**** **DRAFT**

**DfT Appraisal Periods Consultation: TPS response**

**Draft 1 December 2020**

**Introduction and context**

Before submitting our overall response to this consultation and replying to the individual questions, we want to make it clear that the discussion on appraisal periods must be seen in the context of the significant criticisms and proposed reforms following the Treasury Green Book review. Addressing these is an urgent matter and it would be wrong to divert resources to making adjustments in a detailed methodology which has been the subject of such a clear and consistent critique.

***Appraisal period and key role of discounting***

However, the length of the appraisal period, in particular raising it beyond 60 years, raises fundamental issues well beyond an academic discussion of economic theory and its application to cost benefit analysis. It is inextricably linked with the approach to discounting costs and benefits over time, which itself raises major issues, for example about inter-generational equity.

While some major future impacts are discounted too rapidly, others are assumed to continue for decades without such a strong decline. One reason is that some benefits are assumed to grow in value over time, offsetting a major part of the discount rate.

***Reflecting uncertainty and risk***

There is also poor representation of uncertainty and risk, these are critical to the selection of time periods and rates of discounting. Some impacts are given precise values decades into the distant future when it is doubtful they can be identified after even a few years. Driver time savings are an example – they are rapidly “spent” in ways which are not tracked by current methods and the ways in which they are spent have hugely different impacts. These in turn are likely to generate new disbenefits and change the outcome of the appraisal. Spending time savings to travel further might continue to benefit users, but are likely to have major negative impacts on non-users not included in the original appraisal. Ironically, there will also be negative impacts on the users – extra travel causes congestion and erodes the time savings. But in the meantime the longer journey patterns have had land use and locational impacts which are hard to reverse. There will also be equity disbenefits to those not included in the group which is benefitting from the time savings. These effects suggest that the simple discounting approach and a long fixed time period is simply not fit for purpose, at least for this type of impact.

We suggest a way forward would be to categorise impacts and treat each in a different, more appropriate way.

**Discussion**

We begin by dividing relevant impacts as follows:

1. fundamental, long lived and hard to change (e.g. landscape, climate, health, land use)
2. tradeable, short lived and likely to be used for different purposes (e.g. time savings, operating costs)
3. fundamental but mutable (e.g. safety, air quality, noise)
4. unknown and fundamental to the extent that the predicted impacts are rendered irrelevant by natural, social or technological change.

In the first category time scales will be long (possibly perpetual) and discounting is inappropriate. The concept of valuing damage to future generations less than the current one is a well known problem and discount rates of zero (or very close) are used to deal with this. That issue in particular was extensively discussed in the 2006 Stern review and subsequently[[1]](#footnote-1).

This is compounded by the fact that monetisation in terms which can be compared to other costs is extremely difficult and probably impossible to the level of accuracy required.

In the second category time scales would be short and discounting high, to reflect uncertainty, volatility and risk. Valuation is easier but still with problems, for example business versus private time savings and the use of national equity values (to avoid penalising the less well off).

In the third category valuation is also problematic, for example assessing the cost of a death[[2]](#footnote-2), the non-linear nature of noise impacts and their correlation with other costs and benefits[[3]](#footnote-3). If used, discounting would have to be at a low rate, but this would not adequately represent uncertainty and sensitivity to other policies and technologies.

The fourth category contains what could be called known unknowns and unknown unknowns. The former may contain elements where we have some idea of what they might be but not the effects. Autonomous vehicles is an example. However it also contains elements which are game changing and we don’t know about, usual examples include pandemics or climate disasters. The likelihood of **not** having such an event falls over time – how can this be factored in? All impacts need to reflect this and compound discounting may not be appropriate. Borrowing from accountancy, a straight line reduction might better reflect this impact.

Overall this shows the impossibility of addressing such a huge range of impacts with one time period and a common discount rate.

***One rate: many divergent purposes***

In the list below we distinguish some of the key areas which are included in the current approach.

* uncertainty over future demand – patterns of travel change as do the people who travel (“churn”), change may also result from restructuring the economy, but is inextricably linked to the location of homes and workplaces and to transport and communications networks. The latter are subject to rapid and sometimes unpredictable developments (e.g. smartphones, social media)
* uncertainty over how those changing transport/comms networks are used, for example changing transport system technology such as vehicle autonomy could let people drink and drive, on the other hand substitutes for travel, especially communications (remote working, internet shopping) will lead to different journey patterns
* how people value future costs and benefits compared to today: “pure time preference”, but note serious inter-generational issues
* chance of a one off change reducing or removing value (including catastrophic events)
* erosion of, and substitution for, tradeable values over time
* rising value (ramp) effects: environment, health

***Different rates and timescales***

It is important to note that discount rates can be calculated using different methods:

* Compound discounting
* Straight line depreciation
* Mixed discounting including rates from zero upwards for each category

The first is the current catch all approach, the others could be applied in a new approach. In this case it will be important to apply any separate rates sequentially to avoid double counting. This is common practise where multiple impacts are applied (such as in Active Travel).

It is also important to distinguish different time periods for different effects and this runs counter to the desire for an overall absolute measure of value for money: the Benefit to Cost Ratio (BCR). This in turn requires long appraisal periods to generate enough benefit to “justify” the scheme being appraised.

Given the Treasury criticism, and the fact that the BCR has always been portrayed by DfT as being part of the picture (even if it has in practise dominated), the requirement for long time periods to produce total value should be removed. We prefer a disaggregated approach which will represent the differing nature of impacts and give the decision makers greater clarity. The existing Assessment Summary Table (AST) was originally designed to go some way towards this, but has not been implemented as a valuable element in its own right. Too often it has been an afterthought. The disaggregated approach will now be possible since the purpose of undertaking of a cost benefit (or cost effectiveness) analysis in future should be to choose between different options to achieve common strategic objectives. It cannot overrule a failure to meet strategic objectives.

This would return CBA to its original purpose: to choose between different schemes which have common characteristics. In other words if there is a fixed budget for a certain type of scheme and no other, it will inform the choice between different schemes of that type. It will not decide whether that type of scheme is the best intervention. That is the task of the strategic assessment. However, that assessment must be taken at the scheme level.

**Conclusions**

The use of long time periods and discounting has been used inappropriately for some very significant impacts. The difference in nature of the impacts has been subsumed in a single rate and time. We suggest a matrix of impacts including those which may not be easy to value, and which would be able to reflect uncertainty in a transparent and effective way. This would lead to a revived version of the AST which indicates timescales during which benefits will be gained or lost and the nature of the costs and benefits being included.

We would also caution against making technical improvements to appraisal while addressing more fundamental issues, such as the lack of an objectives led analysis and an over emphasis on the BCR, should be the priority.

1. Stern Review 2006, Buchan 2008 [↑](#footnote-ref-1)
2. For example older people who are drawing a pension may generate a net benefit if they are killed in a transport accident. There is no balancing loss from productive work. We generate values for not dying to avoid this unacceptable outcome. [↑](#footnote-ref-2)
3. Such as visual intrusion and community severance. [↑](#footnote-ref-3)