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When Everything is Small: The Regulatory Challenge of Scale in the Sharing Economy

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When Everything is Small: The Regulatory Challenge of Scale in the Sharing Economy

KELLEN ZALE*

TABLE OF CONTENTS

ABSTRACT	950
INTRODUCTION	951
I. REGULATION AND SCALE	959
A. <i>Regulatory Leniency for Small-Scale Activities</i>	960
1. <i>De Minimis Character of Small Scale Activities</i>	960
2. <i>Privacy and Autonomy Concerns</i>	961
3. <i>Enforcement Costs</i>	964
4. <i>Fairness Concerns</i>	966
5. <i>Alternatives to Legal Regulation</i>	967
B. <i>The Large-Scale Occurrence of Small-Scale Activities</i>	969
1. <i>Public Law vs. Private Law</i>	970
2. <i>Cumulative Impacts and Scale</i>	971
II. SCALE IN THE SHARING ECONOMY	975
A. <i>Overview of the Sharing Economy</i>	976
B. <i>The Role of Platforms</i>	979
C. <i>Implications of Scale in the Sharing Economy</i>	983

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	1. Cumulative Impacts	983
	2. Regulatory Fractures	991
	3. Responding to Leniency Arguments	994
III.	REGULATING SCALE IN THE SHARING ECONOMY	1000
	A. Co-Regulation	1004
	B. Aggregate Regulations	1011
	C. Scaled Regulations	1013
	D. Cooperative Regulation	1014
IV.	CONCLUSION	1016

ABSTRACT

The sharing economy—the rapidly evolving sector of peer-to-peer home-sharing and ride-hailing transactions facilitated by platforms like Airbnb and Uber—offers the potential for economic growth, greater sustainability, and expanded access for underserved groups. But the massive number of small-scale activities that these platforms facilitate also causes negative cumulative impacts and exposes regulatory fractures, from the loss of long-term rental housing to discrimination against protected classes to increased burdens on public infrastructure.

This Article contends that scale is a defining feature and fundamental challenge of the sharing economy. Small may be beautiful, but when everything is small, the regulatory challenge is immense. Small-scale activities that once fit the criteria for light or no regulation are occurring at scales at which non-regulation makes little sense. As the sharing economy becomes an increasingly large segment of the public accommodations and transportation markets, the traditional ways we distinguish between activities that we should regulate and those we treat with regulatory leniency no longer fit. Existing regulatory systems, from civil rights and environmental law to consumer protection and tax law, do not map neatly onto the configuration of scale in the sharing economy. This regulatory misfit threatens to result in inequitable and discriminatory outcomes across the sharing economy.

Effective governance of the sharing economy requires a more complete understanding of the role of scale. This Article investigates the implications of scale in the sharing economy, focusing on the prominent sectors of home-sharing and ride-hailing. The Article begins by exploring governance of small-scale activities, unpacking why regulatory systems tend to treat small-scale activities with reduced stringency and how increasing numbers can shift the governance response. It then analyzes the implications of scale in the sharing economy, examining how massive numbers of home-sharing and ride-hailing activities produce negative cumulative impacts and expose regulatory fractures, which threaten to undermine a range of important public policies—including affordable housing, civil rights, and

consumer protection. The Article concludes by considering possible legal regimes for responding to scale, such as co-regulation, aggregate regulation, and cooperative models.

INTRODUCTION

*“At the most macro level, I think we’re going to go back to the village . . . everything will be small.”*¹

The sharing economy—epitomized by home-sharing company Airbnb and ride-hailing companies Uber and Lyft—is big.² While the underlying activities are not new—people have long rented rooms to boarders, used gypsy cabs, and carpooled—platforms like Uber and Airbnb make it possible for strangers to engage in these kinds of transactions on a massive scale.³ Airbnb has more listings for short-term accommodation than the world’s largest hotel chains.⁴ Uber has provided more than one billion rides worldwide

1. Uri Friedman, *Airbnb CEO: Cities Are Becoming Villages*, ATLANTIC (June 29, 2014), <http://www.theatlantic.com/international/archive/2014/06/airbnb-ceo-cities-are-becoming-villages/373676/> [<https://perma.cc/DRX6-LPHR>] (quoting Brian Chesky, CEO of Airbnb).

2. This Article adopts the approach of the AP Stylebook and uses the term “ride-hailing” rather than ride-sharing to describe the services of companies like Uber and Lyft. See AP Stylebook (@APStylebook), TWITTER (Feb. 11, 2015, 6:21 AM), <https://twitter.com/apstylebook/status/565515953430364163> [<https://perma.cc/DC7F-7FYF>] (“Ride-hailing or ride-booking services let people use smartphone apps to book and pay for car service. Do not use ride-sharing.”).

3. While I use the term “sharing economy” throughout this Article because it is the most prevalent term used to talk about companies like Airbnb and Uber, it is worth acknowledging at the outset that much of the activity occurring in the sharing economy is not the type of gratuitous activity many of us instinctively associate with the word “sharing.” Kellen Zale, *Sharing Property*, 87 U. COLO. L. REV. 501, 514–15 (2016). A more accurate description thus might be the “sharing-for-profit economy.” *Id.* at 527.

4. Vicki Stern et al., *Hotels: Is Airbnb a Game-Changer?*, BARCLAYS, Jan. 16, 2015, at 1, 4, 13 (reporting that Airbnb is predicted to double in market share in the next twelve months and already has a twenty percent share of “hotel” rooms in New York City); see also Gregory Ferenstein, *Uber and Airbnb’s Incredible Growth in Four Charts*, VENTUREBEAT (June 19, 2014, 6:00 AM), <http://venturebeat.com/2014/06/19/uber-and-airbnbs-incredible-growth-in-4-charts/> [<https://perma.cc/89YH-XN9A>] (charting Airbnb’s listings growth from 50,000 in 2011 to 550,000 in 2014). Airbnb’s gross bookings in 2014 were estimated at over \$4 billion and its revenues at \$423 million. See Rafat Ali, *Airbnb’s Revenues Will Cross Half Billion Mark in 2015, Analysts Estimate*, SKIFT (Mar. 25, 2015, 7:00 AM) (citing Michael J. Olson & Samuel J. Kemp, *Sharing Economy: An In-Depth Look at Its Evolution & Trajectory Across Industries*, PIPER JAFFREY 20–22 (Mar. 2015), <http://collaborativeconomy.com/wp/wp-content/uploads/2015/04/Sharing-Economy-An-In-Depth-Look-At-Its-Evolution-and-Trajectory-Across-Industries-.pdf>), [<https://perma.cc/>]

and has a greater market share than taxis in a growing number of cities.⁵ Almost half of all U.S. residents have participated in some aspect of the sharing economy.⁶ Airbnb and Uber have two of the three highest valuations of venture-backed private corporations globally.⁷

Yet despite these big numbers, the sharing economy has staked its identity on smallness. Uber's tagline is "Everyone's private driver."⁸ Lyft's slogan is "Your friend with a car."⁹ Airbnb says its "greatest achievements aren't monumental . . . They're the small, meaningful connections that happen between us every day."¹⁰ And whether it's called the sharing

P84D-PMA9]), <http://skift.com/2015/03/25/airbnbs-revenues-will-cross-half-billion-mark-in-2015-analysts-estimate/> [<https://perma.cc/PDC3-ZV2Z>].

5. See Kia Kokalitcheva, *Uber Completes One Billion Rides*, FORTUNE (Dec. 30, 2015, 7:22 PM), <http://fortune.com/2015/12/30/uber-completes-1-billion-rides/> [<https://perma.cc/CC5D-GR87>] (discussing Uber exceeding one billion rides); Andrew Bender, *Uber's Astounding Rise: Overtaking Taxis in Key Markets*, FORBES: TRAVEL (Apr. 10, 2015, 11:42 AM), <http://www.forbes.com/sites/andrewbender/2015/04/10/ubers-astounding-rise-overtaking-taxis-in-key-markets/#5285824322ef> [<https://perma.cc/CPW6-PBBX>] (discussing Uber's market share in key markets); see also Henry Blodget, *Uber CEO Reveals Mind-Boggling New Statistic that Skeptics Will Hate*, BUS. INSIDER (Jan. 19, 2015, 4:04 AM), <http://www.businessinsider.com/uber-revenue-san-francisco-2015-1> [<https://perma.cc/6GX6-SRAS>] (discussing Uber's annual revenues of \$500 million in San Francisco, which exceed that of the city's traditional taxi market). Ride-sharing numbers for companies in other countries are similarly stunning. See Anthony Kuhn, *In China, a Battle Uber Didn't Win*, NPR (Aug. 3, 2016, 4:50 AM), <http://www.npr.org/sections/parallels/2016/08/03/488477289/in-china-a-battle-uber-didnt-win> [<https://perma.cc/WR25-X6S8>] (describing Didi, China's largest ride-hailing service: "It gives 15 million rides a day, and has 300 million registered users—almost the population of the U.S.").

6. Katy Steinmetz, *Exclusive: See How Big the Gig Economy Really Is*, TIME (Jan. 6, 2016), <http://time.com/4169532/sharing-economy-poll/> [<https://perma.cc/76RZ-GWNK>]; see also Jennifer Rossa, *The Sharing Economy: The Workers*, BLOOMBERG BRIEF (June 15, 2015), <https://newsletters.briefs.bloomberg.com/document/4vz1acbgfrxz8uwan9/the-workers-demographics> [<https://perma.cc/9QGZ-ERBH>]; Sarah Treuhart, *Can We Bend the Sharing Economy Toward Equity?*, POLICYLINK: EQUITY BLOG (Feb. 19, 2015), <http://www.policylink.org/blog/can-we-bend-the-sharing-economy-toward-equity...> [<https://perma.cc/5F3G-7JH6>] ("... 34 percent of workers, or 53 million Americans, are freelancing to make a living, and that share is expected to grow to 40 percent by 2020."). Participation rates in the sharing economy in some other countries are even higher. For example, over sixty percent of U.K. adults have participated in the sharing economy. See Patrick Penzo, *The UK Government and the Sharing Economy*, ONFIDO (Apr. 2, 2015), <http://blog.onfido.com/uk-government-sharing-economy/> [<https://perma.cc/WN7R-WYNH>].

7. See Scott Austin et al., *The Billion Dollar Startup Club*, WALL ST. J. (Feb. 18, 2015), <http://graphics.wsj.com/billion-dollar-club/> [<https://perma.cc/T6JL-UPDS>] (listing Uber's valuation as \$68.0 billion and Airbnb's as \$25.5 billion as of September 2016).

8. See Aarti Shahani, *In Battle Between Uber and Lyft, Focus Is on Drivers*, 89.3 KPCC (Jan. 1, 2016), <http://www.scpr.org/news/2016/01/18/56919/in-battle-between-lyft-and-uber-focus-is-on-driver/> [<https://perma.cc/FV4Q-KMJV>].

9. *Id.* (noting the companies' different mottos reflect underlying differences between Uber and Lyft).

10. *About Create Airbnb*, AIRBNB, <https://create.airbnb.com/en/about> [<https://perma.cc/6CHT-8QBB>] (last visited Nov. 6, 2016).

economy, the peer-to-peer economy, or the people-powered economy,¹¹ the labels make us think small: “[f]raming it as ‘sharing’ or ‘peers’ is a way of trying to keep the focus on the people who provide the services—and off the platforms.”¹²

“Thinking small” is not just a marketing strategy. By focusing on smallness, platforms have tapped into a powerful framing device in the debate over governance of the sharing economy. If the sharing economy is “just a way to bring two independent parties together—one to provide a service and the other to utilize a service . . . [w]hy does government need to stick its nose into” it?¹³ If it is just “making the world a more connected and better place, one less stranger at a time,”¹⁴ then why should it “have to follow the same regulations as big business does”?¹⁵

And indeed, in a wide range of legal contexts, regulatory systems treat small-scale activities with reduced stringency, either exempting them outright or subjecting them to lowered levels of regulatory oversight.¹⁶ Small businesses benefit from preferential regulatory treatment under a number of federal laws, from the Occupational Safety and Health Act (OSHA),) to the Family and Medical Leave Act (FMLA).¹⁷ Other legal regimes, such as patent law and copyright law, provide benefits to small-

11. See *About*, PEERS FOUND., <http://www.thepeersfoundation.org/about/> [<https://perma.cc/WBH8-XHJM>] (last visited Nov. 6, 2016) (“We are the people powered economy.”) (last visited Sept. 27, 2016).

12. Natasha Singer, *Twisting Words to Make ‘Sharing’ Apps Seem Selfless*, N.Y. TIMES (Aug. 8, 2015), http://www.nytimes.com/2015/08/09/technology/twisting-words-to-make-sharing-apps-seem-selfless.html?_r=0 (quoting Erin McKean, a lexicographer).

13. Liberty For All, Comment to *A World Without Uber*, ATLANTIC (June 18, 2016, 6:41 AM), <http://www.theatlantic.com/business/archive/2016/06/a-world-without-uber/487331/#article-comments>. [<https://perma.cc/4TVQ-96BD>].

14. *Creating #OneLessStranger: Stories of Belonging*, AIRBNB, (Jan. 1, 2015) Blog, <http://blog.airbnb.com/creating-onelessstranger-stories-belonging/> [<https://perma.cc/RQ5N-EFYX>] (last visited July 23, 2016).

15. Sam Sanders, *Rental Rules in California Raise Questions About Who’s Using Airbnb*, NPR (May 17, 2015, 5:17 PM), <http://www.npr.org/2015/05/17/407529301/does-airbnb-help-folks-by-or-help-businesses-get-sly> [<https://perma.cc/3GVG-482U>] (quoting a supporter of home-sharing).

16. As used here, small-scale activities refer to those where each individual transaction contributes a minimal amount to the overall level of that type of activity. See discussion *infra* Section I.A.

17. See Mirit Eyal-Cohen, *Down-Sizing the “Little Guy” Myth in Legal Definitions*, 98 IOWA L. REV. 1041, 1073 (2013) (noting that the FMLA exempts employers with fewer than fifty employees from its provisions, and that the Occupational Safety and Health Act exempts from its record keeping requirements firms with eleven or fewer employees—which make up “more than 79% of” all firms).

scale actors as well, such as reduced schedules of fees for “small inventors” under patent law,¹⁸ and the “homestyle” exemption under the Copyright Act.¹⁹ Similar regulatory leniency for small-scale activity is evident in environmental law, much of which targets large polluters like power plants and industrial factories, eschewing regulations of households and individuals.²⁰

Justifications for regulatory leniency for small-scale activities vary but include concerns about privacy, autonomy, and fairness; the de minimis nature of the activity; costs of enforcement; and the availability of non-legal means to shape the behavior of small-scale actors.²¹ The result is that in a variety of regulatory contexts, small-scale activities are seen as entrepreneurial, low-impact, and even beautiful.²²

But while small may be beautiful, when everything is small, the regulatory challenge is immense. Small-scale activities taking place in the sharing economy can potentially expand access to goods and services to previously underserved groups, encourage more sustainable uses of resources, and open up new avenues of economic activity. But the cumulative impacts of individually de minimis activities in the sharing economy can also lead to significant negative consequences, from the loss of long-term rental housing to discrimination against protected classes to increased burdens on public services and infrastructure.²³

For example, while a single ride-hailing transaction may simply substitute one-for-one for someone otherwise driving themselves, the cumulative impacts of ride-hailing may be more congestion and increased emissions, as people who would otherwise use public transportation instead use Uber or Lyft, and the number of vehicles on the road increases. Similarly, while a single home-sharing transaction likely has no discernable effect on a city’s housing market, the cumulative effects of thousands of home-sharing transactions in a city may be reduced rental availability and increased

18. See *id.* at 1076–77 (“[A] key part of the statutory patent fee structure is a two-tier fee system, which provides small entities with discounted rates for fees required for application, issuance, search, and maintenance of patents”).

19. 17 U.S.C. § 110(5) (2016) (providing that broadcasts of copyrighted material on “a single receiving apparatus of a kind commonly used in private homes” are not liable for infringement, unless there is a charge or it is re-transmitted to the public).

20. See Michael P. Vandenberg, *From Smokestack to SUV: The Individual as Regulated Entity in the New Era of Environmental Law*, 57 VAND. L. REV. 515, 517–18 (2004) (discussing the extent to which environmental law focuses on large polluters and not small-scale ones).

21. See *infra* Section I.A, for a detailed discussion of the justifications for regulatory leniency.

22. For a lengthy discussion and defense of this idea, see E.F. SCHUMACHER, *SMALL IS BEAUTIFUL: ECONOMICS AS IF PEOPLE MATTERED* (1973).

23. See *infra* Part II, for a further discussion on cumulative impacts.

rental costs, as landlords remove units from the long-term rental market and move them into the more profitable short-term rental market.

Furthermore, a wide range of regulations, from the Americans with Disabilities Act (ADA)²⁴ to the Fair Housing Act (FHA), do not map neatly onto the massive amounts of small-scale activity occurring in the sharing economy.²⁵ The resulting regulatory fractures threaten to undermine important public policies, such as civil rights and consumer protection, as large numbers of small-scale activities, facilitated by third-party platforms, fall outside the reach of existing regulation.

For example, mounting evidence has emerged of discrimination against minorities, as both guests and hosts, in the provision of short-term rentals on Airbnb.²⁶ The anti-discrimination provisions of civil rights laws such as the Fair Housing Act and Title II of the Civil Rights Act of 1964 are intended to ensure that people are not discriminated against because of their race in housing and public accommodations.²⁷ But because these existing regulatory models do not align with the sharing economy's three-sided model, a person discriminated against while using the services of a multi-billion dollar company like Airbnb or Uber may have no legal recourse under these federal laws against either the individual who discriminated against them or the platform that facilitated the discriminatory activity.²⁸

As these examples illustrate, scale in the sharing economy poses an institutional design challenge for regulators. As scholars have recognized in a range of legal contexts, from environmental law to tax law, “[i]t is very expensive and difficult to regulate . . . where the scale of the business organizations is relatively small and the number of business actors is

24. 42 U.S.C. §§ 12101–12213 (2012).

25. 42 U.S.C. §§ 3601–3619, 3631 (2012) (FHA).

26. See, e.g., Benjamin Edelman & Michael Luca, *Digital Discrimination: The Case of Airbnb.com* 1 (Harvard Bus. Sch., Working Paper No. 14-054, 2014) (finding that “non-black hosts charge approximately 12% more than black hosts for the equivalent rental” when controlling for all information visible on the website); Biz Carson, *Harvard Study Finds People with Black-Sounding Names Have a Harder Time Booking on Airbnb*, BUS. INSIDER (Dec. 10, 2015, 7:37 PM), <http://www.businessinsider.com/airbnb-has-a-race-problem-with-names-2015-12> [<https://perma.cc/9MW4-MQ5U>].

27. 42 U.S.C. §§ 3601–3619, 3631; 42 U.S.C. § 2000a(b) (prohibiting discrimination on the basis of race in “public accommodations,” which include hotels, businesses, restaurants, and other establishments whose “operations affect commerce.”).

28. See Beth J. Harpaz, *Racism on Airbnb Inspires New Sites Inclusive and Noirbnb*, WASH. TIMES (July 21, 2016), <http://www.washingtontimes.com/news/2016/jul/21/racism-at-airbnb-inspires-new-sites-inclusive-and/> [<https://perma.cc/Q5G7-9WSJ>].

large.”²⁹ Enforcing requirements like permits for home-sharing or fingerprinting for ride-sharing against the large numbers of small-scale actors engaged in such activities is an almost Sisyphean task, the costs of which likely outweigh the benefits.³⁰

The challenges of monitoring and enforcement are further compounded by the unwillingness of platforms like Airbnb and Uber, companies built on “sharing,” to share data with regulators. As Lawrence Lessig has put it, to regulate effectively, a regulator needs to know “Who did what, where?”³¹ While Airbnb and Uber collect precisely this information on the millions of small-scale transactions occurring via their platforms, to date, they have largely resisted sharing this data with regulators. While legitimate privacy and competition concerns exist with respect to data sharing, without a way to determine “Who did what, where?”, the task of enacting and enforcing tax obligations, zoning laws, and a range of other regulations becomes a near insurmountable one.³²

This Article contends that scale is a defining feature of the sharing economy, and that effective governance of the sharing economy requires a more complete understanding of the role of scale. The sharing economy is not just about what two individuals do. It is about what millions of people are doing, and the cumulative impacts of those activities on affordable housing, public infrastructure, and civil rights. It is about what Airbnb, Uber, and other platforms are doing to facilitate those activities and impacts, and their responsibilities not only as technology companies, but also as de facto regulators of spare housing capacity, quasi-public transportation, and massive amounts of data.

The traditional ways we distinguish between activities that we should regulate and those that should be treated with regulatory leniency, like the commercial–personal dichotomy, are ill-suited to an economy based on multi-billion dollar companies facilitating individuals using personal assets for commercial purposes. Small-scale activities that once fit criteria for light or no regulation are now occurring at scales at which non-regulation

29. David Barnhizer, *Waking from Sustainability's "Impossible Dream": The Decisionmaking Realities of Business and Government*, 18 *GEO. INT'L ENVTL. L. REV.* 595, 672–73 n.172 (2006).

30. See Zale, *supra* note 3, at 512–13, 577 (discussing the San Francisco Planning Department's determination that that city's short-term rental law was “unworkable,” due to lack of resources and data from platforms. (citing Phillip Matier & Andrew Ross, ‘No Way of Enforcing’ Airbnb Law, *S.F. Planning Memo Says*, *S.F. CHRON.* (Mar. 22, 2015), <http://www.sfchronicle.com/bayarea/matier-ross/article/No-way-ofenforcing-Airbnb-law-S-F-planning-6151592.php> [<https://perma.cc/46WC-Z8T4>])).

31. LAWRENCE LESSIG, *CODE VERSION 2.0*, 39 (2006).

32. See *infra* notes 245–50 and accompanying text, for a discussion of the issues raised by the use of data.

makes little sense, but existing regulatory models have not adapted to the sharing economy's model of everything is small.

Yet the problem of scale is not intractable. This Article focuses on the two most prominent sectors of the sharing economy, home-sharing and ride-hailing, and proposes several governance mechanisms that can respond to the particular configuration of scale in the sharing economy, such as co-regulation, aggregate regulation, and cooperative models. By recognizing platforms' roles as aggregators of mass amounts of small-scale activity, lawmakers can adapt regulation to fit the sharing economy's three-sided model and address the negative cumulative impacts of large numbers of small-scale home-sharing and ride-hailing activities.

Despite extensive media coverage of the sharing economy and a growing legal literature on the subject, the role of scale in the sharing economy and its implications for governance have been largely overlooked. By providing a comprehensive account of the regulatory challenge of scale in the sharing economy, this Article contributes to the literature on both the sharing economy and governance.³³ By using scale as a lens to develop a more robust understanding of the sharing economy, this Article provides a novel descriptive account of the sharing economy and a prescriptive framework for recalibrating regulation to its configuration of scale. And by using the sharing economy as a lens to explore scale, the Article makes a normative contribution about the role of scale in governance and invites a broader conversation with those engaged with other evolving technologies that also implicate the large-scale occurrence of small-scale activities.

This Article's discussion of scale in the sharing economy also responds to the exceptionalism that often underlies commentary on the sharing economy.³⁴ The sharing economy is fueled by technological innovations,

33. See, e.g., Zale, *supra* note 3, at 512–13 (providing an analytical framework and taxonomy for home-sharing, ride-sharing and other sharing economy activities); see also Stephen R. Miller, *First Principles for Regulating the Sharing Economy*, 53 HARV. J. ON LEGIS. 147, 172–75 (2016) (analyzing local government regulations of the sharing economy); Daniel E. Rauch & David Schleicher, *Like Uber, but for Local Government Law: The Future of Local Regulation of the Sharing Economy*, 76 OHIO ST. L.J. 901, 942–63 (2015) (discussing how local government responses to the sharing economy may evolve from top-down regulatory approaches); Sarah Schindler, *Regulating the Underground: Secret Supper Clubs, Pop-up Restaurants, and the Role of Law*, 82 U. CHI. L. REV. DIALOGUE 16, 27–28 (2015) (discussing potential regulatory treatment of meal-sharing activities).

34. See, e.g., SHAREABLE, <http://www.shareable.net/about> [<https://perma.cc/CL67-J7S6>] (last visited Nov. 6, 2016) (describing the sharing economy as a “transformation” that is “democratizing how we produce, consume, govern, and solve social problems”);

which can certainly raise unique legal questions, but the sharing economy is not *sui generis*.³⁵ While new conceptual frameworks may be necessary to analyze and respond to some aspects of the sharing economy, this Article demonstrates how existing frameworks can be drawn on to inform both our understanding of the regulatory challenge of scale in the sharing economy and the development of governance in response.

The Article proceeds in three parts. Part I analyzes the governance of small-scale activities. Drawing on literature from a range of legal fields, this Part considers why regulatory systems typically treat small-scale activities with reduced stringency, as well as how and why the governance response shifts when small-scale activities occur in large numbers. Part II turns to the implications of small-scale activities in the sharing economy. It begins with an overview of the sharing economy and the role of platforms as network orchestrators. It then explores the full implications of scale in the sharing economy, by unpacking how scale in the sharing economy produces negative cumulative impacts and regulatory fractures that threaten to undermine civil rights and other laws, and argues that justifications for regulatory leniency do not apply with full force to home-sharing and ride-hailing. Part III proposes several governance mechanisms that respond to the negative consequences of scale in the sharing economy, such as co-regulation, scaled regulation, and cooperative regulation. A brief conclusion follows.

David Streitfeld, *Companies Built on Sharing Balk When It Comes to Regulators*, N.Y. TIMES (Apr. 21, 2014), <http://www.nytimes.com/2014/04/22/business/companies-built-on-sharing-balk-when-it-comes-to-regulators.html> (quoting Airbnb's CEO's comments to supporters that "[t]here are laws for people and there are laws for business, but you are a new category, a third category, people as businesses As hosts, you are microentrepreneurs, and there are no laws written for microentrepreneurs.").

35. See Lawrence Lessig, *The Law of the Horse: What Cyberlaw Might Teach*, 113 HARV. L. REV. 501, 506 (1999) ("[W]hile particular versions of cyberspace do resist effective regulation, it does not follow that every version of cyberspace does so as well. Or alternatively, there are versions of cyberspace where behavior can be regulated, and the government can take steps to increase this regulability.").

I. REGULATION AND SCALE

The literature on governance and regulation—why we regulate,³⁶ how to regulate,³⁷ and the effects of regulation³⁸—is immense, and it is beyond the scope of this Article to summarize the many important insights scholars have contributed to this field. Instead, my focus here is to draw on this literature to answer two questions central to this Article’s inquiry into the regulatory challenge of scale in the sharing economy.

First, why do regulatory systems typically treat small-scale activities with reduced stringency? I identify five factors justifying regulatory leniency for small-scale activities: (1) the de minimis character of the activities; (2) privacy and autonomy concerns; (3) enforcement costs; (4) fairness concerns; and (5) alternatives to legal regulation. Second, how and why does the governance response to small-scale activities shift when the activities occur in large numbers? I explore how this shift in scale distinguishes private law from public law in a range of legal contexts and unpack how cumulative impacts of small-scale activities shape regulatory responses.

36. We can broadly understand regulation as a response to externalities. See Lisa Grow Sun & Brigham Daniels, *Mirrored Externalities*, 90 NOTRE DAME L. REV. 135, 136, 140–41 (2014) (“[T]he existence of externalities is one of the most commonly proffered, and most widely accepted, arguments for government intervention in markets and individual liberty.”). Externalities are the external effects of an activity on third parties. Paul Stephen Dempsey, *Taxi Industry Regulation, Deregulation, & Reregulation: The Paradox of Market Failure*, 24 TRANSP. L.J. 73, 94 (1996) (citing Paul Stephen Dempsey, *Market Failure and Regulatory Failure as Catalysts for Political Change: The Choice Between Imperfect Regulation and Imperfect Competition*, 46 WASH. & LEE L. REV. 1, 17 (1989)) (defining externalities); see also N. GREGORY MANKIW, PRINCIPLES OF ECONOMICS 196, 199 (7th ed. 2014) (defining negative externalities as when the external effects of an activity impose costs on third parties and positive externalities are when the external effects of an activity yield benefits to third parties).

37. See, e.g., Jordan M. Barry & Paul L. Caron, *Tax Regulation, Transportation Innovation, and the Sharing Economy*, 82 CHI. L. REV. DIALOGUE 69, 73 (2015) (discussing the challenge regulators face in determining appropriate tax regulations and that: “[t]he government’s job—crafting rules that encourage compliance, discourage avoidance, and do not impose a heavy compliance burden on taxpayers—is an extremely difficult one.”).

38. See generally Luke A. Stewart, *The Impact of Regulation on Innovation in the United States: A Cross-Industry Literature Review*, INFO. TECH. & INNOVATION FOUND. (June 2010), <http://www.itif.org/files/2011-impact-regulation-innovation.pdf> (summarizing literature from a range of disciplines on the impact of regulation on innovation).

A. Regulatory Leniency for Small-Scale Activities

Across a range of legal contexts, small-scale activities are either exempt from or subject to lowered levels of regulatory oversight. From small businesses exemptions in health and safety laws³⁹ to intellectual property law's "homestyle" exemption for broadcasts of copyrighted material,⁴⁰ regulatory systems routinely treat small-scale activities with reduced stringency.⁴¹ This Section examines why this is the case. I identify five factors justifying regulatory leniency: (1) the de minimis character of the activity; (2) privacy and autonomy concerns; (3) enforcement costs; (4) fairness concerns; and (5) alternatives to legal regulation.

1. De Minimis Character of Small-Scale Activities

Small-scale activities are, by their very definition, small. This means that each small-scale occurrence of a small-scale activity contributes a minimal amount to the overall amount of that activity, and correspondingly, a minimal amount to any social "bads" caused by that activity. For example, an individual driving a vehicle to work in a city is just one of many thousands—or hundreds of thousands or millions—of people engaged in that activity everyday. While there are recognized social "bads" caused by solo commuting—from traffic congestion to increased emissions—each individual driver's contribution to overall levels of those problems is minimal.

Because individual actors contribute relatively so little to the problem that regulation seeks to address, the regulation of small-scale actors raises what Professors Stack and Vandenberg have termed the "one percent" problem.⁴² Arguments that such de minimis actors should be exempt from regulation have intuitive appeal.⁴³ Not only do cognitive biases make it difficult for individuals to "evaluat[e] and mak[e] use of very low-value probabilities," but individuals also "have a tendency to treat very small percentages and probabilities as if they were zero."⁴⁴ Thus, arguments like that of economist E.F. Schumacher, who believed that "[s]mall-scale

39. See Eyal-Cohen, *supra* note 17, at 1068–69.

40. See 17 U.S.C. § 110 (2012)(5) (providing that broadcasts of copyrighted material on "a single receiving apparatus of a kind commonly used in private homes" are not liable for infringement, unless there is a charge or it is re-transmitted to the public).

41. "Regulatory systems," as the term is used here, refers to public law, as opposed to private law. See *infra* Section I.B (discussing the distinctions between public and private law). Small-scale activities often remain subject to private law, even where they are not subject to public law.

42. Kevin M. Stack & Michael P. Vandenberg, *The One Percent Problem*, 111 COLUM. L. REV. 1385, 1393 (2011).

43. *Id.*

44. *Id.* at 1388, 1398.

operations no matter how numerous are always less likely to be harmful to the natural environment than large-scale ones, simply because their individual force is small in relation to the recuperative forces of nature,” can persuade us that regulation is unnecessary.⁴⁵

An exception to the de minimis justification for regulatory leniency is where de minimis activity poses a risk of serious harm.⁴⁶ Even if the likelihood of harm occurring is low, when small-scale activity poses a risk of serious harm, it is more likely to be regulated. For example, in many states, it is illegal not only to buy or sell unpasteurized milk, but also to “deliver, give away, or knowingly receive” unpasteurized milk, because of the serious health risks that are posed by bacteria in unpasteurized products.⁴⁷

2. *Privacy and Autonomy Concerns*

Concerns about intrusions into autonomy, privacy, and intimacy can limit the reach of regulation. Determining when exactly such concerns are raised can be challenging; as the Supreme Court has acknowledged, “[b]etween the[] poles” of activities that warrant government oversight and those that do not, “lies a broad range of human relationships that may make greater or lesser claims to constitutional protection from particular incursions by the State.”⁴⁸

Courts have identified some factors that may be determinative in deciding where to draw the line between conduct that warrants government oversight and that which does not.⁴⁹ One such factor is the commercial or personal nature of an activity. While precise definitions vary, commercial activity typically involves monetary gain—direct or indirect—from an activity; a

45. Schumacher, *supra* note 22, at 36.

46. I focus here on the seriousness of the harm with respect to an individual incident of small-scale activity. The discussion in Section I.B *infra* of the cumulative impacts also deals with the seriousness of harm of an activity, but as a cumulative matter.

47. See JANELLE ORSI, PRACTICING LAW IN THE SHARING ECONOMY 433–34 (2012) (emphasis omitted).

48. *Roberts v. U.S. Jaycees*, 468 U.S. 609, 619–20 (1984) (citing competing considerations such as personal and familial autonomy). Relationships that implicate freedom of association concerns “are distinguished by such attributes as relative smallness, a high degree of selectivity in decisions to begin and maintain the affiliation, and seclusion from others in critical aspects of the relationship.” *Id.* at 620.

49. See *Zale*, *supra* note 3, at 522–24 (providing the examples of the commercial/non-commercial dichotomy in a range of legal contexts).

non-commercial or personal activity does not.⁵⁰ Another factor in determining whether autonomy concerns necessitate regulatory leniency is where the activity takes place. Activities taking place in private, personal spaces—particularly homes—have traditionally benefitted from a hands-off regulatory approach.⁵¹ Additionally, when regulation targets an activity where “unrestricted individual choice has been (or is perceived to have been) the norm,” autonomy concerns may weigh against regulating.⁵²

Thus, when small-scale activities fall on the non-commercial end of the spectrum, occur in private spaces like the home, or implicate norms of individual choice, they are more likely to be treated with a light regulatory touch. For example, one friend inviting another friend over to dinner at their home would normally be considered a personal or non-commercial activity. Although home dining involves many of the same underlying activities as dinner in a restaurant—the preparation of food and use of cooking appliances—it is exempt from a range of regulations applicable to restaurants, from food safety inspections to building code requirements for commercial kitchens to employment laws for staff. The lenient regulatory environment is not because there is no danger of food poisoning or faulty stoves in a home-dining scenario. Rather, the lack of direct regulation of home cooks is largely due to the fact that it is a non-commercial activity occurring in the private space of the home, thereby entitling it to regulatory deference for reasons of personal autonomy and privacy.⁵³

Even when small-scale activity is commercial, it still may receive regulatory deference if it occurs in a personal space, such as the home.⁵⁴ For example,

50. See CREATIVE COMMONS, DEFINING “NONCOMMERCIAL”: A STUDY OF HOW THE ONLINE POPULATION UNDERSTANDS “NONCOMMERCIAL USE” 11 (Sept. 2009), http://mirrors.creativecommons.org/defining-noncommercial/Defining_Noncommercial_fullreport.pdf [<https://perma.cc/Y9ZJ-7M8Y>].

51. See, e.g., Katrina Fischer Kuh, *When Government Intrudes: Regulating Individual Behaviors that Harm the Environment*, 61 DUKE L.J. 1111, 1168–74 (2012) (discussing the “significance of home” in substantive due process cases).

52. Holly Doremus, *Biodiversity and the Challenge of Saving the Ordinary*, 38 IDAHO L. REV. 325, 346 (2002); see also David E. Adelman, *Environmental Federalism when Numbers Matter More than Size*, 32 UCLA J. ENVTL. L. & POL’Y 238, 265–66 (2014) (“The historical record highlights both the long-standing prominence of small sources and the persistent challenges (political and otherwise) of regulating them [T]he interests of small businesses and the public may be diffuse, but in absolute terms they are not necessarily small—the public cares a great deal, for example, about having the freedom to use their cars . . .”).

53. Other reasons for non-regulation of the home-dining scenario are enforcement costs, see *infra* notes 62–73 and accompanying text, and the availability of alternatives to formal regulation, such as informal norms, see *infra* notes 80–89 and accompanying text; See generally Schindler, *supra* note 33 (discussing regulatory treatment of informal dining arrangements).

54. Conversely, there are situations where even non-commercial activities that occur in personal spaces are regulated, because privacy and autonomy concerns are outweighed by

under the Fair Housing Act (“FHA”), landlord-owners whose properties contain four units or less and who occupy the property as their residence are exempt from FHA prohibitions against discrimination against protected classes in the sale or rental of those properties.⁵⁵ Even though such individuals are engaged in commercial activity, the “Mrs. Murphy” exemption reflects Congress’s determination that significant autonomy concerns are also raised when a property owner lives in close proximity with others.⁵⁶ The result is that small-scale owners and landlords whose property contains less than five units can discriminate against protected classes in the sale or rental of housing.⁵⁷

However, regulatory deference for reasons of privacy and autonomy is not static. Shifts in social beliefs or new scientific information about a particular activity may lead to a greater or lesser acceptance of regulatory intrusions into privacy or autonomy. In some cases such shifts in societal beliefs or new information may lead to greater acceptance of regulations that put some burden on personal autonomy, as with seat belt laws.⁵⁸ In other cases, it may lead to lesser acceptance of regulatory burdens on autonomy, as with birth control and sodomy laws.⁵⁹

competing considerations, such as the seriousness of harm posed by the activity. *See* *Osborne v. Ohio*, 495 U.S. 103, 111 (1990) (upholding an Ohio state law criminalizing the viewing or possession of child pornography in the home).

55. 42 U.S.C. § 3603(b)(2) (2012). However, the exemption does not apply to discriminatory advertisements, which are prohibited by all owners, including “Mrs. Murphy” types. *Id.*

56. In addition, there likely were political motivations for the exemption. *See* James D. Walsh, Note, *Reaching Mrs. Murphy: A Call for Repeal of the Mrs. Murphy Exemption to the Fair Housing Act*, 34 HARV. C.R.-C.L.L. REV. 605, 607–09 (1999) (“Circumstantial evidence also points to the influence of racial politics in the inclusion of the Mrs. Murphy exemption in the FHA.”).

57. The Mrs. Murphy exemption has been criticized. *See* David M. Forman, *A Room for “Adam and Steve” at Mrs. Murphy’s Bed and Breakfast: Avoiding the Sin of Inhospitability in Places of Public Accommodation*, 23 COLUM. J. GENDER & L. 326, 328 (2012) (criticizing the Mrs. Murphy exception in the context of sexual orientation discrimination); Walsh, *supra* note 56, at 606 (“[T]he exemption indicates where society, speaking through Congress, draws the line in the clash between civil rights and civil liberties. This Note will argue that Congress drew the line in the wrong place, rendering the exemption over-inclusive as a protector of liberty.”).

58. *See, e.g.,* *People v. Kohrig*, 498 N.E.2d 1158, 1161 (Ill. 1986) (holding that while a state seat belt law “implicates a person’s interest in ‘liberty’” by restricting freedom of choice, it does not implicate the intimate and private aspects of one’s life and thus only requires a rational basis justification).

59. *See, e.g.,* *Lawrence v. Texas*, 539 U.S. 558, 578 (2003) (striking down a state anti-sodomy law which “further[ed] no legitimate state interest which can justify its intrusion

Furthermore, while privacy and autonomy concerns may limit the direct regulation of certain types of small-scale activities, regulation often indirectly targets those activities. For example, if the government were to dictate how many miles people could drive each day in an effort to reduce carbon emissions, this would likely be extremely unpopular.⁶⁰ However, when the government sets fuel efficiency standards, and other emissions criteria for car manufacturers, which can then only sell vehicles that meet those standards, the desired outcome—reduced carbon emissions—can be at least partially achieved with less resistance to the regulation on privacy and autonomy grounds.⁶¹

3. Enforcement Costs

In determining whether to regulate any activity, efficiency is a major concern.⁶² According to standard welfare economics principles, “society should enact all regulations that provide a net social benefit—and only such regulations.”⁶³ There is a size at which government oversight is “worth it,” and efficiency considerations are often the method used to determine what point that is.⁶⁴ Under an efficiency analysis, if the cost of enforcing regulations against an actor would exceed the benefits, then not regulating is an efficient response.⁶⁵

into the personal and private life of the individual”); *Griswold v. Connecticut*, 381 U.S. 479, 485 (1965) (striking down a state law forbidding the provision of birth control as conflicting with individual’s right to privacy).

60. See Craig N. Oren, *Getting Commuters Out of Their Cars: What Went Wrong?*, 17 STAN. ENVTL. L.J. 141, 148–49 (1998) (describing the failure of the Employee Trip Reduction requirement provisions of the Clean Air Act Amendments of 1990).

61. See *id.* at 148.

62. See ALFRED E. KAHN, *THE ECONOMICS OF REGULATION: PRINCIPLES AND INSTITUTIONS* xvi (1988) (noting that the wave of deregulation across industries in the 1970s was in part due to the shared perception that “regulation had . . . sheltered inefficiency . . .”).

63. Jeff Schwartz, *The Law and Economics of Scaled Equity Market Regulation*, 39 J. CORP. L. 347, 350 & n.15 (2013). Scholars debate what exactly should be factored into the welfare calculus. See, e.g., Gregory S. Alexander & Eduardo M. Penalver, *Properties of Community*, 10 THEORETICAL INQUIRIES L. 127, 134 (2009) (setting out a human-flourishing approach to property law that “rests upon a thicker conception of the good human life than is embraced” by traditional welfare economics approaches).

64. See Emily Badger, *Why We Can’t Figure Out How to Regulate Airbnb*, WASH. POST: WONKBLOG (Apr. 23, 2014), <http://www.washingtonpost.com/blogs/wonkblog/wp/2014/04/23/why-we-cant-figure-out-how-to-regulate-airbnb/> [https://perma.cc/GHT8-VDQG] (“We’re always making a tradeoff between the burden of regulation, and the safety—or public benefit—created by it.”).

65. C. Steven Bradford, *Does Size Matter? An Economic Analysis of Small Business Exemptions from Regulation*, 8 J. SMALL & EMERGING BUS. L. 1, 25 (2004) (“If the total cost of applying a regulation to small firms or small transactions exceeds the total benefit, those firms or transactions should be exempted from the regulation in the absence of any transaction costs associated with the exemption. Thus, absent transaction costs, size-

Enforcement costs are of particular concern when considering regulation of small-scale actors because the costs of enforcing regulation may be significant and the benefits relatively minor.⁶⁶ Agencies tasked with enforcement of regulations often rationally devote their limited resources to the most cost-effective enforcement activity.⁶⁷ Often, this means enforcement agencies focus on large actors that are statistically more likely to have violations than smaller ones, simply because of the larger volume of relevant activity.⁶⁸ Thus, small business exemptions—or lowered regulatory standards—are justified for efficiency reasons in a range of regulatory contexts, from health care law to employment law to intellectual property law.⁶⁹

based exemptions can be efficient. [However,] exemptions do have transaction costs, and those transaction costs complicate the analysis, making it less likely that any particular small business exemption is efficient.” (emphasis omitted)).

66. See, e.g., U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-06-669, CLEAN AIR ACT: EPA SHOULD IMPROVE THE MANAGEMENT OF ITS AIR TOXICS PROGRAM 23 (June 2006), <http://www.gao.gov/assets/260/250607.pdf> [<https://perma.cc/34K2-6RRY>] (“Challenges in regulating small stationary sources center on difficulty in characterizing the large number of widely dispersed facilities In some cases, data do not exist on the number or location of facilities potentially subject to a regulation. Furthermore, unlike the large stationary sources . . . owners and operators of these [small] sources have limited resources to implement regulations and will require extensive outreach and compliance assistance.”).

67. See Richard J. Pierce, Jr., *Small Is Not Beautiful: The Case Against Special Regulatory Treatment of Small Firms*, 50 ADMIN. L. REV. 537, 561 (1998).

68. See *id.* (“No regulatory agency has investigative and enforcement resources sufficient to ensure anything approaching comprehensive compliance with its rules. OSHA, for instance, can inspect less than one percent of the worksites for which it has regulatory responsibility in a given year. Agencies allocate their scarce compliance and enforcement resources disproportionately to large firms.”). In addition, enforcement agencies may focus on large actors because of the limited penalties that may be permitted under particular administrative schemes against smaller actors. *Id.* at 561–62; see also Shu-Yi Oei & Diane M. Ring, *Can Sharing Be Taxed?*, 93 WASH. U. L. REV. 989, 1054 (2016) (“[I]t may not be worth IRS’ effort to audit multiple, low dollar amount, individual returns of these microbusiness earners in order to determine compliance. Thus, traditional audit strategies may not be cost effective.”).

69. See Pierce, *supra* note 67, at 542 nn.23–27 (describing regulatory fields with small business exemptions); see also Eyal-Cohen, *supra* note 17, at 1044 (discussing various regulatory regimes for which categorization as “small business” matters). A federal agency—the Small Business Administration—as well as analogous state agencies have been created to promote the growth of small businesses, including reducing regulatory burdens imposed on them. See, e.g., *Office of the Small Business Advocate*, CAL. GOVERNOR’S OFFICE OF BUS. & ECON. DEV., <http://www.business.ca.gov-gobiz-elb-1780917013.us-west-2.elb.amazonaws.com/Programs/SmallBusiness.aspxSmall-Business-Assistance/Office-of-Small-Business-Advocate> [<https://perma.cc/FZY9-K5CG>] (last visited Nov. 2, 2016) (describing California’s small business agency).

However, a number of researchers have criticized exemptions for small businesses for failing to accurately calculate the true costs of regulating—or failing to regulate—small-scale actors.⁷⁰ For example, one study found that employees at small firms are 500 times more likely to experience a fatal accident than employees at larger firms, raising questions about the exemptions from workplace safety laws for small firms.⁷¹ Another study found that smaller firms appear to engage in illicit behavior with respect to backdating stock options more often than larger firms.⁷² Thus, although the costs of enforcing regulation against small-scale actors may be relatively high compared to costs of enforcing regulations against larger entities, if small-scale actors make up the bulk of the regulated “bad,” the cost-benefit analysis may need to be recalibrated.⁷³

4. Fairness Concerns

In addition to efficiency concerns, many—though not all—governance scholars believe that regulations should also promote other social goals, such as fairness, justice, and equity.⁷⁴ Fairness is an elusive concept, which involves subjective judgment,⁷⁵ but it may be broadly framed as encompassing the moral considerations regarding distributive justice

70. See, e.g., Eyal-Cohen, *supra* note 17, at 1045–46 (“[E]conomic stimulus, job creation, and the promotion of entrepreneurship will not be accomplished by focusing merely on size, but by crafting purposive definitions that will target and reward entities according to the activities the government seeks to encourage.”); Pierce, *supra* note 67, at 539, 542–43 (contending that “special regulatory treatment of small firms is both unjustified and socially destructive”).

71. Pierce, *supra* note 67, at 558.

72. Deniz Anginer et al., *Should Size Matter When Regulating Firms? Implications from Backdating of Executive Options*, 15 N.Y.U. J. LEGIS. & PUB. POL’Y 1, 4 (2012).

73. See Stack & Vandenberg, *supra* note 42, at 1396 (“The threshold requirement for regulation—whether in securities, environmental regulation, or lobbying—stands as a very rough proxy for the point at which the costs of compliance are likely to exceed the benefits. What drives these exemptions is the relative cost of compliance and the relatively small scope of the activities subject to the exemptions. But this cost-benefit calculation should shift depending on the proportion of activities that fall within the exemptions.”).

74. See, e.g., Louis Kaplow & Stephen Shavell, *Fairness Versus Welfare*, 114 HARV. L. REV. 961, 966–68 (2001) (arguing that “legal policies should depend exclusively on their effects on individuals’ welfare. In particular, in the evaluation of legal policies, no independent weight should be accorded to conceptions of fairness, such as corrective justice and desert in punishment.”).

75. Richard H. Fallon, Jr., *Should We All Be Welfare Economists?*, 101 MICH. L. REV. 979, 1000 (2003) (discussing a conception of fairness as being drawn from the notion that “the foundation of moral thought lies in an ‘impersonal standpoint’ from which each of us must recognize that, objectively speaking, we are no more important than anyone else” (citing THOMAS NAGEL, EQUALITY AND PARTIALITY 10–11 (1991))).

concerns.⁷⁶ Thus, even though a particular governance response may be efficient from a welfare-maximizing perspective, if regulation produces unfair results then it may not be justified, at least according to those who believe the role of regulation is to produce fair outcomes in addition to efficient ones.⁷⁷

Fairness concerns may militate against regulating small-scale actors because doing so would require them to bear a burden disproportionately greater than the harm they are causing. For example, exemptions or lowered regulatory compliance are often justified for small businesses because uniformly imposing the same regulation on firms of all sizes imposes proportionally higher costs on small businesses, which do not benefit from the economies of scale that large firms do.⁷⁸ The resulting competitive advantage to larger firms may drive small-scale firms out of the market; while this outcome may be economically efficient, it may be perceived as unfair.⁷⁹

5. Alternatives to Legal Regulation

Law is not the only mechanism that can be used to affect or shape human behavior. As Lawrence Lessig has discussed in his scholarship,

76. See, e.g., Kevin A. Kordana & David H. Tabachnick, *Rawls and Contract Law*, 73 GEO. WASH. L. REV. 598, 629 (2005) (“In [the Rawlsian view of contract law], fairness is not defined in terms of the will of consenting parties, but rather by an external standard of distributive justice.”).

77. See Fallon, *supra* note 75, at 1003 (criticizing Kaplow’s and Shavell’s rejection of fairness); see also *The Sharing Economy*, VA. MUN. LEAGUE 16 (July 2015), <http://www.vml.org/sites/default/files/15SharingEconomyGuide.pdf> [<https://perma.cc/QBF5-NRQF>] (discussing the role of regulation in ensuring equal access to services: “While the marketplace has an appropriate and necessary role in determining where and how services are delivered, it is incumbent upon local government officials to monitor these services to ensure that they are provided in an equitable, non-discriminatory manner and that the benefits represented by the sharing economy are readily accessible to all.”).

78. See Bradford, *supra* note 65, at 29 (“Uniform application of regulatory requirements, without small business exemptions, gives a competitive advantage to larger firms, which have a lower per-unit compliance cost due to economies of scale.”).

79. The outcome may also raise efficiency concerns because “the increased costs to small firms resulting from economies of scale will raise barriers to entry and eliminate the potential competition on which we rely so heavily to keep prices in line.” *Id.* at 29 (first citing Russell W. Pittman, *Issues in Pollution Control: Interplant Cost Differences and Economies of Scale*, 57 LAND ECON. 1, 13 (1981); then Robert A. Leone, *The Real Costs of Regulation*, HARV. BUS. REV. 57, 62 (1977); and then *Impact of Federal Regulation on Small Business: Hearings Before the Subcomm. on Special Small Bus. Problems of the H. Comm. on Small Bus.*, 96th Cong 125 (1979) (statement of Dr. Milton Kafoglis)).

non-legal tools—such as norms, markets, and architecture—also constrain behavior.⁸⁰ In some cases, these alternatives to legal regulation may be equally or more effective than legal regulations alone in producing desired social outcomes.⁸¹ In such cases, we may expect to see less direct formal legal regulation of individuals and more reliance on alternatives to regulation.⁸²

When small-scale activities involve areas where individual choice is strongly embedded, shaping that activity through changes in norms—whether directly or indirectly—may be particularly effective in changing behavior.⁸³ Societies often enforce norms through social sanctions in the form of reputational costs.⁸⁴ Because small-scale activities often involve individual actors for whom personal reputation is crucial to continue to engage in the activity, informal norms may be effective in influencing their behavior, thereby reducing the need for formal regulation.⁸⁵

80. See Lawrence Lessig, *The New Chicago School*, 27 J. LEGAL STUD. 661, 661–63 (1998) (identifying these constraints on behavior outside the law and suggesting rather than being justifications for the state doing less, the existence of these alternative structures can act “as additional tools for a more effective activism” by the state).

81. Whether alternatives to regulation, such as informal norms, produce the same constraints on socially undesirable behavior as formal regulation is a matter of debate. See, e.g., Ann E. Carlson, *Recycling Norms*, 89 CALIF. L. REV. 1231, 1236 (2001) (“[S]ocial norms play a much less significant role in encouraging behavior necessary to resolve a large-number, small-payoff collective action problem than social norms enthusiasts might believe.”); Dan Kahan, *Social Influence, Social Meaning, and Deterrence*, 83 VA. L. REV. 349, 350–51 (1997) (discussing the effectiveness of norms in the deterrence of criminal behavior).

82. These non-legal alternatives to regulation themselves are often shaped by the law. See Lessig, *supra* note 80, at 662 (“[R]ather than diminishing the role of law, these alternatives suggest a wider range of regulatory means for any particular state regulation. . . . [L]aw not only regulates behavior directly, but law also regulates behavior indirectly, by regulating these other modalities of regulation directly.” (emphasis omitted)); see also Cass R. Sunstein, *Social Norms and Social Roles*, 96 COLUM. L. REV. 903, 913 (1996) (“A good deal of governmental action is self-consciously designed to change norms, meanings, or roles, and in that way to increase the individual benefits or decrease the individual costs associated with certain acts.”).

83. See, e.g., Lior Jacob Strahilevitz, *How Changes in Property Regimes Influence Social Norms: Commodifying California’s Carpool Lanes*, 75 IND. L.J. 1231, 1262 (2000) (describing the failure of San Diego’s attempt to change commuter behavior and ease congestion through HOV-only lanes: “[T]he norm of solo commuting was not undermined. People were willing to drive solo even if it meant longer commutes.”).

84. Sunstein, *supra* note 82, at 915; see also Richard H. McAdams, *The Origin, Development, and Regulation of Norms*, 96 MICH. L. REV. 338, 355 (1997) (articulating an “esteem theory” of norms in which “the desire for esteem creates a norm [And] norm violators [are punished] by withholding from them the esteem they seek”).

85. To emphasize Lessig’s point, however, regulation may still indirectly affect behavior, by being applied to the particular norm at issue. See sources cited *supra* note 82.

Consider childcare services. Day-care centers are subject to formal regulations, such as minimum wage, child labor laws, or child-care licensing.⁸⁶ These same regulations rarely apply to teenage babysitters, even though teenage babysitters perform essentially the same functional tasks as child day-care centers.⁸⁷ Instead, informal norms accomplish many of the same goals that formal legal regulation might otherwise. Parents usually know the babysitter's own parents, who not only provide the personal references needed to entrust a child to a teenager and serve as a backstop able to intervene in the case of emergency, but who also act as a strong non-legal constraint on the teenager's behavior.

However, there are limits to the effectiveness of norms and other non-legal mechanisms in shaping small-scale activities. Norms have been shown to be effective when small-scale actors are relatively homogenous and have repeated interactions with each other, but are less effective in heterogeneous groups of small-scale actors who do not engage in repeated actions.⁸⁸ Additionally, as the number of small-scale actors grows, the effectiveness of norms tends to decrease.⁸⁹ The next Section explores in more detail how increases in small-scale activity affect governance.

B. The Large-Scale Occurrence of Small-Scale Activities

While regulatory systems often treat small-scale activities with reduced stringency for the reasons discussed above, as the amount of small-scale activity increases, there is often a shift in the governance response to the activity. This Section begins by exploring how this shift in scale distinguishes private law from public law in a range of legal contexts. It then discusses the concept of cumulative impacts and analyzes how the aggregate effects of small-scale activities can necessitate a regulatory response.

86. See, e.g., California Child Day Care Facilities Act, CAL. HEALTH & SAFETY CODE §§ 1596.70–1596.7995 (West 2008) (establishing a range of regulatory requirements that apply to childcare facilities in the state).

87. Some forms of formal legal regulation are still applicable to teenage babysitters; tort and criminal law, for example, apply. However, these are largely ex post legal regulations; the type of ex ante legal regulations applied to day-care facilities discussed above are largely inapplicable.

88. See Carlson, *supra* note 81, at 1245–47.

89. See *id.*

1. Public Law vs. Private Law

Scale is a seemingly straightforward concept: it signals an increase or decrease in size or number.⁹⁰ As a legal construct, at the most macro-level, scale distinguishes public law from private law. Traditionally, public and private law are defined by subject matter. Private law is concerned with rights and duties individuals and entities owe to each other, and it encompasses subjects such as torts, contracts, family law, and property law.⁹¹ Public law is concerned with the government's relationship to private parties and includes constitutional law, criminal law, and a range of administrative and regulatory laws.⁹²

However, the line between private and public law is less a question of subject matter and more a question of scale. For example, the relationship between an individual landlord and tenant would appear to fall squarely in the realm of private contract and property law. Yet, in today's society where there are a large number of individual landlord-tenant relationships, the law of landlord-tenant relationships has evolved to be largely a matter of public law, ranging from rent control ordinances to administrative law on eviction to statutory requirements for repairs.⁹³

This same pattern—a subject traditionally considered an area of private law evolving into a matter of public law when the small-scale activity between individuals occurs in large-scale numbers—is evident across a range of legal contexts. Employment law, for example, involves private contractual arrangements, but the employer-employee relationship has become the subject of significant regulatory oversight at the federal, state, and local levels, with respect to everything from minimum wage laws to

90. *Scale*, MACMILLAN DICTIONARY, http://www.macmillandictionary.com/us/dictionary/american/scale_1 [<https://perma.cc/7BCU-7MNT>] (last visited Nov. 7, 2016) (defining scale as “the size of something”).

91. See Paul A. Diller, *The City and the Private Right of Action*, 64 STAN. L. REV. 1109, 1116–17 (2012) (defining public and private law); see also Joanna Kudisch Weinberg, *The Judicial Adjunct and Public Law Remedies*, 1 YALE L. & POL'Y REV. 367, 367 n.1 (1983) (defining public law litigation as “all complex litigation where a broadly characterized public interest, that is one which extends beyond the particular interests of the parties, is at stake”).

92. Weinberg, *supra* note 91, at 367 n.1; see also John C.P. Goldberg, *Introduction: Pragmatism and Private Law*, 125 HARV. L. REV. 1640, 1640 (2012) (“Like many legal concepts, ‘private law’ has recognizable referents yet eludes precise definition. Private law defines the rights and duties of individuals and private entities as they relate to one another.”).

93. See JOSEPH SINGER, PROPERTY 455–93 (4th ed. 2014) (describing various public laws regulating the landlord–tenant relationship, such as security deposit requirements, anti-eviction protections, rent control, housing codes, and lead paint laws).

anti-discrimination laws to family leave laws.⁹⁴ Similarly, the scale of residential foreclosures in 2008 tipped the legal response from a private contract law issue between individual mortgagor and mortgagee to one of public consumer protection law, in which federal and state governments injected statutory reforms such as tax relief for borrowers⁹⁵ and requirements for mandatory mediation before foreclosure.⁹⁶ A similar evolution occurred with regard to land use law, where private law of nuisance and servitudes has been supplemented by the public law of zoning and land use law, developed over the course of the last century as individual interactions between neighbors occurred in greater numbers as society grew more urbanized.⁹⁷

Thus, whenever we see a particular type of small-scale activity occurring in greater numbers, we tend to also see a shift from the realm of private law and regulatory leniency to public law and regulatory oversight. The next Section considers why this shift occurs.

2. *Cumulative Impacts and Scale*

When small-scale activities occur in large numbers, there is, in a quantitative sense, more of that activity. More activity means more impacts from that activity. These aggregate impacts are known as cumulative impacts. Cumulative impacts occur when individual activities, which may cause only de minimis– or no– negative impacts, result in aggregate harms when repeated by numerous individual actors.⁹⁸

94. Marna M. Tess-Mattner, *Employer-Employee Issues: Eight Danger Areas*, 21 GPSOLO MAG. (2014), http://www.americanbar.org/newsletter/publications/gp_solo_magazine_home/gp_solo_magazine_index/employeremployeeissues.html. [<https://perma.cc/VSC5-S4X3>].

95. For example, the Mortgage Forgiveness Debt Relief Act of 2007 allowed taxpayers to exclude income from the discharge of debt on their principal residence, up to a certain amount. Mortgage Forgiveness Debt Relief Act of 2007, Pub. L. No. 110–142, § 2, 121 Stat. 1803, 1803–04 (codified as amended at 26 U.S.C. § 108 (2012)).

96. See, e.g., *Pasillas v. HSBC Bank USA*, 255 P.3d 1281, 1284 (Nev. 2011) (describing Nevada’s mandatory mediation law); see also Robin Paul Malloy & James Charles Smith, REAL ESTATE TRANSACTIONS 406–09 (4th ed. 2013) (describing other statutory reforms in response to the 2008 financial crisis).

97. See SINGER, *supra* note 93, at 635 (describing the limits of nuisance and servitude law and the development of zoning and other public land use regulations to accomplish land use goals).

98. See Kellen Zale, *The ‘Government’s Right to Destroy*, 47 ARIZ. ST. L.J. 269, 272 (2015) (discussing cumulative impacts in the context of property demolitions); see also 40 C.F.R. § 1508.7 (2015) (defining cumulative impact under NEPA and noting that

The problem of negative cumulative impacts is evident across a range of legal contexts, from corporate law to civil rights law to employment law.⁹⁹ Economist Alfred Kahn recognized how the aggregate result of a series of individually rational “small decisions” can result in a cumulative impact of market failure.¹⁰⁰ Kahn contended that because of the “limited size, scope and time-perspective” of individual decisions, the result of many such individual decisions may be outcomes that do not reflect individuals’ desired outcome “if they were ever given the opportunity explicitly to vote for or against it.”¹⁰¹

Drawing on Kahn’s insights, biologist William Odum explored cumulative impacts in the context of environmental science.¹⁰² Odum was one of the first scholars in the environmental movement to recognize how the accumulation of small-scale decisions can result in environmental outcomes that would not be the “optimal, desired, or preferred solution for society.”¹⁰³ For example, the destruction of coastal wetlands may result from a series of individually rational development decisions by coastal property owners,¹⁰⁴ but it is unlikely that individuals would choose to destroy a coastal wetlands—and experience both the ecological and market costs that result—if they had a chance to collectively make the “big decision” at the outset.¹⁰⁵ Because individuals typically do not have that collective opportunity, Odum,

it can “result from individually minor but collectively significant actions taking place over a period of time”). Conversely, there are situations where the aggregate results of small-scale activity produce lower levels of harm than the sum of their individual parts would suggest. See Sarah B. Schindler, *Of Backyard Chickens and Front Yard Gardens: The Conflict Between Local Governments and Locavores*, 87 TUL. L. REV. 231, 287–92 (2012) (discussing zoning laws adopted in numerous jurisdictions to allow for small-scale urban farming).

99. See J.B. Ruhl & James Salzman, *Climate Change, Dead Zones, and Massive Problems in the Administrative State: A Guide for Whittling Away*, 98 CALIF. L. REV. 59, 92–93 (2010) (discussing how the concept of cumulative impacts or cumulative effects has influenced legal doctrine in these and other areas).

100. Alfred E. Kahn, *The Tyranny of Small Decisions: Market Failures, Imperfections, and the Limits of Economics*, 19 KYKLOS INT’L REV. FOR SOC. SCI. 23, 45 (1966).

101. *Id.* As an example of this kind of market failure, Kahn pointed to the termination of rail service on the Ithaca, New York line, which was bemoaned almost universally when it was announced, but which was the inevitable result of the loss of revenues and ridership due to many, many individual decisions to drive instead of use the train. *Id.* at 25–27. Kahn suggested “extra-market intervention[s],” such as regulations authorizing additional public investment in rail service, may be necessary “to offset the tyranny of small decisions”; otherwise, people will not have “the full range of economically feasible alternatives required for rational choice.” *Id.* at 33.

102. William E. Odum, *Environmental Degradation and the Tyranny of Small Decisions*, 32 BIOSCIENCE 728, 728 (1982).

103. *Id.* at 728–29.

104. *Id.* at 728.

105. *Id.*

like Kahn, suggested corrective governance measures might be needed, such as strengthening of environmental regulation to take a more holistic view of large-scale problems caused by small-scale activities.¹⁰⁶

To address cumulative impacts, regulators may also need to modify the initial rules applying to individual, small-scale actions to account for the negative aggregate effects. Environmental and land use law is an area where negative cumulative impacts are of particular concern. Massive problems such as climate change,¹⁰⁷ water pollution,¹⁰⁸ and sprawl¹⁰⁹ have been recognized as being caused not primarily by any single actor, but rather as the result of incremental, small-scale actions of millions of people.¹¹⁰ Although each individual action may be de minimis—a “one percent” actor, as Vandenberg and Ruhl refer to it—the aggregate effects of their

106. *Id.* at 729. While suggesting these corrective measures, Odom himself was not optimistic about the chances of success, noting that federal regulators tend to “become entangled in their own bureaucratic red tape” and that lower levels of government are structurally ill-suited to “solving complex problems of environmental management.” *Id.* A number of environmental laws, such as the National Environmental Protection Act (NEPA) and state laws such as the California Environmental Quality Act (CEQA), have been enacted that explicitly require consideration of cumulative impacts. *See, e.g.*, CAL. PUB. RES. CODE § 21083 (West 2016) (“[A] project may have a ‘significant effect on the environment’ if . . . [t]he possible effects of a project are individually limited but cumulatively considerable.”); COUNCIL ON ENVTL. QUALITY, CONSIDERING CUMULATIVE EFFECTS UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT 1 (1997), http://energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-CEQ-ConsidCumulEffects.pdf [<https://perma.cc/7LLD-M59G>].

107. *See, e.g.*, Ruhl & Salzman, *supra* note 99, at 92–93 (discussing challenge of regulating the cumulative impacts of small-scale actors in the context of climate change).

108. *See, e.g.*, Mackenzie Kastl & Joan Rose, *Septic Tanks Aren’t Keeping Poo Out of Rivers and Lakes*, MICH. ST. U. TODAY, (Aug. 3, 2015), <http://msutoday.msu.edu/news/2015/septic-tanks-arent-keeping-poo-out-of-rivers-and-lakes/> [<https://perma.cc/UY86-Q3KN>] (“For years we have been seeing the effects of fecal pollution, but we haven’t known where it is coming from. . . . Pollution sources scattered in an area—called non-point—have historically been a significant challenge in managing water quality.”).

109. *See, e.g.*, Zale, *The Government’s Right to Destroy*, *supra* note 98, at 301–02 (citing REID EWING ET AL., SMART GROWTH AMERICA, MEASURING SPRAWL AND ITS IMPACT 17–21 (2002), <http://www.smartgrowthamerica.org/documents/MeasuringSprawl.PDF>) [<https://perma.cc/R7TX-FTN8>] (“The cumulative effect of the numerous individual actions in the case of sprawl produces a myriad of negative effects, such as increased infrastructure cost, ecosystem degradation and fragmentation, and socio-economic inequality.”).

110. On the general problem of aggregate impacts of small-scale actors, see Ruhl & Salzman, *supra* note 99, at 65. The problem of the aggregate impacts of small-scale environmental harms has been explored by a number of environmental law scholars. *See, e.g.*, Katrina Fischer Kuh, *Capturing Individual Harms*, 35 HARV. ENVTL. L. REV. 155, 161 (2011); Dave Owen, *Critical Habitat and the Challenge of Regulating Small Harms*, 64 FLA. L. REV. 141, 143–44 (2012); Vandenberg, *supra* note 20, at 534; Hannah J. Wiseman, *Remedying Regulatory Diseconomies of Scale*, 94 B.U. L. REV. 235, 237 (2014).

activity can make it impossible to achieve a particular social good unless the individually de minimis activity is regulated.¹¹¹ When “small contributors account for so much of a regulatory problem that the social goal cannot be met without regulating many one percent sources,” then exempting small-scale actors from regulation because of their de minimis contributions harms the very social benefits or public goods that the regulation was intended to protect.¹¹²

While recalibrating federal environmental laws to account for the cumulative impacts of small-scale actors has proven challenging,¹¹³ local environmental and land use laws frequently regulate small-scale activities to account for negative cumulative impacts. For example, numerous cities have hillside building ordinances or impermeable surface regulations that impose restrictions on individual property owners who seek to build on hillsides or increase the paved surface on their properties.¹¹⁴ While one more house on a hill, or one more parking lot may have a de minimis effect when considered as an isolated action, the aggregate effect of the activity repeated over and over can have significant negative impacts on erosion and storm water runoff that threaten the health and safety of the entire community.¹¹⁵

While non-legal constraints such as markets and norms can address some types of negative cumulative impacts, those mechanisms are not always as effective as formal legal regulation. As Kahn and Odum recognized,

111. Ruhl & Salzman, *supra* note 99, at 92; *see also* Stack & Vandenberg, *supra* note 42, at 1388.

112. Stack & Vandenberg, *supra* note 42, at 1388, 1397 (“No one stands for treating trifles as anything but. The key is to see that defining something as a trifle depends on an assessment of the surrounding landscape.”); *see also* Pierce, *supra* note 67, at 557 (“We impose costly regulatory rules for a reason. We want to reduce incidences of things we consider bad, e.g., occupational injuries, racial discrimination, pollution, or inadequate access to healthcare. Every study of the relationship between firm size and social bads produces the same finding—small firms account for a disproportionate quantity of the social bads that we attempt to reduce through regulation.”).

113. *See* Vandenberg, *supra* note 20, at 518–23 (discussing reasons for federal environmental law’s focus on large scale actors as opposed to individuals and arguing for a re-focus on individuals).

114. Zale, *supra* note 98, at 302 (citing Eric T. Freyfogle, *Private Land Made (Too) Simple*, 33 ENVTL. L. REP. 10, 167–68 (2003)).

115. In some scenarios, cumulative impacts may cause harms even greater than the aggregate sum of their individual parts due to interdependent effects. For example, certain types of water and air pollution may be amplified when they interact with other types of conditions (such as other pollutants or natural conditions like weather), resulting in cumulative impacts “at larger scales than merely the sum of small-scale processes.” *See* Craig Anthony (Tony) Arnold, *Clean-Water Land Use: Connecting Scale and Function*, 23 PACE ENVTL. L. REV. 291, 320–21 (2006) (discussing the cumulative impact phenomenon in the context of water pollution (citing NAT’L RESEARCH COUNCIL, NEW STRATEGIES FOR AMERICA’S WATERSHEDS 43 (1999))).

markets may fail at responding to the large-scale occurrence of small-scale activities.¹¹⁶ Furthermore, there are limits to the effectiveness of norms in constraining behavior, particularly in cases involving what Professor Ann Carlson has termed “large-number, small-payoff collective action problems.”¹¹⁷ Where a social problem requires behavior changes by large numbers of individuals with little economic incentive to do so, norms often fail to take hold.¹¹⁸ “Large numbers of people, little economic incentive to act, and lack of homogeneity” make it challenging for groups to develop informal norms,¹¹⁹ and thus regulation to address the negative cumulative impacts of such small-scale actors may be more effective.

The analysis above—identifying why regulatory systems tend to treat small-scale activities with reduced stringency, and how the cumulative impacts from the large-scale occurrence of small-scale activities can necessitate a regulatory response—lays out an underlying framework for the governance of small-scale activities. Part II now turns to a fuller exploration of the sharing economy and applies the governance framework to the small-scale activities occurring therein.

II. SCALE IN THE SHARING ECONOMY

Part I set out a framework for the governance of small-scale activities. This Part applies the framework to the sharing economy, focusing on the two most prominent sectors: home-sharing and ride-hailing. I begin with a brief overview of the sharing economy and an analysis of the role of platforms as network orchestrators. I then turn to the implications of scale in the sharing economy. While the sharing economy offers great promise and opportunity for platforms, participants, and the public, I argue that the particular configuration of scale in the sharing economy also produces negative cumulative impacts and regulatory fractures that threaten to

116. Kahn, *supra* note 100, at 25–33; Odum, *supra* note 102, at 728–29.

117. Carlson, *supra* note 81, at 1234–36. Professor Carlson focuses primarily on the example of recycling.

118. *Id.* at 1235–36.

119. *Id.* Even where norms do become operative, Carlson suggests the impact of those norms are not as effective in large-number, small-payoff problems like recycling as when those norms apply to small, relatively homogenous groups, or when the norms address “large-number, large-payoff problems,” such as AIDS. *Id.* at 1236.

undermine a range of important public policies, such as affordable housing, civil rights, and consumer protection. Furthermore, justifications for regulatory leniency do not apply with full force to the small-scale activities in the sharing economy.

A. Overview of the Sharing Economy

In the last half-decade, the sharing economy has emerged as a significant economic and social force.¹²⁰ Companies like Uber and Airbnb have enabled millions of people to engage in peer-to-peer and on-demand transactions for temporary access to a wide range of goods and services, from apartments and cars to meal preparation and transportation.¹²¹ Descriptive accounts of the sharing economy abound in the media,¹²² and an emerging legal scholarship on the subject is also developing.¹²³ Rather than repeat those accounts, this Section provides an overview of the sharing economy with a focus on the role of scale.

There is no single, agreed-upon definition of what counts as the sharing economy; the term “sharing economy” is itself a subject of contention.¹²⁴ In my own previous scholarship on the subject, I have focused on four key characteristics of the sharing economy: (1) monetization of previously unmonetized assets; (2) access to those assets rather than ownership; (3) technologically driven disaggregation of the assets; and (4) peer-to-peer transactions facilitated by third-party platforms.¹²⁵ The term “on-demand economy,” sometimes used interchangeably with the term sharing economy, relaxes the fourth characteristic and includes both peer-to-peer platforms, such as Uber, as well as business-to-consumer platforms that use technology to disaggregate assets, such as Zipcar and Car2Go.¹²⁶ The gig economy, another term used sometimes interchangeably with the sharing economy,

120. See *supra* notes 2–7 and accompanying text.

121. Anand Iyer, *How Modern Marketplaces Like Uber and Airbnb Build Trust to Achieve Liquidity*, FIRST ROUND REV., <http://firstround.com/review/How-Modern-Market-places-Like-Uber-Airbnb-Build-Trust-to-Hit-Liquidity/> [<https://perma.cc/8QUG-ZVEY>] (last visited Nov. 7, 2016).

122. See *Zale, Sharing Property*, *supra* note 3, at 503–08 & nn.4–25 and accompanying text.

123. For a sample of the emerging legal scholarship, see *supra* note 32.

124. See *Zale*, *supra* note 3, at 521–22 (noting that while not all aspects of the sharing economy involve the monetization of assets—that is, some activities are non-monetized or gratuitous sharing, such as community tool libraries—much of the sharing economy involves commercial exchanges that might be more accurately described as “sharing-for-a-fee”).

125. *Id.* at 527 & n.83.

126. *Id.* at 525.

involves the temporary provision of services, such as the errands-and-more services offered by Taskrabbit or food delivery services offered by Instacart.¹²⁷

While many of the underlying activities occurring in the sharing economy, such as home-sharing and ride-hailing, have existed long before the emergence of Uber and Airbnb, transaction costs previously limited such activities to an ad-hoc or informal basis or within close-knit communities. For example, until the advent of technology that could easily connect me with other people who need accommodation during the specific times my spare bedroom is available, making arrangements for a short-term rental was logistically challenging. Not only was it difficult to find someone who needed accommodation for the precise dates my spare bedroom was available, but there was also a range of risks, from concerns about safety to the failure to pay. Because of these transaction costs, peer-to-peer home-sharing and ride-hailing activities were generally limited in numbers, and the pre-sharing economy was characterized by relatively few larger entities—such as hotels and taxi companies—taking advantage of economies of scale to provide short-term accommodation and point-to-point transportation.

Sharing economy companies like Uber and Airbnb, however, have harnessed technological developments such as GPS location services, smartphones, and app software to lower transaction costs of what were often previously expensive or inconvenient exchanges. By providing a mechanism for connecting people who want access to a good or service with those offering that good or service, companies like Airbnb and Uber facilitate these connections almost instantaneously. These companies also provide a range of trust verification devices, such as publicly available user reviews and payment processing, that significantly lower the transaction costs associated with “stranger sharing.”¹²⁸ The result is that massive numbers of strangers are now engaging in one-time, small-scale transactions.

The sharing economy’s growth is partly attributable to the fact that the particular configuration of scale in the sharing economy offers participants the opportunity for resource maximization and risk minimization. From

127. *Id.* at 529 (citing Sarah Kessler, *The Gig Economy Won’t Last Because It’s Being Sued to Death*, FAST COMPANY (Feb. 17, 2015, 6:00 AM), <http://www.fastcompany.com/3042248/the-gig-economy-wont-last-because-its-being-sued-to-death>) [<https://perma.cc/RW4F-XY68>]].

128. *See* JULIET SCHOR, GREAT TRANSITION INITIATIVE, *DEBATING THE SHARING ECONOMY* 7 (Oct. 2014), http://www.greattransition.org/images/GTI_publications/Schor_Debating_the_Sharing_Economy.pdf [<https://perma.cc/9656-NGJB>] (using the term “stranger sharing” to describe sharing economy transactions “among people who do not know each other and who do not have friends or connections in common”).

the provider's perspective, it enables her to engage in relatively low-risk entrepreneurial activities.¹²⁹ Anyone who has an asset—whether it is a spare bedroom, a seat in their car, or a parking spot—can become a micro-entrepreneur. Unlike Avis or Hilton, each individual micro-entrepreneur may engage in their business only a few hours a week or a few nights a month; the remainder of the time, the asset remains available for their personal use. The sharing economy thus puts entrepreneurial activity within the reach of a larger swath of the population than possible under traditional business-to-consumer models.¹³⁰

On the other end of sharing economy transactions, users also benefit from scale. By making it possible to access goods like cars or tools only when needed and only in the amount needed, the sharing economy lowers the cost of use of many goods and services. Peer-to-peer platforms like Uber and Airbnb may therefore expand access to goods and services to people who otherwise would not have been able to afford them. For example, an apartment or bedroom on Airbnb may be less expensive than a hotel room in the same neighborhood, and an Uber ride may cost less than a taxi fare to the same destination.¹³¹ The availability of ride-hailing

129. The key words here are “relatively” and “entrepreneurial.” There are still risks to participants in the sharing economy, whether that a host's home on Airbnb will be damaged by a guest, or that a passenger using Uber will be assaulted by her driver (or vice versa). See Nicholas Pell, *Risky Business? Airbnb, Uber, and Insurance in the Sharing Economy*, SIMPLE DOLLAR (Aug. 2, 2016), <http://www.thesimpledollar.com/uber-insurance-sharing-economy/> [<https://perma.cc/D8LR-DAWE>]. But in terms of economic risks, engaging in small-scale activities such as being an Airbnb host is a relatively less risky endeavor than opening a traditional bed and breakfast. See Nina Feldman, *B&B vs. Airbnb: Competition and Common Ground Between Traditional Inns and the New Sharing Economy*, 89.9 WWNO NEW ORLEANS PUB. RADIO (Aug. 7, 2014), <http://wwno.org/post/bb-vs-airbnb-competition-and-common-ground-between-traditional-inns-and-new-sharing-economy> [<https://perma.cc/C3RK-RBCD>].

130. However, the ability of the sharing economy to provide a sustainable income has been criticized. See Sarah Kessler, *Pixel & Dime: On (Not) Getting By in the Gig Economy*, FAST COMPANY (Mar. 18, 2014), <http://www.fastcompany.com/3027355/pixel-and-dime-on-not-getting-by-in-the-gig-economy> [<https://perma.cc/3CGU-RDA5>] (discussing the economic hardship faced by numerous individuals who could not obtain full-time employment and relied solely on sharing economy activities for income).

131. See Emily Badger, *The Real Promise of the “Sharing Economy” Is What It Could Do for the Poor*, WASH. POST (Mar. 16, 2015), <http://www.washingtonpost.com/news/wonkblog/wp/2015/03/16/the-real-promise-of-the-sharing-economy-is-what-it-could-do-for-the-poor/> (quoting studies that finding that the sharing economy “creates this opportunity for people to be able to get stuff and experience stuff that they wouldn't otherwise be able to afford” and claiming that “[a]ny time you create a rental alternative for goods that previously had to be owned, that benefits people who couldn't afford to buy those goods before” (citing Samuel P. Fraiberger & Arun Sundararajan, *Peer-to-Peer Rental Markets in the Sharing Economy*, NYU STERN SCH. BUS. RES. PAPER (manuscript at 3), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2574337 [<https://perma.cc/4JV2-BUHQJ>])).

may make it feasible for a two-car family to downsize to one car,¹³² or for someone who lives just a little too far from the train station to use public transportation.¹³³

The next section considers in more detail the role platforms like Airbnb and Uber play in facilitating these peer-to-peer transactions in the sharing economy.

B. The Role of Platforms

While informal home-sharing and ride-hailing transactions occurred before the emergence of companies like Uber and Airbnb, the massive scale on which these activities are now taking place is directly due to the technology harnessed by platforms to connect users, transact payments, and create trust verification mechanisms.¹³⁴ Companies like Uber and Airbnb, which create a network of users whose activities in turn create value for the company, are known as network orchestrators in the economic literature.¹³⁵

The network orchestrator business model leverages a phenomenon known as network effects. Also known as demand-side economies of scale, network effects occur when the value of a good or service increases as the number of people using it increases.¹³⁶ Each individual user's decision to participate in the network not only benefits that user by increasing the utility of the network for them, but also creates positive externalities by making the network more valuable to other participants, the public, and

132. *Personal Car Sharing Comes to L.A.*, L.A. TIMES, (Mar. 5, 2012, 4:01 AM), http://latimesblogs.latimes.com/home_blog/2012/03/la-personal-car-share.html [<https://perma.cc/967S-FNV8>] (quoting Shelby Clark, founder of Turo (formerly RelayRides): "A lot of families always need one car and sometimes need two. [Currently] their only option is to round up. The only way to access that car when they need it is to own one.").

133. For example, according to Lyft, more than twenty percent of Lyft rides in the San Francisco Bay Area start or end near a BART or Caltrain stop. *Paving the Way for Greener Cities*, LYFT BLOG (Apr. 22, 2015), <https://blog.lyft.com/posts/earthday>.

134. This is not to say peer-to-peer transactions require a third-party facilitator; Bitcoin is an example of how the large-scale occurrence of small-scale activities is possible without such a facilitator. See Catherine Clifford, *The Future of the Sharing Economy Is a World Built Like Bitcoin*, ENTREPRENEUR (June 12, 2014), <https://www.entrepreneur.com/article/234804> [<https://perma.cc/V3P4-V44S>].

135. See Barry Libert et al., *What Airbnb, Uber and Alibaba Have in Common*, HARV. BUS. REV. (Nov. 20, 2014), <https://hbr.org/2014/11/what-airbnb-uber-and-alibaba-have-in-common> [<https://perma.cc/AJ2E-ZYDD>] (defining network orchestrators).

136. CARL SHAPIRO & HAL R. VARIAN, INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY 174–75 (1999). "The value of a network goes up as the square of the number of users." *Id.* at 184.

the network orchestrator. Participants benefit from network effects because the more participants there are in a particular network, the more efficient that network is likely to be in facilitating transactions.¹³⁷ For example, the more people that join a ride-sharing network, the more likely both drivers will be able to find passengers in need of rides and the more likely riders will be able to find drivers able to provide them with a ride.

The public can also benefit from network effects because the network may make socially desirable activity that was previously difficult to achieve feasible. For example, UberPool and LyftLine are specialized services in which the driver picks up several riders along the route who are going in generally the same direction; the service costs less for riders than the typical Uber or Lyft service.¹³⁸ Because the underlying apps are so popular, these services have the potential to make carpooling¹³⁹ a far more viable option than it has ever previously been. The potential associated results—fewer cars on the road, lower emissions, and less congestion—benefit not only participants in the network but also members of the public at large.¹⁴⁰

Most crucially, network effects benefit network orchestrators. The more individuals who join a network, the more valuable that network is.¹⁴¹ As more people use the product or service that is the subject of the network, the platform gains more members, typically resulting in a monetary gain

137. See Bryant Cannon & Hanna Chung, *A Framework for Designing Co-Regulation Models Well-Adapted to Technology-Facilitated Sharing Economies*, 31 SANTA CLARA HIGH TECH. L.J. 2368 (2015) (“By participating in the largest network, the user maximizes their selection and speed in encountering an acceptable transaction opportunity.”). However, network effects are not necessarily infinite; at some point, increasing amounts of small-scale activity on the network may no longer produce increasing returns. See Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CALIF. L. REV. 479, 497–98 (1998) (“The presumed increasing returns of network markets are not guaranteed; networks will suffer net diseconomies of scale if the volume of interactions exceeds network capacity and causes delays or failure.”).

138. See *Meet Lyft Line*, LYFT, <https://www.lyft.com/line> [<https://perma.cc/Z8EQ-RLL4>] (last visited Nov. 7, 2016) (describing Lyft Line as “an affordable new way to ride,” in which passengers “[s]hare the ride with others going the same way, and pay up to 60% less;”); see also *UberPOOL: Share Your Ride and Save*, UBER, <https://get.uber.com/cl/uberpool/> [<https://perma.cc/MXJ8-3D94>] (last visited Nov. 7, 2016) (describing Uber’s shared ride service comparable to Lyft Line).

139. Or at least a form of carpooling, since Lyft Line and Uber Pool are arguably not true carpooling, which utilizes otherwise unused capacity (in the form of empty seats in a car). See Tanya Snyder, *Uber and Lyft Take a Step Toward Real Ride-Sharing*, STREETS BLOG (Aug. 8, 2014), <http://usa.streetsblog.org/2014/08/08/uber-and-lyft-take-a-step-toward-real-ride-sharing/> [<https://perma.cc/TEY6-VR34>].

140. Note, however, this is a merely a potential benefit at this point. See *infra* Section II.C (discussing the potential negative cumulative impacts of ride-hailing on emissions and congestion).

141. See Lemley & McGowan, *supra* note 137, at 495 (describing the benefits of network effects to the network creator).

for the platform. For example, Airbnb charges commission fees to both guests and hosts on every home-sharing transaction; the more guests and hosts there are on the network, the greater the number of home-sharing transactions that are likely to occur, and the more fees the company collects.¹⁴² Furthermore, network effects are self-perpetuating: because the largest network offers the most connections to others, new users are likely to gravitate towards that network, making it even larger and more attractive to future users and so on.¹⁴³ As Reid Hoffman, founder of LinkedIn, put it: “First-scaler advantage beats first-mover advantage.”¹⁴⁴

While any company that facilitates interconnection between users may benefit from network effects,¹⁴⁵ network orchestrators like Uber and Airbnb receive an amplified benefit from network effects. These companies do not own the underlying assets that are the subject of their business model.¹⁴⁶ Unlike their non-sharing economy competitors, such as hotels and rental

142. Airbnb collects a three percent commission from hosts, as well as a non-refundable six to twelve percent guest fee. *What Are Host Service Fees?*, AIRBNB, <https://www.airbnb.com/support/article/63> [<https://perma.cc/SG3B-ZQE9>] (last visited Nov. 7, 2016); *What Are Guest Service Fees?*, AIRBNB, <https://www.airbnb.com/support/article/104> [<https://perma.cc/JKB8-XUUW>] (last visited Nov. 7, 2016). Ride-hailing companies like Uber and Lyft charge commissions ranging from twenty to thirty percent of drivers’ total ride earnings. See Dara Kerr, *Uber Tests Taking 30% Commission from New Drivers*, CNET (May 18, 2015, 6:43 PM) <http://www.cnet.com/news/uber-tests-30-commission-for-new-drivers-in-san-francisco/> [<https://perma.cc/SGC9-XQUA>].

143. See Tim Wu, *In the Grip of the New Monopolists*, WALL ST. J. (Nov. 13, 2010, 12:01 AM), <http://www.wsj.com/articles/SB10001424052748704635704575604993311538482> (“A single firm can dominate the market if the product becomes more valuable to each user as the number of users rises. Such networks have a natural tendency to grow, and that growth leads to dominance.”).

144. Reid Hoffman, *Expertise in Scaling up Is the Visible Secret of Silicon Valley*, FIN. TIMES (Sept. 12, 2015), <https://www.ft.com/content/39001312-4836-11e5-af2f-4d6e0e5eda22>; [<https://perma.cc/ZZZ2-9TS5>]; see also BRHMIE BALARAM, FAIR SHARE: RECLAIMING POWER IN THE SHARING ECONOMY 13 (2016), <https://www.thersa.org/discover/publications-and-articles/reports/fair-share-reclaiming-power-in-the-sharing-economy> [<https://perma.cc/2RNP-DW8F>] (click “DOWNLOAD REPORT” button) (“When you can enable a community of users online, that community is also infinitely scalable, and thus infinitely valuable, because there needn’t be a limit to numbers.”).

145. See Avitai Aviram, *Regulation by Networks*, 2003 BYUL. REV. 1179, 1182 (2003).

146. Nor do they employ the people who provide the services that are the subject of their business model. Whether sharing economy companies are in an employer–employee relationship is the subject of significant dispute. See Davey Alba, *Many More Drivers Can Now Join the Class Action Suit Against Uber* (Dec. 9, 2015, 8:02 PM), <http://www.wired.com/2015/12/uber-class-action-suit-expands/> [<https://perma.cc/89G2-HY8B>] (discussing the class action lawsuit filed by Uber drivers against the company regarding employment status).

car companies, network orchestrators like Airbnb and Uber leverage the assets of the network participants—their houses, apartments, and cars—thereby minimizing the companies’ risk and expenses. Economists have recognized that network orchestrators “outperform companies with other business models on both compound annual growth rate and profit margin.”¹⁴⁷ This is in part because “the value creation performed *by the network on behalf of the organization* reduces the company’s marginal cost.”¹⁴⁸ The multi-billion dollar market capitalizations of companies like Uber and Airbnb—valued at \$50 billion and \$25 billion, respectively—indicates just how highly investors value the massive numbers of small-scale activities occurring on these networks.¹⁴⁹

Network orchestrators like Uber and Airbnb have not just facilitated ride-hailing and home-sharing networks; they have also created massive data networks. Sharing economy companies have data about each and every small-scale activity that occurs on their network. Unlike pre-sharing economy ride-hailing and home-sharing activities—such as people renting rooms to boarders or using gypsy cabs—which were largely ad hoc, one-time, unmonitored—and unmonitor-able—transactions, there is data about every home-sharing transaction that occurs on Airbnb and every ride-hailing transaction that occurs on Uber. The identities of the parties engaged in the transactions; the location, time, and distance of the transactions; and the amount of money exchanged in the transaction—all of this information is captured by the platforms and available to be monetized.¹⁵⁰

A final item of note about network orchestrators like Uber and Lyft is that their business model diverges from the traditional, two-sided model of commercial activity between industry and consumers. Instead, the sharing economy’s model is a three-sided one, involving platforms, users—namely, ride-hailing passengers or home-sharing guests—and providers, namely,

147. Libert et al., *supra* note 135 (emphasis added).

148. *Id.* (emphasis added).

149. See Austin et al., *supra* note 7 (listing Uber’s valuation as \$68.0 billion and Airbnb’s as \$25.5 billion, as of September 2016); see also CHRIS ANDERSON, *THE LONG TAIL* 23 (2006) (quoting a venture capital investor’s comment that “[t]he biggest money is in the smallest sales”).

150. See Russell Walker, *Big Data Monetization Lessons from the Sharing Economy*, DATA INFORMED (Apr. 6, 2016, 5:30 AM), <http://data-informed.com/big-data-monetization-lessons-from-the-sharing-economy/> [<https://perma.cc/H8GL-7HQY>]. This data may be as valuable as, if not more valuable than, the actual transactions occurring in the sharing economy. *Id.* Challenging questions beyond the scope of this paper are raised about the sharing economy’s creation of new information and how that information should be used. See generally *The Feasibility of Measuring the Sharing Economy*, OFFICE FOR NAT’L STATISTICS (Apr. 5, 2016), <https://www.ons.gov.uk/economy/economicoutputandproductivity/output/articles/thefeasibilityofmeasuringthesharingeconomy/2016-04-05> [<https://perma.cc/N4G6-N26G>].

ride-hailing drivers or home-sharing hosts. Further complicating the picture is the fact that most providers would be treated as consumers under the two-sided model, but under a three-sided model, their role is less clear. They supply services like transportation and accommodation, but they are not necessarily professionals engaged in this activity; they are using personal assets, like their vehicles and residences, but doing so for commercial reasons. As the next Section will discuss, adapting regulation to respond to this three-sided model has proven to be challenging.

C. Implications of Scale in the Sharing Economy

The previous Sections provided a descriptive account of the sharing economy and the role of network orchestrators like Airbnb and Uber in facilitating small-scale activities on a large scale. This Section develops the case for a regulatory response to these small-scale activities on three grounds. First, negative cumulative impacts can result from large numbers of small-scale home-sharing and ride-hailing activities, such as decreased long-term rental availability and increases in vehicle congestion and emissions. Second, existing regulations are not designed for the three-sided, network orchestrator model of the sharing economy, and the failure to address this misfit is producing regulatory fractures that threaten to undermine civil rights laws and other important public policies. Finally, the justifications for regulatory leniency, such as concerns about privacy, enforcement costs, and alternate forms of regulation, do not apply with full force to small-scale activities in the sharing economy.

1. Cumulative Impacts

Large numbers of small-scale activities are crucial to the success of the sharing economy: network effects depend on there being enough drivers for all the passengers who want rides and enough passengers for all the drivers who want fares. For platforms like Airbnb and Uber, the more small-scale activity, the better. But while network orchestrators may benefit from network effects as the network grows larger and the number of individual transactions increases, the large-scale occurrence of small-scale home-sharing and ride-hailing can have a range of negative cumulative impacts.¹⁵¹

151. There are positive benefits of the cumulative impacts of activities in the sharing economy, primarily network effects. *See* discussion *supra* Section II.B.

Consider someone renting out his or her own apartment on Airbnb a few days a month. As a discrete, stand-alone action, this small-scale activity likely creates few, if any, negative impacts. However, multiply it by the hundreds or thousands, as is happening in many major U.S. cities, and the cumulative effects become apparent. For example, residents in cities from Los Angeles to New York have experienced increased noise and safety concerns, as well as traffic and parking congestion from increasing amounts of home-sharing activity in their neighborhood or buildings.¹⁵² As the number of people engaged in home-sharing grows, formerly residential neighborhoods or resident-occupied buildings have become flooded with an influx of transitory individuals, who may not be familiar with—or may not care about—legal rules such as parking restrictions or informal norms such as noise considerations in buildings with thin walls.¹⁵³ While the extent of these impacts will necessarily vary by individual home-sharing transaction, the more transactions there are in a concentrated area, the more the negative impacts are likely to occur.

The large-scale occurrence of home-sharing activity has also raised concerns about more subtle changes in the character of neighborhoods. When short-term rentals proliferate, what had been a residential neighborhood essentially becomes de facto rezoned to one that is more like a mixed-use or commercial area as properties are used more intensively for commercial activity.¹⁵⁴ While this change in neighborhood character could ultimately

152. See, e.g., Josh Dawsey, *Airbnb Faces Scrutiny from New York City Officials*, WALL ST. J. (Jan. 20, 2015, 6:08 PM), <http://www.wsj.com/articles/Airbnb-faces-scrutiny-from-new-york-city-officials-1421795280> (“Residents who spoke at the [City Council] hearing said they were uncomfortable with people they didn’t know using shared services and having access to their buildings. Some brought up issues with noise.”); Steven Leigh Morris, *Airbnb is Infuriating the Neighbors. Is It Time for New Rules?*, L.A. WKLY., (Jan. 22, 2015, 2:47 PM), <http://www.laweekly.com/news/Airbnb-is-infuriating-the-neighbors-is-it-time-for-new-rules-5343663> [<https://perma.cc/S5YP-2247>] (“[M]ajor problems recur with ‘one-nighters in town for a good time, and consideration for others just isn’t a priority.’”); Emily Alpert Reyes, *New Soldiers in Airbnb Battle: PR and Politics*, L.A. TIMES ((Apr. 4, 2015, 12:00 PM), <http://www.latimes.com/local/politics/la-me-adv-airbnb-politics-20150405-story.html#page=2> [<https://perma.cc/4YVN-3D8V>] (quoting an opponent of home-sharing as saying “I don’t know who my neighbors are It’s like suddenly having a bar or a restaurant next to your house instead of a family.”).

153. See Reyes, *supra* note 152.

154. Venice, California is perhaps the best (or worst) example of this kind of neighborhood transformation. While the beach neighborhood has always been attractive to visitors, a 2015 study found that “in census tracts along Venice Beach and Abbott-Kinney Boulevard [the primary commercial thoroughfare], Airbnb listings accounted for 6% to 7% of all housing units—about 10 times the countywide average.” Tim Logan et al., *Airbnb and Other Short-Term Rentals Worsen Housing Shortage*, *Critics Say*, L.A. TIMES (Mar. 11, 2015, 3:00 AM), <http://www.latimes.com/business/realstate/la-fi-airbnb-housing-market-20150311-story.html> [<https://perma.cc/4SG8-NC28>]. Estimates

be a positive outcome from the perspective of urban planning,¹⁵⁵ the cumulative impact of large amounts of home-sharing activity in a neighborhood is likely to be perceived as a negative outcome by residents who purchased property in what they thought was a residential neighborhood.¹⁵⁶

In addition to the negative cumulative impacts from concentrated amounts of home-sharing in particular neighborhoods or buildings, the large-scale occurrence of small-scale home-sharing activities can result in negative cumulative impacts in long-term rental markets. In a number of cities, the increasing numbers of short-term rentals have been cited as a factor in rising housing costs and decreasing availability of long-term rental housing.¹⁵⁷ As large numbers of tenants under long-term leases rent out their apartments on home-sharing platforms like Airbnb,¹⁵⁸ landlords rationally

indicate that short-term rentals in Venice had tripled in the one-year period from 2013 to 2014. *Id.*

155. See, e.g., Emily Badger, *Mixed-Use Neighborhoods May Be Safer, Too*, ATLANTIC: CITYLAB (Mar. 13, 2013), <http://www.citylab.com/housing/2013/03/mixed-use-neighborhoods-may-be-safer-ones-too/4962/> [<https://perma.cc/Y8LY-LLR3>] (discussing the health, safety, environmental, and quality-of-life benefits of mixed-use zoning).

156. See, e.g., Walter Hamilton, *In Silver Lake, Some Have Reservations About Vacation Rental Website*, L.A. TIMES (Sept. 2, 2013), <http://articles.latimes.com/2013/sep/02/business/la-fi-airbnb-economy-20130903> [<https://perma.cc/2U6X-7X2M>] (noting that one justification for the proposed ban on short-term rentals in Silver Lake was concerns about negative impacts on property value).

157. See, e.g., Reyes, *supra* note 152 (noting that approximately seven thousand rental units had been removed from the long-term rental market for short-term rentals during the time Airbnb had been operating in the city; (citing ROY SAMAAN, LAANE, AIRBNB, RISING RENT, AND THE HOUSING CRISIS IN LOS ANGELES 3, 16 (Mar. 2015), <http://www.laane.org/wp-content/uploads/2015/03/AirBnB-Final.pdf> [<https://perma.cc/FJ2L-2FNB>])); see also Dayne Lee, Note, *How Airbnb Short-Term Rentals Exacerbate Los Angeles's Affordable Housing Crisis: Analysis and Policy Recommendations*, 10 HARV. L. & POL'Y REV. 229, 229 (2016) (discussing the implications of Airbnb on Los Angeles's housing market). But see Coral Garnick, *Airbnb Says Its Rentals Aren't Affecting Local Housing Affordability*, SEATTLE TIMES (Dec. 4, 2015), <http://www.seattletimes.com/business/airbnb-says-its-rentals-arent-affecting-housing-affordability/> (noting that an Airbnb study of the Seattle market found that “hosts are renting short-term for less money than they could earn on the long-term market, suggesting that hosts are not materially decreasing the housing supply” (citing Airbnb and the City of Seattle, AIRBNB 3 (Dec. 2015), <https://1zxiw0vqx0oryvpz3ikczauf-wpengine.netdna-ssl.com/wp-content/uploads/2016/08/AirbnbandtheCityofSeattle.pdf> [<https://perma.cc/2PXX-LWD6>])).

158. While long-term leases may forbid tenants from offering short-term rentals, many tenants with such restrictions nonetheless engage in short-term rental activities. See Ashley Peterson, *No Assignment, Sublease . . . or Airbnb?*, SAN DIEGO CTY. B. ASS'N: FOR THE REC. (Mar. 2016), available at <https://www.sdcba.org/index.cfm?pg=FTR-Mar-2016-4> [<https://perma.cc/Q362-66EW>] (noting that “many standard landlord/tenant form leases contain a ‘no assignment’ and/or ‘no sublease’ clause The majority of tenants,

want to capture the higher rents for short-term rentals themselves.¹⁵⁹ Therefore, landlords are incentivized to take units out of the long-term rental market and move them into the more profitable short-term rental market.¹⁶⁰ Furthermore, even those landlords who do not remove their rental units from the long-term rental market may raise rents in an attempt to capture short-term rental revenue they assume their tenants will engage in—legally or not. As a result, long-term rental housing supply goes down, and rental costs go up—for everyone, not just those who operate as Airbnb hosts.¹⁶¹

Negative cumulative impacts can also result in the form of increased burdens on public infrastructure and other public goods and services. Short-term accommodations like hotels and traditional B&Bs typically charge transient occupancy taxes to fund the infrastructure and amenities that visitors use and expect while they are in the jurisdiction—such as roads, public transportation, police, and parks.¹⁶² Thus, it seems appropriate

however, probably do not know what a sublease is, or that Airbnb rentals could qualify as such”); *see also* Ron Lieber, *A Warning for Hosts of Airbnb Travelers*, N.Y. TIMES (Nov. 30, 2012), http://www.nytimes.com/2012/12/01/your-money/a-warning-for-airbnb-hosts-who-may-be-breaking-the-law.html?_r=0 (“[Airbnb] avoids educating the people who provide its inventory. . . . given how many listings on the site come from hosts who are breaking the law or the terms of their lease or their condominium board rules”); Carolyn Said, *Airbnb Sublets in S.F. Land Some Renters in the Doghouse*, S.F. CHRON. GATE, (Mar. 18, 2014, 9:38 PM), <http://www.sfgate.com/realestate/article/Airbnb-sublets-in-S-F-land-some-renters-in-the-5326019.php> [<https://perma.cc/9X32-6VFY>] (“Thousands of San Franciscans make extra money by renting out their home or a room to travelers via Airbnb. Considering about two-thirds of city residents are renters, many local hosts don’t own their places.”); Ron Lieber, *A Warning for Hosts of Airbnb Travelers*, N.Y. TIMES (Nov. 30, 2012), http://www.nytimes.com/2012/12/01/your-money/a-warning-for-airbnb-hosts-who-may-be-breaking-the-law.html?_r=0 (pointing out the inconsistency in the fact that Airbnb “[Airbnb] avoids educating the people who provide its inventory. . . . given how many listings on the site come from hosts who are breaking the law or the terms of their lease or their condominium board rules.”).

159. *See* Said, *supra* note 158 (“Landlords are pissed off that tenants are profiting off their properties. . . . It makes them crazy: They’re rent controlled, and the tenant is making more off their property than they can make.” (internal quotations omitted)).

160. In cities with rent control, landlords may not be able to easily remove units from the long-term market. *See id.* But if tenants are engaged in home-sharing in violation of their lease, doing so provides the landlord with grounds for eviction, allowing the unit to be re-let to a new long-term tenant at current market rates. *See* Lieber, *supra* note 158 (describing how an apartment owners’ association in San Francisco uses this tactic to evict tenants).

161. While these shifts in the housing market may simply be pricing signals that will, in the long term, allow the market to reallocate resources, and low vacancy rates may result in market pressure to construct more rental housing, in the short- to medium-term, the impacts of decreased rental availability and increased rents on residents is something that cities may not be able to wait for the market to address.

162. *See, e.g., Transient Occupancy Tax*, COUNTY OF SONOMA, <http://sonoma-county.org/tax/tot/index.htm> [<https://perma.cc/9VVB-8FY3>] (last updated Nov. 7, 2016); *Transient Occupancy Tax*, FAIRFAX COUNTY, VA., http://www.fairfaxcounty.gov/dta/transient_

to impose some level of transient occupancy taxes on Airbnb guests, who are likely to use city infrastructure and amenities in a manner similar to, if not exactly the same as, hotel guests.¹⁶³ And in many cases, local laws do in fact require that short-term hosts like Airbnb host pay some sort of transient occupancy tax. However, except in those jurisdictions where Airbnb has agreed to facilitate the collection of taxes directly through its platform,¹⁶⁴ many users do not pay the tax, and it is all but impossible for cities to directly enforce the tax collection because the costs—dedicated staff, enforcement activity, and other such costs—would most likely exceed the amount of revenue collected.¹⁶⁵ While the failure to pay transient occupancy tax on a single home-sharing transaction may have no discernable effect on a city’s budget, the loss of tax revenue from hundreds of thousands of home-sharing transactions—which make up an ever-larger segment of the overall short-term accommodation market in many cities—means the local citizenry who are the intended beneficiaries of the uncollected tax

occupancy_tax.htm [https://perma.cc/B66E-LRJK] (last visited Nov. 7, 2016); *Transient Occupancy Tax*, MY NEV. COUNTY (Feb. 14, 2012, 12:00 AM), https://www.mynevadacounty.com/nc/ttc/Pages/Transient-Occupancy-Tax-.aspx [https://perma.cc/QWH9-8NG3]. Transient occupancy taxes are also appealing to local governments because there is no natural constituency to resist them—the people who pay them are typically travelers, who do not live in the jurisdiction, and thus who can’t vote out the politicians who raise these taxes. See Cory Briggs, *Who Runs San Diego: The Use and Abuse of the Transient Occupancy Tax*, SAN DIEGO FREE PRESS (Sept. 3, 2014), http://sandiegofreepress.org/2014/09/who-runs-san-diego-the-use-and-abuse-of-the-transient-occupancy-tax/ [https://perma.cc/ZCP3-M4H3].

163. See Emily Badger, *Airbnb Is About to Start Collecting Hotel Taxes in More Major Cities, Including Washington*, WASH. POST (Jan. 29, 2015), https://www.washingtonpost.com/news/wonk/wp/2015/01/29/airbnb-is-about-to-start-collecting-hotel-taxes-in-more-major-cities-including-washington/ (quoting a tax official in Washington, D.C. as saying “Airbnb hosts should have been registering with the city and collecting the tax, which supports both a convention center fund and the city’s general fund—and, ultimately, services like the fire and police departments”).

164. The list of jurisdictions where Airbnb facilitates the collection and remittance of state or local occupancy taxes has steadily grown, although it still represents only a portion of locations where Airbnb has listings. See *In What Areas is Occupancy Tax Collection and Remittance by Airbnb Available?*, AIRBNB, https://www.airbnb.com/help/article/653/in-what-areas-is-occupancy-tax-collection-and-remittance-by-airbnb-available [https://perma.cc/MM4C-2JUJ] (last visited Nov. 7, 2016).

165. See Badger, *supra* note 163 (discussing payment of Washington D.C.’s transient occupancy tax by home-sharing users where city officials “acknowledged that some residents in the city haven’t been paying this tax as they should”).

bear a greater burden, in the form of higher taxes or lowered level of services and infrastructure maintenance.¹⁶⁶

The picture of cumulative impacts from ride-hailing is less clear-cut than for home-sharing, in part because there is limited empirical evidence to date, and in part because the evidence that does exist paints a mixed picture of the impacts.¹⁶⁷ However, two areas of particular concern for negative cumulative impacts are emissions and congestion. On one hand, ride-hailing in the long term has the potential to decrease vehicle ownership, and thereby reduce both traffic congestion and emissions.¹⁶⁸ Not only would there be fewer cars on the road, thereby directly reducing emissions and congestion, there might be potential indirect reductions in emissions from manufacturing, as demand for vehicles goes down. In addition, the carpooling services offered by ride-hailing platforms have the potential to make carpooling a viable transportation option that also reduces the number of vehicles on the road.¹⁶⁹

But to date, these positive cumulative impacts of ride-hailing are largely theoretical. Instead, evidence from a number of cities indicates that the cumulative impact of ride-hailing may be to increase the number of vehicles on the road, with associated increases in congestion. In New York City, for example, a 2015 study using Uber's own data found that the effect of the additional number of vehicles on the road for Uber reduced traffic speeds by 7.7%.¹⁷⁰ In London, the number of private vehicles for hire

166. *Sharing Economy Guide*, *supra* note 77, at 10–11.

167. See, e.g., Steven Hill, *Is the Sharing Economy Truly Green?*, SIERRA CLUB (Mar. 14, 2016), <http://www.sierraclub.org/sierra/2016-2-march-april/green-life/sharing-economy-truly-green> [<https://perma.cc/F5U4-VN5C>] (noting that “hard data on the environmental benefits of the sharing economy is difficult to come by. Many green claims are anecdotal. . .”); Chris Roberts, *The Unstudied Traffic Impacts of Uber and Lyft*, S.F. WKLY. (Apr. 20, 2016), <http://archives.sfweekly.com/sanfrancisco/the-unstudied-traffic-impacts-of-uber-and-lyft-news-traffic-rideshare-development-uber-lyft/Content?oid=4626985> [<https://perma.cc/UV7V-ND8R>] (noting that “there is little data on the impact on traffic caused by the ‘companies’ drivers”).

168. See Natasha Lomas, *Let's Talk About Uber, Congestion, and Urban Air Quality*, TECHCRUNCH (Aug. 26, 2015) <https://techcrunch.com/2015/08/26/uber-london-impact/> [<https://perma.cc/95VV-5Y5E>] (discussing Uber's claims that each Uber in London takes “seven and half cars off the road” (citing Ian Silvera, *Uber CEO Travis Kalanick: We Will Have 42,000 London Drivers in 2016*, IB TIMES (Oct. 3, 2014, 4:34 PM), <http://www.ibtimes.co.uk/uber-ceo-travis-kalanick-we-will-have-42000-london-drivers-2016-1468436> [<https://perma.cc/5EQS-GPKW>] (emphasis omitted))).

169. Farhad Manjoo, *Car-Pooling Helps Uber Go the Extra Mile*, N.Y. TIMES (Mar. 30, 2016), http://www.nytimes.com/2016/03/31/technology/car-pooling-helps-uber-go-the-extra-mile.html?_r=0 (discussing the potential of UberPool and LyftLine).

170. See Stephen Miller, *Uber's Own Numbers Show It's Making Traffic Worse*, STREETS BLOG (July 22, 2015), <http://www.streetsblog.org/2015/07/22/ubers-own-data-reveals-it-slows-manhattan-traffic-9-percent/> [<https://perma.cc/UP5H-5NDN>] (citing a transportation analyst's study of Uber's data).

operating on city streets—a category that includes vehicles used for ride-hailing—jumped 25% between 2013 and 2015.¹⁷¹ In the capital of the Philippines, Manila, ride-hailing “add[s] an estimated 10,000 to 15,000 vehicles to the roads at a time when there are reportedly more than 200 cars for every mile of road in the capital.”¹⁷²

Furthermore, while some individuals may decide against car ownership because of the availability of ride-hailing, others may choose to invest in a car in order to become a ride-hailing driver. Uber and Lyft actively encourage such investments with their leasing programs, Uber Xchange and Lyft Express Drive.¹⁷³ The programs are marketed to individuals who want to be drivers but who do not have their own vehicle, or whose vehicle does not meet the standards required by Uber and Lyft.¹⁷⁴ Thus, such leasing programs may potentially increase the overall number of vehicles on the road.¹⁷⁵

While overall emissions from vehicles may eventually decrease if more people opt out of vehicle purchases because of the availability of ride-hailing, if the services simply result in a one-to-one substitution for trips that would have been driven in personal vehicles or taxis, the cumulative

171. See Lomas, *supra* note 168 (citing data from U.K. government’s Department for Transport, DEP’T FOR TRANSP., TAXI AND PRIVATE HIRE VEHICLE STATISTICS: ENGLAND 2015, at 2–3, 10 (Aug. 25, 2015), https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/456733/taxi-private-hire-vehicles-statistics-2015.pdf [<https://perma.cc/QU25-7DWN>]).

172. Davey Alba, *In the City with the World’s Worst Traffic, Uber Is an Awkward Fit*, WIRED (Dec. 12, 2015, 7:00 AM), <http://www.wired.com/2015/12/in-a-city-with-the-worlds-worst-traffic-uber-tries-to-fit-in/> [<https://perma.cc/HE2L-NRDJ>] (“Instead of car owners registering to work on the platform, operators with an entrepreneurial spirit typically buy small fleets of brand new cars and hire individual drivers—essentially layering a new middleman on top of Uber and other platforms. These are brand new cars that are being added to Manila’s roads.”).

173. See *Express Drive Rental Car Program*, LYFT, <https://help.lyft.com/hc/en-us/articles/218196557-Express-Drive-Rental-Car-Program-> [<https://perma.cc/JMJ7-8SBZ>] (last visited Nov. 7, 2016); *Drive with Uber*, UBER, <https://www.uber.com/signup/drive/xchange-new/> [<https://perma.cc/5EER-CQAH>] (last visited Nov. 7, 2016).

174. *Id.*

175. These programs also raise consumer protection concerns, since the costs can be far higher than a conventional car lease. For example, one driver reported paying \$160 per week for a used Ford Escape (approximately \$640/month); another driver was charged \$870 per month and was still charged for the vehicle even after Uber deactivated him because of a poor review by a passenger. Sarah Skidmore Sell, *Desperately Seeking Drivers, Uber and Lyft Offer Car Options*, ASSOCIATED PRESS (July 22, 2016, 1:51 PM).

impact on emissions may be neutral, or even negative.¹⁷⁶ Because ride-hailing platforms offer a cheap and convenient service, there is evidence that those who would otherwise use public transportation may instead use Uber or Lyft, thus actually increasing overall emissions.¹⁷⁷ Concerns have also been raised that unless ride-hailing services take steps to increase the use of electric or low-emission vehicles among their drivers or make their carpooling services a larger proportion of the overall rides provided, the cumulative impacts of ride-hailing may ultimately be higher emissions. As one researcher has noted, “[t]he companies can’t have it both ways—creating new economic activity and reducing carbon emissions—because the two are closely linked.”¹⁷⁸

176. See SCHOR, *supra* note 128, at 6 (“[Ridehailing and carsharing activities resulted in] a measurable reduction in greenhouse gas emissions [but] only because of substantial reductions from a small fraction of households. For the majority, carsharing, by expanding access to cars, increased emissions.” (citing ELLIOT W. MARTIN & SUSAN A. SHAHEEN, MINETA TRANSP. INST., GREENHOUSE GAS EMISSION IMPACTS OF CARSHARING IN NORTH AMERICA 33–35, 38–41 (June 2010), <http://transweb.sjsu.edu/MTIportal/research/publications/documents/Carsharing%20and%20Co2%20%286.23.2010%29.pdf> [<https://perma.cc/2EUA-6CDK>])). The substitution of ride-sharing for taxi service raises particular concerns because in many cities, a certain percentage of taxi fleets must be low emissions or hybrid vehicles; it is unclear if a similar percentage of ride-sharing vehicles are similarly green. See Brad Berman, *SF Taxi Driver Wages 10-Year Battle to Reduce Fleet Emissions, and Wins*, HYBRIDCARS (Oct. 20, 2010), <http://www.hybridcars.com/sf-taxi-driver-wages-10-year-battle-reduce-fleet-emissions-and-wins-28788/> [<https://perma.cc/Y39F-5GJB>]; Carmel DeAmicis, *Why Ridesharing Companies Like Uber and Lyft Have Yet to Prove Their Environmental Friendliness*, GIGAOM (Sept. 21, 2014, 6:25 PM), <https://gigaom.com/2014/09/21/why-ridesharing-companies-like-uber-and-lyft-have-yet-to-prove-their-environmental-friendliness/> [<https://perma.cc/FN2E-MCDJ>].

177. See Hill, *supra* note 167 (“[Almost half of respondents indicated] that if they had not had the option of using a ride-sharing service, they would have instead used a bike, public bus, or train, or simply walked. Ride-sharing is taking away business, not just from traditional taxis, but also from more low-carbon modes of travel.” (citing LISA RAYLE ET AL., UNIV. OF CAL. TRANSP. CTR., APP-BASED, ON-DEMAND RIDE SERVICES: COMPARING TAXI AND RIDESOURCING TRIPS AND USER CHARACTERISTICS IN SAN FRANCISCO 13 tbl.3 (Aug. 2014), <http://www.uctc.net/research/papers/UCTC-FR-2014-08.pdf> [<https://perma.cc/2VFB-62XZ>])); see also Lomas, *supra* note 168 (challenging Uber’s CEO’s assertion that each Uber in London takes “seven and half cars off the road” and arguing that “[w]hat seems closer to the truth is the (VC-subsidized) cost of taking an Uber is encouraging (some) Londoners to step away from public transport and get into one of its partner’s cars . . . [P]ublic transport in London is both plentiful and generally cheaper than getting any kind of taxi.”). But see AM. PUB. TRANSP. ASS’N, SHARED MOBILITY AND THE TRANSFORMATION OF PUBLIC TRANSIT 4 (Mar. 2016) [hereinafter APTA Shared Mobility Report] (finding that shared mobility services such as Uber and Car2Go “substitute[d] more for private automobile trips than public transit trips”).

178. SCHOR, *supra* note 128.

2. Regulatory Fractures

In addition to the negative cumulative impacts from large numbers of individual home-sharing and ride-hailing activities, the unique arrangement of scale in the sharing economy also exposes regulatory fractures that threaten to undermine a range of civil rights and other laws. Regulatory fractures refer to the misfit between existing regulations and new modes of activity. As noted by Saskia Sassen in her scholarship on the underground economy, when activities “diverge from the model for which extant regulations were designed. . . . [and] take on a recognizable shape of their own, it becomes meaningless to speak of regulatory violations.”¹⁷⁹ Like the related problem of regulatory arbitrage,¹⁸⁰ in which people deliberately shift activities to less governed spheres, regulatory fractures are problematic because activities which may have “profound effects in a given state or market [are] placed beyond . . . regulatory reach.”¹⁸¹ Regulatory fractures can result in massive non-compliance by regulated parties, because they believe either that existing laws are inapplicable or that enforcement is unlikely.¹⁸²

In the case of the sharing economy, regulatory fractures are occurring because numerous regulations, from local zoning codes to state wage and employment laws to federal civil rights laws like the Americans with Disabilities Act (ADA)¹⁸³ and the Fair Housing Act (“FHA”),¹⁸⁴ do not map neatly onto the sharing economy’s three-sided, network orchestrator model. These regulations have worked relatively well when the regulated activity

179. Saskia Sassen, *The Informal Economy: Between New Developments and Old Regulations*, 103 YALE L.J. 2289, 2291 (1994).

180. Regulatory arbitrage is the “legal planning technique used to avoid taxes, accounting rules, securities disclosure, and other regulatory costs” by exploiting “the gap between the economic substance of a transaction and its legal or regulatory treatment.” Victor Fleischer, *Regulatory Arbitrage*, 89 TEX. L. REV. 227, 229 (2010). Fleischer quotes a New Yorker cartoon caption that arguably explains regulatory arbitrage better than any legal definition: “These new regulations will fundamentally change the way we get around them.” *Id.* at 228 (citations omitted).

181. Annelise Riles, *Managing Regulatory Arbitrage: A Conflict of Laws Approach*, 47 CORNELL INT’L L.J. 63, 73 (2014) (citing Joel F. Houston et al., *Regulatory Arbitrage and International Bank Flows*, 67 J. FIN. 1845, 1892–93 (2012)).

182. See Alba, *supra* note 172 (“[Uber] tends to barrel its way into a new country or city without *technically* being legal and gets pushback from regulatory bodies, often in the form of a cease-and-desist or even an outright ban. But Uber stays put. Then, digging into its cavernous coffers and unleashing its loyal user base, it lobbies and campaigns until regulators relent. It almost always wins.”).

183. 42 U.S.C. §§ 12101–12213 (2012) (ADA).

184. 42 U.S.C. §§ 3601–3619, 3631 (2012).

involves the traditional two-party model of industry–consumers or employer–employees. But when applied to the sharing economy’s three-sided model, many of these regulations break down.

For example, the ADA requires “reasonable modifications” in the provision of public accommodations.¹⁸⁵ But applying the ADA to ride-sharing activities raises legal questions as well as practical difficulties. Is Uber providing a public accommodation? And even if it is, how does the ADA apply to a driver who uses his Honda partly for personal use and partly for commercial ride-sharing?¹⁸⁶ Platforms like Uber and Lyft have argued that since they are simply aggregators of individual small-scale ride-sharing transactions, which are arguably not subject to the ADA, they are also not subject to the ADA.¹⁸⁷ Furthermore, because platforms like Uber and Lyft do not own the personal vehicles used by drivers, the types of accessibility requirements imposed on commercial taxi operators under the ADA—where usually, one entity owns the fleet of vehicles and must maintain a certain percentage of the fleet as wheelchair accessible—may be ill-suited.

The applicability of civil rights laws like the FHA and Title II of the Civil Rights Act of 1964 to home-sharing raises similar concerns. Studies have shown that minority hosts and guests have experienced systematic discrimination when using home-sharing services like Airbnb, yet it is unclear if this discrimination is unlawful under existing regulatory models.¹⁸⁸ For example, the FHA’s “Mrs. Murphy” exception exempts property owners from compliance with the FHA’s anti-discrimination provisions in the sale or rental of housing if the owner lives in the property she rents out and it has fewer than four units.¹⁸⁹ If an owner falls within this exception, she is permitted to discriminate on the basis of race, sex, religion, and other protected classes in the selection of tenants.¹⁹⁰ Arguably, as written, the exemption might allow an owner of such a unit to list her property on

185. 42 U.S.C. § 12182 (2012).

186. See APTA Shared Mobility Report, *supra* note 177, at 24–29 (discussing these and other challenges in making ride-sharing accessible to disabled users, such as the fact that liability concerns may attach for drivers who are not adequately trained in loading and unloading mobility-impaired passengers).

187. See Bob Egelko, *Obama Administration Takes Sides in Disability Suit Against Uber*, S.F. GATE (Dec. 23, 2014, 2:43 PM), <http://www.sfgate.com/bayarea/article/Obama-administration-takes-sides-in-disability-5976148.php> [<https://perma.cc/EDT2-LLBW>] (discussing a Justice Department filing arguing that Uber is subject to the ADA and is liable if its drivers refuse to provide service to blind passengers with service animals).

188. See *supra* notes 27–28 and accompanying text.

189. 42 U.S.C. § 3603(b) (2012).

190. See *id.*; 42 U.S.C. § 3604. As discussed in Section I.A.2, the justification for the Mrs. Murphy exception is personal autonomy concerns. See discussion *supra* Section I.A.2.

Airbnb and discriminate in the selection of guests, even though the owner is engaging in commercial activity and not staying on the premises.¹⁹¹

While the Mrs. Murphy exception was criticized even before the rise of Airbnb,¹⁹² it raises particular concerns in the context of home-sharing. Applying the exemption to home-sharing may lead to outcomes that not only potentially undermine anti-discrimination policies, but which are also illogical. Because the Mrs. Murphy exemption only applies to “owners,”¹⁹³ an Airbnb host who happened to own a four-unit or smaller property could discriminate, while an Airbnb host who happened to be a tenant in the same property could not. While any extension in the coverage of the Mrs. Murphy exception is troubling,¹⁹⁴ having its applicability hinge on the whether an Airbnb host is a tenant or owner is illogical, when both home-sharing scenarios involve commercial activity and a host who is not occupying the unit at the same time as the guest.

It may be tempting to dismiss these kinds of regulatory fractures as the natural consequence of innovation. After all, the phenomenon of law lagging behind technology is not a new one; regulators have always struggled to catch up with new technology.¹⁹⁵ Furthermore, some might applaud the regulatory disruption being caused by the sharing economy: “the regulator’s one guess [about regulation] could preclude the emergence at some later time of a valuable alternative made possible by some yet-unknown technological advance.”¹⁹⁶

191. See Michael Todisco, *Share and Share Alike? Considering Racial Discrimination in the Nascent Room-Sharing Economy*, 67 STAN. L. REV. ONLINE 121, 124–25 (Mar. 14, 2015), http://www.stanfordlawreview.org/wp-content/uploads/sites/3/2015/03/67_Stan_L_Rev_Online_121_Todisco.pdf [<https://perma.cc/7U23-9Q8F>] (discussing factors in determining whether Airbnb hosts would fall under the Mrs. Murphy exemption).

192. See Walsh, 34 HARV. C.R.-C.L. L. REV. at 607–09, *supra* note 56.

193. Todisco, *supra* note 191, at 125.

194. See *id.* at 125 (“This extension [of the Mrs. Murphy exemption] would breathe new life into an unfortunate provision that looked moribund [T]his extension would result in millions of new Mrs. Murphy rooms—nearly the equivalent impact of allowing the three largest hotel chains in the world to discriminate at will.”).

195. See, e.g., MORTON KELLER, *REGULATING A NEW ECONOMY: PUBLIC POLICY AND ECONOMIC CHANGE IN AMERICA, 1900–1933*, at 66, 70 (1990) (describing the regulatory challenges posed by the introduction of the automobile: “The rapidity with which these devices spread throughout the social fabric, and the rich variety of regulatory problems that they brought with them, posed a major additional challenge to the American polity. . . . New technology and rapid growth far outstripped the pace of regulation”).

196. Richard A. Epstein, *The Political Economy of Crowdsourcing: Markets for Labor, Rewards, and Securities*, 82 U. CHI. L. REV. DIALOGUE 35, 46 (2015).

The sharing economy is undoubtedly creating economic opportunities and facilitating socially beneficial activities. But the innovative ways in which it is facilitating these activities should not mask the fact that the underlying activities—providing short-term accommodation and transportation to the public—are ones which we have important public policy reasons for regulating.¹⁹⁷ As home-sharing and ride-hailing become increasingly large sectors of the accommodation and transportation markets, the distributional impacts of these activities are also likely to grow and regulatory models will need to adapt.

3. Responding to Leniency Arguments

The two preceding Sections have argued that a regulatory response to the small-scale activities in the sharing economy is appropriate because of the negative cumulative impacts from large numbers of small-scale activities and the resulting regulatory fracture that threaten to undermine civil rights and other laws. But what about the justifications for regulatory leniency for small-scale activities identified in Part I(A): de minimis character, privacy and autonomy concerns, enforcement costs, fairness concerns, and alternatives to legal regulation? This Section contends that each of these justifications for regulatory leniency fails to apply with full force in the context of home-sharing and ride-hailing.

First, while each stand-alone home-sharing or ride-hailing transaction is de minimis, the potential impacts of these activities—even on a stand-alone basis—are not. For example, ride-hailing involves a personal interaction in a stranger’s vehicle, raising the possibility of serious harms such as

197. In addition to questions about the applicability of civil rights laws like the ADA and FHA to the sharing economy, similar questions are raised with respect to consumer protection laws and employment laws. See, e.g., Kalev Leetaru, *The \$200 Uber Ride and the Realtime Data-Driven Sharing Economy*, FORBES (Jan. 2, 2016, 9:28 AM), <http://www.forbes.com/sites/kalevleetaru/2016/01/02/the-200-uber-ride-and-the-realtime-data-driven-sharing-economy/#f7e432305612> [https://perma.cc/GJR5-MUTU] (noting that unlike the taxi system, in which “all riders are officially considered equal, with no formal system to jump to the front of the queue,” Uber’s surge pricing means service goes to who can afford the increased fares first); see also Anand Giridharadas, *Is Technology Fostering a Race to the Bottom?*, N.Y. TIMES (June 1, 2012), http://www.nytimes.com/2012/06/02/us/02iht-currents02.html?_r=2& (quoting the founder of Taskrabbit, an online platform for outsourcing errand and tasks: “The consumer has the right to make their own choices about whom they hire to do work,” said Ms. Busque, the founder. She described the possibility of discrimination in the choices as an ‘interesting perspective’ that she found unlikely, and one that, in effect, is not TaskRabbit’s problem.”); Eric T. Schneiderman, *Taming the Digital Wild West*, N.Y. TIMES (Apr. 22, 2014), http://www.nytimes.com/2014/04/23/opinion/taming-the-digital-wild-west.html?_r=0 (“[T]he ability to pay truly exorbitant prices shouldn’t determine someone’s ability to get critical goods and services when they’re in short supply in an emergency.”).

traffic accidents or physical assaults.¹⁹⁸ While the likelihood of accidents or assaults may be rare—and perhaps no more likely to occur in an Uber ride than in a taxi¹⁹⁹—the seriousness of the potential harm weakens the case for regulatory leniency on de minimis grounds.²⁰⁰

Second, claims for regulatory leniency on privacy and autonomy grounds are significantly diminished because the “sharing-for-a-fee” activities taking place within the sharing economy fall squarely within the definition of commercial activities.²⁰¹ Furthermore, although commercial activity may still implicate privacy concerns, particularly when it takes place in personal spaces,²⁰² the simple fact that home—sharing involves a home does not

198. Although Uber conducts internal background checks of drivers, there have been a number of highly publicized incidents of assaults by drivers who went through the company’s internal background check. See Adrienne LaFrance & Rose Eveleth, *Are Taxis Safer than Uber?*, ATLANTIC (Mar. 3, 2015), <http://www.theatlantic.com/technology/archive/2015/03/are-taxis-safer-than-uber/386207/> [<https://perma.cc/K46M-Z7ZW>] (“San Francisco District Attorney George Gascon called Uber’s background checks ‘completely worthless,’ . . . [A]nd several Uber and UberX drivers in the Washington, D.C., area said Uber’s background checks were hardly rigorous.”).

199. *Id.* (comparing available data on safety for ride-sharing and taxi services).

200. See Cannon & Chung, *supra* note 137, at 73 (“Government should take a more significant role in regulating activities where a failed transaction implies irreversible high-risk consequences.”). The seriousness of potential harm varies across different sectors of the sharing economy, and a regulatory response may not always be warranted. For example, a driveway-sharing service like ParkingPanda typically involves no personal interactions and the use of an asset—a driveway or garage—that is not readily susceptible to physical damage. See *How It Works*, PARKINGPANDA, <https://www.parkingpanda.com/how-it-works> [<https://perma.cc/S7MF-3FDC>] (last visited Nov. 7, 2016). While damage in the driveway-sharing scenario is still possible, for example, from leaking oil or hitting an adjacent structure while using the driveway, the harms would typically be lower than those possible in a failed ride-hailing or home-sharing transaction.

201. Early on, some proponents of the sharing economy resisted categorization of its activities as commercial ones; however, even early adherents of this view now concede these activities are in fact commercial. See, e.g., Molly Cohen & Arun Sundararajan, *Self-Regulation and Innovation in the Peer-to-Peer Sharing Economy*, 82 U. CHI. L. REV. DIALOGUE 116, 116 (2015) (“It [the sharing economy] blurs the line between personal and professional in the provision of commercial services.”). While some sharing economy platforms, such as Couchsurfing, do not involve a monetary exchange between parties, the vast majority of sharing economy activities do involve monetary exchanges and thus should be considered commercial, even if users also have other motivations (such as community-building) in using the sites. See *About Us*, COUCHSURFING, <http://www.couchsurfing.com/about/about-us/> [<https://perma.cc/M7DS-LM3W>] (last visited Nov. 6, 2016); Zale, *supra* note 3, at 523 (citing CREATIVE COMMONS, *supra* note 50).

202. See Kuh, *supra* note 51 (noting that “the home has long been afforded special status in a variety of legal contexts” and analyzing thin and thick accounts of the significance

automatically entitle the activity to regulatory immunity on privacy grounds. Those working out of their home, for example, still must comply with tax and employment laws; many home businesses, such as at-home daycare, are subject to numerous regulations, from health and safety codes to zoning laws.²⁰³ While some home-sharing activity, such as short-term rentals where the host is also staying in the unit, may implicate privacy and autonomy concerns akin to those raised by roommate selection,²⁰⁴ the vast majority of Airbnb hosts rent out entire units, never occupying the space at the same time as the guests.²⁰⁵ Laws prohibiting discrimination in such a scenario—an arms-length, short-term commercial rental between individuals who never occupy the space at the same time—do not raise the kind of privacy and autonomy concerns that roommate or shared room scenarios do.²⁰⁶

Third, there are undoubtedly high enforcement costs if cities have to monitor and enforce regulations like tax obligations or permit registrations against the large numbers of individual users, especially when cities lack a means of determining whether individuals are engaged in the small-scale activities being regulated. However, the network orchestrator model of the sharing economy offers a way to lower those enforcement costs by re-focusing regulatory efforts on a single actor: the platform. In a variety of contexts, from environmental law to employment law, regulatory programs focus on big actors because doing so can lower enforcement costs. For example, air quality regulations focus on car manufacturers, not individual drivers; by doing so, these regulations achieve their goal of reducing emissions without having to monitor millions of individual drivers.²⁰⁷

of the home (citing *McDonald v. City of Chicago*, 561 U.S. 742, 886 (2010) (Stevens, J., dissenting))).

203. See, e.g., Nicole Stelle Garnett, *On Castles and Commerce: Zoning Law and the Home-Business Dilemma*, 42 WM. & MARY L. REV. 1191, 1195 (2001) (discussing laws applicable to home businesses).

204. See *Fair Hous. Council v. Roommate.com, LLC*, 666 F.3d 1216, 1221 (9th Cir. 2012) (holding the FHA inapplicable to personal roommate selection, because of the serious “privacy, autonomy and security” concerns that regulating it would raise).

205. On the breakdown of whole unit versus private room rentals on Airbnb, see Scott Shatford, *2015 in Review—Airbnb Data for the USA*, AIRDNA (Jan. 7, 2016), <http://blog.airdna.co/2015-in-review-airbnb-data-for-the-usa/> [<https://perma.cc/P3WE-LMDV>] (showing data that sixty-three percent of units listed on Airbnb in the U.S. in 2015 were entire units; thirty-four percent are private rooms; and three percent are shared rooms).

206. This is not to say there are no privacy concerns raised by short-term rentals of entire units. Even if I rent my entire unit out on Airbnb, if it is my personal residence that I otherwise live in, there are more privacy concerns than with a hotel room. But the question is not whether there are *any* privacy concerns; it is whether privacy concerns are so significant as to justify exemptions from regulations intending to achieve other important public policies.

207. See Oren, *supra* note 60, at 148 (“Technology-forcing—compelling regulated industries to seek more effective ways of reducing emissions—has been a hallmark of the Clean Air Act since 1970. . . . Changing individual behavior is more complex than regulating industry.”).

Regulators can take a similar approach to the sharing economy. For example, rather than trying to determine if the thousands of short-term rental hosts in a city each have obtained the necessary permit to engage in the activity—an almost Sisyphean task—regulation can focus on the platforms and require that they include permit numbers on listings posted on their sites.²⁰⁸ Furthermore, because the big actors in the sharing economy are not only facilitators of small-scale transactions but are also aggregators of data about small-scale transactions, regulations can also be designed to utilize this data to lower enforcement costs.²⁰⁹

Fourth, fairness concerns that may be raised by regulations that impose a disproportionate burden on small-scale actors engaged in sharing and ride-hailing can be largely addressed by adopting regulatory approaches that are proportional to the regulated activity. For example, while one-size-fits-all regulations may be appropriate for background checks for ride-hailing drivers, other types of activity, like home-sharing, may be better addressed through tiered regulation, such as permit fees or tax obligations based on the number of nights the property is used for short-term rentals.²¹⁰

Finally, a number of non-legal alternatives, such as norms, markets, and architecture, have already emerged to shape and constrain the behavior of small-scale actors in the sharing economy. For example, self-regulatory systems, such as internal background checks on drivers conducted by Uber and Lyft, have been praised as just as, if not more, effective than government-mandated fingerprinting requirements.²¹¹ The informal norms that mechanisms such as two-way rating systems can produce have also been touted as more protective of users than any government intervention.²¹² Market-based

208. *But see infra* text accompanying notes 229–39 (discussing section 230 of the Communications Decency Act (CDA) as a potential obstacle to regulations such as this which focus on regulating platforms).

209. Difficult questions remain to be resolved about obtaining access to data and how privacy concerns should be addressed. *See infra* text accompanying notes 250–52.

210. *See* discussion *infra* Sections III.2, III.3.

211. *See* Daniel C. Vock, *Is Fingerprinting Austin's Uber and Lyft Drivers Actually Safer?*, GOVERNING (May 9, 2016), <http://www.governing.com/topics/public-justice-safety/gov-uber-austin-houston-fingerprinting.html> [<https://perma.cc/ZJ85-FCVQ>] (noting that Uber and Lyft have fought fingerprinting regulations in a number of cities and “argue[d] that their current system is safer than fingerprinting”).

212. *See* Arun Sundararajan, *Why the Government Doesn't Need to Regulate the Sharing Economy*, WIRED (Oct. 22, 2012, 1:45 PM), <http://www.wired.com/2012/10/from-airbnb-to-coursera-why-the-government-shouldn-t-regulate-the-sharing-economy/> [<https://perma.cc/T2TF-YXFW>] (contending that “[i]n the sharing economy, reputation

responses have also emerged, with competitors to Airbnb, such as Noirbnb and Innclusive, launched after their founders experienced racial discrimination on Airbnb.²¹³

However, the existence of alternatives to formal legal regulation does not mean that legal governance is unnecessary. As Jane Winn has noted in her scholarship on Amazon and consumer protection, there are public goods that private regulation, whether in the form of norms, architecture, or markets, will fail to adequately address because “private regulators can focus on maximizing value to shareholders while avoiding the broad range of duties a national legal system must accommodate.”²¹⁴ Furthermore, regulation of behavior by mechanisms other than formal legal regulation “is not normally legitimated by the same mechanisms as government regulation: representative democracy or judicial review.”²¹⁵ Not only do non-legal alternatives lack the transparency and democratic processes of formal legal regulation, they may result in parties who have little or no voice in the process bearing the brunt of the costs.²¹⁶

While a full analysis of alternatives to legal regulation in the sharing economy could be the subject of an entire separate article, the example of two-way rating systems can illustrate why relying on alternatives to legal regulation in lieu of legal regulation may be problematic. Two-way ratings systems on platforms like Airbnb can potentially reduce socially undesirable behavior because negative reviews serve as a form of non-legal sanction. The user can be removed from the network by the platform orchestrator,²¹⁷ or be effectively prevented from engaging in activities on the network because other users can see the negative reviews.²¹⁸ Especially when the platform is the largest one, and thus the most desirable for users to belong

serves as the digital institution that protects buyers and prevents the market failure that economists and policy makers worry about”).

213. See Harpaz, *supra* note 28.

214. Jane K. Winn, *The Secession of the Successful: The Rise of Amazon as Private Global Consumer Protection Regulator*, 58 ARIZ. L. REV. 193, 196 (2016).

215. *Id.* at 209.

216. *Id.* (“Amazon’s intense focus on customer satisfaction combined with its status as a private regulator currently permit it to externalize many of the costs of achieving high levels of customer satisfaction onto those stakeholder groups [employees and suppliers] most excluded from its governance processes.”).

217. Uber apparently suspends drivers whose rating goes below 4.6 (out of five). See Jack Smith IV, *Uber Drivers: The Punishment for Bad Ratings Is Costly Training Courses*, THE OBSERVER, (Feb. 3, 2015, 2:25 PM), <http://observer.com/2015/02/uber-drivers-the-punishment-for-bad-ratings-is-costly-training-courses/> (noting that a bad review is not always the result of bad service, but “can come any time; a passenger could be having a bad day, or if you’re a woman, a drunk passenger could give you a low rating after you rebuff his entitled attempts to hit on you.”).

218. See Aviram, *supra* note 145, at 1197 (“The network’s ability to exclude a member may therefore be a powerful sanction.”).

to in order to take advantage of network effects,²¹⁹ this form of sanction can be particularly powerful.

On the other hand, two-way reviews may exacerbate socially undesirable behavior: internet comments, even non-anonymous ones, are a forum ripe for racism, sexism, and other “isms.”²²⁰ Furthermore, because studies have shown that two-way reviews skew positive, the effect of just one negative review—for what may have been a mistake or misunderstanding—can have disproportional consequences.²²¹ Finally, even where two-way reviews effectively constrain some aspects of users’ behavior, such as cleanliness of a car or house, they do not address behavior that may be more troubling from a public safety perspective. While a friendly Airbnb host with a clean house may garner five-star reviews from users, if she has failed to install smoke detectors, members of the public will not be protected by ratings systems alone.²²²

This is not to say formal legal regulation should be the only governance response to the sharing economy. Alternatives to legal regulation may effectively address numerous aspects of home-sharing and ride-hailing. But while non-legal mechanisms can help address negative cumulative impacts and regulatory fractures, they are unlikely to be able to do it alone. Non-legal responses to discrimination on Airbnb, like the creation of Inclusive and Noirbnb, or Airbnb’s hiring of Eric Holder to craft a new anti-discrimination policy for the company, should be applauded.²²³ But

219. *See id.* at 1182–83 (discussing how “network effects make certain mechanisms far more effective in enforcing norms”).

220. *See* Nancy Leong, *The Sharing Economy Has a Race Problem*, SALON (Nov. 2, 2014, 3:58 AM), http://www.salon.com/2014/11/02/the_sharing_economy_has_a_race_problem/ [<https://perma.cc/PC8C-5GXW>] (raising questions about both explicit and implicit bias against minorities in online user reviews and the impact that they may have on minority groups); *see also* Harpaz, *supra* note 28 (describing discriminatory behavior that minority users of Airbnb have experienced).

221. *See, e.g.*, David Streitfeld, *Ratings Now Cut Both Ways, So Don’t Sass Your Uber Driver*, N.Y. TIMES (Jan. 30, 2015), http://www.nytimes.com/2015/01/31/technology/companies-are-rating-customers.html?smid=tw-share&_r=0 (noting concerns from scholars about inaccurate two-way ratings potentially leading us into a “disinformation economy”); Georgios Zervas et al., *A First Look at Online Reputation on Airbnb, Where Every Stay Is Above Average* (Apr. 28, 2015), <http://ssrn.com/abstract=2554500> [<https://perma.cc/3Z8M-CHVN>] (“[N]early 95% of Airbnb properties boast an average user-generated rating of either 4.5 or 5 stars (the maximum); virtually none have less than a 3.5 star rating.”).

222. *Cf.* Sundararajan, *supra* note 212.

223. Abha Bhattarai, *Airbnb Hires Eric Holder to Help Company Fight Discrimination*, WASH. POST (July 20, 2016), <https://www.washingtonpost.com/news/business/wp/2016/07/20/>

concluding that formal legal governance is therefore superfluous is much like saying that market responses, such as the Green Book, were an adequate response to discrimination against African Americans in the Jim Crow era, making civil rights laws unnecessary.²²⁴

While the sharing economy offers social and economic benefits to participants, the public, and platforms, the large numbers of small-scale home-sharing and ride-hailing activities that platforms like Uber and Airbnb have facilitated can result in negative cumulative impacts and produce regulatory fractures that may undermine important public policy goals. Furthermore, justifications for regulatory leniency do not apply with full force to small-scale activities like home-sharing and ride-hailing, making governance both appropriate and necessary. The next Part considers what kind of specific governance mechanisms can effectively respond to implications of scale of the sharing economy.

III. REGULATING SCALE IN THE SHARING ECONOMY

Whenever novel activities emerge, existing regulation must either yield or adapt to them. In the case of the sharing economy, some existing regulations should clearly yield; taxi medallion requirements, for example, have been shown to be largely protectionist and the result of industry capture.²²⁵ But other existing regulations—such as anti-discrimination laws, consumer protection laws, and environmental laws—serve important public policy goals, and can address the negative cumulative impacts of large numbers of small-scale home-sharing and ride-hailing activities. This Part proposes four specific ways in which governance can adapt and respond to scale in the sharing economy: (1) co-regulation; (2) aggregate regulation; (3) scalar regulation; and (4) cooperative regulation.

eric-holder-joins-airbnb-to-help-company-fight-discrimination/ [https://perma.cc/VK8Y-R5WS].

224. See Gillian B. White, *Revisiting a Jim Crow-Era Guide for Traveling While Black*, ATLANTIC (Jan. 18, 2016), <http://www.theatlantic.com/business/archive/2016/01/jim-crow-green-book-mlk/424467/> [https://perma.cc/22HC-G7D7] (describing the Green Book, a travel guide series “created to help black Americans travel safely through a segregated and often unsafe country during the years of Jim Crow. . . . [T]he severity of the racial segregation that made these publications necessary can be difficult to grasp. . . . You needed the “Green Book” to tell you where you can go without having doors slammed in your face.” (quoting former NAACP chairman Julian Bond)).

225. See Schneiderman, *supra* note 197 (“Uber has been an agent for change in an industry that has long been controlled by small groups of taxi owners. The regulations and bureaucracies that protect these entrenched incumbents do not, by and large, serve the public interest.”).

Before unpacking the specifics of these proposals, I address two overarching issues. First, the question of which level of government—federal, state, or local—should enact these proposals is one that deserves fuller treatment in a future paper; however, some preliminary observations may be useful to mention here. Local regulators have been most active to date in responding to the sharing economy.²²⁶ This local focus makes sense because local communities have different housing markets and transportation sectors: the rental market in San Francisco is different than that in Galveston, Texas, just as transportation concerns in Washington, D.C. are different than those in Orlando, Florida. Different localities will experience the effects of the sharing economy differently, and thus the matching principle would suggest that regulation at the local level is most efficient.²²⁷ Especially considering that the sharing economy is an evolving sector, and that regulations will likely require re-evaluation as underlying activities evolve, local governance may be more conducive to such experimentation and adaptation.²²⁸

Second, Section 230 of the Communications Decency Act potentially complicates the regulatory response to scale. Section 230 preempts any state or local law that imposes liability on “interactive computer service[s],”

226. See generally Nestor Davidson and John Infranca, *The Sharing Economy as an Urban Phenomenon*, 34 *YALE L. & POL’Y REV.* 215 (2016) (discussing how the regulatory response to the sharing economy has primarily been at the local level).

227. The matching principle suggests that the regulatory oversight of an activity should be matched to the externalities caused by that activity. See Henry N. Butler & Jonathan R. Macey, *Externalities and the Matching Principle: The Case for Reallocating Environmental Regulatory Authority*, 14 *YALE L. & POL’Y REV.* 23, 25 (1996) (defining the matching principle as suggesting that “the size of the geographic area affected by a specific pollution source should determine the appropriate governmental level for responding to the pollution”).

228. See, e.g., Zale, *supra* note 3, at 576–77 (“[T]he rapidly evolving nature of technological innovation in the sharing economy means that crafting a regulatory response will necessarily entail keeping pace with changing technology.”). However, where uniformity across jurisdictions is desirable, such as insurance requirements for ride-hailing drivers, regulatory responses may be more appropriately undertaken through state regulation. And for those aspects of the sharing economy with connection to existing federal laws, such as intellectual property law and fair housing laws, federal regulation may be appropriate. For example, clarifications to the FHA’s Mrs. Murphy exception or the extent of the CDA Section 230 immunity. Other considerations relevant to the question of which level of government is best suited to regulate a particular issue include: the institutional competencies of the relevant level of government; the availability of resources for enforcement; scaling of the level of government to match the scale of the regulated activity; concern about public choice and regulatory capture at different levels of government. See Arnold, *supra* note 115, at 336–38.

for the publication or speech of another “information content provider.”²²⁹ Section 230 thus provides immunity to websites like Yelp or Craigslist for users’ discriminatory or libelous posts.²³⁰ While a full discussion of the implications of Section 230 for the sharing economy is beyond the scope of this paper, the law poses an obstacle to regulations targeting platforms like Airbnb or Uber. For example, when San Francisco recently amended its home-sharing ordinance to prohibit platforms from collecting fees for listings on their site that lack valid city-issued short-term rental registration numbers,²³¹ Airbnb sued, claiming that Section 230 preempted the local ordinance.²³²

While Section 230 has proven highly protective of internet companies in the past, the law may not provide the kind of blanket immunity from regulation that Airbnb seeks. While the CDA protects internet companies from liability based on third party content, if a law imposes liability for conduct—such as platforms collecting fees for transactions involving unpermitted hosts, as San Francisco’s law does—CDA immunity arguably should not attach.²³³ In addition, if an internet company is “responsible, in whole or in part, for the creation or development of information

229. 47 U.S.C. § 230(c)(1) (2012). “The term ‘information content provider’ means any person or entity that is responsible, in whole or in part, for the creation or development of information provided through the Internet or any other interactive computer service.” 47 U.S.C. § 230(f)(3) (2012).

230. See, e.g., *Levitt v. Yelp! Inc.*, Nos. C-10-1321EMC, C-10-2351EMC, 2011 WL 5079526, at *9 (N.D. Cal. Oct. 26, 2011) (holding Yelp immune from suit under state law for alleged manipulation of third-party reviews).

231. San Francisco amended the ordinance after the previous version (which had previously required hosts to register and obtain a permit) was decried as “unworkable” and uncomplied with because regulators lacked access to data to determine if hosts were actually registered as required. See Emily Green, *SF Supes Crack Down on Unregistered Short-Term Rentals*, S.F. GATE (June 7, 2016, 9:18 PM), <http://www.sfgate.com/politics/article/Supervisors-No-unregistered-hosts-on-short-term-7969444.php> [<https://perma.cc/WB9Z-TFED>] (noting “only roughly 1,400 of the estimated 7,000 or more residents who rent their homes and rooms have” registered); Phillip Matier & Andrew Ross, *No Way of Enforcing Airbnb Law*, S.F. Planning Memo Says, S.F. CHRON. (Mar. 22, 2015), <http://www.sfchronicle.com/bayarea/matier-ross/article/No-way-of-enforcing-Airbnb-law-S-F-planning-6151592.php> [<https://perma.cc/GYT8-NDHE>].

232. See Complaint for Declaratory and Injunctive Relief at 2, *Airbnb, Inc. v. City of San Francisco*, No. 3:16-cv-03615 (N.D. Cal. June 27, 2016) [hereinafter *Airbnb Complaint*] (“By requiring Airbnb to verify that each third-party rental listing has a valid registration number prior to posting the listing on their websites, and by imposing criminal and civil penalties for websites’ publishing of unverified third-party listings, the Ordinance violates the CDA, which preempts the enforcement of these provisions against Airbnb.”). The complaint also alleges that the city’s ordinance violates the Stored Communications Act and the First Amendment. *Id.* at 1.

233. See San Francisco’s Memorandum of Points and Authorities in Opposition to Plaintiffs’ Motion for a Preliminary Injunction at 8-11, *Airbnb, Inc. v. City of San Francisco*, No. 3:16-cv-03615-JD (N.D. Cal. Sept. 19, 2016).

provided,” then immunity does not attach.²³⁴ Thus, the Ninth Circuit has held that the roommate-matching website, Roommates.com, was not entitled to Section 230 immunity for alleged violations of the FHA because it developed and designed its website to allow users to input preferences about sex or familial status of potential roommates.²³⁵ Companies like Airbnb and Uber, who exercise extensive control over their platform design, may be vulnerable to characterization as content providers and therefore may not receive Section 230 immunity.²³⁶

Furthermore, even if Section 230 could be construed broadly enough to provide immunity to sharing economy companies from things like San Francisco’s home-sharing ordinance or the FHA, policymakers should consider whether it should. We are no longer at the edge of the digital frontier as we were in 1996, when Section 230 was enacted.²³⁷ As New York’s Attorney General pointed out, we are fully “living in an online world.”²³⁸ Unless we want that world to be a world without consumer protection laws, anti-discrimination laws, and environmental laws, the applicability of Section 230 to sharing economy companies should be handled with care.²³⁹

234. *Fair Hous. Council v. Roommates.com, LLC*, 521 F.3d 1157, 1162, 1172 (9th Cir.2008) (“Roommate is directly involved with developing and enforcing a system that subjects subscribers to allegedly discriminatory housing practices.”).

235. *Id.* at 1169. The website was ultimately not found liable for violations of the FHA on different grounds. *See Fair Hous. Council v. Roommate.com, LLC*, 666 F.3d 1216, 1222 (9th Cir. 2012) (holding that the term “dwelling” as used in the FHA did not include shared living space, and therefore that the FHA was inapplicable to roommate selection).

236. *See also Ascentive, LLC v. Opinion Corp.*, 842 F. Supp. 2d 450, 474 (E.D.N.Y. 2011) (“While an overt creation of content is easy to identify, determining what makes a party responsible for the ‘development’ of content under § 230(f)(3) is unclear, and the CDA does not define the term. Accordingly, courts often look to the totality of the circumstances in making the determination.”).

237. *See Arthur Chu, Mr. Obama, Tear Down this Liability Shield*, TECHCRUNCH (Sept. 29, 2015), <https://techcrunch.com/2015/09/29/mr-obama-tear-down-this-liability-shield/> [<https://perma.cc/AM2Q-N5UE>] (“It was passed in 1996, when the Internet was still a novelty rather than an integral element of commerce and daily communication for pretty much all Americans.”).

238. Schneiderman, *supra* note 197.

239. *See* Brittany McNamara, *Airbnb: A Not-So-Safe Resting Place*, 13 COLO. TECH. L.J. 149, 165 (2015) (discussing calls to reform Section 230 (citing Letter from Chris Koster, Mo. Att’y Gen., et al., to John Rockefeller IV, Senator, et al., (July 23, 2013), <http://www.naag.org/assets/files/pdf/signons/Final%20CDA%20Sign%20On%20Letter.pdf> [<https://perma.cc/PBQ9-LUUW>])).

A. Co-Regulation

Much of the current regulatory response to the sharing economy attempts to force existing regulatory models onto activities occurring in the sharing economy.²⁴⁰ While some existing modes of regulation may translate onto the sharing economy, the sharing economy's three-sided model of platforms, users, and providers is a poor fit with much existing regulation.²⁴¹ A more effective regulatory approach would take advantage of the sharing economy's three-sided model through the development of co-regulatory forms of governance.

Co-regulation refers to a collaborative regulatory effort that utilizes industry to implement regulatory standards.²⁴² Co-regulatory models have been utilized in a range of legal contexts, from international trade law to environmental law, and offer a number of benefits.²⁴³ Co-regulation harnesses the “unique competence[s]” companies often have in terms of expertise about their industry and internal structures.²⁴⁴ By delegating partial regulatory responsibilities to companies, government could be relieved from implementation and enforcement responsibilities that would be duplicative of

240. See discussion *supra* Section II.C.2.

241. See discussion *supra* Section II.C.2.

242. See NEIL GUNNINGHAM & DARREN SINCLAIR, LEADERS AND LAGGARDS: NEXT-GENERATION ENVIRONMENTAL REGULATION 27 (2002) (“[Co-regulation is a] hybrid policy instrument involving a combination of government-set targets and industry-based implementation, with even the latter element being underpinned by government controls” (citing NEIL GUNNINGHAM ET AL., SMART REGULATION 50–56 (1998))). While the terms self-regulation and co-regulation are sometimes used interchangeably, the two are distinct concepts. See *id.* at 27–28 (distinguishing co-regulation from self-regulation, which “involves giving industry very considerable autonomy in relation to both goal-setting and implementation”). While self-regulation may be appropriate under certain circumstances, it involves significant risks; most glaringly, that the regulated entities will not effectively regulate themselves, as was the situation in the securities markets prior to the financial crisis of 2008. Cf. Arun Sundararajan, *Trusting the ‘Sharing Economy’ to Regulate Itself*, N.Y. TIMES (Mar. 13, 2014, 12:01 AM), http://economix.blogs.nytimes.com/2014/03/03/trusting-the-sharing-economy-to-regulate-itself/?_r=1 [<https://perma.cc/4X32-VBVH>] (suggesting the securities industry's self-regulatory organizations as a model for the self-regulation by sharing economy companies). Co-regulation attempts to mitigate some of these risks by retaining more government involvement in the governance response than self-regulatory models do. GUNNINGHAM & SINCLAIR, *supra* at 27–28.

243. See, e.g., Paul Harpur, *New Governance and the Role of Public and Private Monitoring of Labor Conditions*, 38 RUTGERS L. REC. 49, 50 (2011); Maria Savasta-Kennedy, *The Newest Hybrid: Notes Toward Standardized Certification of Carbon Offsets*, 34 N.C. J. INT'L L. & COM. REG. 851, 857 (2009); Michael P. Vandenbergh, *Private Environmental Governance*, 99 CORNELL L. REV. 129, 133 (2013).

244. Cannon & Chung, *supra* note 137, at 61.

and less productive than those that industry already engages in and can instead turn to other areas where government oversight is more necessary.²⁴⁵

Co-regulatory governance recognizes the reality that private companies like Airbnb and Uber are already becoming de facto regulators of certain sectors: Airbnb is approaching a role as the de facto regulator of spare housing capacity, and Uber and Lyft are becoming de facto regulators of quasi-public transportation. However, to date, these companies are largely not accepting the responsibilities that come with being regulators, such as the need for transparency and accountability. By engaging platforms as partners, co-regulatory models offer a possible way of better aligning territorial and functional governance.

Co-regulatory models are also particularly appropriate to the sharing economy because of its network orchestrator model. As discussed above, norms created and enforced by networks can be more effective constraints on individual behavior than direct legal regulation of individuals.²⁴⁶ Networks can enforce sanctions against users that “may rival or surpass the government’s sanctions in their effectiveness, thus deterring opportunism,” such as making two-way feedback available to all members, or removing from membership users who violate network norms.²⁴⁷ Furthermore, “[w]hen members transact mostly over the network’s transacting facilities, an ancillary byproduct is that the network can monitor the transactions quickly and accurately at low cost.”²⁴⁸

The rapidly evolving nature of the sharing economy also makes co-regulation models attractive. Traditional, top-down regulation typically takes time

245. GUNNINGHAM & SINCLAIR, *supra* note 242, at 27–28 (describing co-regulation as a “strategy that leaves the government free to focus on its core business of setting policy directions and establishing safety standards”); *see also* Sundararajan, *supra* note 242 (“As hundreds of new peer-to-peer marketplaces emerge over the coming years, such organizations would ease what would otherwise be a tremendous strain on the government’s resources: having to constantly monitor and correct regulatory misalignment across an evolving set of industries.”).

246. *See* Lessig, *supra* note 80, at 662–63 (explaining how norms, markets, and architecture can be both indirect formal legal regulation, as well as stand-alone direct forms of regulation).

247. Aviram, *supra* note 145, at 1190; *see also supra* text accompanying 210–19.

248. Aviram, *supra* note 145, at 1205; *see also* Winn, *supra* note 214, at 199 (“A successful platform operator is not merely the manager of activity taking place on the platform, but also one of the regulators governing that activity. A platform operator’s power as a private regulator may be amplified by network effects . . .” (citing Jane K. Winn, *Technical Standards as Data Protection Regulation*, in REINVENTING DATA PROTECTION 91 (Serge Gutwirth et al. eds., 2009)).

to draft and enact; by the time a regulation goes into effect, the underlying activities in the sharing economy may have changed significantly.²⁴⁹ By shifting some of the regulatory responsibility to platforms—who can adapt quickly and cheaply to the evolving nature of the sharing economy because they control the platforms and most of the underlying technology—governments can reduce costs of frequent regulatory updates and preserve their limited budgets for other important public needs.

Furthermore, co-regulation models can at least partially address concerns that data collection raises regarding privacy, competition, and efficiency. Good regulation—predictable, enforceable regulation that responds to the social bad at issue—depends on having accurate information about “Who did what, where?”²⁵⁰ However, the platforms typically hold this type of information—data about how many nights someone rents their house on Airbnb or how many units in total are rented out in a city during a particular time period, for example. And while platforms like Airbnb and Uber like to encourage sharing among their users, they are less inclined to share data with regulators. While most refusals have centered on concerns about user privacy,²⁵¹ even where regulators have requested only anonymized data, platforms such as Airbnb and Uber have almost universally refused to cooperate until a court order requires them to do so.²⁵²

249. See Zale, *supra* note 3, at 577 (“[T]he rapidly evolving nature of technological innovation in the sharing economy means that crafting a regulatory response will necessarily entail keeping pace with changing technology.”); see also CITIES, THE SHARING ECONOMY, AND WHAT’S NEXT, NAT’L LEAGUE OF CITIES 30 (2015), <http://www.nlc.org/Documents/Find%20City%20Solutions/City-Solutions-and-Applied-Research/Report%20-%20%20Cities%20the%20Sharing%20Economy%20and%20Whats%20Next%20final.pdf> [<https://perma.cc/5ABN-P4RH>] (noting that lawmaking’s “iterative process can be time-consuming and frustrating. Cities that tackle regulation in a piecemeal manner may find themselves continually rewriting legislation”).

250. Lessig, *supra* note 31, at 39. The use of big data for governance—known in the literature as “smart cities”—and the privacy issues raised, are issues that reach far beyond the sharing economy, and there is a burgeoning scholarship in the area. See, e.g., Kelsey Finch & Omer Tene, *Welcome to the Metropticon: Protecting Privacy in a Hyperconnected Town*, 41 FORDHAM URB. L.J. 1581, 1583–90 (2014); Katrina Fischer Kuh, *Personal Environmental Information: The Promise and Perils of the Emerging Capacity to Identify Individual Environmental Harms*, 65 VAND. L. REV. 1565, 1569–70 (2012).

251. While publicly citing privacy concerns, platforms’ general unwillingness to release data likely hinges as much on competitive concerns, because the massive amount of data they are collecting is likely of significant value. See Tom Lee, *The Sharing Economy’s Dirty Laundry*, JACOBIN (Mar. 23, 2016), <https://www.jacobinmag.com/2016/03/uber-airbnb-sharing-economy-housing-tech/> [<https://perma.cc/G9N2-ZSPZ>].

252. Tomio Geron, *New York State AG Seeks Airbnb Data on Hosts in Legal Battle*, FORBES (Oct. 7, 2013, 5:11 PM), <http://www.forbes.com/sites/tomiogeron/2013/10/07/new-york-state-ag-seeks-airbnb-data-on-hosts-in-legal-battle/> [<https://perma.cc/52R9-T7AC>] (quoting an Airbnb blog post about the Attorney General’s request: “We always want to work with governments to make the Airbnb community stronger, but at this point, this demand is unreasonably broad and we will fight it with everything we’ve got.” (quoting

While data collection raises legitimate concerns about both privacy and competition, traditional regulatory approaches will likely fail without access to the data that the platforms hold. For example, just six months after San Francisco enacted its home-sharing ordinance, and less than two months after it went into effect, the City Planning Department decried it as “unworkable” and indicated that the department lacked the resources or access to information—held by Airbnb—necessary to enforce the law.²⁵³ Particularly when many communities face other significant public needs, from infrastructure to schools and police, the costs of attempting to enforce regulations against large numbers of individuals engaged in home-sharing and ride-hailing may simply not add up.²⁵⁴ Lacking data from platforms, many cities have been forced to rely on municipal enforcement departments with small staffs and limited budgets to engage in what amounts to undercover investigations.²⁵⁵ The result is complaint-driven enforcement of traditional, top-down regulation, which can be sporadic, as well as potentially illegal.²⁵⁶ And while such an approach may result in responses to the most flagrant

Fighting for You in New York, AIRBNB ACTION (Oct. 6, 2013), <https://www.airbnbaction.com/fighting-for-you/> [<https://perma.cc/9M59-P3YW>]); see also Nathaniel Minor, *Airbnb Hosts, Denver Regulators Search for Middle Ground*, COLO. PUB. RADIO (Nov. 5, 2015), <http://www.cpr.org/news/story/airbnb-hosts-denver-regulators-search-middle-ground> [<https://perma.cc/9KSD-MXZE>] (noting that cities “are having trouble enforcing [regulations]. Airbnb and its peers don’t share internal data with regulators, so officials ‘don’t know who to go after’”).

253. See Matier & Ross, *supra* note 231 (citing the lack of access to Airbnb’s booking data, to ensure hosts on the site are actually registered with the City).

254. See Rob Walker, *Airbnb Pits Neighbor Against Neighbor in Tourist-Friendly New Orleans*, N.Y. TIMES (Mar. 5, 2016), <http://www.nytimes.com/2016/03/06/business/airbnb-pits-neighbor-against-neighbor-in-tourist-friendly-new-orleans.html> (describing the challenges facing New Orleans’s attempts to enforce its short-term rental restrictions: “New Orleans, like most cities, has more urgent priorities—including an understaffed police force and road and infrastructure problems that would cost billions to fix.”).

255. See, e.g., Matier & Ross, *supra* note 231 (discussing the enforcement failures of San Francisco’s short-term rental law); see also Walker, *supra* note 254 (describing the New Orleans’s mayor’s acknowledgment that enforcement of that city’s “short-term rental law has been ‘lax and difficult.’ Listings on home-sharing platforms do not reveal specific names and addresses, and identifying and building cases against violators would involve considerable time and money, city officials say”).

256. See Associated Press, *Honolulu Hit with Lawsuit over Enforcement of Rental Units*, WASH. TIMES, July 14, 2016, <http://www.washingtontimes.com/news/2016/jul/14/honolulu-hit-with-lawsuit-over-enforcement-of-rent/> [<https://perma.cc/S69B-KWMW>] (describing a lawsuit by a coalition of short-term rental operators against the city of Honolulu for alleged trespassing during city investigations of properties for violations of the city’s zoning laws).

violations, it fails to address the negative cumulative impacts of the vast majority of the small-scale activity.

A co-regulatory model, however, can address platforms' concerns about data by allowing the platforms a certain amount of control over data as long as they meet regulatory goals, while also relieving government from inefficient attempts to replicate the information necessary to enforce regulations. While oversight mechanisms such as audits may be necessary to ensure that the platform is implementing the regulation as required, co-regulation is likely to involve less of an intrusion into the data held by platforms than traditional regulatory models.²⁵⁷

A handful of co-regulatory models have already begun to emerge. For example, in a growing number of jurisdictions, Airbnb now directly collects the jurisdiction's transient occupancy tax from users.²⁵⁸ The company automatically calculates and collects the tax when a guest books a room through the website, and the company remits the tax to the city.²⁵⁹ Airbnb thus acts as a co-regulator with respect to tax collection, requiring users to pay the tax as part of the booking process on the website and then remitting the aggregate taxes collected to the city.

While becoming a co-regulator in this way is not costless to platforms, the benefits of co-regulation to the platforms—greater control of data and in how regulatory outcomes are achieved, as well as potential advantage over market competitors—might be expected to result in platforms embracing co-regulatory roles.²⁶⁰ However, sharing economy platforms have not eagerly assumed a co-regulatory role. For example, until recently, Airbnb disclaimed any responsibility in the majority of locations in which it operates for collecting local occupancy taxes and simply posted a notice on its website that users are responsible for compliance with all applicable laws.²⁶¹

257. Furthermore, the amount of data sharing economy companies are permitted to retain under a co-regulation should also be balanced against the needs of government to access that data in order to better ensure that regulations are being effectively implemented.

258. Badger, *supra* note 163. The complete list of jurisdictions where Airbnb collects and remits taxes is available on Airbnb's website. *In What Areas Is Occupancy Tax Collection and Remittance by Airbnb Available?*, AIRBNB, <https://www.airbnb.com/help/article/653/in-what-areas-is-occupancy-tax-collection-and-remittance-by-airbnb-available> [https://perma.cc/EN7E-WFRX] (last visited Nov. 8, 2016).

259. Badger, *supra* note 163.

260. For example, the platform might have to create the necessary software to implement the regulation, and it may lose some users who don't want to pay the tax to other platforms, such as Craigslist, that don't charge the tax as part of the online transaction. However, websites such as Craigslist do not have the trust verification advantages of Airbnb, such as user reviews or integrated online payment systems, so users may find that paying the tax is preferable to those risks.

261. See *What Is Occupancy Tax? Do I Need to Collect or Pay It?*, AIRBNB, <https://www.airbnb.com/help/article/654/what-is-occupancy-tax-do-i-need-to-collect-or-pay-it?topic=264> [https://perma.cc/2JF9-A33M] (last visited Nov. 8, 2016) ("Occupancy tax is generally

While Airbnb's attitude toward cooperating with local governments in the collection of taxes is changing,²⁶² other home-sharing platforms, like HomeAway and VRBO, continue to resist doing so.²⁶³ And neither Airbnb nor other home-sharing or ride-hailing platforms have indicated interest in co-regulation with respect to other areas, such as permit requirements, zoning laws, or fingerprinting.²⁶⁴ Instead, they have responded with lawsuits and multi-million dollar ballot campaigns against such regulatory efforts.²⁶⁵

Part of the resistance to co-regulatory roles stems from the fact that regardless of the advantages, co-regulation imposes more responsibilities and costs on platforms than they currently have. For example, when the City of San Francisco attempted to enlist short-term rental companies as co-regulators by prohibiting platforms from collecting fees for listings without valid permits from the city, Airbnb responded by suing the city.²⁶⁶ While the company's legal claims center around the CDA and the First Amendment, the underlying reason for the lawsuit is more straightforward:

paid by the guest, but the obligation to remit the taxes to the government usually falls on the host. We expect all hosts to familiarize themselves with and follow their local laws and regulations.”).

262. See Alison Griswold, *Why Airbnb Desperately Wants to Pay Hotel Taxes*, SLATE (Feb. 13, 2015, 7:00 PM), http://www.slate.com/articles/business/moneybox/2015/02/airbnb_hotel_taxes_why_does_the_sharing_economy_startup_want_to_pay_them.html. [https://perma.cc/TWB6-277R].

263. See, e.g., Steve Law, *City Cracking Down on Short-Term Rental Companies and Hosts for Failing to Pay Taxes, Get Inspections*, PORTLAND TRIB. (Oct. 21, 2015, 12:07 AM), <http://portlandtribune.com/pt/9-news/277870-154116-city-cracking-down-on-short-term-rental-companies-and-hosts-for-failing-to-pay-taxes-get-inspections> [https://perma.cc/HTB4-M6AB] (describing a lawsuit filed by Portland against VRBO.com for failing to collect and remit taxes and failing to display permit numbers on listings).

264. See Walker, *supra* note 254 (describing home-sharing companies' rejection of a proposed co-regulatory model requiring platforms to display only listings with valid license numbers because it would be “too onerous to adjust their software to accommodate every regulatory arrangement for thousands of municipalities around the world;”); see also *supra* notes 231–32 and accompanying text (describing Airbnb's lawsuit against San Francisco when the city tried to implement precisely such a law).

265. See Camila Domonoske, *Uber, Lyft Vow to Stop Driving in Austin After Voters Keep Regulations*, NPR (May 9, 2016, 8:00 AM), <http://www.npr.org/sections/thetwo-way/2016/05/09/477310339/uber-lyft-vow-to-stop-driving-in-austin-after-voters-affirm-regulations> [https://perma.cc/QU24-3X64] (describing Uber's and Lyft's withdrawal from Austin, Texas, after voters in the city rejected the companies' referendum to repeal the city's fingerprinting requirements, despite the companies' spending more than eight million dollars on the effort to repeal the regulations); *supra* notes 231–32 and accompanying text (describing Airbnb's lawsuit against San Francisco).

266. See Airbnb Complaint, *supra* note 232.

cost. Although adding a field on a website for a license or permit number might appear to be a simple “tweak,” Airbnb and other home-sharing platforms have previously rejected such proposals as a “nonstarter”: “it would be too onerous to adjust their software to accommodate every regulatory arrangement for thousands of municipalities around the world.”²⁶⁷ However, just as Hilton and Marriott comply with different employment, land use, and tax laws in the thousands of cities where they operate, multi-billion dollar companies like Airbnb and Uber should be able to do so as well.²⁶⁸

While the platforms’ resistance presents one obstacle to co-regulation, local and state governments may also hesitate to entrust platforms with co-regulatory oversight based on the less than exemplary track record of some platforms with respect to transparency and full disclosure.²⁶⁹ And although co-regulatory approaches like platforms facilitating the collection of taxes may seem like an easy economic choice, regulators in a number of jurisdictions have expressed concerns that legitimizing the tax aspects of short-term rentals may undermine other regulatory goals.²⁷⁰ For example, after Los Angeles adopted a co-regulatory approach for home sharing tax collection, one city council member cautioned about the specter of regulatory capture: “We need to let our regulations dictate how much revenue we receive, and not let potential revenue dictate what sort of regulations we

267. Walker, *supra* note 254.

268. Furthermore, it is possible to conceive of co-regulatory approaches that could lower the costs. For example, in the case of home-sharing permits, platforms could be the issuers of permits themselves. A city could provide its permit requirements to platforms (for example, payment of a twenty-five dollar fee for each platform the host lists on), and the platforms could collect the fees from the hosts directly, issue a permit number, and remit payment to the city.

269. See, e.g., Amy Plitt, *Airbnb May Have Deleted NYC Listings to Bolster Its Image*, CURBED N.Y. (Feb. 12, 2016, 10:00 AM), <http://ny.curbed.com/2016/2/12/11029536/airbnb-may-have-deleted-nyc-listings-to-bolster-its-image> [<https://perma.cc/H8KL-GYGT>] (noting that before Airbnb released data about its New York City listings in November 2015, the company deleted one thousand listings for “entire homes” that would have undermined its claims that entire units are not being removed from the long-term rental market); see also Letter from Brian Schatz, Dianne Feinstein, and Elizabeth Warren, Senators, United States, to Edith Ramirez, Chairwoman, Fed. Trade Comm’n (July 13, 2016), <http://www.housingwire.com/ext/resources/files/Editorial/Files/Letter-to-FTC-re-short-term-rental-platforms-7-13-16.pdf> [<https://perma.cc/6JCX-BY8A>] (noting that while platforms are in the best position to provide the data needed to determine their impacts on housing markets, they have been “reluctant to do so” and “even if platform companies do share their data, concerns have been raised about the reliability of this data”).

270. See Griswold, *supra* note 262 (quoting Liz Krueger, a New York state senator who opposed allowing Airbnb to collect and remit taxes: “Paying hotel taxes actually puts the ‘hosts’ they claim to care so much about at risk of eviction by providing evidence of lease violations, and does nothing to alleviate an acute shortage of affordable housing that their illegal activity exacerbates.”).

craft.²⁷¹ Yet while concerns such as balancing short-term efficiency gains with long-term public needs and proper oversight of platforms should be part of the conversation about co-regulatory programs, co-regulation deserves careful consideration as a regulatory tool that may be well-suited to the configuration of scale in the sharing economy.

B. Aggregate Regulations

Aggregate regulations are framed around the aggregate impacts of regulated activity.²⁷² In contrast to scaled regulations, discussed in the next Section, where the regulatory response is tailored to the amount of activity engaged in by individual actors, aggregate regulations are designed to respond to the overall amount of activity occurring.²⁷³ Two recent examples of ride-hailing regulations provide a useful illustration of how aggregate regulations can address the negative cumulative impacts of small-scale activities.

The city of São Paulo, Brazil, which ranks as one of the world's most congested cities, recently announced a plan to charge ride-hailing companies bimonthly, upfront fees, based on estimates of total miles that drivers travel in their network.²⁷⁴ The dual goals of this regulation are to ensure that the companies compensate the city for their “commercial use of [the city’s] public road infrastructure, which can then be used to better manage and maintain it,” and to create a market for the mileage credits, which the companies can then trade.²⁷⁵ By focusing on the aggregate impacts of ride-hailing on traffic congestion, the regulation addresses the incremental impacts of each additional vehicle Uber and Lyft put on the road while putting the costs of monitoring that activity on the least-cost avoider—the platforms.

271. See Emily Alpert Reyes, *Airbnb Strikes Deal with L.A. to Collect Millions in Lodging Taxes*, L.A. TIMES (July 18, 2016, 4:55 PM), <http://www.latimes.com/local/lanow/la-me-ln-airbnb-taxes-20160718-snap-story.html> [<https://perma.cc/YN25-NHBH>] (quoting Los Angeles city council member Mike Bonin after the city’s recent decision to allow Airbnb to collect and remit taxes from short-term rentals, even though such rentals are currently illegal in much of Los Angeles).

272. See Stack & Vandenberg, *supra* note 42, at 1419 (“To confront one percent arguments, it is critical to change the frame of reference from a focus on exemptions justified individually to a focus on aggregate effects.”).

273. See *infra* Section III.3.

274. Georges Darido et al., *Sao Paulo’s Innovative Proposal to Regulate Shared Mobility by Pricing Vehicle Use*, WORLD BANK: TRANSPORT FOR DEV. (Jan. 26, 2016), <http://blogs.worldbank.org/transport/sao-paulo-s-innovative-proposal-regulate-shared-mobility-pricing-vehicle-use> [<https://perma.cc/3L8D-ZCBX>].

275. *Id.*

Another example of aggregate regulation was enacted in Washington, D.C. to address the cumulative impacts of ride-hailing on accessibility. Because existing regulatory models for ADA compliance—such as accessible vehicle percentage requirements for taxis—are ill-suited to the network orchestrator model of ride-hailing companies, Washington, D.C. requires that ride-hailing fares include a surcharge that platforms remit to the city, which uses the surcharges to ensure adequate accessible transportation in alternate forms.²⁷⁶ By focusing on the aggregate impacts of ride-hailing on accessibility, the regulation aims to ensure that the growing ride-hailing sector does not undermine public policy interests in accessible transportation for those in wheelchairs or with other mobility challenges.

Aggregate regulation like São Paulo’s congestion pricing and Washington, D.C.’s accessibility surcharge can be particularly useful where the underlying small-scale activity is one that for reasons of autonomy or enforcement costs is not readily susceptible to regulation. By regulating the third-party platform that facilitates the underlying activity, aggregate regulation can lower the costs of enforcement, as well as help avoid difficult questions about balancing individual autonomy against other important public policies.

However, there are challenges to aggregate regulations. As discussed in Part III(A), obtaining the data needed to develop and enforce regulations has proven to be a challenge, with platforms that hold the data generally unwilling to share it with regulators. For example, a number of cities have struggled with enforcing aggregate regulations, such as transient occupancy taxes or short-term rental permit fees, because they have limited ability to determine who owes those fees without data from the platforms.²⁷⁷ But there may be ways to bring the platforms to the table. Airbnb is increasing its cooperation with cities and collecting transient occupancy taxes directly through its website in order to legitimize the tax aspects of home-sharing.²⁷⁸ And even though São Paulo’s congestion pricing regulation requires companies to provide anonymized data on “trip origins and destinations, times, distances and route of travel, price and service evaluation,”²⁷⁹ Uber has embraced the plan as far preferable to the complete ban on ride-hailing that was the alternative.²⁸⁰

276. See CITIES, THE SHARING ECONOMY, AND WHAT’S NEXT, *supra* note 249, at 17 (discussing how Washington, D.C., Chicago and Seattle have enacted these types of regulations).

277. See *supra* notes 250–52 and accompanying text.

278. See sources cited *supra* notes 270–71.

279. Darido, *supra* note 274.

280. *Sao Paulo Mayor to Authorize Uber with Mileage Fee*, REUTERS (May 10, 2016, 7:08 PM), <http://www.reuters.com/article/us-uber-tech-brazil-idUSKCN0Y12TL> [<https://perma.cc/XV73-EZ8R>].

C. Scaled Regulation

Scaled regulations link the level of regulation to the amount of an individual, small-scale actor's activity. An example of scaled regulation is fee-based regulation, in which regulators charge a fee to those who engage in a particular activity to account for externalities imposed by the activity—and the corresponding regulatory oversight required—and the amount of the fee is proportional to the amount of regulated activity engaged in. For example, home-sharing regulations in Portland, Oregon impose minimal permit fees for occasional home-sharing hosts, with higher fees for hosts who engage in more frequent short-term rentals.²⁸¹ By tailoring the level of regulation to the amount of regulatory activity, scaled regulations can respond to fairness concerns that a one-size-fits-all regulation may unduly burden small-scale actors. At the same time, scaled regulation can ensure that the impacts of small-scale activities are accounted for proportionally.

For example, in a jurisdiction with no permitting requirements for short-term rentals, when someone regularly rents out their apartment for home sharing through Airbnb, neighboring residents may experience increased noise or parking congestion, but the host is unlikely to bear the cost of these externalities. If instead the jurisdiction has a scaled permitting system, with permit fees tied to the number of nights the host uses the property for home-sharing, the system can provide the funds necessary for regulators to respond to the externalities that the small-scale activity causes. By raising the costs of engaging in the activity, scaled regulation requires the host to internalize at least some of those costs. Additionally, from an institutional design perspective, because scaled regulations are based on quantifiable measurements, they can offer the prospect of certainty and efficiency to both regulators and the regulated parties.

As with aggregate regulations, obtaining the data necessary to develop and enforce scaled regulation will be a challenge without the cooperation of platforms that hold this data. If regulators have no way of determining how many nights a year a host engages in short-term rentals, then regulators

281. Portland, Oregon's regulations were to allow owners/renters of houses and duplexes to "rent one or two bedrooms of their primary home for less than 30 days at a time, if they get a city inspection and pay a \$180 fee once every two years," rather than the \$4,130 fee traditional bed and breakfast operators must pay. Steve Law, *Airbnb Rules May Cool City's Underground Rentals*, PORTLAND TRIB. (June 3, 2014, 8:00 AM), <http://portlandtribune.com/pt/9-news/222831-83954-airbnb-rules-may-cool-citys-underground-rentals-> [<https://perma.cc/SYE8-AGPW>].

cannot enforce a scaled regulatory approach that sets varying tiers of permit fees based on the number of nights a host rents out their property. To respond to this concern, co-regulatory models such as those discussed above should be considered together with scaled regulatory models.

D. Cooperative Regulation

A final governance mechanism to respond to scale in the sharing economy is cooperative regulation. A cooperative is a form of business ownership in which the members—consumers who patronize the business, producers who supply the business, workers who work at the business, or some combination—own and manage the enterprise.²⁸² Cooperatives are democratically controlled by their members, operate at cost by returning any excess revenues to members, and subordinate capital by limiting investor control and returns.²⁸³

Cooperative models provide a tool to address the regulatory fractures that the sharing economy's three-sided model creates. By substituting participant-owned cooperatives for third-party platforms like Uber and Lyft, the cooperative model realigns the network orchestrator model: the actors themselves now facilitate small-scale activities through their cooperative.²⁸⁴ Members have control over and responsibility for the actions of the network. If the aggregate amount of small-scale activity results in negative cumulative impacts subject to regulation, the cooperative model holds the members responsible. And the cooperative can return the financial benefits of network effects to the members, rather than having them go to a third-party platform, whose goal of maximizing shareholder profits does not necessarily align with the interests of participants.²⁸⁵

One might question whether a cooperative model is actually viable; after all, how can participant-owned cooperatives compete with multi-billion dollar companies like Uber and Airbnb? In fact, the local nature of ride-

282. See ORSI, *supra* note 47, at 187–93 (providing examples of different types of cooperatives and describing key characteristics of cooperatives).

283. Puget Sound Plywood, Inc. v. Comm'r, 44 T.C. 305, 308 (1965) (citing these “three guiding principles, which still persist as the core of economic cooperative theory”).

284. In addition to provider- or user-owned cooperative models, publicly-owned platforms run by municipalities have also been proposed. See, e.g., Introduction, PLATFORM COOPERATIVISM, <http://platformcoop.net/2015/> [<https://perma.cc/F2Q5-NKXD>] (last visited Nov. 9, 2016) (“Could the Internet be owned and governed differently? What if Uber drivers could set up their own platform, or if cities could control their own version of Airbnb?”).

285. See Mike Konczal, *Socialize Uber*, NATION (Dec. 10, 2014), <https://www.thenation.com/article/socialize-uber> [<https://perma.cc/56VJ-7GHF>] (criticizing Uber's business model: the “arrangement means that drivers have to pay for their own cars, maintenance and gas, while management sets the rates and terms of their labor, taking a hefty cut in the process”).

hailing and home-sharing services actually may lend itself to competition from cooperatives, since “a majority of demand from each consumer is concentrated in a specific city, making ‘network effects’ from global reach [of companies Uber or Airbnb] a less effective barrier to entry.”²⁸⁶ Furthermore, the biggest barriers to worker cooperatives—up-front capital and coordinating different types of employees—are absent in the sharing economy: users already own most of the capital and engage in the same types of activities. Furthermore, replicating the underlying technology does not pose a significant barrier to entry.²⁸⁷

Cooperative or driver-equity based peer-to-peer ride-hailing platforms, as well as driver-owned taxi cooperatives, have emerged in a number of cities.²⁸⁸ For example, when Uber and Lyft abandoned the Austin market in May 2016 after their failed \$8 million ballot measure campaign to repeal the city’s fingerprinting regulation for ride-hailing drivers, several other ride-hailing services entered the market, including some services based on the cooperative model.²⁸⁹ While regulators should not necessarily mandate

286. Arun Sundararajan, *The New “New Deal”? Sharing Responsibility in the Sharing Economy*, POL’Y NETWORK (Oct. 30, 2014), http://www.policy-network.net/pno_detail.aspx?ID=4762; [<https://perma.cc/7WED-BNKC>]; see also Tracey Lien, *Lyft Defies Predictions by Continuing to Grow as a Rival to Uber*, L.A. TIMES (Jan. 5, 2016, 3:00 AM), <http://www.latimes.com/business/technology/la-fi-0105-lyft-growth-20160105-story.html> [<https://perma.cc/YLP6-CMUV>] (discussing how the “the winner-take-all phenomenon that drives so much of the Internet—a theory also known as ‘network effects’—may not be as relevant to the transportation industry”).

287. See Konczal, *supra* note 285 (“The capital owners maintain the phone app, but app technology isn’t the major cost, and it’s getting cheaper and easier by the day.”); see also David Z. Morris, *A Swarm of Startups Are Filling the Uber Void in Austin*, FORTUNE (May 29, 2016, 10:37 AM), <http://fortune.com/2016/05/29/uber-alternatives-austin/> [<https://perma.cc/B8XF-TWJ9>] (“While a ride-sharing service isn’t necessarily the easiest thing in the world to build, it also clearly doesn’t have the kind of technological moat that makes it irreproducible.”).

288. See, e.g., Sarah Kessler, *Inside Juno, the Company that Wants to Beat Uber by Wooing Its Drivers*, FAST COMPANY (Feb. 29, 2016, 6:06 AM), <http://www.fastcompany.com/3057182/inside-juno-the-company-that-wants-to-beat-uber-by-wooing-its-drivers> [<https://perma.cc/MS49-B5PF>] (“Juno has reserved half of its founding shares for drivers (they’ll be diluted as investors come on board, but no more so than Juno’s four founders’ shares).”); see also About, UNION TAXI COOPERATIVE, <http://www.uniontaxidenver.net/about/> [<https://perma.cc/HL8V-KD7H>] (last visited Nov. 9, 2016) (describing Denver’s driver-owned Union Taxi); *The Union Difference*, TRANSUNION CAR SERV., http://www.ridetcs.com/#union_difference [<https://perma.cc/R4SJ-AC54>] (last visited Nov. 9, 2016) (describing New Jersey’s driver-owned Transunion taxi).

289. Susan Johnston Taylor, *A World Without Uber*, ATLANTIC (June 16, 2016), <http://www.theatlantic.com/business/archive/2016/06/a-world-without-uber/487331/>

or prefer cooperative forms of sharing economy platforms, they can try to ensure that laws do not unnecessarily burden cooperative business models and explore whether there are ways to make cooperative formation more accessible.²⁹⁰

IV. CONCLUSION

The small-scale activities taking place in the sharing economy offer enormous potential for economic growth, sustainability and connectivity, and equity of access. However, the massive numbers of small-scale activities being facilitated by platforms is also resulting in negative cumulative impacts and regulatory fractures—from the loss of long-term rental housing to discrimination against protected classes to increased burdens on public services and infrastructure. By unpacking the role of scale in the sharing economy and proposing a prescriptive framework for recalibrating regulatory responses, this Article offers insights for both policymakers grappling with the economic and social impacts of home sharing and ride-hailing in their communities and for those who wish to develop a deeper understanding the role of scale in governance.

[<https://perma.cc/9KL3-4RVV>] (describing numerous ride-hailing services that have emerged to fill the Austin market since Uber and Lyft's departure).

290. For example, Austin, Texas, a city with more than forty cooperative businesses, recently passed a resolution “[t]o foster growth of cooperative businesses” in the city. Press Release, Nat’l Cooperative Bus. Ass’n, ACBA Partners with Austin City Council in Resolution to Foster Growth of Cooperative Businesses, <https://www.ncba.coop/press-releases?start=405> [<https://perma.cc/2SMB-YHZN>] (last visited Nov. 9, 2016).