

# **Income Inequality at Rideshare Companies**

Tasha Torchon

University of Michigan

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Thesis Committee:

Kentaro Toyama, W. K. Kellogg Professor of Community Information, School of Information,  
Chair

Gerald F. Davis, Gilbert and Ruth Whitaker Professor of Business Administration, Ross  
School of Business

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## Abstract (200)

This paper assesses the income gap between rideshare drivers and full-time Uber employees in Chicago between 2018 and 2021. In the midst of a growing platform economy, this analysis gives some sense of the fairness of gig work earnings and the extent to which one can survive on them. Using descriptive analyses based on government data and cost calculations proposed by Henao and Marshall (2019) and Mishel (2018), we determine whether the average net hourly income of rideshare drivers meets established minimums of living (i.e. the federal poverty threshold, local minimum wage, and MIT living wage). We also compare the difference in hourly earnings between rideshare drivers and Uber associates, analysts, and managers over time. Taking driver costs and employee benefits into account, we find that rideshare drivers' hourly earnings are between 25 and 44 percent of Uber employees. However, there is no clear temporal trend. Our analysis shows that drivers likely cannot thrive on rideshare earnings alone, and that the gap between gig workers and the corporate employees enforcing their pay rates is great. Implications for ridesharing as a whole and for society more generally are discussed.

## Introduction

The platform economy is characterized by software applications that facilitate an exchange of goods or services. Various sources refer to the platform economy by other names (e.g. the gig economy, the sharing economy, and the digital matching economy) to highlight specific characteristics. Although we acknowledge the important distinctions that come with these terms, we will mostly use them interchangeably. The gig economy emphasizes the patchworked nature of temporary jobs with few protections. The sharing economy underscores the peer-to-peer exchange of money for goods and services between workers and customers. The U.S. Department of Commerce (Telles, 2016) describes “digital matching firms” as having four main features:

1. They use information technology (IT systems), typically available via web-based platforms, such as mobile “apps” on Internet-enabled devices, to facilitate peer-to-peer transactions.
2. They rely on user-based rating systems for quality control, ensuring a level of trust between consumers and service providers who have not previously met.
3. They offer the workers who provide services via digital matching platforms flexibility in deciding their typical working hours.
4. To the extent that tools and assets are necessary to provide a service, digital matching firms rely on the workers using their own.

Digital matching firms share a triangular relationship with service providers and service buyers (Chan et al., 2019). The firms connect supply and demand between strangers in different locations who may not otherwise have met, verify successful transactions, and offer (if not always furnish) some protections against defaults, physical harm, or damage by either party. They then take a portion of the customer’s bill as a service fee for making the exchange easier through the app. It is for this reason that a digital matching firm, such as Uber does not brand itself as a ride and delivery business but as “a technology platform” (Wu, 2020) or “tech

company that connects the physical and digital worlds to help make movement happen at the tap of a button” (Uber Technologies Inc., 2022a). According to Hoyles (2021), a traditional business sells self-made products or services and increases profit by reducing supply chain inefficiencies, such as poor quality control or transportation issues. A platform company, on the other hand, creates networks of users and resources that can be accessed on demand, and it profits from network effects (Wu, 2020). The more people use an app, the greater its value. A platform company owns the means of connection, not production (Hoyles, 2021).

Tracking participation in the platform economy, various researchers have found an increase in gig workers over time. Between 2012 and 2018, for instance, there was a steady yearly growth of 0.3 percent Chase account holders who became gig workers (Farrell et al., 2019). In 2019, the growth peaked at 2.5 percent monthly (Greig & Sullivan, 2021). With this growth in mind, some have found discrepancies in how workers benefit from the gig economy. Walsh (2020), for instance, identifies a digital divide that separates people in the platform economy into three classes – gig workers who are subject to the surveillance of software algorithms without much knowledge of how they work or ability to rise through the ranks, privileged professionals who design and train the algorithms, and a small elite that owns the algorithmic platforms, which manage gig work. As the gig economy continues to grow, he foresees that inequality will be exacerbated among these three classes of workers.

Through descriptive analyses, this paper explores how well the platform economy has supported gig workers financially and compares income inequality between privileged full-time workers and gig workers at rideshare companies, particularly between 2018 and 2021. We focus on full-time corporate workers at Uber and drivers at Uber, Lyft, and Via in Chicago.

### **Background**

Some consider the triangular relationship between digital matching firms, service providers, and service buyers positive because it increases market efficiency and has fewer barriers to entry than traditional employment. Below, we expand on the positives and negatives

of the platform economy to highlight how the idea of worker freedom is complicated by algorithmic control and companies' attempts to circumvent responsibility for worker protection.

### ***Positives***

Platform companies are successful because they make it easier for transactions to occur. They consolidate supply and demand in one place (Wu, 2020) and allow for direct communication between providers and customers (Edelman & Geradin, 2015). Whereas a home buyer and seller usually communicate through a broker, Airbnb makes it easy for guests and hosts to message each other before, during, and after a stay, allowing both to have the most up to date information about unusual requirements, time of arrival, etc. Companies in the platform economy also improve resource allocation (Edelman & Geradin 2015; Wu 2020). Turo (a peer-to-peer car sharing app) has put more cars to use when they would have otherwise sat parked in a garage or on the street, for example. With its UberPool option, Uber leverages its software to allow multiple strangers traveling in the same direction to share a ride. In some cases, these efficiencies can create negative externalities. When compared to private vehicles, (Ward et al., 2021) find that travel by the standard UberX option increases fuel consumption by about 20 percent because of deadheading (the action of driving around to find a request) and increases congestion, crashes, and noise by about 60 percent. These negatives increase threefold when an UberX is replacing public transport but decrease when rides are pooled or when the Uber vehicle is electric.

Platform companies also allow most content producers, creators, and service providers to market themselves and sell their work with fewer barriers to entry. They do not need to convince a traditional gatekeeper of their merit (Wu, 2020). Instead, algorithms and crowdsourced reviews help assess value and hold both parties accountable for behavior. Edelman and Geradin (2015) point out that in the platform economy, the functionalities of specialized equipment (e.g. credit card readers) do not require extra costs because they have been incorporated into widely used smartphones. Less gatekeeping and equipment have

allowed additional talent and products to reach more people while increasing incomes and decreasing upfront costs. Moreover, Edelman and Geradin (2015) point out that with real-time information, platforms more closely mirror the laws of supply and demand. Periods of high demand are reflected in more expensive fares, such as Uber surge pricing which motivates drivers to provide rides and riders to postpone or find alternative modes of travel for less urgent trips.

### ***Negatives***

Critics of the platform economy cite the conditions of workers who have less job security than those in the traditional labor market and are subject to algorithmic control and manipulation. Weil (2017) contends that the trend of classifying gig workers as independent contractors is deceptive. In the true sense of the term, “an independent contractor’s decisions and actions have significant impacts on opportunities for profits or losses” (Weil, 2017). Workers in the platform economy, however, are employees because the digital matching company that hired them set standards for what they are allowed to do, how they can do their work (e.g. by limiting what vehicles Uber drivers can use (Schor et al., 2020), and the rate of pay that they receive. The individual platform workers, however, do not have power over the outcomes of the firm. Though apps create some distance between workers and employers, they are still a managerial tool, a means of tracking workers and dispensing rules, pay, and penalties.

Davis (2016) posits that the platform economy is a harbinger of widespread Uberization where corporations are replaced by webpages and regular work is broken into on-demand tasks. “Quasi-associates” within a commutable distance will have to log onto apps daily to compete against others for these one-off gigs. This system of insecure income will be marketed as an opportunity for workers to be independent, set their own hours, and profit as micro-entrepreneurs. However, it would disguise companies’ real intent of eschewing responsibility for worker benefits, labor protections, and fair wages. Davis (2016) concludes that the remaining traditional employees in an Uberized economy would be those whose abilities

were specific to the needs of their company, not necessarily those who were highly skilled.

Rogers (2015-2016) believes that the majority gig class would have to take on the emotional labor of constantly appearing pleasant and ensuring customer satisfaction in order to maintain rating levels that would keep them employed.

While labor laws may require updates to match current times, the rise of the platform economy did not obviate the need for worker protections. Boone (2015) explains, for instance, that labor laws expanded the reach of democracy into the workplace. Standards for safer working conditions and workers' compensation decreased fatalities and gave employees leverage to ask for greater safety. Protections for union members gave workers more bargaining power. In 2021 (Bureau of Labor Statistics [BLS], 2022b), union members consistently earned more than nonunion members independent of other characteristics (e.g. age, race, or gender). These laws also expanded the workforce by allowing for greater participation of women and racial minorities.

There are various ways that platform companies circumvent the law to make a profit. The immediate effects are that these companies underpay some of their workers while attracting customers with costs that are lower than what traditional companies offer. Customers are also put at risk when protections are not properly implemented (e.g. drivers are underinsured, Edelman & Geraldin, 2015). Nevertheless, there are also negative long term implications. Weil (2017), for instance, explains that those without an employee status (e.g. contractors) do not contribute to benefits such as unemployment insurance or workers compensation, thereby decreasing coverage for others. In many cases, they also do not need to pay payroll taxes which decrease federal and state tax revenue. With less tax revenue, the government has fewer means to fully fund Medicare and other social insurance initiatives from which all citizens benefit. A discussion by Edelman & Geraldin (2015) illustrates that when platform companies evade regulations in creative ways, it incentivizes other companies and individuals to do the

same. Thus, it encourages a system where the government becomes increasingly less effective and workers and customers continue to lose protections to corporate greed.

### **Related Work**

Unsurprisingly, the literature discussed below indicates that most drivers cannot make a viable living on platform income alone. The insight gleaned is the reason for these low earnings - largely, economic class. In this section, we review a range of possible wages, education and experience, demographic information, and the extent to which rideshare drivers depend on app income. Through this lens, we show that driver earnings seem more strongly linked with the value that rideshare companies place in the role than with traditional indicators of income, such as skills and schooling.

Before continuing, we would like to note that this section references papers (Hall & Krueger, 2018; Cook et al. 2020; Chen et al., 2019) by Uber's Chief Economist Jonathan Hall or others who had some affiliation with Uber while completing research related to the company. Although we expect that these researchers have followed high standards of analysis, we acknowledge that their positive conclusions may have been at least partly informed by their affiliation to the rideshare company.

### ***Income of Gig Workers***

In terms of the value that drivers derive from Uber, researchers disagree. Hall and Krueger (2018) assert that Uber likely provides equal or higher pay, greater ease of entry, and more schedule flexibility than taxi companies do. It is not evident that Uber wages are competitive, however. After calculating average hourly net wages from the cost and earning scenarios provided by Hall and Krueger (2018), we found that Uber earnings range from \$9.77 to \$20.93 and average hourly taxi earnings from \$12.54 to \$15.74 (Hall and Krueger, 2018, pp. 725, 727). Mishel (2018) and Henao and Marshall (2019), on the other hand, calculated Uber net pre-tax earnings that are on the lower end of the Hall and Krueger range or less.



Other research corroborates the idea that gig workers and rideshare drivers, in particular, receive low income. Using a survey of gig workers across the United States in 2020, Zipperer et al. (2022) found that their working conditions and pay tended to be worse than service-sector workers. For instance, 14 percent of gig workers made less than the federal minimum wage (\$7.25 per hour) and 29 percent made less than the state minimum wage compared to one percent of W-2 service-sector workers. With regards to other indicators of poverty, about 19 percent of gig workers went hungry due to lack of money, 30 percent took part in the Supplemental Nutrition Assistance Program (SNAP), and 31 percent could not pay their utility bills in full during the month before the survey.

Among gig workers in the United States, drivers and food deliverers are more likely to struggle financially than other groups, such as renters on Airbnb or Turo, sellers on Etsy, or taskers on TaskRabbit (Greig & Sullivan, 2021; Schor et al., 2020). Drivers and food deliverers comprise the largest group because their barriers to entry for platform work tend to be low. Unfortunately, their median income including sources other than apps is the least among platform workers (\$48,800 compared to taskers with \$58,900 annual income and non-gig workers with \$54,800, Greig and Sullivan, 2021); they are most likely to receive unemployment insurance during the pandemic (with a peak of almost 19 percent versus 13 to 15 percent for other groups); and they (Uber and Lyft drivers, especially) are the most likely to depend on apps for basic expenses (Schor et al. 2020). In short, the baseline wealth of rideshare drivers tends to be lower than other gig workers, and they often still struggle even when apps are used to provide supplemental earnings.

### ***Education and Experience***

Some factors that traditionally affect pay include education and experience. In terms of education, Schor et al. (2020) find that 75 percent of the ride hailing drivers they surveyed in Boston between 2013 and 2016 had some university education and over 44 percent had at least an undergraduate degree. Hall and Krueger's (2018) analysis also showed high levels of

education among Uber drivers in the US, even greater than the general workforce. Yet, despite so much schooling, the previous section indicated that rideshare drivers tend to be economically disadvantaged. A regression by Hall and Krueger (2018) clarifies this unexpected result. They conclude that there is no significant relationship between formal education and earnings for Uber drivers.

Experience seems to play a more important but limited role. The same regression by Hall and Krueger (2018) indicates that a unit increase in experience approximated as time spent in the workforce (age minus years in school minus six) increases earnings by one percent. Moreover, an additional month spent using the platform increases earnings by five and a half percent. This effect decreases after 14 months. Similarly, Cook et al. (2020) show that a driver who has made over 2,500 trips earns 7.2 percent more than one who has only made up to 100. As a person learns how to better gamify the app, they may be able to optimize their working time around high-value rides, for instance. In comparison, the average pay increases for civilian workers only increased by 5.3 percent between June 2021 and 2022 (Bureau of Labor Statistics, 2022a). Although experience-based pay changes offer some hope for drivers to increase their wages by a greater percentage than what is usually provided in a traditional job, these returns are limited to the short term. After 14 months or 2,500 trips, the driver may not see any experience-related pay raises. Therefore, traditional indicators of income (education and experience) do not scale with driver earnings as they do for traditional jobs. Much, if any, return is limited to the short term.

### ***Driver Demographics***

Next, we look at driver demographics to get a sense of whether discrimination could be contributing to the low earnings. When comparing demographic data between Uber driver-partners and taxi drivers, Hall and Krueger (2018) have found that a greater portion of Uber drivers are white (40.3% vs. 26.2%), college educated (36.9% vs. 14.9%), post college educated (10.8 vs. 3.9), and under 40 (46.2% vs. 28.4%). For these factors, the researchers

conclude that Uber driver-partners are more similar to the general workforce than taxi drivers and chauffeurs are. The general workforce at that time comprised 44.3% people under 40, 25.1% college graduates, and 16.0% postgraduates.

Nevertheless, similarity to the general workforce does not necessarily translate to employment diversity or equity. The statistics from Hall and Krueger (2018) indicate that taxi and chauffeur companies are actually more inclusive of racial minorities, older workers, and less educated adults (those with a high school diploma or less) than Uber or the general workforce. Yet, despite the similarity in skill and youth to the general workforce, Mishel (2018) explains that the W-2 equivalent hourly wage for Uber falls below the mandated minimum in 13 of 20 Uber markets. For the most part, Uber drivers could be making better money elsewhere. This is one indication that the low earnings of rideshare drivers may not be linked to age or racial discrimination.

Uber does tend to hire more women than taxi companies (Hall & Krueger, 2018). However, this number (13.8%) is still far less than the percentage of women in the general workforce (47.4%). In terms of gender inequality, Cook et al. (2020) show that there was a 7% gender earnings gap among Uber drivers, which is about 10% less than the wage gap in the US overall (Barroso & Brown, 2021). According to Cook et al. (2020), the difference in pay does not seem to be an effect of customer or algorithmic discrimination but in worker behavior. They find that women tend to drive slower than men and work close to home because of greater safety concerns and household responsibilities (e.g. chores and family care). Unfortunately, these specific variables (speed and distance) have a direct relationship to higher earnings on the platform. Fares are based on distance and time. Therefore, we see that the algorithm is agnostic to the demographic makeup of their drivers. The earnings gaps captured in the literature were more attributable to driver behavior than direct discrimination.

### ***App Dependence***

The literature indicates that flexibility is the most desirable benefit of gig work. However, it is not universally enjoyed by platform earners. We discuss the value of flexibility and how it is a sign of financial privilege in the platform economy. This gives further evidence of the link between class and earnings for gig workers.

Flexibility is considered one of the main benefits of gig work. However, the literature indicates that it is not universally enjoyed. Chen et al. (2019) determine that the ability to choose when to work in real time is worth an extra \$150 per week to an active UberX driver. It also appears that Uber drivers use this flexibility widely and tend to have a light schedule working on the app. According to Hall and Krueger (2018), in any given week, about a third of Uber drivers work 25% more or less than they did the previous week. Moreover, over half of Uber drivers have a light schedule, working only up to 15 hours a week. Uber's free app incentivizes drivers to work based on rider demand. Therefore, Uber drivers can optimize their schedules based on their own needs or peak earning hours in a way that traditional workers or taxi drivers cannot.

Nevertheless, this benefit of flexible work is a double-edged sword in that it is also tied to uncertain wages and potentially low compensation (Chen et al., 2019). Farrell and Greig (2016) suggest that the low earnings, lack of benefits, and absence of career progression result in high turnover and underscore class differences between platform laborers. Farrell and Greig (2016) find that those who do not have other forms of employment are almost twice as likely to become platform workers as employed adults. These non-employed adults are also about 20% more likely to continue platform work after a year even though most Uber drivers quit the app after six months. Those without alternative work arrangements tend to remain "stuck" with platform work.

Despite the popular notion of gig work as a temporary or "side" job, a sizable portion of platform laborers seem to rely on this type of work for their primary income and may not feel they have many alternatives. Schor et al. (2020) explain that platforms are free-riders because the positive experiences of their workers are tied to the security they receive from traditional employers. "When platform income is supplemental (i.e., the provider has multiple sources of

income), satisfaction is higher, autonomy is greater, hourly wages are generally higher and conditions are better. By contrast, those who are dependent on the platform to fund basic living expenses express more dissatisfaction and experience more precarity,” (Schor et al., 2020, p. 835). Those who use the platform for supplemental income are more discerning about their customers and hours and less concerned about ratings than the dependent group. They are more likely to avoid low-earning tasks or unsafe exchanges. Drivers who used Uber as a primary income source, however, found that they benefited less from schedule flexibility and had difficulty finding time to spend with friends and family. Since their work revolved around rider demand, they tended to work when others were free (e.g. on weekends or after 5PM on weekdays). They were also more sensitive to Uber policies. For instance, budgeting could get sidetracked by decreases to Uber fare rates. Therefore, we see that there are different classes of gig workers. The ability to set one’s hours - the main draw of the platform economy - is actually an indicator of their financial wellbeing. Given that rideshare drivers tend to have the most economic hardship among this group, they are particularly vulnerable to any unfair earnings that Uber, Lyft, or Via may provide.

This paper is distinct from the aforementioned analyses because it shines a light on income inequality between different classes of workers at the same rideshare companies. Other analyses have compared drivers to other comparable workers (e.g. taxi drivers and gig workers). Here, however, we will consider how economic class distinctions are maintained within a single entity.

### **Data and Methodology**

Our descriptive analysis measures the difference in earnings between two classes of ridesharing company workers – drivers and full-time employees – and how they have changed between 2017 and 2022 in Chicago. Due to differences in reporting, the earnings for some roles were unavailable for the full timeframe. For instance, wages for drivers span November 2018 to April 2022 while salaries for analysts only span 2019 to 2021. The data can be grouped into

three main categories: public disclosure data from the government, salary estimates from Glassdoor, and statistics gleaned from literature reviews. The public disclosure data includes anonymized trip and driver information from transportation network providers (TNPs) Uber, Lyft, and Via to inform travel initiatives in the city of Chicago (Levy, 2022a-b). TNPs, i.e. ridesharing companies, are required to provide data to New York City and Chicago, which publish them for public use. Though both datasets were considered, Chicago was selected in the end because each trip record contains information about fares and tips (rounded to the nearest \$0.50). New York, on the other hand, only had information on ride length and geographic locations for pickup and drop off points. For information on salaried workers, we turned to the Labor Condition Application (LCA) data from the U.S. Department of Labor [DOL], (n.d.). This data provided prevailing wages and ranges of the base rate of pay for full-time positions at Uber offices. Employers fill out an LCA to help H-1B, H-1B1, and E-3 visa holders secure work authorizations in the US. Statistics from public data (e.g. the poverty threshold from the U.S. Census Bureau, 2022) also helped frame the earnings in a larger context. As a starting point for our salary analysis and sanity check of our calculations, we extracted data from the website Glassdoor, which provided earnings estimates for Uber software engineers, analysts, and managers in cities across the United States. For comparisons of our calculations for driver wages, we turned to the literature, which provided earnings based on Uber administrative data (e.g. Mishel 2018, Cook et al. 2020) and experience as an Uber and Lyft driver (Henao & Marshall, 2019). Unlike the government websites, Glassdoor and previous research did not show earnings across time.

Mishel (2018) and Henao and Marshall (2019) have explained that an accurate representation of ridesharing driver earnings needs to account for the costs of driving, taxes, and the Uber commission. Uber drivers make 75 percent of each ride fare (excluding Uber charges). They also make expenses that a traditional employee may not often incur. Henao and Marshall (2019)'s analysis includes multiple cost scenarios, including those for both occasional drivers (those who work for a ridesharing app up to 15 hours a week) and part- to full-time

workers (those who work 16 to 49 hours a week). The scenarios assumed previous vehicle ownership and incorporated fee calculations only for the extra 11,000 to 33,000 miles of driving associated with working for rideshare companies. For a more precise comparison to traditional workers, Mishel (2018) focuses on computing a W-2 equivalent wage net of common benefits and taxes. The analysis presented here shows net wages using both approaches to give a sense of the possible range of earnings associated with driving for TNPs. Tables 1 and 2 illustrate the calculation for the 2018 average net driver earnings proposed by Henao and Marshall (2019) and Mishel (2018), respectively.

**Table 1***Calculation of Average Hourly Driver Earnings Net of Costs in 2018<sup>1</sup>*

1	Average gross fare per ride <sup>2</sup>	\$191,588,125 / 17,461,453	\$10.97
2	Fare net of commission (25%)	Row 1 x .75	\$8.23
3	Average tip per ride <sup>2</sup>	\$9392,723 / 17,461,453	\$0.54
4	Average gross earnings per ride	Row 2 + Row 3	\$8.77
5	Average gross earnings per hour	Row 4 x 1.82	\$15.96
6	Average gas cost for ~11K miles	423.075 gallons x \$2.782 / gallon <sup>3</sup>	\$1,176.99
7	Less average operating and ownership costs per hour (occasional) <sup>4</sup>	(\$2,059.60 + Row 6 ) x 0.58 <sup>5</sup> / (40 hours per week x 50 weeks)	\$0.94
8	Average gas cost for ~33K miles	1269.229 gallons x \$2.782 / gallon <sup>3</sup>	\$3,531
9	Less average operating and ownership costs per hour (full-time) <sup>7</sup>	(\$10,078.80 + Row 6 ) x 0.38 <sup>6</sup> / (40 hours per week x 50 weeks)	\$2.59
10	Average net earnings	Row 5 – Row 7 – Row 9	\$12.43

<sup>1</sup> Based on Henao and Marshall (2019)

<sup>2</sup> Levy (2022b)

<sup>3</sup> U.S. Energy Information Administration (2022)

<sup>4</sup> Occasional driver costs comprise depreciation, maintenance, and miscellaneous as defined by Henao and Marshall (2019)

<sup>5</sup> Percent of occasional workers (1-15 hours/ week), Hall and Krueger (2018)

<sup>6</sup> Percent of part- to full-time workers (16-49 hours/ week), Hall and Krueger (2018))

<sup>7</sup> Part- and full-time driver costs include finance charges, registration, and insurance costs in addition to the occasional costs defined by Henao and Marshall (2019)

**Table 2**

*W-2 Equivalent Wage Calculation for Average Driver in 2018<sup>1</sup>*

1	Average gross earnings per hour	Calculated in Table 1, Row 5	\$15.96
2	Pre-tax expenses	\$0.32/mile; 20 miles/hour	\$6.40
3	After-tax expenses (marginal tax, 25.3%)	Row 2 x (1 – 0.253)	\$4.78
4	Hourly compensation	Row 1 – Row 3	\$11.18
5	Less mandatory benefits	Row 4 x 0.0765	\$0.86
6	Net profit/discretionary compensation	Row 4 – Row 5	\$10.32
7	Less standard voluntary benefits	Row 4 x 0.141	\$1.46
8	W-2 equivalent wage	Row 6 – Row 7	\$8.74

<sup>1</sup> Based on calculations described in Mishel (2018)

The gross hourly earnings, focus on full-time-equivalent earnings, and gas prices were adapted for this analysis. Levy (2022) provides information about fares and tips for each trip. To get a sense of the hourly compensation for drivers, we multiplied the average fare by 1.82 the average number of trips per hour in Chicago (Manzo and Bruno, 2021). According to Hall and Krueger (2018), occasional drivers made up 58 percent of Uber drivers while part- to full-time drivers made up 38 percent in Chicago in 2014. In this paper, we present a weighted average of Henao and Marshall’s calculation based on Hall and Krueger’s distribution. This approach, however, omits the four percent of drivers who work over 50 hours from the pertinent net earnings calculation and whose costs were not outlined in the literature. Estimating their expenses are outside of the scope of this paper. With regards to fuel costs, the research of Henao and Marshall used data from Denver (2019). The calculation for this paper was updated for average yearly Chicago gas prices (U.S. Energy Information Administration, 2022).

## Findings



Based on our analysis of drivers' average earnings (summarized in Table 3), their gross hourly pay is between \$15.94 and \$27.07 with a range of \$11.13. The Henao and Marshall-based hourly compensation net of costs (e.g. depreciation associated with rideshare driving) is \$12.42 to \$21.77. The W-2 equivalent hourly wage is \$8.73 to \$16.53. Between 2018 and 2020, gross pay per hour increased by only \$1.38. This set an expectation of slow wage growth, especially when we take the two-cent difference between 2019 and 2020 into account. In 2021, however, we see a 56 percent bump in gross hourly earnings with a four percent decrease in 2022.

**Table 3***Average Hourly TNP Driver Earnings in Chicago 2018 - 2022*

Year	Gross Hourly Income	Net Income <sup>1</sup>	Discretionary Compensation <sup>2</sup>	W-2 Equivalent Earnings <sup>2</sup>	Federal Poverty Threshold (1 Adult Household, 0 Children) <sup>3</sup>	Chicago Living Wage (1 Adult Household, 0 Children) <sup>5</sup>	Chicago Minimum Wage <sup>6</sup>	Federal Poverty Threshold (2 Adult Household, 2 Children) <sup>3</sup>	Chicago Living Wage (2 Adult Household, 2 Children) <sup>5</sup>
2018	\$15.94	\$12.42	\$10.31	\$8.73	\$6.53		\$12.00	\$13.16	
2019	\$17.30	\$13.79	\$11.57	\$9.80	\$6.65		\$13.00	\$12.96	
2020	\$17.32	\$13.97	\$11.58	\$9.81	\$6.73		\$14.00	\$13.12	
2021	\$27.07	\$23.39	\$20.58	\$17.44	\$7.05	\$16.72	\$15.00	\$13.74	\$22.89
2022	\$25.90	\$21.77	\$19.51	\$16.53	\$7.66 <sup>4</sup>	\$18.42	\$15.20	\$14.92 <sup>4</sup>	\$25.03

<sup>1</sup> Henao and Marshall (2019)

<sup>2</sup> Mishel (2018)

<sup>3</sup> U.S. Census Bureau (2022)

<sup>4</sup> U.S. Inflation Calculator (2022)

<sup>5</sup> Glasmeier and MIT (2022)

<sup>6</sup> Department of Business Affairs and Consumer Protection (2018), Poster Compliance Center (2019), Business Affairs and Consumer Protection (2022)

A look at drivers' median pay per hour indicates that most drivers likely earn less than the averages shown in Table 3. The data contains outliers from particularly long trips, which skews the mean. According to our data, approximately 0.6% - 3% of rides each year had a fare

above \$50 with a maximum fare of \$940 to \$6,145. Focusing on the median earnings shown in Table 4, gross hourly income for rideshare drivers is \$10.23 - \$20.45; Henao and Marshall-based hourly compensation net of costs is \$6.70 - \$6.78; and W-2 equivalent hourly wages are between \$4.26 and \$12.26. Only about 30.7 to 38.7 percent of rides between 2018 and 2022 generate enough driver revenue (commission plus tip excluding extra charges) for a driver to make at least the averages shown in Table 3. Nevertheless, to remain consistent with most of the literature, our analysis focuses primarily on average (instead of median) earnings per hour.

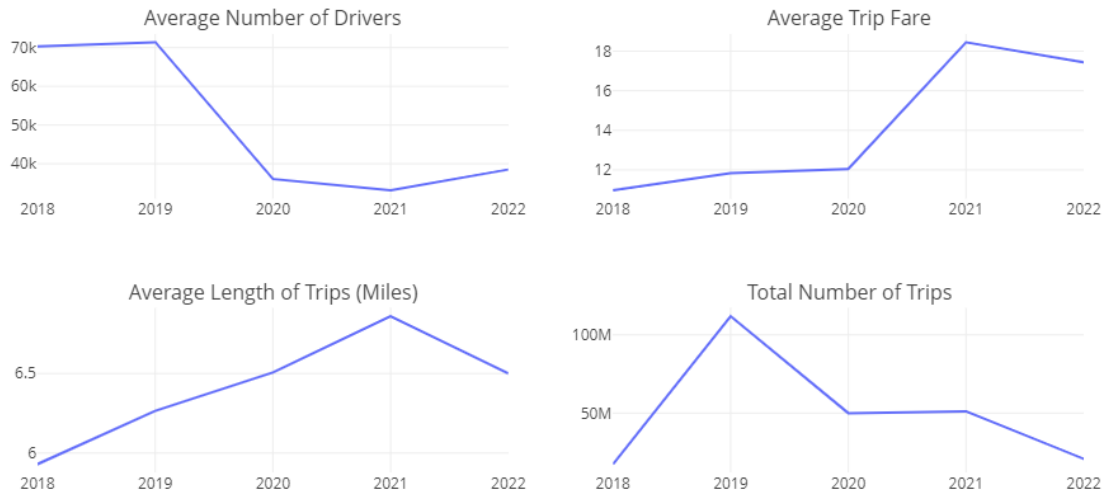
**Table 4**

*Median Hourly TNP Driver Earnings in Chicago 2018 - 2022*

Year	Gross Hourly Income	Net Income	Discretionary Compensation	W-2 Equivalent Earnings
2018	\$10.23	\$6.70	\$5.03	\$4.26
2019	\$13.64	\$10.12	\$8.18	\$6.93
2020	\$13.64	\$10.28	\$8.18	\$6.93
2021	\$20.45	\$16.78	\$14.47	\$12.26
2022	\$20.45	\$16.32	\$14.47	\$12.26

Graph 1 highlights some trends that may have contributed to higher average earnings for drivers in 2021. While the supply of drivers decreased by over 30,000, the demand for rides increased by over one million indicating more opportunities for drivers to make money. The most salient, however, is that the average total trip fare increased by almost \$6.50 between 2020 and 2021 even though the average length of a trip did not increase proportionally. Some possible reasons for this include fare changes at the corporate level that were in response to ongoing impacts of the COVID-19 pandemic.

**Graph 1**

*Yearly TNP Trends in Chicago 2018 - 2022*

With regards to corporate changes to rideshare fees, various articles and Uber itself indicate that there may be merit to this hypothesis. In 2017, Uber and Lyft charged 95 cents per mile and 20 cents per minute (Byrne, 2017). In 2022, these charges are \$2.25 and \$0.33, respectively (Uber Technologies Inc., 2022b). That is a 137 percent increase in per mile earnings and 65 percent increase in per minute earnings. According to Grabar (2022), Rakuten data suggests a 92 percent increase in Uber rides between 2018 and 2021 while Bloomberg found a 45% increase for rideshare trips between 2019 and 2022 as companies respond to higher interest rates. He also mentions a rider surcharge to help drivers with high gas prices in 2022.

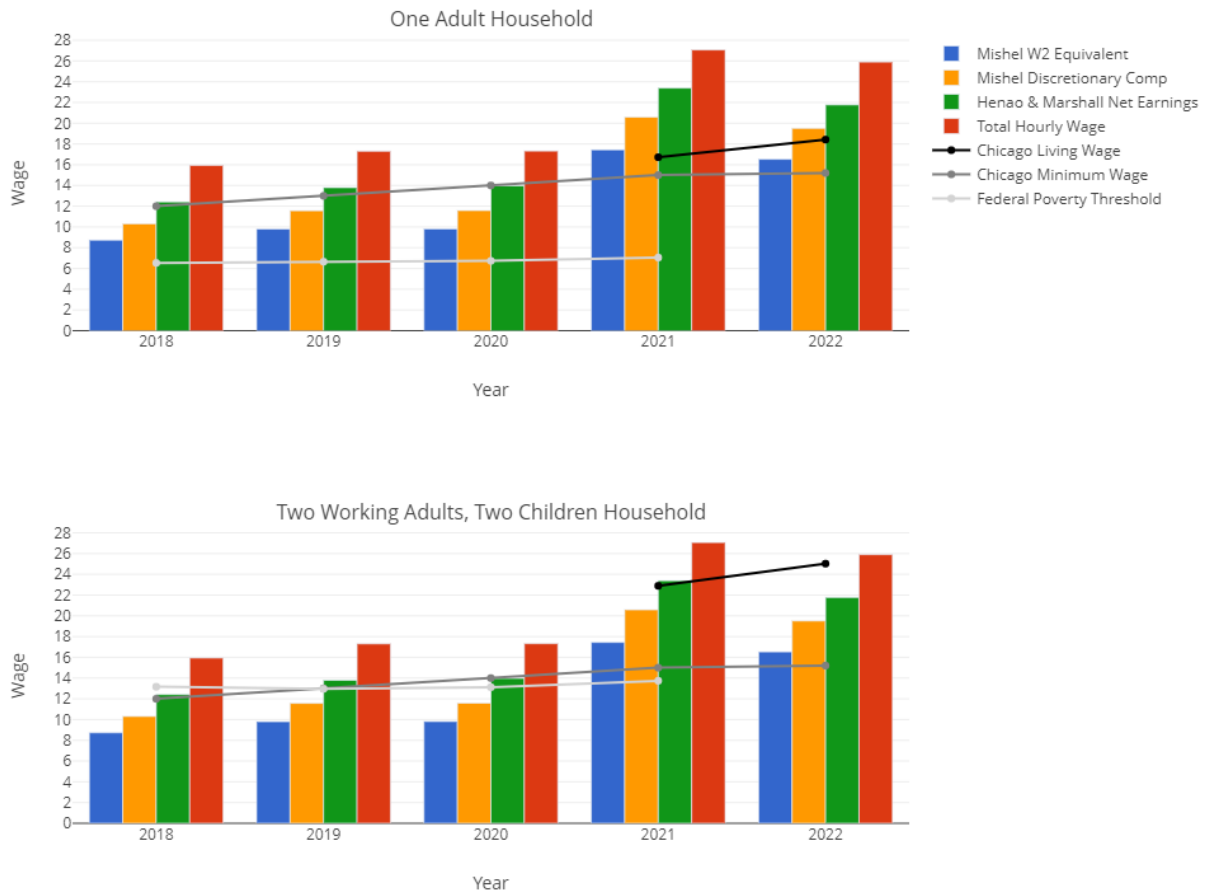
Graph 2 helps contextualize the numbers in Table 3. To determine whether the average hourly earnings could be used to provide for one's basic needs, we compared them to three benchmarks for minimum standards of living: the federal poverty threshold (U.S. Census Bureau, 2022), the Chicago minimum wage, and the Chicago living wage (Glasmeier & MIT, 2022). The federal poverty threshold is three times the cost of a basic food diet and adjusted for

different family sizes (Institute for Research on Poverty, 2022). The Chicago minimum wage is the legal minimum required for the basic amount of food, clothing, and shelter in the city. The living wage calculated by MIT is similar to the minimum wage but includes considerations for childcare, transportation, and other necessities. Historical data is not kept for the MIT living wage, which is why Graph 1 does not include living wages before 2021. Hall and Krueger (2018) indicated that about half of Uber drivers in 2014 were married with children and less than three-percent were 65 years or older. Therefore, we have included household scenarios for nonelderly single adults and nonelderly adults who are married with two children.

For the most part, we see that drivers likely cannot thrive on rideshare income alone, especially before 2021. The benchmarks included in this analysis are pre-tax measures. Not considering the W-2 equivalent wage, we see that net earnings for the single adult household (“Mishel Discretionary Comp” and “Henao & Marshall Net Earnings”) are significantly higher than the benchmarks (including the living wage of \$16.72). In the four-person household between 2018 and 2021, the hourly discretionary compensation calculated is less than the federal poverty threshold, which peaks at \$13.16 over this three-year period). The discretionary compensation never surpasses the living wage (\$22.89 in 2021 and \$25.03 in 2022). Although the fare increase of 2021 bolstered the earnings of rideshare drivers and may have improved the quality of life for single-adult households, it would not have been sufficient to cover much more than the basic needs of two-adult, two-children households.

## **Graph 2**

*Average Hourly Earnings – Chicago Rideshare Drivers 2018 - 2022*



With regards to employee salary information, the data was more limited than the driver data. We focus on pay level II workers (those whose education and experience allow them to perform moderate tasks with limited judgment) because they were the most widely represented in the Labor Condition Application data (DOL, n.d.) for Chicago. One caveat in using these prevailing wages for comparison is that they may not be representative of salaries overall. Labor Condition Applications indicate the salaries offered to new hires. Therefore, we do not get a sense of the earnings for veteran Level II hires or those who were promoted internally. Moreover, salaries and pay levels assigned to H-1B visa holders may be lower than the local median range for similar positions (Costa & Hira, 2020). Another example of the data's limits is that salaries were not available for all groups during the period of interest (2018 - 2022). At the

time of analysis, income information was not yet available for 2022. Incomes for associates and analysts in Chicago were not available for the year 2019.

A look at Uber employees' hourly income indicates fewer financial challenges than Uber drivers. In the data, the prevailing wages for corporate employees were provided in terms of yearly salaries. To all salaries, we added \$17,255 in benefits (including stock options and healthcare) provided to all Uber employees as detailed by Levels Fyi Inc. (2022). Then we divided the sum by 40 hours and 50 weeks to approximate hourly employee pay. Tables 5 and 6 display average and median earnings, respectively. To find the longest contiguous trends, we used employee categories instead of specific roles. For instance, instead of focusing on Operations & Logistics Managers, we aggregated salaries for solutions managers, engineering managers, etc. under the "manager" group. Salary variations may result from the employee roles hired within a given year. Unlike the driver earnings, we find that both average and median earnings increase yearly, for the most part. Moreover, the employees earn well above the Chicago minimum and living wages. For managers, average hourly earnings between 2018 and 2021 ranged from \$40.07 to \$46.48 while median earnings ranged from \$47.03 to \$88.41. The average associate earned \$41.07 to \$46.48 per hour; the median associate earned \$52.95 to \$62.18. The average analyst received \$42.06 to \$48.31 hourly; the mediate analyst received \$44.48 to \$53.20.

**Table 5**

*Average Uber Corporate Employee Earnings in Chicago 2018 - 2021*

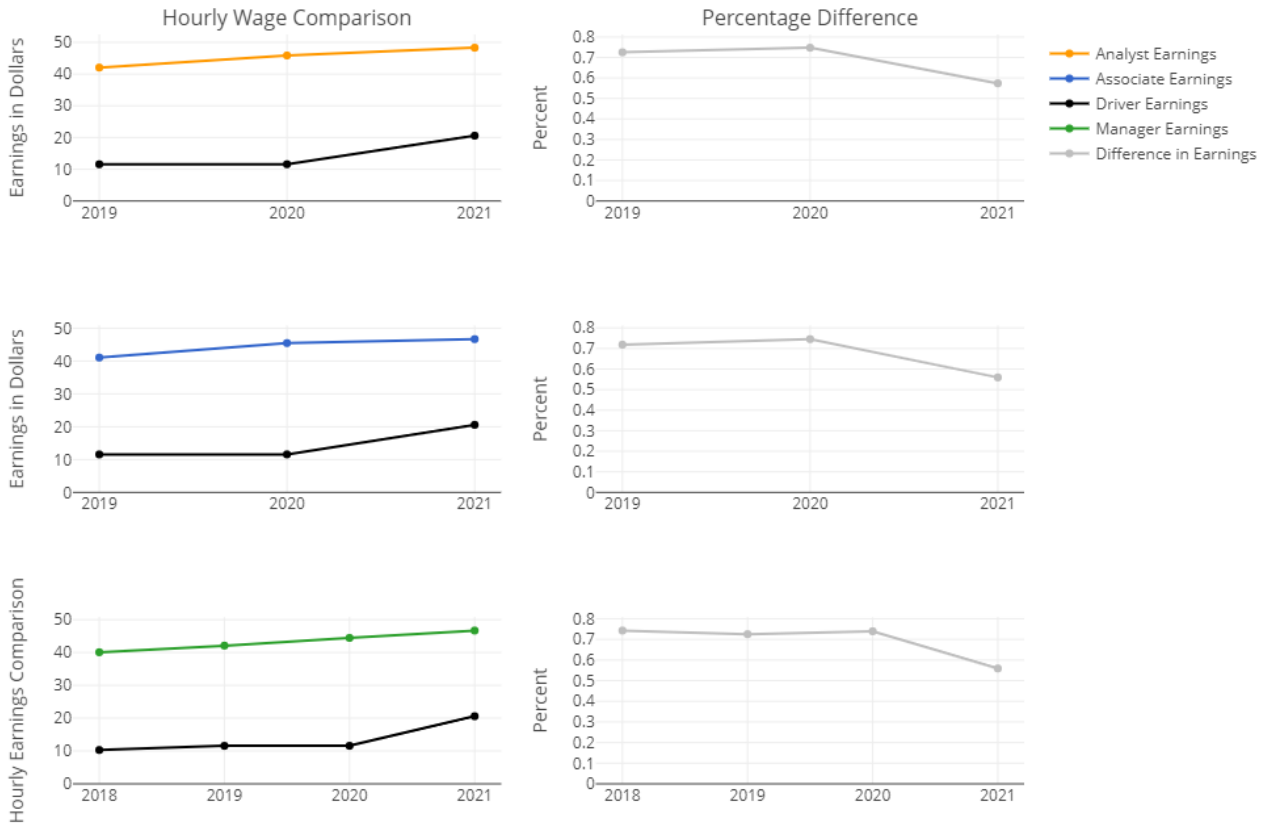
Year	Manager	Associate	Analyst
2018	\$40.07	—	—
2019	\$42.09	\$41.07	\$42.06
2020	\$44.44	\$45.48	\$45.86
2021	\$46.48	\$46.48	\$48.31

**Table 6***Median Uber Corporate Employee Earnings in Chicago 2018 - 2021*

Year	Manager	Associate	Analyst
2018	\$47.03	–	–
2019	\$47.47	\$55.86	\$44.48
2020	\$61.87	\$52.95	\$46.45
2021	\$88.41	\$62.18	\$53.20

In Graph 3, we compare the earnings between gig and full-time TNP workers to get a sense of how differences in pay changed over time. The graph highlights the large gap between the mean hourly discretionary compensation (net of voluntary benefits) for rideshare drivers and mean hourly earnings (including \$17,255 estimated yearly benefits, Levels, Fyi, Inc., 2022) for full-time corporate employees. The difference in average earnings between driver and full-time workers is 55.9 to 74.7 percent. We also note the lack of a temporal pattern in this income inequality. Even though the fare increase at rideshare companies coincided with a reduction in inequality, the average manager was still making 2.27 times more than the average driver (\$46.68 versus \$22.29) in 2021. If projected to pay for 40 hours of labor a week for 50 weeks, the manager was making \$93,362 while the driver made \$44,574. During the year of highest inequality between managers and drivers (2018), a manager could make \$80,140 while the average driver would make \$22,318. Since the driver data is skewed right and the employee data is skewed left, if we compare the median earnings, the income inequality is even more pronounced. In 2018, a full-time manager could make a median of \$85,853 a year while a full-time driver would have a net income of \$10,893 (\$47.03 versus \$5.45 per hour, respectively).

**Graph 3***Average Hourly Earnings for Rideshare Employees (incl. Benefits) and Drivers (Net Costs)**2018 – 2021*



### Discussion and Conclusion

We found that the average hourly pay of Uber drivers was between \$15.94 and \$27.07, while the median was between \$10.23 and \$20.45. The average hourly wage was within the range found in the literature for the first three years of the data but exceeded expectations starting in 2021 when there was a fare increase. This is consistent with prior research, where literature on the labor market for the platform economy estimates the average gross hourly earnings of Uber drivers in the United States to be between \$15.57 (Henao and Marshall, 2019) and \$24.48 (Cook et al. 2019).

If we consider the median, however, it seems that most Chicago drivers were actually earning lower than that range suggests from 2018 - 2020. In the literature, the hourly earnings



minus driver expenses, benefits, and taxes ranges between \$5.72 (Heno and Marshall, 2019) and \$11.77 (Mishel, 2018). The average W-2-equivalent wage in our findings was between \$8.73 and \$16.53 while the median was between \$4.26 and \$12.26. Therefore, the median earnings indicate that in 2018 most Chicago drivers were likely earning about \$1.50 less than the literature indicates and in 2021 to 2022 were earning about \$0.50 more than the range.

Though not found in previous research, our analysis of hourly pay, including benefits, for Uber corporate level II managers, associates, and analysts showed that these employees were well off. They not only consistently make more than rideshare drivers but likely exceed the living wage for the full period analyzed. In 2022, the Chicago hourly living wage for a two-adult, two-children household is \$25.03. On average, managers earn between \$40.07 and \$46.48 per hour between 2018 and 2021. Associates earn from \$41.07 to \$46.48, and analysts earn \$42.06 to \$48.31 between 2019 and 2021. The median earnings tended to be greater with managers earning \$47.03 to \$88.41, associates earning between \$55.86 and \$62.18, and analysts earning between \$44.48 and \$53.20.

Comparing rideshare driver discretionary compensation and average Uber employee salaries with benefits, we found an exorbitant gap, which indicates how little rideshare workers are valued. For some context, in 2017, college graduates across the United States made about 1.82 times more than those with a high school diploma; CEOs made 5.40 times more than top 0.1% performers (Mishel & Wolfe, 2019). Even though, as mentioned above, Uber drivers tend to be more educated than the general workforce, the gap in average earnings (2.27 to 3.96) between rideshare drivers and employees is higher than the college-high school gap. If we consider median earnings, the inequality in hourly income peaked at 9.35 in 2018. This is almost twice the ratio of CEO to top earner salaries in 2017.

Unlike in traditional employment, the process for starting a position as a rideshare driver does not include an appraisal of talent or education beyond an ability to drive a car. Independent of whether a driver holds a high school diploma or a doctorate, for instance, their commission

will be the same rate. In the Related Work section, we have already explained that the positive relationship between driver experience and earnings tapers off after about 14 months. Without the extenuating circumstances of the COVID-19 pandemic and the need of rideshare companies to entice profitable drivers back to their workforce, driver pay likely would have continued to grow slowly or remain stagnant. A median level II manager from our data could make over nine times the hourly earnings of a median rideshare driver in 2018 not because drivers are unable to learn or build skills but because rideshare corporations minimize the contribution of the gig worker to their businesses while giving greater importance to the employee.

Ultimately, ridesharing represents a situation in which one class of people – the white-collar employees of companies such as Uber – are working intently to extract revenue off the backs of another class – drivers – in order to enrich themselves and their shareholders. At one level, it is not surprising that the white-collar class is earning wages that are multiples of the driver class; that situation is common in our economy. What is shocking in the case of ridesharing, however, is the extent to which this class difference is intentionally enforced by the white-collar class. For a company like Uber, every penny earned is effectively a penny taken from a driver; to maximize revenue is to reduce driver wages. Rideshare companies are keenly aware of this, and they intentionally run through promotion cycles to lure drivers in only to drop them to a low-paid status after they join. In 2015, when a hedge fund manager asked Uber's CFO at the time why the company would risk making drivers unhappy by taking a larger cut of revenues, the CFO reportedly said, "Because we can" (Lopez 2015). Since Uber largely sees itself as an established tech unicorn (business valued over \$1 billion), not a conventional transportation company, it aims to attain astronomical profits at all costs. This includes exploiting their lowest class of worker and circumventing laws to make this possible.

The inequality illuminated in this paper has persisted for over a decade because the idea of an exploited working class is a systemic capitalist trope. In a society that upholds higher

education as a means of socioeconomic advancement, it seems incongruous that a highly educated group could be making less than minimum wage without assurance of a raise. About 87.7 percent of drivers in the US have some college education according to Hall and Krueger (2018). As corporate employees get a guaranteed pay increase each year, the driver is tricked by promises of up to six-figure earnings (Griswold, 2014). A suspension of disbelief comforts the driver during a period of financial hardship. It also frees the rider of responsibility for the driver's earnings as they enjoy cheap and convenient transportation. The employee does not take responsibility for the driver either. The plight of the driver depends on their initiative and the market. Though unjust, the system of underpaying drivers is largely accepted because different stakeholders benefit from and take comfort in it.

The rideshare industry can be seen as a microcosm of larger socio-economic phenomena in the United States. Different individualist groups maintain a level of just enough satisfaction or hardship to be complacent in the face of significant inequality. If one group becomes uncomfortable, the system responds with temporary solutions that do not fully address anyone's concerns but do enough to maintain the status quo. Over time, inequality endures or grows to benefit the privileged few.

### References

- Barroso, A., & Brown, A. (2021). Gender pay gap in U.S. held steady in 2020. Pew Research Center. <https://www.pewresearch.org/fact-tank/2021/05/25/gender-pay-gap-facts/>
- Boone, G. (2015). Labor law highlights, 1915-2015. Bureau of Labor Statistics, U.S. Department of Labor. <https://www.bls.gov/opub/mlr/2015/article/pdf/labor-law-highlights-1915-2015.pdf>
- Bureau of Labor Statistics. (2022a, July 29). Employment Cost Index – June 2022. <https://www.bls.gov/news.release/pdf/eci.pdf>
- Bureau of Labor Statistics. (2022b, January). Table 2. Median weekly earnings of full-time wage and salary workers by union affiliation and selected characteristics, 2020-2021 annual averages [Table]. Economic News Release. U.S. Department of Labor. <https://www.bls.gov/news.release/union2.t02.htm>
- Business Affairs and Consumer Protection. (2022). Minimum Wage. City of Chicago. [https://www.chicago.gov/city/en/depts/bacp/supp\\_info/minimumwageinformation.html](https://www.chicago.gov/city/en/depts/bacp/supp_info/minimumwageinformation.html)
- Byrne, J. (2017, Oct 23). Uber, Lyft still cheaper than a cab, even after Emanuel's proposed ride-share fee hike. *Chicago Tribune*. <https://www.chicagotribune.com/politics/ct-met-rahm-emanuel-cab-uber-fees-20171018-story.html>
- Chan, D., Voortman, F., & Rogers, S. (2019). The rise of the platform economy. Deloitte. <https://www2.deloitte.com/content/dam/Deloitte/nl/Documents/humancapital/deloitte-nl-hc-the-rise-of-the-platform-economy-report.pdf>
- Chen, M. K., Chevalier, J. A., Rossi, P. E., & Oehlsen, E. (2019). The Value of Flexible Work: Evidence from Uber Drivers. *Journal of Political Economy*, 127(6), 2735–2794. <https://doi.org/10.1086/702171>

- Cook, C., Diamond, R., Hall, J. V., List, J. A., & Oyer, P. (2020). The Gender Earnings Gap in the Gig Economy: Evidence from over a Million Rideshare Drivers. *The Review of Economic Studies*, 88(5), 2210–2238. <https://doi.org/10.1093/restud/rdaa081>
- Costa, D., & Hira, R. (2020). H-1B visas and prevailing wage levels: A majority of H-1B employers-including major U.S. tech firms-use the program to pay migrant workers well below market wages. Economic Policy Institute. <https://files.epi.org/pdf/186895.pdf>
- Davis, G. F. (2016). What Might Replace the Modern Corporation? Uberization and the Web Page Enterprise. *Seattle University Law Review*, 39, 501.
- Department of Business Affairs and Consumer Protection. (2018, April). Know Chicago's Minimum Wage Ordinance. 44th Ward. [https://www.44thward.org/wp-content/uploads/2018/04/Know\\_Chicagos\\_Minimum\\_Wage\\_Ordinance\\_2\\_.pdf](https://www.44thward.org/wp-content/uploads/2018/04/Know_Chicagos_Minimum_Wage_Ordinance_2_.pdf)
- Edelman, B. G., & Geradin, D. (2015). Efficiencies and Regulatory Shortcuts: How Should We Regulate Companies like Airbnb and Uber? *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2658603>
- Farrell, D., & Greig, F. (2016). The Online Platform Economy: Has Growth Peaked?. JPMorgan Chase & Co. Institute. <https://www.jpmorganchase.com/content/dam/jpmc/jpmorgan-chase-and-co/institute/pdf/jpmc-institute-online-platform-econ-brief.pdf>
- Farrell, D., Greig, F., & Hamoudi, A. (2019). The Evolution of the Online Platform Economy: Evidence from Five Years of Banking Data. *AEA Papers and Proceedings*, 109, 362–366. <https://doi.org/10.1257/pandp.20191040>
- Glasmeier, A. K., & MIT. (2022). Living Wage Calculation for Chicago-Naperville-Elgin, IL. <https://livingwage.mit.edu/metros/16980>
- Grabar, H. (2022, May 18). The Decade of Cheap Rides Is Over. *Slate*. <https://slate.com/business/2022/05/uber-subsidy-lyft-cheap-rides.html>

Greig, F., & Sullivan, D. M. (2021). The Online Platform Economy through the Pandemic.

<https://www.jpmorganchase.com/institute/research/labor-markets/online-platform-economy-through-the-pandemic>

Griswold, A. (2014, Oct 27). In search of Uber's Unicorn: The ride-sharing service says its median driver makes close to six figures. But the math just doesn't add up. Slate.

<https://slate.com/business/2014/10/uber-driver-salary-the-ride-sharing-company-says-its-drivers-make-great-money-but-its-math-just-doesnt-add-up.html>

Hall, J. V., & Krueger, A. B. (2018). An Analysis of the Labor Market for Uber's Driver-Partners in the United States. *ILR Review*, 71(3), 705–732.

<https://doi.org/10.1177/0019793917717222>

Henao, A., & Marshall, W. E. (2019). An analysis of the individual economics of ride-hailing drivers. *Transportation Research Part A: Policy and Practice*, 130, 440–451.

<https://doi.org/10.1016/j.tra.2019.09.056>

Hoyles, J. (2021). Navigating The Platform Economy. *Forbes*. Retrieved July 5, 2022, from

<https://www.forbes.com/sites/forbestechcouncil/2021/05/26/navigating-the-platform-economy/?sh=4826f6987af1>

Institute for Research on Poverty. (2022). How is poverty measured?. University of

Wisconsin-Madison. <https://www.irp.wisc.edu/resources/how-is-poverty-measured/#:~:text=in%20your%20browser.,Official%20Poverty%20Measure,and%20adjusted%20for%20family%20size>.

Levels Fyi, Inc. (2022). Benefits at Uber. <https://www.levels.fyi/companies/uber/benefits>

Levy, J. (2022a). Transportation Network Providers – Drivers. [Data set]. City of Chicago.

<https://data.cityofchicago.org/Transportation/Transportation-Network-Providers-Drivers/j6wf-834c>

- Levy, J. (2022b). Transportation Network Providers – Trips. [Data set]. City of Chicago.  
<https://data.cityofchicago.org/Transportation/Transportation-Network-Providers-Trips/m6dm-c72p>
- Lopez, L. (2015, May 18). Billionaire hedge-fund manager says Uber told him it might cut driver pay 'because we can'. *Business Insider*.  
<https://www.businessinsider.com/uber-cfo-because-we-can-2015-5>
- Manzo, F., IV., & Bruno, R. (2021, January 19). On-demand Workers, Sub-Minimum Wages: Evidence from Transportation Network Provider Trips in the City of Chicago. Illinois Economic Policy Institute.  
<https://illinoisepi.files.wordpress.com/2021/01/ilepi-pmcr-on-demand-workers-sub-minimum-wages-final.pdf>
- Mishel, L. (2018). Uber and the labor market: Uber drivers' compensation, wages, and the scale of Uber and the gig economy. Economic Policy Institute.  
<https://files.epi.org/pdf/145552.pdf>
- Mishel, L., & Wolfe, J. (2019). CEO compensation has grown 940% since 1978: Typical worker compensation has risen only 12% during that time. Economic Policy Institute.  
<https://www.epi.org/publication/ceo-compensation-2018/>
- Poster Compliance Center. (2019). 2020-2021 Minimum Wage Increases for City of Chicago, IL. Poster Compliance Center.  
<https://www.postercompliance.com/blog/chicago-illinois-minimum-wage/#:~:text=The%20minimum%20wage%20for%20large,increase%20to%20%2413.50%20per%20hour>
- Rogers, B. (2015-2016). The Social Costs of Uber. *University of Chicago Law Review Dialogue*, 82, 85-102.
- Schor, J. B., Attwood-Charles, W., Cansoy, M., Ladegaard, I., & Wengronowitz, R. (2020). Dependence and precarity in the platform economy. *Theory and Society*, 49(5–6), 833–861. <https://doi.org/10.1007/s11186-020-09408-y>

- Telles, R., Jr. (2016). Digital matching firms: A new definition in the "sharing economy" space. Office of the Chief Economist, U.S. Department of Commerce.  
<https://intuittaxandfinancialcenter.com/wp-content/uploads/2017/02/digital-matching-firms-new-definition-sharing-economy-space.pdf>
- U.S. Census Bureau. (2022). Poverty Thresholds. Retrieved July 2, 2022, from  
<https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html>
- U.S. Department of Labor. (n.d.). Performance Data. Retrieved February 1, 2022, from  
<https://www.dol.gov/agencies/eta/foreign-labor/performance>
- U.S. Energy Information Administration. (2022). Chicago Regular All Formulations Retail Gasoline Prices (Dollars per Gallon). [Data set]. U.S. Department of Energy.  
[https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=emm\\_epmr\\_pte\\_yord\\_dpg&f=a](https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=emm_epmr_pte_yord_dpg&f=a)
- U.S. Inflation Calculator. (2022). Annual Inflation Rates by Month and Year [Table]. U.S. Inflation Calculator. <https://www.usinflationcalculator.com/inflation/current-inflation-rates/>
- Uber Technologies Inc. (2022a). About Us. Uber. <https://www.uber.com/us/en/about/>
- Uber Technologies Inc. (2022b). Uber Estimate – Get a Price Estimate in Your City. Uber.  
<https://www.uber.com/global/en/price-estimate/>
- Walsh, M. (2020, October 22). Algorithms Are Making Economic Inequality Worse. Harvard Business Review. <https://hbr.org/2020/10/algorithms-are-makingeconomic->
- Ward, J. W., Michalek, J. J., & Samaras, C. (2021). Air Pollution, Greenhouse Gas, and Traffic Externality Benefits and Costs of Shifting Private Vehicle Travel to Ridesourcing Services. *Environmental Science & Technology*, 55(19), 13174–13185.  
<https://doi.org/10.1021/acs.est.1c01641>
- Weil, D. (2017, July 5). Lots of Employees Get Misclassified as Contractors. Here's Why It Matters. Harvard Business Review.



<https://hbr.org/2017/07/lots-of-employees-get-misclassified-as-contractors-heres-why-it-matters>

Wu, K. (2020) *The Platform Economy*. Sparkline Capital.

<https://www.sparklinecapital.com/post/the-platform-economy>

Zipperer, B., McNicholas, C., Polydock, M., Schneider, D., & Harknett, K. (2022). National survey of gig workers paints a picture of poor working conditions, low pay. Economic Policy Institute. <https://files.epi.org/uploads/250647.pdf>