

Coronavirus, Cities and Public Transport

The current restrictions on public transport use – for essential journeys only – are now being eased in a measured way. Cities depend on public transport. Their economies will not be able to recover until public transport is fully operational. and judged safe to use.

In this extract from an upcoming report for the UK2070 Commission on the transport revolution needed to ‘level up’ the national economy, we summarise the likely effects of Coronavirus on travel demand. We argue that a restored, healthy and improved public transport service is central to national economic recovery and to compliance with Government commitments on climate change.

Coronavirus impacts on travel behaviour

The impacts of *Coronavirus*, with the UK following practice elsewhere and instigating a lock-down, have of course been dramatic for the travel and transport sector.¹ It is too early to say what the longer term effects on travel demand will be. It is clear that regardless of employee preferences, some businesses will not re-open their offices when travel restrictions are lifted. Many have discovered that they can operate with a lower cost base satisfactorily ‘from home’. Broadband availability is required of course, and no doubt its national coverage will be one of the priorities for investment ahead.²

The effect on commuter travel is likely to have lasting impacts. Of course, only some office-based jobs can be made home-based. And in this sub-category, many employees and some employers will wish to have sight of their colleagues and engage in team briefings and so on. A switch to commuting (say) 1, 2 or 3 days per week for those that don’t need to be physically present, rather than every day, appears to be a favoured approach and a likely consequence. But commuting accounts for less than a fifth of all travel. And office-based work, only a minority of all jobs.

How this translates into overall travel demand patterns ahead depends on what happens to cities and in particular to city centres. Will office blocks be re-purposed? Will retail-based high streets revive? Will theatres and museums re-open? How long will it take for people to feel comfortable to visit them in large numbers? These are simply unknown at present.

What we do know is that the retail sector recovery so far is weakest in city centres.³ The problem is getting to them. Business decisions ahead will depend on the availability of safe public transport services that inspire public confidence, and which are no longer limited to ‘essential travellers’ only.

The fundamentals of city life, post-Coronavirus, might shift but some factors are unchangeable. Markets (across various sectors including leisure/tourism) need scale to operate on a commercial basis – often described under the heading of ‘agglomeration benefits’. Co-located businesses function inter-dependently.

Cities have overcome set-backs repeatedly through history and can – and most likely will – do so again.

¹ As of mid-July, the Department of the Transport website guidance continues to urge people to work from home wherever possible, consider “cycling and walking before using public transport” and avoid rush hour.

² The UK2070 Commission included this as a priority in Action 3 (page 50) of its Final Report <http://uk2070.org.uk/2020/02/26/uk2070-final-report-published/> earlier this year: Covid-19 has made it more urgent.

³ See Centre for Cities evidence in <https://www.chargedetail.co.uk/2020/07/07/retail-unlikely-to-recover-until-uk-returns-to-the-office-government-warned/>

Devolution is a factor in recovery

One of the biggest drivers of city economies, even in a country with such an established recent history of down-sizing the public sector, is Government itself. The rationale for business co-location is very strong in supporting the functions of Government: “UK cities need devolution of powers and links to London to succeed”.⁴

This point serves to underline an often overlooked point around devolution. With so much of all Government activity in the UK centred on London (which contributes almost a quarter of the country’s output and broadly 30 per cent of its economy-related tax take, according to Professor Tony Travers)⁵ this adds to the problem of regional imbalance.

The degree of centralisation in London deprives other centres of a share of this part of the economy. Cities with devolved Governments have bucked wider economic trends, as their economies have built smaller versions of the wider business infrastructure that supports London. Between 2000 and 2008, while the economies of many cities in the north improved, they didn’t close the productivity gap with the national average. Those with devolved Governments, such as Cardiff and Belfast, however, did particularly well, and between 2008 and 2010, London and Edinburgh were the only UK cities in the world’s top 20 per cent worldwide by gross value added per head.⁶ Devolution, or at least dispersal of Government functions – in particular to provincial English cities – is what’s needed most.

Re-shaping travel behaviour

Making transport investment decisions in the face of uncertainty is not easy. Projects that have been progressed for capacity reasons alone, based on medium/long term planning forecasts, may be postponed, some cancelled. But the country, to function as a productive, democratic and open society, needs to be able to support inter-personal contact in a variety of ways, and not just be left reliant on digital hook-ups. This entails travel. The economy will also not function – for consumers or for producers – unless goods can get to market.

What is clear is that the short-term palliative of discouraging public transport use is unsustainable. It puts many people, those living or working in large cities in particular, but also all of those wherever they live that rely on public transport, at an unacceptable disadvantage and in an untenable predicament that demands resolution.

As the economy gets back to full operation other travel restrictions are being eased⁷. But with no real demand management tools (and with fuel prices at a very low level) it is private car-based traffic that is rising and will likely continue to rise most sharply. Not only will this prejudice the widely noted air quality, bio-diversity and tranquillity gains apparent during the lock-down period, it will also result in intolerable (and highly inefficient) levels of road congestion.⁸ Recent evidence from the

⁴ <https://www.ft.com/content/35c7a600-d51f-11e3-9187-00144feabdc0> The regional development point (‘links to London’) is often overlooked by critics of HS2

⁵ https://www.london.gov.uk/sites/default/files/devolution_-_a_capital_idea_lfc_2017.pdf

⁶ <https://www.liverpool.ac.uk/media/livacuk/publicpolicyamppractice/UK,City-Regions,in,Growth,and,Recession,-Final,Version,March,2014.pdf>

⁷ Air travel, unlike bus travel, is not subject to any on-board requirement to maintain social distancing – see: <https://www.gov.uk/guidance/coronavirus-covid-19-safer-air-travel-guidance-for-passengers#on-board-the-aircraft>

⁸ The evidence to date shows that the various air quality measures have worsened, as the lockdown has been eased, but not yet returned to pre-Covid-19 levels in city centres. This reflects the fact that traffic levels have not fully recovered and so congestion levels are lower (as of July 2020) than pre-virus.

Netherlands suggests that poor air quality is a significant factor in increasing coronavirus infections.⁹ Accommodating the reduced levels of travel that will be a necessary part of achieving net zero carbon and wider environmental objectives including those on air quality standards is going to require demand restraint measures. If these are not to be economically damaging, and to garner sufficient public support for them, suitable alternatives to car use have to be provided.

Locally, active travel is the best answer in sustainability terms, but not everyone is able to participate, and it only makes sense for most people for trips of up to (say) 5 miles cycling distance (which circumscribes an area of around 80 square miles) – or much shorter if walking – before trip times get too lengthy. Beyond that, to avoid reversion to reliance on private car use (or taxis, *uber*, or minicabs), the country will need to turn to its public transport system. It will find it to be – for the main part – in good working order, having benefitted from governmental financial support through the lock-down period, and able to provide better on-time performance (with fewer passengers).

But it's far from perfect. In the immediate term at least, customer and staff protection measures will continue to be needed along with demand management to help maintain social distancing. Longer term, there are several areas where in some cases investment, and in others pricing action and regulatory advances, are especially needed to improve service quality and attract customers back:

- the nation's scheduled public transport system **is not joined-up**. Buses and trains are managed entirely separately. They have separate fares systems; they present very different challenges for mobility impaired travellers; interchanges between bus and rail exist, but not always where they would be most expected and helpful. Timetables are rarely matched for through travellers, and information sources are scattered across the internet. The current circumstance, with many fewer passengers, is a unique opportunity for radical change. With revenue depressed, the short-term income downside is minimised, while the scope to use new simplified fares system across the travel modes can be a key feature in attracting people back to using public transport
- some parts of the public transport network are **seriously unreliable due to road and rail congestion**. For rail, this may well be best tackled through removing a few services so that those that remain can be operated reliably to timetables – and this is already happening with rail timetables operating at slightly less than 100% of pre-Covid service levels achieving very high levels of service punctuality. For the bus sector, extended journey times and service unreliability will quickly reemerge post-Covid because of car traffic growth and lock-down period measures that have re-allocated road capacity to pedestrians and cyclists (in support of active travel): unless there is a complementary attempt to reduce car traffic when this happens, bus service quality always takes a hit, with yet slower journey times
- public transport is still provided to a significant extent through diesel powered vehicles with resulting **poor outcomes both in terms of carbon emissions and air quality**
- the public transport network is suffering from **some serious gaps**.

⁹ Damian Carrington, *Guardian*, 14th July 2020. The research was carried out by a team from Birmingham University and interestingly was able to overcome the problem of correlations between high pollution in cities (largely road-traffic based) and other factors such as high housing densities because high air pollution levels in the Netherlands often arise in rural areas.

How public transport works

Overcoming 'serious gaps' is only in part about providing missing infrastructure. The public transport network, to function efficiently and provide a substantive alternative to car use, has to offer an interconnecting set of routes that come together in a series of hubs, intersections, or junctions – the network 'nodes'. On the rail network, these key nodes are generally found in cities, and usually in city centres. This is why, regardless of the likely long term impact of Coronavirus on cities themselves, if public transport is to form the core medium-long distance national network, then services to these key hubs, which are mainly in cities and major towns, must be retained – and improved where they are deficient. And places that lack good inter-connections – even if they are geographically peripheral – must be provided with them, if public transport is to be a truly national facility.

Within the public transport network, it has to be recognised that interurban bus speeds are very low compared with rail speeds. For example, in a Greengauge 21 survey of West Country interurban bus routes between places with over 5,000 population (so ignoring deep rural routes) carried out in 2018, of 98 services identified, only eight achieved end-to-end operating speeds of over 20 miles/hour. The other 90 were all in the range 10-20 miles/hour. Rail speeds are typically much faster of course.

So, when it comes to a joined-up national network that can obviate or at least reduce car-dependency, a rail network, suitably backed up by limited stop inter-urban (as well as local) bus services, is what's needed to join local communities with each other, and with regional centres, the national capital, and international gateways. In short: active travel locally and public transport for medium and long distance travel.

The carbon imperative

Of course, to meet the national zero carbon target the overall system needs to use electrically-powered vehicles. This is much easier to achieve with rail, where already over half of journeys are made on electrically-powered trains. For freight, there is a real problem, since battery-electric power is cost ineffective and range-limiting for the HGV fleet that dominates the country's logistics arrangements. Much hope is being placed in the use of hydrogen technology which looks more promising than other approaches¹⁰, although this is equally dependent on electrical power decarbonisation and potentially on the use of carbon capture technologies too.

Just on the issue of international connectivity, it is worth reflecting on the combined impact of Brexit and achieving net zero carbon. Brexit will lead to some revision in patterns of trade – and hence freight/logistics patterns – but will have a lesser impact on person travel patterns. Indeed, here the impact of carbon reduction through a more climate conscious society with a predilection for less flying will keep leisure travel more tied to surface transport than would otherwise have been the case – and hence international travel to more of a Europe-based focus. With significant travel distances by surface modes, however, the importance of expanding the set of services using the Channel Tunnel and the high-speed rail network will probably increase, as UK holiday makers consider travelling further afield avoiding flights, encouraged by the imposition of carbon tariffs.

¹⁰ See <https://www.commercialmotor.com/news/buying-advice/closer-look-hydrogen-fuelled-trucks> October 2019

Levelling up

There is a further strand to the Coronavirus event to consider. It is increasingly clear that the impact of coronavirus is not uniform: it has impacted poorer communities and neighbourhoods, the elderly and the BAME community hardest. As ONS data attests, the death rate of people living in the poorest 10% of England during the outbreak is at 1.28/1000, whereas it is at half that level (0.59/1000) in the wealthiest 10%.¹¹

Coronavirus also appears to be causing differential impacts across the education sector, with children in poorer households less able to study from home using laptops to connect with teachers, according to an IFS survey of 4,000 households.¹² Inevitably, this means a set-back for the life-chances of children growing up in lower income households: the social mobility challenge is made all the greater for the young generation by the virus.

And the economic impacts are also likely to have an equivalent, adverse, effect on the working age generation. It may prove possible to retain a large part of 'white collar' employment post-pandemic, with remote screen-based work practices offering a spin-off advantage of reduced commuting times and lowered (or even avoided) place-of-work (office) costs. But the same is not true for 'blue-collar' workers, who engage in 'hands-on' activities, where the economic recession is more likely to result in job losses. To which it should be added, both white and blue collar jobs are likely to be subject to losses (as well as opportunities) through the application of digital technology.¹³

More public transport capacity is needed, not less

In summary, does Coronavirus mean that capacity concerns on rail (and bus) can safely be disregarded, because demand will decline, especially into cities? The answer must surely be no, and for this reason. True, it may well be that for a period of months, maybe longer, the effective capacity of individual public transport vehicles will be reduced to help achieve social distancing guidelines. Modelling by the Rail Delivery Group suggests a 5-year period to recover 90% of total rail demand. But having fewer passengers per train operated, for example, doesn't mean it would make sense to cut service frequencies or train lengths – indeed, rather the opposite, as carrying people safely means that more space has to be provided on trains (and buses) not less. And once the need to keep socially distant is passed, the only sustainable option for the nation as demand picks up is public transport.

As we have shown here, this needs to be structured around a set of service hubs that are, in general, in the centres of our major towns and cities.

¹¹ Quarterly data from ONS:

<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/deaths-involvingcovid19bylocalareasanddeprivation/deathsoccurringbetween1marchand31may2020>. Death rates are in normal times higher in poorer areas, but the ONS data for March-May show this effect being intensified.

¹² See <https://www.bbc.co.uk/news/education-52701850> May 18th, 2020

¹³ Employers expect nearly two in five (37per cent) job roles to alter significantly or become redundant as a result of new digital technology and automation in the next five years – affecting 12 million workers across the UK. Source: <https://www.hrreview.co.uk/hr-news/digital-revolution-to-impact-12-million-jobs/117135> June 2019