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Turning statutory regulation into private regulation for the UK's taxi industry

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the Paragon initiative

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Summary

- Over the past two years, there has been a worldwide regulatory backlash against new smartphone-app-based Private Hire Vehicle (PHV) operators, with Uber probably being the most emblematic one. While a few regulatory clarifications can be justified, the vast majority of measures have been transparent attempts to obstruct the growth of this sector, in order to protect the interests of politically well-organised, competition-averse incumbents.
- Until the advent of smartphones, apps and GPS systems, there was a rigid distinction between taxis on the one hand, and PHVs on the other hand. Only taxis could be hailed on the street, ply for hire and wait for customers at ranks, while PHVs had to be pre-booked. This distinction created two quite different sub-sectors, with limited overlap. People would turn to the PHV sector for trips that could be planned in advance and to the taxi sector for spontaneous trips. However, now that 'pre-booking' via smartphone apps has effectively become an electronic form of hailing, the distinction between the two sectors has become blurred. PHVs have become much closer substitutes for taxis.
- This would not be a problem were it not for a fundamental difference between the two markets. While PHV markets tend to be relatively open and competitive, taxi markets tend to be heavily protected, with the number of taxi licenses either explicitly capped, or held low in other ways. Licences therefore accrue a scarcity value: in recent years, they have been traded for over €200,000 in Paris, for over AU$250,000 in various Australian markets, and for nearly $1m in New York City. But if app-based PHVs become near-taxi substitutes, and if the PHV-sector is not entry-controlled, then the licensing system is undermined.

- This development should be welcomed, because quantity restrictions should never have existed in the first place. There was never a sound economic justification for them and they owe their existence purely to lobbying efforts. Where they have been abolished – such as in New Zealand, Ireland and parts of the UK – consumers have generally benefitted from shorter waiting times, lower fares, higher quality and a greater diversification of the taxi market. Rather than trying to suppress the growth of new business models in the PHV sector, we should derestrict the taxi market.
- In recent years, smartphone-enabled applications such as Uber have gone a long way to resolve the market imperfections which gave rise to taxi regulation in the past. GPS technology and Big Data have spurred market innovations which reduce informational asymmetries, facilitating transactions between passengers and drivers.
- App-based transport services form part of the so-called 'sharing economy,' which involves the reduction of transaction costs to make more efficient use of assets. In particular, sharing economy providers add value by providing information in a timely and searchable way, outsourcing trust on behalf of users, and consummating transactions in a reliable and immediate fashion.
- Contrary to conventional wisdom, smartphone-enabled apps have not created an 'unregulated' private transport sector – on the contrary, they have fostered the emergence of regulatory brands. Organisations such as Uber do not just offer transport services, they also offer a set of rules and regulations under which these services are provided. This *is* regulation – but it is *private* regulation, or regulation by the market, as opposed to statutory regulation. The scope for competition has also been broadened as drivers compete with each other for custom; passengers compete for rides; and apps compete for users on both sides of the transaction. As with other Internet-based innovations, transport apps have increased economies of scale in private transport.
- Recent market innovations make reform of taxi regulation urgent. The principles of such reform should be decentralisation, to facilitate trial-and-error and fitness for local conditions; a one-tier system of regulation, as the old separation between taxis and private hire is obsolete; technology neutrality; and a preference for private governance, which has proven so successful in app-based services.

- London provides a suitable setting for reform. The milestones to be achieved include the abolition of taxi privileges and the equal treatment of black cabs and private hire operators. The London Taxi Drivers' Association (LTDA) would be granted powers to regulate the quantity of black cab drivers and the fares to be charged (similar to how Uber and private hire firms oversee their own drivers and vehicles). It is important to note that the LTDA would not be given a monopoly – black cab drivers could over time decide to form competing brands and associations within the trade.
- Statutory regulations would be limited to criminal background checks; the monitoring of fraud and illegal behaviour; and a periodic review of the state of competition in the market. These tasks could be conducted by Transport for London (TfL), with the assistance of the Competition and Markets Authority in the latter function.

Introduction

In September 2015, Transport for London released a consultation document (TfL 2015), which proposed various new regulations for private passenger transport operators. Of the proposals contained in this document, the one which attracted the most attention was a mandatory minimum waiting time period of five minutes between the confirmation of a booking and the commencement of the journey. That period would have to be observed even if the car was literally just around the corner.

Given that this document was published against the backdrop of a global regulatory backlash against new models of private hire transport, it seemed like a fairly mild restriction. All over the developed world, incumbents in lucrative, heavily protected taxi markets were trying to use their political muscle in order to shut down their novel competitors, or at least consign them to the sidelines. In many places, they had won full or partial victories. With this in mind, a five-minute waiting period appears like a fairly trivial measure, which could not have had much of a deterrent effect.

But there was nevertheless something strange about the mental image of a passenger standing next to a booked car, both the driver and the passenger ready to leave, both impatiently checking their watches and waiting for the five minutes to pass. The proposal seemed to have no other purpose than penalising consumers for the use of a politically unpopular product; an arbitrary inconvenience no more logical than a law stipulating that before entering the car, the passenger would have to stand on one leg and count to 100, or sing a song.

The same went for another proposal in the document, which would have amounted to a much more serious restriction on the trade. TfL also proposed to ban operators from displaying the location of cars that were available for immediate hire on an online map. Again, this seems like chicanery.

The document was framed to be about consumer protection and improving the functioning of the market, aims which are surely best served by disseminating *more* information, not by deliberately withholding it.

But in a strange way, these proposals actually did have a logic of sorts. The UK, like most other developed countries, maintains a strict legal distinction between 'taxis' and 'private hire services', a distinction which creates two separate markets. Only taxis are allowed to pick up passengers spontaneously on the street, without a prior booking. Private hire services always need to be booked in advance, and the booking needs to be made via a dispatcher. Thus, private hire drivers could not cruise around waiting to be hailed, and they could not wait in a public place for somebody to approach them.

The two markets are organised in very different ways. The market for private hire services is the less regulated of the two. There is free entry and exit subject to an operating licence. Operators are also free to set their own fares and determine their own fare structures, and there is a variety of business models and contractual arrangements. Most taxi markets, in contrast, are government-backed cartels. The number of market participants is fixed or at least heavily constrained, and prices are fixed as well, eliminating price competition, or at least confining it to the margins. Unsurprisingly, taxi fares are therefore higher than equivalent private hire fares, even if there are parts of the country where competition in the private hire sector is limited, and the difference in fares is not large (Law Commission 2014: 14-15).

Even if organised in different ways, taxis and private hire firms offer, of course, similar services, which are to some degree interchangeable. This creates a potential tension. If one market is competitive, and a closely related market is cartelised, there will always be a temptation for operators in the competitive market to get a slice of the supernormal profits that can be earned in the cartelised market. In order to maintain the distinction, the boundaries between the two markets need strict policing.

This does indeed happen, for example through spot checks. In some local authorities, licence officers act as undercover investigators, who approach private hire vehicles around busy transport hubs, pretending to be customers in search of a taxi ride. If drivers give one of these 'customers' a ride, they have committed an offence. Another example of boundary-policing is restrictions on the use of terminology. Private hire operators are not allowed to call themselves 'taxis' or 'cabs', and sometimes, this extends to spelling

variations thereof. Curiously, East Devon District Council explicitly forbids private hire operators from using the word ‘kab’ (ibid: 23), presumably on the basis of an individual case of an operator who tried to do just that.

So the boundaries can be a bit blurred and there are legal grey areas. Nonetheless, there has, until recently, been a fairly clear distinction between taxis and private hire services. Private hire was an option for journeys that could be planned in advance. For journeys where the timing could not be predicted, and where the passenger did not have much time, private hire was usually not an attractive option. It would simply have taken too long to arrange a pre-booking and wait for the car to arrive.

This is where technological change comes in. If available hire cars can be tracked, and booked, via a mobile phone, then booking a car that is driving by in close proximity becomes indistinguishable from hailing a taxi. The act of booking an Uber or a Lyft car then becomes, effectively, an electronic form of hailing. It turns out that the separation of the taxi sector from the private hire sector owed a lot to the state of technology as it was at the time, and of the transaction costs resulting from it. Had there been some other way of finding out whether there were any empty private hire cars driving by nearby, and some other way of pre-booking them quickly, the regulatory distinction between taxis and private hire would not have been sustainable for long. Private hire services would have made inroads into the taxi market long ago, and eroded the supernormal profits that can be earned there. This did not happen because transaction costs were too high.

With this in mind, proposals that otherwise seem bizarre, like the minimum waiting period and the ban on tracking cars online, suddenly begin to make some sense, at least on their own terms. Of course, one must not take TfL’s justification for these proposals at face value. Rather, the proposals must be interpreted as an attempt to simulate a return to the previous technological status quo. If the online tracking of vehicles, and the booking for immediate use, were banned, the boundaries between taxis and private hire vehicles would be restored once again. With regard to the waiting period, it needs pointing out that none of the participants in the consultation had literally proposed a five-minute wait. Some participants had proposed a mandatory waiting period of half an hour or more, and the five minutes were, presumably, a rotten compromise. If consumers cannot track nearby vehicles, and if they have to wait for half an hour or more anyway, then it is, for all intents and purposes, as if smartphones and apps had never been invented.

The new actors in this market have been described as part of the so-called ‘sharing economy’, which could be loosely described as a part of the economy which is dedicated to increasing the usage of hitherto underutilised assets, via technologies that radically reduce transaction costs. For the purposes of this paper, however, it is not of primary importance whether we think of the new entrants into the private transport sector as part of a novel economic phenomenon, or simply as a different business model within the private hire trade.

Whichever way we interpret it, the same technological changes which have given rise to the new providers are also undermining the economic assumptions behind the current regulatory framework. The strict regulation of the taxi trade has traditionally been justified by a number of idiosyncrasies, which make it different from other markets. These are:

- When hailing a taxi, a consumer may have no way of knowing when, or whether, another taxi will pass by. In this situation, the taxi driver possesses a degree of monopoly power, and could abuse it under a free pricing system.
- Related to this, the consumer cannot put an offer ‘on hold’; they cannot ‘compare’ the offers of, say, three different taxi drivers, in the way in which they would compare three different yoghurt brands in a supermarkets. They have to accept or reject it on the spot.
- There are usually no ‘repeat transactions’ in the taxi trade: all transactions are, for all intents and purposes, one-off transactions. If we are dissatisfied with a restaurant, for example, we do not go there again, and we tell other people about it. But we cannot deliberately avoid any one particular taxi driver, or advise other people to do so. The usual market incentives to build up and maintain a good reputation are therefore absent.
- This creates problems not just for customers, but for the industry as well. Satisfied (dissatisfied) customers may be good (bad) for the local taxi trade as a whole, because they will be more (less) likely to go by taxi more (less) often. But the benefits (losses) do not accrue to the driver who provided the satisfactory (unsatisfactory) service (see Aquila 2011: 183).
- There are information asymmetries regarding the driver’s skills, the safety of the vehicle, the route, and the going rate for a comparable trip.

There are also a number of more dubious justifications for entry restrictions, which read more like post-hoc rationalisations presented by insiders/ incumbents to lobby against outsiders/newcomers (more on this below). Also, the regulatory interventions actually in place have always gone well beyond what could sensibly be justified on the basis of the above points. But nonetheless, until recently, the interventionist approach has had some theoretical grounding. Now, however, within a very short time space, technological change has rendered this reasoning obsolete. With modern hailing apps, customers can find out very easily how many vehicles there are in the area and how far away they are. They know the exact price of the ride before they make the booking. They can rate individual drivers' performance and access other people's ratings. Overall, this leads to a level of transparency and information symmetry which exceeds that of many other markets, including well-functioning markets that even most interventionists would not want to see heavily regulated.

Rather than adapting the regulatory apparatus to the new economic reality, policy responses have tried to do the opposite and press economic reality into the old regulatory apparatus. This paper will show that even under the old technological conditions, the regulation of taxi markets has gone well beyond the remit of what could be theoretically justified. It will also demonstrate that deviations from this general trend, i.e. individual case studies of deregulation, have largely produced the results economic theory would predict. It will then discuss the advent of smartphone-enabled transport apps and the ways they have found to resolve the market inefficiencies which gave rise to taxi regulation. The paper will then propose to replace the current two-tier model of statutory regulation with a less interventionist approach based on private governance. Specifically, it is proposed that regulated taxis be granted powers to determine their own fares and other requirements, so they can better serve passengers and compete with private hire vehicles. In this model, statutory regulators – such as Transport for London and the Competition and Markets Authority – would retain a residual role aimed at monitoring passenger satisfaction and promoting competition.

The effects of taxi market regulation

Theory

The taxi trade is subject to licensing everywhere in the developed world. In the most liberal markets, however, licensing only serves to ensure certain quality standards, not to constrain supply. In such markets, the number of licences is not limited; the relevant authorities will issue as many licences as there are applicants that meet the specified criteria.

But liberal taxi markets are the exception, not the rule. In most taxi markets, the government, local or national, explicitly or implicitly (more on this later) limits the number of taxi licences. The licences are usually tradable. If the number of licences is smaller than the number of taxis that would result under conditions of free entry – which they would be, because that is the whole point of a system of quantity restrictions – the licences accrue a scarcity value. There are reasons why the number of licences can be expected to fall further behind the free-market equilibrium supply over time:

- Taxi demand cannot be reliably estimated. There are models which try to express the required number of taxis as a function of variables such as population size, income levels, the relative price of alternative means of transport, traffic volumes etc., but these models cannot be more than complicated guesswork. In Ireland, taxi demand forecasting was inadvertently put to the test by 'natural policy experiment'. In 1998, it was estimated that the city of Dublin would require 5,901 taxis by 2008 (Barrett 2010: 65). Two years later, in an unexpected policy U-turn, quantity restrictions were abolished. Thus, the subsequent expansion of taxi numbers can be compared to the model forecast. It turned out that actual taxi numbers already exceeded the 5,901 target by 2002, and

reached about 12,500 in 2008 (ibid) – more than double the number that were supposedly 'needed'. If demand cannot be 'objectively' modelled, demand forecasts become arbitrary and can be tailored to produce a desired outcome. As the OECD (2008: 29) explains:

> '[T]he informational requirements for efficient regulation of the taxi industry are substantial […] Regulators are likely to be unwilling and/or unable to invest the resources necessary to gather the required information for efficient regulation, while undertaking the required analysis may also be highly challenging. […] In such circumstances, alternative approaches to regulatory decision-making are likely, including basing decisions on what is least controversial politically.'

- The taxi market is a classic showcase for the rent-seeking mechanisms identified by the Public Choice School of economics. The gains from restricting licensing practices are highly concentrated, the losses are widely dispersed. For the majority of consumers, taxi rides only represent occasional purchases, which only account for a minor share of their household expenditure.[1] For them, the issue is simply not important enough to get politically organised, whereas for licence holders, political organisation can make all the difference. Licence holders are also a relatively socio-economically homogenous group, which decreases the cost of organising politically. The opposite is true for consumers. Virtually everybody has, at some point, been a consumer in this market. Taxi passengers are not a group with any identifiable common social characteristics. This leads to a political asymmetry. Producer interests will be far more likely to capture the political process, and use it for their ends, than consumers. According to the OECD (2008: 29),

  > 'Consumers are generally unlikely to lobby regulators for lower fares or increased taxi numbers […] In this situation, regulators are likely to accede, perhaps in good faith, to strong pressure from industry groups for higher fares and restrictive entry policies.'

1 The biggest loser from quantity restrictions is probably the 'marginal car owner', the person who does not value car ownership very highly, and who sees taxis as a close-enough substitute. That person would not buy a car if taxis were a bit cheaper and/or more frequently available.

- The above points apply even when taxi licences are not tradable. Tradable licences make these tendencies self-perpetuating. The value of a licence reflects the (net present value of) the income that a driver can expect to earn in the future years. This, in turn, depends on how many licences will be issued in the future, because, broadly speaking, the greater the number of licences, the lower the income earned by any given licence holder. So the price of a licence, at any given time, reflects expectations about the future number of licences in circulation. If a driver buys a licence, and if their number is then increased at a higher rate than was anticipated at the time of the purchase, the driver may find themselves unable to recoup the initial investment. If, however, the increase in licence numbers is smaller than anticipated, the driver would reap a windfall gain. So political pressure to restrain growth in the number of licences cannot be relaxed over time; on the contrary, incentives point towards steadily increasing it.

- The number of licences issued does not just affect a driver's future income, but also the resale value of their licence. From the perspective of an operator, the taxi licence is an input factor like any other, just like the vehicle itself and the petrol it runs on. However, unlike other input factors, the licence has no inherent productive value (it is, after all, just a piece of paper). It derives its value exclusively from legislative fiat. If quantity restrictions are abolished, the value of a licence immediately drops to zero (or more precisely, to a residual value reflecting the administrative fee and the hassle of going through the application process). Thus, under a system of quantity restrictions, licences become a financial asset, rather than just a business permit. They are, however, an unusual asset class, in that their value can reach very high levels, but it can also be wiped out at the stroke of a pen at any time. Political decisions matter far more than market fundamentals. Licence holders have a lot to gain from engaging in the political process and a lot to lose from *not* doing so.

General evidence

There are indeed plenty of taxi markets which behave just as we would expect, given the above points. In 2013, taxi licences in Paris were traded for over €200,000 each.[2] In metropolitan markets in Australia, a taxi licence would fetch over AU$250,000 (Taxi Services Commission 2016). The extreme end is probably New York City, where taxi medallions typically sold for nearly $1m each in 2014 (NYC Taxi and Limousine Commission 2016).

Quantity restrictions can be very lucrative to those to whom the ensuing monopoly rents accrue. But any gains are, of course, achieved at the expense of other groups, especially consumers. In a quantity-restricted taxi market, fares can be expected to be higher than they would otherwise be, representing a redistribution from consumers to licence holders. The exact incidence will differ from country to country, but generally, low-income consumers, who are less likely to own a car, have been found to spend a larger proportion of their budgets on taxi services than other income groups (OECD 2008: 33). Moreover, waiting times for a taxi will be longer in a quantity-restricted market.

At least where licences are tradable and lettable, it is not necessarily correct to think of the effect of quantity restrictions as a redistribution from passengers to drivers. The main beneficiaries may be long-established incumbents, who bought their licences while they were still relatively cheap, and who subsequently benefited from their increasing scarcity value. Drivers who rent their licence cannot be counted among the beneficiaries. According to the OECD (2008: 8), ‘there is no evidence to suggest that taxi driver incomes are higher in markets with restrictive entry conditions. Rather, the monopoly rents that accrue due to these restrictions appear to be appropriated solely by licence owners. For example, Melbourne has taxi licences valued at almost A$500,000 and driver incomes estimated at A$8-14 per hour’. This suggests that a common concern among even proponents of derestriction, namely a potential drop in driver earnings, is unwarranted and that only licence owners would face a welfare loss if quantity restrictions were abolished.

2 ‘Protection of privilege is driving France’s taxi wars’, *Financial Times*, 29 December 2015.

An extreme example of the monopoly rent effect would be the wealth of New York City's 'Taxi King' Evgeny Freidman.[3] Freidman took over his father's taxi business, which owned several taxi licences, in 1996. At the time, the value of licences was increasing at an accelerating rate, and Freidman borrowed against the value of the company's existing licences in order to buy new ones. In this way, he expanded the company into a taxi empire of around 1,000 licences. When the value of licences stood at their peak, this would have amounted to a licence wealth not too far away from $1 billion. In Freidman's own words:

> 'Every day that I wake up, you know, I'm like, this is great […] You know, I live on Park Avenue, got a bunch of, like, Ferraris that I drive. I have a house in the south of France. I can have breakfast, like, at Cipriani. And it's like, you know, pinch me. Is this real?'

Freidman is right to wonder. If quantity restrictions were abolished, his 'medallion wealth' would become worthless within a split second.

Quantity restrictions also have negative impacts on service quality and the diffusion of technological and organisational innovations. This point is less measurable and therefore harder to prove, but it is striking how quickly London's taxis came up with a series of service improvements as soon as they came under pressure from their new taxi-like competitors. For example, passengers who wanted to pay by card had to pay a surcharge of 10 per cent of the fare, but this surcharge is now being dropped.[4] Previously, many London taxis did not accept card payments at all, a situation which is currently being rectified. The number of taxis offering fast WiFi access is also increasing, and there are plans to create taxi ranks outside every Night Tube stop.[5] Taxis are also beginning to use 'hailing apps' similar to those used by their new competitors, and they are making it more convenient for groups of people to split the fare.[6]

3 'The Struggles of New York City's Taxi King', *Bloomberg*, 27 August 2015. See also 'New York's Taxi King Is Going Down', *The Federalist*, 26 October 2015.

4 'Card fees for paying for London taxis removed for all passengers', *City* AM, 5 April 2016.

5 'London black taxis vs Uber: This is cabbies' big plan to save the industry - and they want the new Mayor of London on board', *City AM*, 4 April 2016.

6 'Now you can split London black cab fares with friends (just like Uber)', *City AM*, 11 April 2016.

The main effect of quantity restrictions, however, has to be the 'deadweight loss', a pure welfare loss that even people like Freidman cannot exploit.[7] When taxi rides are perceived to be a luxury good and/or when average waiting times for a taxi are high, taxi rides will be reserved for special occasions, rather than used as an everyday mode of transport. People will make other arrangements where possible and a 'taxi culture' will never develop.[8]

Evidence from London

Statistics compiled for London by the Department for Transport (2015) would also appear to corroborate the hypothesis that statutory restrictions[9] tend to lead taxi numbers to fall further and further behind the market equilibrium over time. Between 2005 and 2015, the number of taxis in Greater London increased from 20,800 to 22,500, that is, by 8.2 per cent over 10 years (see Table 1). By comparison, private hire vehicles (PHVs) have grown by 52 per cent during that period, from 40,000 in 2005 to 62,800 in 2015. In particular, there was a boom in PHVs in the latter part of the period – 2013 to 2015[10] – as smartphone-enabled transport apps became widespread. The number of PHV-only licences has nearly doubled over the past decade, whilst taxi-only licences have increased by a meagre 0.8 per cent (ibid.).

7 The deadweight loss is the loss of consumer surplus and/or producer surplus resulting from changes in the number of rides supplied and rides demanded (compared to what would prevail in an open market) due to quantity restrictions and statutory price regulation.

8 On an anecdotal note: one of the authors spent the summer and autumn of 2004 in La Paz, Bolivia, a city where taxi fares are very cheap (at least from the perspective of a Western visitor) and where the supply of taxis is very high. In La Paz, going by taxi is a common, everyday form of transport.

Even though the author knew about this, he was nonetheless initially reluctant to take a taxi, because he could not rid himself of the notion that a taxi ride was a luxury good, and that going by taxi before exploring other options was a frivolous waste of money. The notion was too deeply engrained; knowing that it was, in this context, factually incorrect, did not make it go away, or at least not in the first few days.

9 It is important to note that there are no quantity restrictions on available taxi licences in London. Rather, entry into the sector is constrained by the requirement to complete the Knowledge, a notoriously difficult test involving the memorisation of hundreds of routes and which takes several years to master (see below).

10 During this two-year period, PHV licences increased from 49,900 to 62,800 (DfT 2015).

Similarly, London's population (Mayor of London 2015) rose by 19.1 per cent – 7,172,091 to 8,538,689 – between 2001 and 2015, compared with 9.8 per cent – 20,500 to 22,800 – for taxi licences. This is especially striking when we consider that close to 50 per cent of the population increase has been in Inner London, where licensed taxis are in greatest demand, and that car ownership in the capital has been made costlier and less attractive by policies such as the congestion charge and the expansion of cycle lanes.

There could be other additional factors behind the stagnation in taxi numbers. Specifically, it could be that part of the large differential between the growth of PHVs and population growth compared with the growth in taxis and taxi licences can be explained by higher taxi fares. At any rate, the discrepancy clearly illustrates the market-distorting impact of taxi regulation, whether it be quantity-oriented (supply-side) or price-oriented (demand-side).

Table 1: Number of licensed taxi and private hire vehicles, and driver licences in London (in thousands, 2005-2015)

	Licensed taxis and taxi drivers				Private hire vehicles (PHVs)			
Year	Wheelchair accessible taxis	Other taxis	Total taxis	Taxi only driver licences	Wheelchair accessible PHVs	Total PHVs	Operator licences issued	PHV only driver licences
London								
2005	20.8	0.0	**20.8**	24.9	..	**40.0**	2.3	40.0
2007	21.6	0.0	**21.6**	24.6	..	**44.4**	2.1	38.0
2009	22.3	0.0	**22.3**	24.8	..	**49.3**	2.6	55.8
2011	22.6	0.0	**22.6**	25.1	..	**50.7**	3.1	61.2
2013	22.2	0.0	**22.2**	25.6	..	**49.9**	3.2	67.0
2015	22.5	0.0	**22.5**	25.2	..	**62.8**	3.0	78.7

Source: Department for Transport statistics (2015)

The impact of derestriction

The economic literature

Economic theory suggests that there would be substantial welfare gains if a government went against the grain by derestricting and deregulating the taxi market. The evidence broadly bears this out. There is a wide range of economic studies on the effects of taxi market deregulation on variables such as waiting times, fares, safety and quality. A comprehensive review of the economic literature is available from Moore and Balaker (2006), who identify 28 suitable journal articles. They find that, overall, 'nineteen concluded that deregulation is beneficial (on net), two conclude that the results are mixed, seven conclude deregulation is net harmful'.

The papers they review differ in quality, and draw on different methodological approaches. Moore and Balaker explain:

> '[T]he literature concluding that taxi deregulation is net beneficial is the richer literature, with articles from each approach to the issue. The literature concluding that taxi deregulation is net harmful is mostly model-building [and] derive their results from strong assumptions about information and transaction costs. The literature finding net benefits often uses a richer set of assumptions.'

So there is no 'consensus' on the economic effects of taxi market deregulation in the economic literature. But two out of three studies on the subject come to, on balance, favourable conclusions, and these tend to be the more robust ones, so their lead would be greater in quality-adjusted terms.

Case studies

'Regulation' and 'deregulation' can, of course, mean lots of different things. Case studies of specific taxi markets that have undergone specific programmes of deregulation are probably more insightful than literature reviews.

A pioneer in this respect was New Zealand. Until 1989, New Zealand had a strict regime of quantity and fare controls. In the Wellington area, taxi licences were traded at around NZ $25000 (Morrison 1997: 914), equivalent to about £26,000 today.[11] Quantity restrictions were then lifted, and fares deregulated.

Within five years, the number of taxi companies in Wellington and the region around it more than doubled, as did the number of vehicles (ibid: 916). Fares also fell in real terms, albeit not symmetrically, as the fare structure changed (ibid: 922-924). And waiting times fell (ibid: 921).

What is most interesting from an economic perspective is that after deregulation, the sector became more diversified in terms of business models, business strategies and market segmentation. Prior to deregulation, taxi companies would typically own around 100 vehicles, employ a workforce of full-time drivers, and their target market would be the general population in the urban area. Five years later, the industry had become much more differentiated. A merger of the two largest companies had produced one very large firm at one end of the spectrum, while a number of small and medium-sized firms had been added at the other end (ibid: 918). Employment and contracting patterns had become more varied. Specialist firms, with services tailored to specific customer segments, had emerged. Some firms began to concentrate on business clients, and one company was set up to cater to the Samoan community. Others found a spatial market niche rather than a socioeconomic one, concentrating on hitherto underserved peripheral areas, such as the suburbs of smaller towns (ibid: 920).

Not everybody benefited. Licence holders lost out, as the value of their licences was wiped out instantaneously and without compensation. Taxi drivers generally had to work longer hours to maintain pre-deregulation incomes. Transitional problems were reported as the sector expanded rapidly, which meant that large numbers of untried and inexperienced drivers entered the sector. But deregulation gave rise to a market discovery

11 Authors' calculation, updated with the New Zealand rate of consumer price inflation, and converted into GBP at the current exchange rate.

process, in which different business ideas and different company structures were tried and tested. This trial-and-error process is the main reason why market economies are superior to other ways of organising economic life, but all economies stop this process in at least some sectors. In New Zealand, since 1989/90, the taxi sector has no longer been one of them.

Ireland offers another case study for a radical policy U-turn with comprehensive derestriction. Ireland had long operated an extreme version of quantity restrictions. In Dublin, not a single taxi licence was added between 1978 and 1991 (Barrett 2003: 34). Licence numbers were increased in homeopathic doses from then on, but the 'Celtic Tiger' boom, combined with the surge in inward tourism following the deregulation of air travel, meant that demand was always racing ahead. The result was an escalation in licence values. In 2000, when deregulation began, a licence to operate a taxi in Dublin traded for €114,000. Around Shannon Airport, it would sell for €136,000 (Barrett 2008: 61).

Since deregulation wiped out this huge licence wealth at a stroke, it was challenged twice in High Court, but the challenges were quashed (Barrett 2002: 36). Judges Murphy and Carney took the view that while the licence holders rightfully owned their *licences*, this did not extend to ownership rights in their licence *wealth*. In other words, the government was under no obligation to sustain the value of taxi licences, or to compensate licence holders for a fall in that value resulting from political decisions.

After deregulation, the total number of taxis in Ireland more than doubled from 4,200 to 10,800 in just two years, and then doubled again to 21,200 by 2008 (ibid: 64). Passenger surveys show that waiting times have fallen. In Dublin, the share of passengers who were able to get hold of a taxi within ten minutes rose from under 60 per cent before deregulation to 85 per cent in 2008. The total number of taxi rides in Dublin nearly doubled during the same period (ibid: 62). Quality is harder to measure, and consumer surveys are a problematic guide.[12] But the fact that only 3.3 per cent of respondents disagreed with the statement 'taxis/hackneys generally provide a good service' (ibid: 64) is encouraging.

12 Consumer surveys represent 'stated preferences' which may not coincide with 'revealed preferences'. If consumers consistently express negative views of an industry (e.g. large supermarkets, low-budget airlines), but nonetheless keep purchasing their products, then which expresses their true preferences – what they say, or what they do? Surveys may also be affected by 'availability bias', for example when negative incidents receive greater media attention, without actually having become more frequent.

Price competition, however, has not become a general feature of the industry. Fares remain subject to a cap, and although it has been reported that drivers often offer sizeable discounts (ibid: 65), the very concept of a 'discount' implies that the regulated fare remains the default option.

The situation in the UK is mixed. On the one hand, the UK has avoided the worst excesses of taxi market regulation. There is no British equivalent of Evgeny Freidman, the 'Taxi King' of New York City. Taxi licensing practices were highly restrictive until 1985, when local authorities could arbitrarily refuse the issuance of licences. Indeed, from the mid-1970s to the mid-1980s, the number of licences remained almost flat, rising from just under to just over 30,000 (Department for Transport 2013). Then, however, the 1985 Transport Act introduced a number of formal hurdles that local authorities would have to clear if they wanted to limit licence numbers. This did not make restrictive licensing practices impossible, but the number of taxis began to increase again, reaching 50,000 in the early 1990s, and 60,000 a decade later. In recent years, numbers have hovered around 78,000 (ibid). So unlike in Ireland before 2000, or in several large US cities to this day, where taxi licence numbers have been effectively frozen for decades, licence numbers in the UK have been rising steadily.

However, throughout this period, the UK has also experienced substantial population growth, income growth, and increases in the relative price of private motoring, factors which must have led to an increase in (latent) demand for taxi trips. National aggregates also hide substantial variation between local authorities. Most authorities do not set an upper limit for licence numbers, however, the ones that do cover most of the major population centres.

Local authorities do not just differ in a snapshot perspective, but also show different policy trends, which enables us to get some idea of the effects of different policies. Aquilina (2011) compares short-term trends in English taxi markets that have abolished quantity controls to short-term trends in markets that have retained them. He finds that while the former have seen taxi numbers increase by 78 per cent over a few years, the latter have only seen a 5 per cent increase. Waiting times in markets that have derestricted have fallen by 60 per cent, compared with only 12 per cent in markets that have not derestricted. The research is not of a particularly high quality: it only covers a small number of local authorities and it is not clear whether the markets which have not derestricted represent a suitable control group. Markets that have derestricted, and markets that have not,

may have differed in other ways, so we cannot automatically attribute differences between them to derestriction. But it is compatible with most of the international evidence on deregulation.

What is important to note in the UK context, though, is that the absence of an official cap on taxi numbers must not be confused with open entry into the market. In London in particular, the stringent Knowledge test that drivers have to pass, combined with the high cost of a vehicle that fulfils the regulatory requirements,[13] is just as effective an entry control as an explicit limit (Law Commission 2014: 144 footnote 3). The preparatory course for the Knowledge test for central London takes up to four years, i.e. longer than most university degrees. In order to pass, prospective drivers must memorise more than 300 different routes (ibid: 54).

There are also more subtle forms of rationing licences. The application process itself is time-consuming, and when the volume of applications exceeds administrative capacities, a backlog builds up (Law Commission 2014: 144). Waiting lists then act like entry controls. So it would be wrong to describe the London taxi market as ‘derestricted’, even if there is no quantitative upper limit on licences. This must be borne in mind in order to make sense of the incumbents’ resistance to new market entrants.

13 According to the website of the London Taxi Company, which manufactures the iconic London black cab, the selling price for a new vehicle stands at £42,795. This compares to £23,295 for a hybrid Toyota Prius, a common choice of PHV drivers.

Peculiarities of the London taxi market

We have described the topographical Knowledge tests that taxi drivers in London have to pass as an *ersatz* entry barrier to the taxi market. This statement needs some elaboration.

We have explained that while a licence could be seen as an input factor like any other, it is different from other inputs, like the vehicle and the diesel, insofar as it has no productive value of its own. Licences derive their value solely from the fact that the government limits their numbers. Since its value is created by political decisions, and could be instantaneously wiped out by political decisions, licence holders have every incentive to be more politically active – and defensive – than producers in most other markets. Topographical knowledge, however, represents human capital, and is thus useful in its own right. Indeed, before the advent of satellite navigation systems, it would have been indispensable to the trade. Insofar as knowledge tests merely ensure that an applicant has the level of knowledge required to function in the job, they are not really an entry barrier.

Yet GPS systems, and their gradual improvement, have made detailed knowledge of routes far less important. This means that while knowledge tests may not originally have acted as entry barriers, they have *become* so over time, to the extent that the level of knowledge that is expected from entrants exceeds the level of knowledge that is actually necessary for the job. Stringent knowledge tests *simulate* a situation in which GPS systems had never been invented, and in which detailed knowledge is therefore still useful in its own right.

Suppose a company that competes with the taxi trade (such as Uber) had been set up in a world without satellite navigation systems. Suppose, further, that their drivers' topographical knowledge had been far below that of licensed taxi drivers. Under these circumstances, that company would not have been much of a rival to the licensed taxi trade, because they would have acquired a reputation for being unreliable.

The advent of smartphones and ride-hailing apps

The above sections have explained how and why taxi regulations have tended to go beyond the market failure justifications given for them to become barriers to entry raised by incumbents. The evidence from various jurisdictions where derestriction has been implemented suggests a net positive impact, with the benefits shared among passengers and new entrants into the market, and the cost borne by licence holders.

Regulation of taxi markets was thus arguably inadvisable given the potential for welfare-reducing rent-seeking by established producers. However, as mentioned in the introduction, in recent years a momentous development has taken place in the market for private hire transport, with the arrival of app-based services operating via smartphones. As explained above, these smartphone-enabled apps have gone a long way towards resolving the 'market failures' which gave rise to extensive regulation in the first place.

Two technical features of this new generation of mobile phones stand out in particular when it comes to the market for transport solutions. The first is their incorporation of Global Positioning System (GPS) technology. GPS allows smartphone users to track their own and each other's location in real time. This means that drivers can signal to passengers where they are and how long it will take to reach them, whilst passengers can wait for drivers in the knowledge that the latter have very accurate information about their location.[14] Not only that, but both drivers and passengers are able to view the availability of suppliers and potential passengers, respectively, in a given location in real time. Drivers can decide on that

14 If they cannot find each other, then driver and passenger can of course speak on the phone using the same device.

basis whether to move to a different location, and passengers can better plan their transport that way. Lastly, the entire ride is tracked via GPS, so passengers can ensure that drivers take a reasonably direct route and parents can track their children's location when the latter are riding alone.

The second relevant technical improvement is the ability for computer and smartphone software to collect, classify, process and quickly respond to large amounts of information – what is commonly known as Big Data. In the case of transport apps, large-scale data collection and processing enables them not only to provide timely and specific information to both parties about each other – such as a driver's name, car model and licence plate; drivers' and passengers' user ratings; and drivers' estimated time of arrival – but also to adjust prices on the basis of existing demand and available supply quickly and accurately. For example, at times of strong demand, Uber uses so-called surge pricing – where fares have the usual fixed and variable component, which is then multiplied by a factor greater than 1 – to lure more drivers on the road and to a particular location. The price increase, of course, also serves to reduce demand on the margin.

In other words, technical innovations have in turn enabled a number of market innovations, in the form of applications specifically designed to provide transport solutions to smartphone users. It is the market innovations, not the technical improvements per se, which have helped to plug the large informational asymmetries which may have prevailed in the analogue era.

The economic consequences of Mr Uber

Smartphone-enabled transport apps are commonly described as part of the so-called 'sharing economy'. Lilico and Sinclair (2016) have described the sharing economy as:

> '[t]he use of digital platforms or portals to reduce the scale for viable hiring transactions […] (i.e. 'sharing' in the sense of hiring an asset) and thereby reduce the extent to which assets are underutilised.'

In other words, the sharing economy involves the reduction of transaction costs, which in turn enables a greater number of exchanges to take place. It is about the rise of middlemen – mainly in the form of websites and mobile applications – whose value-added is to facilitate exchanges. Munger (2015a and 2015b) identifies three separate categories of transaction costs which middlemen need to address:

- provide information about options and prices in a way that is searchable, sortable and immediate;
- outsource trust to assure safety and quality in a way that requires no investigation or effort by the users;
- consummate the transaction in a way that is reliable, immediate and does not require negotiation or enforcement on the part of the users.

Using Munger's framework, we can examine the ways in which smartphone-enabled apps have reduced transaction costs in the market for private transport.

Provide searchable and immediate information about options and prices

We saw earlier that one of the market imperfections that traditionally had given rise to taxi regulation was passengers' inability to know whether there were other immediate options – i.e. whether another taxi was likely to arrive within a reasonable time span – and the impracticability of comparing offers on the spot.

Similarly, it was a feature of taxi markets in the pre-smartphone era that there were substantial informational asymmetries regarding key information needed to consummate the transaction, such as the driver's qualifications, the vehicle's characteristics and technical fitness, and the price of the ride, as well as an assurance that the agreed price would remain the price requested at the end of the ride. Economic theory has suggested that, if such informational asymmetries are large enough, they can starkly reduce the scale of viable transactions in a market, and even cause the entire market to unravel (Akerlof 1970).[15]

Smartphone applications have overcome these barriers to successful transactions by correcting for a large part of the informational asymmetry. App users – both drivers and, crucially, passengers – carry a rating with them which is the average of the ratings received for all previous transactions. This enables both transacting parties to find out about the counterparty's reputation, which acts as an indirect indicator of quality and reliability. Apps also provide information about users' names, their appearance and, in the case of drivers, vehicle characteristics and licence plates.

Furthermore, transport apps tend to either inform prospective passengers of the fare before the transaction is agreed – this is the case, among others, for Addison Lee and PHV aggregator Kabbee – or to have a fare structure that is known to the user and/ or to give an estimate of the likely cost of the ride – as in the case of Uber. The range of options available to passengers is also significantly expanded: they can multi-home, that is, they can carry several apps on their smartphones and alternate between them as desired; passengers can also view the number of available cars from any one service, as they are often featured visually on a map; and, through comparator apps such as Kabbee, they can shop for the most competitive – in price, punctuality, vehicle features, and so on – offer available for the ride that they seek.

15 On the other hand, Cowen and Tabarrok (2015) have recently argued that we may be approaching '[t]he end of asymmetric information'.

Outsource trust to assure safety and quality without effort by the users

A reasonable amount of trust between the parties to a transaction is necessary for markets to function (see, for instance, Harford 2016). Indeed, market economies have over time developed sophisticated institutions – such as contract law, the neutrality of legislation, and the protection of property rights – to assure trust and thereby lower what would otherwise be prohibitive transaction costs. Technical improvements and market innovations make it possible to continue to improve upon existing arrangements.

This is no less the case with transport apps. As discussed, a key part of their value proposition is the ability to rate users on both sides of the transaction. Indeed, some apps *require* at least some users to rate their counterparties. Such reputational mechanisms provide a picture of a user's dependability and thus serve to encourage or dissuade other users from transacting with him. Ratings may also be used by app providers themselves to sort through suppliers and stop working with those whose reviews do not meet a given standard.[16]

Trust assurance by apps is not limited to providing reliable information about other users. It also involves offering price transparency and facilitating payment in a traceable and convenient manner. For example, all rides on Uber are paid for via credit or debit card, the details of which must be provided in advance of a user's first ride. All reimbursements and credits are also handled electronically.

16 For instance, it has been claimed that Uber aims for its drivers to maintain an average rating above 4.5 out of 5. If it falls below this level, they are liable to be called into the Uber head office for a 'quality session.' See https://www.theguardian.com/technology/2016/apr/27/how-uber-conquered-london.

Consummate the transaction in a way that does not require enforcement on the part of the user

The use of electronic payments and the tracking of routes means that transactions are automatically enforced, charges can be monitored by both parties, and most disagreements between drivers and passengers can be readily resolved using the available evidence from the app. Furthermore, most apps ask for comments and they feature a complaints section where users can report incidents and request refunds.

Thus it is clear that smartphone-enabled transport apps have developed effective mechanisms to reduce transaction costs in private hire markets. The various features of apps outlined above are the sort of market-based institutions which have largely resolved the traditional imperfections of taxi markets and thus rendered much of the existing regulation unnecessary.

The emergence of regulatory brands

A related development which is the product of innovation is the appearance of distinct and recognisable brands in taxi markets. Before the advent of smartphones, such brand differentiation was limited in scope and restricted to the less regulated PHV market, where some heterogeneity in pricing, market segmentation and the choice of a customer base was allowed. Within the taxi market, where strict uniform standards prevailed, such differentiation was not possible, although one can say that 'the regulated taxi' as such has become a distinct 'brand' when compared to other private transport providers.[17]

Apps have, however, radically extended the scope for brand differentiation, in two important ways. Firstly, apps are not only digital ecosystems within which drivers compete for custom and passengers compete for a ride – they are themselves in competition with other apps for users' eyeballs, be they prospective passengers or drivers. Importantly, whilst users can multi-home, smartphone storage capacity is not unlimited and it is therefore unlikely that any user will keep more than two or three such apps in operation at any one time. This makes it important for apps to develop a reputation of their own, based on the individual reputations of its users on both sides, as well as on the apps' effectiveness at reducing transaction costs in the manner explained above.

Secondly, unlike the overwhelming majority – effectively the entirety – of non-app-based transport providers, transport apps face no technical

17 This is clearly the case in London, where the London black cab has not only become a symbol of the city and a tourist attraction, but is also valued by at least some Londoners for the skill and dependability of drivers. These are features we would normally associate with a brand.

geographical boundaries.[18] This means that they can use their reputation in the markets where they currently operate to elicit user interest and anticipation in prospective markets. Additionally, provided mobile networks allow it,[19] app users can secure a ride when they find themselves outside their home location and in a location where the app operates. Both of these features of the transport app market encourage the development of strong brands related to the services offered and the suitability of their regulatory mechanisms.

18 That is partly a function of the much greater economies of scale of apps compared to traditional taxi and minicab firms, and partly itself the result of the growth of brands which facilitate expansion.

19 This is not a given when we consider that, for some time, Spain forced mobile operators to restrict use of private hire apps by Spanish mobile phone users *outside* as well as *within* the country. See http://www.eleconomista.es/empresas-finanzas/noticias/6311674/12/14/Un-juez-ordena-el-cese-de-actividades-de-Uber-en-toda-Espana.html.

A framework for regulatory reform of taxi markets

It is apparent from the above analysis that the rationale for heavy regulation of taxi markets, namely the existence of significant market imperfections, has largely been – and is continuing to be – resolved by smartphone-enabled transport applications. A fundamental reassessment of existing regulation, with a view to adapting it to the new market conditions, is therefore warranted. What follows is a proposal for substantial deregulation of taxi markets, and for an emphasis on private governance and regulatory competition between service providers.

There are four principles to be followed in any reform of taxi regulation, to ensure the new framework takes advantage of the opportunities offered by innovation; that it promotes competition and facilitates experimentation; and that it avoids rent-seeking behaviour by incumbents. They are:

Decentralisation

Licensing authorities at the local level should be encouraged to reform their existing taxi and PHV regulations to take account of new market developments. The Department for Transport should continue to educate local decision-makers about best regulatory practices and to inform them about the state of the economic evidence.[20] In particular, such education would continue to focus on the damage of quantity restrictions and include evidence on derestriction from foreign jurisdictions. In addition, there should be more information about the way in which smartphone-enabled apps have managed to resolve the problems that prompted regulation.

20 See DfT (2010) for the Department's guide on best practices in the taxi sector, offered to local authorities.

But that is where the role of central government should stop. The most egregious anti-competitive restrictions by licensing authorities are already banned in the 1985 Transport Act by only permitting a licence to be refused on grounds of quantity restriction 'if, but only if, the [licensing authority] is satisfied that there is no significant demand for the services of hackney carriages […] which is unmet.'[21]

Furthermore, two features of current private transport markets in the UK suggest decentralisation to be preferable. The first is that transport markets differ widely between local jurisdictions, both in the nature of the market – urban or rural, densely or sparsely populated, well-served or not by alternative modes of transport – and in the current structure of their private transport offerings.[22] The second is that app-based services are recent and flourishing, which suggests that the regulatory environment requires experimentation and trial-and-error to ensure it is fit for purpose. Economic theory and evidence point to a decentralised policy environment as best-placed to facilitate such experimentation.[23]

A one-tier system of regulation

Taxi markets in the UK currently operate a two-tier system of regulation. On one hand, there is the heavily regulated taxi sector, sometimes subject to quantity restrictions and generally protected by high barriers to entry and price regulation. On the other hand, there is the less regulated PHV market, of which suppliers operating via smartphone-enabled apps form a part.

Such a distinction may have made sense when the boundary between hailing and pre-booking was clear and distinct. But technological innovations have blurred the line separating each tier. Regulated taxis increasingly make use of apps – e.g. Gett, Hailo and Karhoo – to boost their capacity utilisation rates, i.e. the share of the time spent on the

21 'Unmet demand' is, of course, a highly dubious concept, since its existence cannot be proven. If, for example, a government decided to forcibly close most hotels, tourism would collapse, and it would then be possible to argue that since there is no tourism, there is no 'unmet demand' for hotels.

22 See the statistics made available by the DfT for an illustration of the varying conditions in each regional and local market (DfT 2015).

23 See Booth (2015) for a review of the economic arguments and salient evidence on fiscal and regulatory decentralisation.

road during which they are carrying passengers.[24] Further, mobile applications have dramatically shortened the time span between pre-booking and starting a ride, to the point where app-based bookings are virtually instantaneous. Innovations have rendered much of the statutory instruments which enforce this separation unnecessary and harmful. It is therefore time to move to a unitary system of regulation and away from the artificially discrete tiers.

Whilst the Law Commission, in its 2014 report on taxi and private hire services, advised in favour of preserving the two-tier system across Britain's licensing authorities, it did acknowledge that '[b]ecause of the speed with which smartphone applications can work, it may seem that the distinction between pre-booking (a required characteristic of private hire work) and hailing (the exclusive preserve of the taxi trade) is being eroded' (Law Commission 2014). Indeed, from a passenger's perspective it is increasingly difficult to view taxis and PHVs as anything other than close-to-perfect substitutes. It is only regulation – of the way in which each can be ordered, and the price they can charge in the case of taxis – which introduces a meaningful distinction.

It may be submitted that, because taxis can stand at ranks and be hailed on the street, their regulation is fundamentally different from PHVs, which can only be pre-booked – even if such 'pre-booking' is almost instantaneous in the case of transport apps. This would certainly appear to speak against a 'levelling up' of regulation in the case of PHVs and, especially, app-enabled PHVs.

Yet, it is also somewhat circular reasoning. Indeed, the Law Commission (2014) argues that, because of their rank and hail work, taxis should be regulated more strictly. But it then goes on to suggest that taxis should retain their exclusive right to stand at ranks and be hailed on the street, and that this regulatory privilege ought to be enforced. This amounts to creating an artificial distinction between operators, and then using that distinction to enshrine a two-tier market in law. Given recent innovations, the two-tier system is increasingly anachronistic.

Thus it would be advisable to abolish the two-tier system and move towards a unitary regulatory system, which would use the existing regulation of PHVs as a model. All existing privileges granted to licensed

24 See Cramer and Krueger (2016) for a US analysis of capacity utilisation rate differential between taxis and Uber cars.

taxis – legal nomenclature, hailing, ranks, the right to drive on bus lanes – would either have to be abolished, or to be applicable to all operators. The abolition of these prerogatives can also be expected to spur greater willingness on the part of taxi drivers to embrace new technologies, to the benefit of passengers.

Technology neutrality

For similar reasons, the law should avoid treating similar operators differently on the basis of the technology they use. Whether operating via apps, through traditional pre-booking systems or like traditional taxis, all operators would be subject to the same rules.

Two objections to this policy might be made. The first is that passengers on non-app-based, non-pre-booking-oriented operators would continue to be exposed to the market imperfections of the pre-smartphone era. Uncertainty about prices and driver qualifications would cause transactions to be suboptimally low and leave otherwise satisfied passengers stranded.

This objection ignores the power of regulatory competition to force all players to offer reasonable assurance to passengers or go out of business. It is difficult to see how any operator will be able to effectively compete in the new environment without developing a reputation for quality and reliability – in other words, without developing a brand. Just like app-based providers offer passengers a fare estimate in advance of the ride,[25] any operator would have an incentive to reveal that information to prospective customers by, for instance, placing it prominently on the outside of the vehicle. Similarly, due to both network externalities (see below) and reputational reasons, there would be significant competitive pressures on independent operators to group together into distinguishable brands in order to gain the necessary scale.

The second objection is that, at least in the near future, there will be a small but – from a regulatory viewpoint – important group of people who will not be able to use app-based alternatives because they lack the means and skills to do so. One may think in particular of the elderly, the immobile and the mentally disabled. To this it may be rebutted that most disabled

25 Indeed, this is a regulatory requirement made of all PHVs in London (Law Commission 2013). It could be preserved, if deemed necessary, under the unitary, technology-neutral system proposed here.

and elderly people already resort to pre-booked options when getting around (TfL 2015). They are not likely to use hailed taxis and thus will not be exposed to the alleged market failures. Additionally, if public authorities wish to ensure the availability of private hire services for certain vulnerable groups,[26] the efficient way to do so is for local authorities to contract with one or a number of operators to provide those services to the desired customers on demand.

Preference for private governance over statutory regulation

Just as geographical decentralisation is appropriate in order to facilitate experimentation and the adaptation of rules to the concrete environment in which transactions take place, the use of private governance over statutory regulation may be viewed as jurisdictional decentralisation. Sharing economy applications, in their role as third-party intermediaries, have the power and tools to regulate and enforce the rules and conditions in which the various parties to a transaction interact (Cohen and Sundararajan 2015). Applications can reward, punish, admit and exclude users on the basis of their conduct and previous behaviour, and – subject to anti-discrimination laws and other equal protection provisions – they can decide who gets to use the app and who does not.

Private governance is what enables regulatory competition to flourish, ensuring that rules evolve according to the preferences and demands of consumers, and that bad regulation does not become entrenched. Furthermore, because transport operators may cater to different customer bases at different price points and with different requirements, a one-size-fits-all model of pricing, vehicle standards and other regulatory requirements is inappropriate. It is best to leave operators to develop their own ways of regulating transactions between the participating parties, and to let competition demonstrate to each operator what works and what does not. The proliferation and varied scope of transport apps in London – which include not just Uber, but Gett, Hailo, Kabbee, Addison Lee, Karhoo, and others – is an early testament to the rich tapestry of effective regulatory arrangements that can emerge in a free market.

26 We emphasise that this need will be extremely limited, if indeed it exists at all, given that the market already caters to passengers with special needs. Uber, for instance, recently launched UberAssist, and regulated taxis are fitted for disabled passengers, a feature which will not disappear on the day of deregulation.

In connection with the ability of sharing economy platforms to exclude certain users from their system, Lilico and Sinclair (2016) have raised the issue of the potential for long-term social exclusion of individual users. It is beyond the scope of this paper to suggest a mechanism for resolution of this conflict. Suffice it to say that it does not take away from the points made about the suitability of private governance, and that competition will tend to encourage the socially optimal amount of exclusion.[27] Furthermore, private governance would appear better suited to provide the sort of reputational bankruptcy mechanisms advocated by Lilico and Sinclair.

27 By exclusion, it is meant that one of platforms' tasks is precisely to protect users against fraudulent and dangerous suppliers. We generally want a minimal amount of exclusion in any market, but we do want harmful activities to be strongly discouraged and exclusion from platforms is a highly effective instrument in this regard.

Implementing regulatory reform – the example of London

There are a number of reasons why London is a suitable example to see how the model of regulation proposed here would work in practice. Firstly, London is a large urban centre with a long history of private transport services of many kinds. Secondly, an important portion of this market has traditionally been served by regulated taxis, known as black cabs. Thirdly, for both economic and regulatory reasons, app-enabled private hire services have flourished in London since 2012. Its large population of young professionals, fairly low rate of car ownership,[28] and relatively tolerant attitude of regulators has facilitated the growth of London's PHVs, from 49,900 in 2013 to 62,800 in 2015 (DfT 2015).

Whereas London black cabs constituted just over a third of all licensed vehicles in 2005,[29] their proportion had shrunk to just over a quarter by 2015 (ibid.).[30] The proportion of taxi *licences* in all licences is even smaller, at 24 per cent, down from 38 per cent in 2005 (ibid.). Whilst the two-tier market has been preserved in regulation, the reality is that London black cabs are an increasingly niche segment within the market for private transport in the capital. This is probably a consequence both of the stiff entry requirement in the form of the Knowledge and of the competitive advantage of lower-priced PHVs made more easily accessible through mobile applications.

28 54 per cent of London households owned at least one car in 2011, compared with 75 per cent in the rest of the UK. See: http://content.tfl.gov.uk/technical-note-12-how-many-cars-are-there-in-london.pdf

29 There were 20,800 taxis in London in 2005, compared to 40,000 PHVs (DfT 2015).

30 22,500 taxis out of 85,300 licensed vehicles overall. It is important to note that these figures do not take account of any divergence in hours between taxis and PHVs, but the evidence suggests that both taxi and PHV drivers in the UK are overwhelmingly likely to work in that function full-time.

Furthermore, as exemplified by ongoing conflict among taxi drivers, PHV firms and mobile applications, the regulatory environment is in flux, subject to intense pressures from incumbent interest groups and increasing uncertainty about the future direction of policy. The draconian measures consulted on by TfL last year (TfL 2015; see Zuluaga 2015 for an analysis and rebuttal) exemplified the regulatory backlash against challenger firms. It was only following a widely publicised petition from Uber, which had been signed by 206,000 users,[31] and an intense media response that some of the proposed measures – including the five-minute waiting period – were discarded.[32]

Settling the question of regulation for the long term

London is well-placed to begin implementing a new regulatory framework of taxi markets along the lines proposed above. As a local authority – or a collection of local authorities – it is jurisdictionally suitable for it to be in charge of the regulation of the local private transport market.

The most significant change would be the shift towards a single tier of regulation. There is a trade-off in this regard between affording incumbents enough of a transitional period and ensuring that the desired changes do indeed go through and are not derailed or watered down by protracted interest-group pressures. An appropriate way to manage these competing factors would be for TfL to clearly set out the reform agenda at the outset, and then to establish a timeframe – no more than five years – during which the various milestones would be achieved. The Mayor of London could request that another independent regulator – preferably a national one, to avoid capture by local interest groups – conducts periodic implementation reviews of the reform agenda, with the ability to make binding recommendations if shortcomings are found. The Competition and Markets Authority would be well-placed to perform this role.

31 More details at https://action.uber.org/tfl/.

32 At any rate, at the time of writing disputes over the regulatory environment around PHVs in London continued, focusing on an English language test that drivers will be required to take, and a mandatory call centre for all PHV firms and transport apps (Barber 2016).

The milestones to be achieved during the transition to a single-tier system would thus be:

- The abolition of taxi privileges, particularly the monopoly on road hailing, the use of taxi ranks and the use of bus lanes. All licensed vehicles would be allowed to form ranks – subject to fulfilment of conditions set by local authorities – and be hailed by passengers. Where there is insufficient rank space, local governments could auction a limited number of 'rank use permits', which could then be traded on secondary markets. Rather than prevent or allow all vehicles to use bus lanes, it would seem most appropriate for authorities to charge for their use. Operators and suppliers could then decide, on an individual basis, whether they wished to use them, depending on traffic conditions, passenger needs, and so on.
- The bulk of taxi regulation would be transferred to licensed taxis themselves. In line with the principle of private governance outlined above, we propose to turn the London Taxi Drivers' Association (LTDA), the trade body for licensed taxi drivers in the capital, into the self-regulatory body for what formerly was the highly regulated London black cab sector. Much like PHV firms and mobile apps do today, the LTDA would be granted powers to determine who could enter the trade – with regard to both quality and quantity – and what fares to charge. It would also establish vehicle standards and the business strategy to be pursued. It should be noted that the LTDA would not be given a *monopoly* over the employment and pursuit of the London black cab trade. The point of regulatory reform is precisely to remove any monopolistic protections from the London private transport market. Competing self-regulatory bodies within the black cab trade could emerge if there were demand from drivers for them to do so. But, at least at the outset, it is practical to view the LTDA as the repository of regulation which would be transferred over from TfL.

- Statutory regulators would remain in charge of licensing drivers and operators in a manner akin to current PHV licensing. Importantly, all operators and drivers would be subject to the same entry requirements. There would be no statutory quantity restrictions, no price regulation, no statutory language test or topographical assessment.[33] Statutory regulatory requirements would largely be limited to the performance of criminal background checks; the monitoring of fraudulent or illegal behaviour by licensed or unlicensed drivers and operators;[34] and a periodic review of the state of competition and operator performance in the private hire market (which would now incorporate black cabs as well). MOT checks would be the responsibility of vehicle owners, i.e. operators or drivers depending on the individual case. They might be subject to periodic unannounced inspections.
- In order to prevent regulatory capture by today's and tomorrow's incumbents – who may include today's challengers – we propose to give the Competition and Markets Authority a mandate to review the performance of TfL, with a view to ensuring the successful completion of deregulation.

This framework would be in line with the principles of decentralisation, a single-tier system of regulation, technology neutrality and private governance. The example of London has been used here, but similar proposals might be suitable for other licensing authorities with comparable conditions.

33 Some operators might well wish to – indeed, might be expected to – demand particular language standards and topographical skills from their drivers in order to offer better passenger service. But it would be up to each operator to balance the costs and benefits of such requirements – that is the essence, and the strength, of private governance.

34 We expect the extent of unlicensed activity to be small, so long as entry barriers are low.

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