

3

Potential approaches to harmonisation

Pressure for structural change in the Australian economy increased during the 1970s (e.g. Treasury, 1978; Rattigan, 1986), with significant micro-economic reform taking place over the following two decades in areas ranging from floating the exchange rate, reducing import tariffs and liberalising financial markets, as well as corporatising government business enterprises, particularly in transport and telecommunications, and exposing them to competition (Willis, 1989; Banks, 2014). Much of the policy debate was underpinned by economic analyses undertaken by the Productivity Commission and its predecessor institutions.

Almost from its historical beginnings, economic thought has been subjected to a variety of criticisms (Pearce & Nash, 1981; Coleman & Hagger, 2001; Coleman, 2002). Perhaps due to ‘reform fatigue’, and growing attacks by anti-economists on cost-benefit analysis (CBA) (e.g. Self, 1975) and its ‘econocrat’ proponents, the 1990s presaged a reduced political appetite for economic reform and economic appraisal of policy proposals. Attacks on so called ‘economic rationalism’ (e.g. Pusey, 1991) and derogatory references to ‘econorats’ by opponents to continued reform coincided with the reduced influence of economic analysis, in Canberra at least.

Notwithstanding the publication by the Department of Finance (1991; revised 2006) of a *Handbook of Cost-Benefit Analysis*, subsequent decades saw a concomitant increase within the Australian Public

Service of managerialist methodologies like triple bottom line reporting (e.g. Department of the Environment and Heritage, 2003), and multi-criteria analysis (MCA) (e.g. Resource Assessment Commission, 1992). MCA is examined in Appendix 2.

Despite the projections of the then Federal Department of Employment, Education and Training, which considered at the time that economists were the third-ranking growth profession, Millmow (1995) drew attention to the decline in availability of academic positions for economists. Riley (1994) detected a corresponding fall in the number of secondary students studying economics. Despite the optimism of Maxwell (2003) of a possible renaissance over the next 50 years in numbers taking tertiary-level economics degrees, Lewis et al. (2004) noted a continued decline in numbers. Reviewing an Economic Society of Australia (ESA) survey of heads of economics departments, Abelson (2005) concluded that student standards had also declined, due to lower entry standards, high student–staff ratios, and a declining culture of study. A decade later, Lodewijks & Stokes (2014) reported on the inevitable consequence, noting the closure of economics departments across Australia, with many being subsumed within business schools and other faculties.

A desktop survey of 39 Australian university websites in February 2015 revealed that only five offered undergraduate or postgraduate courses devoted to CBA, with a further four offering courses that partially covered CBA. This may be an underestimate because details were not always fully available of the specific content of postgraduate programs and because online search facilities did not always provide comprehensive information. Although seven out of eight New Zealand universities appear to offer CBA in their undergraduate or postgraduate courses, it is uncertain what proportion of students take up those courses.

On the other hand, the Government Economics Network in New Zealand has found a high level of demand for CBA courses by members, indicating a general lack of sufficient training in this area. In Australia, executive courses presented by the Australia and New Zealand School of Government (ANZSOG) in various cities in Australia and New Zealand, and by the Crawford School of Public Policy at The Australian National University in Canberra, continue to attract healthy numbers of participants. CBA forums organised in 2014 and

2015 by the NSW branch of the ESA and NSW Trade & Investment attracted in the order of 200 participants from a range of government departments, universities and the private sector.

Although direct evidence is not available, it is likely that the fall in the number of economics graduates and the relatively low number of CBA courses offered at universities is reflected in the ostensibly diminished extent of CBA expertise in government agencies across Australia. A NSW central agency pointed out that the paucity of economic positions within the NSW public service that are focused specifically on economic evaluation is an important factor in the loss of expertise. Any expertise that existed was not harnessed appropriately. A Centre for Program Evaluation has recently been established in the NSW Treasury in order to concentrate evaluation expertise.

During face-to-face interviews with staff from government agencies from October to December 2014, those responsible for portfolios such as health and environment reported that they tended, out of necessity, to resort to assistance from their colleagues in other specialised agencies when they were required to produce or commission an economic appraisal. Transport agencies were seen as repositories of expertise and one interviewee related that a contact in the (since abolished) Queensland Office of Best Practice Regulation was considered to be especially helpful to agencies in that state.

A number of those interviewed indicated that their strong preference to use CBA was stymied by the lack of resources and expertise. Interlocutors regularly stated that the provision of harmonised 'plug-in' values endorsed by a central agency or recognised authority such as the Productivity Commission would encourage their use of CBA.

3.1 Harmonisation versus standardisation

Standardisation implies the inflexible, procrustean imposition of pre-specified variable values or methodologies. In other words, standardisation would insist on strict uniformity in an economic appraisal, with little or no scope for variation, irrespective

of circumstances. The less rigid approach of harmonisation is based primarily on the use of default values or 'yardsticks', or even ranges of recommended values.

In the case of recommended default 'plug-in' values, the onus would be on the consultant or the government agency concerned to justify use of a different value. Justification might be offered on the basis of differences in local conditions and greater relevance, or use, for example, of more up-to-date information or estimates. To ensure transparency, results of CBA studies that use harmonised values could be presented in two separate analyses: one using the set 'plug-in' value and one using values preferred by the analyst.

Inter- or intra-jurisdictional harmonisation would necessarily require agreement not only about the values of the variables themselves, but also about the underlying methodology. For example, values used for the value of statistical life (VOSL) are generally estimated using either the human capital approach or some form of stated preference that reflects a change in risk of mortality or morbidity. At present, jurisdictions differ in the methodological approach that is used to derive a value for this variable, so there can be significant differences in values.

Lack of harmonisation is not a new issue. An example regarding its effect was provided several decades ago by McKnight (1982), who concluded from a survey of travel time values in Australia that:

the results of the survey indicate a reluctance on the part of most agencies to make independent estimates of value of time for use in analysis. In general, they lack the appropriate resources or technical skills. Consequently these agencies seek some standard, 'off the shelf' set of values. Most agencies are willing to carry out simple analysis to update such standard values to current price levels, but there was no uniformity among respondents in the method of update adopted, with both consumer price and average wage rate indices being popular.

Nevertheless, harmonisation would also require care to ensure internal analytical consistency. Suppose an agency is using the value of a life year (VLY) based on a 40-year annuity of an estimate of the VOSL, using a specific discount rate. Disregarding the reason and appropriateness of choosing between VLY and VOSL, to ensure consistency it is necessary to make sure that the overall discount rate used for the CBA and for the annuity is the same.

The Australian Bureau of Transport Economics (BTE, 2000, p. 29) used a central 4 per cent per annum (consumption) discount rate to obtain the value of labour lost to society's production levels due to road crashes, while an updated report (Bureau of Infrastructure, Transport and Regional Economics, 2009, p. 90) uses a 3 per cent rate. However, Austroads (Rockcliffe et al., 2012, p. 7) recommends an annual discount rate of 7 per cent for public transport infrastructure projects, which is the same rate that is used by a number of Australian jurisdictions. A search for any discussion of the potential effects of such inconsistencies proved fruitless.

3.2 Potential approaches to developing harmonised values

Various methods for estimating economic costs and benefits are presented in standard texts such as Boardman et al. (2011), Perkins (1994), Mishan & Quah (2007), Campbell & Brown (2003), Pearce & Nash (1981) and Pearce et al. (2006). They include revealed preference methods, such as direct econometric estimation, hedonic pricing, damage costs avoided, travel cost methods and market analogies, as well as two stated preference methods: the contingent valuation method (CVM) and choice modelling (CM).

Each of the standard estimation methods has advantages and weaknesses, depending on the context, data availability and rigour of application. Although not explored specifically here, it is important to be aware that the choice and application of a particular estimation method will affect downstream development of 'plug-in' values. For example, a meta-analysis or expert elicitation of values for noise externalities may be influenced by a hedonic comparison of differences in house prices near an airport and further away that may not have taken into account other factors, such as the size of houses or the quality of their construction. An alternative estimation method, such as CVM, may have been better in such circumstances, but it too is likely to suffer from particular weaknesses.

The objective of developing harmonised values is to allow their use as 'off-the-shelf' variables. That is, readily available 'plug-in' values that can be used without the need for separate estimation on each

occasion that a CBA is carried out. This approach comes within the broad rubric of 'benefit transfer', which is itself subject to a range of qualifications (see below).

3.2.1 Publication of CBA guidelines and manuals

Publication of CBA guidelines and manuals is a common practice worldwide, particularly in the transport sector, but central agencies also issue such publications from time to time. For the transport sector, publications usually also include unit values for benefit variables or parameters, as well as the method for updating such values to current dollars. One limitation, however, is that many benefit values, for example in the NZ context, are based on outdated studies and may, therefore, not be accurate reflections of the current values of the benefits.

3.2.2 Access to completed CBA studies

Access to CBA studies undertaken by others can assist public servants, academics and the general public through an educative process. Information about methodological approaches used can be particularly helpful in assisting those tackling analogous issues. Over time, the availability of completed studies can also assist in setting standards or establishing canonical values for variables and parameters that are included in the analysis.

The New South Wales Government Department of Premier and Cabinet (2013) has instructed government agencies to make 'Evaluation findings ... publicly available, unless there is an overriding public interest against disclosure, in line with the *Government Information (Public Access) Act 2009*': arp.nsw.gov.au/c2013-08-program-evaluation-and-review. Although a welcome development, this policy does not guarantee the use of CBA or evidence-based methods. An example, albeit one that predates the 2013 instruction, is a review of the use of tablet and iPad technology in school classrooms which appears to have been based primarily on opinions expressed by teachers and parents as well as the researcher's personal observations (Goodwin, 2012).

The Commonwealth Government, on the other hand, has restricted public access to economic analyses under the *Freedom of Information Act 1982*. The Act generally exempts from release any material

developed as part of a ‘deliberative process’ which ‘involves the exercise of judgement in developing and making a selection from different options’, although section 47C(3)(a) excludes reports of scientific or technical experts.

Somewhat incongruously, the social sciences, including economics, are not considered to be scientific or technical for the purposes of section 47 (Office of the Australian Information Commissioner, 2014, ss 6.74–6.76). As it is inherently the task of a CBA to ‘deliberate’ among a set of options, a CBA can evidently be precluded from release to the public. At the Commonwealth level, therefore, the scope for sharing information and improving the standards of CBAs through greater transparency is severely constrained.

3.2.3 Establishment of databases of variables and parameters

In 1995, the NSW Environment Protection Authority released its Envalue online database of environmental valuation studies (www.environment.nsw.gov.au/envalueapp/). The database was intended to facilitate the incorporation of environmental values into CBA studies and environment impact statements.

Due to the cost of maintaining the Envalue database, it was later subsumed into the Environmental Valuation Reference Inventory (EVRI) online database (www.evri.ca/Global/Splash.aspx), which is sponsored jointly by Australian (NSW), Canadian, French, British and American environmental agencies. Access to EVRI is free to nationals of the sponsoring countries. Environmental databases are also maintained separately by other countries, including the NZ Non-Market Valuation Database, which is maintained by Lincoln University (www2.lincoln.ac.nz/nonmarketvaluation/QuerySearch.asp).

An advantage of compilations of valuation studies, especially those with free access like Envalue and EVRI, is that they reduce search costs for analysts. Nevertheless, as the number of studies accumulated in a database grows, search costs may no longer be negligible. Specialist skills — not generally available within government agencies — may also be required to apply database information that has been based on sophisticated choice modelling techniques. It may also not be clear how values extracted from older studies should be updated over time.

In sum, databases are useful for specialist practitioners of CBA, but their utility to generalist public servants, who are often subject to time pressure to provide advice to government, is probably limited (Pearce et al., 2006, ch. 17). It is instructive that none of the officials interviewed in 2014 in the various jurisdictions proposed greater use of databases, but a number did raise the desirability of provision of officially sanctioned ‘plug-in’, ‘off-the-shelf’ values. While databases themselves are not necessarily useful in practice, they do provide the necessary basis for more specific approaches, like benefit transfer.

3.2.4 Canonical values

Inertia, lack of information, or reluctance to break with tradition may lead over time to the de facto establishment of canonical ‘plug-in’ values. An example is the use of different discount rates for road projects. In the past, it has invariably been recommended by Austroads that road projects be discounted at an annual real rate of 7 per cent (e.g. Austroads, 1996; Rockliffe et al., 2012, part 2), and this rate is generally used by road transport agencies.

Appraisal of rail projects, on the other hand, is less definitive in its use of specific discount rates. The Bureau of Transport Economics (1976) used a 7 per cent real per annum rate for an analysis of a Victorian rail line, and real annual rates of 4 per cent, 7 per cent, and 10 per cent for an evaluation of standard gauge links to selected ports (Starr et al., 1984), but applied three annual rates of 7 per cent, 10 per cent and 15 per cent in a study of the Tasmanian rail system (Tsolakis et al., 1991). Luskin et al. (1996) used an annual 11 per cent real rate in an analysis by the bureau of the proposed Melbourne–Brisbane inland rail route, but a later bureau analysis of the same route by Reynolds et al. (2000) applied a real discount rate of only 4 per cent per annum. Referring to a recommendation by Luskin & Dobes (1999) for the use of risk-free discount rates based on the long-term government bond rate, the Australian Transport Council (ATC, 2006, vol. 5) endorsed the approach for transport projects.

Another example of a canonical value in Australian transport practice is the designation of the value of travel time. McKnight (1982) presents separate tables of travel time values that are used by various Australian state road authorities, urban transport agencies and planning agencies, showing a wide range of values due to differences

in updating methods and treatment of modes and passenger types. Unfortunately, McKnight's tables do not reveal the precise method of calculation of the values by the various agencies, or their identities. In recent years, travel time values have been based on wage rates in Australia, presumably because they are officially recorded by the Australian Bureau of Statistics (ABS) and hence easily discovered.

Austrroads has invariably recommended (e.g. Tan et al., 2012) that the value of travel time should be based on average weekly earnings (AWE), as estimated by the ABS. Travel time values for private car travel to and from work, travel time for pensioners, tourists, bicycle travel, public transit passengers, pedestrians and waiting time, for example, for public transport, are set at 40 per cent of seasonally adjusted full-time AWE by Tan et al. (2012). It is not clear why a production-oriented approach should be used, rather than a stated preference valuation from the perspective of both employers and/or those travelling, but the Austrroads methodology has gained general acceptance among analysts.

The Australian Transport Council (ATC, 2006) guidelines specify default values for a range of environmental effects, and they emphasise the desirability of maintaining consistency of values used in analysing transport projects:

If a growth rate for the VTTS [Value of Travel Time Savings] is assumed over the life of an initiative, index all labour costs throughout the BCA ... In Australian BCAs, it is more usual not to increase the VTTS, the costs of labour, crashes and externalities in line with forecast growth in real income. Yet increasing these attributes is the correct approach. The difficulty is that if proponents choose their own growth rates for parameters, there could be a loss of comparability between appraisal results, and proponents may use over-optimistic growth forecasts to achieve more favourable BCA results ... If Austrroads specifies growth rates for road initiatives, jurisdictions should develop a consistent set of growth rates for rail initiatives. (vol. 5, p. 51)

As of early 2015, the Australian Transport Council and Austrroads are in the process of combining their transport system evaluation methodologies and parameters.

Canonical values may also develop organically if the producer of the data is well respected. For example, forecasts of Australian population levels published by the ABS are used by most researchers because of

the reputation of the ABS for quality statistical research. Although population forecasts depend heavily on contestable assumptions about parameters such as longevity, net immigration and reproduction ratios, the ABS projections are generally accepted in both the commercial and the public sectors.

3.2.5 Meta-analysis

Meta-analysis summarises findings from previous studies. Its objective is to identify representative values, or an associated range, that can be used as a 'plug-in' to a current study. Apart from saving resources, the technique is sometimes justified on the basis that a value derived from a combination of different studies, and hence more observations, offers greater statistical power-efficiency than one derived from a single study. Values can be obtained either qualitatively or by using statistical techniques, typically regression analysis.

On occasion, lack of local data necessitates use of data from other countries. Abelson (2003b) found that there was no general VOSL in Australia based on willingness to pay. He therefore reviewed European estimates of VOSL on the basis of the broad similarity of European and Australian incomes. Based on European values, he recommended a VOSL of about \$A2.5 million for a healthy prime-age individual for Australian policy purposes. Australian road agencies at that time were using a VOSL of about \$1.3 million that was based on the human capital approach and which did not, therefore, reflect willingness to pay.

An essential first step in a credible meta-analysis is a systematic review of the available literature. Ideally, the review should be 'reproducible for others to prevent author-induced selective bias in the inclusion of studies' (van Wely, 2014). Nevertheless, the technique can suffer from a number of problems:

- so-called 'publication bias' — sometimes called 'the file drawer problem' — is a major potential problem. Studies that report definitive results, or surprising ones, are more likely to be published in learned journals than ones that offer an equivocal result or a less dramatic narrative. Rothstein et al. (2005) note that suppression of studies may also occur due to language bias (e.g. preference for studies published in English), or familiarity bias (e.g. inclusion

only of studies from a familiar discipline). There are no obvious ways of overcoming such fundamental data problems

- the analysis can only be as good as the quality of the underlying studies. But any attempt to weed out poor quality studies itself runs the risk of selectivity bias
- two separate studies may yield similar results indicating a particular effect. When combined, however, they may indicate the opposite effect, sometimes termed ‘Simpson’s paradox’. This is illustrated in Figure 3.1 below, which shows regression lines for two separate data sets having a positive slope, but the combined data set showing a negative slope. Similarly, Bickel et al. (1975) present an intriguing study of apparent sex discrimination in university admissions when analysed at an aggregated level, but no apparent discrimination when data are pooled into disaggregated sets.

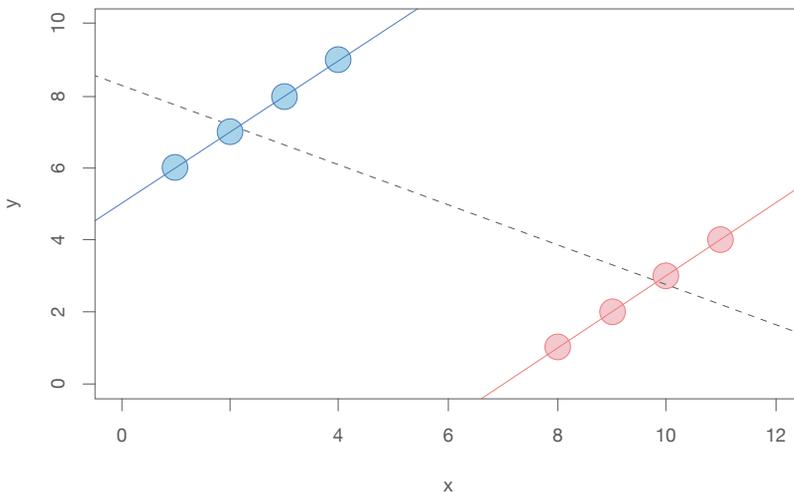


Figure 3.1: Simpson’s paradox

Source: en.wikipedia.org/wiki/Simpson%27s_paradox

It would be difficult to unreservedly recommend the use of meta-analysis for determining ‘plug-in’ values. The principal reason is that cost-benefit studies suffer from the invariable reluctance of governments to publish them. Estimates of costs and benefits used in such studies, therefore, seldom see the light of day either. The extent of the publication bias is not known, but is likely to be not inconsiderable.

3.2.6 Expert elicitation

In a paper on ‘rapid cost-benefit evaluation’ of measures to manage effects of climate change, such as floods, Oldfield (2012) advocates the use of ‘subjective judgement obtained using expert elicitation techniques’ in a ‘structured workshop environment’. Experts’ opinions about costs and benefits are garnered using a unitary rating scale from 1 to 7 and then translated to monetary units using ‘an equivalent monetary scale’. Oldfield gives as an example a rating of 2 being valued at \$100 and a rating of 3 at \$1,000. The term ‘evaluation’ is used rather than ‘analysis’ in order to recognise the associated loss of accuracy.

Whether the use of expert elicitation is a credible method of developing harmonised ‘plug-in’ values is an open question. Defining, identifying and selecting experts poses a key problem in methodological approach. Definitional issues aside, the identification and recruitment of knowledgeable persons is potentially subject to subjectivity and the sort of biases that afflict meta-analysis.

For example, *The Economist* (3 January 2015) published a table ranking economists by their publication record, compared to their ranking according to media prominence. Some, like Paul Krugman, scored well on both measures, but a large proportion of the socially more prominent economists did not score well in terms of academic performance, and vice versa. Choosing an expert panel on the basis of prominence may thus fail to satisfy the criterion of academic expertise or specialist knowledge.

In a review of the literature on biosecurity risk assessment, Burgman et al. (2006) found that experts tend to be overconfident compared to the accuracy of their estimates, are subject to value-induced biases, and influenced by the framing of issues. Elicitation techniques range from general opinion surveys to numerical (e.g. ‘standard gamble’) and language-based (e.g. expressed as ‘highly likely’, to avoid the ‘false precision’ of numerical probabilities) tools, but few of them have been tested for accuracy or reliability in the area of biosecurity.

Arnell et al. (2005) sought unsuccessfully to garner expert views on the likelihood of rapid climate change due to the collapse of the North Atlantic Thermohaline Circulation. They concluded that a problem with expert elicitation is ‘that it does not factor in the process of

judgment making; it focuses simply on the outcome of the judgment process', and therefore prefer not to aggregate the significantly divergent results. To ensure consensus, a commonly used approach is the structured Delphi method where a facilitator provides feedback iteratively on the responses of all expert participants until they arrive at a consistent view. A key risk of deliberately seeking consensus is agenda-driven bias, as is the risk of papering over differences that reflect genuine uncertainty, ambiguity or bimodalism.

It is at least arguable that expert elicitation is likely to be more reliable in issues relevant to the physical sciences than for social sciences like economics. Physical effects or dose-response relationships are often governed by the laws of physics or chemistry, and so provide some bounds to likely outcomes.

Economics and other social sciences tend to involve multiple possible interrelationships, which are often influenced by unpredictable human behaviour and 'unknown unknowns'. Benefits, in particular, should preferably be based on the community's willingness to pay, rather than an estimate of physical damage avoided and its financial cost. Reliance on expert elicitation of economic costs and benefits therefore does not seem to be a particularly sound approach to establishing harmonised values.

3.2.7 Benefit transfer using stated preference methods

A low-cost, back-of-the-envelope estimate of benefit values is often feasible where even only limited amounts of market data are available. For example, where few or no resources have been made available, it might be possible to carry out hedonic pricing of noise costs by asking a sample of real estate agents about differences of prices of houses near an airport and further away.

When no market data are available, revealed preference methods like hedonic pricing cannot be used and stated preference methods like Contingent Valuation Methods (CVM) or Choice Modelling (CM) need to be used instead. Both methods, however, are expensive and time-consuming because of the need to undertake detailed surveys. Analysts, therefore, welcome opportunities to use results from stated

preference studies that have been carried out by others, so that they can transfer them to their own work. The process of extrapolating results from one study to another is termed 'benefit transfer'.

CVM studies yield unique values for a specific good or service because of the way that questions about willingness to pay (WTP) or willingness to accept (WTA) are put to survey respondents. For example, a CVM study by Imber et al. (1991) sought to estimate the value of the Kakadu Conservation Zone by asking: 'Would you be willing to have your income reduced by \$X for the next ten years to add [a particular] area to Kakadu National Park, rather than use it for mining?'. Because responses specifically addressed a particular area in Kakadu, the resulting valuation cannot realistically be applied elsewhere.

CM, on the other hand, establishes separate values for the constituent characteristics of a good or service, rather than a single holistic value. Had a CM study been conducted of Kakadu, it might have defined its characteristics by the number of bird species, the quality of rivers, and the range of native food types. By presenting survey respondents with different combinations of the number of bird species and native food types, varying river water quality, and the (different) cost to the respondent of preserving each combination, it is possible to estimate the relative value of each characteristic. For example, it is possible to estimate how much more value is placed by respondents on bird species, compared to river water quality. More importantly, it is possible to estimate the value placed on an increase or decrease of each separate characteristic (called a 'part worth'), so that the values can be applied to a larger area of Kakadu, or a similar ecological area. By capturing the socio-economic characteristics and site characteristics, benefit transfer can be extended to sites with different characteristics.

Because stated preference studies are expensive and time-consuming, they are not always an option for CBA studies commissioned by government. Even if funds are available, agencies often fail to budget for such studies. Ministers often require advice at short notice, thus precluding a time-consuming survey. Although databases such as Envalue and EVRI do contain a range of studies to draw on, they may not always be relevant, and specialist expertise in stated preference techniques is necessary to make proper use of them.

Table 3.1: Types of ‘benefit transfer’ methods for stated preference techniques

Transfer method	Example	Valuation technique
Single point value transfer	A rainforest protection value of \$50 per person per year is transferred from Case Study A to Site B	Generally CVM
Marginal point value transfer	A rainforest protection value of \$2 per hectare/person per year is transferred from Case Study A to Site B. The values are adjusted for the size of the area protected	Part-worths of CM. CVM can also be used, but values may not be rigorous unless multiple CVM studies are available.
Benefit function transfer	A rainforest valuation function that involves several attributes (i.e. characteristics) is transferred from Case Study A to Site B.	Model from CM study. Allows automatic adjustment for variations in attribute levels.
Meta value analysis	Results from studies A, X, Y, Z are pooled to estimate a value for Site B.	Either CVM or CM

Source: adapted from Rolfe (2006, Table 2.2)

Given that this problem faces all Australian and New Zealand jurisdictions, one solution might be to carry out large-scale CM studies of commonly appraised projects (e.g. protection of wetlands) in a manner designed to maximise the potential for benefit transfer across jurisdictions, including ease of deriving ‘plug-in’ values. The cost could be shared between jurisdictions in some agreed proportion, with provision for regular updating of values, perhaps through readily available price indexes.

3.3 Points in favour of making available harmonised variable values

A feature of CBA that is not shared by techniques like cost-effectiveness analysis (CEA) or Multicriteria Analysis (MCA) is that results can be expressed fully in a common numeraire of money values. Use of a monetary metric allows valid comparisons of projects as different as a road upgrade and the construction of a hospital. From a conceptual

perspective, commensurate estimates allow decision-makers to compare and choose between demands on limited resources in a way that best enhances the community's overall well-being.

3.3.1 Consistency in decision-making

Implicit in the literature is the perspective that the purpose of CBA is to provide decision-makers with adequate information to determine whether social costs are exceeded by social benefits, or vice versa. If the present value of the social benefits exceeds the present value of the social costs, then net present value (NPV) is positive, and the project or policy is typically deemed to be worthwhile and should proceed.

Subject to some of the qualifications canvassed in Chapter 5, if more than one project or policy is available for implementation, it is generally presumed that decision-makers should give precedence to the one with the highest NPV. Projects or policies that have positive but lower NPVs should also proceed progressively to the extent of available (budgetary) resources.

In order to be able to make judgements about the allocation of scarce community resources, however, decision-makers need to be confident that the NPV for each project or policy has been calculated in a comparable manner. Inappropriate methodology, or the use of different values for key input variables will preclude valid comparisons between the relative merits of potential projects and policies. Harmonisation of key variables and associated methodologies would help engender a degree of consistency that does not exist today.

3.3.2 Reduction in transaction and search costs

CBA is expensive when estimates of social benefits or costs are not readily available, especially so in the case of non-marketed goods and services, because collection of appropriate data, administration of surveys and recording and analysis of findings requires considerable financial resources. Arriving at estimates dedicated to a specific project or proposal may also not be possible within a tight timeframe set by decision-makers if a stated preference survey is required. In those situations, the benefit of conducting a dedicated analysis may be outweighed by the costs.

The availability of harmonised 'plug-in' values based on techniques such as CM offers a workable solution because 'part-worth' values can be applied in different contexts. Their disadvantage is the expense of establishing a database that provides values for a comprehensive range of different situations and variables. On the other hand, a CBA may not be carried out at all in the absence of 'plug-in' values, resulting in a less than socially optimal selection of projects.

3.3.3 Procurement practice and commissioning of CBA studies

Harmonised values are likely to be beneficial to both consultants and to the government agencies that commission CBA studies.

Preparation of request for tender (RFT) documentation can be time-consuming. It is also a difficult process from the perspective of a government agency because lack of uniformity can make assessment of bids more difficult. One consultant may nominate a higher fee because they intend to estimate the value of travel time using an expensive survey, while a competitor may propose the use of a 'plug-in' value that is not entirely accurate but is sufficiently 'fit for purpose'. The difference between the technical responses of the two tenders requires a degree of expertise to interpret the proposals and this is not always available within government agencies. The use of ad hoc survey results for different CBAs also raises issues around consistency and comparability between projects, interventions and decisions.

A list of harmonised values specified in an RFT would allow consultants to quote rates on a common basis, enabling better comparisons between competitors. This would not preclude consultants from providing separate estimates for more resource-intensive work, such as estimation of local travel time values, where more specific estimates are considered to be justified. Lower resource costs incurred by consultants would be likely to be reflected in lower costs to government, and hence taxpayers.

3.3.4 Use of 'rapid CBA' (back of the envelope)

Government agencies faced with the task of evaluating projects at short notice at the request of a minister would find it easier to perform the analysis using readily available, harmonised values. As ministers

and their office staff became more familiar with the use of harmonised values, the likelihood of their acceptance of 'back of the envelope' analyses would increase and hence assist in fostering more rigorous decision-making processes.

3.3.5 Reduced public confusion about the nature of cost-benefit analysis

Public understanding of CBA is limited and there appears to be a widespread misconception that the process only estimates financial costs and revenues. This may be because of the increasing commercial use of the same term to mean a financial analysis. Because money is used as the standard numeraire in social CBA, any confusion in the public mind is understandable.

Harmonisation cannot in itself dispel misconceptions about CBA, but it may assist in clarifying its nature by publishing values, and methodologies for determining non-market goods and services such as congestion or the value of statistical life. Public presentation of the various non-market values would help reassure the public that non-financial impacts are also taken into account in an economic appraisal. In particular, it would help counter inappropriate use of MCA or triple bottom line approaches.

3.3.6 Pliant consultants may bring government projects into disrepute

Exaggerated CBA studies or those that use unrealistic values will ultimately lead to a loss of confidence in such analyses on the part of the public, and even by decision-makers. In some circumstances, even socially desirable projects may be derailed for the wrong reason.

Lack of harmonisation provides ample scope for massaging results to suit a client government agency. Discussion of draft reports between consultants and clients, for example, can afford an opportunity to signal a desired outcome. Even if an agency does not explicitly or implicitly indicate what result is desired, consultants, who rely on continuing business, may prefer to provide a result that will not displease a client.

Peer review and publication of CBA studies are important tools for ensuring credible analysis, but even credible analyses can differ considerably if values of key variables, such as the value of travel time can be chosen without constraint by a consultant. The proliferation of values generated in various studies, whether based on appropriate methodologies or not, leaves open the possibility of a consultant being able to ‘justify’ the use of any preferred value simply on the basis that it has been used by others.

3.3.7 Common evidence base

Apart from the valuation of benefits, CBA also requires realistic projections of future impacts. Projections generally rely on a range of inputs and assumptions (e.g. about population growth or economic outlook). Whether or not input values and assumptions are modified to deliberately influence results, experience has shown that optimism bias (below) is an ever-present risk. Even in the absence of optimism bias, inappropriate use of input values or assumptions can result in misguided intervention decisions. Greater collaboration between agencies to share common evidence bases and key assumptions would help to reduce search costs as well as improving consistency in assessments across projects.

3.3.8 Reduction of optimism bias

Optimism bias is a problem worldwide, particularly with regard to transport infrastructure projects (Flyvbjerg, 2009). In some cases, the reason may be innocent, but bias is more likely to occur in cases where a project proponent carries out the CBA, or where special interest groups are able to influence the way in which a study is carried out.

Optimism bias typically arises in projects where projected demand for infrastructure or services is overestimated compared to the final outcome. The Productivity Commission (2014, p. 685) suggests that optimism bias can be countered through:

- the use of sensitivity analysis to test the robustness of outcomes to changes in variables or assumptions
- ensuring a clear statement of the assumptions underpinning the analysis to ensure transparency
- identification of the results of comparable projects carried out elsewhere.

The latter approach, called ‘reference class forecasting’ (Flyvbjerg, 2009), involves the identification of a relevant reference class of comparable past projects, establishing a probability distribution of a parameter being forecasted for the reference class, and comparing the current project proposal with the reference class distribution. It is therefore not much different in concept — except that it is focused on outcomes — from a quantitative meta-analysis that might be used to establish harmonised variable values.

Harmonisation can further assist in ameliorating optimism bias. For example, projected road traffic may primarily be a function of population growth projections. Specification of estimated population growth, or at least that of a credible source of estimates of population growth, can help limit any overestimate of future traffic. Similarly, any associated estimate of the social cost of car crashes can be constrained by specifying default values for the value of statistical life.

3.4 Drawbacks of using harmonised variables

It is at least arguable that harmonisation of input variable values would impose inappropriate constraints, and potential bias in terms of specific or localised analyses. Analysts and consultants, however, would be free to use their own values, so long as they were able to justify them. Ways of ensuring credible justifications might include some or all of the following:

- the results of the CBA pass a ‘commonsense’, ‘pub’, or ‘sniff’ test
- the study and underlying analysis and data are published
- the study is subjected to independent expert peer review
- if variable values other than those recommended in a harmonised system are to be used, the justification for their use should be published before the analysis is started.

3.4.1 Cost considerations

Considerable cost in resources would be incurred in selecting and harmonising values of variables to be used, as well as ensuring updating in the future. On the other hand, this cost would be partly

offset through resources saved in search costs for ‘plug-in’ values. But it is not immediately apparent that the social benefits of doing so would exceed the social costs.

3.4.2 Inappropriate application and use of plug-in values

Use of harmonised ‘plug-in’ values runs the risk of their inappropriate use, particularly where a CBA envisages large changes in the use of resources or production of goods and services.

Take as an example the construction of a public housing estate. A CBA of a relatively small project could validly use a ‘plug-in’ value for the cost of concrete because the national price of concrete would not change much, if at all, due to the construction of several houses. A large project, by contrast, would be likely to see an increase in the price of concrete, making the use of the recommended ‘plug-in’ value unrealistic. Boardman et al. (2011, ch. 4) illustrate the effect of price changes of resources on both existing users of those resources (who lose consumer surplus due to higher costs) and on the project itself.

Automatic application of fixed harmonised values cannot be a substitute for rigorous economic analysis. Estimation of harmonised values covering all potential situations of supply and demand is, however, unlikely to be a realistic proposition.

3.4.3 Potential ossification

Harmonisation risks ossification in the absence of an institutional mechanism that ensures regular updating of methodologies and variable values. Federal systems with several stakeholders would be particularly prone to this problem in the absence of a collegiate approach. Arrow’s impossibility theorem reinforces the likelihood of difficulty in reaching agreement on all issues. In Australia, the Council of Australian Governments (COAG) is an existing institution that could be used to establish at least an umbrella framework.

Harmonising a variable may not be practicable if different agencies or jurisdictions require the variable for significantly different purposes and cannot agree on a common definition. An alternative to harmonisation is to link related databases, perhaps with input of

additional information, to allow interrogation of different combinations of data. For example, police data on road crashes involving location and vehicle types could be integrated with hospital clinical data on type and severity of injury or period of treatment. But linking databases may raise sensitive privacy issues.

In New Zealand, for example, matching of police, hospital admissions data and the NZ Accident Compensation Corporation's new claims data is carried out periodically to assist estimation of the total social cost of road crashes and injuries. For privacy and commercial sensitivity reasons, however, such linkages have not been extended to include private insurance claims data.

3.4.4 Incomplete harmonisation

In cases like climate change analyses, a national perspective may not be sufficient for adequate harmonisation. Unless harmonisation of values, such as the national externality cost of carbon emissions, is also consistent with values used in other countries, national projects or policies may result in less than optimal results.

On the other hand, reliance on foreign databases can also be problematic. Austroads research underpinning its standardised environmental externalities unit values, for example, draws heavily on European methodology and data, including the calculation of air pollution costs due to exhaust emissions. Austroads issued a review notice on 7 October 2015 foreshadowing an examination of whether Volkswagen's reported emissions violations would affect standardised unit values.

3.5 Alternatives to harmonisation

If consensus cannot be achieved, the Commonwealth could develop a set of protocols and recommended values, perhaps in cooperation with only some of the states. Other states would be able to accede to the agreement or memorandum of understanding in the future, or to make use of the values without any formal commitment. Despite the potential for some free-riding, the long-term national efficiency gains elicited from better project selection may outweigh the costs.

Other, longer term approaches might include:

- publication of results of all CBAs, so that others can copy key variables, with some values ultimately becoming dominant in usage. The US Government in 2013 reportedly required federal agencies that spend more than US\$100 million per annum on research to publish the results in locations where they can be accessed for free (*The Economist*, 2014, p. 80). A similar requirement in Australia — provided it passed a cost-benefit test — could increase transparency in government, as well as reducing the transaction costs of carrying out economic appraisals
- establishment of government research or evaluation units to provide leadership and expertise in analysis. Examples include the Centre for Program Evaluation in the NSW Treasury, the Program Evaluation Unit in the WA Treasury, and Superu in New Zealand. In a budget-constrained environment, peak workloads could be covered by seconding commercial analysts temporarily to a bureau, both to carry out work and to pass on skills
- establishment of a Government Economics Network on the NZ model (www.gen.org.nz/tiki-index.php), so that economists and other policy officers can exchange views and information on a regular basis
- establishment of a Government Economic Service on the UK model (www.gov.uk/government/organisations/civil-service-government-economic-service/about), with specialist economists outsourced to line agencies to transfer analytical skills.

3.6 The Pew-MacArthur Results First Initiative in the United States

Although its antecedents go back much further, the US ‘federal government first mandated the general use of cost-benefit analysis in Executive Order 12291 in early 1981’ (Boardman et al., 2011, ch. 1), requiring a regulatory impact statement (RIA) for all proposed federal regulations. Similar executive orders have been issued by presidents William Clinton (no. 12866) in 1993 and Barak Obama (no. 13563) in 2011. However, Shapiro (2013) considers that studies of RIAs have concluded that their quality ‘has been uneven at best’.

A 'first-of-its-kind' survey by Pew-MacArthur Results First Initiative (2013), sponsored by The Pew Charitable Trusts and the John D. and Catherine T. MacArthur Foundation, from 2008 to 2011 of the 50 US states and the District of Columbia found that 10 states systematically evaluated costs and benefits of program alternatives and used them to inform policy and budget decisions. Practice in other states varied, but use of CBAs increased significantly over the study period, spurred on by budgetary pressures.

The Pew-MacArthur study found that key constraints on the use of CBA were:

- resource limitations in terms of cost and available expertise
- data limitations because 'state accounting systems often do not track expenditures by program or activity, making it difficult to compute the marginal and total costs. States also frequently lack robust systems to monitor program outcomes ...'
- tension between the length of time required to produce a CBA and shorter legislative timeframes and hence the need to inform decision-makers at short notice.

Distrust of CBA studies by policymakers and ineffective communication of results by analysts also constrained its acceptance. The study also found that 252 statutes mandated CBA in 48 states and the District of Columbia, but a July 2011 California law directed that 'the state oil-spill-response administrator "shall not use a cost-benefit or cost-effectiveness analysis or any particular method of analysis in determining which measures provide the best achievable protection"'.

Washington state was considered to be the national leader in the use of CBA. Established in 1983, the Washington State Institute for Public Policy (WSIPP) has developed a high-quality cost-benefit model. WSIPP is often called upon to provide advice to the legislature, partly because of the trust engendered by the rigour of its work, and its development of working relationships with various agencies over time.

The peer-reviewed WSIPP (2014) model is based on a rigorous and selective meta-analysis of available data and research literature to establish the costs and benefits of public policy initiatives in the following areas:

- criminal and juvenile justice
- K–12 and early education
- child welfare
- substance abuse
- mental and public health
- public assistance
- employment and workforce development
- health care.

A particular advantage of the model is considered to be the ready availability of cost and benefit data. Consistency and replicability are complemented by the ability to provide a relatively quick analysis of proposed programs.

Costs include any externalities and the deadweight loss of taxation, and are available in both average and marginal form, as well as equivalent annual values. Although data, such as earnings, are taken from the US Census Bureau, state-specific adjustments are made where considered appropriate.

Benefits, however, are generally estimated in the form of a ‘costs avoided’ approach (see also s. 5.6 for issues associated with this method). For example, crime-reduction programs are assessed on the basis of costs avoided by both the state and the victims of seven major types of crime. Costs to the state are primarily budgetary, while tangible costs to victims include property damage, medical and mental health care, and intangible costs such as pain and suffering are based on jury awards.

The Results First Initiative has extended the use of the WSIPP model to 14 other states in the United States. The initiative hosts annual meetings with the states involved in the program and provides technical expertise to assist users of the model. Pew-MacArthur representatives at a workshop connected to the March 2015 Society for Benefit-Cost Analysis conference in Washington DC reported that an important aspect of assistance to the states has been the identification and categorisation of relevant program costs.

3.7 Views and practice in the various jurisdictions regarding harmonisation in the period October to December 2014

Research for this volume involved the holding of semi-structured face-to-face interviews in all the Australian (except for the Northern Territory) and New Zealand jurisdictions over the period October to December 2014. Resource constraints dictated the selection of agencies consulted and, where possible, transport, health and environment departments, as well as central agencies, were included. In several jurisdictions, requests for interviews were declined by some departments (Appendix 1).

Because interviews were held in late 2014, some of the information and views garnered then may now be outdated. For example, line agencies in Queensland drew attention to the fact that all policy was aligned with the then government's 'four pillars' policies (www.thepremier.qld.gov.au/plans-and-progress/plans/6-months-july-dec-12/four-pillar-economy.aspx (viewed 31 October 2014)). The four pillars were:

- tourism
- agricultural development
- mining
- construction.

The then Queensland Government's policy focus was on streamlining and reforming legislation to meet business needs, including cutting red tape. Policy proposals were not examined in terms of social benefit, but rather how they would contribute to economic growth. Conventional CBA was not relevant in this context. An election in January 2015, however, saw a change in government, and the 'four pillars' webpage cited above was no longer available in July 2015. In April 2015, the Queensland Productivity Commission was established, subsuming the Queensland Office of Best Practice Regulation. Victoria also saw a not entirely expected change of government following the election on 29 November 2014, although interviews had been held there a month earlier. Despite significant changes such as these, the reported perspectives of jurisdictions on harmonisation issues are necessarily those recorded over the October to December 2014 period.

A significant constraint on reporting the outcomes of the interviews is the request for anonymity that was made by a number of officials. The problem was partially overcome by drawing on handbooks and appraisal guidelines issued in some of the jurisdictions. It should also be borne in mind that, in many instances, the views expressed were those of a single official speaking informally. In some circumstances a group of officials participated, but views recorded may have been those of a dominant discussant.

The New Zealand Treasury was in the process of revising its previous CBA guidelines in November 2014, and revised guidelines were published in July 2015 (New Zealand Treasury, 2015). Support among line agencies for harmonisation of CBA variables was less effusive than in some of the Australian jurisdictions, possibly because of a non-federated political structure and greater use of consultants to carry out CBAs. However, the transport portfolio collaborates closely with Austroads and, like its Australian counterparts, maintains in-house analytical expertise.

This section and relevant parts of Chapter 4 should, therefore, be taken as indicative, rather than as fully considered positions of the government agencies that were consulted.

3.7.1 New Zealand

New Zealand has a long history of economic appraisal of projects, particularly in the transport sector. In July 2015, New Zealand Treasury released its *Guide to Social Cost Benefit Analysis* to replace the previous version that had been in circulation since 2005. It reduced the recommended annual discount rate from 8 per cent to 7 per cent for infrastructure and special purpose buildings, with default annual discount rates unchanged at 8 per cent for projects that are difficult to categorise, including regulatory proposals.

The New Zealand Treasury (2015, pp. 43–44) *Guide* notes that there are a range of common criticisms of CBA that might have contributed to its low level of usage.

- ‘CBAs produce false accuracy’: It is not unusual to see CBAs that state that the benefit cost ratio is ‘1.17’. This is most likely to be spurious accuracy. The problem of false accuracy is overcome with the use of ranges.

- ‘CBAs can’t measure everything’: We acknowledge that there are some intangible benefits that the analyst won’t be aware of or that are too hard to measure. As this guide explains, there are more benefits that can be measured than people think. As for those that can genuinely not be measured, this guide recommends that they should be drawn to decision-makers’ attention along-side the results of the CBA of those benefits and costs that can be measured.
- ‘CBA can be misused to produce self-serving analysis’: CBA is a tool, and like all tools it can be misused. This is not a reason to dismiss CBA in favour of some other tool.
- ‘CBA is too complex’: ... [it is] not recommended that inexperienced policy analysts should carry out CBAs of complex or large projects themselves. Either a ‘rough’ CBA can be carried out, or the job should be contracted out to specialists. However, it is important for those carrying out CBAs to produce an accessible report that heeds the recommendations of this guide.
- ‘Information requirements are often too onerous’: CBAs can be carried out with whatever information is available. If the information is poor, then the confidence intervals will be larger. There are no other project evaluation methodologies that can produce better results from the same information base.
- ‘CBAs overlook equity considerations’: It is recommended that equity implications of a project be discussed and drawn to decision-makers’ attention along-side the results of the CBA.
- ‘The CBA is not likely to support our Minister’s objectives’: This comment ignores the fact that public servants have two distinct roles. The first is to give ministers free and frank advice on what the likely consequences of their decisions are. A CBA is necessary for this role. The second is to implement the Minister’s decisions, whether or not those decisions are consistent with the advice given.

Economic appraisal for transport projects has evolved over the last 35 years. In the early 1980s, CBA was compulsory only for major state highway improvements. Around the mid-1980s, an economic appraisal procedure for road improvement projects was developed. This was later updated and expanded to form the *Project Evaluation Manual*. Due to the demand for guidance on approaches to assessing alternatives to road construction (e.g. public transport investment), a separate guide was developed in the mid-1990s. The value of non-work

travel time was later updated as a result. In the mid-2000s, the *Project Evaluation Manual* was combined with other new guidelines (including health benefits from walking and cycling) to form the *Economic Evaluation Manual (EEM)*. Since its initial release in 2005, the *EEM* has been updated and improved annually with uplift factors for updating benefit parameter values published at the same time to ensure road controlling authorities use the same unit valuations in their assessments.

3.7.2 Victoria

As with other jurisdictions, Victorian transport agencies were well advanced in harmonising a range of variable values, in cooperation with Austroads and the Australian Transport Council. Nevertheless transport, like other portfolios, was subject to overarching Department of Treasury and Finance Guidelines on economic appraisals.

General line agency comments included:

- the desirability of consultants providing transparent lists of assumptions made, even if harmonisation of variables were instituted
- harmonisation would require a consensual top-down approach, with the Commonwealth ‘putting money on the table’
- publication of CBAs should be avoided because of their commercial-in-confidence nature as part of tendering processes.

3.7.3 New South Wales

It was pointed out by several interlocutors that New South Wales, together with Victoria, was an early developer and adopter of guidelines for undertaking economic appraisal. Material developed by the former Roads and Traffic Authority, for example, provided a basis for the 2006 National Transport Council guidelines. There was a relative preference in some agencies for consistency in approach, rather than harmonisation of variable values, although it was also recognised that default values might be useful in the case of agencies that lack CBA expertise. However, the NSW Treasury (2007, p. 2) states that ‘in

order to ensure that a consistent approach is used by all public sector agencies, Treasury sets certain key parameters to be used in appraisals, such as the discount rate and the rate of real earnings growth’.

3.7.4 Queensland

Several interlocutor agencies in Queensland commented on the lack of CBA expertise in the state, with the provision of detailed guidelines and harmonised default values being seen as a desirable initiative. It is likely that these views reflected the rather minimalist and non-prescriptive nature of the project analysis guidelines issued by the Queensland Treasury at the time. One suggestion was that the Commonwealth’s Productivity Commission could issue guidelines that incorporate a list of ‘best practice’ variable values in the same way that the Australian Government Office of Best Practice Regulation does. Transport was again the standout portfolio, drawing on its own modelling capabilities and Austroads parameters.

3.7.5 South Australia

Like the NZ Treasury, the SA Department of Treasury and Finance was in the process of revising its evaluation guidelines (Department of Treasury and Finance, 2014) in late 2014. In the past it has not recommended ‘plug-in’ values to agencies, but has considered that ensuring the accuracy of underlying data used in analysis was an issue of particular importance. One line agency considered that a set of ‘plug-in values’ that could be adjusted for different circumstances and situations would be a good start to encouraging more CBA. It would be important, however, to have transparency in the derivation of such values, including the assumptions made.

3.7.6 Western Australia

Discussion at central agency level in Western Australia indicated some predilection for the use of authoritative harmonised values. Unsolicited reference was made to the usefulness of the Environmental Value Reference Inventory (EVRI) database as a source for environmental variable values. One line agency, however, cautioned against the unqualified application of nationally harmonised variable values,

especially because there were obvious differences in conditions and circumstances in Western Australia compared to other parts of Australia.

3.7.7 Tasmania

Analytical CBA expertise in Tasmania resides primarily in the Department of Treasury and Finance, although one agency referred to a proposal to establish an Infrastructure Tasmania organisation (in fact established mid-2015) to improve coordination of infrastructure appraisals. Specialist consultants are relied on to perform CBA. Austroads material was used in the absence of an internal manual for economic evaluation. The principle of harmonisation was regarded positively in principle, subject to the caveat of addressing local conditions and needs.

3.7.8 Australian Capital Territory

As in Tasmania, analytical expertise in the Australian Capital Territory resides primarily in the Treasury, but internal evaluation manuals are also provided to line agencies for the preparation of project proposals. Informal discussion indicated support in principle for a greater degree of harmonisation in terms of both default variable values and methodology. One view was that the benefit of harmonisation within the ACT government would probably be even more beneficial than inter-jurisdictional harmonisation.

3.7.9 Commonwealth Government

The leadership role exhibited in the past by the Department of Finance (1991) with its publication of the *Handbook of Cost-Benefit Analysis*, and the revised version in 2006, has not been maintained. While some officials have expertise in the area of CBA, Finance's previous role has dissipated. Further, its administrative responsibility for the Commonwealth's Office of Best Practice Regulation (OBPR) was transferred to the Department of the Prime Minister and Cabinet in September 2013. The Commonwealth Treasury Department has internal expertise in CBA, but its role is simply that of a 'consumer' of studies produced or commissioned by line departments when briefing the Treasurer on new proposals.

The Productivity Commission and Infrastructure Australia possess significant analytical capabilities. The Productivity Commission undertakes inquiries on topics referred to it by the Australian Government. It also undertakes internal research on productivity and regulatory issues, but does not have a coordination role with respect to inter-jurisdictional evaluation practices.

On 6 November 2014, the Minister for Infrastructure and Regional Development issued a statement of expectations (Truss, 2014) to the board of Infrastructure Australia, requiring it, inter alia, to produce a rolling 15-year plan of infrastructure priorities at the national and state levels on the basis of rigorous cost-benefit analysis. Infrastructure proposals to be considered include transport, water, communications, energy, and social infrastructure in the education and health areas. Given the broad range of areas to be covered, it is unsurprising that Infrastructure Australia officials informally favour a greater degree of harmonisation in the evaluation of projects.

3.8 Conclusion

With the exception of the transport sector, there is a surprising dearth of economic appraisal expertise in the line agencies of most jurisdictions. Whether due to deliberate outsourcing or not, relevant expertise is now primarily the domain of commercial consultants.

In principle, it should not matter whether appropriate expertise is held within the public service or outside it, because it is always possible to commission external experts to undertake any required studies. In practice, however, the current situation is less than ideal, partly because of the operational characteristics of the public service.

To the extent that new policy proposals are not predictable at the time of setting budgets, public service agencies generally do not set aside budgeted funds to undertake CBA studies. Even where funds may be available, procurement principles and processes mean that there may be insufficient time to commission an external CBA if a new policy proposal requires a quick response from a minister or the government. Where outside experts are commissioned, the paucity of internal expertise can mean that a request for tender may not be expressed with sufficient clarity. If the quality of the final product cannot be

adequately assessed internally, even peer review processes may not obviate issues such as the optimism bias that afflicted some recent Australian urban tunnel projects. Given that ministers typically seek policy advice from their portfolios rather than external consultants, a general lack of expertise in CBA may also affect the quality of policy advice provided.

Harmonisation of variable values and methodologies offers some solutions in principle, but it is likely to require Sisyphean effort in practice. There are too many jurisdictions and competing interests within each one to establish a workable arrangement. The lack of in-house expertise itself would complicate any negotiations.

An alternative might be for an agency to adopt a de facto leadership role. Perhaps building on existing databases, like that provided by Austroads and Infrastructure Australia requirements, additional roles could be added over time. A central agency in one of the jurisdictions, a university, or a body like the (Australian) Productivity Commission or the Office of Best Practice Regulation could undertake this task, given an appropriate level of resources and collaboration with other jurisdictions.

A more practicable approach may be to begin a step further back, by harmonising the processes involved in economic appraisal. Harmonising the framework adopted for CBA studies would not only increase the transparency of results, it would also make them more accessible to readers. It could also accommodate the future establishment of any desirable harmonisation of variable values or methodologies.

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