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BEYOND LEGAL OPERATION: THE NEXT RIDESHARING POLICY CHALLENGES

Zach Graves, Arthur Rizer and Joe Kane

CONTENTS

EXECUTIVE SUMMARY

Ridesharing is one of the most robust and salient sectors of the sharing economy. Now valued at over $72 billion, Uber is the world's largest transportation network company (TNC), as well as the largest sharing- economy company.[1] But it also faces competition from rivals like Lyft, Via and Wingz. Together, these companies offer legal ridesharing services in all 50 states and the District of Columbia,[2] and cover 95% of the U.S. population.[3]

It took less than a decade for TNCs to become ubiquitous across the United States, and these companies had to rewrite driver-for-hire regulations as they went. A few holdouts notwithstanding, most states have enacted legislation that allows these services to operate, often preempting municipalities that have traditionally enabled resistance from politically-connected incumbents in the taxi and limo industry.[4]

These legislative frameworks were not always perfect or comprehensive. Many were hasty compromises necessary to accommodate TNCs' popular but gray-market operation. Some technical policy details, like compliance with finance and insurance rules,[5] were handled through inter-industry negotiations. Others were not always thought through. All of these factors meant that the nuances of crafting good policy were sometimes overlooked.

While this approach solved the near-term challenge of legalizing TNC operations, it has also calcified their business model by designing a regulatory framework around how they currently operate, rather than how they might in the future.

Meanwhile, critics of the sharing economy, and ridesharing in particular, have gotten louder. Labor advocates have pointed out that services like Uber and Lyft take hefty commissions, do not provide benefits, impose rigid terms on those who wish to use their networks and can kick people off their platforms without any transparency as to why. This has led to consternation among some policymakers and stakeholders about how the sharing economy is shaping the American one and the future of work.

1. Theodore Schleifer, "Uber's latest valuation: $72 billion," *Recode*, Feb. 9, 2018. https://www.recode.net/2018/2/9/16996834/uber-latest-valuation-72-billion-waymo-lawsuit-settlement.

2. David Pierson, "Lyft now picks up anywhere in 40 states, grabbing areas Uber doesn't cover," *Los Angeles Times*, Aug. 31, 2017. http://www.latimes.com/business/la-fi-lyft-uber-statewide-20170831-story.html.

3. "Half a Billion Rides and Counting," *Lyft Blog*, Oct. 11, 2017. https://blog.lyft.com/posts/2017/10/10/half-a-billion-rides-and-counting.

4. "City Rights in an Era of Preemption: A State-by-State Analysis," National League of Cities, 2017, p. 3. http://www.nlc.org/sites/default/files/2017-03/NLC-SML%20Preemption%20Report%202017-pages.pdf.

5. R.J. Lehmann, "Blurred Lines: Insurance Challenges in the Ridesharing Market," *R Street Policy Study* No. 28, October 2014. http://2o9ub0417chl2lg6m43em6psi2i.wpengine.netdna-cdn.com/wp-content/uploads/2014/09/RSTREET28.pdf.

Many of these critics also foresee the coming of highly autonomous vehicles (HAVs) to replace TNC drivers, as well as other professional driving jobs. This development comes in the midst of state and federal policy debates over the regulation and deployment of HAVs, and growing anxiety over machines displacing human jobs.[6]

Accordingly, the present study explores these issues and maps out some of the future policy challenges for TNCs. To do so, it first examines the background and development of ridesharing in the United States and its legal frameworks. It then discusses current and future policy challenges that have emerged with the maturation of the TNC market. These include: insurance, licensure, criminal history, future of work, automation, competition with public transit, congestion, decentralization, data privacy, and taxes and fees. By considering these issues in depth, the paper puts forward a framework to promote successful policies for a safe, robust and efficient ridesharing market.

A BRIEF HISTORY OF RIDESHARING

Uber's valuation now exceeds $72 billion.[7] Its closest rival, Lyft, comes in at $11 billion.[8] Despite the massive value of these companies, a recent study by Pew Research Center shows that only 15% of American adults have used a ridesharing app, and only 27% are aware that such services exist.[9] While TNCs are grossing billions in global annual revenues, it seems they still have room to grow. After all, the rise of TNCs is a fairly recent development.[10]

Uber was founded just seven years ago as "UberCab" by Garrett Camp and Travis Kalanick. The company's first app went live in July, 2010 and offered a black-car-only service that operated in the San Francisco Bay Area. They dropped the "Cab" suffix from their name later that year.

It did not take long for Uber to run afoul of regulators. By October, 2010 they had received a cease-and-desist order from the San Francisco Metro Transit Authority and the California Public Utilities Commission, which threatened the company with massive fines and jail time if they continued to operate.[11] Nevertheless, they ignored the order, cultivating public support through a vocal user base (a strategy they later repeated in other markets).

Despite such strong support, Uber did not hit the mainstream until it began its national expansion in 2011 into cities such as New York, Seattle, Chicago, Boston and the District of Columbia.[12] A year later, its chief competitor, Lyft, was launched as a spinoff of the longer-distance service, Zimride.[13] Lyft's product, which relied on non-professional drivers using their personal vehicles, was followed quickly by the launch of Uber's competing service, UberX.[14] Together, these opened up vast new opportunities for people who were not professional limo drivers to participate in the market, and made TNCs a significant part of the sharing economy.

Much of the period that followed was a veritable "wild west" with respect to the legality and regulatory status of ridesharing. Fully featured legal frameworks—particularly to deal with difficult insurance and liability questions—largely did not come on the scene until several years later.[15]

While the battles for TNC legalization started in large cities, eventually they moved to the state level. This made sense for a few reasons. Transportation policy is inherently interjurisdictional. This is because people's desire to travel is not confined to city limits, and legal issues at the borders of different jurisdictions propose certain challenges. Additionally, working at the state level allowed TNCs to hold a stronger position relative to taxi companies and labor groups that had a particularly influential presence in cities but not as much power statewide. Overall, state legislation allowed for one battle to be fought for all cities in a state rather than fighting one city at a time.

Some of these new state laws, such as in Wisconsin or Nevada, preempt the ability of cities or counties to impose heavy-handed regulations.[16] Others, like Alabama, set only a

6. Aaron Smith and Monica Anderson, "Americans' attitudes toward a future in which robots and computers can do many human jobs," Pew Research Center, Oct. 4, 2017. http://www.pewinternet.org/2017/10/04/americans-attitudes-toward-a-future-in-which-robots-and-computers-can-do-many-human-jobs.

7. Schleifer. https://www.recode.net/2018/2/9/16996834/uber-latest-valuation-72-billion-waymo-lawsuit-settlement.

8. Darrell Etherington, "Lyft raises $1 billion at $11 billion valuation led by Alphabet's CapitalG," *TechCrunch*, Oct. 19, 2017. https://techcrunch.com/2017/10/19/lyft-raises-1-billion-at-11-billion-valuation-led-by-alphabets-capitalg.

9. Aaron Smith, "On-demand: Ride-hailing apps," Pew Research Center, May 19, 2016. http://www.pewinternet.org/2016/05/19/on-demand-ride-hailing-apps.

10. "Uber's revenue hits $6.5 billion in 2016, still has large loss," *Reuters*, April 14, 2017. https://www.reuters.com/article/us-uber-tech-results/ubers-revenue-hits-6-5-billion-in-2016-still-has-large-loss-idUSKBN17G1IB.

11. Lora Kolodny, "UberCab Ordered to Cease And Desist," *TechCrunch*, Oct. 24, 2010. http://techcrunch.com/2010/10/24/ubercab-ordered-to-cease-and-desist.

12. Eric Eldon, "How Uber Is Launching In Its Newest City, Washington, DC," *TechCrunch*, Dec. 15, 2011. https://techcrunch.com/2011/12/15/uberdc.

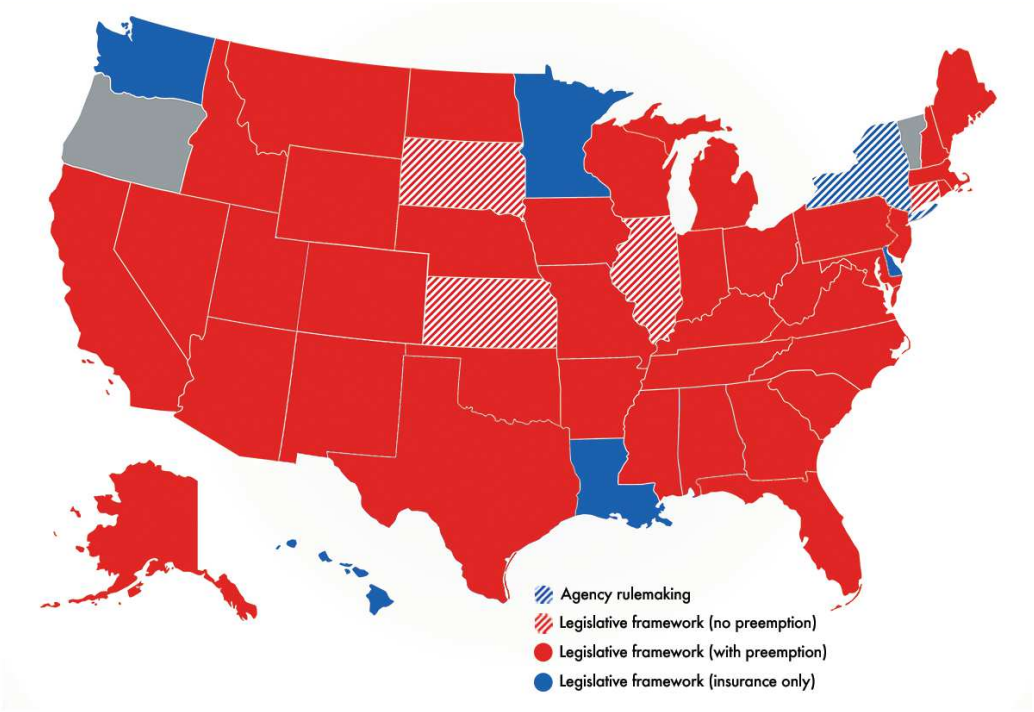
13. Kim-Mai Cutler, "Zimride Brings Ride Sharing To New York And Washington D.C.," *TechCrunch*, Aug. 3 2012. https://techcrunch.com/2012/08/03/zimride-brings-ride-sharing-to-new-york-and-washington-d-c.

14. Alexia Tsotsis, "Uber Opens Up Platform To Non-Limo Vehicles With 'Uber X,' Service Will Be 35% Less Expensive," *TechCrunch*, July 1, 2012. https://techcrunch.com/2012/07/01/uber-opens-up-platform-to-non-limo-vehicles-with-uber-x-service-will-be-35-less-expensive.

15. See, e.g., Lehmann. http://www.rstreet.org/wp-content/uploads/2014/09/RSTREET28.pdf.

16. See, e.g., "An Act to amend 194.01 (1) and 194.01 (2); and to create 340.01 (23g) (b) 4, 440.08 (2) (a) 69m and subchapter IV of chapter 440 [precedes 440.40] of the Statutes," Assembly Bill 143, 2015-2016 Legislature of Wisconsin. http://docs.legis.wisconsin.gov/2015/related/proposals/ab143; "An Act relating to transportation," Assembly Bill 176, 2015 Legislature of Nevada. https://www.leg.state.nv.us/Session/78th2015/Bills/AB/AB176_EN.pdf.

FIGURE I: STATE-LEVEL TRANSPORTATION NETWORK COMPANY LEGAL FRAMEWORKS (2018)



baseline for insurance requirements.[17] Still others, like Maryland, are in the middle and place some limitations on municipalities while leaving other elements open.[18]

Today, all states except for Vermont and Oregon have a legal framework for TNC operation. The vast majority of these include some form of municipal preemption and regulate TNC insurance, as well as general conduct and operation statewide.

However, in the rush to pass TNC legislation, Uber and Lyft may have disrupted the protectionist taxi monopolies, but they also acquiesced to new barriers to entry that were subsequently erected—a process Marc Scribner has described as "accommodation, not deregulation."[19]

From the TNCs' perspective, this was their best option at a time when they were facing mounting fines, cease-and-desist orders and police crackdowns. After all, comprehensive deregulation of driver-for-hire markets would have been a much heavier policy lift.[20] Nevertheless, the aftermath of this accommodation strategy means that some laws need to be rewritten both to make them more effective for current ridesharing models and to allow new kinds of competitors to enter the market.

THE NEXT POLICY CHALLENGES

Policymakers face an entirely new set of challenges with respect to ridesharing, which will come from the emergence of new competitors, technological advances like autonomous vehicles, the national debate over the future of work and externalities from the maturation of the market.

Additionally, the ridesharing sector has drawn criticism for its effects on congestion, drawing customers away from public transportation and expanding the number of 'gig economy' workers without benefits. In addition, new technologies such as HAVs raise their own unique regulatory challenges and threaten to replace and automate most driving jobs.

Accordingly, the following sections present an overview of the next wave of policy challenges that ridesharing companies must grapple with in the United States.

17. See "An Act relating to transportation," Senate Bill 262, 2016 Alabama Legislature. http://alisondb.legislature.state.al.us/Alison/SearchableInstruments/2016rs/PrintFiles/SB262-enr.pdf.

18. See "An Act concerning Public Utilities," Senate Bill 54, 2016 Maryland Legislature. http://mgaleg.maryland.gov/2016RS/chapters_noln/Ch_16_sb0054E.pdf.

19. Marc Scribner, "Uber and Regulation: Pro-Business Is Not Pro-Market," Competitive Enterprise Institute, Aug. 7 2014. https://cei.org/blog/uber-and-regulation-pro-business-not-pro-market.

20. Adam Clark Estes, "Uber Faces Down Legal Trouble Pretty Much Everywhere," *The Atlantic*, Dec. 3, 2012. https://www.theatlantic.com/technology/archive/2012/12/uber-legal-trouble/320893.

Fees and licensure

As local governments saw ridesharing as an opportunity to extract revenues and fill their coffers, new fees and taxes were built into agreements for TNC regulation. These fees are structured in different ways, typically with some combination of an annual TNC-licensing fee, an annual driver-licensing fee, an airport-use fee and a per-trip fee. Although some TNC-level fees, like Georgia's, are adjusted based on fleet size,[21] most are flat.

It may be appropriate for governments to collect some revenues to pay for the cost of administration, as they do for other driver-for-hire services. However, such financial outlays can have negative effects on the labor force and competition. For instance, high fees and paperwork requirements for individual drivers can undermine a key benefit of the sharing economy: namely, the creation of new, flexible opportunities for work. Those who were previously unemployed or underemployed now have the possibility to find on-demand work that fits their schedule. This creates a buffer against economic shocks—like unexpected layoffs or some types of illnesses—that might otherwise put people on the street. But if one has to pay a city hundreds of dollars to get started and navigate a complex permitting process, those benefits can be negated, or worse, entry into such work could be barred entirely.

Other licensure requirements also limit the availability of drivers, which harms both consumers and competition. New York City, for example, requires TNC drivers who have met state requirements to get a separate license from the Taxi and Limousine Commission.[22] Seattle requires drivers to complete a defensive driving course and an additional training course.[23] These licenses and special course requirements cost time and money that can discourage would-be drivers from joining a TNC platform.

Moreover, high TNC-level fees impose a significant barrier to entry for new competitors, while also limiting the kinds of business models that make sense to operate. Colorado, for example, charges a fee that declines with each new entrant, but started at $107,500; the next competitor to Uber and Lyft still has to pay $71,667.[24] Virginia imposes a $100,000 fee to apply for approval and subsequent annual fees of $60,000.[25] New York similarly charges a $100,000 application fee, with a $60,000 annual renewal.[26] While paying a six-figure licensing fee to operate in a state or other locality is not debilitating for Uber or Lyft, it certainly would be for newcomer TNCs—particularly those with niche business models.[27]

Some localities opt for per-trip fees as a way to raise revenue. When these fees are essentially sales taxes, their distortive effects are minimal. But if they are set too high or added to other fees, they contribute to a reduction in competition and increase in price. The same is true of fees specific to airports. High surcharges for trips that start or end at airports (up to five dollars in places like Chicago O'Hare[28] and Seattle-Tacoma[29]) may be a way to raise revenue from relatively price-inelastic consumers, but it limits competition and at higher levels, distorts the price signals for transportation.

The end result of all these barriers is fewer choices and higher prices for passengers and drivers alike. Such protection of incumbent players is detrimental to a dynamic and responsive transportation market.

Criminal justice

Other potential barriers come in the form of restrictions based on would-be drivers' criminal backgrounds. It is easy to understand why a business model based on getting into strangers' cars would require caution. Nevertheless, policymakers have heretofore been overly prescriptive in their efforts to mandate onerous background checks and other restrictions for ridesharing companies.

However, TNCs have their own incentives to balance risk because their business model relies upon the perception of safety and trust among their consumers. Accordingly, as R Street's Arthur Rizer and Jonathan Haggerty, and Impact Justice's Rachel Liebman have recently argued, allowing them to evaluate individuals on a case-by-case basis will

21. "HB 225," Georgia General Assembly Legislation, May 6, 2015, p. 13. http://www.legis.ga.gov/Legislation/20152016/153884.pdf.

22. "FAQs – Transportation Network Company," NYC Taxi and Limousine Commission, 2018. http://www.nyc.gov/html/tlc/html/faq/faq_nysdmv_tnc.shtml.

23. Seattle Municipal Code 6.310.400. https://library.municode.com/wa/seattle/codes/municipal_code?nodeId=TIT6BURE_SUBTITLE_IVNELICO_CH6.310TAFREVE_IVFREDRLIRE_6.310.400FREDRLIAP.

24. "A bill for an act concerning the regulation of transportation network companies," Senate Bill 14-125, 69th General Assembly State of Colorado, p. 15. http://www.leg.state.co.us/clics/clics2014a/csl.nsf/billcontainers/70364091166B28FC87257C4300636F6B/$FILE/125_eng.pdf.

25. "Virginia Transportation Network Company Manual," Virginia Department of Motor Vehicles, 2018, p. 3. https://www.dmv.virginia.gov/webdoc/pdf/dmv277.pdf

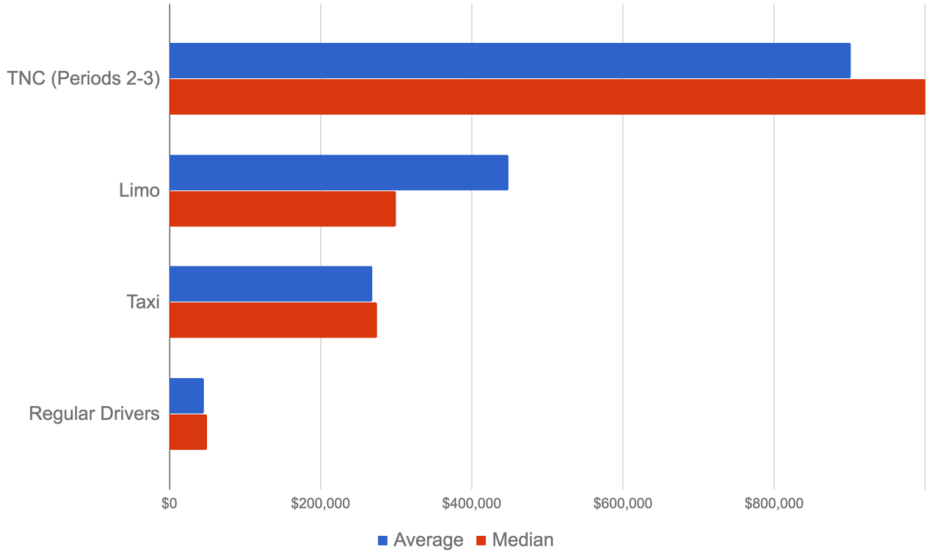
26. "Governor Cuomo Announces New Regulations to Bring Ride Sharing to Upstate and Long Island This Summer," Office of Governor Andrew M. Cuomo, June 6, 2017. https://www.governor.ny.gov/news/governor-cuomo-announces-new-regulations-bring-ride-sharing-upstate-and-long-island-summer.

27. This might include companies such as UZURV, Wingz, Blacklane, or the now-defunct Chariot for Women. Additionally, when that fee is passed on to a niche operator, it would be divided among a smaller number of customers. This would put them at an even greater disadvantage to incumbents.

28. "Ride with Uber Chicago O'Hare International Airport (ORD)," Uber, 2018. https://www.uber.com/airports/ord.

29. "Ride with Uber Seattle-Tacoma International Airport (SEA-TAC)," Uber, 2018 https://www.uber.com/airports/sea-tac.

FIGURE 2: MINIMUM LIABILITY INSURANCE REQUIREMENTS IN THE TOP 50 U.S. CITIES (2015)



NOTE: Organized by driver category. Minimum liability for bodily injury or death per accident. Excludes personal insurance data from no-fault states. Compiled from R Street's 2015 Ridescore data. http://www.rstreet.org/policy-study/ridescore-2015-hired-driver-rules-in-u-s-cities.

likely yield better results.[30] After all, one-size-fits-all rules merely serve to exclude otherwise safe and qualified candidates.[31]

This is problematic both for public safety and human dignity, particularly since there is a body of research that demonstrates that to allow formerly incarcerated people to hold a job greatly reduces their likelihood to reoffend.[32] In fact, unemployed offenders are more than twice as likely to commit another crime and end up in prison than those who have a job,[33] and some research has identified joblessness as the single most important predictor of recidivism.[34]

Given this, if ex-offenders can access stable employment, the incentive to commit additional crimes dissipates, while the promise of income mobility makes criminal activity increasingly unpalatable. And, in particular, the nature of the on-demand economy and its potential for self-selected work schedules, make it an excellent option for ex-offenders. It also expands the pool of drivers for companies and actually alleviates public safety issues.

Insurance

Also with respect to safety and economic viability, insurance is one of the most essential policy areas for ridesharing. Although it was contentious in the earlier history of ridesharing debates, the issue of insurance was largely settled in a 2015 industry compromise that determined a national standard.[35] As a result, insurance for TNCs can be purchased either by the driver or by the TNC itself, and many state laws are agnostic about which party acquires the coverage. Often,

30. Arthur Rizer et al., "Can the On-Demand Economy Open Doors for the Formerly Incarcerated?", *R Street Policy Study* No. 132, February 2018. http://www.rstreet.org/policy-study/can-the-on-demand-economy-open-doors-for-the-formerly-incarcerated.

31. See, e.g., "HB 992 Transportation Network Company Services Act," General Assembly of the State of Tennessee, May 20, 2015; Rizer et al., p. 9. http://www.rstreet.org/policy-study/can-the-on-demand-economy-open-doors-for-the-formerly-incarcerated.

32. See e.g. Christopher Uggen, "Work as a Turning Point in the Life Course of Criminals: A Duration Model of Age, Employment, and Recidivism," *American Sociological Review*, 65:4 (August 2000), pp. 529-46. http://www.jstor.org/stable/2657381?seq=1 - page_scan_tab_contents; Mark T. Berg and Beth M Huebner, "Reentry and the Ties that Bind: An Examination of Social Ties, Employment, and Recidivism," *Justice Quarterly*, 28:2 (July 30, 2011), pp. 382-410. http://www.tandfonline.com/doi/abs/10.1080/07418825.2010.498383.

33. Binyamin Appelbaum, "Out of Trouble, but Criminal Records Keep Men Out of Work," *The New York Times*, Feb. 28, 2015. http://www.nytimes.com/2015/03/01/business/out-of-trouble-but-criminal-records-keep-men-out-of-work.html.

34. "Back to Business: How Hiring Formerly Incarcerated Job Seekers Benefits Your Company," American Civil Liberties Union, June 2017, p. 4. https://www.aclu.org/sites/default/files/field_document/060917-trone-reportweb_0.pdf.

35. This compromise provided that: 1) Primary insurance be in effect for all three periods, in differing amounts; 2) Coverage limits be $50,000 in per-person bodily injury, $100,000 in per-incident bodily injury and $25,000 in physical damage; and 3) Insurers have a right to subrogation for cases in which a claim ought not to have been covered. See, e.g., Ray Lehmann, "Major Insurers to Strike Deal to Support Compromise TNC Language," *Insurance Journal*, March 24, 2015. http://www.insurancejournal.com/blogs/right-street/2015/03/24/361971.htm.

transportation network companies and drivers share the responsibility depending on the driver's status.[36]

Since personal auto insurance policies typically exclude livery services and other commercial liability exposures, some insurers offer products specifically tailored to TNC services. For instance, Geico offers a hybrid form of personal and commercial coverages.[37]

However, despite the general availability of coverage and the fact that the risk TNCs present is not materially distinct, mandated liability coverage for TNCs is often higher than for limousine and taxi services. In Memphis, for example, limos must have effective single-limit minimum coverage (including bodily injury and/or physical damage) of at least $50,000,[38] while TNCs must provide at least $1 million of coverage.[39] Such nonsensical requirements impose a direct barrier to entry for incumbent and newer TNCs, and on individuals for whom the cost of such unnecessarily high liability limits is prohibitive.

Accordingly, policymakers should be careful not to undo past successes. Current inter-industry compromise has been successful at accounting for insurance claims. In California, for instance, 97 percent of TNC-related incidents have been fully covered under the policy limits mandated by current law.[40] Upending this system to alter or raise coverage requirements, then, likely would only result in significant additional costs—without much additional benefit.

Automation

Looming on the horizon of ridesharing services is the development and deployment of highly automated vehicles (HAVs). While estimates differ on whether HAVs will disrupt traditional driving in a couple years or a couple decades,[41] their effects will likely be far reaching and significant when they do. High levels of automation are already present in systems like Tesla's "autopilot,"[42] which is still less advanced than Waymo's fully autonomous cars that are already in operation in the Phoenix suburbs.[43] Additionally, Uber has tested self-driving rides in Pittsburgh,[44] as has Lyft in Boston.[45]

Some effects of widespread automation on ridesharing are obvious. When cars become driverless, there will be a diminished role for TNC drivers. Uber and Lyft, however, have reportedly had too few drivers in the past,[46] so self-driving alternatives should be a welcome addition to human drivers in the short run. In a 2016 statement, Uber suggested that early self-driving technology will result in a mixture of autonomous and human drivers using the platform.[47] Furthermore, in some locations and weather conditions, autonomous vehicles may take longer to become a viable option.[48] Eventually, however, drivers should expect to be displaced.

Some have proposed that automation will increase the rate of car sharing, as fleets of HAVs can be managed by a TNC and used for different riders on routes to and from different destinations. Lyft president John Zimmer has predicted that increased automation may lead to subscription plans for transportation analogous to Spotify subscriptions.[49] Uber has already experimented with upfront payments in exchange for discounted, guaranteed fares in select locations with

36. There are three periods when TNC activity is outside of personal auto insurance coverage and must be covered by a separate policy. Period one is when the ridesharing app is on but the driver has not yet been matched with a passenger. Period two is when a driver is matched with and has accepted a passenger but they are not yet in his or her vehicle. Period three is the point at which the driver has picked up the passenger until he or she leaves the vehicle. Often ridesharing companies will cover the driver in periods two and three, while the driver's policy is effective in period one. See, e.g., "Joint Study of Transportation Network Company (TNC) Insurance Coverage Requirements in California," California Department of Insurance and California Public Utilities Commission, Dec. 31, 2017, p. 9. http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Licensing/Transportation_Network_Companies/TNC_REPORT_AS_OF_010518.pdf.

37. "FAQs for Rideshare Drivers," Geico, 2018. https://www.geico.com/information/aboutinsurance/ridesharing/faq/#where_is_ridesharing_insurance_available.

38. Memphis Code of Ordinances Sec. 6-44-6. https://library.municode.com/tn/memphis/codes/code_of_ordinances?nodeId=TIT6BULIRE_CH6-44LISHOTVEHI_ART2CEPUCO_S6-44-6IN.

39. TN Code § 55-12-141 (2015). https://law.justia.com/codes/tennessee/2015/title-55/chapter-12/part-1/section-55-12-141.

40. Ian Adams, "California Legislature should be cautious about disrupting the ridesharing balance," Fox & Hounds, Feb. 3, 2018. http://www.foxandhoundsdaily.com/2018/02/california-legislature-cautious-disrupting-ridesharing-balance.

41. Sarah Kessler, "A timeline of when self-driving cars will be on the road, according to the people making them," Quartz, March 29, 2017. https://qz.com/943899/a-timeline-of-when-self-driving-cars-will-be-on-the-road-according-to-the-people-making-them/.

42. "Autopilot," Tesla. https://www.tesla.com/autopilot.

43. Waymo is also piloting its own TNC service. See, e.g., Andrew J. Hawkins, "Waymo is first to put fully self-driving cars on US roads without a safety driver," *The Verge*, Nov. 7, 2017. https://www.theverge.com/2017/11/7/16615290/waymo-self-driving-safety-driver-chandler-autonomous.

44. Alex Davies, "Uber may be aflame, but its self-driving cars are getting good," *Wired*, Dec. 28, 2017. https://www.wired.com/story/uber-self-driving-cars-pittsburgh.

45. Andrew J. Hawkins, "Lyft is now offering self-driving car trips in Boston," *The Verge*, Dec. 6 2017. https://www.theverge.com/2017/12/6/16742924/lyft-nutonomy-boston-self-driving-car.

46. Paul A. Eisenstein, "Millions of Professional Drivers Will Be Replaced by Self-Driving Vehicles," Nov. 5, 2017. https://www.nbcnews.com/business/autos/millions-professional-drivers-will-be-replaced-self-driving-vehicles-n817356.

47. Anthony Levandowski and Travis Kalanick, "Pittsburgh, your Self-Driving Uber is arriving now," *Uber*, Sept. 14, 2016. https://www.uber.com/blog/pittsburgh/pittsburgh-self-driving-uber.

48. Aarian Marshall, "To Let Self-Driving Cars Go Anywhere, Train Them Everywhere," *Wired*, Oct. 27, 2017. https://www.wired.com/story/waymo-self-driving-michigan-testing.

49. John Zimmer, "The Third Transportation Revolution," Medium, Sept. 18, 2016. https://medium.com/@johnzimmer/the-third-transportation-revolution-27860f05fa91.

Ride Pass.[50] Autonomous, electric cars could also offer free or nearly-free transportation in urban areas.[51]

For their part, TNCs have been increasingly active in policy discussions surrounding HAVs. On the one hand, they participate in the Self-Driving Coalition for Safer Streets, which advances policy developments that speed HAV deployment.[52] On the other hand, a coalition of firms that includes many ridesharing companies has asserted that AVs in dense urban areas should be operated only in shared fleets. This requirement, however, would be a self-serving restriction on the permissive framework that allowed these companies to innovate in the first place.[53] Governments should not give in to attempts by incumbents to use the regulatory process to skew the market for HAVs in their favor.

Public Transit

As their popularity has grown, critics have pointed fingers at ridesharing apps for their increased congestion in urban areas like Manhattan. For example, a recent report by Bruce Schaller, a former deputy commissioner with the NYC Department of Transportation, decries the "unsustainable" growth of Uber and Lyft, and argues that rather than bringing convenient, low-cost transportation, they have brought increased gridlock and taken vital revenue away from public transportation.[54] However, a report issued by the New York City Mayor's Office (the very city that was the focus of Schaller's report) found that while overall congestion in the busiest part of Manhattan had increased, Uber was not a significant contributor to its rise.[55]

Indeed, further studies suggest that TNCs may actually decrease congestion. For example, in 2016, Arizona State University business researchers concluded that: "Uber entry significantly decreases traffic congestion in the urban areas of the United States," and moreover that such reductions (perhaps unsurprisingly) extended to emissions too.[56] Similarly, a study from the American Public Transportation Association found that TNC users were both less likely to own cars and more likely to use public transportation, which minimizes burdens on public infrastructure.[57]

With respect to the impact on public transit revenue, TNC competition with public transit is not just a coincidence. Ridesharing became cheaper when Uber and Lyft introduced carpooling services, such as UberPool and Lyft Line. As a result, in some instances, such services can be cheaper than public transit.[58] For example, a 2016 promotional offer made UberPool cheaper than the subway fares of both New York and Boston.[59] Additionally, services like Lyft Shuttle can sometimes fill in geographical gaps in public transportation routes while potentially providing superior service.[60]

Moreover, public transportation may have experienced artificially high demand in the past because of hidden subsidies. According to a 2015 study commissioned by Comptroller Scott Stringer, New York City residents faced an "invisible fare" equivalent to $130 per month, per household, "even before buying a MetroCard or paying a toll on an MTA crossing."[61]

Put simply, while there is no doubt that TNCs do act as a substitute for public transport, this is often because they provide a service that consumers prefer. At the same time, there may be externalities that have not yet been accounted for, and thus cities should not tilt the playing field in favor of either method. Competition will bring out the best in both types of service.

50. "What is ride pass," Uber, 2018. https://help.uber.com/h/800946bf-50a5-479d-ad5e-dee680f5c5c6?state=Gp-C6PqWjwdCMkjm0SuZhsDCZMg68znoFKQmmp1kbko%3D#_.

51. Zach Graves and Ian Adams, "Could ridesharing shift to an ad-supported business model?", *R Street Blog*, April 6, 2015. http://www.rstreet.org/2015/04/06/could-ride-sharing-shift-to-an-ad-supported-business-model.

52. "Our Mission and Members," Self-Driving Coalition for Safer Streets, 2018. http://www.selfdrivingcoalition.org.

53. Ian Adams, "The most important 'shared mobility principle' is freedom," *R Street Blog*, Feb. 2, 2017. http://www.rstreet.org/2018/02/02/the-most-important-shared-mobility-principle-is-freedom.

54. "UNSUSTAINABLE?: The Growth of App-Based Ride Services and Traffic, Travel and the Future of New York City," Schaller Consulting, Feb. 27, 2017. http://schaller-consult.com/rideservices/unsustainable.pdf.

55. Office of the Mayor, "For-Hire Vehicle Transportation Study," City of New York, Jan. 2016, p. 5. http://www1.nyc.gov/assets/operations/downloads/pdf/For-Hire-Vehicle-Transportation-Study.pdf. This is consistent with the findings of the Shared-Use Mobility Center, which recently concluded that TNC traffic is not connected with long-term changes in rush hour congestion. See Colin Murphy, "What Can Transit Agencies Learn from TNCs' Late-Night Popularity?", Shared-Use Mobility Center, Jan. 25, 2018. http://sharedusemobilitycenter.org/research/what-can-transit-agencies-learn-from-tncs-late-night-popularity.

56. Ziru Li et al., "Do On-demand Ride-sharing Services Affect Traffic Congestion? Evidence from Uber Entry," *Social Science Research Network*, Sept, 13, 2016, p. 13. https://goo.gl/99HAHD. The authors suggest that mechanisms such as increased vehicle occupancy and use of surge pricing in times of high demand could be responsible for this effect.

57. Shared Mobility and the Transformation of Public Transit," American Public Transportation Association, March 2016. http://www.apta.com/resources/reportsandpublications/Documents/APTA-Shared-Mobility.pdf.

58. Alison Griswold, "Commuting with Uber in New York is cheaper than taking the subway this summer," *Quartz*, July 11, 2016. https://qz.com/728871/commuting-with-uber-in-new-york-is-cheaper-than-taking-the-subway-this-summer.

59. Clinton Nguyen, "It's now cheaper to take an Uber than the New York City subway," *Business Insider*, July 21, 2016. http://www.businessinsider.com/uber-pool-cheaper-than-subway-2016-7.

60. Emily Castor Warren, "Reflections on Lyft Shuttle: How Microtransit Can Expand Mobility and Beat Car Ownership," Medium, July 12, 2017. https://medium.com/@emilycwarren/reflections-on-lyft-shuttle-how-microtransit-can-expand-mobility-and-beat-car-ownership-c39341d69c56.

61. Bureau of Fiscal and Budget Studies, "The 'Invisible Fare': Revealing NYC's Full Contribution to the MTA," Office of the New York City Comptroller, May 2015, p. 7. https://comptroller.nyc.gov/wp-content/uploads/documents/MTA_Report_Invisible_Fare.pdf.

Data Privacy and Security

Inherent in the TNC business model is the possession of data about drivers and passengers. These data can greatly improve the efficiency of ridesharing and improve consumers' experience with the service. However, they also present potential risks and TNCs must decide how to mitigate them to protect their users' privacy.

The recent Uber hack is an example of a failure in this respect: the company both neglected to adequately protect consumers' data and did not tell them when it was compromised.[62] Instead, it paid the hackers $100,000 to delete the data without any way of verifying that they had done so.[63] As increasingly advanced and connected cars and apps collect more data, the frequency and scale of breaches will likely increase. While negligent or reckless conduct requires targeted enforcement in accordance with existing laws, we should be careful not to overreact and impose stringent new regulations that could harm responsible business practices.

Discussions of privacy must also acknowledge that not all data are equally sensitive and thus they may warrant different levels of protection and consent. Accordingly, any data that are personally identifiable should be treated with more care. In light of this, The National Institute of Standards and Technology has produced specific guidelines for protecting personally identifiable information.[64] Such guidelines can serve as best practices for TNCs to protect their customers' most sensitive data and to match the level of protection to the level of potential adverse impact from a breach.

Should TNCs fail to act appropriately, the Federal Trade Commission (FTC) is already empowered to address unfair and deceptive acts or practices.[65] They are also developing a framework for how to incorporate mere informational injuries into their analysis.[66] The FTC has also brought cases against Uber for poor privacy practices that have resulted in a $20 million settlement[67] on one occasion and an agreement to regular privacy audits on another.[68]

48 states and the District of Columbia also have requirements for consumer data security and privacy, including breach notification.[69] Therefore, enforcing existing laws will allow companies to be held accountable for any irresponsible behavior.

Moreover, some legal information sharing has tangible benefits. For example, historical location data may allow for better positioning of drivers and faster pickups. Insurance companies also have a strong interest in better data to inform their underwriting practices. Privacy is about tradeoffs, and giving drivers and passengers options both within one company, or the option to switch companies, is more likely to achieve a desirable outcome than rigid privacy mandates.

Future of work

One commonly voiced concern is that the sharing economy is bad for workers. For example, former U.S. Labor Secretary Robert Reich suggests that its rise will cause us to become a nation of contractors,[70] which will take away an assortment of benefits that accompany traditional employment.[71] This, he argues, is "the most significant legal trend in the American workforce," and will ultimately lead workers directly to "low pay, irregular hours, and job insecurity."[72] Reich further criticizes what he calls the "share-the-scraps economy" for creating uneven accrual of profits, arguing that : "The big money goes to the corporations that own the software. The scraps go to the on-demand workers."[73] In fact, however, there has not been a large shift toward self-employed, on-demand work. The rate of self-employment has actually been

62. Nicole Perlroth and Mike Isaac, "Inside Uber's $100,000 Payment to a Hacker and the Fallout," *The New York Times*, Jan. 12, 2018. https://www.nytimes.com/2018/01/12/technology/uber-hacker-payment-100000.html. This event has led Pennsylvania to file suit against Uber for violating the state's data breach notification law. See Louise Matsakis, "Uber 'surprised' by totally unsurprising Pennsylvania data breach lawsuit," *Wired*, March 5, 2018. https://www.wired.com/story/uber-pennsylvania-data-breach-lawsuit.

63. Ibid.

64. "Guide to Protecting the Confidentiality of Personally Identifiable Information (PII)," National Institute of Standards and Technology, April, 2010. http://nvlpubs.nist.gov/nistpubs/Legacy/SP/nistspecialpublication800-122.pdf.

65. 15 U.S.C. § 45.

66. "Informational Injury Workshop," U.S. Federal Trade Commission, Dec. 12, 2017. https://goo.gl/SjFxKz.

67. "Uber Agrees to Pay $20 Million to Settle FTC Charges That It Recruited Prospective Drivers with Exaggerated Earnings Claims," U.S. Federal Trade Commission, Jan. 19, 2017. https://www.ftc.gov/news-events/press-releases/2017/01/uber-agrees-pay-20-million-settle-ftc-charges-it-recruited.

68. Natasha Lomas, "Uber agrees to 20 years of privacy audits to settle FTC data mishandling probe," *TechCrunch*, Aug. 15, 2017. https://techcrunch.com/2017/08/15/uber-agrees-to-20-years-of-privacy-audits-to-settle-ftc-data-mishandling-probe.

69. "Security Breach Notification Laws," National Conference of State Legislatures, April 12, 2017. http://www.ncsl.org/research/telecommunications-and-information-technology/security-breach-notification-laws.aspx.

70. Notably, taxi and chauffeurs typically are not comfortable middle-class jobs with good benefits. Many are already contractors or self-employed, and have a median annual salary of only $23,510. See, e.g., Bureau of Labor Statistics, "Occupational Employment and Wages, May 2016," U.S. Dept. of Labor, 2016. http://www.bls.gov/oes/current/oes533041.htm.

71. Robert B. Reich, "Why We're All Becoming Independent Contractors," Feb. 22, 2015. http://robertreich.org/post/111784272135.

72. Ibid.

73. Robert B. Reich, "The Share-the-Scraps Economy," Feb. 2, 2015. http://robertreich.org/post/109894095095.

declining since 1993.[74] Other recent data also suggests that fears of freelance work becoming the norm are overblown since traditional employment remains dominant.[75]

This is not necessarily a positive development. A robust and more expansive sharing economy could be highly beneficial especially for individuals who face the alternative of leaving the workforce altogether. Nevertheless, current policymakers have announced what they view as the evils of the sharing economy. For instance, at a recent talk at the New America Foundation, Sen. Elizabeth Warren (D-Mass.) called out ridesharing companies in particular, and demanded stronger protections and a greater share of profits for workers.[76]

Such debates regarding "extraction of value" and lack of leverage in negotiation have become a major point of contention among labor advocates. Both Uber and Lyft take a commission of about 25% on each fare (not including tips). These numbers are rising and Uber recently announced it was experimenting with a 30% commission.[77] Unilateral price changes have also been a source of frustration for drivers, such as when Uber slashed their prices in 100 North American cities in 2016.[78] Aside from quitting or switching between Uber and Lyft—or taking another kind of job—many drivers feel they do not have much leverage in the negotiation.

However, in response to concerns about worker benefits, Uber has moved to partner with the International Association of Machinists and Aerospace Workers to form a guild of drivers in New York City,[79] which would help them achieve some benefits and protections.[80] Lyft has similarly partnered with the National Freelancers Union to offer benefits, such as health insurance and retirement plans.[81] Such conflicts over TNC unionization, however, highlight a larger policy question that concerns the status of TNC drivers as either employees or independent contractors.

While labor advocates see solutions in full unionization or granting workers full employee status, a better approach would be to take a more comprehensive look at existing labor laws in the United States.

Current laws largely treat employment as a binary between full-time employee and part-time contractor. This fails to accommodate the need for greater flexibility in employment arrangements as new technologies enable new economic opportunities, or even new kinds of labor organizations. It also restricts employers who might otherwise want to offer some, but not all benefits.[82] In light of this, it may be time to devise a new classification for workers who do not fit into traditional labor categories.

Accordingly, legislative proposals such as the NEW GIG Act introduced by Sen. John Thune (R-S.D.) have sought to create a new tax category for workers that currently do not fit well into the mold of employee or contractor.[83] Though the bill has failed to become law, something like it would help resolve definitions that are ambiguous and outdated. At the state level, proposals to allow portable benefits for gig economy workers have been put forward in Washington[84] and New York.[85] These deserve serious consideration as they could both help resolve ambiguities about worker status and allow TNCs and drivers to agree to a more beneficial mix of compensation. Finally, since it is especially difficult to amend federal labor laws, there are other creative solutions that can be considered. For example, federal waivers could allow exempted states to experiment with innovative arrangements and new types of worker organizations.[86] Any of these measures could bolster and augment the benefits of TNCs, as well as of the gig economy at large.[87]

74. Eli Lehrer, "The Future of Work," *National Affairs* (Summer 2016), pp. 37-38. http://2o9ub0417chl2lg6m43em6psi2i.wpengine.netdna-cdn.com/wp-content/uploads/2016/06/20160616_Lehrer_Indiv.pdf.

75. See, e.g., Eli Dourado and Christopher Koopman, "Evaluating the Growth of the 1099 Workforce," Mercatus Center, Dec. 10, 2015. http://mercatus.org/publication/evaluating-growth-1099-workforce; R.J. Lehmann, "6 Charts That Debunk the 'Gig' Economy," R Street Shorts No. 11, July 2015. http://www.rstreet.org/policy-study/6-charts-that-debunk-the-gig-economy.

76. Elizabeth Warren, "Strengthening the Basic Bargain for Workers in the Modern Economy," New America Annual Conference, May 16, 2019. https://www.warren.senate.gov/files/documents/2016-5-19_Warren_New_America_Remarks.pdf.

77. Douglas Macmillan, "Uber Tests 30% Fee, Its Highest Yet," *Wall Street Journal*, May 18, 2015. http://www.wsj.com/articles/uber-tests-30-fee-its-highest-yet-1431989126.

78. Jacob Kleinman, "Uber drivers are furious about new price changes," *Technobuffalo*, Jan. 11, 2016. http://www.technobuffalo.com/2016/01/11/uber-price-cuts-spark-outrage-from-drivers.

79. Noam Scheiber and Mike Isaac, "Uber Recognizes New York Drivers' Group, Short of a Union," *New York Times*, May 10, 2016. http://www.nytimes.com/2016/05/11/technology/uber-agrees-to-union-deal-in-new-york.html.

80. The plan stops short of full unionization in that it will not allow for collective bargaining in contract negotiation.

81. "Lyft Partners with Freelancers Union," *Lyft Blog*, June 30, 2014. https://blog.lyft.com/posts/2014/6/30/lyft-partners-with-freelancers-union.

82. Ian Adams, "The Flexible Future of Work," *R Street Shorts* No. 15, November 2015. http://www.rstreet.org/wp-content/uploads/2015/11/RSTREETSHORT15.pdf.

83. Caleb Watney, "Getting gig-y with it: We should support Thune's GIG Act," *The Hill*, Nov. 11, 2017. http://thehill.com/opinion/technology/361806-getting-gig-y-with-it-we-should-support-thunes-gig-act.

84. Richard Meneghello, "Gig Economy Portable Benefits Bill Introduced In Washington State," Fisher Phillips, April 3, 2017. https://www.fisherphillips.com/gig-employer/gig-economy-portable-benefits-bill-introduced-in-washington-state.

85. Anne Milligan, "Handy Proposal May Solve Sharing Economy Business Woes," Fisher Phillips, Dec. 2, 2016. https://www.fisherphillips.com/gig-employer/handy-proposal-may-solve-sharing-economy-business.

86. Andrew Stern and Eli Lehrer, "How to Modernize Labor Law," *National Affairs* (Winter 2017), pp. 52-67. http://2o9ub0417chl2lg6m43em6psi2i.wpengine.netdna-cdn.com/wp-content/uploads/2017/01/20161230_SternLehrer-1.pdf.

87. Lehrer, pp. 35-52. http://2o9ub0417chl2lg6m43em6psi2i.wpengine.netdna-cdn.com/wp-content/uploads/2016/06/20160616_Lehrer_Indiv.pdf.

Decentralization

Finally, the promise of the sharing economy was built around disintermediation or put more simply, the idea that consumers could transact more directly with producers or owners through smartphone-enabled software. In the case of ridesharing, this meant cutting out the taxi or limo company by instantly connecting rider and driver. But according to critics, the dominant sharing economy platforms have merely supplanted these former middlemen as powerful intermediaries themselves, and thus the logical next step is to disintermediate them.

This has given rise to calls for using "blockchain technology"[88] to disrupt peer-to-peer sharing economy services like ridesharing. According to proponents, this would work by allowing individual drivers and passengers to connect directly rather than relying on a third-party TNC to intermediate.[89] They further argue that such "decentralizing" could reconcile the current issues faced by TNCs because it would offer a technological solution that would create a true peer-to-peer network for on-demand services.

While the idea of a decentralized TNC (or "dTNC") built on top of a blockchain seems like an attractive solution on paper, it presents a number of serious challenges. For starters, a dTNC requires a much more complicated system than the simple financial transactions blockchain technology traditionally hosts and it necessarily relies on a wider variety of third-party inputs. It also has the potential to run afoul of regulations in many different arenas and at various levels of government – particularly if it sought to bend or break the law as Uber and Lyft originally did. And since the technology is new, we simply do not yet know all of its potential vulnerabilities.[90]

Additionally, current regulatory structures would make this model somewhat impractical. A dTNC would need a corporate entity of its own to manage TNC-level licensure, negotiate insurance, handle data requests and legal documents, and interface with different levels of government. To ignore these issues would not be a viable option, as drivers would be targeted for lack of compliance. Furthermore, to be competitive with a behemoth like Uber, it would probably also need coders, customer service representatives, a government affairs team and a leadership team. Each piece of this infrastructure would require the dTNC to charge higher fares to recoup its costs. And, since it would already be operating on a smaller scale than its competitors, this could easily wipe away any structural benefits. In short, the combination of unattractiveness for investors, experimental technology, lack of governance, and going up against well-funded incumbents is likely to make any dTNC hard to get off the ground.[91] Moreover, the more robust and competitive a dTNC becomes, the more it simply would begin to resemble the very thing it tries to replace.

For these reasons, a better option would be for rival companies to emerge and challenge incumbents using traditional legal institutions and funding mechanisms—particularly in niche markets.[92] Accordingly, to encourage this kind of stronger competition, policymakers should focus on lowering traditional barriers to entry, rather than buying into any hype.

CONCLUSION

Ridesharing has emerged as perhaps the most expansive and salient facet of the sharing economy. While the fight for its legalization in the United States is largely over, the debate about its regulation and evolution is now focused on how it can function more efficiently, mitigate potential externalities, adapt to new technologies, and integrate with broader policy challenges like the future of work and data security.

As they revisit existing TNC legal frameworks, policymakers should seek to roll back structural barriers to entry and overly prescriptive rules on issues that private companies are better suited to address. When it comes to new technologies, like HAVs, governments should embrace flexible standards that promote their creation and adoption. Policymakers should also recognize the ways in which ridesharing presents both challenges and solutions to future-of-work issues. And finally, they should undo provisions that could enshrine legacy business models. Ridesharing is an industry that has changed as fast as it has grown. Keeping pace with these changes while having the humility to correct past mistakes is the only way to ensure that its full benefits are realized.

88. Peter Van Valkenburgh, "Open Matters: Why Permissionless Blockchains are Essential to the Future of the Internet," Coin Center, December 14, 2016. https://coincenter.org/files/2016-12/openmattersv1-1.pdf.

89. See, e.g., "Take a Ride on the Blockchain," Medium, July 4, 2017. https://medium.com/chasyr-news/take-a-ride-on-the-blockchain-a526dbc4a126; Joe Carmichael, "Arcade City Is a Blockchain-Based Ride-Sharing Uber Killer, Inverse Innovation, March 30, 2016. https://www.inverse.com/article/13500-arcade-city-is-a-blockchain-based-ride-sharing-uber-killer; and Giulio Prisco, "Decentralizing the Sharing Economy With Blockchain Technology," *Bitcoin Magazine*, Jan. 18, 2018. https://bitcoinmagazine.com/articles/decentralizing-sharing-economy-blockchain-technology.

90. A number of cryptocurrency projects have been plagued by cybersecurity failures and bugs that have resulted in stolen funds. See, e.g., Timothy B. Lee, "A brief history of Bitcoin hacks and frauds," *Ars Technica*, Dec. 5, 2017. https://arstechnica.com/tech-policy/2017/12/a-brief-history-of-bitcoin-hacks-and-frauds.

91. TNCs spend a lot of money competing with one another for consumers and drivers. See, e.g., Eric Newcomer and Leslie Picker, "Leaked Lyft Document Reveals a Costly Battle With Uber," Bloomberg, April 30, 2015. http://www.bloomberg.com/news/articles/2015-04-30/leaked-lyft-document-reveals-a-costly-battle-with-uber.

92. The ridesharing company Juno is already trying to do this, charging lower fees and giving drivers opportunities to own shares in the company. See, e.g., Patrick Sisson, "Can Juno be the labor-friendly alternative to Uber?," Curbed, Jan. 31, 2017. https://www.curbed.com/2017/1/31/14455292/uber-juno-deleteuber-app-ridesharing-ridehailing.

ABOUT THE AUTHORS

Zach Graves is director of technology and innovation policy for the R Street Institute, where he manages development efforts for the tech program, oversees its scholars and coordinates work across a variety of issue areas. Zach joined R Street in April 2013, having previously worked at the Cato Institute and the America's Future Foundation. He is also a fellow at the Internet Law and Policy Foundry and a visiting fellow at the National Security Institute at George Mason University's Antonin Scalia Law School. He holds a master's from the California Institute of the Arts and a bachelor's from the University of California at Davis.

Joe Kane is a technology policy associate with the R Street Institute, where he works primarily on telecommunications, antitrust and intellectual property issues to push for regulatory frameworks that will promote long term innovation. Joe has a bachelor's degree in political science from Grove City College and a master's degree in economics from George Mason University.

Arthur Rizer is a senior fellow and the national security and justice director at the R Street Institute. Arthur has also worked as a federal prosecutor for the U.S. Department of Justice, as a police officer and a law professor.