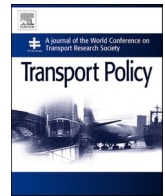




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Will Covid-19 put the public back in public transport? A UK perspective

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ABSTRACT

Covid-19 has had a major impact on public transport systems across the world. Public financial support has been needed to maintain services in the face of drastically reduced ridership and adjustment to the need for social distancing. This paper explores the challenge this poses to current methods of delivery of public transport services and argues that a simple return to the status quo is unlikely as public transport adjusts to a new normal of more home working and fear of crowded spaces. In turn this impacts most on the transport disadvantaged. The paper argues that this may spell the end of the prevailing model of a deregulated competitive public transport that has prevailed in the United Kingdom and require a major rethinking of the way to provide an efficient and effective transport system. Such a rethink will depend on understanding the interplay of private and social norms and building public trust.

1. Introduction

The pandemic of Covid-19 is unprecedented in terms of its worldwide and long-lasting effect. The impact on transport systems across the world has been something which most countries were unprepared for and there is very little evidence from previous pandemics to guide transport operators and policy makers, certainly in most developed countries. The 2003 SARS epidemic largely affected East Asia. It had a major impact on air travel and on public transport usage in major cities. However, the impact was relatively short lived and transport usage returned to pre-pandemic levels relatively quickly. The International Energy Agency (IEA, 2020) reports that airline traffic stabilised within around six months and although metro usage in Taipei (for example) fell to around 50 per cent at the height of the crisis it returned to normal levels within four months. The 2008 swine flu outbreak also had some impact on international airline traffic and led to an increased use of temperature screening, but had relatively minor and short-term impact on transport use in major cities. Other relevant evidence comes from terrorist attacks on transport in cities such as Tokyo, London and Brussels. Again, an increase in security meant that after a few weeks of initial disruption there was relatively little long-term impact on transport usage. The IEA, however, suggests that domestic air travel in the United States was more than 7% below expected levels in the five years after the September 11, 2001 terrorist attacks.

In contrast there has been a virtual collapse of public transport in

cities due to lockdowns and social distancing in response to Covid-19 (Zhang and Hayashi, 2020). Across the world passenger demand typically decreased by between 80% and 95% in the earlier stages of lockdowns, although there is evidence that ridership is creeping up again as restrictions are eased, but typically only to about half of pre-pandemic levels. Evidence gathered by the Transport Strategy Centre at Imperial College, London (TSC, 2020) after the first wave of the pandemic in July 2020 shows that Asian metros, which fell by less, had returned to about 70 percent of normal levels by July, whilst those in Europe were at 50 percent and in the Americas at between 20 and 30 per cent.

It is clear that the fall in traffic has created financial problems for operators from lost revenue. Regardless of whether these operators are fully in the public sector, or franchised operators or fully private they have needed financial support to maintain at least a basic level of services to keep urban economies running and particularly for key workers. It has become increasingly clear that in many cases this is not a question of short-term support to tide operators over through a difficult year, but that there will be likely to be long-term changes to commuting patterns and the desire to travel in cities. This need to provide public funds to keep operators afloat raises further questions about the long-term viability of such operators, especially those in the private sector.

Private car usage in cities also fell initially as more people have been urged to work from home, and home working may become the new normal for a much larger proportion of workers in the future. However, fear of infection also seems likely to have led to more private car usage

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for commuting in the short to medium term during the recovery thus compounding the financial problems for public transport operators. Road usage has returned to close to normal levels in many cities reflecting in part a shift away from public transport modes.

If we add to the mix the claims for financial support made by airline and ferry operators it appears that transport policy may need a major shake-up in the next few years as we move towards a new paradigm.

The rest of this paper focuses on the situation in the United Kingdom. The UK has faced one of the most serious cases of the incidence of Covid-19. According to data from Johns Hopkins University (to December 1, 2020) the UK had suffered the seventh highest number of cases (1.629 million), the fifth highest number of deaths (58,448) and the eighth highest death rate (87.1/100,000)¹. There are some differences between the four countries that make up the United Kingdom with the devolved administrations in Scotland, Wales and Northern Ireland able to impose their own restrictions, but in England there have been two periods of national lockdown from 23 March with a gradual lifting during June, and again from 3 November to 1 December. During these periods all but essential shops had to close along with bars and restaurants and all leisure facilities and restrictions were imposed on households mixing. Educational establishments were closed during the first period but remained open during the November period. People were encouraged to work from home whenever possible and to avoid public transport unless essential to access workplaces.

2. Background to public transport organisation

The past two to three decades have seen major shifts in the way public transport is provided. The move to deregulation that started with US airlines led to privatisation that became the preferred policy towards railways and urban public transport in many countries. Whether through total sale of operations to private sector operators or various forms of franchising or public-private partnerships the traditional view of transport as a public service provided directly by a public sector agency changed fundamentally. The need to reduce subsidy levels and a belief that the private sector could operate services more efficiently than the public sector and be more innovative and so reduce costs often lay behind these changes. Whether such moves actually reduced the overall cost to the public sector is not clear (Preston and Robins, 2013). The increase in competition may have been beneficial where demand is buoyant, but has had negative impacts on more marginal services such as branch railway lines, rural bus services or air links to remote regions where public subsidy to maintain the public service obligations of transport has been stretched to the limit.

Rethinking the role of public transport is important for many reasons. A simple return to the status quo ante may not be possible. The rescue packages put in place by governments to support businesses, individuals and health care systems during the Covid-19 crisis will place increased pressure on public budgets. In the UK central government borrowing in fiscal year 2020/21 is expected to reach almost GBP400 billion as the economy shrinks by an expected 11.3 per cent and unemployment rises to 7.5 per cent. The debt to GDP ratio is expected to remain at over 100 per cent through to 2025 limiting the scope for extra spending (UK Government, 2020a). The impact on the economy is estimated by OECD (2020) to be worse than any other country with the exception of Argentina.

Much will depend on how individuals respond to the situation after the best part of 2020 has been spent in various degrees of lockdown and the fear of infection dominates decision making until vaccines prove effective in developing a degree of herd immunity. Changing working practices with more home working has reduced the demand for commuter services. The need to maintain social distancing has made

traditional commuter trains and buses impractical and this view may last for some time. These may be issues that resolve in the medium term, though the length of that period has been gradually extended and it seems unlikely that anything resembling a normal pattern of demand will return until well into 2022, if not longer.

Beyond these immediate problems, two issues that were already pressing before the pandemic remain critical in the immediate future. One is the increasing inequality in accessibility to transport occasioned by income, age, disability and other individual and social characteristics. The other is the pressing climate and environmental crisis where transport accounts for a significant share of global emissions. Encouraging the use of public transport, but also investing in more environmentally efficient technologies for that public transport, is vital here. But these more efficient technologies are much more expensive at a time when investment funds will be at a premium. Governments may be able to incentivise public transport operators to invest in new technologies but will face the difficulty that lower costs may be seen as feeding through into private operators' profits rather than improved service.

The initial response to encourage those who cannot work from home to return to work to get economies moving again has been combined with a warning to avoid public transport where possible. Encouraging alternative modes such as walking and cycling will have good long-term benefits, but for many this may not be feasible and the alternative is to use private transport. This could reverse the benefits of reduced emissions and less congestion that have been achieved over a long period of time though increasingly restrictive measures on private vehicles in city centres and demonstrated during the most severe stages of lockdown during the pandemic.

The next sections turn to an analysis of the impacts on each mode of transport and the issues raised for future policy. In this we focus on the situation in the United Kingdom. As we have seen, the UK has suffered one of the highest rates of infection and death from Covid-19. The UK has also experienced some of the most widespread moves to deregulation and privatisation and thus faces a serious problem in restoring a functioning transport system post pandemic.

3. Impacts on transport use by mode

Fig. 1 shows data on transport usage by mode from March 1, 2020 until the end of November 2020 based on comparisons with a typical equivalent day. The data is based on the whole of Great Britain (England, Scotland and Wales), but the detail of policy measures is focussed on England. The devolved administrations in Scotland and Wales have competence for both transport policy and Covid-19 policy. The initial lockdown in England began on 23 March and was lifted in stages from mid-June. As infection rates rose again from August there was a gradual increase in restrictions in the worst affected areas. These were initially mainly large urban areas in the north of England. As the situation continued to worsen, following similar rises in infection rates across Europe, a second total lockdown was initiated for four weeks for the period from 3 November to 1 December. Following this a revised system of tiered restrictions became effective with most of England placed in the highest two tiers.

Fig. 1 shows clearly how traffic by all modes fell dramatically at the start of the initial lockdown. It then recovered at different rates by mode, especially after the easing of restrictions in June, but then fell again, albeit less dramatically, with the second lockdown in November.

3.1. Overview

After an initial fall road traffic began to increase after two to three weeks and heavy goods traffic was nearly back to normal by mid-June with car traffic back to almost 80%. Car and light goods vehicle traffic fell again at the start of November, but not by as much as in the first lockdown. Rail services fell to below 5% and only recovered to 12–15% by the end of June. They continued to rise to around 40% by the end of

¹ Reported in <https://www.bbc.co.uk/news/world-51235105> (1 December 2020).

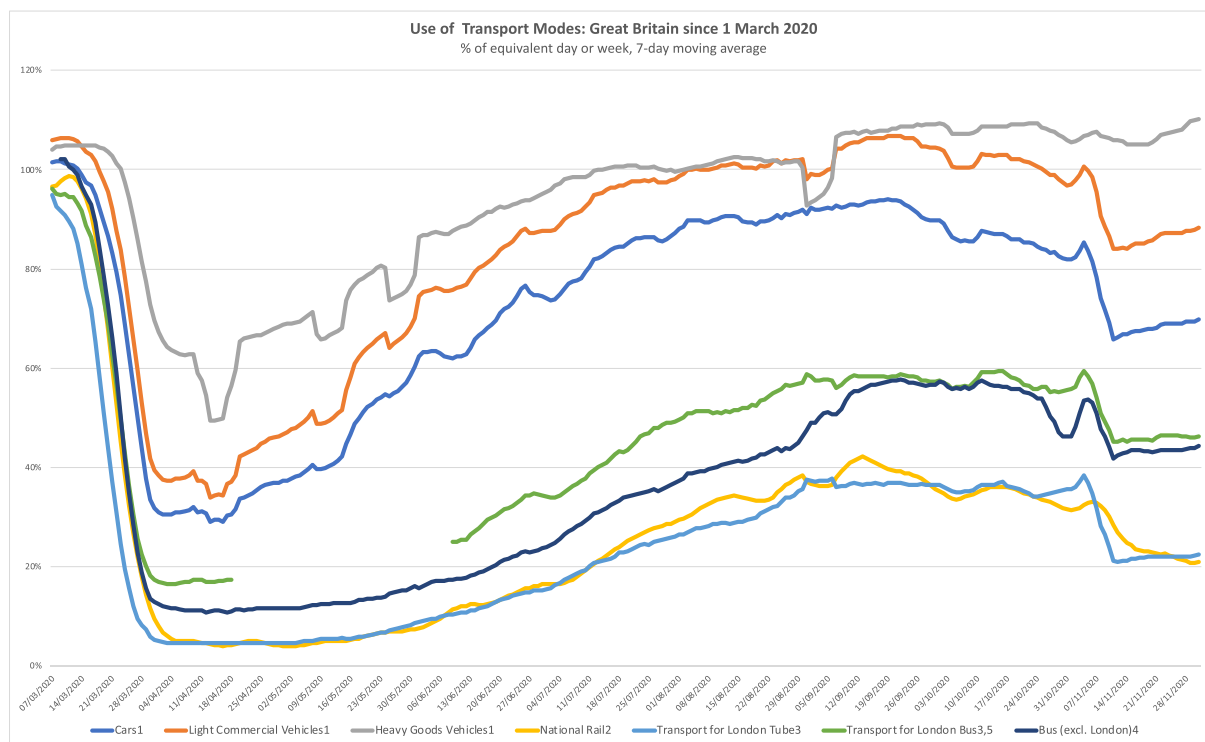


Fig. 1. Use of transport modes: Great Britain 1 March to December 1, 2020.

Notes

- 1 Percentage of the equivalent day in the first week of February 2020.
- 2 Percentage of the equivalent week in 2019.
- 3 Percentage of the equivalent day in 2019.
- 4 Percentage of the equivalent day of the third week of January 2020.
- 5 Data on TfL Buses is not available from Sunday 19th April to 8th June due to the change in boarding policy.

Source: Department for Transport <https://www.gov.uk/government/statistics/transport-use-during-the-coronavirus-covid-19-pandemic>.

August but then began to fall again with a further sharp fall in November to below 25%. London Underground traffic followed a similar pattern to national rail services until July but then grew back more slowly reaching a maximum of 37% just before the November lockdown when it fell to below 25%. Bus services outside London fell to about 11–12% and recovered to around 25% in June and almost 60% by September but then again began to fall back to less than 50% in November. In part this reflects the demand from educational establishments. Bus traffic in London fell slightly less and increased to around 35% by the end of June and almost 60% before the end of August since when it has followed a similar pattern to bus services outside London. Data is not available for the period 19 April to 8 June as travel was free with boarding via centre doors only to reduce contact with drivers. For comparison cycling increased to well over 300% of a typical day on weekends during the first lockdown though had fallen back to around 200% of the reference day in early March by the end of June. Weekday figures were above normal during the first lockdown and up to the end of September after which they began to fall and were in many cases below the figure in early March even during the second lockdown.

3.2. Rail

Rail services in the UK were privatised in 1996 with a move to an area-based franchising system for passenger services operating on an initially private track network later brought back into a not for profit arms’ length agency, Network Rail (Nash, 2015; Preston and Robins, 2013). The franchise system has changed several times and even before the pandemic was under a review that was likely to make fundamental changes (Department for Transport, 2020a). Two franchises had already collapsed and been brought back into public ownership. At the start of

the pandemic the Government changed the nature of all the franchises into management contracts under an Emergency Measures Agreement where the existing operators continued to run the (reduced) services at an agreed cost whilst the Government took the revenue (Department for Transport, 2020b). This was intended for an initial period of six months to September 2020 at an estimated cost of £4.3 billion (UK Parliament Public Accounts Committee, 2020). In the event the Emergency Recovery Measures Agreements were extended for further periods of six months to one year with the Government then proposing to replace existing franchises with new National Rail Contracts (Department for Transport, 2020g) at a further cost estimated to be between £3 billion and £5 billion (UK Parliament Public Accounts Committee, 2020). This effectively implements changes expected following the on-going Williams Review and provides for terms of direct award of up to six years to take operations to a point where normal service levels are expected to be reached post Covid-19.

During the initial stages of the lockdown, when essentially only key workers or those who were unable to work from home were commuting, rail timetables were drastically reduced. Passenger numbers fell to around 5% of normal. Train operators indicated social distancing requirements by marking seats out of use and implementing one-way systems to enter and leave carriages. The gradual release from lockdown saw a phased introduction of more trains, especially at peak periods although train operators are urging people not to travel unless their journey is essential. Almost full timetables were in operation by September. This has not however seen a significant return to normal in passenger numbers and some services were cut again in the November lockdown period.

Whilst rail services, both inter-city and local, have seen significant increases in ridership in recent years before the pandemic, these

increases have often put pressure on ageing infrastructure so that service levels have deteriorated with overcrowding and delays commonplace (Vickerman, 2020). In a post-pandemic world in which social distancing remains in place the provision of capacity will be critical. Full social distancing allowing 2 m between passengers reduces the effective capacity of trains to around 15%. This requires a move either to compulsory advance reservations, already introduced on some of the key inter-city lines, or access controls to stations to prevent overcrowding on platforms and trains.

The problem is that if working from home becomes more normal, especially for service sector workers in large cities, then that capacity will need to be there but for fewer passengers. Who pays for this will then again become a key question. In the UK the prevailing view has been that the largest burden should fall on the user of a service so rail fares remain high and peak-load pricing (or more usually off-peak discounting) the norm. With fewer passengers but similar levels of capacity then under this system fares would have to rise and the question arises as to who should bear this burden? The current logic is that the major share would fall on the user but there are also arguments that some of this might fall on employers, either through taxation (as is already the case in some countries such as France where there is a levy on employers to support the cost of public transport), or through paying increased wages or direct payments to workers for commuting costs (which has implications for how the tax system treats such payments). There is an argument that this should in fact be a public sector responsibility. The agglomeration factors that make large cities more productive generate tax receipts for the public sector and good public transport is part of the urban public good that attracts investment and workers to the city (Graham et al., 2021). This has been compounded during the crisis in that public transport has had to be kept running to enable key workers to get to work, especially those in the health care system. These are often amongst the lowest paid workers for whom any rise in fares would be a serious burden.

3.3. London

Urban mass transit systems such as metros and light rail or tram systems present similar problems to commuter rail but often magnified. By definition mass transit systems carry large numbers of people over relatively short distances, often from underground and relatively enclosed platforms, and therefore are very vulnerable to infection spreading and problems of enforcing social distancing.

As shown in Fig. 1 London Underground (“Tube”) ridership followed a similar pattern to national rail falling to a low of 5% of normal in early April and only gradually recovering to a high of around 40% just before the second lockdown in early November when it fell again to below 25% of normal. London Bus ridership fell to 14% of normal in early April but reached 60% by the end of August falling to around 40% in November.

Whereas the Underground is run by a wholly owned subsidiary of Transport for London, there is a franchising system for bus services with central planning of routes by Transport for London, but services, typically franchised in blocks, operated by private operators. Fares are set and revenue received centrally and operators remunerated on a net cost basis following tenders.

The financial provisions made for rail were not applied to urban networks which are the responsibility of local governments, although usually operated by private operators under a franchise system. In the case of Transport for London which runs London Underground and London Buses this resulted in the system almost running out of money before emergency funding was provided by the UK Government. In London, the initial response to Covid-19 was to reduce capacity to enable the maintenance of a reasonably reliable service but ensure sufficient capacity to allow for social distancing. Fare collection was abandoned on buses between April and June largely to protect drivers. This led to a rapid deterioration in Transport for London’s financial position and it required financial help from national government to

maintain services (Department for Transport, 2020e, f).

This help came with strings, however, and TfL was required to reintroduce fare collection on buses, commit to a rise in fares after a period when fares had been frozen, reduce free travel periods for younger and older passengers, and accept two government nominated members on its board. To an extent this impacted on the independence of TfL, but also showed that the basic mindset of public provision of transport is one of centralised control largely driven by financial constraints. The situation continued to deteriorate and following further investigations into TfL’s finances agreement was finally reached on a £1 billion package to maintain services through to March 2021 (Department for Transport, 2020h). This sum is based on the assumption that passenger demand is at 65% of pre-Covid-19 levels, a figure which is above that reached so far and considerably above demand levels on London Underground.

This demonstrates very clearly the vulnerability of such systems to a crisis: the services they provide are essential, especially for key workers, but the contracts under which they are typically run do not provide for emergencies such as the Covid-19 pandemic and the franchising authorities do not have the resources to cover the loss of revenue and still maintain services.

3.4. Local bus and tram services

Outside London after the deregulation of long-distance express coach services in 1980 (White and Robins, 2012) local bus services were deregulated in 1986 (Jeffrey, 2019). Prior to this most services outside major urban areas had been operated by local subsidiaries of the National Bus Company and in the larger towns and cities by local authority-owned operators. Since 1986 services have been operated by private operators. Initial selling of constituent regional operators in the National Bus Company, largely to management buy-outs, led rapidly to the emergence of a small number of dominant groups which control most bus services, including operating on Transport for London contracts. Previously municipal owned and operated bus services had to be divested to arm’s length companies, most of which were subsequently sold on to one or more of the major private sector groups.

Generally, there are two types of service: those run on a full commercial basis by the operator taking revenue risk, and contracted services where local governments deem a service is necessary (public service obligation) and operated on a tendered/franchise basis. This includes services on otherwise commercial routes operated at periods of low demand such as evenings and Sundays. Provision is also made for certain groups, principally older people and school students, to travel for free or at discounted rates. Free travel for older people is provided under a national scheme but funded by the local authority of residence. Operators are paid fixed sums that typically do not cover costs. These have been the subject of budget cuts as has the financing of contracted services. Bus ridership outside London has fallen dramatically since deregulation.

Shortly before the Covid-19 pandemic started the UK Government produced a new policy discussion paper on bus transport (Department for Transport, 2020c). Building on the Bus Services Act (2017) (UK Government, 2017) this looked further at ways of bringing local authorities more into the planning mechanism, reinforcing regional transport authorities along the lines of Transport for London, but without identifying a preferred structure. Mayors in some of the large city regions have expressed a preference for a move to a London-style franchising system as part of a plan to enable them to take more control of planning for all modes of transport, including rail and light rail, and implementing single ticketing systems covering all modes. But there is not universal support and the private sector bus operators claim that it will increase costs and reduce service levels. The alternative is for greater use of partnerships between local authorities and operators in which agreement is reached on such things as the provision of bus-priorities in return for investment by the bus operators (Jeffrey,

2019).

Outside London ridership on buses fell more sharply in the initial lockdown to 11% of pre-Covid levels and rose again more slowly than in London but reaching similar levels of just under 60% by early September, influenced again by the return of schools. Separate data is not available for the (relatively few) tram and metro services outside London.

Bus services present a similar overall issue to rail for funding, but also pose additional problems. Bus services generally serve smaller flows of people than rail and this includes a greater share of the transport disadvantaged, those on low incomes or living in sparsely populated rural areas. Unlike rail which has seen a growth in ridership over recent decades, both from urban agglomeration and from modal switching, buses have generally lost out to private car transport with a long-term decline in ridership. To maintain a minimum level of services for key workers bus operators were provided with funds through a Covid-19 Bus Services Support Grant (CBSSG). This was supplanted by CBSSG Restart (Department for Transport, 2020d) to help operators increase services back to near normal levels as the initial restrictions were eased. Both of these were provided on a £1 per km operated basis, but again with a clear centralised control to ensure that only necessary costs were covered such that operators did not make profits out of the funding package. This also included help in increasing safety such as screens to protect drivers and other measures necessary to maintain safe operation.

Tram, light rail and metro services outside London were initially not covered by these support grants but subsequently packages for each individual operator were agreed to enable services to keep running. Such services present additional problems to provide for some degree of social distancing. Although underground metro stations might allow for similar access control measures to commuter rail, most light rail/tram networks with on-street running have open platforms. In such systems access is not by entry barriers and this presents additional problems of revenue control and protection.

Buses face perhaps even greater problems of social distancing than rail or light rail as it is more difficult to control access at frequent stops than at rail stations and on-board fare payment poses further risks to operators. One simple solution is to make urban bus services free as Transport for London did in the initial response to Covid-19, largely to protect bus drivers, by implementing centre-door entry where vehicles allowed for this and not requiring use of smart-card cancellers on vehicles. Outside London and some other large cities, the use of multi-door buses is much less common, but operators have tried to reduce the use of cash in payment where fare collection machines allow for smartcards or other forms of cashless payment. The debate over free public transport, as has been implemented in some countries, such as Estonia and Luxembourg, will continue. To the extent that a high proportion of off-peak riders on buses already benefit from various forms of social provision that makes use free at the point of use, this may not be a major change. But it again challenges the underlying economic model for bus operation as the use of such concessions depends on how operators are compensated.

3.5. Private transport

Where does that leave the use of private transport in cities? Public authorities already receive significant income from the operation of congestion and emission charging schemes and parking charges. In many cases these are justified on the basis of controlling congestion and pollution and using the proceeds to promote alternative public transport choices. Although road usage did not fall by as much as public transport usage during the initial lockdown in the pandemic (typically to around 30% of normal traffic), the reduction in pollution in cities during this period was significant. For example, the Centre for Cities (2020) reported a 38% reduction in NO₂ in major cities between March and May 2020 with some having reductions of more than 50%. Carbon dioxide emissions fell dramatically by up to 40% across Europe in the early

stages of the pandemic but then rose again and by July were down about 10–15% (Friedlingstein et al., 2020). The UK was towards the middle of this range at around 13% (Le Quéré et al., 2020).

Fig. 1 shows how public holiday weekends affected road transport much more markedly than public transport. It also shows that the second lockdown in November did have an impact on private car and light goods vehicle traffic but not on heavy goods traffic. As road traffic has grown back faster than public transport usage, pollution levels (and the health hazards that creates) have risen, with NO₂ levels back to pre-lockdown levels in most cities by July. The UK Government has actively encouraged essential worker commuters to use private transport rather than public transport in the interest of controlling infection rates. Strong emphasis has been placed on the health benefits of cycling and walking and provision has been made to impose restrictions on the use of some roads by motorised vehicles or increased capacity of cycle lanes to assist this. However, in larger cities where commuting distances are often longer there is a limit to how far this can occur.

Whereas cycle use grew considerably during the first lockdown, as Fig. 2 shows this has not been maintained into the colder weather of Autumn. The cycling figures also display huge daily variations which also reflect weekend leisure usage and variations in weather. It seems unlikely that cycling will replace either private car or public transport usage to any great extent on a permanent basis.

The external costs of the move to greater private vehicle commuting will outweigh the ability of current charging systems to control overall levels of congestion and pollution. The Congestion Charge in London has been increased to try and curb this growth in traffic as well as provide much needed revenue for Transport for London to maintain public transport, although plans to increase the area covered by the Congestion Charge were not implemented.

3.6. Aviation and maritime

Aviation has been the greatest immediate loser from the pandemic with entire fleets withdrawn from service. Aviation has suffered from the effective closing of borders to large groups of travellers. It is often perceived in the popular imagination as being primarily concerned with holidays and leisure trips, but the reduction in business travel affects in particular the full-service airlines with premium cabins. Whilst the days of state-owned flag carriers have largely passed, many airlines, although technically private companies, are still seen as having this image and thus considerable amounts of public money have been provided to airlines across the world to maintain their capability. This has been seen as essential to enable freight to be carried; medical supplies, personal protective equipment etc are ideal consignments for air freight. The UK Government has not made financial provision to airlines a priority unlike for example Germany and France.

At the same time, relatively few health checks were imposed initially on incoming travellers to the UK and whilst UK citizens were advised not to travel abroad for non-essential travel no restrictions were placed on incoming travellers except for general public health advice. Curiously as internal lockdown restrictions were beginning to be lifted the UK imposed a compulsory 14-day quarantine from early June on all arriving travellers (with the exception of some exempt groups of essential workers). This seriously affected the airlines' wish to resume services at the same time as border restrictions were being lifted across the rest of Europe. Although air-bridges to certain destinations deemed relatively safe were introduced during the summer, as the UK was the country with the highest rates of infection in Europe the risk of imported infection was probably less for the UK than for other potential air-bridge partners. The debate continues on the efficacy of international travel restrictions as a means of controlling the pandemic given an announcement in December

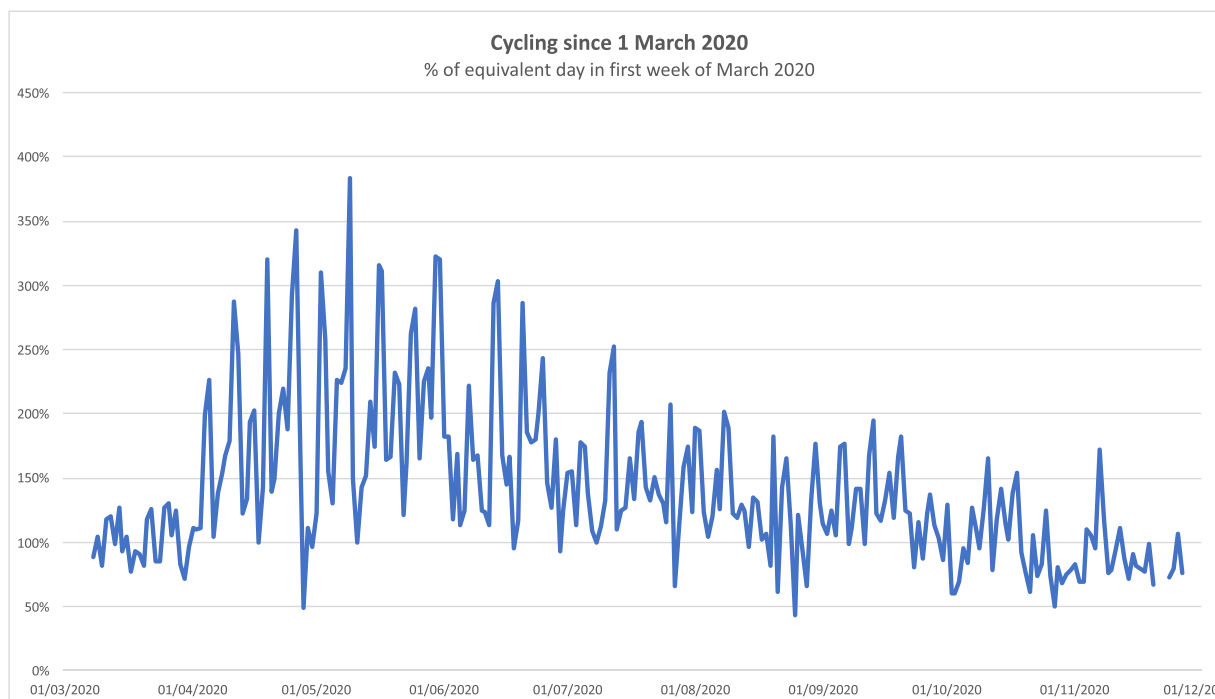


Fig. 2. Cycling in England since March 1, 2020.

Source: Department for Transport <https://www.gov.uk/government/statistics/transport-use-during-the-coronavirus-covid-19-pandemic>

2020 that high value business travellers could face fewer restrictions.²

This places airlines, airports, in the position that they are being subject to government-imposed restrictions on their ability to operate commercially, but are being denied compensation whilst their competitors are often being assisted. A group of airlines led by British Airways started legal action against the UK Government on the grounds that the blanket quarantine restriction is disproportional. The situation is complicated by the use by UK airlines of the UK Government's furlough scheme for workers that guarantees jobs by paying 80% of wages up to a monthly maximum. This scheme was designed to prevent short-term redundancy but airlines such as British Airways and Virgin Atlantic have used the opportunity to plan revisions to their future networks by, for example, proposing to move flights from London Gatwick to London Heathrow. Such moves would be accompanied by eventual redundancy for some currently furloughed workers and/or an imposed revision to employees' terms and conditions of employment.

A further potential problem as airlines try to recover schedules is the availability of slots at airports. Although the initial response at an EU level was to suspend the "use it or lose it" regulation it is not clear how long this may apply. The allocation of slots may become a bargaining weapon between the Government and the airlines although technically the slots are not directly allocated by the Government.

For the future, there will remain the problem of how to preserve the sort of social distancing expected on other forms of public transport. This is almost impossible on aircraft under the current economic model used by most airlines that requires high levels of load factor not the 20% occupancy that is seen as essential for buses and trains. Airports will also face the problem of dealing with numbers of passengers, potentially imposing more stringent health checks on both departing and arriving passengers and, if air bridges become the norm, achieving effective segregation of different types of traffic? Longer check-in times may also create problems of overcrowding in departure lounges.

Maritime services face similar problems. The UK is reliant on ferry

traffic for large amounts of its trade, including food supplies. Whilst it may be possible to incorporate social distancing measures on short-sea routes, longer routes, typically with overnight accommodation, may prove more difficult. Ferry companies, along with the Channel Tunnel operator, also had to deal with the quarantine requirements. In this case it is made administratively more burdensome as exempted travellers such as road haulage drivers form a large proportion of the traffic. All these operators are private sector firms operating at their own risk without public subsidy but facing the requirement to comply with changing government regulations and restrictions.

4. Rethinking the future of public transport

The basic conclusion from this is that a sustainable transport system in a post-pandemic world is unlikely to see a return to business as usual after a short period, unlike that after previous disruptions. Whilst ridership may increase it seems unlikely that there will be a return to pre-pandemic levels of commuting for some considerable time as working from home has become the norm for many. Similarly, business travel will take time to return as long as infection rates remain high and some form of quarantining after travel remains. It has to be seen how long it will take for vaccination programmes, which started in the UK on December 8, 2020, to give the level of "herd immunity" that is deemed sufficiently safe to remove restrictions. Increasing demand, as long as some form of social distancing remains in force, will also present problems for operators. If useable capacity is somewhere between 10% and 20%, frequencies may have to increase to provide sufficient useable capacity and this will lead to increased costs. Some bus operators are having to duplicate peak services to avoid customers facing excessive waits. This may render more marginal services unviable.

Short-term interventions in the form of the type of additional payments to operators to maintain services, as detailed above, cannot provide long-term solutions. This is particularly the case in the UK with the mixed economy of wholly private, franchised and publicly provided services seen across the transport sector. For example, bus services outside London involve a mix of commercially operated (unsubsidised) services and contracted services. Whilst these have all been maintained

² Reported in <https://www.bbc.co.uk/news/business-55162318> 3 December 2020.

during the pandemic with central government support, any continuing support will change the basic philosophy of allowing private sector operators to determine routes, frequencies and fares whilst taking on the revenue (demand) risk. Under current arrangements if an operator withdraws from a commercially provided route it becomes the responsibility of the local government authority to determine whether to contract an operator to provide a service deemed socially necessary. Local governments have been reducing support for such services for some years due to financial constraints imposed by central government. Any additional demands would be difficult to sustain.

The immediate response of central government to the funding crisis at Transport for London was, as detailed above, to insist on fare rises and service reductions including withdrawal of concessions to students and older travellers. Although fares had been frozen in London under the current Mayor they remain considerably higher in real terms than in other major cities across the world. The philosophy in the UK for most forms of public transport has been that the user should pay the bulk of the fare, such that farebox ratios are relatively high in world terms for all modes, rather than placing the burden on the taxpayer who may not be a regular user. Although the annual announcement about increases in regulated rail fares was delayed until December (Department for Transport (2020i)) and the start date for the new fares put back from January 2021 to March 2021, fares are then set to rise by RPI (Retail Price Index) +1%. This is a larger rise than in the recent past by the addition of 1% over RPI whilst the Government claims that the actual rise is lower, due only to the low rate of inflation. The justification is that this “recognises the unprecedented taxpayer support over the last 12 months” and that “we’re ensuring that taxpayers are not overburdened for their unprecedented contribution”.

With governments facing deficits after the support given during lockdowns due to the pandemic there is unlikely to be the money available for a wholesale return of public transport to the public sector or to continue the emergency payments to keep services running through management contracts. Moreover, there are many competing demands for financial support from other sectors of the economy, albeit sectors that will often depend on the recovery of public transport such as retailing, hospitality or entertainment.

That is why there will need to be a wholesale rethinking of how to provide safe and reliable public transport to support the economy, tinkering at the edges will not be sufficient. This suggests that the deregulated, competitive model of transport may have to be confined to history. A crisis is often the catalyst to new ways of thinking. A bit of financial sticking plaster of the type adopted so far does not address the long-term issues which were already present and which Covid-19 has highlighted and accelerated rather than caused. The assumption seems to have been that only interim aid is needed until the situation returns to normal. But that “normal” may be a long time in coming about, if it ever returns to something like the situation immediately before Covid-19 struck. And we know that even before the crisis much of public transport was in difficulty. The danger is that the new model begins to look surprisingly like model minus one, the one existing before the advent of the deregulated, competitive model. A return to a centralised, publicly financed and operated transport system without a more fundamental rethink of the purpose of public transport could be counter-productive as it would again lead to transport being subject to the overall position of public sector budgets, both at central and local government level. The “sticking plaster” approach covers up some fundamental disagreements between different levels of government, and different political standpoints, over how to organise and pay for public transport (Jeffrey, 2019). A rational and objective approach to reform will be difficult, but perhaps this is an opportunity for that rethink.

This suggests that urban transport and particularly commuting will need to be planned as whole. A move towards national road pricing has again become part of the agenda in the UK and this is a welcome development as it would provide the basis for a more comprehensive treatment of a self-financing transport system. [The Times \(2020a\)](#)

reported that the Treasury was preparing proposals for a national scheme given the consequent loss of tax revenue from fuel taxes from the move to ban petrol and diesel vehicles from 2030 announced earlier in November ([UK Government, 2020b](#)). If this was combined with a possible extension of the London Congestion charge into a “boundary charge” ([The Times \(2020b\)](#)) and similar schemes were introduced across other major cities it could lead to a comprehensive coverage of all modes into a national transport plan. Only if all these schemes were rolled into a single comprehensive means of charging for private vehicle use according to distance driven, emissions and congestion would it stand any chance of acceptance. This revenue should then be used to support all forms of transport according to need. It is important not to see this as a tax on road users but an environmentally efficient charge for the use of road space so that users can see the real costs of using each mode of transport and make their decisions accordingly.

Whilst the health benefits of an encouragement to cycling and walking are important these cannot be delivered without investment in a realignment of the space devoted to each mode. Those choosing not to cycle or walk are more likely to revert to the private car if public transport cannot deliver an acceptable option; that has implications both for the conflicts between different users and for a rise in congestion and pollution. Sustainable mobility will in the future have to pay more attention to sustainability in the widest sense of personal safety as well as community impact than just to facilitating mobility.

A fundamental reappraisal needs to reverse the current thinking which has been largely one of how can we move a given number of people for the least cost to the public purse to one of a more basic approach to the demand for mobility and how that mobility relates to the economic and social wellbeing of a city or region. The mobility as a service (MaaS) approach goes some way towards this goal (see [Lajas and Macario, 2020](#) for a recent review and application), but car has to be taken in the way it is implemented to avoid introducing inefficiencies (see [Hörcher and Graham, 2020](#)). Nevertheless, such an approach could provide a more holistic approach that could start to identify the distinction between the private and social benefits of journeys and achieve a better balance of trip making by journey purpose, time of day and mode.

Understanding this fully involves understanding better the relationship between private and social norms and building trust in transport operators whether public or private ([Poon and Vickerman, 2020](#); [Ababio-Donkor et al., 2020](#)). Responses to Covid-19 have highlighted the importance of social norms as influences on private behaviour and thus building a sense of ownership of public transport is an essential part of the future organisation (see, for example, [Budd and Ison, 2020](#)). Publicly owned operators are too frequently regarded simply as agencies of government and private operators as profit-rather than service-focussed. Understanding such norms and building trust and a sense of ownership will be a vital aspect of any revised approach to the provision of public transport. This will involve a serious discussion on the appropriate balance between financing through the farebox by users and social funding that reflects both societal need and the economic well-being of a city or region rather than just funding to cover deficits that usually leads to cost cutting and service reduction. This would allow for a better planning of both overall capacity of a transport system to serve the needs of the city or region and its appropriate modal shares.

5. Conclusions

Covid-19 has had a major disruptive impact on all aspects of the transport system, local, national and international. The impact has been significant for both public sector and private sector operators and has thrown most business models into disarray. This has been particularly significant in the United Kingdom which had moved to one of the most decentralised and deregulated forms of provision. Whilst the UK Government, like many others across the world, has moved to provide funding to enable services to keep running during the pandemic, the

length of the emergency and the slow speed of recovery threatens the ability to maintain this until demand returns to pre-pandemic levels.

This paper has argued that the situation will require a more fundamental approach to long-term policy for transport as a whole and not just a mode by mode approach. But this is also an opportunity for a move towards a holistic approach that addresses problems of provision such as the environmental impacts of transport, congestion and questions of transport justice such as accessibility to transport for disadvantaged groups in society. Much remains to be done in designing such an inclusive transport system.

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