TECHNICAL ANNEX

The below provides a summary of the methodology used and assumptions made in estimating the cost and impacts of the different policies to reduce the cost of bus fares.

Free bus travel for all

Estimates are based on the level of revenue generated by buses in England in 2019/20, (BUS0501) and passenger journeys during the same period (BUS0106, BUS0105). These have been adjusted based on passenger journey data in the year to September 2022, to account for the impact of the pandemic on bus usage (source).

The estimate takes into accounting spending already allocated for Bus Service Improvement Plans. It is assumed that this spending equates to a 20 per cent reduction in single fares in recipient areas. The estimate does not take into account any funding commitments made related to reducing fares beyond this.

The demand impact of free travel is based on a metareview of price elasticity (source).

The estimate does not account for investment in additional services/capacity on the network. It is assumed that during peak times in metro areas, increased demand will not be able to translate into additional journeys due to crowding, but that outside of this it will (source, NTS0403, source).

The impact of reducing public transport fares can be expected to impact travel behaviours in different parts of England, and different demographics, in a different ways. The metareview relied on for this model matches the experience of some case studies (eg a 65 per cent increase in bus passengers during weekdays was experienced in Dunkirk within a year when they went fare free (source)). Despite accounting for crowding, the model predicts a high level of increase in bus journeys, but it should be anticipated that a temporary scheme may not have the same level of impact on ridership as a permanent one – eg the metareview indicates that just 50 per cent of the impact of a price reduction is seen within the first year, with the full impact only being felt beyond 2.9 years.

Although there is some uncertainty around the assumptions on the potential increase in passenger numbers, they only drive a small percentage of the estimated total policy costs.

DfT estimates of the marginal increase in operating cost from an additional concessionary trip (£0.06 in 2022/23 prices, after adjustment) have been used to derive an estimate of the overall increase in operating cost from new trips.

Modelling is carried out for separately for London, due to significant differences in average fares between London and the rest of England. All of our estimates are for England as a whole.

The indirect fiscal effect of the policy has been estimated based on OBR and IMF – these are combined to estimate the overall fiscal impact of the policy.

Where appropriate, costs have been adjusted for inflation and are presented in 2022/23 prices (BUS0415, source, source).

Free bus travel for young people

The model described above has been adjusted to focus specifically on making bus travel fare free for all under 25 year olds in England.

Disabled young people are excluded from this analysis as they are already covered by concessionary schemes.

The price elasticity of demand for young people is assumed to be the same as for the general population.

The amount currently spent on concessionary travel schemes for young people across England has been estimated. This is based on taking TfL's estimate of the cost of providing concessionary schemes for children, students and apprenticeships in 2018/19 (£203m in 2018/19 prices), and using data on the number of youth concessionary trips across England and the relative cost of current concessionary schemes in London and the rest of the country to extend this estimate across England. This is then subtracted from the estimate of the total cost of providing free transport for young people to estimate the net cost of this policy.

The indirect fiscal impact of this policy have not been estimated, as this is likely to be less significant for this group.

Free bus travel for people on universal credit

The model described above has been adjusted to focus specifically on the impact of making bus travel free for universal credit recipients. Date on travel behaviour by household income has been used to estimate travel behaviour among universal credit recipients.

The price elasticity of demand for universal credit recipients is assumed to be the same as for the general population.

People with disabilities and people aged 60+ people are excluded from this analysis, as they will already be covered by concessionary schemes. This makes a significant impact to the estimated cost of this policy, as a high proportion of universal credit recipients are also disabled.

Universal credit is not yet fully rolled out, and some people on low incomes are still on legacy benefits. The model does not account for the number of low-income people on legacy benefits. This means that there will be some additional growth in the cost of this policy post-2022/23, as universal credit rollout continues.

The indirect fiscal impact of this policy have not been estimated, as this is likely to be less significant for this group.

We also estimate the total cost of making bus travel free for young people *and* universal credit recipients. This is not equal to the sum of the cost of making bus travel free for young people and universal credit recipients separately, because there is some overlap between the two groups.

The anticipated cost of making daily bus pass never cost more than £1/£1.50 anywhere in England

The current average cost of a daily bus pass (£4.95 in London, and £6.08 in England outside London, in 2022/23 prices (source, source)) has been compared to the new cost (£1/£1.50) to derive a percentage reduction (80 per cent/70 per cent in London, and 84 per cent/75 per cent in England outside London).

It is assumed that either the cost of a single fare will go down in proportion with the cost of a daily bus pass, or that consumers will switch from buying single fares to using a daily bus pass. This means that this policy can be modelled in the same way as an 80 per cent/etc reduction in all fares. The model above has been adapted to do this.

As some fares will still be collected under this policy, the new level of revenues collected has been modelled.

The indirect fiscal effect of the policy has been estimated based on OBR and IMF – these are combined to estimate the overall fiscal impact of the policy.

The anticipated cost of making a single fare never cost more than £1/£1.65 anywhere in England

The current average cost of a single fare in England (£1.65 in London, and £2.91 in England outside London, in 2022/23 prices (source, source)) has been compared to the new cost (£1/£1.65) to derive a percentage reduction (39 per cent/0 per cent in London, and 66 per cent/43 per cent in England outside London).

It is assumed that either the cost of a daily bus pass will go down in proportion with the cost of a single fare, or that consumers will switch from using daily bus passes to buying single fares. This means that this policy can be modelled in the same way as a 39 per cent/etc reduction in all fares.

The indirect fiscal effect of the policy has been estimated based on OBR and IMF – these are combined to estimate the overall fiscal impact of the policy.

Estimated the distributional impacts of the policy

The distributional impacts are based on the new number of journeys expected with this policy in place multiplied by the original passenger fare. These savings are apportioned by household income decile using data on bus trip rates by household income decile. It is assumed that non-concessionary trips are distributed across household income deciles at the same rate as all trips and that the distribution of household income for young people follows the same distribution as for the general population. Data from the Family Resources Survey is used to account for the income distribution of universal credit recipient households.

Estimated the impact of the policy on car trips

The impact of the policy on the number of car trips taken is based on the estimated number of additional bus journeys generated, from the model above, combined with DfT estimates of diversion factors from car to bus trips (source), and on average car trip length (NTS0101). Lower average rates of car use among young people and low-income households were taken into account where relevant.

Other considerations

If this policy did result in additional departmental spending, then there would be an increase in the block grant for the devolved administrations as a result of the Barnett formula and therefore an additional cost to the exchequer overall.