

# Agenda

## Advancing economics in business

### Is the ride right?

### Transportation network companies and taxicabs

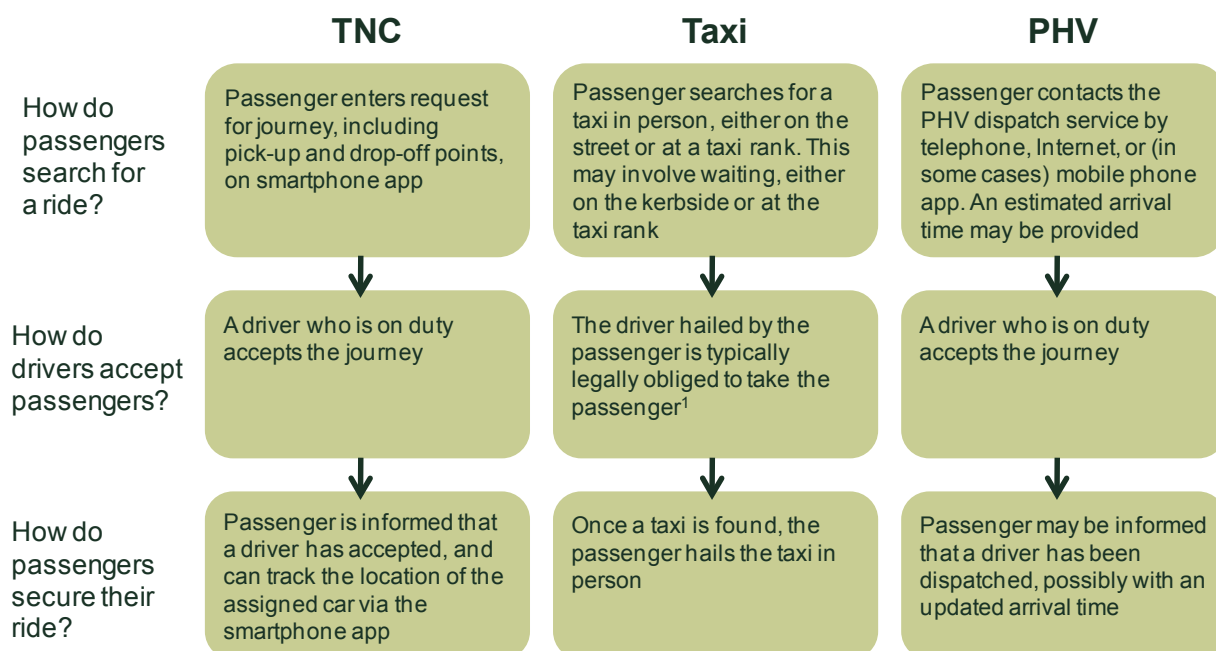
**Taxi operators in major cities across the world are facing competition from entrants with a new business model: the ability for consumers to book drivers via smartphone applications, who use their private cars to carry passengers. In August 2014, Berlin became the latest city to ban Uber, a smartphone-powered transportation company, under threat of a large fine. Against strong opposition from taxi operators, how should policymakers react?**

Smartphone applications that can be used to book cars with drivers have become popular in large urban centres worldwide. While traditional hire involved hailing a taxi in person, obtaining a cab at a taxi rank, or pre-ordering a car over the phone, smartphones have made the process easier.

The development of transportation network companies (TNCs), or firms that match drivers to passengers using an online-enabled app,<sup>1</sup> has been met with animosity and even outright hostility from incumbent taxi drivers. There are reports of vandalism and violence—drivers of one TNC, Uber, have reportedly been assaulted in Paris,<sup>2</sup> and the office

of Hailo, a London-based TNC, was allegedly vandalised by taxi drivers.<sup>3</sup> In many cities, taxi services are heavily regulated in terms of price, vehicle type, and, in some cases, the number of taxi licences available. In general, there are also specific requirements for taxi drivers and taxis, in terms of background checks or technical inspections, for example. Even in locations with an existing private hire vehicle (PHV) system,<sup>4</sup> such as the UK, TNCs may be targeted by the incumbent taxi industry. The differences in business operation between TNCs, taxis and PHVs, from a consumer perspective, are outlined in Figure 1.

**Figure 1 How do passengers obtain a ride?**



Note: <sup>1</sup> Many jurisdictions require taxis to take any journey within a specified district, unless there is a good reason not to. This is the case in Great Britain—see The Institute of Licensing (2009), 'Taxis – An Overview', p. 2.

Source: Oxera.

Thus far, the regulatory and judicial responses to TNC entry have been mixed, with some jurisdictions (e.g. California) allowing TNCs to enter the market as a separate class of licensed business.<sup>5</sup> Other jurisdictions have reportedly banned TNCs from operating at all, citing safety concerns (e.g. Berlin)<sup>6</sup> or the lack of appropriate licensing of drivers (e.g. Brussels).<sup>7</sup> This article considers the impact of TNC entry and what might be an appropriate regulatory response to ensure good consumer outcomes.

## Concerns with TNCs

The criticisms of TNCs can be loosely classified into two categories: concerns about safety and the insurance liability of private cars dispatched by TNCs; and concerns about an uneven competitive playing field between TNCs and other car hire businesses.

### Safety concerns

Safety concerns over TNC operations are typically focused on the vetting of drivers, and, to a lesser degree, on the upkeep and features of the vehicle. Moreover, some concerns have been raised about whether TNC drivers take out sufficient liability insurance, or whether they are being charged the appropriate commercial premium—i.e. one that takes into account increased risk from accepting strangers into the car.

Some TNCs do have vetting processes in place, requiring drivers to undergo background checks.<sup>8</sup> Some TNCs also inspect their drivers' vehicles, and for some services only certain classes of vehicle are permitted.<sup>9</sup> Even though the safety and security checks on TNC vehicles may not be as strict as for taxicabs, the vehicles used must be sufficiently safe to be operated as private vehicles, according to existing legislation regarding roadworthy vehicles.

However, evidence suggests that vehicle standards and quality do not significantly affect consumer willingness to pay for private vehicle transportation, once a certain minimum threshold is met.<sup>10</sup> Any further improvements in vehicle quality for taxis would only impose higher costs on taxi drivers, which in turn could result in decreasing profits for taxi operators in cases where additional costs cannot be passed on—for example, where taxi fares are fixed by a local authority. If costs can be passed on to passengers, stricter vehicle requirements result in higher taxi prices, but with no additional value for consumers, and subsequently lower demand for taxi services.

### Unfair price competition

The key argument that incumbent taxicab firms have levied against TNC drivers is that the latter have an unfair competitive advantage. According to this argument, taxi drivers face higher fixed costs because they are required to pay expensive licence fees and meet onerous safety standards that do not apply to TNC drivers. Indeed, taxi licence costs can be prohibitively expensive, particularly

in jurisdictions with a fixed number of licences.<sup>11</sup> For taxi drivers who entered the market prior to TNC entry, the licence fees were set with the expectation that the volume of customers would cover their licensing costs. However, the entry of TNCs may significantly extend the time needed to recoup the fixed costs of taxi operation. Where taxi drivers rent licences, or pay an annual licence fee, competing against TNCs that do not have these costs may force the established drivers to exit the market in the long run, as renewing the licence may no longer be profitable.

Furthermore, taxis are subject to price controls that can include minimum prices, maximum prices, or fixed rates, depending on the jurisdiction. By contrast, TNCs are not subject to the same price regulations, and hence can undercut taxi fares. In cases where taxi fares are either fixed, or the price charged by TNCs is below the minimum taxi fare, taxis would be unable to compete on price with TNCs, and subsequently lose business that may have been profitable even at a lower price.

## Market definition

A market definition exercise is an appropriate starting point for determining the extent of the competitive pressures imposed by TNCs on taxis. This question is of practical relevance, especially since local authorities have decided to ban or allow TNCs depending on perceived similarities and differences between taxis and TNCs.<sup>12</sup> If taxis and TNCs compete in the same market and do not have idiosyncratic passenger groups, differences in the regulatory and safety requirements that apply to the different operator types could unfairly affect the ability of one of the operator types to compete in the long term. On the other hand, if there are markets unique to taxis that are not contested by TNCs, or vice versa, an outcome where both taxis and TNCs continue to operate may be desirable.

A number of individuals who consider travelling by taxi may also consider travelling with a TNC driver. In locations where there are price differences between TNCs and taxis, price-sensitive customers may travel exclusively via the cheaper form of travel. In general, for these customers, the substitutability of TNC and taxi services will depend crucially on consumers' relative valuation of price versus quality, and their perception of the quality of taxi services versus that of TNC services.

On the other hand, there may be taxi passengers who would not switch to TNCs, for example because they do not have a smartphone (which is required to book TNC services) or the time or inclination to download the relevant apps. Similarly, if passengers are in a hurry, and do not have the time to pre-book a TNC driver, hailing a taxi or catching one at a nearby taxi rank may be the only available option. It is also plausible that some TNC passengers may not have considered taking a taxi if a TNC were unavailable, but would instead have used some other form of transport (e.g. a bicycle or bus).

The contestable portion of customer demand between the two options will comprise those customers to whom both taxis and TNCs are accessible. The extent to which TNCs and taxis operate in the same market will depend on the proportion of this group of passengers compared with all TNC passengers, and compared with all taxi passengers. The growth and popularity of TNCs in many cities—and the opposition of incumbent taxi operators—suggests that there probably is a contested passenger base, and that TNCs and taxis do compete head to head.

## Consumer outcomes

Demand for private-car-plus-driver services is characterised by two market imperfections that influence consumer outcomes. First, passengers have imperfect information about quality of service and—in cases where street-hailing taxi prices are not fixed—about price.<sup>[13]</sup> Moreover, taxi trips have negative externalities on other passengers' waiting times; since demand for taxi trips is quite time-specific (i.e. consumers are relatively unwilling to change their time of travel), if a passenger hails a taxi then other potential passengers will have to wait longer to make their journey.<sup>14</sup> While TNCs offer a new business model for providing passengers with cars and drivers—potentially encroaching on services traditionally offered by regulated taxicabs—these characteristics are also present in the demand for TNCs. Here, too, some information about quality of service is unknown to passengers, and passenger journeys can negatively affect others' waiting times.

Local authorities around the world are therefore at a crossroads: should these new entrants be banned, given that differences between TNCs and taxis are minimal, and should TNC drivers apply for taxi licences? Or should TNCs be allowed to operate in local markets, dispatching drivers and cars that are not licensed as taxis? If TNCs are allowed to operate, should taxi regulations and price restrictions change?

## Effect on prices

On the face of it, allowing TNCs to operate strengthens competition for personal transportation services, which is likely to result in lower fares—a key benefit to consumers. However, for consumers to have the greatest benefit from lower fares, fixed or minimum taxi fares would arguably have to be abolished.

Traditionally, the arguments given for a fixed price for taxicab services were that search costs for consumers are high, and taxis that have been flagged by potential passengers enjoy a high degree of point-of-sale advantage.<sup>15</sup> In such cases, from the consumer's perspective, it is preferable to have a single, appropriate price for taxi services, instead of marginal pricing that may differ from taxi to taxi. However, following the widespread use of smartphones and mobile Internet, search costs

for the cheapest price of hiring a car to get from point A to point B have reduced—passengers can, in principle, compare per-mile charges across a number of companies by checking those companies' websites.

The economic rationale for setting a minimum price for taxis is unclear, and price floors may have been implemented in some jurisdictions simply due to industry pressure.<sup>16</sup> Where there is no salient reason to set minimum prices for taxis—except to limit price competition, benefitting taxi operators at the cost of consumers—it is likely to be in the interests of consumers to remove such price restrictions.<sup>17</sup>

If TNCs are allowed to operate and binding price floors are not removed, price competition between TNC operators and taxis is likely to be minimal, with TNCs pricing at (or slightly under) taxi prices. However, if multiple TNCs begin operating in the same city, price competition between TNCs should drive down TNC prices. This, in turn, would leave taxis at a disadvantage when competing for the business of customers who could switch to TNCs. This is because taxis will be unable to match the attractive prices offered by TNCs competing against one another. If, instead, price floors for taxis are removed, all passengers may benefit from taxis cutting prices to compete with TNCs.

The motivation for a maximum price for taxi services would remain, but only for services where taxis have a point-of-sale advantage—i.e. picking up passengers from a taxi rank, or when cruising. Price-checking via the Internet and smartphones for pre-booked services may promote competition among firms that provide these services. If there is a sizeable contested customer base between these services and non-booked taxi services then prices for rank taxis and cruising cabs should also be at a competitive level. That said, if the contested customer segment is small, or there is a sizeable portion of passenger trips that is exclusively serviced by rank hire and cruising cabs, there is a segment of customers for whom taxi drivers still have a high degree of point-of-sale advantage. For this reason, a maximum price on non-booked taxi services is still appropriate in order to prevent taxis from exploiting customers who do not pre-book travel.<sup>18</sup>

## Effect on quality

The entry of TNCs can allow for market segmentation, with certain types of passenger choosing to use TNCs, and others preferring taxicabs. This is likely to be analogous to the current situation in the UK, where for certain customer groups, or certain journey types, taxicabs are preferable, and for others PHVs are preferred. While allowing TNCs to enter is likely to erode the market share of both taxicabs and PHVs, the current coexistence of the two in the UK suggests that compatibility of three business models of car-plus-driver services is feasible.

The effect of TNC operation on two key metrics of service quality—waiting time and travel time—is ambiguous. On the one hand, new entrants that provide personal transportation services will result in more cars that can deliver these services. With more cars available, there is a greater chance that a car will be free close to a passenger's pick-up point, and hence the passenger will not have to wait as long for their ride. On the other hand, with additional cars on the roads, this may cause greater congestion, and consequently increase waiting times and travel times. Overall, the net effect of these competing pressures will differ from city to city, and may generally improve waiting times in cities with low current road congestion, and worsen waiting and travel times in cities where road congestion is already high.

One quality benefit of TNCs is decreased uncertainty for passengers in finding and tracking a driver: TNC passengers have to order cars via a smartphone app and can track how far away their assigned driver is. By contrast, looking for a taxi rank, waiting for a cruising cab, or even waiting for a pre-booked PHV,<sup>19</sup> often involves an additional element of uncertainty in finding a car.

Additionally, the greater flexibility in the type of car that TNC drivers can use versus taxicabs can result in product differentiation and quality competition. Consumers will be able to select the mode of transport that they find more comfortable or safer, or that uses a brand or make of car they prefer.<sup>20</sup> Consumers will have varying preferences with regard to these three dimensions and, by allowing more differentiated services, consumers may self-select, with the result that taxis, TNCs and PHVs each have specific customer groups. In addition, with service offerings that are differentiated on price and quality, driver-plus-car services can expand to consumer groups that were previously not serviced.

Finally, in addition to any self-regulation of the TNC industry, some quality regulation of drivers and vehicles by local authorities may be appropriate for characteristics

that cannot be readily observed by consumers.<sup>21</sup> Evidence suggests that, with the exception of extreme differences in vehicle quality or driver ability and knowledge, consumers generally do not have a higher willingness to pay for such quality aspects.<sup>22</sup> Hence, in cases where such extreme differences cannot be observed by passengers prior to making a trip, a classification system that identifies minimum standards, barring very low-quality vehicles or drivers, may be appropriate.

## Conclusion

Allowing TNCs to operate is likely to promote price competition for driver-plus-car services, and will allow for differentiated services which can serve a larger consumer base. The impact on waiting times is unclear, and is largely an empirical question, depending on passenger diversion between modes of transport and changes in congestion. However, entry of TNCs may also draw passengers away from other modes of transport, such as local buses, especially if price competition from TNC entry results in low prices relative to bus fares.

Overall, this would suggest that, if local authorities permit TNC entry, price competition should ensue, resulting in better prices for passengers. However, the magnitude of this consumer benefit may depend on deregulating taxi fares, allowing the taxi business model to compete on price with TNCs. In this manner, consumers could choose which form of transportation they prefer. If, indeed, TNCs are a significant innovation that improves outcomes for consumers across the board, then this could have a significant impact on the taxi business. On the other hand, it may be that the existence of both business models provides value to consumers. Consumers should be allowed to decide which outcome is in their best interests—and local authorities can facilitate this by allowing effective competition between the two modes, with the appropriate degree of regulation in place for both.

<sup>1</sup> State of California Public Utilities Commission (2013), 'Decision adopting rules and regulations to protect public safety while allowing new entrants to the transportation industry', Decision 13-09-045, 19 September, p. 24.

<sup>2</sup> Bradshaw, T. (2014), 'Taxi drivers turn violent against Uber in Paris', *Financial Times*, 13 January.

<sup>3</sup> BBC (2014), 'Angry London cabbies attack Hailo taxi app office', 22 May.

<sup>4</sup> A PHV is a vehicle that is 'licensed to carry up to eight passengers who have pre-booked but which is not licensed to ply for hire'. See Office of Fair Trading (2003), 'The regulation of licensed taxi and PHV services in the UK', November, final report, p. 84. The term for vehicles licensed in this way may differ by jurisdiction—for example, in California they are referred to as charter-party carriers. See State of California Public Utilities Commission (2011), 'Basic information for passenger carriers and applicants', January, pp. 6–7.

<sup>5</sup> State of California Public Utilities Commission (2011), 'Basic information for passenger carriers and applicants', January.

<sup>6</sup> BBC (2014), 'Berlin bans Uber app citing passenger safety', 14 August.

<sup>7</sup> Fontanella-Khan, J. (2014), '€10,000 fines threat for Uber taxis in Brussels', *Financial Times*, 15 April.

<sup>8</sup> The three largest US-based TNCs—Uber, Lyft and Sidecar—all conduct background checks for their US drivers, and Uber's UK operation also requires background checks. See <https://www.uber.com/>, <https://www.lyft.com/> and <http://www.sidecar.com/>.

<sup>9</sup> For example, Lyft requires that cars provided through its app are no more than 14 years old (i.e. a 2000 model or newer), and Uber's UberX London service requires vehicles to be a 'mid-size or full-size saloon that comfortably seats 4 passengers'. See <https://www.lyft.com/> and <https://www.uber.com/>.

<sup>10</sup> Whelan, G., Wardman, M., Jevons, D., Senior, T. and Marshall, N. (2004), 'Consumer Preferences in the UK Taxi Market', European Transport Conference 2004: Applied Methods in Transport Planning, p. 13.

<sup>11</sup> Cumming, D. (2009), 'Why has the price of taxi medallions increased so dramatically? An analysis of the taxi medallion market', *The Park Place Economist*, 17:1.

<sup>12</sup> See examples in footnotes 5–7.

<sup>13</sup> Oxera (2003), 'Taxi Markets Literature Review', Office of Fair Trading, September, p. 10.

<sup>14</sup> Oxera (2003), 'Taxi Markets Literature Review', Office of Fair Trading, September, pp. 10–1.

<sup>15</sup> Office of Fair Trading (2003), 'The regulation of licensed taxi and PHV services in the UK', November, pp. 64–5.

<sup>16</sup> This seems to be the case at least in the USA. See Frankena, M.W. and Paulter, P.A. (1984), 'An Economic Analysis of Taxicab Regulation', Federal Trade Commission, May, p. 75.

<sup>17</sup> The UK Office of Fair Trading has concluded this to be the case regardless of TNC operation. See Office of Fair Trading (2003), 'The regulation of licensed taxi and PHV services in the UK', November, p. 9.

<sup>18</sup> In cases where taxis can be pre-booked, these taxis should be treated as any other pre-booked car since the point-of-sale advantage that taxis enjoy at taxi ranks or when cruising is no longer present.

<sup>19</sup> Some PHVs have developed smartphone apps to facilitate booking for customers. See, for example, Addison Lee (2014), 'Discover Addison Lee – Mobile'.

<sup>20</sup> There is some evidence that passengers are willing to pay a premium for certain vehicle types. See Whelan, G., Wardman, M., Jevons, D., Senior, T. and Marshall, N. (2004), 'Consumer Preferences in the UK Taxi Market', European Transport Conference 2004: Applied Methods in Transport Planning, pp. 5–6 and 13.

<sup>21</sup> Office of Fair Trading (2003), 'The regulation of licensed taxi and PHV services in the UK', November, p. 52.

<sup>22</sup> While consumers state that the quality of driver and vehicle (for example, a driver's topological knowledge) is important, revealed-preference tests have shown that there is, in fact, additional willingness to pay only in cases of extreme disparities in quality. See Oxera (2003), 'Consumer Survey Report', Office of Fair Trading, September, pp. 42–4.