

Transport Planning Society

February 2016

Response to the new values of time proposed by DfT

TPS had originally intended to make a finished submission on the revised values of travel time (VTT) derived from new DfT research based on Stated Preference. We attended the presentation of the findings in December and asked a series of follow up questions of DfT. Their responses were very useful, but inevitably in dealing with such a complex subject there remain issues of concern which we both intend to pursue. This has resulted in more of a dialogue than a finished submission, although we think that there are a few key suggestions we should make at this stage. This is particularly pressing because the values are to be included in WebTAG in May this year. We nevertheless think that a continuing dialogue with practitioners will be useful to all concerned and very much welcome the DfT's openness to further discussion.

The key issues we wish to comment on are:

- 1 Varying the values of time by size of saving or trip distance
- 2 Differences between continuous functions and use of a small number of distance bands
- 3 How to deal with changes in mode causing changes in value
- 4 Areas where further work is needed.

1 Varying the values of time by size of saving or trip distance

In reality there is considerable correlation between absolute size of time saving and distance related parameters. Both appear to be important in the DfT's latest survey results (as they were in the previous research). The issue is that in some appraisals, particularly those with large road network based models, very small changes in time spread widely across the modelled area play a key role in generating benefits. Setting aside whether these are genuine or a by-product of model structure, the likelihood of these being useable or perceivable, and therefore of monetary value, is in reality very low. In the past this problem has been put to one side on ideological grounds to maintain "constant value theory". Since it is now clear from the latest research (as it was in the 1997 work) that this does not apply we support the idea of using variable VTTs. Values are in fact altered in appraisal already, for example noise, as well as by distance in transport modelling. Thus we disagree with the contention in 7.6.1 (page 214) of the Phase 2 report which supports continued use of constant value theory and small time savings.

We also think there are mode differences which mean that small time savings on shorter journeys by bus, for example, may be valued more highly than the car mode. We would like to explore this further with DfT. While this is an area where further discussion would be useful, we think that a move to a continuous function, more widely used in terms of mode and purpose, would avoid some of the worst anomalies, including size of savings. This is our next key point.

2 Differences between continuous functions and use of a small number of distance bands

Having discussed this among Board members who have modelling experience, we consider that using a non-continuous distance-based VTT for business travel (or any other purpose), with step changes at specific trip lengths, is fraught with problems. There will be boundary effects where trip values change significantly, for example through reassignment or redistribution. It could lead to significant problems in model calibration and scheme appraisal. Differences in model structure, such as the use of two or three levels of detail (decreasing as distance from the area of interest increases) will also cause serious problems if a step function is used. For example, the step may interact with the boundary between a simulation area and a buffer zone. They are not entirely eliminated by a continuous function, but in our view will be far less.

For this reason we strongly support the alternative of a continuous function which we understand is readily available from the research. This has the added advantage of setting all changes of time less than a minute to zero. This is probably wise in the context of large scale models which generate a mass of small and widespread changes.

We also think it should apply to both car and rail modes and this is supported in the data shown at the seminar. This could have important advantages. For example, if the apparent increase in value of time for longer rail journeys is based on the fact that longer-distance travellers appear willing to pay a lot for their train journey, then this is probably because the alternatives (notably driving) become unattractive at a faster rate than rail, presumably due to the combination of the effort required to drive long distances and the inability to work while driving etc. If this is modelled by applying a perceived value to the car journey time which increases (continuously) with increasing journey time (rather than remaining constant) then the observed mode split and insensitivity to rail fare may be reproduced without having to assume that rail users have a different value of time than car drivers. Again this is an idea we would like to develop with DfT.

Both the proposed mode-specific VTT varying in a few discrete steps, and the alternative suggested above, will need to include guidance about how to handle long-distance trips which start/finish beyond the modelled area – the implication is that it will not be possible to use the ‘Route Zone’ approach for feeding trips into the edge of the modelled area and instead every model will need to work out which distance band each trip needs to be allocated to.

3 *How to deal with changes in mode causing changes in value*

We are also concerned that using mode-specific values of time is likely to cause anomalies in multi-modal models – for example, reducing the rail fare may attract low-value of-time bus users who will then presumably perceive additional benefit from the faster-than-the-bus train because their value of time will magically rise to that of rail users. Conversely, when car drivers switch to bus, their time value will fall. This needs to be addressed in WebTAG, possibly by maintaining some sort of original trip value for mode transfers.

We also consider that:

a) using values of time defined by journey purpose, household car ownership and/or income and

b) applying increasing perceived weights to long car journeys

it should be able to reproduce the ‘observed’ higher value of time for long-distance rail trips, without the need to use problematic mode-specific values of time (and the high value of time travellers will become rail users, rather than the other way round). Again this supports the use of a continuous function in the short term and exploring further options after the next WebTAG revisions.

4 *Areas where further work is needed*

Revealed preference and the short term nature of time savings

It is clear that time savings from transport schemes are rapidly “spent” on other items, particularly longer trip lengths. In this sense the use of VTT savings over 60 years is not realistic and, for example, this explains why most TPS members consistently say that appraisal methods should be reformed. In the most recent survey, only 3.5% considered current methods did not need reform, with 60% having major issues with them. The top reason for this by some way was the need to appraise changes in land values, land-use or travel behaviour. This was followed by:

- how health could be represented in the appraisal of motorised modes, and
- valuation of economic costs and benefits outside the present time savings and vehicle operation.

Given that current values for “wider economic benefits” is subject to a high risk of double (or even treble) counting we emphasise that the search is for a system to represent medium and long term values far better than VTT savings. For this reason we would like to engage further on this issue and would be able to organise a group discussion on this specific issue.

Data collection

We have some concerns over the data collected, in particular:

- the reliance on internet based responses
- the testing of “spot value” only – there should be some assessment of a value more akin to the scheme appraisal benefits for which VTT is used. For example a monthly or annual cost should be tested.

- The way in which the value of time was not found to be sensitive to the ability to use that time for other purposes (for example on a long distance train) needs to be checked more directly – the additional question at the end of the survey process may have caused some problems.

DfT have responded on some of these issues, and the research has produced some interesting results, but again we think there needs to be some further work to ensure that all values are equally reliable.

Further research

We consider that extending this work in to producing VTTs for cycling (or even walking) would be very difficult and probably not worthwhile, since there are many trade offs, for example in terms of safety and attractiveness of routes versus time. We also consider that modelling cycle time changes properly is extremely challenging.

This is a case where there tends to be an optimum travel time (in terms of health benefits) rather than a need to save time for economic reasons. In fact, benefits from cycling schemes tend to be a combination of health benefits and reduced road congestion. Parallel but equally difficult issues arise with walking.

For this reason we strongly recommend that a similar study is not pursued for walking and cycling, and that the resources are instead put into exploring the real changes in land use, price and behaviour which are caused by transport projects, rather than marginal changes in predicted time over very long appraisal periods. We are happy to explore this further with DfT and as part of our events and policy work programmes.