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Taxation of Ride-hailing

Prepared By
Lewis Lehe
Javier Rondan
Saipraneeth Devunuri
Ayush Pandey
University of Illinois at Urbana-Champaign

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Lewis Lehe, https://orcid.org/0000-0001-8029-1706 Sairpaneeth Devunuri, https://orcid.org/0000-0002-5911-4681 Javier Rondan Ayush Pandey, https://orcid.org/0000-0002-2524-2618	ICT-21-040 UILU-2021-2040

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16. Abstract

This report is a guide to the practice of taxing ride-hailing at the state and local levels in the United States. The information is based on a survey of legislation, news articles, journal articles, revenue data, and interviews. We first review the literature and provide a history of ride-hailing and the practice of ride-hailing. We then profile all ride-hailing taxes in the United States, classifying these taxes according to common attributes and pointing out what details of legislation or history distinguishes each tax. One important distinction is between ad valorem taxes, levied as a percentage of fare or revenues, and "per-ride" taxes levied as a flat charge per ride. Another distinction is the differential treatment of shared and single rides. We provide extensive references to laws and ordinances as well as propose a system to classify the state legal environments under which ride-hailing is taxed. States fall into five regimes: (1) a "hands-off" regime wherein local governments are permitted wide leeway; (2) a "tax-free" regime wherein local taxes are prohibited and the state does not impose a tax; (3) a "state-tax-only" regime wherein local taxes are prohibited but the state levies taxes for its own use; (4) a "revenue-sharing" regime wherein the state levies taxes and distributes them to local governments; and (5) a "local-option" regime wherein local governments can opt into participating in a tax system regulated by the state. We make nine recommendations for Illinois policymakers considering taxes on ride-hailing, with the most important being that the state pass legislation clarifying and regulating the rights of local governments to levy such taxes.

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Members of the Technical Review Panel (TRP) were the following:

- Charles Abraham, TRP Chair, Illinois Department of Transportation
- Daniel Comeaux, Chicago Metropolitan Agency for Planning
- Peter Kersten, Regional Transportation Authority
- Dean Mentjes, Federal Highway Administration
- Tom Radak, Pace Suburban Bus
- Ken Runkle, Illinois Department of Transportation
- Megan Swanson, Illinois Department of Transportation
- Dave Tomzik, Pace Suburban Bus
- Holly Bieneman, Illinois Department of Transportation
- Martin Menninger, Chicago Metropolitan Agency for Planning

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EXECUTIVE SUMMARY

Over the past seven years, dozens of state and local governments have passed laws either enacting consumer taxes on ride-hailing (colloquially known as ridesharing) or regulating other governments' power to do so. In Illinois, Chicago, Evanston, and Skokie have passed such taxes. This project aimed to provide an informed basis for Illinois lawmakers at all levels of government to make decisions about this class of tax. The approach was primarily descriptive and focused on the experiences of governments across the United States. Profiles of each tax provide extensive references to legislation, the histories of each tax, and, where available, revenues. In addition, a literature review was provided on the impacts of ride-hailing. It was found to be impossible to estimate the impacts of taxes, due to their recency, a lack of fine-grained data sources, and the impact of the COVID-19 crisis on ride-hailing.

A classification system was created for ride-hailing tax design. One important way that taxes vary is whether the tax is *per ride* or *ad valorem*. Per-ride taxes apply the same tax to every ride (e.g., $0.30 per ride), while ad valorem taxes apply as a percentage of the fare. Another important distinction lies in the treatments of shared rides. Governments commonly charge less for such rides.

US states were each grouped into one of five legal regimes, according to how state legislation treats ride-hailing taxes. In Regime I ("Hands Off"), state legislation does not address local ride-hail taxes, and the state itself does not tax ride-hailing. Illinois is in Regime I. In Regime II ("Tax Free"), local taxes are prohibited, and the state does not levy a tax on ride-hailing. In Regime III ("State Tax for State Use"), the state prohibits local taxes but levies its own tax, with revenues used at the state level. In Regime IV ("Revenue Sharing"), the state levies its own tax but distributes all or part of the revenue from each ride to the local government where the ride originates. Finally, in Regime V ("Local Option"), each local government can choose whether to tax ride-hailing, but state rules limit how they can do so and resolves jurisdictional issues, and the state collects and distributes revenues.

Nine recommendations were formulated for Illinois lawmakers considering ride-hail taxes. The research team strived to be politically neutral in these recommendations and focus on best practices rather than questions of how much to tax. The central recommendation is to pass state legislation, which would clarify and regulate local governments' taxation powers. In this manner, questions of jurisdiction can be addressed in advance, administration can be simplified, and local governments can be protected from legal issues like those that befell Skokie upon passing its taxes. However, the research team also recommends that Chicago, like New York City and Philadelphia, be granted a carve-out permitting the city to tailor its ride-hailing taxes to its needs, as the city has one of the oldest and most complex systems of ride-hail taxes in the United States, which has been designed to address severe congestion. Other recommendations address details of tax design, such as that any per-ride taxes enacted be indexed to inflation. Others draw attention to issues likely to arise in the treatment of future ride-hail services (e.g., those conducted by autonomous vehicles) and how to treat subsidized trips such as those provided in public-private partnerships between transportation network companies and transit or health care agencies.

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CHAPTER 1: INTRODUCTION

Since 2018, Illinois has passed legislation that seeks to apply state and local sales and use taxes to e-commerce (Illinois Department of Revenue 2020). These efforts are part of a larger trend in state legislatures to update old tax practices for new digital business models, including ride-hailing (often called "ridesharing"). In the United States, dozens of states, counties, and cities currently tax ride-hailing in many ways. This is exemplified in Figures 1–3, which respectively show taxes on receipts from Uber rides in New York City, Chicago, and San Francisco.

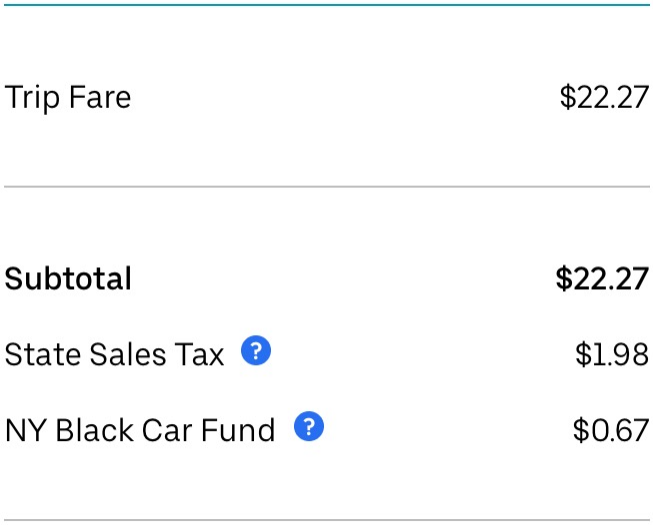


Figure 1. Screenshot. New York City (outside congestion zone) Uber receipt with tax.

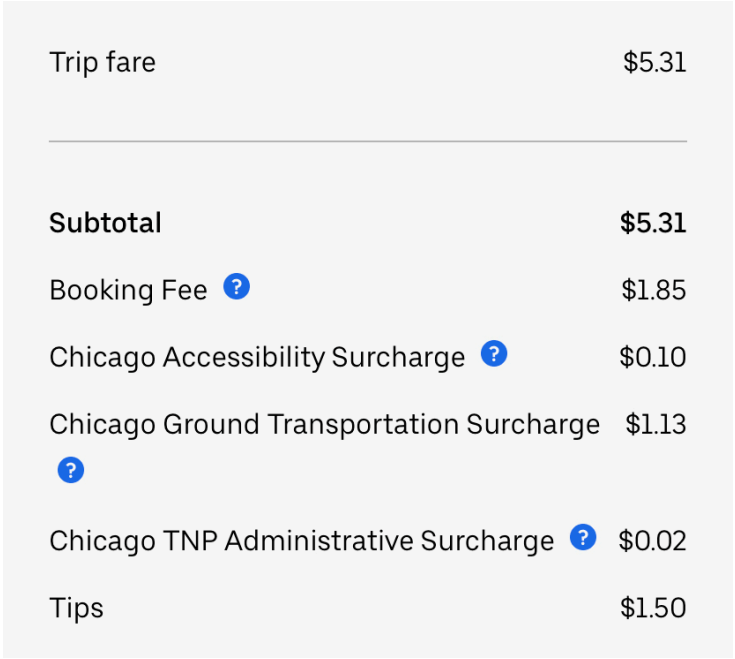


Figure 2. Screenshot. Chicago Uber receipt with tax.

Trip Fare	$6.82
Subtotal	$6.82
Marketplace Fee	$1.80
San Francisco City Tax	$0.29
Wait Time	$0.09
CA Driver Benefits	$0.30
Tolls, Surcharges, and Fees	$0.10

Figure 3. Screenshot. San Francisco Uber receipt with tax.

Unlike Illinois, most states have passed laws clarifying whether and how ride-hailing may be taxed at state or local levels (Lowe, Ashton, and Kasal 2021). While Illinois state law addresses the regulation of ride-hailing, it is silent on taxing it, even though Chicago was the first city to levy a special-purpose ride-hailing tax. The resulting ambiguity has created a problem in at least one case thus far.

In May 2019, the Village of Skokie passed ordinance No. 19-5-C-4462 imposing a tax on all ride-hail pickups or drop-offs within its limits: $0.35 for most trips and $0.15 on "shared rides." The ordinance went into effect August 2019. However, Uber sought declaratory and injunctive relief in Cook County Circuit Court against the tax on October 30, 2019 (Wisniewski 2019). Uber argued that Skokie's tax violated the Illinois State Constitution in three ways. They stated that the tax is "extraterritorial" and "arbitrary," and constitutes an "occupation tax" (Rasier, LLC and Uber Technologies Inc., v. Village of Skokie 2019). The arguments for extraterritoriality and arbitrariness rely on facts specific to Skokie and the circumstances surrounding the tax's adoption. However, the "occupation tax" argument is broad enough to affect all local taxes on ride-hailing anywhere in Illinois. The Illinois State Constitution states the following:

> A home rule unit shall have only the power that the General Assembly may provide by law...to license for revenue or impose taxes upon or measured by income or earnings or upon occupations.
>
> —Illinois State Constitution, Article VII §6(e)

The state legislature must therefore explicitly grant an Illinois local government the power to tax some occupation. Uber has argued that ride-hailing is an occupation, and the General Assembly has not granted home-rule communities the power to tax it.

Whatever this case's merits, the fact the complaint was filed illustrates the sort of problem that can arise in the absence of explicit state legislation. In states where state law explicitly grants local governments the power to tax ride-hailing, the enabling legislation usually accomplishes other objectives too. It may clarify the issue of jurisdiction (e.g., whether any tax goes to the place where a trip begins or where it ends), limit the taxes' size, explain how the tax is to be remitted, and other tasks.

This report seeks to provide information that decision-makers at various levels of Illinois government can use to craft policy around ride-hailing taxes—particularly state-level legislation. Of interest are such taxes that aim to finance public spending and potentially ameliorate the impacts of vehicle travel. This report's scope excludes taxes that are calculated somehow on corporate profits, labor earnings, or property. Given their intersection with labor law classification of work conducted via a transportation network company (TNC), those issues are evolving, often ambiguous (Thomas 2018; Oei and Ring 2017), and usually outside the scope of local government. Moreover, this report also omits the class of fixed licensing fees that some states and local governments charge TNCs to operate within their borders (e.g., a per-year licensing fee), because these do not generate nearly as much revenue as taxes and regulators rather than legislation sometimes determine them. This report is organized into Chapters 2–7—History, Literature Review, Profiles, Administration, State Legal Regimes, and Recommendations, respectively.

GLOSSARY OF COMMON TERMS

The following glossary will serve to standardize terms that recur throughout this report.

- **Ride-hailing**: "Ride-hailing" refers to the activity of using software to book a vehicle for providing a trip between a pre-selected origin and destination. Often ride-hailing is carried out using the driver's personal vehicle. The *Associated Press Stylebook* and the Society of Automotive Engineers has deprecated the popular alternative term "ridesharing" because it is misleading and refers to a different activity.

- **Transportation Network Company**: This report uses "transportation network company (TNC)" to mean firms that arrange ride-hailing services. Relatedly, Illinois Public Act 098-1173, which legalized and regulated ride-hailing in Illinois, defines a "transportation network company service" as "transportation of a passenger between points chosen by the passenger and prearranged with a TNC driver through the use of a TNC digital network or software application." In Chicago's laws, the term used is "transportation network provider."

- **Ride-hail tax**: A ride-hail tax is any compulsory contribution to government levied on ride-hailing activity. Some laws call these "surcharges," "fees," or another name. For consistency and clarity, this report calls all such levies "taxes."

- **Taxi/Taxicab**: This report uses the definition of taxi/taxicab provided by the City of Chicago's Department of Business Affairs and Consumer Protection (BACP): "A vehicle licensed for hire at fare rates set by the City, which are recorded by a taximeter. A taxi may be hailed by customers on the street or prearranged. Taxis are driven by licensed public chauffeurs" (BACP 2018, 2).

- **Livery**: BACP provides the following definition of livery service: "Liveries are licensed public passenger vehicles that charge a rate of fare which is not based on a meter. Livery rides and fares must be prearranged. Livery rides may not be street hailed or secured in cab stands" (BACP 2018, 3).

- **Individual/single ride**: An individual/single ride is the most common service that TNCs offer. A customer requests a trip from an origin to a destination, and the vehicle does not stop along the way. Although multiple passengers may be in the vehicle, there is only one pickup.

- **Shared/pooled ride**: A shared/pooled ride is a type of ride-hail trip in which a customer grants permission for the vehicle to pick up other passengers during the course of the trip to typically receive a lower fare. Given the density of demand required for grouping trips, TNCs only offer shared rides in the largest markets; in Illinois, Uber Pool is only available in the Chicago area market.

- **Sales tax**: For brevity, this report uses "sales tax" as an umbrella term for what are technically sales, use, occupation, and general excise taxes.

CHAPTER 2: HISTORY

This chapter provides a brief overview of ride-hailing in the United States as well as a history of ride-hailing taxation.

HISTORY OF RIDE-HAILING

In June 2010, the UberCab app appeared in the iOS store for iPhone apps (Stone 2017). It allowed customers to book rides with licensed livery drivers in San Francisco. UberCab used GPS to locate the users' coordinates, matched them with licensed drivers it had recruited individually or in partnership with existing fleets, and took care of the transaction via stored credit card details. This service quickly spread to other cities, including Chicago in September 2011.

From 2010–2011, UberCab was marketed and priced as a premium service. Its slogan was "UberCab is everyone's private driver," and all trips were conducted in luxury town cars. But in 2012, the company added more affordable options. In April 2012, Uber launched a service called Uber Taxi in Chicago that let users book licensed street-hail taxis from the Uber app (June 2012). Four months later, Uber launched another affordable option called UberX, letting drivers use ordinary vehicles (especially Priuses), although the drivers still needed to be licensed chauffeurs.

At this time, Uber still operated within the regulatory framework governing taxi and livery service. Drivers were licensed, and the vehicles they drove were in possession of any requisite licenses or medallions. But 2012 also saw the arrival of competitors operating far outside the taxi and livery regulatory framework. Sidecar and Lyft, respectively, began operating in February and June 2012. They claimed to offer a new take on "ridesharing."

Before 2012, "ridesharing" meant something closer to "carpooling" than what is meant by "ridesharing" today. For example, Chan and Shaheen (2012) used the following definition in a scholarly review of ridesharing systems submitted for publication in 2011:

> *Ridesharing* is the grouping of travelers into common trips by car or van…Ridesharing differs from for-profit taxis and jitneys in its financial motivation. When a ridesharing payment is collected, it partially covers the driver's cost. It is not intended to result in a financial gain. Moreover, the driver has a common origin and/or destination with the passengers.

Lyft and Sidecar were not the first digital "ridesharing" services. Zimride, which was founded in 2007, facilitated ridesharing in the traditional sense of the term. It helped match people together into carpools, focusing on trips between college campuses (Rayle et al. 2016). As of 2012, Lyft was one of several services that Zimride offered.

Zimride and Sidecar claimed that their products merely extended the ridesharing concept to trips within a city. Since livery regulations did not govern ridesharing because it was merely an arrangement among amateur travelers, Lyft and Sidecar therefore claimed that these regulations should not apply to them. Key to this argument was that Lyft and Sidecar trips were fare free on paper. In practice, however, Lyft and Sidecar passengers could pay the driver a voluntary "tip" or

"donation," and the suggested amounts were sufficiently high to motivate drivers to make trips with no other purpose than to pick passengers up rather than to pick passengers up on trips they would have taken anyway. If a passenger did not pay the suggested tip, the driver would give the passenger a low rating and thus make it hard for the passenger to book further trips using the same apps. Hence, Zimride and Sidecar were implicitly providing livery service with unlicensed drivers who drove unlicensed personal vehicles.

In light of these developments, the California Public Utilities Commission (CPUC) issued a cease-and-desist order to Sidecar and Zimride (Lyft's parent company) in fall 2012. This was partially reversed in January 2013, when CPUC signed a consent decree with Zimride and Sidecar that allowed them to continue operating until regulations could be finalized.

Shortly thereafter, Uber began letting unlicensed drivers operate under the UberX banner. In September 2013, the CPUC finalized its rules and legalized ridesharing in California, taking full control over its regulation from cities and counties. These rules introduced the term "transportation network company" (TNC) for the first time. The California experience also validated a strategy of pushing for state preemption of local regulation (Collier, Dubal, and Carter 2018; BERK Consulting 2019). With this strategy, TNCs spread quickly, as shown in Figure 4.

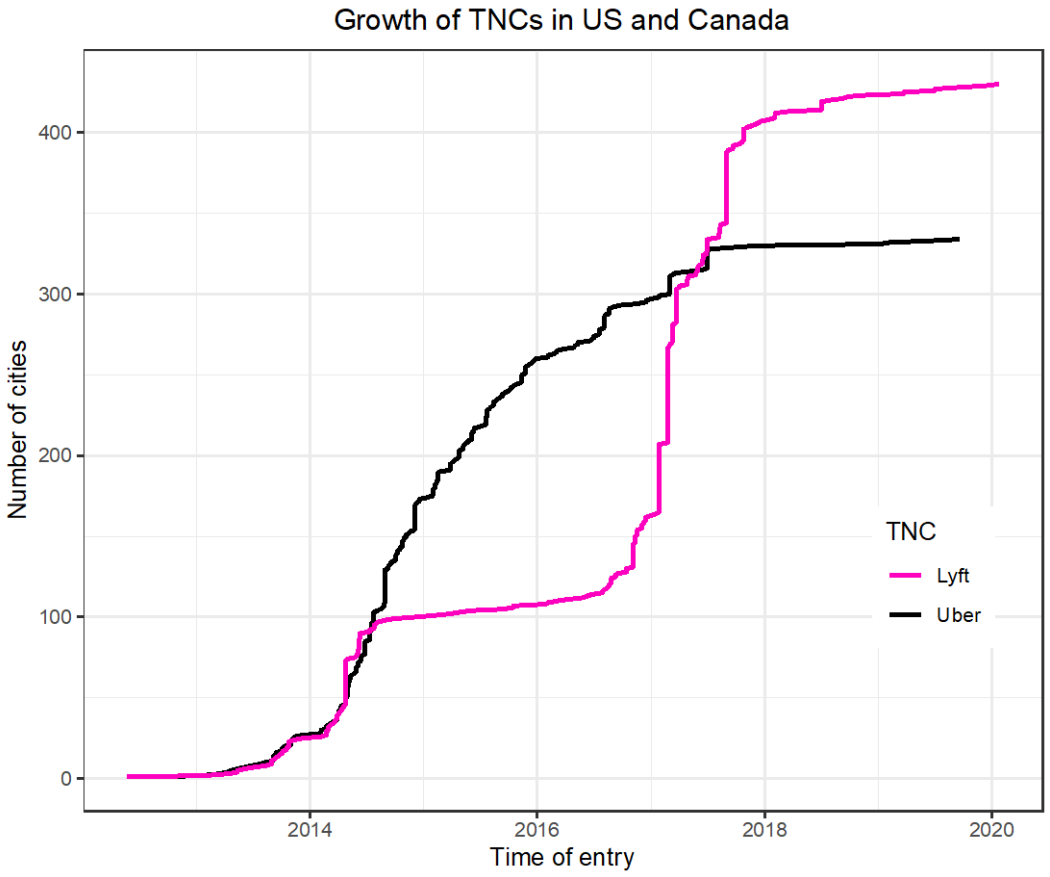


Figure 4. Plot. Growth of TNCs over time.

Source: Cairncross, Hall, and Palsson (2021)

Since TNCs have spread, the major development in their business model has been the proliferation of specialized ride-hail services. The most common has been cheaper “pooled” or “shared” ride-hail services (Shaheen and Cohen 2019), which began in August 2014, when Uber and Lyft launched their respective UberPool and Lyft Line (today “Lyft Shared Rides”) options. The menu of specialty services has since grown: Lyft Priority Pickup lets users pay a premium for shorter wait times, and Uber Pet allows riders to take pets along.

Specialized TNCs have sometimes served demand for specialized ride-hailing services. The TNC Via provides pooled ride-hail and shuttle service in select cities, including Chicago. Zum, Kango, and HopSkipDrive specialize in children’s transportation and offer an elevated driver certification process for safety. Wingz specializes in trips to and from airports. Several firms also offer traditional ridesharing service through an app by matching passengers and drivers who share common destinations. These include Carma, Waze Carpool, and, until recently, Scoop.

More recently, the COVID-19 crisis has dealt a heavy blow to ride-hail activity. Shared rides have ceased and are not being offered. Figure 5 illustrates the sharp fall and slow recovery of monthly rides in Chicago. The TNCs are also facing a driver shortage and have significantly increased fares this year (Evans 2021).

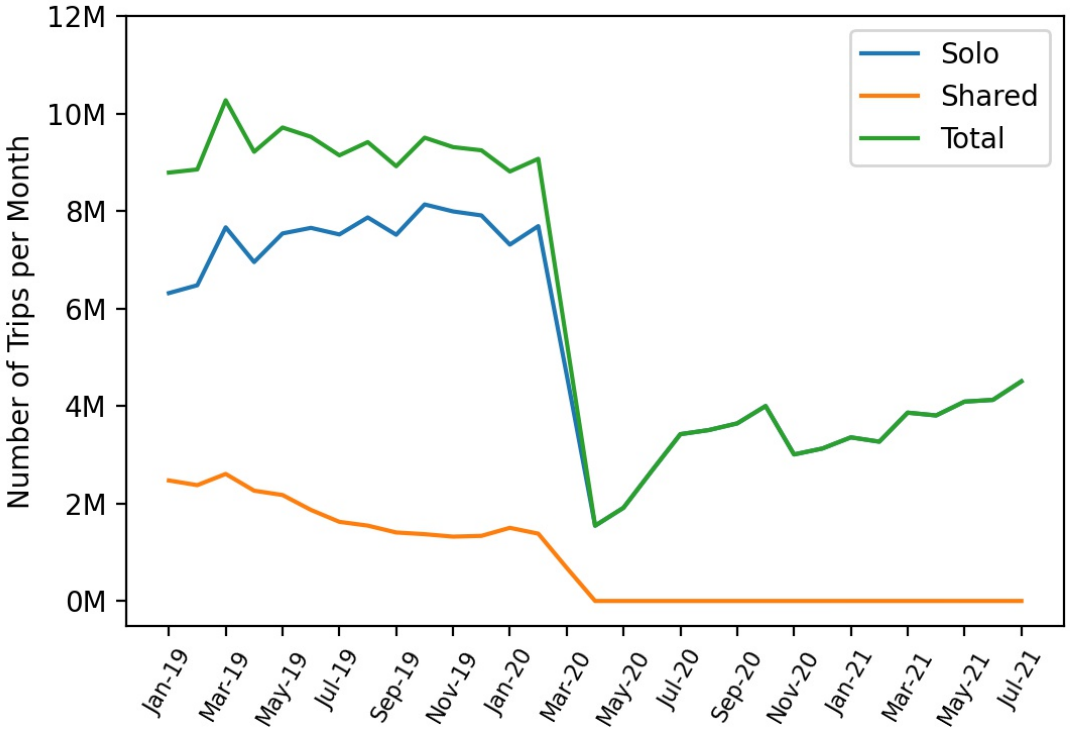


Figure 5. Plot. Monthly ride-hail trips in Chicago.

Source: Chicago Digital Portal (2021)

HISTORY OF RIDE-HAIL TAXES

Since nearly every state levies some type of sales tax, it invites the question: "Why has ride-hailing not automatically been subject to sales tax?" Schiller and Davis (2017, 3) responded that it was a "historical accident." "When most sales taxes were enacted in the 1930s, tax administrators had fewer resources to identify and monitor sales of services, and services comprised a relatively small part of consumer spending. Thus, in the interest of expediency, sales taxes often were structured to apply only to sales of tangible personal property." Hence, most states did not levy sales taxes on personal transportation services.

New York State has levied a 2.5% surcharge since 1999 on the fares of nearly all taxi and livery trips in the state to finance a workers compensation fund—called the Black Car Fund—for drivers who are independent contractors. It has also levied state and local taxes since 2009 on "black car service," which included ride-hailing (Noonan and Lawrence 2017). Taxing ride-hailing in New York City therefore required no special legislation. New York City, hence, was the first place where ride-hailing became subject to a sales tax when Uber entered this market in 2012. The New York legislature only passed a special tax for ride-hailing in 2018 when ride-hailing was legalized in the rest of the state.

The first wave of taxes that legislatures enacted specifically for ride-hailing were items in larger legislative packages which aimed to legalize and regulate ride-hailing for the first time. These legislatures reasoned that TNCs could contribute revenue or at least cover regulatory costs given the massive influx of new drivers since governments were changing laws to allow ride-hailing. It also addressed complaints from existing taxi and livery services, which were subject to many special taxes, fees, and regulatory requirements that TNCs had escaped.

The first government to impose a tax specific to ride-hailing was the State of California. When the California Public Utilities Commission (CPUC) issued its decision about ride-hailing in September 2013, it also imposed a regulatory fee equal to 0.33% of the gross revenues of any TNC operating in the state. All revenues were devoted to covering the costs of regulating ride-hailing until the fee was retired in 2019.

Shortly thereafter, in May 2014, the City of Chicago passed SO2014-1367, the first municipal ride-hail tax. This ordinance revised Chicago's Ground Transportation Tax that existed for several decades and is levied on all taxicab and livery trips in the city. The City of Chicago implemented this new tax in two parts. The first part was a $0.10 charge on every ride conducted in a vehicle that was not wheelchair accessible, which was hypothecated to the city's accessibility fund. The second part was a $0.20 per ride charge on all trips, which went into the city's general fund. This imposition touched off a long series of tax changes in Illinois, some of which appear in Figure 6's timeline.

Figure 6. Graphic. Timeline of ride-hail tax events in Illinois.

In the next several months, the City of Seattle (Ordinance 124524) and King County, Washington (Ordinance 2014-0187) (which contains Seattle) imposed per-ride taxes, too. In November 2014, Washington, DC passed the Vehicle-for-Hire Innovation Amendment Act of 2014, which legalized TNCs (called "digital dispatch services") and imposed a 1% tax on TNC gross receipts.

As of 2021, 33 states have passed legislation regarding taxation of ride-hailing services, and 17 local governments have imposed a tax on ride-hailing services. The City of Chicago levied the highest per-ride tax, in which they can tax a ride up to $8. New York City has the highest ad valorem rate, in which sales tax and a tax for workers' compensation comprises 11.25% of the fare. Also common are state laws that explicitly prohibit local governments from levying ride-hail taxes.

CHAPTER 3: LITERATURE REVIEW

LITERATURE ON RIDE-HAILING TAXES

Ride-hailing taxes have not yet garnered a robust literature because the literature does not contain any statistical studies on these taxes' effects. Several factors easily explain this lack of statistical analysis. First, these taxes are still new. Second, precise data is only available in Chicago and New York City. Third, most taxes are small and do not change very often, thus hampering the ability to detect changes. Finally, the COVID-19 crisis has distorted any time-series data that exists. Although Chicago, San Francisco, and Seattle all substantially altered their taxes at the start of 2020, the effects of these alterations are difficult to currently discern. For these reasons, the studies undertaken thus far have tended to be more oriented toward recommending and surveying policies than estimating discrete effects of existing policies.

Schiller and Davis (2017) listed various tax questions that the on-demand economy poses, including issues of sales, property, and income taxes for ride-hailing and services such as Airbnb. The authors advocated that ride-hailing activities should be subject to all ordinary sales and use taxes. They believed that it is more efficient for consumption taxes to raise a given amount of revenue with a broad base and lower rate than with a higher rate, which is "riddled with exemptions and carve-outs."

Kim and Puentes (2018), in a short brief from the Eno Center for Transportation, listed information for approximately 12 states and 7 cities that had adopted TNC taxes as of July 2018.

In contrast to Schiller and Davis's (2017) insistence that ride-hailing be taxed the same as any other form of consumer spending, many observers have advocated that ride-hail taxes ought to be seen not merely as a way to raise revenue but as a tool to encourage choices that achieve policy goals. Sam Adams, the former mayor of Portland, wrote in *Bloomberg*: "A tax is 'lazy' if it basically just collects and spends revenue, when it could do much more good for cities" (Adams 2018).

In line with this prescription, Slowik, Wappelhorst, and Lutsey (2019) advocated that electric vehicles receive sufficiently large tax exemptions or discounts so that choosing an electric vehicle becomes economical in the long-run for long-term drivers.

Similarly, Fuller et al. (2021) considered ride-hail taxes in 21 cities and showed how they could be designed to encourage more sustainable travel choices, emphasizing consumer choices about whether to choose a shared ride over a single one. Their report undertook a numerical exercise wherein the authors used Uber's online fare calculator to estimate how much taxes raise the percentage cost of various trips across the United States. Excluding New York City and Chicago, they found that taxes had amounted to approximately 4.3% of an average single ride and 5.55% of an average shared ride. The authors found this "disappointing" because the percentage amounts were not large enough to alter travel behavior much. Their methodologies also suggested that shared rides were actually *penalized* in spite of discounts available in some places (except in New York City and

Chicago). The penalties arose from the fact that shared trips involved multiple passengers who each paid the tax.

Brown (2021) considered the equity implications of different ways to design ride-hail taxes. He used data from 97 million trips in Chicago between 2018 and 2019 to reconstruct who would pay under the various tax designs. Although he did not have data on riders' incomes, he considered the incomes of the neighborhoods involved in each trip, using census tract origin and trip destination data. This study found that ad valorem taxes were more "progressive" (in the sense of not taxing rides in low-income neighborhoods as much) than per-ride taxes. Table 1, copied from Brown (2021), illustrates the facts behind this finding: rides originating in low-income neighborhoods were cheaper because they were shorter and more likely to be "shared rides." Hence, a flat per-ride tax accounts for a larger share of a low fare than a high one, so the fact of low-income neighborhoods having low fares makes a per-ride tax less progressive.

Please note that this pattern of fares by neighborhood seems not to be accidental to Chicago since the same pattern (low fares/short trips/high sharing) can be observed among Lyft riders in Los Angeles (Brown 2019). And even among transit riders, trips in low-income neighborhoods tend to be shorter (Brown 2018). It also turns out that a tax structure with a discount for shared rides is more progressive than one without, given the higher fraction of shared rides in low-income neighborhoods. Please see Table 1 for a breakdown of how trips vary by neighborhood income group for Chicago.

Table 1. Ride-hail Trip Characteristics by Neighborhood Income Group for Chicago

Neighborhood Income	Mean Fare	Mean Trip Miles	Mean % Peak trips	Mean % Pool Authorized	Mean % Actually Pooled	Mean Trips per Capita	Share of Total Trips
Low	$11.95	7.01	32.3%	41.6%	28.6%	13.1%	7%
Middle	$14.98	9.10	30.1%	31.0%	19%	16.6%	16%
High	$15.43	8.86	22.5%	16.1%	10.7%	116.4%	77%
Overall	$14.27	8.47	28.7%	29.9%	19.4%	39.2%	100%

Source: Table 5, page 8 of Brown (2021)

Lowe, Ashton, and Kasal (2021) compared taxes and fees on e-scooters and ride-hailing in a survey of the 50 largest US cities. They noted that ride-hail taxes were relatively rare, given governments' ability to levy them—a point discussed below in Chapter 6: State Legal Regimes. They also argued that even when states levied ride-hail taxes, they set them at low rates. These taxes therefore did not sufficiently encourage travel choices and did not sufficiently reimburse the local governments that TNC activity most affected.

The following practicing attorneys wrote several useful reports about legal questions involving ride-hail taxes in different places: Fay and Liu (2021) (California) and Noonan and Lawrence (2017) (New York). BERK Consulting (2019) also reviewed all aspects of TNC regulation as of 2019.

IMPACTS OF RIDE-HAILING

When the first wave of regulation around ride-hailing was still being cemented in the United States, there was little evidence of ride-hailing's impacts. But in the past five years, studies have appeared in the academic literature to identify the direction and amount that TNCs have affected various statistical measures. However, this evidence is still very limited.

The main source of uncertainty is that fine-grained data about pickups, drop-offs, routes, and prices are often closely guarded. For example, although the California Public Utility Commission stores data on all TNC trips in that state, the Commission guards this data to such a degree that the San Francisco County Transportation Authority had to conduct its own estimates of TNC trips in San Francisco by directly scraping data from the applications (Erhardt et al. 2019). Such data are only available in places such as Chicago and New York City that have open data rules for TNCs. Still, even in these cities, privacy requirements have limited the information provided. The exceptions are rare studies such as Anderson and Davis (2021), which used proprietary data that Uber gave the authors.

The most popular approach to estimating TNC impacts is the "entry protocol," the date when each TNC entered each "market" (i.e., a city, county, or metro). Hence, many studies use panel data (comparing time-series between one place and another) to test how the entry of Uber and/or Lyft changed some statistical measure (e.g., car crashes) relative to a time trend and relative to other cities. Still, there are two obstacles to using this protocol for practical decision-making. First, Uber and Lyft had entered nearly every major city in the United States by 2014. If Uber's effect on crashes in a city were much larger (or smaller) today than it was when Uber arrived, this protocol would not measure any difference. Second, the dependent variable is the either/or fact of *entry*, not measures of the degree of ride-hail activity, such as how many ride-hail vehicles are circulating.

Below are the study results of TNC impacts on congestion, transit ridership, and safety. Different studies reach different conclusions because their data and methodologies vary. After weighting the highest-quality studies, the research team has found that ride-hailing (i) increases travel times in congested places, (ii) reduces traffic fatalities, and (iii) reduces bus ridership. All three effects are mild. These are not the only arenas of city life on which ride-hailing bears. Business owners and bus drivers, for example, sometimes complain about drivers occupying curb space. But congestion, crashes, and transit ridership are the most widely studied topics in the literature because they produce statistics amenable to identification. The National Academies of Science Engineering and Medicine (2021) provides a more thorough literature review on the impacts of ride-hailing, especially upon public transit ridership.

Impacts: Congestion

The literature suggests that the presence of ride-hailing has a non-negligible effect on traffic speeds—particularly in places that are already highly congested.

Tarduno (2021) tested the effect that the presence of TNCs had on traffic by way of a "natural experiment" from Austin, Texas. Uber and Lyft ceased operations in Austin on May 9, 2016, to protest a new city ordinance requiring driver background checks. Using traffic sensor data and controlling for

various other effects (e.g., seasonality), Tarduno estimated that this sudden exit increased average traffic speeds approximately 2.3% between 7 a.m. and 7 p.m.

Erhardt et al. (2021) found that Uber and Lyft were the biggest contributors to congestion in San Francisco since 2016. They used a microscopic research design, which could potentially be reproduced in Illinois—particularly in the Chicago area. The researchers scraped data from the Uber and Lyft apps to learn when and where Uber and Lyft drivers were operating. They combined this data with speed data at the street level and compared data for 2010 (when the TNC activity was negligible) and 2016. To control for other factors that could increase congestion during this period, such as job or population growth, they used San Francisco's travel demand model, SF-CHAMP.

Balding et al. (2019) estimated the fraction of vehicle-miles traveled (VMT) in six major metropolitan areas due to Uber trips in 2018. They found that Uber and Lyft collectively accounted for 1%–3% of vehicle miles traveled (VMT) in these metropolitan areas, but more in the areas' core counties (13% in San Francisco). For Chicago, this study found that Uber and Lyft accounted for 2% of VMT in the metropolitan area and 3%–4% in Cook County. Of these miles traveled by Uber and Lyft vehicles in Cook County, about 55% were driven with a passenger in the vehicle and 45% were driven either waiting for a passenger or on the way to pick up a passenger.

The City of Chicago (2019) wrote a report focusing on congestion in Chicago that did not try to statistically identify the impact of ride-hailing. However, they highlighted suggestive facts which indicated that ride-hailing has contributed to congestion in downtown Chicago. During a typical evening rush, TNC vehicles completed 29,817 trips and occupied 26 lane-miles of road space in downtown Chicago.

Using the entry protocol for 44 metropolitan statistical areas in the United States between 2012 and 2016, Diao, Kong, and Zhao (2021) found that Uber or Lyft's entry into the market increased the national cumulative hours of delay by 4.5%, as measured by the National Performance Management Research Data Set. This effect is much larger than that observed in any other studies.

Impacts: Transit Ridership

Ride-hailing can theoretically either erode or boost transit ridership. It can erode transit ridership insofar as it acts as a substitute: some people will opt for a ride-hail trip who would have otherwise ridden transit. In contrast, ride-hailing could make it convenient to connect to transit trips. In our opinion, the balance of the literature suggests that the effect of ride-hailing on overall transit ridership is probably negative but not very large—at least at the large scales over which data are available. The negative effect seems to be most substantial for bus ridership.

Graehler, Mucci, and Erhardt (2019) examined the sharp declines in transit ridership that occurred between 2015 and 2018. (See also media coverage at Bliss [2019].) They used the "standard protocol" described above, but also controlled for measures known to affect transit ridership—such as fares, revenue miles of service, gas prices, and job growth. They found that "for each year after TNCs enter a market, heavy rail ridership can be expected to decrease by 1.3% and bus ridership can be expected

to decrease by 1.7%" (Graehler, Mucci, and Erhardt 2019, 15). However, please note that the metric for heavy rail was highly dependent on data from New York City.

Clewlow and Mishra (2017) presented the results of a household survey on travel behavior carried out in seven American metros from 2014–2016: Boston, Chicago, Los Angeles, New York, San Francisco/Bay Area, Seattle, and Washington, DC. They found that although "ride-hailing attracts Americans away from bus services (a 6% reduction) and light rail services (a 3% reduction),""ride-hailing serves as a complementary mode for commuter rail services (a 3% net increase in use)" (p. 3) This is one of several surveys (e.g., Feigon and Murphy [2018] and SUMC [2016] that found that ride-hailing *complements* rather than *competes* with transit) asking riders what they would have done.

Hall, Palsson, and Price (2018) is the most highly cited study of how ride-hailing affects transit ridership. Like other studies, they used a difference-in-differences design with a dataset containing dates when Uber entered each metropolitan statistical area. They also supplemented this entry data with a proxy for the intensity of market penetration: the relative number of Google searches for "Uber" in each metropolitan statistical area, which was correlated with the number of Uber drivers per capita. They found that Uber provided first-/last-mile service, which modestly increased transit ridership relative to trend for the typical transit agency (a 5% increase over two years).

Ward et al. (2021) found no statistically significant effect of TNC entry on transit ridership for US cities from 2011 to 2017.

Impacts: Safety

There are two opposing channels by which TNC service is argued to affect safety on the road network. First, by adding to VMT, the introduction of TNC service can increase opportunities for cars to crash. Second, TNC service may reduce driving under the influence of alcohol by giving people a convenient alternative for travel at night. The best evidence suggests the latter prevails.

Barrios, Hochberg, and Yi (2020) used the aforementioned "entry protocol" to document a 2% to 4% *increase* in the rate of fatal accidents. They critiqued earlier studies that found the opposite—such as Brazil and Kirk (2016) and Greenwood and Wattal (2017)—for various reasons, including that they had not properly accounted for a recent change in the definition of alcohol-related crashes that the National Highway Traffic Safety Administration used.

Lagos, Muñoz, and Zulehner (2019) found that the arrival of UberX in Santiago, Chile, significantly cut the number of fatal drunk-driving accidents, particularly at night and for women.

Anderson and Davis (2021) is the most recent and probably most accurate contribution to the literature on ride-hailing and safety outcomes. Rather than tease effects using the date TNCs entered markets, they used a dataset Uber provided. The dataset contained the number of Uber trips with origins in each census tract, by month, between January 1, 2012, and January 1, 2017. They estimated that Uber reduced alcohol-related traffic deaths by 6.1% and total traffic fatalities by 4% in 2019.

Rather than crashes, some scholars have looked at the apparent effects of TNCs on other safety-related outcomes. Weber (2019) found that the introduction of Uber reduced personal crime in

urban areas by approximately 5%. Nearly all of this reduction involved assaults. Zhou (2020) looked at self-reported survey data about alcohol consumption, aggregated at the level of metropolitan statistical areas. The study found that the entry of UberX to an area increased binge drinking but had no effect on driving under the influence or the number of drinking days. Results are especially strong for younger males. Burtch, Greenwood, and McCullough (2019) reached the same results using the same dataset.

CHAPTER 4: PROFILES

INTRODUCTION

This chapter describes various ride-hail taxes. While nearly every tax has some special distinction, they can be usefully classified along the following dimensions:

- **Tax design**:
    - **Ad valorem**: A tax levied as a percentage of some measure of fare or receipts. Of the state ad valorem taxes, most are sales taxes. More detail about the treatment of sales taxes is provided in Chapter 6: State Legal Regimes.
    - **Per-ride**: A tax levied as a fixed amount per ride—no matter the fare.
- **Wheelchair-accessible vehicle (WAV) treatment**: Any special treatment for WAV trips.
- **Shared ride discount**: Some jurisdictions have a lower tax rate for shared rides than for single rides. Three of these are cities in Illinois.

Table 2 uses these dimensions to fully describe nearly every jurisdiction's policy. But in addition to seeing these summaries, it is useful to exposit many cases individually to glean lessons from history and legal details. The research team has provided profiles of taxes in many places in the sections below. The states that only levy sales tax are not profiled in this chapter, although Chapter 6 considers them in more detail. Where the research team has been successful at finding it, they have listed revenue information, but it has not been possible to obtain actual revenues in most cases. In a private email communication with Connecticut authorities, the research team learned that revenue gained from the state's ride-hail tax raises is confidential, and the research team suspects this to be the case in more places. Connecticut's argument was that divulging revenue amounts would violate the companies' privacy because only a couple of companies pay this tax.

Alabama and South Carolina "Local Assessment Fees"

South Carolina (since June 2015) and Alabama (since January 2018) have levied almost identical taxes called "local assessment fees." (See SC Code §58-23-1700 and AL Code §32-7C-23.) These were introduced when each state legalized ride-hailing. The states collect 1% of the gross fare. Some of this revenue is devoted to the Public Service Commission tasked with regulating ride-hailing and the remainder is distributed to the municipalities and counties where the rides originated. If a trip originated *within* an incorporated municipality, then that municipality receives the local share. If a trip originated in a county's unincorporated area, then that county receives the assessment. TNCs registered with the state receive up-to-date GIS files of all municipal and county borders and then submit information about how many rides have origins in each place and the rides' fares. The laws also provide for auditing and require cities to inform the state quickly upon any annexation so that the state can update its GIS files.

Table 2. Classification of Ride-hail Taxes in the United States

Jurisdiction	Date tax began	Per ride	Ad valorem	Sales tax	Single	Shared	WAV
Alabama	2/2018		x		1.00%	same	
Annapolis, MD	5/2016	x			$0.25	same	
Baltimore, MD	8/2020	x			$0.25	same	
Berkeley, CA	1/2021	x			$0.50	$0.25	exempt
Brunswick, MD	7/2016	x			$0.25	same	
Burlington, VT	10/2016	x			$0.25	same	
California	9/2013	x					$0.10
Chicago, IL	7/2014	x			see below		
Connecticut	1/2018	x			$0.30	same	
Evanston, IL	1/2018	x			$0.45	$0.20	exempt
Frederick, MD	3/2016	x			$0.25	same	
Georgia	8/2020	x			$0.50	$0.25	
Hawaii	1/2018		x	x	4%	same	
Iowa	5/2018		x	x	6%	same	
King Co., WA	9/2014	x			$0.23	same	$0.10
Massachusetts	8/2016	x			$0.20		
Montgomery Co., MD	12/2015	x			$0.25	same	
Nevada	5/2015		x		3%	same	
New Jersey	10/2018	x			$0.50	$0.25	
New Orleans, LA	4/2015	x			$0.50	same	
New York (ex NYC)	6/2017		x		6.50%	same	
New York City	2012	x	x	x	see below		
Ocean City, MD	11/2015	x			$0.25	same	
Ohio	2020	x			5.75%	same	
Philadelphia, PA	6/2016		x		1.40%	same	
Portland, OR	6/2018	x			$0.50	same	
Prince George's Co., MD	7/2016	x			$0.25	same	
Rhode Island	7/2016		x		7%	same	
San Francisco, CA	1/2020		x		3.25%	1.50%	
Skokie, IL	8/2019	x			$0.35	$0.15	exempt
South Carolina	6/2015		x		1%	same	
South Dakota	10/2017		x	x	4.50%	same	
Seattle, WA	7/2014	x			$0.65	same	$0.10
Washington, DC	3/2015		x		6%	same	
Wyoming	3/2017		x	x	4%	same	

Berkeley, California "Transportation Network Company User Tax"

Berkeley is the most recent place to adopt a ride-hail tax. It passed a ballot measure to adopt the tax in November 2019. Since January 1, 2021, Berkeley has imposed a per-ride tax of $0.50 for single rides and $0.25 for shared rides. (Please see Berkeley Municipal Code, Ch. 7.71.) A unique feature of this tax is that it not only exempts WAV trips but also any trip "that is paid for or reimbursed by a state, or federal government healthcare payor." In the ballot measure informational packet, the Berkeley City Attorney's neutral analysis predicted annual revenues of $910,000 (City of Berkeley Measure GG 2020).

Chicago "Ground Transportation Tax" and Other Fees

Chicago has changed its taxes on ride-hailing several times since implementation. Effective since January 6, 2020, the current system of ride-hail taxation in Chicago is the most complex ride-hail tax structure of any surveyed. Its complexity stems from its mission to discourage mode-switching in congested places at congested times. (Please see Figure 7.) Chicago's system also has a reputation for being "the country's highest fee" (Freund 2020). However, because Chicago's taxes are per trip, a trip in another jurisdiction with an ad valorem tax design can have a higher tax if its fare is sufficiently high. Unfortunately, this study's researchers cannot accurately ascertain the extent to which the tax has effectively changed behavior because of its rollout just before the COVID-19 crisis.

Figure 7. Screenshot. A tweet from Business Affairs and Consumer Protection with the #ChooseShared hashtag that Chicago launched alongside the tax changes in January 2020.

The ride-hailing tax structure in Chicago exists in three different sections of the municipal code and can be difficult to understand. The first part is the Ground Transportation Tax (GTT) (Municipal Code of Chicago §3-46-035), which long predates ride-hailing. The GTT treatment of ride-hail (transportation network provider) trips are as follows:

- WAV rides always pay $0.53 per ride.
- Single rides other than WAV rides are charged:
  - a base rate of $1.13 per ride.
  - an additional $1.75 when the Downtown Zone (see below) surcharge is in effect.
  - an additional $5 for trips beginning or ending at a Special Zone (see below).
- Shared rides other than WAV rides are charged:
  - a base rate of $0.53 per ride.
  - an additional $0.60 when the Downtown Zone surcharge is in effect.
  - an additional $5 for trips beginning or ending at a Special Zone.

Special Zones are geofences around O'Hare International Airport, Midway International Airport, McCormick Place Convention Center, and Navy Pier. The *Downtown Zone* surcharge applies to trips that begin or end within a zone of downtown Chicago on weekdays between 6 a.m. and 10 p.m. Figure 8 provides a map of the Downtown Zone.

Figure 8. Map. Chicago downtown zone.

Source: BACP (n.d.)

The City of Chicago also levies a total of $0.12 in additional per-ride fees on ride-hail trips that are not wheelchair accessible: $0.10 per ride for an "accessibility fund" (Municipal Code of Chicago §9-115-140[e]) and a $0.02 "license fee" to defray the costs of regulation (Municipal Code of Chicago §9-115-040[e]). The accessibility fund (created in Municipal Code of Chicago §9-112-010) provides "reimbursement for costs associated with converting or purchasing a vehicle to be used as a taxicab or transportation network vehicle that is fully wheelchair accessible by ramp or lift, and costs to a licensee for the provision of wheelchair-accessible vehicle taxi rides to customers where the cost to provide the ride exceeds the cost charged to the customer." The structure of charges is shown in Tables 3 and 4.

Table 3. Chicago Ground Transportation Tax, Single TNC Rides

Single Trips	Without Downtown Zone Surcharge	With Downtown Zone Surcharge
Regular	$1.25	$3.00
Begins/ends in Special Zone	$6.25	$8.00
WAV trip	$0.53	$0.53

Table 4. Chicago Ground Transportation Tax, Shared TNC Rides

Shared Trips	Without Downtown Zone Surcharge	With Downtown Zone Surcharge
Regular	$0.65	$1.25
Begins/ends in Special Zone	$5.65	$6.25
WAV trip	$0.53	$0.53

Like New York City, Chicago provides a discount for shared rides and levies higher fees in certain places, but its discount is not as large and applies both within the Downtown Zone and outside of it. Moreover, Chicago's is the only system in the United States to change any part of its ride-hail taxes by day and by time-of-day.

Chicago reports data on GTT revenue from all sources—including traditional taxis. Revenues from ride-hail alone are not available. GTT revenues from 2008–2020 are shown in Table 5. Before implementing ride-hail taxes in 2014, GTT revenue was consistently around $9 million/year, but it precipitously rose once this tax was implemented. It is straightforward to deduce that nearly all the current-day remittance is from ride-hailing trips. Currently, all revenues are devoted to the general fund, but during 2018 and 2019 part of the revenues went toward funding the Chicago Transit Authority.

Please note that revenues declined in 2020, despite the Downtown Zone surcharge and the aforementioned changes. The Lightfoot administration had anticipated approximately $40 million in additional revenue from the 2020 changes and had forecasted $190.5 million from the GTT for 2020 (City of Chicago Budget Recommendations 2020). However, its revenue did not meet expectations because of the COVID-19 crisis. The City expects revenues to recover by 2023 (City of Chicago 2021 Budget Forecast).

Table 5. Chicago Ground Transportation Tax Revenues

Year	$ millions
2008	8.6
2009	8.8
2010	8.6
2011	9.1
2012	8.9
2013	9.1
2014	10.4
2015	17.1
2016	59.6
2017	85.4
2018	119.4
2019	138.81
2020	94.4

Source: City of Chicago Annual Comprehensive Financial Reports

Connecticut "Transportation Network Company Fee"

Connecticut began collecting its $0.25 per-ride tax in January 2018 with revenues dedicated to general funds. (Please see CT Gen Stat §13b-121.) In July 2019, they increased this tax to $0.30 per ride as part of a package of tax increases aimed at closing a large budget deficit (Keating 2019). They have not distinguished between shared and single rides and will not divulge revenues.

Evanston, Illinois "Transportation Network Company Tax"

In October 2017, Evanston, Illinois, passed Ordinance 119-O-117 creating the Transportation Network Company Tax, which went into effect January 1, 2018. (Please see Evanston City Code §3-2-19.) This tax originally consisted of a flat $0.20 per-ride charge on all trips booked via TNC.

In November 2018, Evanston passed Ordinance 133-O-18 to change this tax. They imposed a $0.45 tax on single rides, a $0.20 tax on shared rides, and an exemption on WAV rides from the tax beginning January 1, 2019. Like Chicago's tax system, Evanston's tax applies to rides that either begin or end in Evanston—rather than simply begin there.

Table 6. Evanston Transportation Network Company Tax Revenues

Year	$ thousands
2018	492
2019	1000
2020 (budgeted)	680

Source: City of Evanston (n.d.)

Revenues go toward Evanston's general fund. At passage, the tax was expected to raise $100,000 per year, and revenues were intended to help fill the city's budget deficit (Karisch 2017). As shown in Table 6, actual revenues have been much larger than $100,000 per year. For comparison, the TNC tax raised about as much as the city's motor fuel tax in 2019.

Georgia "Transportation Services Tax"

Taxi and livery trips in Georgia were subject to state and local sales taxes before ride-hailing was fully legalized. These taxes could add up to 8.9% in the City of Atlanta: 4% state, 3% county, 1.5% Atlanta, and a 0.4% special-purpose local option sales tax for transportation projects.

In 2018, the State of Georgia's Department of Revenue ruled that ride-hail trips were subject to state sales tax and demanded Uber pay $22 million in unpaid state taxes, but Uber contested the decision (Wickert 2018). Uber's argument was that it did not actually provide transportation services, and that the law thus required its *drivers* to charge and remit the sales tax. Because the Department of Revenue could not plausibly enforce this tax, victory in the case would keep Uber rides tax free. In January 2020, Georgia's governor signed HB 276, which clarified that "marketplace facilitators" were liable for all state and local sales and use taxes. Consequently, TNCs would be responsible for remitting the sales taxes (Wickert 2020). The consequent tax rate on ride-hail trips was considered too burdensome, so within a few months, Georgia changed the law to exempt all for-hire transportation from sales taxes and moved Georgia to a per-ride tax. (See GA Code §48-13-8 for the current system.)

The tax is the same as New Jersey's and Berkeley's tax: $0.50 for single rides and $0.25 for shared rides. (Please see details in the policy bulletin [Georgia Department of Revenue 2020]). Revenues are deposited to a special state fund, which will pay for transit infrastructure. There are no definite revenue figures available yet, but a legislative analyst from the Georgia State Senate said in a private email that $7.6 million in revenue have been appropriated for fiscal year 2022. Of this, $6 million is appropriated to MARTA (Metropolitan Atlanta Rapid Transit Authority) and $1.6 million to other transit agencies.

An interesting feature of Georgia's tax is that, even though revenue is not automatically shared with jurisdictions where the trips take place, the law requires TNCs to report how many trips take place in each county to several agencies:

> Each for-hire ground transport service provider shall submit a quarterly report that identifies the number of for-hire ground transport trips provided by county of origin and destination to the department, the Atlanta-region Transit Link "ATL" Authority, and the Department of Transportation. All such reports shall be treated as confidential and shall not be subject to Article 4 of Chapter 18 of Title 50, relating to open records.
>
> —GA Code §48-13-143

Please note that the records are confidential.

Another useful feature of the law is that the tax is adjusted for inflation—the only per-ride tax to do so—per GA Code 48-13-141(b).

Maryland "Transportation Network Company Assessments"

When Maryland passed SB 688 to legalize and regulate ride-hailing in May 2015, it also inaugurated a distinctive tax regime. In general, the law allows cities and counties in Maryland to levy a tax of up to $0.25 per ride for rides originating within their borders. (See Md. Code Ann., Pub. Util. § 10-406 for the law text and Comptroller of Maryland [2015] for details and clarification.) Unlike other local taxes, however, TNCs pay the state rather than remit revenues to local governments imposing the taxes. The state then reimburses participating local governments and requires them to spend the money on transportation.

A caveat is that jurisdictions that had imposed per-ride taxes on for-hire trips *of any kind* (including taxis) before the state law was enacted in 2015 are exempt from these requirements. This was a means of letting Baltimore impose a higher fee. Thus far, seven local governments have levied a local assessment: Annapolis, Baltimore, Brunswick, Fredrick, Montgomery County, Ocean City, and Prince George's County. All have chosen a $0.25 assessment rate. Please note that despite being exempt from the tax limit, Baltimore only charges $0.25. Baltimore did not impose this tax until August 1, 2020, which led to an unusual situation: a bill to levy the tax in Baltimore had been floated years earlier. In anticipation of this tax, Uber began to charge riders an extra $0.25. After the proposal languished, Uber deposited the payments back into riders' Uber Cash accounts (Campbell 2020).

Table 7 provides revenues for Prince George's County.

Table 7. Prince George's County TNC Assessment Revenues

Year	$ million
2017	1.158
2018	2.7
2019	3.4
2020	2.8
2021	1.6

Source: Prince George's County (n.d.)

Montgomery County responded to the assessment permission by creating a "Transportation Services Improvement Fund" (Hamlin 2018). The research team had only been able to obtain revenues for 2017 and 2018. This revenue was approximately $1.3 million for each year and has been used to provide wheelchair accessible taxis, dial-a-ride, and mass transit subsidies for low-income and senior people. The research team was only able to obtain data from these two counties.

Massachusetts

In August 2016, Massachusetts levied a $0.20 per-ride tax as part of its ride-hail legalization with no distinction between single and shared rides (Ingram 2016). It was the first state to allocate a substantial amount of money from the ride-hail tax in a highly transparent way. It has allocated its revenue as follows:

- Twenty-five percent is allocated to the municipalities where the ride originates. Municipalities must spend the money on transportation and submit an annual report to the State Department of Public Utilities' TNC Division explaining how they have spent the money.

- Fifty percent is allocated to Massachusetts' general transportation fund, the Commonwealth Transportation Fund.

- Twenty-five percent is allocated to the Massachusetts Development Finance Agency (MassDevelopment) "to provide financial assistance to small businesses operating in the taxicab, livery or hackney industries to encourage the adoption of new technologies and advanced service, safety and operational capabilities and support workforce development." This allocation was intended to ameliorate the impacts of legalizing TNCs on established taxi and livery firms and drivers. In 2020, this money funded a statewide program called the Taxi & Livery Business Support Grant whereby small taxi/livery firms can apply for up to $50,000 to spend on equipment or a variety of other uses, while industry associations can apply for up to $1 million to spend on marketing materials or technology systems (MassDevelopment 2020).

The share to traditional taxi and livery operators has been the only one of its kind that the research team could find. However, this provision will sunset in 2022 and thereafter revenues will be split equally between municipalities and the Commonwealth Transportation Fund.

Table 8 lists revenues and how they were allocated, as reported by the Massachusetts Department of Public Utilities. Figure 9 shows a plot of revenues against town population using data from 2018; revenue scales fairly linearly with town size.

Table 3. Massachusetts Revenues

Fiscal Year	$ million
2017	$64.8
2018	$81.3
2019	$91.1

Source: Massachusetts Department of Public Utilities (2019, 2020)

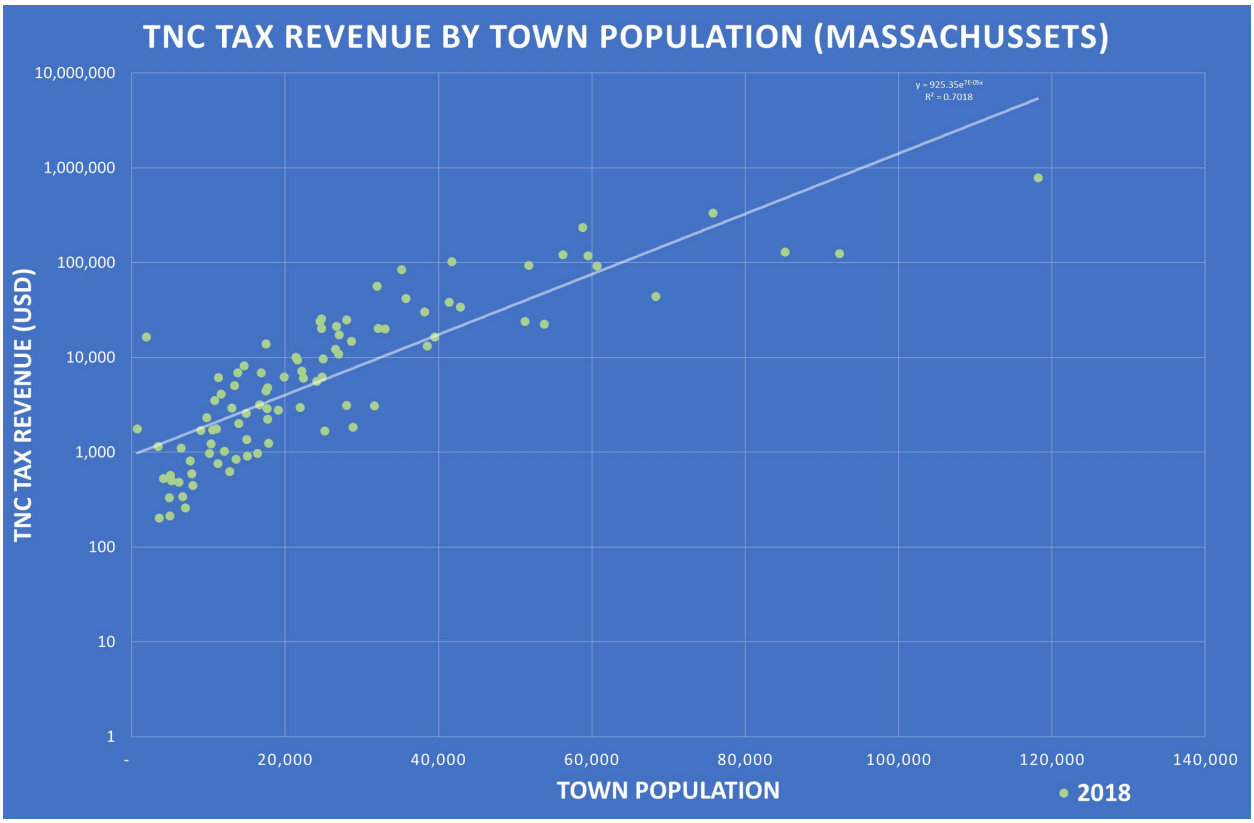


Figure 9. Plot. 2018 Massachusetts revenues against town population.

New York City

New York City is treated separately from the rest of New York. Ride-hail trips (called TNC trips) that originate in New York City are subject to all state and local sales taxes. However, if they begin outside the city and terminate within the city, they are subject only to the State's 4% tax (Noonan and Lawrence 2017). State and local sales taxes in New York City add up to 8.75%. Together with the 2.5% Black Car Fund charge for workers' compensation applied across New York State, the total amount is 11.25%—the highest ad valorem tax applied to ride-hailing anywhere in the United States.

New York City also began collecting a "Congestion Surcharge," a per-ride tax applicable to certain trips on January 1, 2019. (Please see the explanation in New York Department of Taxation and Finance [2018].) All taxi, livery, and ride-hail trips that begin and end in New York State and begin or end in the "Congestion Zone" in Manhattan (Please see the map in Figure 10) are subject to the Congestion Surcharge. For ride-hail trips, the charge is $2.75 for solo trips but only $0.75 for shared trips. This is the largest difference in treatment between solo and shared trips among any ride-hail tax regime. The difference is somewhat less dramatic considering that both solo and shared riders must pay the ad valorem taxes: the Congestion Surcharge is *on top of* sales tax, but does not figure into the basis for sales tax.

All revenue from the surcharge goes to the Metropolitan Transportation Authority (MTA). In July 2018, the MTA forecasted that this surcharge would raise "$365 million in 2019 and $385 million

annually thereafter" (Metropolitan Transportation Authority 2018, II–37). (It is unknown how much ride-hail trips contribute to this revenue.) However, the surcharge yielded $336 million in 2019 due to the pandemic and only $235 million in 2020 (Metropolitan Transportation Authority 2021). The revenue from the first several years has been dedicated to the NYC Subway Action Plan, a maintenance campaign to improve subway service.

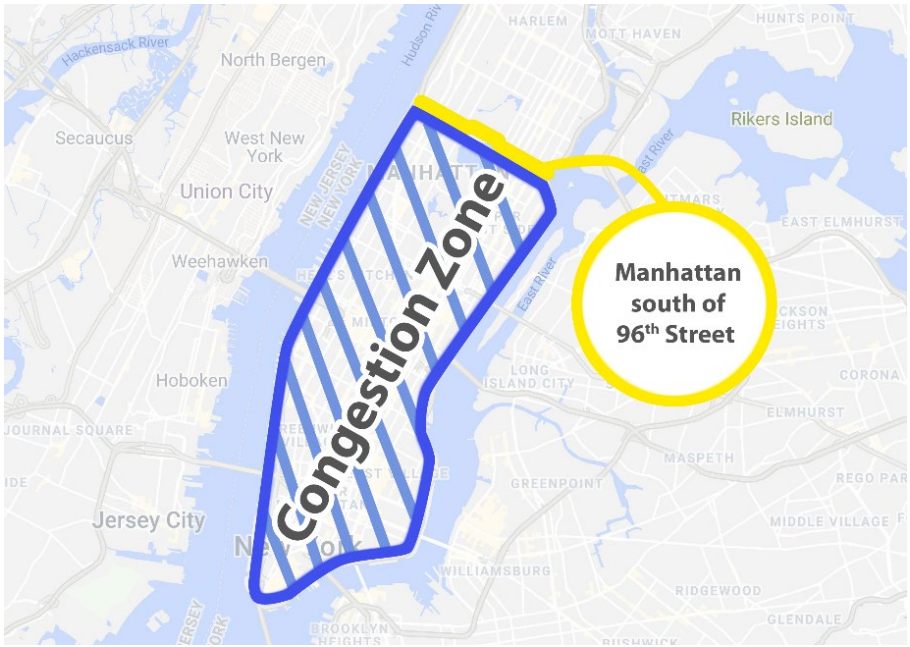


Figure 10. Map. New York City congestion zone.

Source: NYC Taxi and Limousine Commission (n.d.)

New York State "Special Assessment"

In June 2017, New York State legalized ride-hailing (which had already been operating in New York City for five years) and began to levy a "special assessment" of 4% on the gross fare of all ride-hail trips originating inside of New York State, but outside of New York City, and terminating anywhere in New York State (New York Department of Taxation and Finance 2017). (See NY Tax Law §1291-1298.) Revenue goes to the general fund. The assessment was passed as part of a bill to legalize ride-hailing.

Nevada "Transportation Connection Tax"

Although its state sales tax is 4.6%, Nevada has levied a lower 3% Transportation Connection Tax on the gross fare of all ride-hail, taxi, and other for-hire trips since 2015. (See NV Rev Stat §372B.) The first $5 million in revenue each biennium (that is, every other year) goes into the State Highway Fund. The remaining revenue goes into the General Fund. Table 9 shows the revenues collected from this tax and the funds into which they flow.

Table 9. Nevada Transportation Connection Tax Revenues

Year	Total	General Fund ($ million)	Highway Fund ($ million)
2016	16.9	11.9	5
2017	23.1	23.1	0
2018	26.7	21.7	5
2019	30.2	30.2	0
2020	24.9	19.9	5

New Jersey "Prearranged Ride Surcharge"

Effective October 2018, New Jersey began imposing the "Prearranged Ride Surcharge" of $0.50 on single rides and $0.25 on shared rides (New Jersey Public Law 2018, Ch. 47). It is notable for being the first tax to distinguish between single and shared rides. New Jersey adopted this tax as part of a broad package of tax increases imposed to deal with a budget crisis. Table 10 lists revenues collected thus far.

Table 10. New Jersey Revenues

Year	$ millions
2019	$22.6
2020	$32.4
2021 (unaudited/preliminary)	$21.2

Philadelphia, Pennsylvania

When the Pennsylvania senate passed SB 984 to regulate ride-hailing in June 2016 (Alexandersen 2019), it prohibited any city except Philadelphia (PA Consolidated Statues §2603) from imposing a ride-hailing tax and fixed Philadelphia's ride-hailing tax into state law (PA Consolidated Statues §57A22*)*. It levied a 1.4% gross receipts tax on all rides originating in Philadelphia. It also allocated two-thirds of this revenue to local schools and one-third of this revenue to the Philadelphia Parking Authority, which regulates for-hire vehicles including TNCs. In 2018, the Philadelphia Parking Authority requested to modify this tax to a $0.50 per-ride charge (Burdo 2018), but Uber and Lyft did not want the tax changed and nothing came of their effort. The research team was not able to determine how much tax revenue was raised.

San Francisco, California "Traffic Congestion Mitigation Tax"

The Traffic Congestion Mitigation Tax in San Francisco was the first ride-hail tax to be passed as a ballot measure. (See San Francisco Business and Tax Code, §3204). In 2018, San Francisco supervisor Aaron Peskin proposed to add a measure to the November 2019 ballot (in California, state law requires that some local tax increases be enacted via ballot measure) levying a gross receipts tax on ride-hailing revenues in San Francisco (Swan 2018). But after negotiations with Lyft and Uber, Peskin withdrew the measure and launched a new one for a tax only on "net fares" (revenues exclusive of

other taxes, tolls, and tips) (Said 2018). Uber and Lyft actually endorsed the compromise measure, and in November 2019, it passed with a two-thirds majority, as required to become law (Swan 2019).

The result is the Traffic Congestion Mitigation Tax (San Francisco County Transportation Authority 2020), which came into effect January 1, 2020. It is an ad valorem tax, with a rate of 3.25% for single rides and 1.5% for shared rides on all TNC trips originating in San Francisco. This tax has many distinctions that set it apart from taxes elsewhere. First, single rides can receive the lower 1.5% rate until 2025 if they occur in zero-emission vehicles. Second, if a firm begins to offer for-hire service using autonomous vehicles, then those rides will be subject to the tax.

Third, it has a very detailed revenue allocation permanently written into law. The revenue is to be deposited in a Traffic Congestion Mitigation Fund; 50% shall go to the San Francisco Municipal Transportation Agency for transit infrastructure and 50% shall go to the San Francisco County Transportation Authority for pedestrian and cycling infrastructure or roadworks such as traffic calming to make walking and cycling safer. Given the fund's existence, which can carry money from year to year, not all revenues must be spent in every year. This tax was originally projected to yield $30–35 million per year, however, it only raised $15 million in fiscal year 2020/2021 (San Francisco County Transportation Authority 2020).

Finally, it includes a complicated system for dealing with trips that originate but do not terminate in San Francisco:

> The Net Rider Fare attributable to the City for each ride shall be the Net Rider Fare for that ride multiplied by a fraction, the numerator of which is the distance traveled within the City for that ride and the denominator of which is the total distance traveled for that ride. In lieu of calculating the distance traveled within the City for each ride a portion of which occurs outside the City, a person subject to tax under this Article 32 may presume that the Net Rider Fare for each such ride is 50% attributable to the City; provided, however, that such presumption must be applied to all rides for which a portion occurs outside the City during the reporting period. If it is impracticable or unreasonable to attribute a Net Rider Fare to the City based on distance traveled, the Net Rider Fare attributable to the City shall be determined on the basis of all relevant facts and circumstances of the particular case, in accordance with any rulings or regulations issued or promulgated by the Tax Collector.
>
> —S.F. Business and Tax Code, Article 32 "Traffic Congestion Mitigation Tax."

In other words, the payer is supposed to figure what fraction of the distance traveled on each ride occurred within San Francisco's borders—or else pay the appropriate rate on 50% of the fare. This is complex, and it is doubtful that it could be enforced because the city does not have records of the exact paths of every trip. In the Uber app, the explanation of the SF City Tax line item on a ride receipt states, "The above tax rates are reduced by 50% for trips originating in San Francisco and terminating outside of San Francisco."

Seattle and King County, Washington

Seattle is inside of King County, Washington, making the pair the only case of overlapping local jurisdictions with ride-hail taxes. Both adopted their fees directly after Chicago, in the summer of

2014. Seattle's tax resembles Chicago's since it layers on three per-ride taxes: one "tax" for general revenue (Seattle Municipal Code Ch. 5.39), a fee to fund regulation, and a fee for non-WAV trips (Ibid. §6.310.150).

Originally, the regulatory fee was $0.14 with no tax for general revenue. In December 2019, the City lowered the regulatory fee to $0.08 and implemented a revenue tax of $0.57 (Groover 2019). The new tax was expected to raise about $25 million per year. This revenue has been dedicated to the mayor's "Fare Share Plan," which includes funding for affordable housing near transit, completion of a streetcar line, and a nonprofit Driver Resolution Center providing services to TNC drivers (City of Seattle 2020).

One interesting feature of Seattle's tax is that it contains a threshold of 1,000,000 trips per quarter (three months). TNCs with fewer trips than the threshold do not have to pay the tax. But during the COVID-19 pandemic, because of concern that even the large TNCs would not have 200,000 trips per quarter, the City Council reduced the threshold to 200,000 (Ordinance 126231).

King County, which contains Seattle, imposes a $0.23 per-ride regulatory fee on trips originating in the county *outside* Seattle.

Washington, DC

When Washington, DC legalized ride-hailing in November 2014 (via the "Vehicle-for-Hire Innovation Amendment Act"), it implemented a 1% gross receipts tax along the same lines as California's—with revenues devoted to regulation. Later, in 2018, the City Council raised the rate to 6% to raise money for the Washington Metropolitan Area Transit Authority (Siddiqui 2018b). This tax increase was originally slated to raise only $18 million per year (Siddiqui 2018a), but revenues were substantially more. Please see Table 11 for revenues from the fiscal years after the tax increase. (Revenue from taxes on ride-hail trips under the 1% tax does not seem to be broken out in budget documents.) Revenues are to be allocated 17% to the District's For-Hire Vehicle Department for regulation and 83% to its general fund.

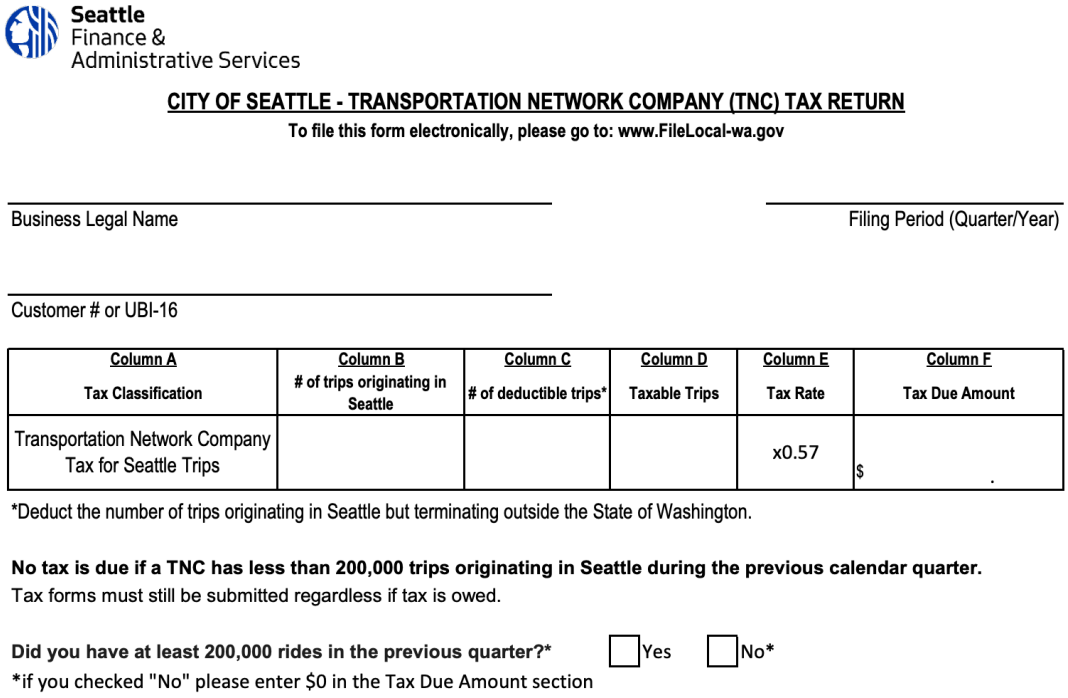
Table 11. Washington, DC 6% Gross Receipts Tax Revenues

Fiscal Year	$ million
2019	31.5
2020	20.0
2021	8.6

Source: Office of the Chief Financial Officer (n.d.)
(See lines for "Private Vehicle For Hire-Register as DDS")

CHAPTER 5: ADMINISTRATION

This chapter considers the administrative aspects of ride-hail taxes—how a tax, once designed, is implemented. Remittance is handled similarly almost everywhere that ride-hailing is not subject to ordinary sales tax. The government that levies the tax requires each TNC to turn in a quarterly report with the amount owed (see Figure 11, for example) and levies penalties if the money is not remitted in time.



Seattle
Finance &
Administrative Services

CITY OF SEATTLE - TRANSPORTATION NETWORK COMPANY (TNC) TAX RETURN

To file this form electronically, please go to: www.FileLocal-wa.gov

Business Legal Name

Filing Period (Quarter/Year)

Customer # or UBI-16

Column A Tax Classification	Column B # of trips originating in Seattle	Column C # of deductible trips*	Column D Taxable Trips	Column E Tax Rate	Column F Tax Due Amount
Transportation Network Company Tax for Seattle Trips				x0.57	$.

*Deduct the number of trips originating in Seattle but terminating outside the State of Washington.

No tax is due if a TNC has less than 200,000 trips originating in Seattle during the previous calendar quarter.
Tax forms must still be submitted regardless if tax is owed.

Did you have at least 200,000 rides in the previous quarter?* ☐ Yes ☐ No*
*if you checked "No" please enter $0 in the Tax Due Amount section

Figure 11. Screenshot. Seattle TNC tax return.

Auditing is an important and relatively under-discussed issue in ride-hailing taxation.

In at least two cases, Uber has reportedly made mistakes in calculating local ride-hail taxes. In Philadelphia, Uber reported to the Philadelphia Parking Authority in May 2018 that it had failed to collect taxes in the amount of $240,000 (Laughlin 2018b). First, Uber had exempted WAV trips, which are exempt elsewhere but not in Philadelphia. Second, Uber had failed to count trips on the last day of each quarter. Finally, a geocoding error in Uber's city boundary file excluded parts of the Delaware River waterfront. In this case, Uber reported the underpayment itself, after discovering it in an internal audit. The event prompted calls from the Philadelphia Parking Authority to replace the city's gross receipts tax with a per-ride tax, because the latter would produce data on how many rides took place in Philadelphia—something regulators did not know (Laughlin 2018a).

The other high-profile case did not involve a tax underpayment but rather who wound up paying the tax (Scheiber 2017). In its contract with drivers, Uber had agreed to take only 25% of the fare in New York. But for rides in New York City, Uber was taking 25% of the amount *inclusive of sales tax*, which

essentially meant that drivers paid some of the sales tax. According to Uber this was a mistake, and the firm wound up settling after the New York Taxi Workers Alliance filed a lawsuit.

Of the two cases, the first case is the most relevant to considerations of tax auditing, because the issue was insufficient payment rather than violation of the agreement with drivers. The fundamental problem that local governments face is that they cannot easily determine whether TNCs have paid sufficient taxes. In the research team's interviews with officials in Chicago, Evanston, and San Francisco, all three agreed that auditing the TNCs' tax reporting would be very difficult. The position of a small city such as Evanston is particularly weak in this regard.

CHAPTER 6: STATE LEGAL REGIMES

After profiling ride-hail taxes levied thus far, the research team can consider the kinds of laws implementing different kinds of taxes. This chapter introduces a "regime" classification system to organize the laws of different states. Different classification systems are possible, but the research team chose to classify laws among *states* rather than cities in the following regimes to provide guidance for state legislators:

I. Hands-off
II. Tax free
III. State taxes for state use
    A. Sales tax (or equivalent)
    B. Excise tax
IV. Revenue sharing
V. Opt-in

Figure 12 shows which states fall into each regime. In Figure 12 and below, the research team only counts those states that actually have local ride-hail taxes or that have prohibited them. Below, the research team provides cases of how states operate in each regime and discusses each regime's possible advantages and disadvantages.

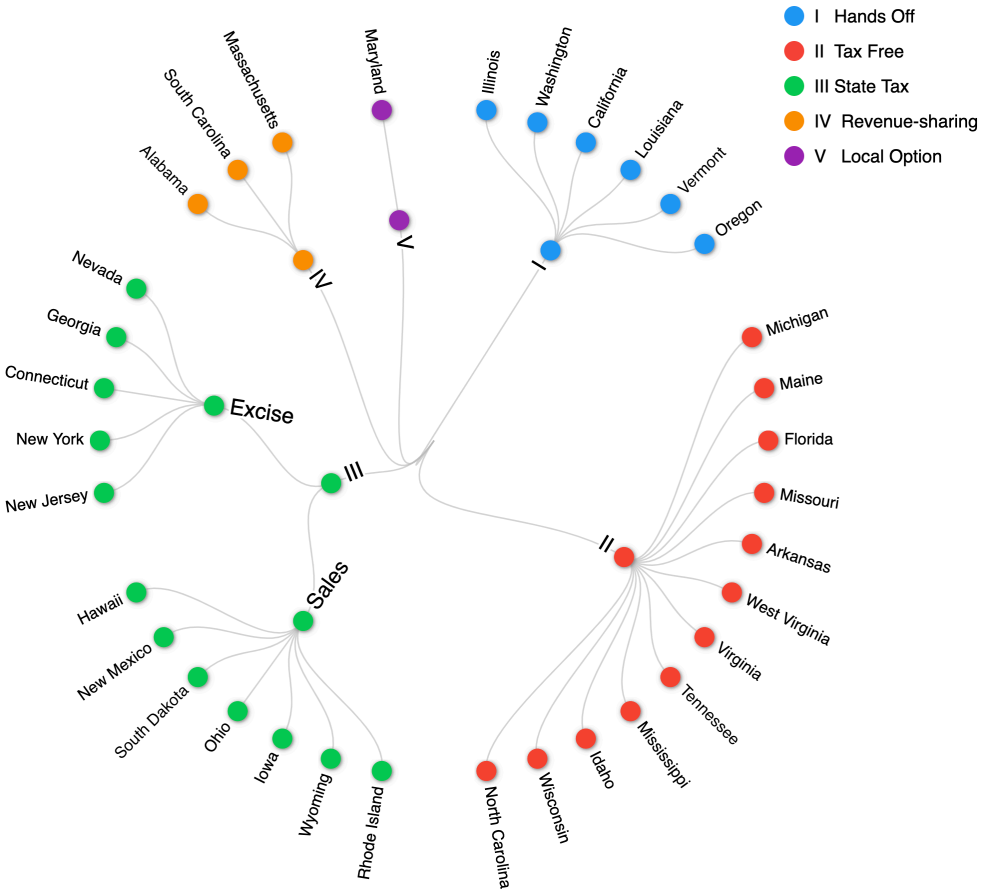


Figure 12. Graphic. Classification of states into regimes.

REGIME I: HANDS-OFF

The "hands-off" regime is one in which ride-hailing taxation is a local matter: local governments may tax ride-hailing, but state laws do not sharply circumscribe tax rates or designs. California, Illinois, Oregon, Vermont, and Washington fall into this hands-off regime. Please note that California prohibits cities from levying taxes on TNCs or drivers, but not on ride-hailing customers.

A clear benefit to a hands-off regime is that it permits local governments to be creative, as with San Francisco's tax. But there are inevitably downsides to letting each local government decide things for themselves. One issue that may arise are issues of jurisdictional boundaries and double taxation. King County and the City of Seattle, which falls within King County, have different taxes, and the two governments have arranged for the taxes to not stack up. But it is easy to see how ambiguous situations can arise when every local government moves unilaterally.

Chicago, Evanston, and Skokie all have taxes that apply to both pickups and drop-offs. Hence, a trip that begins in Evanston and ends in Skokie (or vice versa) could ostensibly be subject to taxes in two places. Chicago's code speaks to this situation:

> To prevent multiple taxation, any person who is licensed, or who is required to be licensed, to operate a ground transportation vehicle used in another municipality may claim a credit against the tax imposed by this chapter equal to any similar occupation tax imposed on the person by the other municipality with respect to such ground transportation vehicle, but only to the extent of the amount of tax properly due and actually paid to the other municipality. The credit may not exceed the amount of the tax imposed by this chapter that otherwise would be due.
>
> —Municipal Code of Chicago *§3-46-035*

REGIME II: TAX FREE

The second regime, "tax free," is one in which the state prohibits local ride-hail taxes and does not levy its own. This is the most common regime, and it includes Arkansas, Florida, Idaho, Maine, Michigan, Mississippi, Missouri, North Carolina, Pennsylvania, Tennessee, Virginia, West Virginia, and Wisconsin. Please note that Pennsylvania is as an example of a tax-free state, insofar as it prohibits any local government *except Philadelphia* from taxing ride-hailing and precisely circumscribes Philadelphia's tax.

Please note that even when a state prohibits local governments from enacting taxes, there is still a role for the state to clarify certain matters. Consider the following passage from Michigan's TNC law:

> A local unit of government shall not impose a tax or fee upon or require a license for a limousine carrier, taxicab carrier, or transportation network company, a limousine driver, taxicab driver, or transportation network company driver, or a limousine, taxicab, or personal vehicle, if the tax, fee, or license is related to the provision of limousine or taxicab service or transportation network company prearranged rides….A local unit of government

> may issue a civil infraction to a limousine, taxicab, or transportation network company driver.
>
> —Mich. Comp. Laws §257.2115

So the law prohibits local taxes not only on ride-hail trips, but also all for-hire vehicle trips, and it heads off possible legal objections to traffic tickets.

REGIME III: STATE TAX FOR STATE USE

"State tax for state use" denotes a regime in which the state taxes ride-hailing, revenue is spent at the state level, and local ride-hailing taxes are prohibited. States operating in this regime can, in turn, be divided into two sub-regimes: one where ride-hailing is treated like an ordinary retail product and subject to sales and use taxes, and another where ride-hailing is subject to its own excise tax.

Regime III(a): Sales Tax

In the first sub-regime, ride-hailing is subject to the general state sales and use tax—or its equivalent, like any other consumer product. States in this regime are Hawaii, Iowa, New Mexico, Ohio, Rhode Island, South Dakota, and Wyoming. (The situation in Hawaii is complicated, because instead of a true sales tax it has a General Excise Tax requiring both drivers and TNCs to remit tax on the same fares [Takayama 2018], but it offers few lessons for Illinois.) These states already taxed taxi and livery services before ride-hailing arrived, except for Iowa and South Dakota. In June 2016, three months after legalizing ride-hailing, South Dakota taxed it by applying its use tax to "the privilege of the use of any transportation of passengers." This was part of a larger bill aimed at raising revenue by taxing more goods and services. Similarly, in 2018 (Hardy 2019), Iowa adopted S.F. 2417, which cut personal and corporate income tax rates and applied its 6% sales tax to dozens of services, including "taxis, driver service, ride sharing service, rides for hire, and limousine service."

An important question for sales taxation of ride-hailing has been which party—the driver or the TNC—is responsible for remittance. It was typical during the early years of ride-hailing for TNCs to argue that it was the drivers' responsibility to do so. For example, in September 2017, Ohio's Tax Commissioner made a final determination that TNCs were responsible for remittance and assessed $1.6 million against Uber for unpaid taxes from 2015. Uber appealed the decision, arguing, among other things:

> The Tax Commissioner erred in determining that Uber is a "vendor" of transportation services under R.C. § 5739.01(C) and thus required to collect and remit sales tax on Ohio transportation services provided by Drivers. Uber does not provide transportation services. Uber provides access to an "app" that Drivers and Riders can use to connect with each other and facilitate payment from the Rider to the Driver.
>
> —Uber Technologies, Inc's Notice of Appeal https://web.archive.org/web/20210829143002/https://src.bna.com/JNX

Note this is essentially the same argument recounted earlier in the discussion of Georgia—which did not wind up keeping its sales tax on ride-hailing. Rhode Island faced the same problem (Anderson 2015), and so in 2016 Rhode Island's legislature amended its laws to say:

> Any TNC operating in this state is a retailer as provided in §44-18-15 and is required to file a business application and registration form and obtain a permit to make sales at retail with the tax administrator, to charge, collect, and remit Rhode Island sales and use tax;
>
> —Rhode Island General Laws *§44-18-7.3*

Regime III(b): Excise Tax

In the second sub-regime, a state levies a special tax on ride-hailing, which is different than the general retail sales and/or use tax rate. Such taxes are usually called "excise taxes." Five states operate this regime: Connecticut, Georgia, New Jersey, New York, and Nevada. All of these states also prohibit local ride-hail taxes.

One advantage of this excise tax approach is that the state might want to levy a charge lower than what the sales tax would be for political or other reasons. New Jersey has a 6.625% state sales tax, for instance, and so its $0.50 per-ride tax on single rides is lower than the sales tax would be on any trip more expensive than $7.60. Another advantage is that the tax can be nuanced to distinguish between single and shared rides—or potentially other types of rides such as those in zero-emission vehicles.

REGIME IV: REVENUE-SHARING

The revenue-sharing regime is one in which the state collects a statewide tax and then distributes all parts of the revenue from each ride to the jurisdiction where the ride is deemed to have taken place. Three states operate a revenue-sharing regime: Alabama, Massachusetts, and South Carolina. All three use the trip's *place of origin* to decide which jurisdiction receives the local share and they ban local governments from imposing ride-hail taxes.

While directing money to local governments, this regime has two advantages over the hands-off regime in which local governments design and administer their own taxes. First, collection is simpler: TNCs only file a return with the state rather than with each jurisdiction that has a tax. Second, the state tax legislation can codify boundary and definitional questions rather than have each jurisdiction decide independently. South Carolina's administration is described in this passage:

> (C) Using the Geographic Information System (GIS) data made available by the Revenue and Fiscal Affairs Office pursuant to subsection (I), a TNC shall determine whether each prearranged trip occurred within the incorporated boundaries of a municipality, or outside of the incorporated boundaries of a municipality and within the boundaries of a county of this State.

REGIME V: LOCAL OPTION

The last regime, "Local Option," only describes the Maryland system. Cities and counties can choose to impose a tax that conforms to conditions and regulation in state law. TNCs remit the tax to the state, which distributes it to the appropriate jurisdictions. Maryland's law also answers jurisdictional and administrative questions that arise when different communities have their own taxes. Much of the text is devoted to resolving the situation wherein a county and a city within its borders both

impose, or seek to impose, the local assessment. For example, under certain circumstances, the two governments must present the state with an agreement on how to divide the revenues.

CHAPTER 7: RECOMMENDATIONS

This chapter contains recommendations for Illinois. The research team has attempted to generally explain the reasoning behind each recommendation as well as provide recommendations for different priorities. For instance, whether Illinois chooses to levy a tax for general funds or to conduct revenue sharing with local governments is a political question.

RECOMMENDATION 1: PASS STATE LEGISLATION ABOUT RIDE-HAILING TAXES

The research team recommends that Illinois exit the "hands-off" regime and move into regimes III (state tax for state use), IV (revenue sharing), or V (local option). The advantages of state administration include simpler remittance, a stronger position for auditing, and resolution of jurisdictional issues. State-level taxation is also the preference that Uber expresses in its lawsuit against Skokie:

> The majority of states across the Nation—including Michigan, Ohio, and Wisconsin—preempt local governments from imposing their own regulations and taxes on Uber and similar business….Uber has never contested the legal validity of such a tax and has operated successfully in each of these other states. Nor does Uber object to rational taxing regimes that pass constitutional muster. Illinois has not followed the approach of the vast majority of states. The result has been an emerging patchwork of local government taxes in Illinois.
>
> —2019 Rasier, LLC and Uber Technologies, Inc., v. Village of Skokie

RECOMMENDATION 2: CHOOSE AN AD VALOREM EXCISE TAX

If the state imposes a tax on ride-hailing, the research team recommends an ad valorem excise tax—a tax levied as a percentage of fares but not necessarily at the same rate as the general sales tax. There are several reasons to choose the ad valorem over the per-ride tax.

First, an ad valorem tax is probably more equitable across the income distribution because some evidence suggests that rides taken in low-income neighborhoods are cheaper (Brown 2021, 2019). While the data on equity is limited, the premise that lower-income people tend to choose a cheaper alternative on average is intuitive at least. Consideration also shows that multiplication of different ride-hail quality options discussed in Chapter 2 is likely to widen the gap in equity between per-ride and ad valorem taxes. As an example, consider the recently introduced priority options (whereby a rider may pay more to be prioritized and receive a shorter wait time); a per-ride tax will affect the ride equally whether or not the rider is being prioritized or (implicitly) deprioritized (by not paying extra).

Second, economics literature exists on the balance between ad valorem and specific taxes (such as a per-ride tax). (Please see Keen [1998] for a helpful review.) It suggests that an ad valorem tax is better for consumers than a specific tax (such as a per-ride tax), which raises the same revenue in an oligopoly situation like the one now existing in the ride-hail market. In that situation, more of the

burden of an ad valorem tax will fall on sellers. The logic behind that theorem, however, is complex and beyond this study's scope.

Third, for ride-hail trips, an ad valorem tax will tend to scale with the externalities that a ride imposes—congestion, emissions, etc.—since fares depend on time and distance traveled. Hence, an ad valorem tax increases when a trip is longer. Less obviously, the fare's dependence on travel time means that the ad valorem tax will be higher on rides that take place in congested traffic for rides of a given length. This penalty is desirable when traffic on a network is already congested because additional vehicles cause more delay and emissions than when it is not. The ad valorem design therefore has some of the effect of congestion-fighting charges like Chicago's.

Finally, there is no need to adjust an ad valorem tax for inflation.

The research team therefore prefers the ad valorem tax, but not so strongly as to make a per-ride tax into a mistake. Among the first three reasons, neither tax is liable to be levied at such a high rate to make a critical difference. For example, when the previously cited economic theory was typically applied to taxes on cigarettes and alcohol, the taxes were very high (Keen 1998). But however weak, these reasons do tip the scales in favor of ad valorem taxes because there are no countervailing reasons to favor per-ride taxes.

The research team therefore recommends that Illinois state and/or local governments introduce a special "excise tax" rather than apply the sales tax to for-hire transportation. Illinois' combined state and local sales tax rate is 8.83%, which is the seventh highest among all states (Cammenga 2021). Imposing all state and local taxes would leave Illinois with the highest ad valorem tax rate on ride-hailing outside of New York City. Imposing only the state rate of 6.25% would put the state in the range of Iowa and Rhode Island, but a sales tax would preclude the possibility of levying different tax rates on single and shared rides, which is recommended below.

RECOMMENDATION 3: ADJUST A PER-RIDE TAX FOR INFLATION

While the research team recommends imposing an ad valorem excise tax, if governments impose per-ride taxes, the research team recommends that they adjust the rates for inflation. When a per-ride tax is not adjusted for inflation, the purchasing power it grants the government will decline over time as prices rise. While legislators might conceivably want this to happen, they could do so more deliberately than by letting it fade from inflation. In the year ending April 2021, prices rose 4.2%—effectively making a $0.25 per-ride tax into a $0.24 per-ride tax without any act or intention of local government. Indexing would be consistent with Illinois and other states' use of the Consumer Price Index to index the gas tax over time (Urban Institute, n.d.).

To date, the State of Georgia is the only government that adjusts its per-ride tax for inflation, via the following language:

> The department shall annually adjust the amount of the excise tax levied pursuant to subsection (a) of this Code section to reflect the effect of annual inflation or deflation for the cost of living that consumers in this state experienced on average during the

immediately preceding calendar year in accordance with rules and regulations. Such rules and regulations may use for this purpose the Consumer Price Index for All Urban Consumers rate published by the Bureau of Labor Statistics of the United States Department of Labor or any other similar index established by the federal government, if the department determines that such federal index reflects the effect of inflation and deflation for the cost of living that consumers in this state experienced on average during the preceding calendar year.

—GA Code § 48-13-141[b]

RECOMMENDATION 4: ENGAGE IN DIALOGUE WITH TNCS EARLY IN THE PROCESS

The research team recommends engaging the transportation network companies in discussions around any ride-hail taxes, even at the local level. Uber participated in advanced discussion with Chicago and Evanston, for instance. Their discussion with Rana Kortam, Head of Global Regulatory Policy at Uber, indicated that Uber and other TNCs are not opposed to taxation but have strong preferences about clarity and fairness. In the end, the TNCs may oppose taxes in spite of dialogue and campaign against them. Even so, every feature of tax design corresponds to code in a piece of software behind the scenes at a TNC; hence, it is important that there be clarity and advance notice.

RECOMMENDATION 5: INCLUDE A CARVE-OUT FOR CHICAGO

Chicago's tax is complex and targeted to deal with a level of traffic unique in Illinois. The city's leaders have also displayed willingness to frequently and precisely adjust the tax. Hence, the research team recommends that it includes a carve-out for Chicago, which would permit it to manage its own ride-hail taxation if Illinois leaves the hands-off regime. Treating a large city differently from the rest of the state has precedent in ride-hail taxation: Baltimore, New York City, and Philadelphia all received special treatment when their states' regimes came into force. Of these, the case of New York City would be most similar to Chicago's insofar as it receives substantial leeway. A key difference, however, between New York City and Chicago is that Chicago is inside Cook County, whereas New York City has counties inside. Hence, if the state permits local governments to levy their own taxes, legislation will need to deal with relevant matters of precedence and jurisdiction if Cook County levies its own ride-hail tax.

RECOMMENDATION 6: MAKE REVENUES TRANSPARENT

The research team recommends that Illinois follow Massachusetts' example in collecting and releasing data. Massachusetts has been at the forefront of providing information gleaned from administration of its tax. The Department of Public Utilities' TNC Division publishes an annual *Rideshare Data Report* providing information about the locations, speeds, and distances of rides across the state. This information is made available as a website with interactive maps and figures (Massachusetts TNC Division 2020). (Please see Figure 13 for an example.) The state also publishes descriptions of the projects that the TNC local assessment funded (DPU TNC Division 2019).

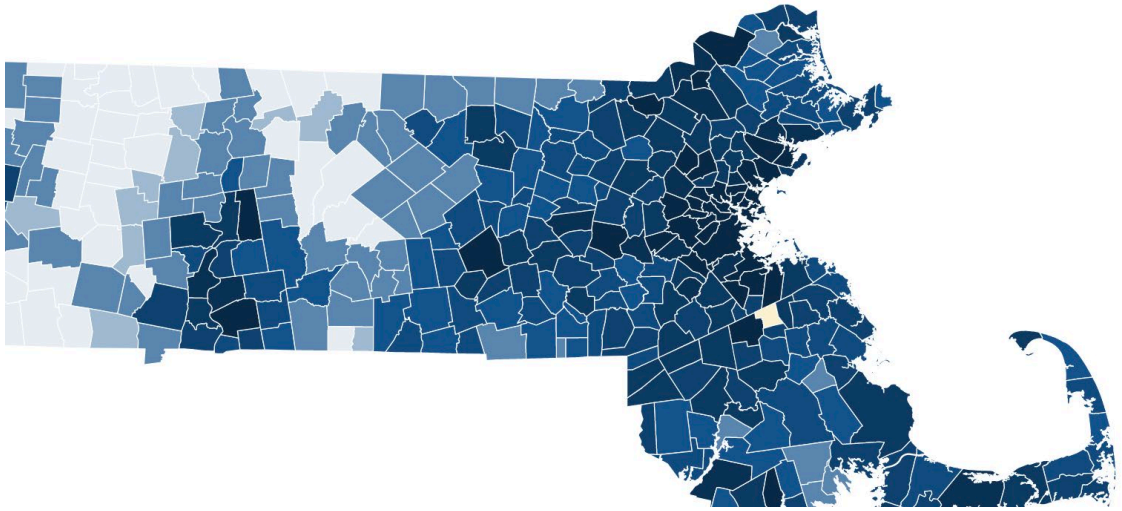


Figure 13. Map. Ridership by city/town in Massachusetts from the 2020 *Rideshare Data Report*.

Source: Massachusetts Department of Public Utilities (2020)

RECOMMENDATION 7: LARGE DISCOUNTS FOR SHARED RIDES

The research team recommends that taxes distinguish between shared and single rides, and do so to a larger degree than most taxes currently do. Fuller et al.'s (2021) numerical simulations show that shared trips are penalized on a per-mile basis under most ride-hail taxes in the United States today—except in Chicago and New York City, where special downtown surcharges impose large differences in the two options' tax rates. Brown (2021) suggests that riders in low-income neighborhoods use shared rides more often.

In addition, there are more theoretical reasons to promote shared rides. Recent research by this report's authors (Lehe and Pandey 2020; Lehe, Gayah, and Pandey 2021) shows how shared rides may exhibit "positive feedback," in the sense that people's decisions to choose a shared ride leads others to do so. A consequence is that there may be more than one self-reinforcing, sustainable pattern of travel choices with different levels of sharing. For example, if hardly anyone requests shared rides, then such rides are not economical to provide at low fares and any detours they make to pick up passengers will be long, which causes fewer people to request shared rides. Conversely, a situation with a very high density of shared requests is self-reinforcing, too, because it is easy to match many passengers and to do so at low fares with short detours. This theory makes the recent collapse of shared-ride TNC service troubling: when the COVID-19 crisis abates and TNCs offer shared rides again, travel patterns may remain stuck in a low-sharing equilibrium.

RECOMMENDATION 8: CONSIDER FUTURE TECHNOLOGIES

The research team recommends that legislators think carefully about the path of future technologies in designing taxes. An example to follow in this regard is the San Francisco Congestion Mitigation Tax. That tax applies a lower rate for zero-emission vehicles but also sunsets that provision in 2025 because such vehicles are likely to be very common in San Francisco by that date.

The imposition also states:

> for each ride originating in the City provided by an Autonomous Vehicle...and not facilitated by a Commercial Ride-Share Company...the tax shall be imposed on the Mobility Provider of the Autonomous Vehicle.
>
> —SF Business and Legal Code *§3204*

Note in this passage the phrase "Mobility Provider of the Autonomous Vehicle." Most laws imposing ride-hail taxes are targeted at transportation network companies, which arrange rides between passengers and *drivers*. Hence, if a company begins to dispatch driverless vehicles, it is ambiguous today whether they would be covered by today's ride-hail tax laws.

RECOMMENDATION 9: CONSIDER TREATMENT OF SUBSIDIZED RIDES

Our last recommendation when designing taxes is to be aware of the trend between TNCs and governments toward partnerships for wholly or partly subsidizing certain rides as part of social programs. Some transit agencies, for example, have begun partnering with TNCs to pilot "last-mile" trips to and from transit stops (Schweiterman and Livington 2018; Lucken et al. 2019). Bedford Park in Illinois is currently engaged in a large-scale pilot of several such last-mile options. During the COVID-19 pandemic, Uber and Lyft partnered with governments to provide essential deliveries such as groceries (Shaheen 2020).

The only law that the research team found that touches on this topic is Berkeley's tax, which exempts not only WAV rides—as several taxes do—but also those that a government health care payor purchased (Berkeley Municipal Code §7.71.020 (D)). In California, Medi-Cal (the state's Medicaid program) pays for TNC rides for non-emergency medical services (Chapman et al. 2020), so this provision would exempt these rides.

While the research team does not have a strong recommendation whether governments should exempt all rides in such partnerships from a ride-hail tax, legislators should be aware of the possibility that different levels of government may be simultaneously taxing and subsidizing certain trips. Also worth noting is the fact that the government is not the final payor but only a subsidizer of the entire ride in some programs such as last-mile ride programs (as in Berkeley's exemption).

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