

ESTIMATING ECONOMIC BENEFITS FROM INCREASED INTERNATIONAL TOURIST ACTIVITY

A technical paper prepared for the Investment Decision-Making Framework Review

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This practice note has been developed to provide a consistent approach for estimating tourism benefits for New Zealand. This enables business cases to better calculate how transport activities that affect tourism deliver on the Government Policy Statement on Land Transport's strategic priority for access. While the calculation of tourism benefits has been allowed in previous business cases, the practice note provides guidance not only on how to calculate benefits, but also how to avoid common errors.

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Background

This practice note outlines interim guidance for assessing benefits arising from increases in international tourism activity as a result of a transport investment. Impacts on domestic tourism activity are specifically excluded.

This guidance is intended for the calculation of net national benefits and should not be used to calculate benefits for individual regions.

To successfully apply this guidance, practitioners will need to estimate changes to the number of international visitors at a national level and convert this into an increase of visitor guest nights. Displacement of activity between regions will also need to be accounted for.

This practice note sets out the principles underlying the evaluation procedure and the gross value added methodology, provides guidance on estimating changes in international tourist activity, and supplies a standardised table of benefit values that must be used for all projects where this guidance is relevant.

For help or to discuss your project's requirements contact the *Economic Evaluation Manual* (EEM) team through eem@nzta.govt.nz

Basic concepts

Economic benefits from increased tourism activity are distinct from the wider economic benefits (WEBs) identified in the EEM. EEM-style WEBs relate to supply-side improvements that lift economic output, for example by increasing the size of the labour force or increasing the productivity of existing firms and workers.

Tourism benefits, by contrast, arise due to changes in the demand for goods and services produced in New Zealand. An increase in international tourist activity in New Zealand can be thought of as an increase in New Zealand's exports. The economic benefits of this increase in demand relate to the resulting increase in New Zealand's total economic output, ie its gross domestic product (GDP) or gross national income.

Increases in domestic tourism are unlikely to result in large net economic benefits, although they may result in user benefits for domestic tourists. This reflects the fact that domestic tourists are likely to have otherwise spent their money on other local goods and services. Therefore, domestic tourists should be excluded from the analysis.

Key principles for evaluation

Practitioners should consider and apply the following principles when estimating tourism benefits:

1. Analysis of economic benefits should be based on the expected net change in international tourism. Domestic tourism should be excluded.
2. Practitioners must identify any short- and long-term capacity constraints that would prevent the sector from serving additional visitors.
3. Practitioners need to assess whether tourists would have come to New Zealand without the project and, if so, discount their added spending accordingly.
4. Estimates of economic benefits must be based on net impact on value added, which will almost always be smaller than the total added expenditure.
5. Value added estimates must account for crowding out effects and exclude multiplier effects unless there is evidence of underutilised resources.

Predicting and classifying tourists

Predicting the number of tourists that will use a facility is typically the most challenging element of any evaluation of tourism benefits. While agencies such as the Ministry of Business, Innovation, and Employment maintain models to predict growth in tourism demand, these focus on aggregate demand, rather than tourism associated with specific projects.

Where possible, practitioners should:

- Draw upon project- or sector-specific surveys of visitor intentions and/or discussions with tourism operators.
- Seek out case studies of similar facilities.
- Check the reasonability of predictions against the scale of the overall market.

After estimating total visitor activity, it is necessary to distinguish between domestic tourists and international tourists. The calculation of economic benefits shall relate to international tourists only, as domestic tourists are to be excluded.

It is also necessary to consider the additionality of international tourist activity. Economic benefits shall only be calculated for international visitors who would not have come to the country if the facility was not available, or who would have come to the country but would have spent less time or money. Where existing international visitors would be diverted from other regions, or where they are dissuaded from visiting due to the investment, displacement effects must be calculated.

Table 1 summarises five different categories of visitor/response and outlines the approach for valuing the economic benefits associated with each category.

Table 1: Categories of visitors

User origin	Alternative facility	without	Added economic benefits/ disbenefits?	Calculate or Exclude
New Zealand	Spend time or money in NZ		No	Exclude from benefit calculations
	Travel overseas		Potentially	Exclude unless there is specific evidence to identify the number of people who will do this
International	Spend same amount of time or money in NZ		No	Exclude from benefit calculations
	Spend less time or money in NZ		Yes	Calculate changes in itinerary or spending and convert to value added
	Spend more time or money in NZ		Yes, disbenefit.	Calculate changes in itinerary or spending and convert to value added
	Do not visit NZ		Yes	Calculate changes in itinerary or spending and convert to value added

Measuring economic benefits from increased international visitors

After estimating the net increase in international visitor activity in New Zealand, it is necessary to convert an increase in visitor numbers into increases in economic activity in New Zealand.

Evaluations should report on three key numbers:

- Net national change in international visitor guest nights;
- Net national change in international visitor spending; and
- Net national change in GDP/value added as a result.

When estimating net economic benefits, the following quantitative errors should be avoided:

- **Do not** report added visitor spending as a measure of net economic benefit. This figure does not account for the cost to serve added visitor spending.
- **Do not** report regional economic benefits. Waka Kotahi NZ Transport Agency takes a national view of economic benefits and costs and any displacement effects must be accounted for.

Value added, or impact on national GDP, is the measure used to calculate the economic benefits of increased international visitor activity. It represents the additional work undertaken in the impacted sectors, excluding intermediate inputs that are imported or purchased from other sectors.

Value added can be calculated as follows:

$$\begin{aligned} \text{Value added} &= \text{employee compensation} + \text{profits and mixed income} + \text{net taxes on production} \\ \text{or} &= \text{gross revenue} - \text{intermediate inputs} \end{aligned}$$

Crowding out and multiplier effects

Additional tourism activity may displace, or crowd out, other economic activity. Where this occurs, the economic benefits from international visitors will be smaller than their total expenditure, ie the net GDP benefits from international visitors will be less than their gross contribution to GDP.

There are three primary ways crowding out can occur:

- Capacity constraints at tourism facilities can mean that it is not possible to accommodate additional visitors.
- Increased tourism activity can draw resources away from other industries, and subsequently these industries may reduce in size.
- Increased international visitor activity can cause the exchange rate to appreciate, crowding out other exports.

Practitioners should consider whether capacity constraints at tourism facilities are likely to apply in the case of their project. For instance, this may involve looking at trends in local hotel occupancy. The second and third mechanisms are general macroeconomic effects and should be assumed to apply to most projects.

Conversely, additional visitor spending may generate multiplier effects as the increased spending flows through the economy. Where this occurs, economic benefits may be larger than expected.

Multiplier effects can occur when:

- Additional visitor spending in one sector prompts an increase in purchases of intermediate inputs from other sectors.
- Increased incomes for tourism operators allow them to spend more on local goods and services.

Theory and evidence suggest that crowding out effects dominate multiplier effects. For instance, the Treasury's *Cost Benefit Analysis Guidance* states that "unless there is significant unemployment of people with the requisite skills, it is likely that multiplier effects do not exist." For the purpose of analysis, multiplier effects should be ignored unless there is clear evidence of underutilised resources.

Rule of thumb: After accounting for crowding out and multiplier effects, the net increase in value added is likely to be between 30% to 50% of additional spending. This range is consistent with estimates from economic models that account for both effects, as well as empirical evidence on the net economic impacts of added government spending in non-recessionary environments.

Input-output vs CGE modelling

Input-output analysis and computable general equilibrium (CGE) modelling are two common methods for estimating the economic benefits of an uplift in demand for goods or services.

Input-output analysis relies on Statistics New Zealand tables that summarise the observed flows of spending through different economic sectors. It uses these observed relationships to predict how additional spending in one sector will affect the overall economy.

Input-output analysis does not account for capacity constraints and hence over-estimates the net economic benefits of additional spending.

CGE modelling extends input-output analysis by including information on price and exchange rate responses. In principle, it therefore captures crowding out effects.

While CGE modelling produces lower and more realistic estimates of net economic benefits from additional spending, these models can be complex and should not be used for small projects.

Input-output analysis and CGE modelling remains recommended on a case-by-case basis for projects that are likely to substantially alter the distribution of economic activity within New Zealand.

Data sources and benchmarks

Statistics New Zealand (SNZ) and the Ministry of Business, Innovation, and Employment (MBIE) publish information on current and historical tourism activity and the economic impacts of tourism. Table 2 describes some of the key data sources that practitioners should consult.

This data can be used to quantify the volume of existing tourism activity as a benchmark for predicting the additional impact of projects. It can also be used to estimate the amount of spending or value added associated with existing visitor patterns.

Table 2: Key sources of data on the economic impacts of tourism

Data source	Coverage	Notes
SNZ Tourism Satellite Account	National Annual 1999 to 2017	Provides data on total tourism expenditure and direct value added, broken down by international vs domestic tourists and industry sector/product category.
SNZ Visitor Accommodation Survey	Regional Quarterly 2007 to 2018	Provides data on the number of guest nights in commercial visitor accommodation, broken down by international vs domestic tourists. Excludes AirBnB/Bookabach, which comprise a small share (<10%) of the market.
SNZ International Tourism and Migration	National Quarterly 1999 to 2018	Provides data on the number of international visitor arrivals and departures, broken down by country of origin and port of arrival.
MBIE Tourist Expenditure data	Regional Monthly 2008 to 2018	Provides data on tourism expenditure broken down by international vs domestic tourists and industry sector/product category. Based on the Tourism Satellite Account.
SNZ International/Domestic Visitor Surveys	National/regional Quarterly 1997 to 2018	Provides data on tourism expenditure, tourist visitor days, and other statistics. Note: Provides a lower estimate of spending per day than dividing MBIE tourist expenditure data into visitor accommodation survey numbers.

Table 3 estimates the volume of existing (2018) international visitor activity by region and is based on SNZ's *Accommodation Survey*. The average spending per international visitor night is estimated from MBIE's *Monthly Regional Tourism Estimates* and adjusted to match SNZ's *International Visitor Survey* estimates. Finally, the estimated average value added per international visitor night, is based on SNZ national accounts data on the ratio of value added to spending in the impacted sectors.

The data indicates that there are regional variations in spending patterns and economic impacts, and therefore displacement of activity between regions has real effects on national benefit levels. In addition, it implies that, on average, each additional dollar of tourist spending results in around \$0.39 in value added. This is consistent with the rule of thumb described above.

Table 3: International visitor activity and estimated economic activity, by region, 2018

Region	International guest nights (000s, unadjusted)	Estimated spending per guest night (adjusted to match IVS)	Estimated value added per guest night (adjusted to match IVS)
Northland	702	\$112	\$41
Auckland	3,503	\$367	\$143
Waikato	1,114	\$178	\$69
Bay of Plenty	1,521	\$114	\$46
Hawke's Bay, Gisborne	388	\$148	\$56
Taranaki, Manawatū, Whanganui	454	\$165	\$60
Wellington	1,038	\$228	\$91
Nelson, Marlborough, Tasman	902	\$122	\$45
Canterbury	2,603	\$164	\$62
West Coast	912	\$98	\$35
Otago	3,758	\$159	\$63
Southland	700	\$108	\$39
Total	17,595	\$194	\$75

Sources: SNZ International Visitor Survey, Accommodation Survey, Tourism Satellite Account, and Annual Enterprise data, plus MBIE Monthly Regional Tourism Estimates.

It is recommended that practitioners rely on the estimated value added data in Table 3 for calculating the economic benefits of increased international tourist activity. The use of non-standard values will require submission of sufficient supporting evidence and the agreement of Waka Kotahi.