# Optimism Bias in Non-Infrastructure Projects

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| ***Optimism bias is the tendency for those involved in projects, as funders, managers or beneficiaries, to be too optimistic in terms of forecasting project costs, scale, timing and benefits. Accordingly, advice is that in any appraisal an optimism bias adjustment should be made. This will probably reduce the forecast benefits over the expected duration of the project. However, SE’s experience is that this is a complicated issue with over-optimism not always being the norm. Accordingly optimism bias adjustments are not necessarily as straightforward as traditional guidance would imply. Advice should be sought from the Appraisal & Evaluation Team before making any such adjustments.***  ***This guidance note deals with optimism bias in non-infrastructure projects. A companion note deals with optimism in Infrastructure developments.*** |

**Why is Optimism Bias Important?**

Appraisals, and many evaluations, include forecasts of such things as company turnover, employment and GVA over the impact period. There is a view (for example articulated in the Treasury Green Book[[1]](#footnote-1)) that beneficiaries and those involved in project development:-

* Underestimate costs;
* Underestimate the time taken to develop a project and for it to begin to deliver impacts; and
* Overestimate the net impacts.

There can be numerous reasons for these failures to deliver according to plan. For example:-

* There may be difficulties in raising the investment needed to deliver a project;
* There may be delays in recruiting appropriate delivery staff; and
* Increases in company turnover may be more difficult to achieve than predicted as the market for a new product or service may be more limited than thought. This can mean that the net GVA and employment impacts are lower than anticipated.

However, what is clear is that much of the discussion and evidence about optimism bias relates to infrastructure projects where such things as costs and timescales are articulated at the start of the project and can therefore be easily monitored[[2]](#footnote-2).

It is important that decision makers are provided with evidence regarding the likelihood of forecast impacts being realised for all types of SE’s interventions. This then ensures a degree of consistency in the decision making process and less risk that decisions are made on the basis of unrealistic impact forecasts.

**Project Costs**

Within SE it is not usual to apply any optimism bias adjustments to project costs. This reflects SE’s project approval processes. Generally projects are approved with a set budget. The absolute and relative impact metrics, such as the impact ratio and cost per job, are then calculated on the basis of these approved costs. If project costs exceed the approved budget then projects generally will apply for re-approval through the submission of a change request. If the increase in costs is judged to be sufficiently large then a reappraisal, recalculating the impact metrics, will be carried out. This means that the costs of a project are increased thereby accounting for optimism. It may also be the case that cost increases result in the impacts arising later than originally planned. In these cases the benefit timescales would also be adjusted. As the GVA and employment impacts will be adjusted in the light of changes to benefit timescales, this is explicitly taking account of changes to the time taken to realise project benefits.

**Gross or Net Adjustments?**

In most cases optimism adjustments are made to the net impacts: usually GVA and employment. If they are made to the gross impacts then, after the additionality adjustments have been made to arrive at net figures, the calculated impacts should be identical to the ones that would have been derived had optimism adjustments been made to the net figures. Thus, it should make no difference to the net impacts when optimism adjustments are made. However, there may be instances when it is felt worth highlighting the impact of potential optimism on the forecast impacts. In these cases optimism may most usefully be reported at the gross stage. This will avoid its potential effect being lost when included with the other additionality adjustments. Again, advice should be sought from the Appraisal & Evaluation Team before making any such adjustments.

**Company Impacts**

Many of SE’s interventions are with individual companies. SE has a growing evidence base as to the extent to which appraisal evidence may diverge from the ultimate attained impacts. This evidence shows that over time companies are not always as over optimistic about future company performance as some of the general guidance would suggest, though this is highly correlated with the type of intervention under review.

While SE has evidence that mirrors the 75% rule of thumb often adopted by Venture Capitalists (that half of the forecast performance will result over twice the initial timescale), on an intra-year basis factors such as trading experience and distance of product from market make future performance difficult to predict. For example:-

* Analysis of the performance of a number of companies in which SE had made investments found that, on average, achieved turnovers were only 5% less than forecast;
* Longitudinal analysis of a cohort of mainly new start technology companies, receiving commercialisation support, compared forecast with achieved turnovers during the first two phases of the project (covering a 24 month period) and found a mixed pattern:-
  + Some consistently underperformed;
  + Some consistently overperformed;
  + On occasion companies achieved their forecast turnovers at one time point or another;
  + Overall, approximately 50% ***underperformed*** against forecasts in year 1, representing an initial ***pessimism*** in projected initial performance, while in year 2 approximately 75% of initial estimates proved ***pessimistic.*** Naturally, these early year estimates are from a ‘low base’ and the reality of what would appear to be aspirational later-year performance profiles remain to be seen;
* Evidence from individual company appraisals (for interventions such as RSA for example) has found that some companies may have very ambitious turnover forecasts (at times in markets that are not growing significantly) that however may be exceeded, in part as the company may be exceptionally innovative.

SE’s evidence base therefore shows that, when dealing with individual companies, the extent to which there is optimism bias inherent in turnover forecasts is far more nuanced than might be expected. Given this, the approach to assessing optimism bias for interventions with companies should, if at all possible, avoid using standard rule of thumb adjustments. Attempts should be made to draw on available evidence to compare the realism of what is being forecast with benchmarks and make adjustments as appropriate. Evidence includes[[3]](#footnote-3):-

* The Account Management database[[4]](#footnote-4). From this metrics such as turnover change over time by industrial sector can be identified, compared to that being forecast and the forecasts adjusted as necessary;
* The 2011 Scottish Annual Business Statistics[[5]](#footnote-5) contains information by SIC Industrial Division on such things as GVA per employee for the period 2008 to 2011. This, and the other comparative data contained in the report, can be used to benchmark companies and make adjustments if it seems as if the forecasts are out of line with the wider sector; and
* Evaluation and research evidence that SE may have access to.

Access to these sources is through the Appraisal & Evaluation Team.

If neither of the above are of use then, in order to err on the side of caution, adjustments of -20% and -40% should be made to net impacts. It should however, be stressed that such rule of thumb adjustments should be avoided if at all possible. The preferred option should be to draw on sector and intervention specific evidence.

It may also be the case that SE’s interventions in some areas may be but one of a large number of factors that influence eventual outcomes. For example, in offshore renewables the attainment of turnover projections will be dependent upon many factors that are outwith the control of the individual company. These include: international and national legislation on such things as carbon; global energy prices; government price incentives; grid connectivity: port infrastructure; as well as the more traditional dependencies such as labour and access to finance. In these instances optimism bias adjustments of up to 75% have been applied to account for these many imponderables.

**Need more help?**

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1. See:-

   <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220541/green_book_complete.pdf>

   where it is stated that there is a “demonstrated systematic tendency for appraisers to be over-optimistic about key project parameters”, p. 85. [↑](#footnote-ref-1)
2. <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/191507/Optimism_bias.pdf> [↑](#footnote-ref-2)
3. The database set up by the Department of Business Innovation and Skills (DBIS) which, although no longer updated, contains a large number of metrics about the top 800 UK and top 750 European companies, as at 2007/08, broken down by sector. Using this it is possible to compare, for example, the Value Added per Employee for a company to the top European and UK comparators. This might result in optimism adjustments being made if the company seems to be out of line when compared to others in the sector. However, as this dates it becomes less relevant, even more so when the economic changes since 2007/08 are considered. [↑](#footnote-ref-3)
4. This is a database of company metrics and the support that SE has provided to them that was assembled (and annually updated) as part of the 2013 evaluation of SE’s support to Account Managed companies. [↑](#footnote-ref-4)
5. <http://www.scotland.gov.uk/Resource/0043/00432251.pdf>

   [↑](#footnote-ref-5)