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Economics of the Gig Economy: Limitations of Data and Policy

Jeffrey A. Michael*

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I. INTRODUCTION

The Gig Economy, or Online Platform Economy (OPE), creates challenges for economic data and policy. While much of the policy debate surrounding this area focuses on “gig” work-arrangements, OPE also includes selling or short-term leasing of personal property such as housing and cars.¹ These new markets have evolved quickly, and the OPE is difficult to track and measure using traditional economic data. Often the best data comes from private proprietary sources that are better positioned to observe transactions such as financial institutions or businesses that have developed web tools to scrape and clean data from websites.² While many insights can be drawn from this data to support policy making, these non-traditional sources lack transparency and provide a more limited view than is ideal.

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1. DIANA FARRELL ET AL., JP MORGAN CHASE INST., THE ONLINE PLATFORM ECONOMY IN 2018: DRIVERS, WORKERS, SELLERS, AND LESSORS, 3 (2018), <https://www.jpmorganchase.com/content/dam/jpmc/jpmorgan-chase-and-co/institute/pdf/institute-ope-2018.pdf> (on file with the *University of the Pacific Law Review*).

2. Kabue Muriithi, *What is AirDNA?*, MASHVISOR, <https://www.mashvisor.com/blog/what-is-airdna/#what-is-airdna> (last updated July 5, 2022) (on file with the *University of Pacific Law Review*) (showing an example of proprietary data scraped off the web is AirDNA, which scrapes Airbnb calendar availability and price postings for individual properties listed on Airbnb and VRBO to generate proprietary estimates of short-term rental market data for investors and property managers who subscribe to its data and analytical services); DIANA FARRELL ET AL., JP MORGAN CHASE INST., WHERE ARE ALL THE CONTINGENT WORKERS? (2018), <https://www.jpmorganchase.com/institute/research/labor-markets/insight-contingent-workers-survey.htm> (on file with the *University of Pacific Law Review*).

The economics of the gig economy can be considered using the basic structure of supply, demand, and third-party effects. Supply includes the entities that develop and own the online platforms as well as individuals who supply their labor and property through the platforms. The issue of employee or independent contractor classification—that is the focus of much of this symposium—is a supply issue as are the earnings of workers and online platform companies. The demand perspective considers the economic value that has been created by this emerging economy and considers the characteristics of consumers and the economic benefits they receive. Third-party effects include: environmental externalities, such as congestion, and impacts on other producers and consumers of substitute goods such as transit agencies or apartment hunters. This short paper cannot fully cover all of these topics but provides a broad overview of what existing data tells us about this economy.

This paper begins by describing the limited economic data surrounding the OPE, what it shows about growth trends, workers, consumers, and the challenges in measuring it with traditional economic data. It then takes a closer look at the Transportation Services sector which has been the most impacted industry by the OPE.³ It concludes with a brief discussion of the implications for public policy beyond the heated worker classification issue.

II. THE GIG ECONOMY AND ECONOMIC DATA

Measuring the OPE or gig economy has proven to be very difficult using traditional approaches. The Bureau of Labor Statistics defines electronically mediated employment as “short jobs or tasks that workers find through websites or mobile apps that both connect them with customers and arrange payment for the tasks” completed.⁴ However, the BLS and other statistical agencies are unable to distinguish electronically-mediated employment from traditional work using standard approaches to collecting economic data regardless of whether the workers are classified as employees of the platform or independent contractors.⁵ Economic data on employment primarily comes from three sources: tax filings, surveys of employer payrolls, and surveys of individuals.

Tax filings do not distinguish between these types of employment, and self-employment tax filings can be particularly hard to interpret because of incomplete and strategic reporting by individuals.⁶ Despite the limitations, analysis of tax

3. FARRELL ET AL., *supra* note 1.

4. *Labor Force Statistics from the Current Population Survey: Electronically Mediated Employment*, U.S. BUREAU OF LAB. STATS., <https://www.bls.gov/cps/electronically-mediated-employment.htm> (last updated Sept. 28, 2018) (on file with the *University of the Pacific Law Review*).

5. FARRELL ET AL., *supra* note 2.

6. Andrew Garin, Emilie Jackson, & Dmitri Koustas, *New Work or Changes in Reporting? A Framework for Measuring Self-Employment Trends in Administrative Data* 7 (Univ. Chicago, Becker Friedman Inst. for Econs., Working Paper No. 2022-67, 2021), https://bfi.uchicago.edu/wp-content/uploads/2022/05/BFI_WP_2022-67.pdf (working paper on file with the *University of Pacific Law Review*) (showing

records show electronically mediated employment has not had a significant impact on the amount of self-employment outside the transportation sector.⁷ Electronically mediated work is not asked about in regular surveys, although BLS intermittently conducts a contingent worker supplemental survey, most recently in 2017, that asks about these issues.⁸ The low-frequency intermittent timing does not allow for trend analysis, and these questions have proven difficult for respondents to answer due to confusion about the definition of electronically mediated work and the fact that this employment is very often a small secondary source of income.⁹

While traditional data is limited for discerning gig economy trends, private and commercial data has provided valuable insights. Access to this private information is limited, but some entities, most notably, the JPMorgan Chase Institute, have put some insightful analysis of their data into the public domain. As the largest bank in the United States, JPMorgan Chase has analyzed deposits to the checking accounts of nearly forty million anonymized U.S. households.¹⁰ It identified about forty depositors that it defined as OPE entities (e.g., Uber, Lyft, Airbnb, etc.), and were able to estimate the share of households receiving OPE income from various sources, the amount and frequency of OPE income, and its relative comparative importance to deposits received from other income sources.¹¹ The Institute has posted an updated analysis of this data every year or two so trends can be analyzed over time.¹² The Institute benchmarked their 2017 data to the BLS contingent worker survey conducted in 2017¹³ and found a close match in the share of households engaged in gig work and their characteristics with the Institutes' data having a slight overrepresentation of Western U.S. households. This 2017 comparison increases confidence in the JPMorgan Chase Institute data which is unique in that it is a consistent time-series of administrative data with some information on household characteristics.

several research reports from the IRS explaining these challenges which include underreporting and strategic reporting where workers respond to changes in tax laws such as the Earned Income Tax Credit that either incentivize or disincentive reporting at various income levels); *see also* Brett Collins et al., *Is Gig Work Replacing Traditional Employment? Evidence from Two Decades of Tax Returns* (Mar. 25, 2019), <https://www.irs.gov/pub/irs-soi/19rpgigworkreplacingtraditionalemployment.pdf> (unpublished paper on file with the *University of Pacific Law Review*).

7. FARRELL ET AL., *supra* note 1.

8. FARRELL ET AL., *supra* note 2.

9. FARRELL ET AL., *supra* note 1.

10. *Id.*

11. *Id.*

12. *See generally id.*; *see also* FIONA GREIG & DANIEL SULLIVAN, JP MORGAN CHASE INST., THE ONLINE PLATFORM ECONOMY THROUGH THE PANDEMIC (2021), <https://www.jpmorganchase.com/institute/research/labor-markets/online-platform-economy-through-the-pandemic> (on file with the *University of Pacific Law Review*); *see also* FARRELL ET AL., *supra* note 2; *see also* DIANA FARRELL & FIONA GREIG, JP MORGAN CHASE INST., THE PLATFORM ECONOMY: HAS GROWTH PEAKED? (2016), <https://www.jpmorganchase.com/content/dam/jpmc/jpmorgan-chase-and-co/institute/pdf/jpmc-institute-online-platform-econ-brief.pdf> (on file with the *University of the Pacific Law Review*).

13. FARRELL ET AL., *supra* note 1.

Several conclusions about gig work can be drawn from the JPMorgan Institute data. First, non-transportation gig work was initially more common than transportation gig work but has grown much more slowly.¹⁴ Transportation gig work was rare prior to 2013, but has experienced explosive growth.¹⁵ By 2015, the data shows 0.5% of households¹⁶ were engaged in transportation gig work in any given month. By 2018, this had grown to 1% of households, and further increased to 1.5% of households by late 2019 and early 2020¹⁷, just before the pandemic. After an initial dip during the COVID-19 pandemic, by 2021 the share of households engaged in transportation gig work had rebounded back to 1.5%¹⁸ of households; although more were engaged in food and merchandise delivery and fewer in passenger transport.

Second, the data shows most gig workers only engage in platform-based employment for a few months per year, approximately 60% were gig workers for 3 months or less,¹⁹ whereas about one-eighth of gig workers engaged in this work for ten or more months. During the months they were engaged in gig work, it provided about half of household income although median gig work earnings were only about \$500 per month.²⁰ Overall, the Institute data shows gig workers to be very middle-class with incomes similar to households without any online platform income. Transportation gig worker household income is slightly lower than non-transport gig workers, with the median transportation gig worker household earning \$48,800 in 2019 compared to a median of \$54,800 for households in the sample with no online platform income, and \$58,900 for households with non-transport gig work.²¹ However, gig work only provided about 10% of total annual income for these households²², as the median gig-working household only participates in gig work a few months per year.

Finally, the Institute data shows geographic variation, with gig workers earning considerably more in California than other states.²³ While median gig-worker earnings were about \$500 per month, the median Los Angeles gig-worker earned \$800 per month, and the median Bay Area gig-worker earned \$1,200 per month, more than double the national median.²⁴ Some of this is certainly due to higher wages or payments per gig, but it could also reflect California gig workers are working more hours and less likely to be engaged in platform work part-time.

14. *Id.*

15. *Id.*

16. *Id.*

17. *Id.*; Greig & Sullivan, *supra* note 12.

18. FARRELL ET AL. *supra* note 1.

19. *Id.*

20. *Id.*

21. Greig & Sullivan, *supra* note 12.

22. *Id.*

23. FARRELL & GREIG, *supra* note 12.

24. *Id.*

III. A CLOSER LOOK AT THE TRANSPORTATION SECTOR

According to the data in the previous section, transportation is the sector of the labor market that has been most dramatically transformed by the emergence of online platforms.²⁵ For other types of services, online platforms have provided a more convenient and easier way for customers and service providers to connect and facilitate contracting and payment, but they have not changed the nature of the service enough to dramatically expand demand or the number or the supply of service providers.²⁶ Transportation has been different, in part because the online platforms became more advanced in ways that transformed the service and opened the market to large numbers of new providers. Transportation platforms such as Uber and Lyft dramatically streamline the search process by reducing the control of consumers and producers and using algorithmic assignment where a buyer is immediately connected to the most efficient provider and given a set price. This satisfies a need for immediate on-demand service in transportation, which is not as essential for other personal services such as dog-walking, house-cleaning, or landscaping. However, this hyper fast and efficient system where the platform does the matching results in workers having significantly less control compared to other electronically-mediated employment, an issue at the center of the employee versus independent contractor debate.

This fast, convenient service combined with easy entry for drivers who want to provide the service, contrasted with a relatively inefficient traditional taxi industry. Both consumers and drivers responded positively and rapidly to the new approach to taxi service. While some of the growth in online ridehailing services came at the expense of traditional taxi services, the data clearly shows the vast majority of growth was due to a massive expansion of taxi services to new riders and communities that were not well-served by the traditional industry. Thus, online transportation platforms created massive new economic value for both consumers and producers as shown in the following data.

1) NYC taxi data shows massive growth in taxi rides in the outer boroughs that were not well served by traditional yellow taxis.²⁷

25. FARRELL ET AL., *supra* note 1.

26. *Id.*

27. Todd W. Schneider, *Analyzing 1.1 Billion NYC Taxi and Uber Trips, with a Vengeance*, TODD W. SCHNEIDER BLOG (March 2018), <https://toddwshneider.com/posts/analyzing-1-1-billion-nyc-taxi-and-uber-trips-with-a-vengeance/> (on file with the *University of Pacific Law Review*).

- 2) California 1099 data shows massive expansion in taxi services provided and related income within the state beginning in 2014.²⁸ UCLA economist Leo Feler estimated that annual earnings by taxi drivers grew by \$4.5 billion between 2010 and 2018, compared to an estimate of only \$1.15 billion if not for Uber and Lyft.²⁹
- 3) U.S. National Household Travel Survey shows taxi services expanding to new markets such as mid-sized cities that had little taxi use before ride hailing apps.³⁰
- 4) Impacts on consumption and growth in related markets: vehicles, fuel, parking, entertainment/alcohol.³¹

IV. BEYOND EMPLOYEE CLASSIFICATION: OTHER POLICY OPTIONS

The OPE raises many issues for public policy. The employee versus independent contractor debate is important and discussed thoroughly in other articles from the symposium. However, the platform economy raises many other additional policy issues regarding the future of labor markets.

First, while app-based algorithmic assignment of workers was pioneered by companies such as Uber that used an independent-contractor model, this new method of scheduling and setting pay-rates is likely to be further modified and expanded into other types of employment and industries.³² Large retailers such as Target are already rolling out app-based systems that allow employees to opt-in to working when they want and use flexible demand-based wage setting to attract additional workers to a shift on short-notice when needed.³³ Employees might be

28. Annette Bernhardt & Sarah Thomason, *What Do We Know About Gig Work in California? An Analysis of Independent Contracting*, UC BERKELEY LAB. CTR. (June 14, 2017), <https://laborcenter.berkeley.edu/what-do-we-know-about-gig-work-in-california/> (on file with the *University of Pacific Law Review*).

29. Leo Feler, *Proposition 22 and the Reclassification of Uber and Lyft Drivers as Employees versus Independent Contractors*, UCLA ANDERSON FORECAST (Sept. 2020), https://www.anderson.ucla.edu/documents/areas/ctr/forecast/FoDi/ForecastDirect_No_1.pdf (on file with the *University of the Pacific Law Review*).

30. Matthew Wigginton Conway et al, *Trends in Taxi Use and the Advent of Ridehailing, 1995–2017: Evidence from the US National Household Travel Survey*, MDPI (Aug. 28, 2018), <https://www.mdpi.com/2413-8851/2/3/79/htm> (on file with the *University of Pacific Law Review*).

31. Susan Shaheen & Adam Cohen, *Shared Ride Services in North America: Definitions, Impacts, and the Future of Pooling*, 39 TRANS. REVS. 427, 435, 437, 438 (2018); see generally Gordon Burtch et al., *Ride-Hailing Services and Alcohol Consumption: Longitudinal Analysis*, 23 J. MED. INTERNET RSCH. 1, 1 (2021).

32. Tom Simonite, *When Your Boss Is an Uber Algorithm*, MIT TECH. REV. (Dec. 1, 2015), <https://www.technologyreview.com/2015/12/01/247388/when-your-boss-is-an-uber-algorithm/> (on file with the *University of Pacific Law Review*).

33. Shoshy Ciment, *Target Embraces Hybrid and Remote Options for Corporate Employees*, FOOTWEAR NEWS (Apr. 19, 2022), <https://footwearnews.com/2022/business/retail/target-hybrid-remote-corporate-office-1203276045/> (on file with the *University of Pacific Law Review*). Target corporations “on-demand” job postings advertised on Indeed, Ziprecruiter, and their own website. Many employers are increasing the use of scheduling apps such as Shyft (myshyft.com) and Crew (crewapp.com) to optimize on-demand staffing and increase

attracted to such a system by having greater control over when they work and the prospect of occasionally higher wages. Employers may be attracted by the ability to attract a larger overall workforce and schedule staffing more efficiently to match immediate needs and reduce fringe-benefit costs by moving to more part-time employees. Wider adoption of algorithm matching in traditional employment could increase economic efficiency, but it could also result in a system where service workers will simultaneously hold a larger number of jobs with much more variation in hours and compensation. If the technology pioneered in the OPE leads to more workers in traditional employee relationships holding multiple, part-time jobs, there would be significant implications for social safety-net programs such as unemployment insurance.

Second, the issues related to app-based employment highlight the problems associated with the U.S. system of social insurance, both in the level of benefits and the structure of building a large share of its social insurance, including healthcare, retirement, unemployment, and disability benefits, around traditional employment relationships. Research shows that unemployment is the best predictor of entering gig-work, something that was true of independent contractor, 1099 work, even before the advent of ridehailing apps.³⁴ In addition, the costs of this system on employers creates strong incentives to utilize independent contractors and part-time employees in order to maintain cost-competitiveness. Changes in the U.S. social safety net system, such as broader availability of portable benefits, and an expanded tax-funded social benefits as substitutes for employment-based insurance, could support a better functioning labor market, and reduce the economic stakes associated with the employee or independent contractor status.

Finally, policy makers should consider whether online platforms are essential infrastructure or natural monopolies. If online platforms are viewed more like natural monopoly utilities, the appropriate policy response would be a stronger regulatory structure similar to a public utility commission or even public ownership. Online platforms are social infrastructure essential to connecting workers to consumers and employment opportunities, just as physical infrastructure like roads facilitate connectivity. Some initial attempts at public-provided online-platforms merit further experimentation and investigation. A California example is CalFlexi, a platform for connecting providers and demanders of in-home childcare services in Long Beach.³⁵

Online platforms have revolutionized the way small service providers connect with consumers with the largest transformation and growth occurring in the transportation sector where algorithm-based matching has increased efficiency and

employee's ability to opt-in and swap shifts on short notice.

34. Feler, *supra* note 29.

35. Eliza Levinson, *A Look at CalFLEXI: Long Beach's Experiment with Government-Run Gig Work*, NEXT CITY (July 19, 2021), <https://nextcity.org/features/inside-calflexi-long-beachs-experiment-with-government-run-gig-work> (on file with the *University of Pacific Law Review*).

facilitated growth. As the use of this technology spreads to traditional employment relationships, policy makers will need to consider actions beyond worker classification to maintain an effective social safety net while maintaining the efficiency and value-generated by online platforms.

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