History and evolution of taxi industry regulation

This chapter reviews the history and evolution of the taxi industry – its current status, future challenges, and opportunities – with an emphasis on the United States as a case study, along with a sampling of comparisons from global jurisdictions, including England, Argentina, and Singapore. The regulatory framework of taxi industries is diverse in these jurisdictions and reflects the particular history to develop an approach to allow for taxi service to meet local needs; as the cultural dynamic and evolution of urbanized metropolitan areas differ from country to country, so do the regulations. In Argentina, the birth of one of the earliest forms of shared-ride taxi services, the *colectivo*, evolved as taxi drivers were allowed the freedom to operate. A comparison of industries with stricter regulations, such as England and the United States, and industries with less onerous regulations, such as Argentina and Singapore, illuminates the point that there is no single approach to creating regulations for transportation needs; each jurisdiction must identify and address its own respective challenges that arise over time.

The word “taxi” is generally associated with a classic New York City yellow Checker cab. Hollywood blockbusters often paint the picture of pedestrians lining the streets of the city with their hands raised, seeking a ride. The global industry, however, is much more complex. Regulations change annually throughout the world as new innovations and issues present themselves, creating a dynamic paradigm that constantly seeks to predict and address the problems of tomorrow. While New York City may be the global hotspot for taxi services, it represents a small portion of a large market.

Dating back to 1605, the first for-hire “vehicles” were horse-drawn carriages operated in Paris and London (Gilbey, 1903, p. 29). The design was simple: a large, four-wheeled carriage, pulled by two horses that could transport passengers from point A to point B. In 1834, Joseph Hansom, an English architect, invented the Hansom cab (Lay, 2018). The small, easily maneuverable one-horse carriage offered quicker, cheaper services to the public and became the most popular model of for-hire vehicle in Paris, Berlin, St. Petersburg, and New York. Thus began the evolution of the taxi. After the Hansom cab, taxis evolved at a much faster rate. The first gasoline-powered taximeter cabs were introduced by Gottlieb Daimler, a German engineer, in 1897. At the same time, Samuel’s Electric Carriage and Wagon Company (E.C.W.C.) introduced its first fleet of 12 electric hansom cabs in July 1897 (Farrell, 2018). The E.C.W.C. added
50 more vehicles before 1898, when the company was reconstituted by its financial backers to form the Electric Vehicles Company (ECV). The ECV built the Electrobat electric car, placing 100 cabs on the road by 1899. Two notable milestones in automotive history took place that year: the first speeding ticket was issued to Jacob German, driving an electric taxicab, in May; and the first automotive crash in New York occurred in September, when Henry Bliss was struck by an electric taxicab. The ECV operated until 1907, when a fire destroyed 300 of their vehicles, which, aided by the Panic of 1907, ultimately led to the company’s demise (Farrell, 2018). Later in 1907, Harry N. Allen, a New York business leader, imported 65 gasoline-powered cabs from France and started the age of combustion engine taxis that still forms the basis of the sector today.

Every jurisdiction in the world has a form of taxi service with a regulatory framework that mirrors the history of the commercial and legal needs of for-hire service. In London, for instance, regulation of the taxi industry dates back to 1636 under Charles I, who issued a proclamation restricting the number of hackney coaches to 50 due to congestion concerns. Soon after, in 1710, the licensing system that exists in London today was created. Hackney carriage licensing was largely administered and enforced by the Metropolitan Police, as it passed the famous Metropolitan Public Carriage Act of 1869, a large portion of which is still relevant today. As technology advanced, however, so did the need for specific legislative action in larger metropolitan areas to address new issues. The most recent organization to regulate the taxi service, Transport for London (TfL), drafts legislation for the entire for-hire vehicle industry and gathers trip data to continually improve on current regulations. TfL is currently responsible for all day-to-day operations of London’s entire public transport network, including private for-hire vehicles, taxicabs, and buses. As seen in the United States and many other countries around the globe, TfL sets regulated taxi fares to prevent overcharging and maintain equilibrium in the market.

Comparatively, the taxi industry in other markets such as Singapore and Argentina has fewer regulations in place when compared to the United States or London. Taxis were a more recent addition to the Singaporean economy; first introduced in 1910 by C.F. Wearne and Co., taximeters were imported from the United Kingdom and equipped to Rover cars (The Straits Times, 1910). In the 1960s, pirate taxis emerged as an alternative to Singapore’s lack of adequate public transport. As a result, Singaporean officials formed a committee to review and implement regulations to protect and promote the practice of licensed taxi work (The Straits Times, 1966). This trend continued until 1998, when the Land Transport Authority (LTA), a statutory board of the Ministry of Transport in Singapore, adopted a more laissez-faire approach by deregulating taxi fares entirely, which forced the market to correct itself and promoted more competition between companies. Contrary to most Western taxi markets, service providers in Singapore set their own fares, allowing them to adapt to a dynamic marketplace.

In Argentina, similar deregulation has occurred; taxicabs currently have minimal regulations in place to promote competition between competitors. In 1928, a group of taxi drivers launched a new mode of for-hire transportation that involved charging fixed rates and established routes for four passengers at a time (Singh, 2018). This practice is known as the colectivo and was the first form of shared-ride transportation service offered in the country. By 1930, Buenos Aires had largely been urbanized; railway lines facilitated public transport to settlements past the city limits, creating a large metropolitan area with a population of over 3 million people (Singh, 2018). The colectivo quickly evolved into a popular form of transportation; eventually, the colectivo transformed into a bus service adopted as the main source of public transport in Buenos Aires (Singh, 2018). Currently, the Buenos Aires Ministry of Transportation regulates all ground transportation modes, including taxis, buses, and trains. To enforce these policies,
agreements have been made with national security forces, including the Argentine National Gendarmerie, Naval Prefecture, and Argentine Federal Police. The Ministry of Transportation has some regulations in place to prevent overcharging and other common issues within the taxi industry, but the restrictions for newer transportation network companies, for instance, are almost non-existent. Currently, a battle between the Buenos Aires Ministry of Transportation and Uber is underway, as the ride-hail giant attempts to expand its services in Argentina. Whether government officials choose to implement strict regulations or deregulate the industry completely, the ultimate goal of taxi regulation is to maintain an equilibrium of supply and demand in the market. While the regulatory framework of each country may differ, the conditions for market equilibrium remain constant for everyone – regulators seek to find the sufficient number of taxis for their respective jurisdictions, as the economic health of the industry is dependent on adequate cash flows for taxi drivers. Stable and sufficient ridership is critical to provide adequate wages for drivers. History has shown that an oversupply of taxis is often accompanied by fare-cutting price wars, low driver wages, traffic congestion, driver strikes, and illegal activities, including riots. During the 1920s and 1930s, financial hardships in the United States, leading to the Great Depression, led to a sharp increase in the number of taxi drivers, and total cabs in New York peaked at 21,000 in 1931. Cheating, hustling, false advertising, stealing, and extortion increased as tensions rose in the taxi industry, which ultimately drove New York City officials to place the taxi industry under police control in 1925 (Jackson, 2010). This temporary solution helped address this rogue activity, but ultimately, the underlying oversupply of taxis was not addressed until 1937 by legislation sponsored by New York City Alderman Lew Haas.

The concept of a taxi medallion was first implemented in New York City in 1937 as a means of preventing oversaturation of the taxi market and to keep traffic congestion at a sustainable level. Sponsored by Alderman Haas, the “Haas Act” capped the number of taxis at 13,595, creating the medallion system (Rodriguez & Levin, 2020). Several jurisdictions in the United States currently use taxi medallions as a method of limiting the number of authorized taxis in a city, including New York City, Boston, Miami, Chicago, San Francisco, and Philadelphia. In New York City, taxi medallions are fully transferable if approved by the regulating agency, the New York City Taxi and Limousine Commission (the TLC) (New York City Taxi & Limousine (TLC) Rule §58–43), creating a secondary market for trade in medallions. The Haas Act of 1937 divided taxicabs into two categories of ownership: independent medallions and corporate medallions (or “mini-fleet medallions”). The corporate medallions were owned in lots of at least two medallions, and there were no restrictions on the number of corporate medallions a person or entity could own (TLC Rule §51–03). Independent medallions, which constituted approximately 42% of the NYC taxi fleet (as required by the Haas Act), were single medallions for which a person could own one, or part of one, independent medallion. Until 2016, the independent medallions also had a regulatory requirement that the owner must also drive the independent medallion a minimum amount of 900 hours each year [TLC Rule §51–03(p)]. In 2017, the New York City Council repealed Section 19–504(i) of the New York City Administrative Code, which was the provision that had maintained the 58% to 42% ratio of corporate to independent medallions that was established by the Haas Act (New York City, N.Y., Local Law No. 59 Int. No. 1475–A (2017) [effective Mar. 21, 2017]). Although the classification of independent and corporate medallions still exists, with the removal of the driving requirements and limits on ownership, there are no legal or operational differences between corporate and independent medallions.

Currently, in New York City, the TLC has regulatory oversight of medallion taxicabs, as well as livery services, black cars, luxury limousines, and other for-hire vehicles (FHVs) operating
in the city. The TLC was created in 1971 to regulate and improve the quality of taxi and livery services, to establish transportation policies to govern these services, and to create and enforce professional and uniform standards to ensure public safety. As of December 2019, the TLC licenses and regulates 13,587 medallion taxicabs, 199,481 licensed drivers, and 116,449 for-hire vehicles. The TLC also regulates taximeter shops, medallion taxicab brokers, and taxicab agents (NYC Taxi & Limousine Commission, 2019). In addition to the TLC, New York State has legislative and regulatory power over the taxi and FHV industry.

In 2004, the TLC introduced several technological improvements in yellow cabs, known as the Taxicab Passenger Enhancement Program (TPEP). It is composed of four main components: a driver information monitor, a passenger information monitor, a credit/debit card payment system, and a global positioning system (GPS). The GPS, importantly, ushered the yellow cabs into the era of big data. Some of the trip metrics captured include pick-up and drop-off timestamp, pick-up and drop-off location, trip duration, and itemized fares. The cost of implementing the TPEP system was initially offset by a 26% fare increase, the largest fare increase in the history of yellow cabs (NYC Taxi & Limousine Commission, 2004).

From approximately 1970 until 2015, medallion prices generally showed a consistent and strong upward trend, fueled by a growing demand for yellow cab service and a limited number of available medallions, as well as a relatively stable regulatory environment in New York City and other similar positive macroeconomic factors. The availability of longer loan terms and the introduction of medallion leasing have attracted individuals to enter the medallion system, either by owning a single medallion or leasing medallions to drivers or by forming corporate entities that hold multiple medallions and function as fleet management taxi companies. As shown in Figure 19.1, yellow cabs mostly operate within the Manhattan Core (south of 96th Street on the east side of Manhattan and 110th Street on the west side of Manhattan), with the remaining trips distributed at the two airports within New York City: John F. Kennedy International Airport and LaGuardia Airport.

When taxi medallions were first traded on the open market in 1947, the average price of a medallion in New York City was $2,500 (NYC Taxi & Limousine Commission, 2014). Four decades later, the average price had risen to $100,000 (Carmody, 1985). This was followed by an even more dramatic rise in subsequent decades. After receiving New York State approval to issue new medallions, the City held its first three medallion auctions between 1996 and 1997. At the auction in September 1997, independent medallions sold for a high of $233,210, while corporate medallions reached $285,551 each (Buettner, 1997). Revenue from these auctions is received by the City.

At City-held auctions in April and October 2004, independent medallions reached a high of $360,000, and corporate medallions reached a high of $407,551 per medallion. At auctions in June 2006, independent medallions sold at a high of $425,102, while corporate medallions reached $554,148 per medallion. At the May 2008 auction, independent medallions reached $524,000, while corporate medallions sold for $656,000 per medallion. There were no auctions between 2009 and 2012, but the value of medallions continued to rise in the secondary market, with the average price of an independent medallion and corporate medallion each reaching $936,117 and $1,160,500, respectively, in 2013. But that was not the end of the medallion auctions. After New York State authorized the sale of 2,000 additional wheelchair-accessible vehicle taxi medallions in 2011, the City held three more auctions between November 2013 and March 2014, generating more than $400 million for the City. It was during these last two auctions that sale prices peaked. At the February 2014 auction, the average winning bid for independent accessible medallions was $863,742. At the subsequent auction in March 2014, the average winning bid for corporate wheelchair-accessible medallions was $1,164,379 per
medallion. The March 2014 auction was the most recent TLC auction before the onset of the current taxi medallion crisis (NYC Taxi & Limousine Commission, n.d.a).

Disruptions on the existing taxi industry

Since the outbreak of the COVID-19 pandemic, the taxi industry in the United States has been affected severely, much like the rest of the world. In New York City, ridership plunged by 94% from the first week of March 2020 to the week of May 4. Due in part to the fear of contracting the virus (at least 50 drivers have died from the virus), roughly 83% of drivers have stopped working altogether (Chan, 2020). The situation is no different in other cities. In Chicago, the number of taxi rides in March 2020 dropped by more than 63% compared to March 2019 (McCall, 2020). In Las Vegas, taxi ridership fell by 97% from February 2020 to April 2020 (Akers, 2020). In San Diego, the number of taxi drivers who quit rose faster than the average

\[ \text{Figure 19.1 Trip density by pick-ups, December 2019} \]

Source: Based on data from NYC Taxi & Limousine Commission, 2019
unemployment rate (Lewis, 2020). Needless to say, adequate cleaning methods, personal protective equipment distribution, and virus transmission prevention mechanisms (like partitions) have become priority items for taxi fleet management. To this end, the U.S. Department of Labor’s Occupational Safety and Health Administration (OSHA) has issued an alert listing safety tips to help reduce the risk of exposure to the coronavirus in the rideshare, taxi, and car service industry (OSHA, 2020). In addition to these containment actions, municipal taxi regulators have also stepped up to assist drivers. In New York City, the TLC has created a meal delivery program for $53 per route to vulnerable populations. In Washington D.C., the Department of For-Hire Vehicles (DFHV) has repurposed its microtransit program to provide trips to hospital workers in partnerships with taxi companies and Via. In Chicago, the Business Affairs and Consumer Protection (BACP) has eliminated the passenger portion of all paratransit taxicab fares as a way to encourage ridership (Daus, 2020b). While the long-term impact of the pandemic on the taxi industry remains to be seen, it was already experiencing major disruptions from transportation network companies (TNCs).

A transportation network company is a company that provides pre-arranged, on-demand passenger transportation services for compensation by connecting riders to drivers through an online digital application or platform, such as a smartphone app. In March 2009, Uber Technologies, Inc. (Uber) – the first TNC – was founded as UberCab in San Francisco, California. UberCab officially began operations in San Francisco in June 2010. In May 2013, Lyft, Inc. (Lyft), previously operating as Zimride, launched itself as a ride-hailing company in several U.S. cities. Similar app-based services have emerged across the globe, including Gett and Via, Didi in China, Ola in India, Careem in Dubai, and Grab in Singapore. These services have competed with the local taxi industries head-on, affecting the incumbent sector adversely.

Due to the growth of Uber and Lyft, yellow cab ridership in New York City declined by 51% between 2013 and 2019. Over the span of four years, the yellow cab sector saw its market share decline from roughly two-thirds in 2015 to less than one-quarter of the market share in 2019 (NYC Taxi & Limousine Commission, n.d.b), as shown in Figures 19.2 and 19.3. In Chicago, only 60% of its 7,000 taxicabs were in operation as of 2019. In Philadelphia, between fall 2014 and summer 2016, taxicab ridership declined by 40%. Boston saw taxi ridership plunge by 22% in the first half of 2015 (Graham, 2018).

In New York City, the price of corporate medallions peaked in 2013 and started to drop in 2014. By 2018, the situation was so difficult that several taxi medallion owner-drivers, facing increased financial burdens, committed suicide. Many more taxi owners and drivers were in financial hardship. Lenders that provided financing to medallion owners were also affected due to the growing number of distressed loans in their portfolios. By the end of 2019, an average medallion was worth roughly 20% of its peak value (NYC Taxi & Limousine Commission, n.d.c). The precipitous fall in medallion value was not confined to New York City. In other cities with similar medallion systems, the fall in price between a peak year and 2019 was even more severe, as shown in Figures 19.4–19.8.

While the taxi medallion system is used principally in the United States, the concept of limiting the number of taxi licenses is common around the world. Many cities have similar regulatory systems in place to control the number of taxis that can legally operate in their jurisdiction. Other jurisdictions, however, choose to deregulate the market in a hope that an equilibrium can be achieved through competition. One of the major topics that regulators across the globe continue to discuss is the integration of TNCs into the existing taxi framework. TNCs are now allowed to operate and are regulated, in some form, throughout the United States. The same is not necessarily true for cities outside the United States and countries around the globe, which have mixed views on TNCs and how to regulate them.
Figure 19.2 NYC ridership comparison, 2015–2019
Source: Based on data from NYC Taxi & Limousine Commission, 2019

Figure 19.3 NYC taxi market share by trip volume, 2015–2019
Source: Based on data from NYC Taxi & Limousine Commission, 2019
Figure 19.4  NYC medallion average price, 1947–2019

Source: Based on data from NYC Taxi & Limousine Commission, 2019

Figure 19.5  Chicago medallion price, 2007–2019

Source: Based on data from City of Chicago Department of Business Affairs and Consumer Protection, 2019
Figure 19.6  Philadelphia medallion price, 2006–2019
Source: Based on data from Philadelphia Parking Authority, 2019

Figure 19.7  Miami medallion price, 1997–2019
Source: Based on data from Miami Department of Transportation and Public Works, 2019
In Canada, provincial and municipal governments are taking a more cautious approach to TNC regulation. For example, TNCs were only allowed to operate in British Columbia in January 2020, making Vancouver the last major city in North America to approve TNCs [Passenger Transportation Act, S.B.C. 2004, c. 39, as amended by Passenger Transportation Amendment Act, 2018, S.B.C. 2018, c. 53 (Bill 55) (effective Sept. 3, 2019)]. In Toronto, TNC drivers will now face the same training and experience requirements as taxi and limousine drivers (Toronto Municipal Code, Ch. 546). In Calgary, the current city administration is recommending a full review of the livery transport bylaw, which governs both taxis and rideshares, with the help of the public to level the playing field (Walter, 2019).

European countries tend to take a more cautious and stringent approach to TNC regulation, as regulators view new business models and innovations with caution until the full consequences are determined. This has made it difficult for TNCs to expand as quickly in Europe. In a landmark ruling in December 2017, the European Court of Justice (ECJ) ruled Uber is a transportation provider – and not a technology platform – subject to the same rules as taxis (Court of Justice of the European Union, 2017). In Barcelona, Uber and fellow ride-hailing company Cabify ceased their operations in January 2019 in response to the city tightening its regulations in response to protests from local taxi drivers (Jones, 2019). On November 25, 2019, Transport for London notified Uber that it would not renew the company’s license to operate in London (Robinson, 2019). Uber appealed the TfL’s decision to Westminster Magistrates’ Court on December 13, 2019, and Uber is able to continue to operate in London pending the outcome of the appeal, which could take months or years to resolve (Reuters, 2019). Uber

Figure 19.8  Boston medallion price, 2000–2019
Source: Based on data from City of Boston, 2019
has been banned in Hungary and Bulgaria, and some services have been banned in cities across France, Italy, Finland, Germany, and the Netherlands (Shead, 2019).

In Asia, TNCs have made inroads in China and Southeast Asia, but less so in the rest of the region. In China, Didi Chuxing is the most prominent player, while Grab from Singapore is a key player in the Southeast Asia region, with services spanning eight countries and 170 cities. In 2016, China became the first major economy to issue laws for TNCs on a national level, in addition to coming up with a set of guidelines for taxi reform. China’s TNC regulation focuses primarily on driver and vehicle standards, as well as efforts to restrain illegal activity (Nougellou & Renders, 2018). In Singapore, the authorities have proposed two classifications of operating licenses: one for street-hail services and another for ride-hail services (Tang, 2019). Elsewhere in Japan, South Korea, and Taiwan, taxi operators have been influential in dissuading regulators from allowing TNCs to compete head-on with taxis (Li, 2019). In Australia, TNCs fall under the “booking service providers” category of the Point to Point Transport (Taxis and Hire Vehicles) Act 2016 and can only operate legally if they have a business registration for their car and a hire car driver authorization.

The socioeconomic impacts of the transportation disruption movement

Of concern with the rapid expansion of TNCs is the adverse impact the TNCs have had on underserved communities, the environment, people with disabilities, and the labor force of the on-demand sharing economy. If these issues are to be successfully addressed, jurisdictions must reconcile the regulatory frameworks among the various for-hire vehicle sectors, and that means providing a “level playing field”.

In many jurisdictions in the United States, TNCs operate outside the traditional regulatory framework that applies to taxis and for-hire vehicles (livery, black car, and limousines). This includes vehicle license caps, licensing procedures and fees, commercial insurance costs, fingerprint background checks, and other requirements mandated by the taxi and FHV industry. The regulations for what are often interchangeable services tend to be uneven and skewed in favor of TNCs, to the detriment of the traditional taxi and for-hire vehicle industries. To add to the confusion, the shared mobility industry is plagued by discrepancies in use and definitions of specific terms (SAE International, 2018). In turn, this often creates ambiguity and confusion for policymakers, regulatory agencies, and the riding public.

Wheelchair accessibility and equity

Business models common among app-based on-demand transportation services, such as TNCs, claim to provide a transportation alternative “for all”. When further examined, it becomes clear that these claims fall somewhat short. Throughout the United States, the proliferation of TNCs has slowed progress toward wheelchair-accessible shared mobility. TNC vehicles and drivers rarely have the capacity and ability to accommodate mobility devices such as wheelchairs and scooters. Typically, TNCs are not held to the same accessibility mandates or standards as the traditional for-hire vehicle industry, and TNCs even go as far as to argue that the Title III of the Americans with Disabilities Act (the “ADA”), 42 U.S.C. § 12181 et seq. does not apply to their operations because they are not a transport provider (see e.g., Access Living of Metropolitan Chicago et al. v. Uber Technologies Inc. et al., case number 19–2116, U.S. Court of Appeals for the Seventh Circuit). Under the ADA, taxicab companies are not required to purchase an accessible automobile. If a taxi company purchases a larger vehicle, like a van, it is subject to the same rules.
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as any other private entity primarily engaged in the business of transporting people that operates a demand-responsive service [Transportation Services For Individuals With Disabilities (ADA), U.S. Code of Federal Regulations, title 49, § 37.29(b)].

Equity in transportation is both a human and civil rights issue. Access to affordable and reliable transportation enhances opportunities and is necessary in addressing unemployment, poverty, and other equal-opportunity goals, such as access to health care services and good schools. Current federal and state transportation spending programs have been discrepant between communities and populations and have not equally benefited all. Negative effects of these transportation decisions are broadly felt and have long-lasting effects. To ensure equity for the riding public, the same advantages and considerations must be given to all potential passengers. If equity is to be successfully addressed, jurisdictions must first address the uneven regulatory and financial resource advantages that smartphone application on-demand dispatchers have (Daus, 2016).

**Traffic congestion and the environment**

The exponential growth of TNCs adds countless vehicles to the road and impacts cities’ efforts to address the number of personal motor vehicles on the road. Unregulated growth challenges years of transport planning and policy that sought to mitigate congestion and pollution and encourage shared mobility and mobility management. When additional vehicles are added to the road, harmful environmental impacts also proliferate with the spreading of volatile organic compounds, carbon monoxide, sulfur dioxide, fine particulate matter, greenhouse gases, and air toxins. Congestion has impacted local businesses and taxpayers. Additional vehicles on the road have also necessitated additional travel time and public funds spent on road repair, while business, government, and labor force activity have been negatively impacted by traffic jams and gridlock. As urban areas are projected to continue growing, policy makers need to consider how they will allow TNCs to continue to expand while avoiding a cataclysmic collision with environmental and sustainability policies.

**Corporate social responsibility**

TNCs consistently market themselves as socially responsible businesses, yet there have been instances of tax avoidance, which deprives the jurisdictions within which they operate of potentially large sums of tax revenue. Uber, for example, created a web of global subsidiaries, limited partnerships, and holding companies and entered into separate and distinct agreements with these entities to safeguard itself from taxes in foreign jurisdictions and from domestic taxes on foreign income (Daus, 2016). Comparatively, local taxicab and for-hire vehicle trips are typically subject to state and local taxes, increasing the operators’ cost burdens and pressuring them to charge higher fares – if those fares are not set by regulation – than their TNC counterparts. This puts the traditional industry at a further competitive disadvantage.

**The gig worker economy**

The definition of a “sharing economy”, as applied to TNCs, has led to a divergence in policies throughout jurisdictions on how these services should be regulated. TNCs have used this to their advantage and have expanded the number of vehicles and drivers in many cities, arguing that their service is different from the traditional for-hire transportation service. At the same time, this unregulated expansion has a major impact on the labor markets of cities that are being
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affected by vehicles. TNC service is best described as an “access economy”, where companies facilitate access to FHV service through their app-based platforms. This has had a severe impact on driver income. TNCs use an independent contractor model to extract maximum profits from the service that drivers provide, which has led to driver unrest and litigation related to employment status.

Taxi and TNC drivers are typically independent contractors, not employees. The terms “employee” and “independent contractor” are labels for tax and legal purposes. The main distinction between an independent contractor and an employee is the degree of control and independence that the hiring entity exerts over the worker. Independent contractors set their own hours, use their own tools, and have their own clients. Employees follow a schedule set by their employer and use their employer's tools and methods to accomplish specific work at the direction of the employer, among other things. There are different aspects and tests for control in various U.S. states, but it all comes down to economics. Employers are responsible for paying for benefits, payroll taxes, unemployment insurance, and other costs for their employees, whereas independent contractors pay their taxes and benefits in full, receive no compensation for accidents or health-related incidents, and are ineligible for unemployment benefits.

The future of the taxi industry

In the United States, the taxi industry market has shrunk significantly, and some may say taxis in certain high-density cities have been decimated by TNCs taking over those markets. In some cities, such as Los Angeles, taxicabs remain in business primarily due to airport and wheelchair-accessible transportation business – with street hails and pre-arranged general passenger transport having been taken over almost entirely by TNCs. Unless major business or regulatory changes happen, such as TNCs going bankrupt or states changing their laws, the future of what remains of the taxi industry in most cities will be limited to niche services.

The non-emergency medical transportation (NEMT) field is ripe for disruption, with paratransit providers and brokers facing competition from new software technology companies, TNCs, and wheelchair-accessible taxicabs (Koffman, 2016) (see also Chapter 17). This niche area, which TNCs originally avoided, shows great opportunity for taxicab services operating in a pre-arranged and on-demand capacity – given government subsidies and the stability of such services. For many years, the taxi industry fought against wheelchair access, but now those companies that built up such services, and those that were required by local regulation to do so, are in an ideal position for growth. Also, many cities with large urban public transport systems may migrate over their public paratransit system to replace buses or mini-shuttles with point-to-point accessible taxicabs and TNCs to outsource all trips under one system or platform with subsidies using an app that could form the basis for a MaaS platform over time (see also Chapter 3).

In terms of the environment, taxicab regulation historically sought to promote a supply and demand balance not just for congestion mitigation purposes but also to ensure a living wage for drivers. In New York City, the large growth of high-volume apps like Uber and Lyft has led the City to enact a cap on the number of for-hire vehicle permits, as well as implementing anticruising regulations to penalize companies for vehicles driving in the central business district of Manhattan without passengers (New York City, N.Y. Local Law 2018/147 [effective Aug. 14, 2018]). It was only a matter of time until transportation regulators and elected officials became aware of the exponential growth that has not only contributed to more congestion but also to wage diminution for drivers. But this wake-up call came about, in large part, as a result of the number of medallion owner-driver suicides that caused the New York City mayor, the New
York City Council, and the TLC to act. Other regulators are closely watching the congestion pricing scheme and FHV cap implemented in New York City, and it is very possible that other cities and states will follow through on replicating such laws in the near future (Congestion Surcharge, N.Y. Tax Law, Article 29-C). Some type of reform or bailout is expected to compensate taxi medallion owner-drivers for the loss of equity and asset value for their medallions and to protect the taxi or overall for-hire vehicle supply number and wages. This is not unlike the reasons during the Great Depression the closed medallion system was created in the first place. Unfortunately, history has repeated itself.

When taxicab unions were active during the mid-20th century up until the advent of leasing in the 1970s, which led to the decertification of unions for collective bargaining purposes, many local regulators protected driver earnings by transferring lease cap limitations and commissions set forth in labor agreements into regulations that prohibited taxi owners from charging more than certain amounts. While these lease caps or gate fees are still law, on the TNC side of the equation, states like California and New York are looking to eliminate the independent contractor status of both taxicab and TNC drivers, through California’s Assembly Bill No. 5 legislation (Daus, 2020a). The elements of control over the industry by owners that may result could change it forever. Also, in New York City, a local law that guarantees minimum payments to drivers for a trip dispatched by a high-volume for-hire service (currently Uber, Lyft, and Via) could end up becoming a trend nationally given that the economic rewards for drivers may meet or even be greater than the wages guaranteed for employees under Assembly Bill 5 (N.Y.C. Admin. Code § 19–549, L.L. 2018/150, effective Aug. 14, 2018). Two extreme approaches on either side will not work for the industry or the drivers, as many drivers do not wish to work set hours, yet they desire minimum pay and benefits. Most likely, there will be legislation tailored to gig workers that achieves both results: better wages and benefits, but not de facto control over every aspect of the worker’s daily activities, including the ability to work for numerous employers. This battle will be decided based on labor politics and whether elected officials wish to return to union control and collective bargaining for taxi and TNC drivers or instead opt for a dependent worker scenario that does not involve unionization or full employee status but preserves elements of independent contractor status along with certain benefits and wage guarantees. The broader politics of conservative capitalism versus democratic socialism or progressivism in the United States may lead to certain politically liberal/progressive states and cities enacting such laws first.

In terms of other niche services, taxicabs, if they can capitalize on TNC shortcomings, could be the go-to mode for underserved and underbanked communities, as they still accept cash and their rates may be less than those of TNCs. One difficulty is that, in large urban environments, taxicabs continue to cluster on the central business district core, where more affluent passengers are choosing TNCs over taxis. An orchestrated effort or regulatory intervention may need to take place, like the green outer borough taxi system in New York City, to allow for or steer taxicabs to fill the underserved and unbanked communities. It is possible that TNCs may end up taking over service to transportation deserts through public-private partnerships with public transport agencies, such as the Federal Transit Administration’s Sandbox Demonstration Programs, which allow for seamless app integration between TNCs and public transport trains and buses to finish the first and last mile of a trip (see also Chapter 22). Taxicabs would be perfect for such solutions but will need to fight against the lobbying and well-funded public relations machine of TNCs to enter and develop this area of service.

In terms of data and privacy, taxicab companies and TNCs have traditionally resisted attempts by regulators to access data, and regulations guard against invasion of privacy in the United States, Europe, and elsewhere (see also Chapter 24). However, to implement connected
and automated vehicle networks, MaaS, universal apps, and/or government subsidy contracts, taxicabs and TNCs will be compelled to share data either by regulation or through business necessity. New York City was the first city to require such data, but across the United States and beyond, mobility providers are slowly starting to share data, and laws will need to be passed to ensure privacy and guard trade secrets as the existing legal paradigm for government control of such data was not built for such innovations when freedom of information laws were enacted.

In terms of governance, the system is disjointed and fragmented, with conflicting regulations for taxicabs; TNCs; and other submodes like limousines, buses, shuttles, liveries, and black cars. Uniformity of licensing standards is likely to happen over a period of time and may end up somewhere in between the stringent regulatory regime of taxicabs and the loose “regulation light” TNC model. The duty of care required of business travel and for government and other work will lift the standard of care naturally outside of government licensing requirements, and taxicab regulations on fares, color regimes, and vehicle choice will continue to be loosened. Taxis may look and operate more like TNCs, and regulations may force TNCs to become safer and more responsible. There are also too many different government agencies with conflicting rules for these transportation modes. While it may make sense to have multimodal agencies like the San Francisco Municipal Transportation Agency, Transport for London, the Singapore Land Transport Authority, or the Dubai Roads and Transport Authority, it is unlikely that these consolidations will take place overnight, yet they will need to occur before autonomous and connected vehicle networks appear on a wide-scale basis.

The taxicab industry has not taken advantage of developing automated and connected vehicles and has not electrified or upgraded its fleets, as the industry is currently on life support from the growth of the TNCs and the impact of the COVID-19 pandemic and also has its hands tied due to numerous regulations that preclude it from innovating. It is possible that after A.B. 5 becomes a reality and the market experiences mergers and acquisitions and ultimately shrinks in size, bigger players with more capital may emerge that would control more taxicabs, black cars, and limousines, and then true innovation, which costs money to do, could occur, especially under unified ownership. In New York City, based on sales and auctions of distressed medallions, a single player, Marblegate Asset Management, a Connecticut private equity firm, has amassed ownership of almost one-quarter of the medallion taxicabs or medallion loans. If this company leads and places new electric and autonomous vehicles on the road with enhanced services, then this could be a revolutionary change for the industry. Only time will tell, but there is opportunity for widespread change and the reinvention and comeback of the taxicab. TNCs, however, are likely to stay, as they have become too big to fail, and if they cannot turn a profit, they are more likely to be bought or resort to reorganization bankruptcy than shut down or be dissolved or liquidated.

Many of the previous predictions are based upon the unique situation in the United States, and the same does not necessarily hold true for other countries or continents. In Europe, TNCs were controlled and could not grow as much as they have in the United States, and taxicabs are still relatively strong in European and Middle Eastern countries. Canada has many of the same problems and issues with TNCs as the United States, but the problems are not as severe and are more slowly materializing in some provinces. Australia has experienced TNC disruption more in big cities like Sydney and Melbourne than other more suburban or less-populated cities around the continent, but the disruption to taxicabs in those urban populations is similar to the that in United States and Canada. South America, Southeast Asia, and Eurasia have many different TNCs, but the dichotomy and politics of the U.S. taxi experience are not the same around the world. Many of the service and safety issues are truths and problems, but the future in those countries may turn on much different factors than discussed here involving the U.S. taxi model.
In stating this, there is a future for taxicabs, but what it will look like and how well it will function is dependent on the taxi industry taking advantage of niche opportunities and lessons from TNCs on how to better serve the customer.

**Conclusion**

Where taxis were once the leader in for-hire passenger transportation, they are now struggling to keep up and have lost significant market share in those jurisdictions with the app companies have launched operations within the past decade. This is especially so in markets that have TNCs operating with a reduced regulatory framework when compared to taxis. While taxis have seen their market share plummet with the advent of TNCs, new modes are entering the marketplace. More mobility options like electric bikes, electric scooters, bicycles, electric skateboards, shared bicycles, electric pedal-assisted bicycles, micro transit, demand-responsive transport, and other shared mobility will further compete with taxis for passengers. As the public transport industry rapidly evolves, so must taxis. As new ways of providing service and doing business develop, so too must the taxi business adapt. To navigate the road forward, taxis will need to be nimble and ready — and willing — to adapt to changes in the market. They will also need creative problem-solving to not just survive but thrive again. However, without equally flexible regulations that allow taxis to evolve, the industry will be hampered to make material, necessary changes.

Based on what is observed today, the following are suggestions for future research areas:

- **Emerging technology.** With the development of taximeters and subsequent in-vehicle technology and dispatching systems, the taxicab industry has shown that innovation through technology is a part of its history. A keen topic for future research is how — and whether — taxicabs will again utilize technology to compete with the app companies to address passenger demand. If taxis use new and emerging technologies similar to TNCs, what effect does this have on rider demand for taxis? Taxis may have an image issue — that is, even if taxis adopt technologies similar to TNCs, passengers may still prefer TNCs over taxis due to the perception that the TNCs are user friendly and technologically advanced.

- **The impact of the pandemic.** As various regions around the world reopen from the COVID-19-related lockdown and social distancing norms are mandated, it will be of interest to examine the long-term impact on the taxi industry and how the reluctance of passengers to return to public transport or shared rides may lead to new opportunities for taxicabs, particularly those taxicabs with partitions and stringent vehicle disinfecting criteria, as well as new business lines that cross-pollinate passenger trips with food and package delivery, which has happened in many jurisdictions.

- **The impact of micromobility.** Having already lost market share to the app companies within the past decade, there may be further erosion due to electric bikes, electric scooters, bicycles, electric skateboards, shared bicycles, and electric pedal-assisted bicycles. Additional research will be needed to determine whether these modes of transportation are a substitute for taxis that further reduce taxis’ share of the market or whether they are their own market and, if so, whether they complement taxi services.

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