use a standard mileage deduction (\$0.54/mile in 2016) to account for vehicle expenses for tax purposes, substantially larger than the calculated costs of \$0.30/mile for this driver population. 47% of drivers report revenues less than \$0.54/mile, indicating that nearly half drivers are able to declare a loss on their taxes from driving activities.

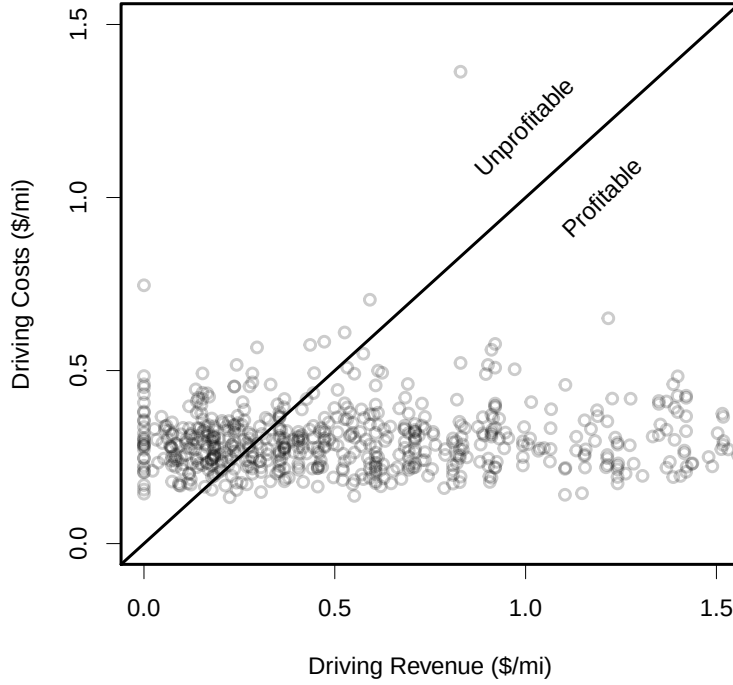


Figure 11: Revenues and Expenses per mile by driver

As shown in Figure 14, mean driver profit per month is \$661 (median \$309.70), but mean taxable income is \$175.40 (median \$52.85). On an hourly basis, the median profit from driving is \$3.37/hour, and 74% of drivers earn less than the minimum wage in their state.

7 Conclusion

This analysis illustrates that the standard mileage deduction is critical to the ride-hailing business model. Since this deduction approaches the median gross revenue

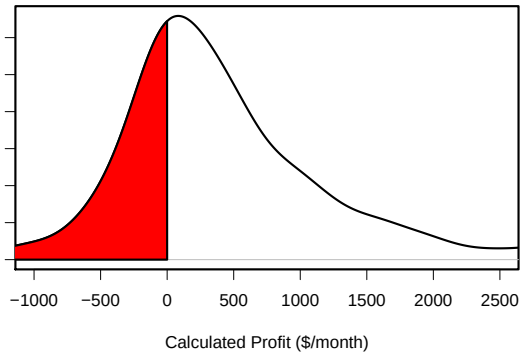


Figure 12: Distribution of calculated profit per month

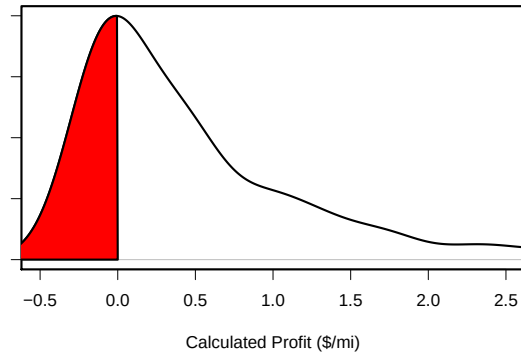


Figure 13: Distribution of calculated profit per mile

per mile, nearly half of the drivers surveyed can legally declare a loss on their taxes for their ride-hailing activities, while in most cases actually earning a few thousand dollars per year by working part-time. Real profit from driving activities average just under thirty cents per mile.

The tax revenue consequences of this disparity between declared profit and actual profit depends on the degree to which drivers who lose money are able to exploit these losses in their tax filings. They could do so by offsetting other income, carrying losses forward to more profitable years, or using other social safety nets. If drivers are able to do this effectively, then 73.5% of ride-hailing driver profit would go untaxed. If drivers are unable to use their declared losses, the true number would be lower.

At an average of \$661/month in net profit per driver and with hundreds of thousands of drivers in the U.S. alone, the standard mileage deduction facilitates billions of dollars of untaxed income, and hundreds of millions of unrealized tax revenue. This untaxed profit represents a social subsidy for the ride-hailing business model.

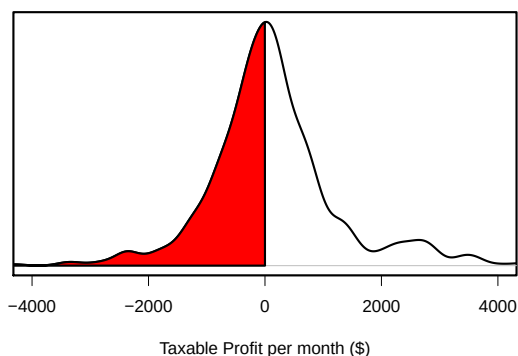


Figure 14: Distribution of calculated taxable profit per month

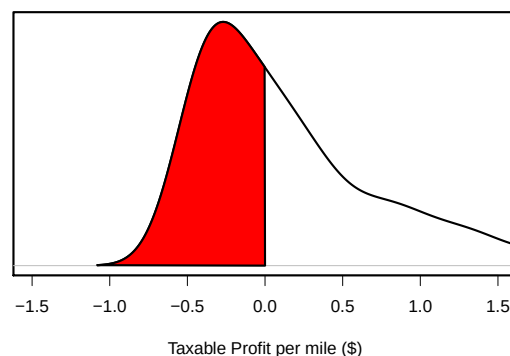


Figure 15: Distribution of calculated taxable profit per mile

Tax implications aside, nearly 30% of drivers are actually losing money for every mile they drive, which seems to be irrational. Why would they do this? There are at least two possible hypotheses. One is that many drivers do not treat driving as a job, but as a way to offset some of the costs of vehicle ownership. In this analysis the only fixed cost is insurance, but presumably drivers in major cities might face other costs such as parking and use taxes.

Another possible explanation for those that drive while losing money is that they fail to do a full accounting of costs associated with driving. Repair costs, for example, are not regular investments. Instead, they manifest themselves as large, infrequent expenses (e.g. transmission rebuild or battery replacement) that drivers must set aside money for out of each paycheck. Similarly, depreciation for a paid-for vehicle is not realized until the driver needs to sell or scrap the car. Drivers are effectively borrowing against the equity in their vehicles in the short term and then repaying when major investments in repairs or a new vehicle are made.

8 Acknowledgements

The authors would gratefully like to acknowledge Harry Campbell of therideshareguy.com for providing data and inspiration for this paper through his annual survey. We would also like to thank Danny Zhou and his team at Edmunds for providing details of the TCO model and vehicle operational cost data. The paper is part of a body of work on ride-hailing the lead author began at CEEPR and now continues at Stanford.

References

- Bosa D, Balakrishnan A (2017) Uber hack exposes data of 57 million users and drivers, report says. URL <https://www.cnn.com/2017/11/21/uber-hack-exposes-data-of-57-million-users-and-drivers-report-says.html>.
- Campbell H (2017) RSG 2017 Survey Results: Driver Earnings, Satisfaction and Demographics. URL <https://therideshareguy.com/rsg-2017-survey-results-driver-earnings-satisfaction-and-demographics/>.
- Castillo JC, Knoepfle D, Weyl G (2017) Surge Pricing Solves the Wild Goose Chase. Proceedings of the 2017 ACM Conference on Economics and Computation, 241–242, EC ’17 (New York, NY, USA: ACM), ISBN 978-1-4503-4527-9, URL <http://dx.doi.org/10.1145/3033274.3085098>.
- Cohen P, Hahn R, Hall J, Levitt S, Metcalfe R (2016) Using Big Data to Estimate Consumer Surplus: The Case of Uber. Working Paper 22627, National Bureau of Economic Research, URL <http://www.nber.org/papers/w22627>, doi: 10.3386/w22627.
- Earnest (2017) Sharing Economy: How Much Are People Really Making From It? URL <https://www.earnest.com/blog/sharing-economy-income-data/>.

- Hall JV, Horton JJ, Knoepfle DT (2017) Labor Market Equilibration: Evidence from Uber. Technical report, National Bureau of Economic Research, URL http://john-joseph-horton.com/papers/uber_price.pdf.
- Harshbarger R (2014) Ubers claim of \$90k average pay for drivers is overestimated. URL <https://nypost.com/2014/11/02/ubers-claim-of-90k-average-pay-for-drivers-is-overestimated/>.
- Henao A (2017) Impacts of Ridesourcing - Lyft and Uber - on Transportation Including VMT, Mode Replacement, Parking, and Travel Behavior. Ph.D., University of Colorado at Denver, United States – Colorado, URL <https://search.proquest.com/docview/1899208739/abstract/756EBBDAADDEE420DPQ/1>.
- Intuit (2017) I drove for Uber last year. Where do I enter deductions for Uber? URL <https://ttlc.intuit.com/questions/4030110-i-drove-for-uber-last-year-where-do-i-enter-deductions-for-uber-service-fee>.
- McGee C (2017) Only 4 percent of Uber drivers remain after a year says report. URL <https://www.cnbc.com/2017/04/20/only-4-percent-of-uber-drivers-remain-after-a-year-says-report.html>.
- Preston W (2017) How Much is Uber Really Taking From Your Ride? URL <https://therideshareguy.com/how-much-is-uber-really-taking-from-your-ride/>.
- Rogers B (2015) The Social Costs of Uber. University of Chicago Law Review Online 82(1), URL https://chicagounbound.uchicago.edu/uclrev_online/vol82/iss1/6.
- Rosenblat A, Stark L (2016) Algorithmic Labor and Information Asymmetries: A Case Study of Ubers Drivers. SSRN Scholarly Paper ID 2686227, Social Science Research Network, Rochester, NY, URL <https://papers.ssrn.com/abstract=2686227>.
- Singer-Vine J, O'Donovan C (2016) How Much Uber Drivers Actually Make

Per Hour. URL <https://www.buzzfeed.com/carolineodonovan/internal-uber-driver-pay-numbers>.

Appendix A: Survey Instrument

1. How long have you been a driver for? *
 - (a) 0-3 months
 - (b) 4-6 months
 - (c) 7-12 months
 - (d) 13-24 months
 - (e) 25+ months
2. Where did you first hear about driving? *
 - (a) Heard from a relative
 - (b) Craigslist Ad
 - (c) Heard from a friend
 - (d) Online Ad (Banner ad/text ad online)
 - (e) Radio/TV Ad
 - (f) From a rideshare driver
 - (g) Other:
3. Have you ever taken a ride as a passenger? * (with Uber, Lyft, or other company)
 - (a) No
 - (b) Yes
4. Why did you sign up to become a rideshare driver? * (Please select your number one reason)
 - (a) Got fired/laid off from last job
 - (b) Needed a more flexible job
 - (c) Just to try it out/pass the time
 - (d) Sign-up bonus
 - (e) Extra money
 - (f) Other:

5. Which service do you PRIMARILY drive for? * Please pick the one service you log the most hours for in an average week
- (a) Postmates—After the last question in this section, skip to question 23.
 - (b) UberEats—After the last question in this section, skip to question 23.
 - (c) DoorDash—After the last question in this section, skip to question 23.
 - (d) Lyft—After the last question in this section, skip to question 20.
 - (e) Juno—After the last question in this section, skip to question 23.
 - (f) Uber—After the last question in this section, skip to question 16.
 - (g) Other:
6. How many on-demand services in total have you signed up to drive/deliver for?
* (ie just Uber = 1) (ie Uber, Postmates and Instacart = 3)
- (a) 0
 - (b) 1
 - (c) 2
 - (d) 3
 - (e) 4+
7. Please select all the services that you are currently an active driver with *
Active means you've given at least one ride/delivery in the past month (Check all that apply)
- (a) Lyft
 - (b) Juno
 - (c) Uber
 - (d) DoorDash
 - (e) Postmates
 - (f) UberEats
 - (g) Other:
8. Which service do you PREFER to drive for? * (Please pick your favorite service to drive for)

- (a) UberEats
 - (b) Uber
 - (c) DoorDash
 - (d) Postmates
 - (e) Lyft
 - (f) Other:
9. What's the most important thing to you as a driver? * What do you care about most when seeking employment?
- (a) Career Growth
 - (b) Benefits (Health Insurance, unemployment, etc)
 - (c) Pay
 - (d) Flexibility
 - (e) Company Culture
 - (f) Other:
10. Are you a full-time driver or part-time driver? *
- (a) Full-time
 - (b) Part-time
11. How many hours per week do you work on average? * Combine all of the on-demand services that you work for
- (a) 0-10
 - (b) 11-20
 - (c) 21-30
 - (d) 31-40
 - (e) 41-50
 - (f) 51+
12. How much longer do you plan on working in the on demand economy? *
- (a) 0-3 months

- (b) 3-6 months
 - (c) 6-12 months
 - (d) 12 months+
 - (e) Forever
13. Which on-demand company do you make the most money with? *
- (a) DoorDash
 - (b) Lyft
 - (c) Uber
 - (d) Postmates
 - (e) Other:
14. How much money do you make in the average month? * Combine the income from all your on-demand activities
- (a) \$0-\$500
 - (b) \$500-\$1,000
 - (c) \$1,000-\$2,000
 - (d) \$2,000-\$3,000
 - (e) \$3,000+
 - (f) Prefer not to say
15. How much of your total monthly income comes from driving? *
- (a) Very little of your income
 - (b) Less than half of your income
 - (c) Around half of your income
 - (d) Most of your income
 - (e) All, or almost all, of your income
16. Overall, I am satisfied with my experience driving for UBER.
- (a) Strongly Disagree
 - (b) Somewhat Disagree

- (c) Neither Agree nor Disagree
 - (d) Somewhat Agree
 - (e) Strongly Agree
17. Overall, I am satisfied with my experience doing UberPOOL. (Please skip if UberPOOL is not live in your market yet)
- (a) Strongly Disagree
 - (b) Somewhat Disagree
 - (c) Neither Agree nor Disagree
 - (d) Somewhat Agree
 - (e) Strongly Agree
18. What is your current driver rating? *
19. How much do you earn per hour before expenses? * Mark only one oval.
- (a) Less than \$5 per hour
 - (b) \$5 to \$9.99 per hour
 - (c) \$10 to \$14.99 per hour
 - (d) \$15 to \$19.99 per hour
 - (e) \$20 to \$29.99 per hour
 - (f) \$30 to \$39.99 per hour
 - (g) \$40 or more per hour
 - (h) Prefer not to say

Satisfaction with your LYFT driving experience

20. Overall, I am satisfied with my experience driving for LYFT. * Mark only one oval.
- (a) Strongly Disagree
 - (b) Somewhat Disagree
 - (c) Neither Agree nor Disagree

- (d) Somewhat Agree
 - (e) Strongly Agree
21. What is your current driver rating? *
22. How much do you earn per hour before expenses? *
- (a) Less than \$5 per hour
 - (b) \$5 to \$9.99 per hour
 - (c) \$10 to \$14.99 per hour
 - (d) \$15 to \$19.99 per hour
 - (e) \$20 to \$29.99 per hour
 - (f) \$30 to \$39.99 per hour
 - (g) \$40 or more per hour
 - (h) Prefer not to say
23. What is your current insurance situation while rideshare driving? *
- (a) I am covered by my personal auto insurance policy
 - (b) Uber/Lyft is covering me
 - (c) I specifically bought a rideshare insurance policy for my rideshare work
 - (d) I don't know
 - (e) I'm not covered
 - (f) Other:
24. Do you understand how insurance coverage from your rideshare platform / company (Uber, Lyft, etc) works? * 1-5, 1 = No Knowledge, 5 = Very Knowledgeable
25. Do you understand what rideshare insurance is? * 1-5, 1 = No Knowledge, 5 = Very Knowledgeable
26. What would you think if you could buy rideshare insurance the way you earn your income on a pay per ride basis? * 1-5, 1 = No Interest, 5 = Very Interested
27. Have you ever had an accident or filed an auto claim WHILE rideshare driving?

- (a) Yes—After the last question in this section, skip to question 32.
 - (b) No—After the last question in this section, skip to question 34.
28. Is your personal insurance company aware that you are a rideshare/delivery driver? * (All answers are anonymous)
- (a) Yes
 - (b) No
 - (c) Other:
29. Have you purchased rideshare friendly insurance? * This would be a personal policy that covers you while driving for Uber/Lyft or won't drop you.
- (a) Yes
 - (b) No
 - (c) I don't know
30. Where do you get your health insurance from?
- (a) Veterans Administration
 - (b) I don't have health insurance right now
 - (c) Stride Health
 - (d) Medicaid
 - (e) Spouse/partner
 - (f) Medicare
 - (g) Another job
 - (h) State exchange (ie Covered California)
 - (i) Other:
31. How do you file your taxes every year? *
- (a) CPA
 - (b) I do them myself (using software like TurboTax)
 - (c) Go in person to a tax chain (like H&R Block)
 - (d) Other:

32. If you have gotten into an accident or filed a claim while rideshare driving, what happened? *
- (a) Collision claim: I was at-fault or shared fault
 - (b) Collision claim: other driver was at fault
 - (c) Other physical damage (fire, theft, vandalism etc.)
 - (d) A claim was made against me for causing personal injury or property damage
 - (e) Other:
33. Please elaborate on your accident/claim and the experience *
34. How many miles did you drive last month while working for a rideshare company? * (Add up all the miles you worked while logged on to an app)
35. How many miles did you drive while NOT working? * (e.g. other jobs or vacation)
36. What price (\$/gallon) do you currently pay for gas? * (Please list the average price you pay)
37. In six months, do you expect gas prices to be higher, lower, or the same as you pay today? *
- (a) Higher
 - (b) Lower
 - (c) About the same
38. Do you own, lease or rent your primary rideshare vehicle? * Mark only one oval.
- (a) I rent the car from Uber or Lyft
 - (b) I lease the car from Uber Xchange
 - (c) I lease the car
 - (d) I own the car
 - (e) Other:
39. What vehicle did you drive when you first started as a rideshare driver? * (Year/Make/Model/Engine), e.g. 2013 Toyota Camry V6

40. Have you purchased or leased another vehicle AFTER starting as a rideshare driver? If so, what? If you have purchased multiple cars, please describe the most recent purchase.
41. Approximately what date did you purchase your most recent vehicle? Example: December 15, 2012
42. If you were to purchase another car tomorrow for rideshare driving, what would it be? * (Year/Make/Model/Engine), e.g. 2016 Honda Accord Hybrid
43. How likely are you to consider an ELECTRIC vehicle for your next vehicle? * 1-5, 1 = Definitely Not, 5 = Definitely Would
44. How likely are you to consider a HYBRID vehicle for your next vehicle? * 1-5, 1 = Definitely Not, 5 = Definitely Would
45. How likely are you to consider a DIESEL vehicle for your next vehicle? * 1-5, 1 = Definitely Not, 5 = Definitely Would
46. Are you a male or female?
- (a) Male
 - (b) Female
47. What's your age? *
- (a) 18-30
 - (b) 31-40
 - (c) 41-50
 - (d) 51-60
 - (e) 61+
48. Ethnicity origin (or Race): Please specify your ethnicity.
- (a) Asian / Pacific Islander
 - (b) White
 - (c) Black or African American
 - (d) Native American or American Indian
 - (e) Hispanic or Latino

- (f) Other:
49. What market do you primarily drive in? * Please list the city AND State (ie. Los Angeles, CA)
50. Education: What is the highest degree or level of school you have completed?
* If currently enrolled, highest degree received.
- (a) Some high school, no diploma
 - (b) High school graduate, diploma or the equivalent (for example: GED)
 - (c) Some college credit, no degree
 - (d) Trade/technical/vocational training
 - (e) Associate degree
 - (f) Bachelor's degree
 - (g) Master's degree
 - (h) Professional degree
 - (i) Doctorate degree
51. What type of content do you like to consume the most? *
- (a) Articles
 - (b) Podcasts
 - (c) Videos
 - (d) E-books
 - (e) Online Courses
 - (f) Other:
52. Which topics do you like to see the most? *
- (a) Weekly news roundups
 - (b) Driving strategies to make more money
 - (c) Resources for drivers (ie apps, tools, items to carry in your car)
 - (d) Explanation of policies (ie airport pickups, insurance, taxes)
 - (e) Driving advice and experience

53. If you're an e-mail subscriber, how do you feel about the number of e-mails we send to you?
- (a) Way too many
 - (b) A few too many
 - (c) Just the right amount
 - (d) Could use a few more
 - (e) I want way more
54. If you have a rideshare related question, where's the first place you'll go for help? *
- (a) The Rideshare Hotline
 - (b) Straight to Uber or Lyft
 - (c) Driver Forum
 - (d) Facebook
 - (e) The Rideshare Guy
 - (f) Google
 - (g) Another rideshare blog
 - (h) Other:
55. What do you like most about this site?
56. What do you like least about this site?
57. If you could pick one thing that you would change about this site, what would it be?
58. Any other comments/feedback for me?
59. Want to enter to win a prize? Just leave your e-mail below! Your e-mail will only be used for the random drawing.

9 Appendix B: NHTSA Mileage 2015

Mileage accumulation rates assumed for vehicles in private use before entering ride-hailing service.

Age (years)	Miles
1	16502
2	14828
3	14552
4	14279
5	13783
6	13039
7	12103
8	11034
9	9891
10	8730
11	7612
12	6804
13	5931
14	5180
15	4979



MIT Center for Energy and Environmental Policy Research

Since 1977, the Center for Energy and Environmental Policy Research (CEEPR) has been a focal point for research on energy and environmental policy at MIT. CEEPR promotes rigorous, objective research for improved decision making in government and the private sector, and secures the relevance of its work through close cooperation with industry partners from around the globe. Drawing on the unparalleled resources available at MIT, affiliated faculty and research staff as well as international research associates contribute to the empirical study of a wide range of policy issues related to energy supply, energy demand, and the environment.

An important dissemination channel for these research efforts is the MIT CEEPR Working Paper series. CEEPR releases Working Papers written by researchers from MIT and other academic institutions in order to enable timely consideration and reaction to energy and environmental policy research, but does not conduct a selection process or peer review prior to posting. CEEPR's posting of a Working Paper, therefore, does not constitute an endorsement of the accuracy or merit of the Working Paper. If you have questions about a particular Working Paper, please contact the authors or their home institutions.

**MIT Center for Energy and
Environmental Policy Research**
77 Massachusetts Avenue, E19-411
Cambridge, MA 02139
USA

Website: ceepr.mit.edu

MIT CEEPR Working Paper Series is published by
the MIT Center for Energy and Environmental
Policy Research from submissions by affiliated
researchers.

Copyright © 2018
Massachusetts Institute of Technology

For inquiries and/or for permission to reproduce
material in this working paper, please contact:

Email ceepr@mit.edu
Phone (617) 253-3551
Fax (617) 253-9845