An Analysis of the Labor Market for Uber's Driver-Partners in the United States

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Abstract

This paper provides the first comprehensive analysis of Uber's driver-partners, based on both survey data and anonymized, aggregated administrative data. Uber has grown at an exponential rate over the last few years, and drivers who partner with Uber appear to be attracted to the platform in large part because of the flexibility it offers, the level of compensation, and the fact that earnings per hour do not vary much with hours worked, which facilitates part-time and variable hours. Uber's driver-partners are more similar in terms of their age and education to the general workforce than to taxi drivers and chauffeurs. Uber may serve as a bridge for many seeking other employment opportunities, and it may attract well-qualified individuals because, with Uber's star rating system, driver-partners' reputations are explicitly shared with potential customers. Most of Uber's driver-partners had full- or part-time employment prior to joining Uber, and many continued in those positions after starting to drive with the Uber platform, which makes the flexibility to set their own hours all the more valuable. Uber's driver-partners also often cited the desire to smooth fluctuations in their income as a reason for partnering with Uber.

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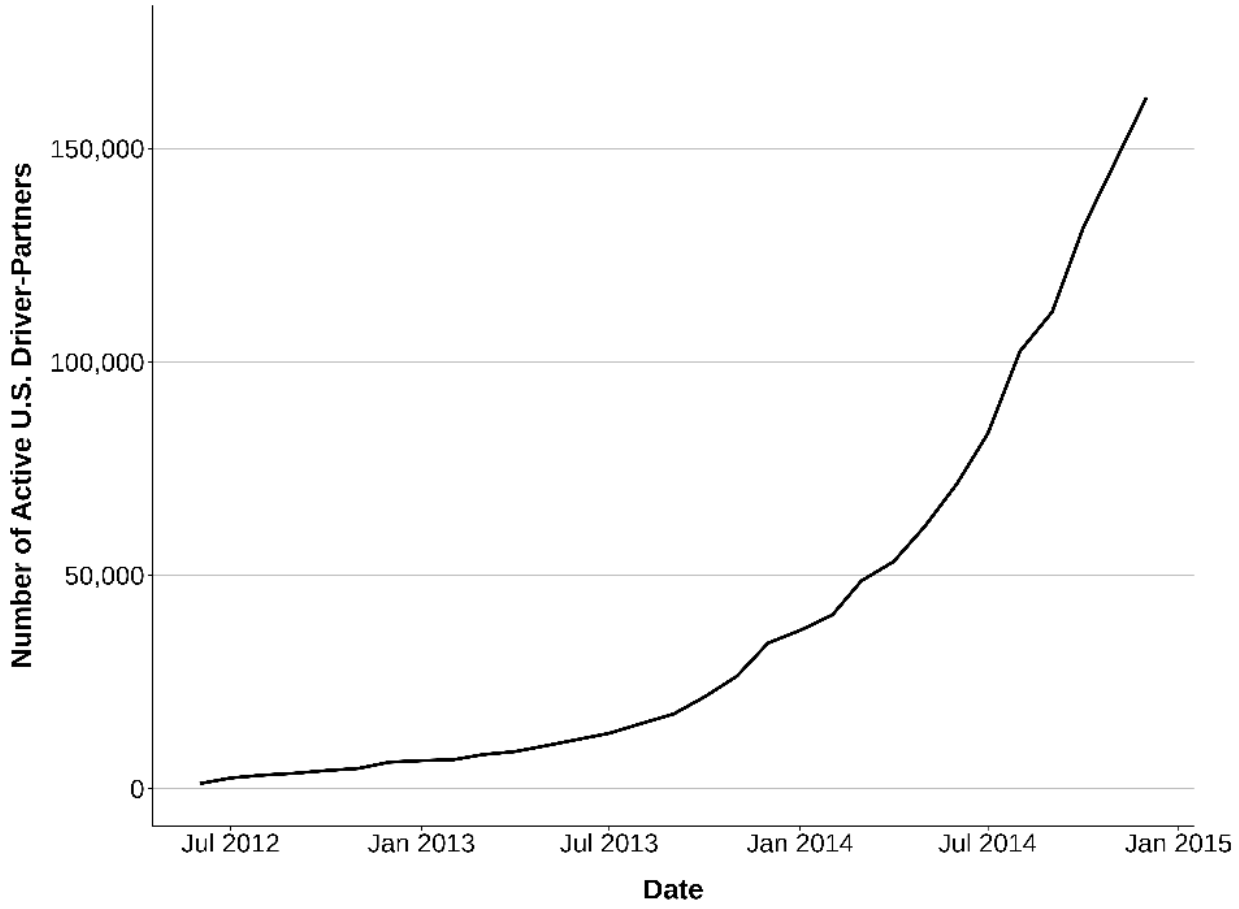
Introduction

Over the last few years, there has been much speculation as to whether the so-called "sharing economy" will positively or negatively impact the future of work, but little hard evidence exists to support either position. In this paper, we consider workers who choose to provide car rides using the Uber platform. Drivers who partner with Uber (Uber refers to them as "driver-partners") provide transportation services to customers requesting rides via Uber's app on their smartphones or other devices. This study provides the first detailed analysis of a representative, national sample of Uber driver-partners. We draw on aggregated and anonymized administrative data from Uber on the driving histories, schedules, and earnings of driver-partners using the Uber platform from 2012-14, and a survey of 601 active driver-partners conducted in December 2014 by Benenson Strategy Group (BSG). In addition, as a point of comparison, we report data on the characteristics of a representative sample of taxi drivers and chauffeurs, and of all workers, based on several government surveys.

Figure 1 documents the exponential growth in the number of active Uber driver-partners in the United States from mid-2012, when uberX was launched, to late 2014. Once applicants qualify to partner with Uber, they are free to choose to spend as much time or as little time as they like offering their services to passengers in any given month.[3] On average, Uber's driver-partners access the app more than five times per day on days when they use the app. Whether to access the app, and when, are their decisions. This flexibility is appealing to driver-partners, but it creates a complication for counting the number of active partners since, at any time, driver-partners can choose to pursue other work opportunities or spend time taking care of non-work obligations, not utilize the Uber platform for a period of time, and then possibly return to using the Uber platform in later months. To address this issue, the figure reports the number of driver-partners who provided at least four trips to passengers in the month indicated (which we refer to as "active partners"). From a base of near zero in mid-2012, more than 160,000 drivers actively partnered with Uber at the end of 2014 in the United States, and the rate of growth was rising throughout this period. In the United States driver-partners received $656.8 million in payments from Uber during the last three months of 2014. This exponential growth clearly indicates that the advent of Uber has provided new opportunities in the economy that a large and growing segment of the workforce finds attractive. For this reason alone, it is important to better understand the backgrounds of Uber's driver-partners and their motivations for partnering with Uber.

[3] Although the requirements vary by city, before they can utilize the Uber platform, potential driver-partners typically must: (1) pass a background check and a review of their driving record; (2) submit documentation of insurance, registration, and a valid driver's license; (3) successfully complete a city-knowledge test; and (4) drive a car that meets a quality inspection and is less than a certain number of years old.

Figure 1: Number of Active Driver-Partners in United States Each Month



Note: Figure based on U.S. UberBLACK and uberX driver-partners providing at least four rides in any month (284,898 individuals). Source: Uber administrative data. An active driver is defined as a driver-partner who completed at least four trips in the month.

One theme that emerges from the analysis that follows is that a tremendous amount of sorting takes place in the sharing economy, and, by dint of their backgrounds, family circumstances, and other pursuits, Uber's driver-partners are well matched to the type of work they are doing. Notably, Uber's driver-partners are attracted to the flexible schedules that driving on the Uber platform affords. The hours that driver-partners spend using the Uber platform can, and do, vary considerably from day to day and week to week, depending on workers' desires in light of market conditions. In addition, most driver-partners do not turn to Uber out of desperation or because they face an absence of other opportunities in the job market – only eight percent were unemployed just before they started working with the Uber platform – but rather because the nature of the work, the flexibility, and the compensation appeals to them.

These findings relate to a broader, more generalized demand by many individuals for workplace flexibility that favors alternative work schedules, family-oriented leave policies, flextime, and

telecommuting arrangements over the standard nine-to-five work schedule in order to support a more family-friendly lifestyle. Historically, independent contractors have preferred their working arrangements to traditional employment relationships, and this tendency appears to be continuing in the sharing economy. Demand for work opportunities that offer flexible schedules is partly driven by the aging of the workforce and the increase in secondary earners, and it will likely increase as a result of ongoing demographic trends. In addition, as changes to the health care system help reduce job lock—by making health insurance more readily available and accessible to individuals —more people are likely to become entrepreneurs and take advantage of the flexibility and income-generating potential made possible by the sharing economy. For these reasons as well, it is critical to understand how the sharing economy is affecting work opportunities.

This paper does not purport to have all the answers, but it represents a first step toward understanding the nature of work in the sharing economy by providing new evidence on hours of work, income, and the motivations and backgrounds of participants in an important segment of the sharing economy. Our goal is to facilitate an informed discussion of how the sharing economy is both a response to, and an influencer of, the changing nature of work and the workforce in the United States.

The next section provides a brief overview of the literature on contingent and alternative work arrangements. The second section draws on the BSG data to describe the backgrounds and motivations of Uber driver-partners. The third section utilizes anonymized, aggregated administrative data to describe the driving histories, schedules, and incomes of Uber driver-partners. The final section concludes and suggests directions for further research.

Literature Review

A spirited debate broke out in the 1990s about the size, growth, and nature of the contingent workforce in the United States. This debate continues today with the advent of the sharing economy.[4] One of the problems with this debate, however, is that analysts, interest groups, and social commentators have employed multiple definitions of contingent work, ranging from the self-employed to temporary workers to part-time workers to on-call workers. Contingent workers can be defined broadly or narrowly, and magnitudes and trends vary depending on the particular definition.[5] Although the U.S. labor market has undergone significant changes in the last few decades, with a dramatic trend toward rising inequality and stagnant wage growth for large segments of the workforce, an objective look at the data reveals little evidence that a rise in contingent or alternative work arrangements has played an important role in driving these momentous labor market shifts.

[4] For example, in his critique of the "task rabbit" economy, Kuttner (2013) claims, "The move to insecure, irregular jobs represents the most profound economic change of the past four decades."
[5] See Polivka (1996) for a thoughtful discussion of the definition of contingent and alternative work arrangements.

Instead, the U.S. job market has always had a variety of alternative working arrangements, each of which is preferred by some workers and not by others. Although the sectors that employ workers with alternative working arrangements have evolved with the economy over time, there is little evidence of a significant rise in the share of workers with contingent or alternative working arrangements in recent decades.

The Bureau of Labor Statistics (BLS) included a supplemental module to collect information on various forms of contingent and alternative work arrangements in the Current Population Survey (CPS) in 1995, 2001, and 2005 that provides the most informative data available, although it is now somewhat out of date.[6] The BLS found that the contingent workforce, defined as workers "who do not expect their jobs to last or who reported that their jobs are temporary," is relatively small, and did not grow between 1995 and 2005. In 1995, from 2.2 percent to 4.9 percent of the workforce was employed in a contingent position, depending on the definition, and in 2005 these figures ranged from 1.8 percent to 4.1 percent.[7] These figures are clearly small, and the growth trend unalarming.

Claims that contingent workers represent a much larger share of the workforce generally count part-time workers as contingent workers, even though part-time workers typically are employed in a traditional employment relationship. As the BLS reported, "the vast majority of part-time workers (91 percent) were not employed in contingent arrangements."[8] Nevertheless, data on part-time work do not point to an alarming trend. As Bernhard (2014) notes, "After increasing during the 1970s, both the overall percent part-time and the percent involuntary part-time have been largely flat, with the exception of cyclical increases during recessions." The share of workers in part-time positions (which BLS defines as usually working less than 35 hours a week) has shown little secular trend over the past three decades. In 1995, 17.8 percent of all workers reported that they usually worked part-time hours according to data from the CPS. That figure fell to 16.8 percent in 2005 and 16.5 percent in 2007, and then rose to 19.8 percent in 2009 during the Great Recession but has since declined. In 2014, some 18.3 percent of workers were in part-time positions, hardly different from 20 years earlier.

Moreover, part-time employment has grown rapidly in some countries that did not experience much of a rise in inequality, such as the Netherlands, so it is difficult to draw a link between part-time work and rising inequality in the United States.[9]

Importantly, the BLS contingent worker supplement also measured the share of workers in alternative work arrangements, including independent contractors.[10] The BLS defines

[6] As of this writing, the BLS has yet to determine whether it will conduct the contingent worker supplement in 2015.
[7] See Cohany (1996) and www.bls.gov/news.release/pdf/conemp.pdf for the BLS statistics on contingent and alternative work arrangements cited in this section.
[8] See bls.gov/news.release/pdf/conemp.pdf.
[9] See *OECD Factbook 2014: Economic, Environmental and Social Statistics*, OECD Publishing.

independent contractors as workers who "identified as independent contractors, independent consultants, or freelance workers, whether they were self-employed or wage and salary workers." Workers in the sharing economy can work part-time or full-time, or participate on a temporary or permanent basis, but they are almost universally working as independent contractors while they are participating in the sharing economy. Thus, evidence on independent contractors can provide relevant background for understanding the nature of the labor market in a sector that overlaps with the sharing economy.

The contingent worker survey found that independent contractors represented 7.4 percent of the workforce in 2005, up slightly from 6.7 percent in 1995. In 2005, 82 percent of independent contractors reported that they preferred their work arrangement to a traditional job, and only nine percent reported that they would prefer a traditional work arrangement.[11] Notably, the BLS found that the vast majority of independent contractors responded that they preferred their working arrangement to a traditional employment relationship even though those in a traditional employment relationship were more likely to have health insurance coverage (69 percent versus 80 percent) and an employer-provided pension (three percent versus 53 percent). As we find for Uber partners below, given their skills and available opportunities, independent contractors appear to sort into a working arrangement that suits their preferences and family circumstances.

The BLS found that 87 percent of independent contractors reported themselves as self-employed in a separate question that is part of its basic monthly labor force survey, while nearly 60 percent of all those who reported themselves as self-employed identified as an independent contractor. Thus, data on the prevalence of self-employment, which is available on an ongoing monthly basis, can provide some insight into the labor market for independent contractors in recent years.

The figure below displays the total number of self-employed individuals relative to the number of civilian employees each month since January 2000, when the BLS started collecting data on incorporated self-employed workers. The share of workers who are self-employed has drifted between 10 and 12 percent throughout this period, with a slight downward trend over the last decade.[12] Fox (2014) reaches a similar conclusion: "the long-term trend in the percentage of workers who are self-employed actually appears to be downward." Fox further highlights that the occupational mix of self-employed workers has evolved over time, with a steady, long-term decline in self-employed farmers and a more recent decline in self-employed construction managers and financial services workers, and a rise in self-employed musicians, maids,

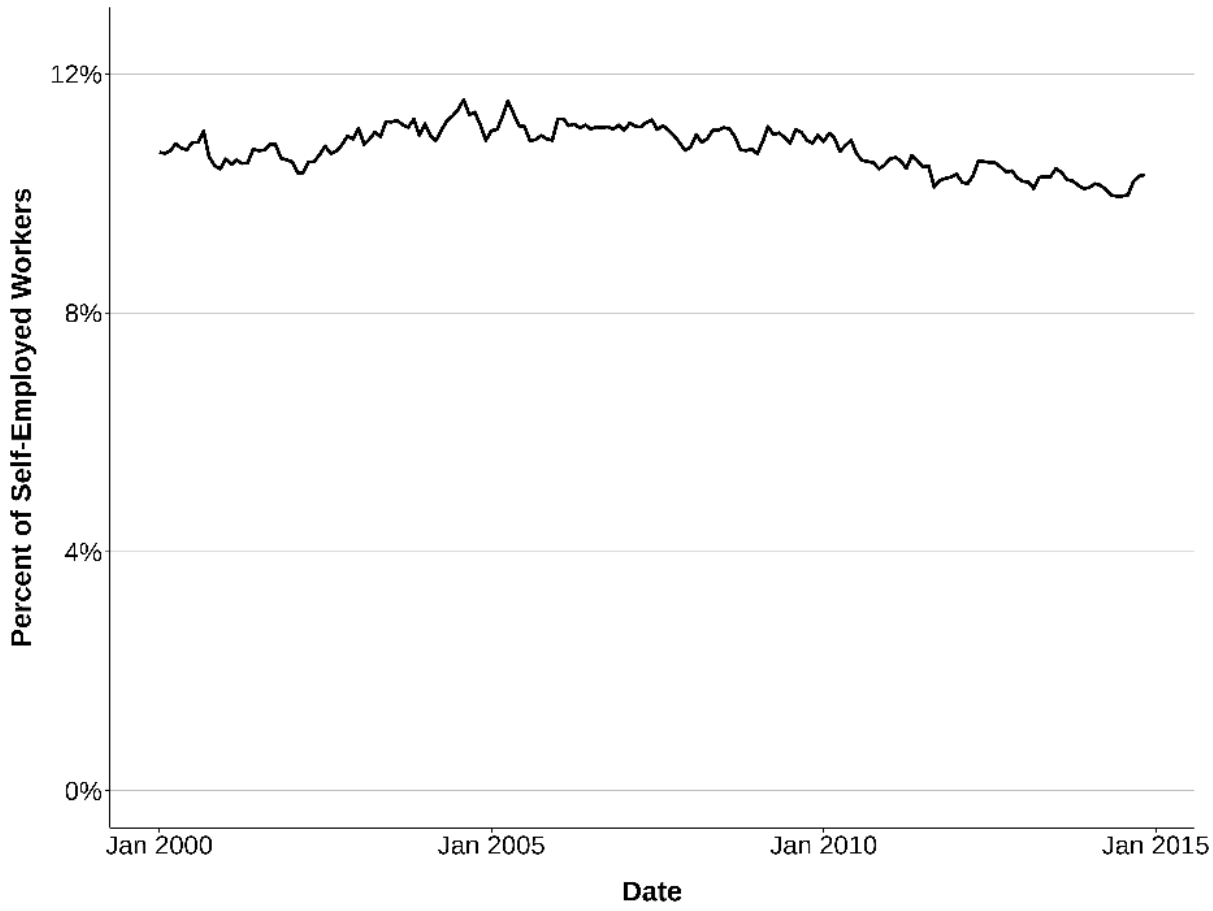
[10] Other alternative arrangements that the BLS identified were on-call workers (1.8 percent of workers in 2005), temporary help agency workers (0.9 percent) and workers provided by contract firms (0.6 percent). Independent contractors were by far the largest of the alternative work arrangements that the BLS identified.

[11] The remainder either said "it depends" (five percent) or did not provide an answer (three percent); see Table 11 of www.bls.gov/news.release/pdf/conemp.pdf.

[12] The share of unincorporated self-employed individuals displays a more prominent downward trend, while the share of incorporated self-employed has been more steady.

landscapers, construction laborers, cosmetologists, managers, and web developers. On net, these trends have left the share of self-employment work only slightly lower than it was a decade ago.

Figure 2: Percent of All Workers who are Self-Employed (NSA), by Month, 2000-2014



Source: BLS monthly data from CPS.

The size of the sharing economy, which is undoubtedly growing as a result of technological advances, is too new to be precisely measured. But workers in the sharing economy are largely a subset of those who are independent contractors and the self-employed. The history of self-employment indicates that the industries where the self-employed are found evolved over time as the economy changes. In the future, it will be important to monitor growth in independent contractors, and whether they continue to prefer their working relationship to a more traditional employment relationship. But the backdrop of trends in contingent and alternative working arrangements reviewed here does not, in itself, indicate flaws in the U.S. labor market on the eve of the sharing economy. The United States surely has serious labor market challenges as a result of rising wage inequality and stagnant middle class wage growth, but these problems appear to

be independent of the growth of contingent and alternative working relationships, as there has been little noticeable growth in those working relationships since the 1990s.[13]

BSG Survey of Uber's Driver-Partners

At Uber's request, the Benenson Survey Group (BSG) conducted a web survey of Uber's driver-partners in December 2014 in 20 market areas that represent 85 percent of all of Uber's U.S. driver-partners. A total of 601 driver-partners completed the survey. Although the response rate to the survey was only 11 percent, based on a comparison of aggregated administrative data, the (weighted) respondents do not appear to be very different from the full set of driver-partners in terms of their average work hours or hourly earnings.[14] Further details of the BSG survey will be made available on BSG's web page (http://www.bsgco.com/uber). In this section we highlight the findings from the survey that are particularly relevant for understanding the labor market for Uber's driver-partners and their motivations for partnering with Uber, and contrast the demographic characteristics of Uber driver-partners with those of taxi drivers and chauffeurs (Census occupation code 9140) based on nationally representative data collected in the American Community Survey (ACS), as well as all workers.

Driver Demographics

Table 1 summarizes the demographic characteristics of Uber's driver-partners based on the BSG survey and reports the corresponding characteristics of taxi drivers and chauffeurs and the entire workforce in the same 20 markets surveyed by BSG based on 2012-2013 ACS data.[15]

Uber's driver-partners are spread throughout the age distribution, mirroring the workforce as a whole rather than taxi drivers or chauffeurs. Nineteen percent of Uber's driver-partners are under age 30, and 24.5 percent are age 50 or older. By contrast, taxi drivers and chauffeurs are substantially older, with nine percent under age 30, and 44 percent age 50 or above. The greater representation of younger people among Uber's driver-partners is probably a reflection of the fact that Uber is a new opportunity, and older workers are less likely to change jobs, but it may also reflect entry barriers into the taxi driver and chauffeur professions that make it more difficult for younger people to obtain such jobs.

[13] See Bernhardt (2014) for related evidence on trends in contingent and nonstandard forms of work.

[14] The BSG survey utilized a stratified design, and weights were derived to make the sample representative of all drivers in terms of the services they offered (uberX, UberBLACK or both); other strata were drawn in proportion to the population and self weighting. All statistics reported here from the BSG survey are weighted to reflect the survey design. Where cited, question numbers refer to the BSG survey.

[15] The 20 markets are: Atlanta, Austin, Baltimore, Boston, Chicago, Dallas, Denver, Houston, Los Angeles, Miami, Minneapolis, New Jersey, New York City, Orange County, Philadelphia, Phoenix, San Diego, San Francisco, Seattle, and Washington, D.C.

Table 1: Characteristics of Uber's Driver-Partners, Taxi Drivers and All Workers

	Uber's Driver-Partners (BSG Survey)	Taxi Drivers and Chauffeurs (ACS)	All workers (ACS)
Age 18-29	19.1%	8.5%	21.8%
30-39	30.1%	19.9%	22.5%
40-49	26.3%	27.2%	23.4%
50-64	21.8%	36.6%	26.9%
65+	2.7%	7.7%	4.6%
Female	13.8%	8.0%	47.4%
Less than HS	3.0%	16.3%	9.3%
High School	9.2%	36.2%	21.3%
Some College / Associate's	40.0%	28.8%	28.4%
College Degree	36.9%	14.9%	25.1%
Postgraduate Degree	10.8%	3.9%	16.0%
White Non-Hispanic	40.3%	26.2%	55.8%
Black Non-Hispanic	19.5%	31.6%	15.2%
Asian Non-Hispanic	16.5%	18.0%	7.6%
Other Non-Hispanic	5.9%	2.0%	1.9%
Hispanic	17.7%	22.2%	19.5%
Married	50.4%	59.4%	52.6%
Have Children at Home	46.4%	44.5%	42.2%
Currently Attending School	6.7%	5.0%	10.1%
Veteran	7.0%	5.3%	5.2%
Number of Observations	601	2,080	648,494

Notes: ACS data pertain to the same 20 Uber markets as the BSG survey, and are for 2012 and 2013.

Women make up 14 percent of Uber's driver-partners, which exceeds the percentage of taxi drivers and chauffeurs who are women in those markets (eight percent), but is less than the share of women in the workforce overall.

Half of Uber's driver-partners are married, which is slightly below the corresponding figure for taxi drivers and chauffeurs, but close to the figure for all workers, probably, at least in part, a reflection of the varying age distributions. On the other hand, Uber's driver-partners are slightly more likely to have children under the age of 18 living with them at home (Q17) than are taxi

drivers and chauffeurs.[16] Additionally, 71 percent of Uber's driver-partners reported that they support financial dependents (Q19).

Among those reporting an ethnic/racial background, Uber's driver-partners were more likely to identify their ethnicity/race as White Non-Hispanic than were taxi drivers and chauffeurs in the same areas, although they were less likely to identify as White Non-Hispanic than the workforce as a whole in those areas.[17] Uber's driver-partners were less likely to identify as Black/African American Non-Hispanic than were taxi drivers and chauffeurs while the percentages who identified as Asian or Pacific Islander and Hispanic/Latino were similar for the two groups. Looking beyond the 20 areas, the ethnic/racial composition of taxi drivers and chauffeurs in the United States as a whole closely matches that of Uber's driver-partners who responded to the BSG survey.[18]

Uber's driver-partners are highly educated. Nearly half of Uber's driver-partners (48 percent) have a college degree or higher, considerably higher than the corresponding percentage for taxi drivers and chauffeurs (18 percent), and above that for the workforce as a whole as well (41 percent). Only 12 percent of Uber's driver-partners have a high school degree or less, whereas over half (52 percent) of taxi drivers and chauffeurs have a high school degree or less. Seven percent of Uber's driver-partners are currently enrolled in school, mostly taking classes toward a four-year college degree or higher.

Seven percent of Uber's driver-partners are veterans of the armed services, and one percent are members of the reserves. In addition, six percent of driver-partners have household members who are military veterans, three percent have household members who are active duty members of the armed services, and two percent have household members in the reserves. Uber has made an effort to attract veterans, and it may be having some effect. Based on the ACS data, five percent of taxi drivers and chauffeurs—and the same percentage of all workers—in the 20 areas BSG surveyed are veterans.

Driver Employment History

The BSG survey provides retrospective information on driver-partners' past work experience that provides a picture of what they were doing prior to partnering with Uber.

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[16] One caveat here, however, is that the BSG question directed respondents to "include children living with you part time."

[17] The BSG and ACS race and Hispanic ethnicity questions are different because Hispanic ethnicity is listed with the other racial identities in the BSG race/ethnicity question (Q56), and then Hispanic ethnicity is also asked about specifically for all those who did not select Hispanic in Q56 in the following question (Q57). We have attempted to align the two surveys by reporting anyone who identified as Hispanic in either question as Hispanic, and then reporting the other groups exclusive of those indicating Hispanic origin, and excluding the eleven percent of respondents who did not provide an answer to Q56 or Q57.

[18] The nationwide figures for taxi drivers and chauffeurs are: 42.3 percent non-Hispanic white; 24.5 percent non-Hispanic black; 12.0 percent non-Hispanic Asian; 3.1 percent non-Hispanic other; and 18.0 percent Hispanic.

Fully 80 percent of driver-partners said they were working full- or part-time hours just before they started driving on the Uber platform (Q5), and two-thirds of these individuals reported that they had a full-time job.[19] Eight percent of driver-partners said they were unemployed just prior to partnering with Uber. Among the remainder, seven percent were students, three percent were retired, and two percent stay-at-home parents. Among those working prior to partnering with Uber, 81 percent reported that they had a permanent job that would be there until they left, were laid off, or were fired (Q7), and many appear to have continued in those jobs after partnering with Uber.[20]

Uber's driver-partners worked in a wide range of jobs prior to partnering with Uber, with Transportation Services the only industry in which more than 10 percent of previously employed driver-partners previously worked (19 percent) (Q10). That said, about half (49 percent) had previously worked as a driver at some point in their career prior to partnering with Uber (with black car, limo, and for-hire car service most common (20 percent)), and half had never previously worked as a driver (51 percent). (Q13).

Just over one-third (36 percent) of driver-partners were not actively looking for a new job prior to driving on the Uber platform. Only 25 percent were actively looking for a full-time job, and another 25 percent were looking for a part-time job, and 10 percent were looking for either a part- or full-time job (Q8). Of those driver-partners actively looking for a job prior to partnering with Uber, 24 percent had been doing so for less than a month, 52 percent for one to six months, and 24 percent for more than six months (Q9). The fact that over one-third of driver-partners partnered with Uber without actively searching for a job suggests that Uber provided a new alternative that enticed a large number of people to engage in work activity that was not previously available.

Driving on the Uber Platform

Uber's driver-partners fall into three roughly equal-sized groups: driver-partners who are partnering with Uber and have no other job (38 percent), driver-partners who work full-time on another job and partner with Uber (31 percent), and driver-partners who have a part-time job apart from Uber and partner with Uber (30 percent) (Q23). Not surprisingly, the administrative data indicate that, on average, those who do not have another job work the most hours per week with the Uber platform, while those who have another full-time job worked the least hours per week with the Uber platform. For example, one-third of driver-partners who said they currently have no other job worked more than 35 hours per week with the Uber platform since starting to work with Uber, compared with 13 percent of those who currently had another part-time job, and just three percent of those who currently had another full-time job.

[19] The 80 percent figure does not count any students as employed. If students who were also employed are included, the figure would rise to 85 percent.

[20] Among those who were working at a full-time job prior to partnering with Uber, 93 percent said their job was permanent.

The survey asked driver-partners whether a variety of possible motivations were a major reason, minor reason, or not a relevant reason for why they partnered with Uber (Q22). The most common reasons (combining major and minor reasons) were: "to earn more income to better support myself or my family" (91 percent); "to be my own boss and set my own schedule" (87 percent); "to have more flexibility in my schedule and balance my work with my life and family" (85 percent); "to help maintain a steady income because other sources of income are unstable/unpredictable" (74 percent).[21]

Driving on the Uber platform provides an important source of income for driver-partners. For nearly one-quarter of driver-partners (24 percent), Uber is their only source of personal income, and for another 16 percent Uber is their largest but not only source of income. More than one-third of driver-partners view income earned on the Uber platform as a supplement to their income but not a significant source (38 percent) (Q29).

Perhaps not surprisingly—given that most driver-partners had a job that they could have kept, and often did, when they started partnering with Uber—71 percent of driver-partners replied that partnering with Uber has increased their overall income, while only 11 percent replied that partnering with Uber had decreased their overall income (Q28R1).

A variety of questions made it clear that Uber's driver-partners value the flexibility that the Uber platform permits, and many are drawn to Uber in large part because of this flexibility. Fifteen times as many driver-partners said Uber had made their lives better, rather than worse, by giving them more control over their schedule (74 percent versus five percent). In addition, when asked directly in Q38, "If both were available to you, at this point in your life, would you rather have a steady 9-to-5 job with some benefits and a set salary or a job where you choose your own schedule and be your own boss?" 73 percent chose the latter. Furthermore, when the driver-partners were asked what they would do if Uber were no longer available in their area, 35 percent (the largest group) said they would use another ride-sharing app platform, while only 21 percent said they would look for a full-time job in an unrelated industry (Q32).[22] These findings suggest that there is considerable sorting in the sharing economy, and those who value flexibility most are the most likely to seek opportunities there.

Women driver-partners were more likely than men to highlight the need for flexibility as a reason for becoming a partner with Uber, but both men and women appear to value the opportunity to set their own schedule. For example, 42 percent of women and 29 percent of men said that a major reason for driving with Uber was that they "can only work part-time or flexible schedules" because of a "family, education, or health reason." Further, female driver-partners

[21] The order was unchanged considering those reasons designated as a major reason, and the corresponding percentages were 76 percent, 64 percent, 63 percent, and 51 percent, respectively.

[22] Other responses were: drive a taxi (eight percent); look for a part-time job (19 percent); not look for a new job (12 percent); and other (five percent).

were nearly 30 percentage points more likely than men to work an average of 15 or fewer hours per week (67 percent versus 38 percent). Men, however, were slightly more likely than women to indicate that they would prefer a job where they choose their own schedule and can be their own boss to a nine-to-five job with some benefits (73 percent versus 68 percent).

Another aspect of the flexibility that Uber provides is that spending time on the platform can help smooth the transition to another job, as driver-partners can take off time to prepare for and search for another job at their discretion. This appears to be relevant for a minority of drivers. About one-third (32 percent) of driver-partners indicated that "to earn money while looking for a steady, full-time job" (Q22R11) was a major reason for partnering with Uber, and this is particularly the case for students, and for those who do not have another job or are working part-time on another job. Likewise, those who have no other job or another part-time job are about twice as likely as those with full-time jobs to say that they will continue with Uber until something better comes along (Q50). These results suggest that Uber provides a helpful "bridge" for some driver-partners until they can find another job that is a better match for their skills and interests.

Partnering with Uber appears to have affected driver-partners in other positive ways as well. Nine times as many said Uber had improved, rather than hurt, their sense of confidence (56 percent versus six percent); nearly six times as many said that it had made better, rather than worse, their overall quality of life (58 percent versus 10 percent); and more than five times as many said that it had strengthened, rather than weakened, their sense of financial security (61 percent versus 11 percent) (Q28).

The BLS contingent worker survey found that independent contractors were less likely to have health insurance coverage than traditional employees. About half (49 percent) of Uber's driver-partners currently receive employer-provided health insurance from their employer at another job or from a spouse or other family member's job (combination of Q42 and Q44). It is unclear how many additional driver-partners purchase health insurance from a health insurance exchange or obtain it from another source. Uber provides driver-partners with access to a service called Stride Health to help them select health insurance coverage that is appropriate for their situation. Almost 19,000 Uber driver-partners in the six eligible states have so far visited the Stride website. We leave for future work an examination of participation in state and federal health insurance exchanges.

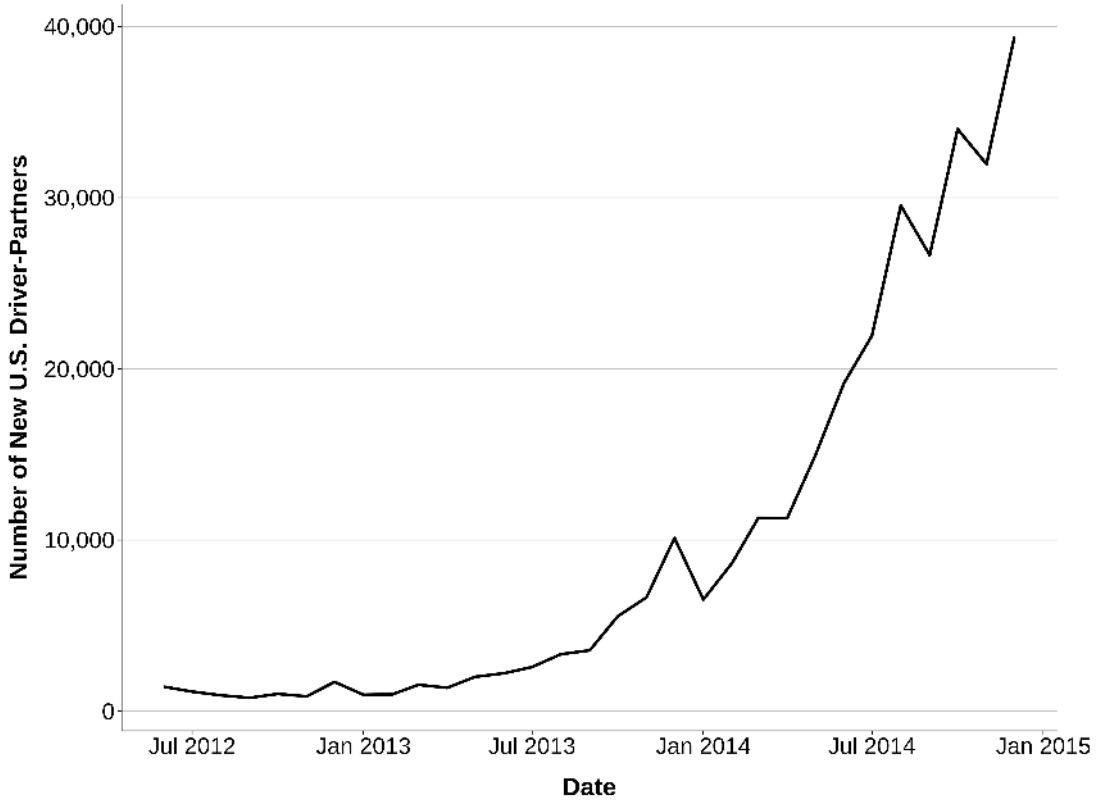
Overall, 78 percent of driver-partners said they are very satisfied or somewhat satisfied with Uber (Q45). In addition, 69 percent of driver-partners reported having a more favorable opinion of Uber currently than when they first started (Q46), suggesting that satisfaction grows with experience driving on the platform.

Completing the Picture with Uber Data

Uber stores comprehensive data on driver-partners' trips, fares, and time using the Uber app. Below, we summarize some of Uber's administrative data using aggregated, anonymized queries on Uber's proprietary databases to round out the analysis of the labor market for Uber's driver-partners.

Figure 3 shows the number of new driver-partners partnering with Uber each month in the United States. A new driver-partner is defined as someone who had not previously provided a trip using the Uber platform, and who provided his or her first trip in the month indicated. The number of new driver-partners is clearly growing exponentially. The number of new driver-partners partnering with Uber has more than doubled every six months for the last two years. Fewer than 1,000 new driver-partners started in January 2013. That number was more than 6,000 a year later in January 2014, more than 19,000 in June 2014, and almost 32,000 in November 2014. In December 2014, with the holiday boost in demand, almost 40,000 new driver-partners provided their first trips in the United States on the Uber platform.

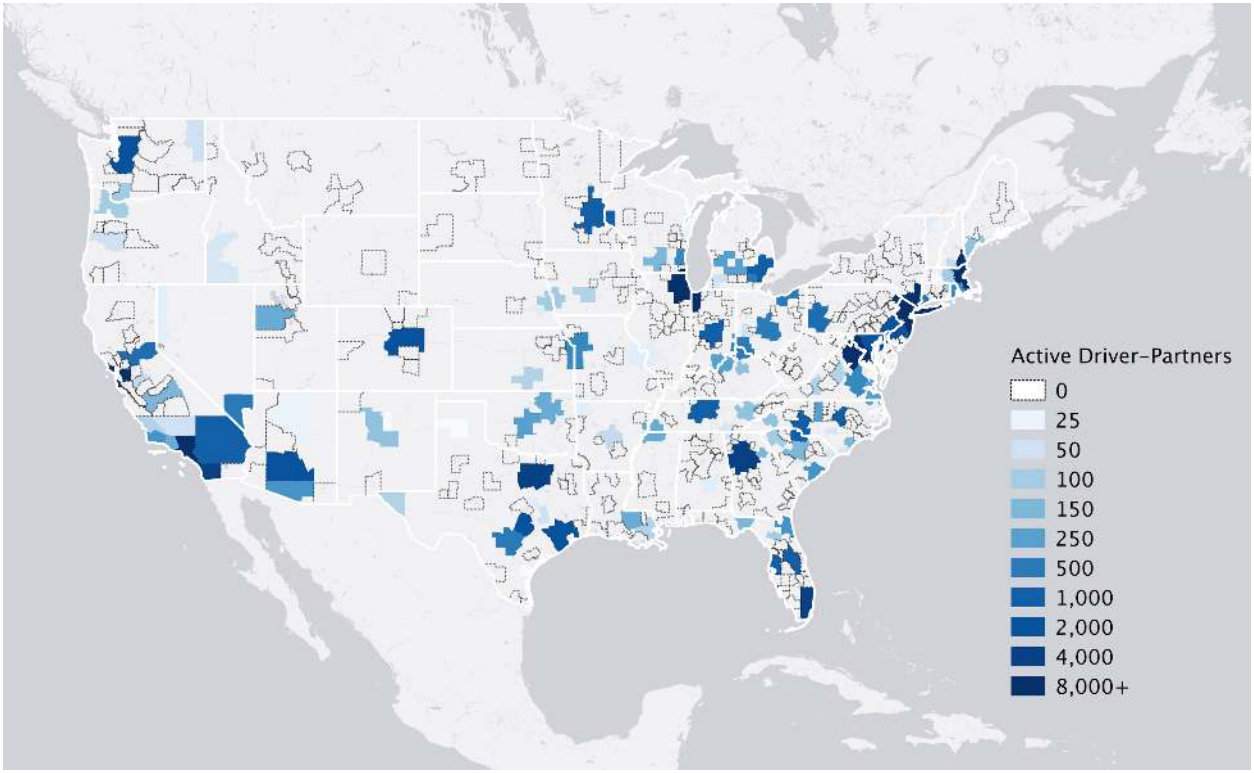
Figure 3: Number of New Driver-Partners Starting Each Month in the United States



Note: Figure based on U.S. UberBLACK and uberX driver-partners who have joined since June 2012 (303,985 individuals), based on Uber data.

The spectacular growth of the number of active driver-partners using Uber over the last few years is evidence that Uber provides a large number of workers a choice they prefer to other available options or not working at all. During the latest month for which we have data, December 2014, a total of 162,037 driver-partners completed four or more trips. As indicated in the graph in the introduction, the number of driver-partners who are active in a given month has grown exponentially since 2012. These driver-partners are distributed across the country in the many places in which Uber operates, as shown in the map in *Figure 4*.

Figure 4: Active Driver-Partners By Census MSA

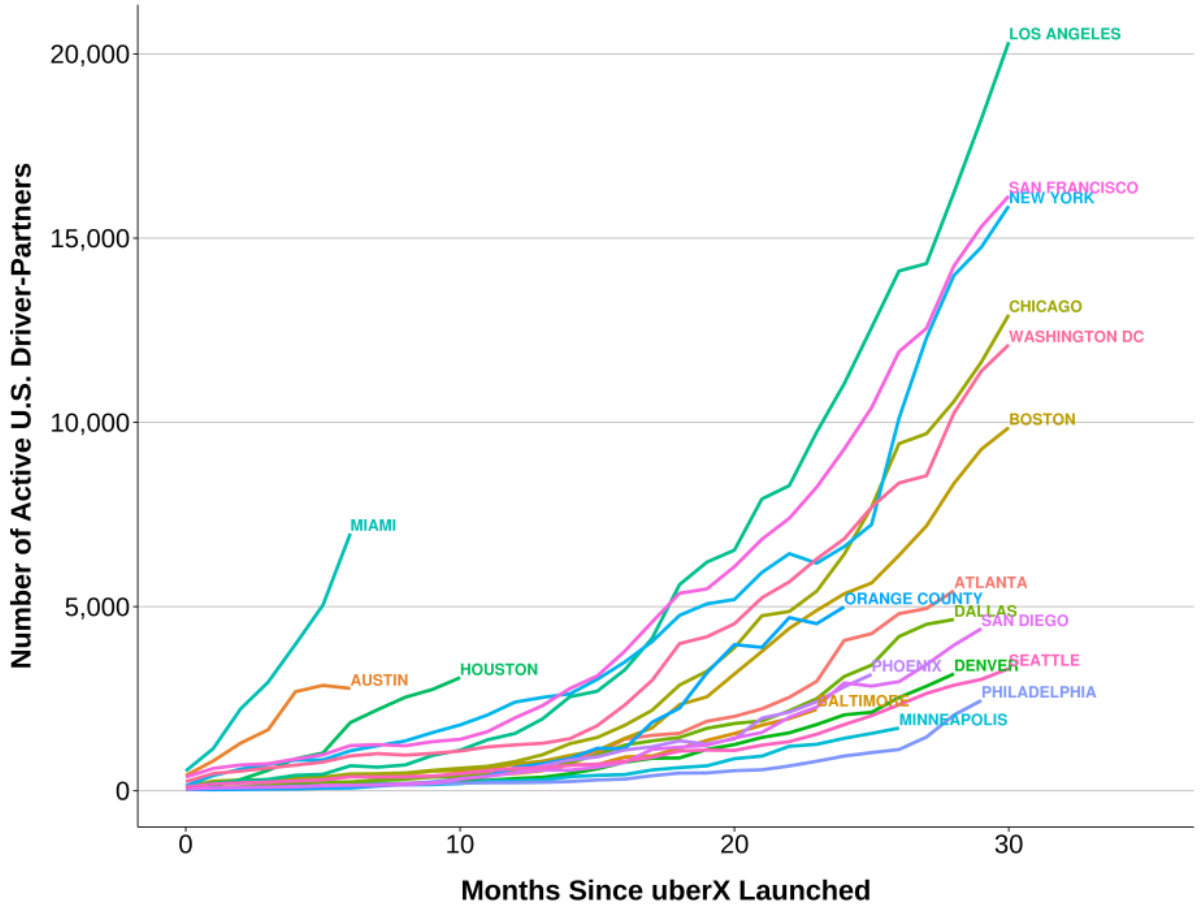


Note: The map indicates the number of Uber driver-partners who took at least four trips in November 2014, by Census MSA.

Figure 5 displays the growth in the number of Uber's driver-partners in each of the BSG metropolitan areas, indexed to the number of months since Uber started operating in the city.[23] The fastest growth in the number of driver-partners has been in Miami, Austin, and Houston, markets in which Uber only recently became fully operational.

[23] The way in which Uber classified New Jersey trips in its database has changed over time, so, for the sake of consistency, New Jersey is omitted from this chart. Also, Orange County is reported as part of Los Angeles.

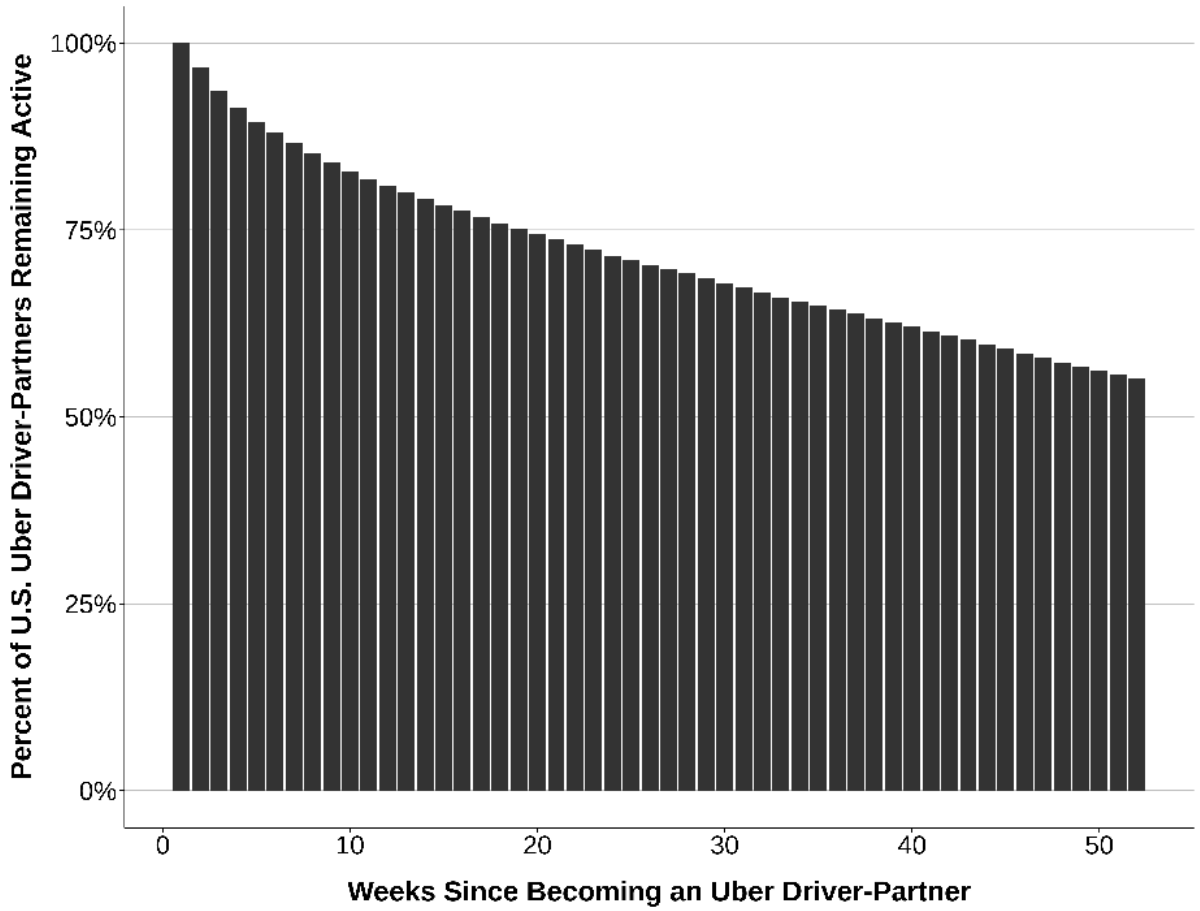
Figure 5: Active U.S. Driver-Partners Over Time, by City



Note: Figure reports the number of U.S. UberBLACK and uberX driver-partners making at least one trip in the specified month, indexed to the number of months since Uber began in the city or June 2012, whichever came later.

Because Uber offers a flexible option with low barriers to entry, a large number of workers try the service, and some discontinue using it after a period of time while others continue indefinitely. As described in the previous section, there are many reasons driver-partners vary their length of time using the platform. Those spending fewer hours may find that Uber is not a good match for their lifestyle or they may only use Uber when they are between jobs; others may find that it provides them with the flexible work schedule and source of income that they have been looking for and continue using the platform for much longer. *Figure 6* reports the weekly continuation rate for all driver-partners who started on the platform in 2013. (A driver-partner is designated as discontinuing in a week if he or she does not use the app for the subsequent six months.)

Figure 6: Continuation Rate for U.S. Drivers Over the Course of a Year



Note: Figure based on U.S. UberBLACK and uberX driver-partners who made their first trip between January and June of 2013 and had subsequently made at least four trips (11,267 individuals). A driver is classified as becoming inactive at the start of any period in which he or she does not record a trip for six or more months.

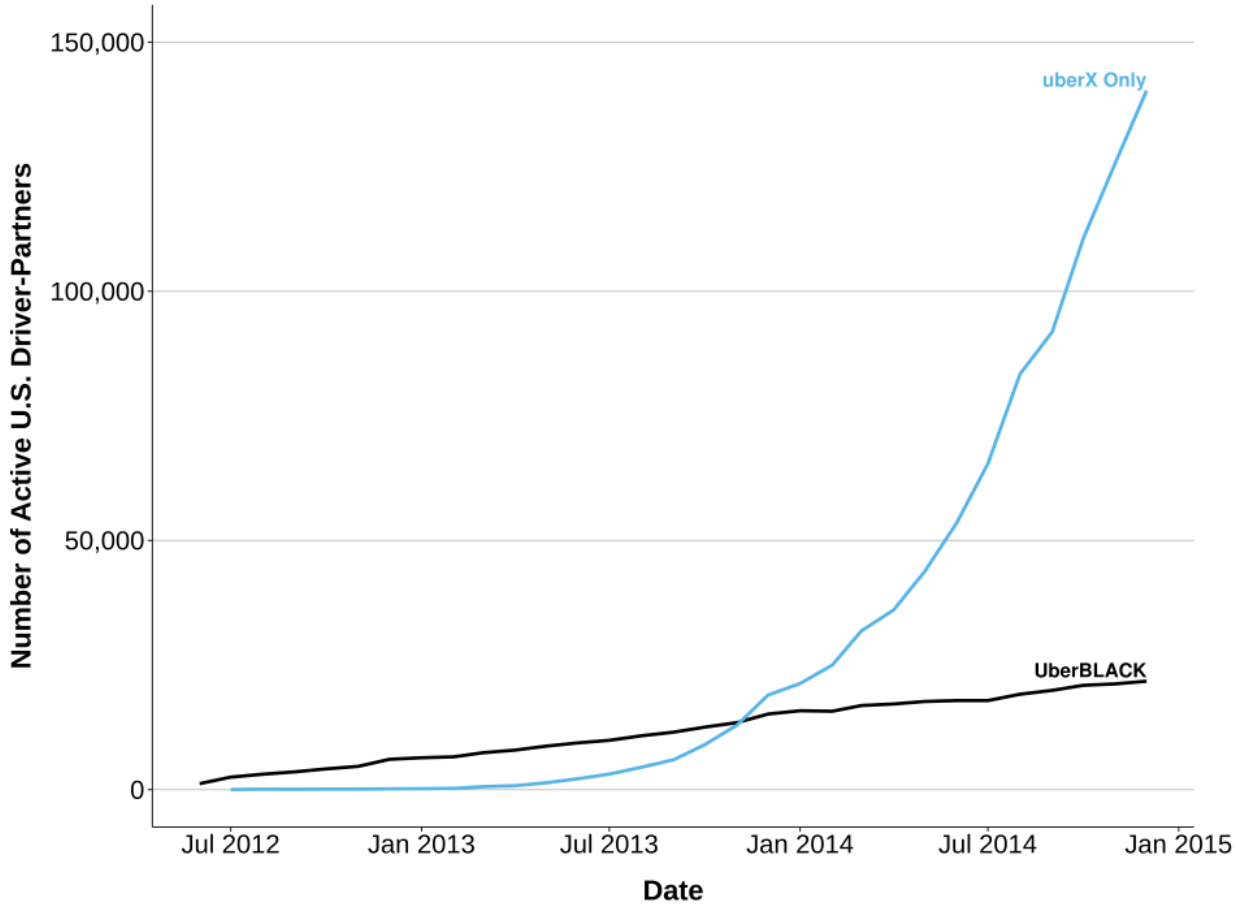
Within a month of becoming an active Uber driver-partner, 11 percent of drivers became inactive, defined as not using the service over the next 6 months. After half a year, 70 percent of those who started using Uber in the first half of 2013 were still actively using the system, and more than half of those who started in the first half of 2013 remained active a year after starting. These figures are consistent with an observation in the previous section: Uber provides a bridge for many who are seeking another position in the labor market, and it provides a longer-term option for others.

Uber's driver-partners can select into providing different types of car service. The Uber platform offers several tiered service levels to potential riders. Roughly speaking, throughout the United States, UberBLACK is the premium option. Driver-partners on UberBLACK are commercially licensed drivers with "black cars" that adhere to specific vehicle standards. Many driver-partners on UberBLACK are employees or contract workers for limousine companies that use Uber's technology. In contrast, in most markets (New York City being a notable exception), driver-

partners on uberX, the lower cost product offered on the platform, may drive their personal automobiles, utilizing commercial insurance (with $1 million in liability and uninsured/underinsured motorist bodily injury coverage provided through the Uber platform) only when conducting commercial activity. As previously stated, uberX driver-partners must pass a background check prior to driving on the platform.

Figure 7 indicates that Uber's recent exponential growth in driver-partners is fueled by the spectacular growth in uberX driver-partners. UberX has grown rapidly because it is available in more American markets than UberBLACK, because of greater customer demand for a lower-cost service, and because of Uber's promotional efforts.

Figure 7: Active Uber Driver-Partners by Service



Note: Sample consists of all U.S. UberBLACK and uberX driver-partners making at least four trips in any month (284,898 individuals).

As previously noted, the BSG survey finds that 62 percent of Uber driver-partners are either working full-time or part-time on another job. Therefore, it is not surprising that a majority of Uber's driver-partners drive with Uber part time. The platform is conducive to a wide range of

work schedules, and this is supported by the fact that because there is little discernable relationship between hourly earnings and hours spent on the platform. *Tables 2 and 3* illustrate this pattern for October 2014 for uberX and UberBLACK separately, which we selected as a month after Uber's summer fare cuts and before the holiday season to represent more normal market conditions. The tables report earnings per hour for Uber's driver-partners by amount of time spent driving per week in the six largest markets where Uber operates, and for the 20 BSG markets as a whole. Note that the tables do not include earnings from promotional offers and incentives (most often hourly and monthly price guarantees conditional on driving a certain number or set of hours) that Uber offers driver-partners from time to time, most often at the beginning of a driver-partner's career on the network or around the launch of a new Uber market.

Table 2: Distribution and Average Hourly Earnings of uberX Driver-Partners by Hours Worked, Oct. 2014

	1 to 15 hours/week		16 to 34		35 to 49		Over 50	
	Percent of driver-partners	Earnings per hour	Percent of driver-partners	Earnings per hour	Percent of driver-partners	Earnings per hour	Percent of driver-partners	Earnings per hour
BOS	58%	$19.25	30%	$20.41	9%	$20.78	4%	$20.48
CHI	56%	$15.60	31%	$16.12	9%	$16.21	4%	$16.03
DC	53%	$16.61	31%	$17.46	10%	$17.70	6%	$17.41
LA	59%	$16.37	29%	$17.07	8%	$17.07	4%	$16.97
NY	42%	$26.03	35%	$28.47	16%	$29.65	7%	$29.61
SF	48%	$25.47	37%	$26.50	11%	$26.17	4%	$26.07
BSG Survey Uber Markets	57%	$16.37	29%	$17.24	9%	$17.56	5%	$16.65

Source: Uber. Data aggregated at the driver-partner-week level. Figures exclude incentive payments that are offered to new drivers in some markets.

In the combined set of 20 areas surveyed by BSG, more than half of uberX driver-partners chose to drive for less than 15 hours a week, and fully 86 percent chose to drive less than 35 hours a week. Yet the largest difference in hourly earnings across workers in the various hours categories was $1.19 (about seven percent) between those driver-partners driving 35 to 49 hours a week and those driving one to 15 hours a week.

Table 3: Distribution of UberBLACK Driver-Partners by Hours Worked and Average Hourly Revenue, October 2014

	1 to 15 hours/week		16 to 34		35 to 49		Over 50	
	Percent of driver-partners	Earnings per hour	Percent of driver-partners	Earnings per hour	Percent of driver-partners	Earnings per hour	Percent of driver-partners	Earnings per hour
BOS	20%	$21.22	34%	$22.55	24%	$24.17	22%	$23.62
CHI	26%	$15.60	32%	$17.06	21%	$18.75	21%	$19.38
DC	28%	$21.40	34%	$23.82	21%	$24.62	17%	$25.04
LA	19%	$19.19	29%	$21.60	23%	$22.82	29%	$22.59
NY	53%	$25.38	30%	$27.48	11%	$29.54	7%	$30.64
SF	25%	$30.63	34%	$32.99	23%	$34.32	18%	$33.82
BSG Survey Uber Markets	29%	$20.87	32%	$20.85	19%	$21.67	20%	$20.76

Source: Uber. Data aggregated at the driver-week level. Figures exclude incentive payments that are offered to new drivers in some markets.

For driver-partners on UberBLACK, we also find little relationship between hours worked and earnings per hour in the 20 markets as a whole.[24] There appears to be a small upward relationship between hourly earnings and hours worked in Uber's older, larger markets, however. Explaining this difference is a topic for future research.

Uber's driver-partners take advantage of the flexibility offered by the low cost of entry on the platform. Consider *Table 4*, which illustrates the breakdown of driver-partners (combining both UberBLACK and uberX drivers) by hours worked per week in October 2014, comparing taxi and limo drivers in the ACS to Uber's administrative data. Taxi drivers and chauffeurs work much longer hours per week than Uber's driver-partners, with more than one-third of taxi drivers usually working 50 or more hours per week. To a considerable extent, this probably reflects the fact that the medallions required to operate a taxi are typically leased on a daily or weekly basis, which gives taxi drivers an incentive to work long hours over the duration of the lease. Uber driver-partners do not face this incentive, which enables them to flexibly select their hours.

[24] In many markets, UberBLACK driver-partners have the option to accept uberX and UberBLACK requests simultaneously. Data in this table is for all time on app and all trip requests accepted.

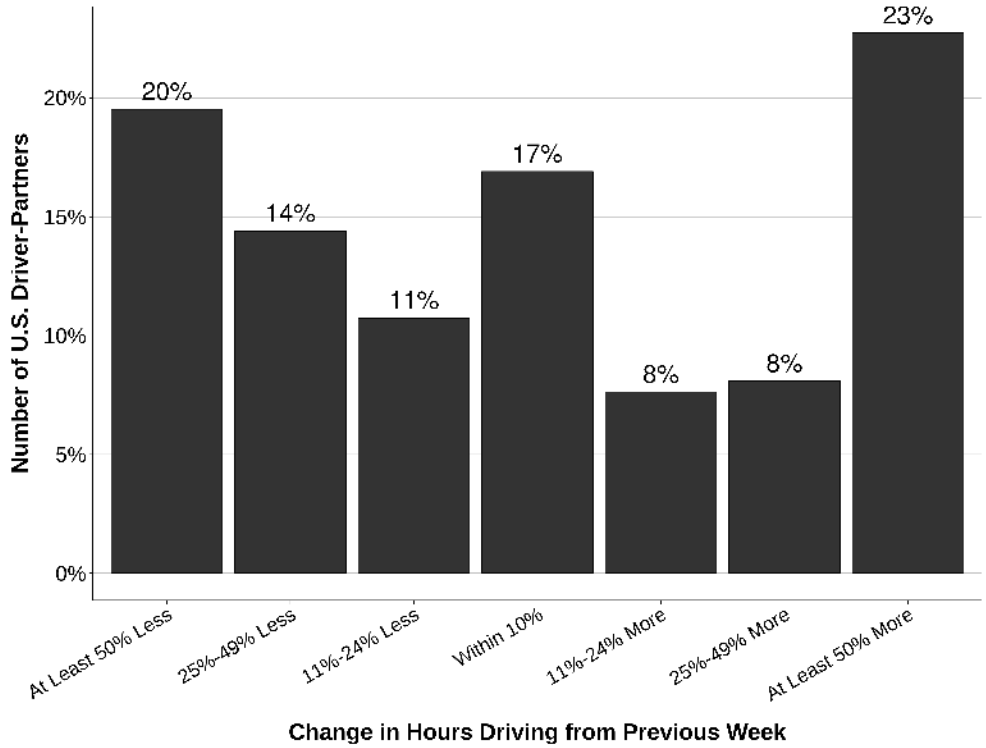
Table 4: Distribution of Uber's Driver-Partners and Taxi Drivers and Chauffeurs by Hours Worked

	Uber driver-partners	Taxi Drivers and Chauffeurs (ACS)
1-15 hours/week	51%	4%
16-34	30%	15%
35-49	12%	46%
50+ hours/week	7%	35%

Source: Uber and 2012-13 American Community Survey. Data for Uber driver-partners pertain to each week when they worked at least one hour in October 2014. ACS hours based on "usual hours worked per week past 12 months." All data are for BSG surveyed market areas.

Figure 8 shows that driver-partners vary the number of hours in which they use the Uber platform by a considerable amount from week to week. In any given week, well more than half (65 percent) of driver-partners drive more than 25 percent, or less than 25 percent, than the amount they drove in the previous week. Only 17 percent of driver-partners tend to drive within 10 percent of the amount of time that they drove in the previous week. The figure is consistent with driver-partners' responses to the BSG survey, which indicated that they valued the flexibility that driving with the Uber app provides.

Figure 8: Distribution of Changes in Work Hours from Week to Week



Note: Figure based on all pairs of weeks in which a U.S. UberBLACK or uberX driver-partner spent at least one hour on the Uber app in the initial week. Sample period is August 31, 2014 through November 22, 2014 (170,505 individuals).

Despite variations in hours on the platform and rider demand, driver-partner income would nonetheless be a fairly predictable function of hours worked if earnings per hour do not vary widely over time. *Table 5* shows the median driver's standard deviation of log earnings per hour across months in 2014 for the six largest markets and the 20 BSG markets combined. For the six largest markets, hourly earnings were fairly steady across months: the standard deviation was typically around 13 percent in these markets. Looking at all markets, the standard deviation was somewhat higher (19 percent), suggesting that factors beyond the number of hours the drivers worked have more of an effect on driver's incomes. Because the six largest markets have greater density and population than the other markets, there is probably a more consistent demand for Uber services. A measure of this consistent demand could be trips per hour in each city. Looking at the median number of trips per hour for each driver, we find that, in general, those markets with more trips per hour have a lower standard deviation in hourly earnings than those with fewer trips per hour. A deeper investigation of the variability of earnings for Uber's driver-partners is a topic for further research.

Table 5: Median Within-Driver Monthly Trips Per Hour and Median Monthly Standard Deviation of Within-Driver Log Hourly Earnings for Uber Driver-Partners in 2014

	Median Trips Per Hour	Median Monthly Standard Deviation of Within-Driver Log Hourly Earnings
BOS	1.67	0.127
CHI	1.55	0.131
DC	1.45	0.121
LA	1.44	0.156
NY	1.09	0.129
SF	1.70	0.137
BSG Survey Uber Market	1.26	0.194

Source: Uber. Data aggregated at the driver-month level. Sample consists of uberX and UberBLACK driver-partners who drove in at least two different months in 2014.

Several economists have recently studied high-frequency (daily) data on the earnings and work hours of taxi drivers to answer the question of whether drivers use an "income targeting" strategy that makes them susceptible to daily fluctuations in the prevailing rate of hourly earnings. In studying taxi driver income targeting, Camerer, et al. (1997) reported negative elasticities of labor supply with respect to the implicit wage rate, which they interpret as evidence of income targeting. Chou (2000) appeared to confirm these results using data from Singapore, and Crawford and Meng (2013) found additional evidence in a modified income targeting model. In essence, these studies find a negative slope when they regress hours worked on hourly earnings, which is inconsistent with standard intertemporal labor supply models.

Farber (2005, 2008), however, demonstrates that "division bias" in the regression models that these studies have estimated biases their estimates of the labor supply elasticity toward a negative number. This problem arises because in Camerer, et al. (1997) and other studies, a noisy estimate of hours is regressed on earnings divided by that same noisy measure of hours (the derived hourly earnings measure), mechanically inducing a negative bias. To avoid this problem, Farber (2014) uses five years of electronic NYC taxi micro-data and finds a positive labor supply elasticity when he instruments for each driver's wage with the wage of other drivers at that time.

Preliminary work by Michael Sheldon (2014) replicates and extends Camerer, et al.'s (1997) and Farber's (2014) results using Uber's proprietary driver-partner data. Most importantly, when he uses accurate data on time worked captured by the Uber app to measure hours to estimate Camerer, et al.'s type of regression of hours on hourly earnings (including individual fixed effects), he finds a positive labor supply elasticity (0.14). Sheldon goes on to demonstrate that he can replicate the finding of a negative elasticity found in earlier work by adding white noise to the measurement of driver shift hours, the measurement of which in the taxi industry is prone to substantial error. When he follows Farber and instruments for a driver's hourly earnings with the hourly earnings of other drivers at that time, he finds an even larger labor supply elasticity (0.22).

In light of these findings, we interpret the current state of the literature as providing little support for income-targeting among for-hire drivers, as opposed to traditional labor supply behavior. In addition, this conclusion is consistent with the BSG survey finding that only six percent of Uber's driver-partners said that they would "prefer to drive with Uber until [they] make a certain amount of money." Income targeting does not appear to be an important motivation in the short-term or long-term among for-hire drivers.

Since the Uber platform applies a new model to an existing industry, it is instructive to compare driver-partner earnings to those in similar occupations. Unfortunately, it is difficult to perform a perfect comparison between the earnings of driver-partners on the Uber platform and other professional drivers, e.g. taxi and limo, because of the limited availability of earnings data for those services. However, taxi drivers, limo drivers, and chauffeurs are classified together in government data sets such as the Occupational Employment Statistics (OES) survey, which tracks drivers who are employees (in contrast to Uber's driver-partners, who are independent contractors).

Table 6: Comparison of Average Hourly Uber Driver-Partner Revenue And Employee Taxi Drivers and Chauffeurs Wages

	Earnings Per Hour or Hourly Wages	
	Uber Driver-Partners (Earnings Per Hour)	OES Taxi Drivers and Chauffeurs (Hourly Wages)
BOS	$19.06	$12.31
CHI	$16.20	$11.87
DC	$17.79	$13.10
LA	$16.98	$11.73
NY	$30.35	$15.17
SF	$23.52	$13.72
BSG Survey Uber Market	$19.04	$12.90

Source: For Uber Driver-Partners: Uber. Data aggregated at the driver-month level. UberX and UberBLACK driver-partner that drove at least one hour a week during the month of October 2014. For OES Taxi Drivers and Chauffeurs: OES from May 2013. OES average for all areas is weighted by total drivers by city. This was the most recently available data.

As can be seen in *Table 6*, Uber's driver-partners generally receive higher earnings per hour than their general-population driver counterparts. In 16 of the 18 markets available, the average earnings per hour of Uber's driver-partners exceeded the average hourly wage of taxi drivers and chauffeurs. Of course, Uber's driver-partners are not reimbursed for driving expenses, such as gasoline, depreciation, or insurance, while employed drivers covered by the OES data may not have to cover those costs. These costs vary for each driver-partner, and drivers may be able to partially offset their costs by deducting work-related expenses from their income for tax purposes, including depreciation and/or leasing fees, gasoline, maintenance, insurance, mobile device and data fees, and license and registration fees depending on their particular tax situation. A detailed quantification of driver-partner costs and net after-tax earnings is a topic of future research. Nonetheless, the figures suggest that unless their after-tax costs average more than $6 per hour, the net hourly earnings of Uber's driver-partners exceed the hourly wage of employed taxi drivers and chauffeurs, on average.

Notice also that Uber's driver-partners tend to earn more in the markets where taxi drivers and chauffeurs tend to earn more. The Pearson correlation across the 19 areas with available data (Orange County and Los Angeles are combined in the OES) is 0.56. At least in the long run, the process of labor market equilibration in the presence of varying local labor market conditions should generate a positive correlation in the wages of those doing similar work in the same market.

Conclusion

This paper has provided the first comprehensive analysis of Uber's driver-partners, based on both survey data and administrative data. Several findings are worthy of emphasis and exploring in further research.

First, the Uber platform provides a great deal of flexibility to driver-partners. Responses to the BSG survey indicated that many driver-partners valued the flexibility to choose their hours of work and days of work. Furthermore, the administrative data indicate that a large share of driver-partners avail themselves of this flexibility and vary their hours from week to week. Compared with traditional taxi drivers, Uber driver-partners tend to work fewer hours per week. For example, taxi drivers and chauffeurs were five times more likely to work 50 or more hours per week (35 percent of taxi drivers and chauffeurs versus seven percent of Uber's driver partners). The finding that hourly earnings for Uber's driver-partners are essentially invariant to hours worked during the week also makes Uber an attractive option to those who want to work part-time or intermittently, as other part-time or intermittent jobs in the labor market typically entail a wage penalty.

Second, Uber's driver-partners are more similar in terms of age and education to the general workforce than to taxi drivers and chauffeurs. There are many possible explanations that could have contributed to this result. First, the U.S. economy was operating at less than full employment during the period studied, and more highly educated and younger workers may have had fewer alternatives available than is normally the case in this time period. Uber may have represented a particularly attractive bridge option for these workers. Second, entry barriers in traditional taxi and limo services may prevent a broader segment of the workforce from gaining such jobs. And third, a broad segment of the general public may be drawn to Uber over traditional taxi and chauffeur jobs because Uber permits greater flexibility in terms of scheduling. The fact that new drivers continued to partner with Uber at an accelerating rate in late 2014, when the economy strengthened and the unemployment rate fell below six percent, suggests that weakness in the economy was not the major reason why drivers partnered with Uber. In addition, most driver-partners were employed prior to joining Uber. These considerations suggest that Uber has attracted driver-partners with a wide range of backgrounds because they value the type of opportunity for flexible work that Uber provides.

Third, although it is difficult to compare the after-tax net hourly earnings of Uber's driver-partners and taxi drivers and chauffeurs taking account of all costs, it appears that Uber driver-partners earn at least as much as taxi drivers and chauffeurs, and in many cases more than taxi drivers and chauffeurs. The prospect of higher compensation is probably part of the explanation for why the number of Uber driver-partners has grown at an exponential rate (along with lower entry barriers and flexibility). Another aspect of Uber that can influence the pay of Uber's driver-

partners vis-à-vis taxi drivers is that customers rate their driver when they take a trip with Uber, and drivers' ratings are made available to potential customers. This leads Uber's driver-partners to develop reputations, and to have an incentive to perform well to develop and maintain a good reputation. By contrast, taxi drivers typically are anonymous and customers are not aware of their reputations. Reputations matter in markets.[25] Driver-partners are rewarded for having a good reputation, which could lead Uber's driver-partners to earn more than taxi drivers. Furthermore, drivers who expect to do a good job and develop a strong reputation are more likely to be attracted to Uber than to traditional taxi service.[26] Estimating the impact of drivers' reputations on their earnings is an important topic for further research.

Lastly, although some have argued that the sharing economy is weakening worker bargaining power and responsible for much of the rise in inequality in the United States, the actual effect is much more complicated and less clear. First, there is little evidence of a secular rise in the percentage of workers who are self-employed, independent contractors, or part-time. As Bernhardt (2014; p. 15) concluded, "we all share a strong intuition that the nature of work has fundamentally changed, contributing to the deterioration of labor standards. Yet at least with aggregate national data, it has been hard to find evidence of a strong, unambiguous shift toward nonstandard or contingent forms of work – especially in contrast to the dramatic increase in wage inequality." Second, inequality increased dramatically in the United States long before the advent of the sharing economy, and has increased much less in many other countries that, unlike the United States, experienced a sharp rise in part-time work. Third, at least insofar as the advent of ride sharing services like Uber is concerned, the relevant market comparison is to other for-hire drivers, many of whom were independent contractors prior to the launch of Uber. Moreover, the availability of modern technology, like the Uber app, provides many advantages and lower prices for consumers compared with the traditional taxi cab dispatch system, and this has boosted demand for ride services, which, in turn, has increased total demand for workers with the requisite skills to work as for-hire drivers, potentially raising earnings for all workers with such skills. And finally, the growth of Uber has provided new opportunities for driver-partners, who, based on the BSG survey, seem quite pleased to have the option available.

[25] See, for example, Cabral and Hortaçsu (2010) for research on the relationship between sellers' ratings and sales on eBay, which, like Uber, is an online marketplace that uses a ratings system to build reputations for both sellers and buyers.

[26] This sorting effect could partly explain why Uber's driver-partners are more highly educated than traditional taxi drivers and chauffeurs.

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