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The research underlying this working paper was commissioned by NSW Department of Premier and Cabinet, Australia.

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Abstract

The concept of 'standing' – whose benefits and costs should be counted – is well-established, and its specification is a crucial step in conducting a rigorous Cost-Benefit Analysis. But it is generally overlooked by analysts. From a national perspective, the orthodox formulation of 'standing' is 'the whole of society', or at least the legal citizens of the country concerned. The implicit rationale appears to be that benefits should be counted only for those who pay for a project through their taxes. However, little or no academic attention has been given to 'standing' at the sub-national level in federations such as Australia or the USA. The general lack of concordance between taxation areas and benefit regions suggests that 'standing' in the border regions of contiguous states should be deemed to connote a national perspective, at least as a default position.

Keywords:

JEL codes: D61, H43, H73, H77, R58

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A CROSS-BORDER PERSPECTIVE ON 'STANDING' IN COST-BENEFIT ANALYSIS

Introduction

There is no 'cookbook' for conducting Cost-Benefit Analysis (CBA)[1], but the analytical framework is necessarily based on a series of sequential steps. Like a mathematical proof, its integrity depends on following a consistent line of argument, beginning with initial assumptions and constraints.

Specification of the bounds of the analysis is a first step. It should include as a minimum the policy objective, identification of alternative means of achieving the objective, and recognition of any legal, budgetary, institutional or social constraints. It should be followed closely by the determination of 'standing': whose preferences are relevant, and hence whose costs and benefits are to be counted before aggregating them to obtain the bottom line of a net present value.

In social cost-benefit analysis, standing typically refers to society as a whole, but the definition of society is rarely stated explicitly.

Lack of clarity in defining the perspective from which the analysis is being conducted can result in errors or ambiguities in subsequent steps. An example is the business case for the Canberra tram (Capital Metro Agency, 2014). Increased income tax receipts were included as a benefit, an error due to failure at the outset to define the 'standing' of the analysis, in this case the Australian Capital Territory. Because income tax is a Commonwealth, rather than a state or territory tax, the additional amount collected should not have been included unless standing had been defined from a wider national perspective.

Analysis of cross-border projects is a grey area. In particular, it is not clear how to treat a NSW state or local government project in twin cities like Canberra-Queanbeyan, Albury-Wodonga or Tweed Heads-Coolangatta. On the one hand, it is a standard formulation that standing should be limited to the whole of the society of a nation or a constituent state that is proposing a project. On the other hand, various arguments have been advanced as to why this rule may be overly restrictive, including for ethical reasons in the case of negative externalities that are imposed by one country on another.

This paper starts by examining the existing literature, including the brief debate that took place in the late 1980s and early 1990s about the characterisation of standing. A number of

[1] The term Cost-Benefit Analysis is often used in financial circles to mean a budgetary or financial analysis. It is used here in the sense of an economic analysis, sometimes termed a 'Social Cost-Benefit Analysis'.

arguments are examined against the specific background of Australian legal rights, following Zerbe's (1991) dictum that legal rights should form the basis for determining standing.

The academic literature

The academic literature on 'standing' is relatively sparse, and has not been a focus of substantive debate for over a quarter of a century. Academics have invariably taken a national view of standing, if they think of it at all. Cost-benefit analyses by consultants often do not even address constraints, alternatives, or the issue of standing, typically proceeding immediately to valuation.

Early applications of cost-benefit analysis tended to equate standing with citizenship, without further refinement or qualification of what constitutes a society. According to Trumbull (1990, p. 201), it was Whittington & MacRae (1986) who first coined the term 'standing' as an analogy to the legal concept of *locus standi*. The term has been used consistently since then in the academic literature. Atypically, Campbell & Brown (2003, 2016) have used the term 'referent group' instead. Their interpretation appears to differ from the standard broad formulation of 'society as a whole', and may introduce an element of arbitrariness because it cedes the selection of members of society to the decision-maker:

> 'In the context of social benefit-cost analysis "society" is to be interpreted in a relatively narrow way: it is simply that group of individuals deemed by the decision-maker to be relevant, and it is usually termed the referent group. Before undertaking a social benefit-cost analysis the analyst needs to ascertain from the decision-maker the composition of the referent group. Often the referent group consists of all the residents of a country, but it may be more narrowly defined in terms of sub-groups such as residents of a State or region, or social groupings such as the poor, unemployed, elderly, or people of Aboriginal descent.' Campbell & Brown (2003, p. 6)

Given that decision-makers tend to be driven primarily by specific political pressures and interest groups rather than by broader utilitarian perspectives, the Campbell and Brown (2003) approach cannot exclude the risk of a biased outcome. For example, using the poor, unemployed or elderly may capture the major benefits of a project but not the costs borne by taxpayers in general. In such cases, the analysis cannot accurately be described as a 'social' cost-benefit analysis.

In recent years, it has also become reasonably common in some public service departments in Australia, for example, to focus advice to decision-makers from the perspective of so-called "stakeholders"; i.e. those with a substantive political voice or vested interest. Proponents of the 'Social Return on Investment (SROI)' approach to evaluation (e.g. Nicholls et al., 2009; Faivel et al., 2012) also appear to advocate selective consideration of 'stakeholders', rather than the whole of society.

A number of eminent sources were skimmed for reference to the determination of standing, as were tables of content and indexes. The terms 'externalities' and 'federal/federalism' were also perused as far as possible because of their potential linkage to cross-border effects. The first group of sources selected consisted of those that pre-dated the debate by Whittington and MacRae (1986), Trumbull (1990) and Zerbe (1991). Only content that was significantly different from the standard formulation of standing as referring to society or the community was analysed further.

Mishan's fourth edition (1988, p. xxvii) of his seminal book on CBA barely considers the concept of standing beyond stating in the foreword that 'in cost-benefit analysis we are concerned with the economy as a whole, with the welfare of a defined society, and not any smaller part of it', a view perhaps reflecting the politically unitary nature of his native United Kingdom. While acknowledging in the fifth edition (Mishan & Quah, 2007, p. 4) that a CBA can be conducted from the perspective of a 'region that encompasses a number of contiguous countries or … one or more provinces of a country or even a single town or city', the area of analysis is taken to be the standard 'economy as a whole' or 'society as a whole' to avoid unnecessary verbiage. Without further explanation, they employ the term 'accounting stance' instead of the more common 'standing'.

Squire & van der Tak (1975, p. 24) state that the 'traditional policy of the World Bank and most other lending agencies is to take account of physical externalities, as in the case of international rivers, and expect agreement of the countries concerned on the sharing of water and appropriate compensation for any untoward effects'. In other words, the World Bank approach is to internalise external considerations that might complicate the issue of standing. Nevertheless, the World Bank approach is clearly grounded in a national perspective regarding 'standing'.

Gramlich (1981, p. 36) noted that intergovernmental grants reflect 'the growing tendency of both the federal and state governments to carry out programs at one remove. Rather than raising their own direct expenditures to deal with a problem, these governments simply transfer money to a lower level of government to have it do so'.

Adopting a pragmatic perspective, Musgrave & Musgrave (1973, p. 626) drew attention to the often messy concordance between political jurisdictions and the provision of services, resulting in spillovers. Non-equivalence between taxing areas and benefit regions can occur 'because people and businesses are mobile'. One example is expenditure embodied in human capital in the form of education that transfers to another jurisdiction if the person concerned moves interstate. A similar issue was raised by Luskin & Dobes (1999, p. 151):

> 'Suppose, for example, that a transport improvement causes the economy of Queensland to expand. Queensland then attracts workers from other states. In defining the population of Queensland's beneficiaries, should one distinguish the newcomers from other residents, and, if so, how?'

Whittington and MacRae (1986) sparked a short-lived debate by highlighting the importance of standing in CBA in deciding whether the gains from criminal activity should be counted, whether the interests of non-citizens, non-human entities, or future generations are relevant. On the issue of cross-border effects, they consider that 'controversies among nations represent the types of questions about standing that are hardest to resolve in cost-benefit analysis' (p. 679), but they offer no specific prescription, leaving it up to individual analysts to wrestle with this ultimately Sisyphean problem.

Taking a universalist approach, Trumbull (1990, p. 213-214), considers that authors such as Mishan employ circular reasoning when claiming that CBA is concerned with 'the economy as a whole'[2]. There is no reason, he argues, why society cannot be 'defined as the local jurisdiction within which a proposed project would be located', but acknowledges that the general presumption in CBA is that society is defined as more than a local jurisdiction because analysts find it useful to account for spillovers. Given that national borders are a social constraint, their effect on costs and benefits (e.g. delay in crossing a border checkpoint) must be taken into account. He further argues that the cross-border costs and benefits should not be ignored. One solution he offers is to have other beneficiary countries or persons share the cost of the project.

Whittington & MacRae (1990, p. 544) counter by asking how far from the national border any cross-border benefits should be counted. In response, Trumbull (1990, p. 549) reiterates that he 'can see nothing about borders, whether national or local, that implies that effects on the other side must be ignored'.

The final word on the issue of foreigners appears to have been Zerbe's (1991, p. 101), who preferred a more circumscribed approach, based mainly on American legal practice and precedent. Where the legal or political rights of persons outside the defined standing for the analysis are unclear, Zerbe recommends alternative calculations of costs and benefits be made separately, 'based on alternative specifications of rights'.

Interestingly, authoritative authors like Dasgupta & Pearce (1972), Harberger (1972), Layard (1972), Little & Mirrlees (1974), Sugden & Williams (1978), Pearce & Nash (1981), Schmid (1989), provided no substantive discussion of standing prior to the Whittington-MacRae-Trumbull-Zerbe debate, or even omitted mentioning it altogether. The same was true of a number of authors after the debate: Brent (2009), Hanley & Barbier (2009), Drummond et al (1997), Freeman (1993), Perkins (1994), Layard & Glaister (1994), Sinden & Thampapillai (1995), HM Treasury (2003), Adler & Posner (2006), Quah & Toh (2012), and USEPA (2010). The Australian Department of Finance and Administration (2006) omits any reference to standing from its 9-step process for CBA, as does Abelson (2012, p. 133).

[2] However, a subsequent paragraph in his 4th edition, indicates that Mishan's intent is actually to emphasise that one should not only consider a public or private enterprise alone because other segments of the public need to be considered too.

Boardman et al (2011, pp. 7-8, 37-40) provide the most comprehensive textbook discussion of standing, characterising it as the second step in their nine step CBA process. They recommend that analysts should ideally conduct CBA 'from the national perspective', even if evaluating projects at a city or other sub-national level. On cross-border issues such as US industry causing acid rain in Canada, they recommend a strictly jurisdictional approach that would include only the willingness to pay of US citizens to reduce acid rain in Canada, with the preferences of Canadians not taken into account.

Pearce et al (2006, p. 55) address cross-border issues as follows:

> 'The basic rule is that benefits and costs to all nationals should be included, whilst benefits and costs to non-nationals should be included if
> a) the policy relates to an international context in which there is a treaty of some kind (acid rain, global warming), or
> b) there is some accepted ethical reason for counting benefits and costs to non-nationals'

They also appear to favour the use of distributional weights to adjust costs and benefits downwards for non-nationals, rather than ignoring them altogether.

Finally, it is worth quoting extensively from the European Commission (Sartori et al, 2014, section 2.5.3, p. 33) *Guide to Cost-Benefit Analysis of investment projects*, which adopts a relatively unqualified universalist perspective:

> 'After having described the project activities and the body responsible for project implementation, the boundaries of the analysis should be defined. The territorial area affected by the project effects is defined as the **impact area**. This can be of local, regional or national (or even EU) interest, depending on the size and scope of the investment, and the capacity of the effects to unfold. Although generalisations should be avoided, projects typically belonging to some sectors have a common scope of effects. For example, transport investments such as a new motorway (the same does not usually apply to urban transport), even if implemented within a regional framework, should be analysed from a broader perspective since they usually form part of an integrated network that may extend beyond the geographical scope of the analysis. The same can be said for an energy plant serving a delimited territory but belonging to a wider system. In contrast, water supply and waste management projects are more frequently of local interest. However, all projects must incorporate a wider perspective when dealing with environmental issues related to CO_2 and other greenhouse gas (GHG) emissions with effects on climate change, which are intrinsically non-local.
> A good description of the impact area requires the identification of the project's **final beneficiaries**, i.e. the population that benefits directly from the project. These may include, for example, motorway users, households exposed to a natural risk, companies using a science park, etc. It is recommended to explain what type of benefits will be enjoyed and to quantify them as much as possible. The identification

> of the final beneficiaries should be consistent with the assumptions of the demand analysis.
>
> In addition, all bodies, public and private, that are affected by the project need to be described. Large infrastructure investment does not usually only affect the producer and the direct consumers of the service, but can generate larger effects (or 'reactions') e.g. on partners, suppliers, competitors, public administrations, local communities, etc. For instance, in the case of a high speed train linking two major cities, local communities along the train layout may be affected by negative environmental impacts, while the benefits of the project are accrued by the inhabitants of the larger areas. The identification of '*who has standing*' should account for all the **stakeholders** who are significantly affected by the costs and benefits of the project.' (emphasis in original)

In sum, it is at least arguable that the standard interpretation of cross-border 'standing' might be characterised as:

- the costs and benefits of non-residents should not be counted unless they have some form of legal right to be considered, or
- that there is a clear presumption of some ethical or other right that is based on the preferences or sentiments of residents.

The case for excluding in-country cross-border costs and benefits

Like any form of analysis, CBA requires commensurability and internal coherence, comparing like with like. Discount rates, for example, are expressed in real value terms if costs and benefits have been estimated as real values. Alternatively all three variables may be expressed in nominal terms, but consistency is the key.

It is therefore likely that the orthodox view espoused by most authors – that non-residents of a defined area of analysis should not have standing – is likely to have been founded on the need to ensure comparability of costs and benefits within a defined geographic area, or for a specific demographic, in order to determine whether the result is Pareto efficient or not. In other words, if the people living within a state or country are the ones who bear the financial burden and other economic costs, then it is only their benefits that should form the basis of comparison. Only those paying for a project should have their benefits counted.

This principle of equivalence between taxing areas and benefit regions is a logical means of ring-fencing an analysis. Without it, it would be necessary to extend the aggregation of benefits to an indeterminate number of people, possibly the whole world, even if residents of other countries had no legal or moral right to use the goods or services provided by the project.

But even this orthodox approach can raise thorny conceptual issues. In particular, if NSW residents are given standing for a project in Albury, how are Wodonga residents who are

employed on the project to be treated? At one extreme, it might be argued that Wodonga residents are a source of free labour because their use does not draw on the labour resources of NSW. On the other hand, once they have crossed the border into NSW they might be considered as being available for work in NSW so that there would be an opportunity cost of employing them on the project rather than elsewhere in NSW.

It would be possible to treat Wodonga residents analogously to unemployed Albury residents; perhaps valuing the shadow price of their labour at zero, or at least according to their loss of leisure time. But is the loss of leisure time relevant if it is incurred by someone who does not have standing? Moreover, there would be no reason to limit this approach to labour. An *ad absurdam* level of consistency would require that all goods and services used in the project that are imported from Wodonga should be shadow priced as costless. In any case, the cost of the NSW project should still include the funds – adjusted for the marginal excess tax burden – used to pay for labour and other goods and services imported from other states.

A third possibility would be to retain the basic principle of equivalence between the taxing area and the benefits accrued, but to accord a lower weighting to costs and benefits attributed to those without standing. Anecdotal information suggests that it is already standard practice for NSW analysts to apply a 40 per cent (0.40) weight to the benefits of those without standing. However, distributional weighting is ultimately arbitrary, and offers no entirely satisfactory conceptual solution.

A fourth possibility is the two-handed approach: two separate calculations; one that includes costs and benefits of both Albury and Wodonga residents, and one limited to the effect on Albury. But this would simply introduce ambiguity, because a decision-maker would be no wiser as to which result to accept. A decision based on *a priori* reasoning – even if not perfectly justifiable – would appear to be preferable to an open-ended result that provides no specific answer.

Finally, there may be a generally acceptable and compelling ethical argument for including costs and benefits attributable to Wodonga residents. A decision-maker would be free to take this into account, but little or no supporting guidance could be provided by the CBA analyst on the basis of allocative efficiency.

The case in favour of including in-country cross-border costs and benefits

The 'legal rights' approach

The debate between Whittington, MacRae, Trumbull and Zerbe (see above) about cross-border effects focused primarily on whether an American project that generated a negative externality to residents in a neighbour like Canada should include the costs incurred by Canadians.

Zerbe (1991, p. 100-101) contends that the issue of standing 'cannot be and should not be decided outside of the general legal and *political* context in which these issues are to be considered' (emphasis added). Much of his paper draws on American legal precedent and practice, so it is not clear what role a 'political context' would play in his conception of the issue. He concludes that where the rights of a foreigner to sue in the American courts is unclear, and 'where the legal and political system furnish unclear guidelines, then of course the issue of the proximate right (or whose preferences should count) should be openly discussed and debated …'. He recommends that 'the analyst should provide alternative calculations based on alternative specifications of rights'.

While Zerbe's approach is more compelling than those of Whittington, MacRae, and Trumbull, it does not in itself provide a particularly strong rule for deciding standing. Unfortunately, alternative calculations are of little help to a decision-maker or analyst making a decision. Nevertheless, there appears to be merit in applying Zerbe's focus on legal rights and political conditions as relevant determinants of standing within a federation of states such as Australia.

The non-equivalence perspective

Rather than looking for a strict legal basis that would determine standing, Musgrave & Musgrave (1973, p. 626) posit a normative link between political jurisdictions with taxing powers and the area where benefits are made available to the residents of that jurisdiction. The implicit underlying rationale is that those being taxed are the ones bearing the cost of a project, and therefore that they, but not others, should benefit from the expenditure. This approach sits more easily with the reality of in-country cross-border issues than the primary focus on foreigners that was explored by Whittington, MacRae, Trumbull and Zerbe.

The key point made by Musgrave & Musgrave (1973, p. 626) is that the theoretical equivalence between taxing areas and benefit regions does not apply neatly in the real world, 'because people and businesses are mobile'. They cite as examples the spillover benefits that outsiders are able to gain from services to which they may have access in jurisdictions other than their own, including education, city streets, police and fire protection.

Musgrave & Musgrave (1973, pp. 626-637) further explore the efficiency and equity aspects of different forms of fiscal federalism, including various forms of grants to states and municipalities, and fiscal equalisation between jurisdictions with high and low taxing capabilities. Efficiency considerations would dictate that regions that benefit from the expenditure of others should compensate the external suppliers of resources. (Where negative externalities are a feature, a Coasean solution may be to bribe the contiguous producer of the externality.) Equity considerations, on the other hand, may favour centralised transfers of tax revenues from poorer to wealthier jurisdictions.

Whether the Musgrave approach can help illuminate the issue of standing for in-country cross-border issues depends on two factors:

- who is paying for the project; and
- who has a right to access the benefits of the project.

Incidence of project costs and taxation areas

Table 1 shows that the Australian states and local governments have relatively limited taxation opportunities compared to the federal government, both in the type of tax and in revenues collected. The combined tax revenues collected by state and local governments are only a quarter of the Commonwealth's collections.

Table 1: Australian taxation revenue 2014-15 by level of government ($m)

Tax	Commonwealth	State governments	Local governments
Income	258 610	-	-
Payroll	735	22 053	-
Property	15	29 465	15 779
Provision of goods & services	93 120	11 408	-
Use of goods, provision of activities	4 975	10 813	-
total	357 455	73 739	15 779

Source: Australian Bureau of Statistics, 5506.0, http://www.abs.gov.au/ausstats/abs@.nsf/mf/5506.0 [viewed 2 September 2017]

However, Table 2 provides a more realistic picture. It presents revenues available to each of the three different levels of government in a way that takes into account the level of government at which revenue is used, rather than simply collected. The term 'adjusted taxation revenue' equals the taxation revenue collected by each level of government, plus current grants received from higher levels of government, less current grants paid to lower levels of government.

Transfers of taxation revenue from higher levels of government can be made through grant payments such as Specific Purpose Payments that are 'tied' to specific policy areas as agreed between any two levels of government. Taxes such as the Goods and Services Tax (GST) – representing about 12 per cent of total Australian tax revenues – are collected on behalf of the states by the Commonwealth and are distributed by the Commonwealth Grants Commission

(CGC) in an untied manner. The CGC bases its distribution on an equal per capita amount for each state, but adjusts the amount to take into account revenue-raising capacity and efficiency, as well as the ability to provide services and associated infrastructure to the same standard as other states. Under the application of this principle of horizontal fiscal equity, the Northern Territory, for example, obtains a much larger proportion of GST than its population-share would indicate.

In addition to taxation, jurisdictions can raise revenue from sales of goods and services, property income (interest, dividends, income tax equivalents, land rents and royalties), fines, capital transfers, and current transfers other than grants, but these are not shown in Table 2. Nor does Table 2 show direct or indirect transfers to households.

Table 2: Adjusted Australian taxation revenue 2014-15 by level of government ($m)

Item	Commonwealth	State governments	Local governments
1. revenue collected	357 406	73 640[a]	15 779
as % of GDP	*22.2*	*4.6*	*1.0*
as % total tax revenue	*80.1*	*16.5*	*3.5*
2. current grants to states	96 418		
3. current grants to local govt	0		
4. current grants to multi-jurisdictional sector[e]	9 985		
5**. adjusted tax revenue**[b]	**251 003**		
as % GDP	*15.6*		
as % total tax revenue	*56.3*		
6. current grants from C'wlth		96 418	0
7. current grants to local govt		4 310	
8. current grants to multi-jurisdictional sector[e]		408	
9. **adjusted tax revenue**[c]		**165 340**	
as % GDP		*10.3*	
as % total tax revenue		*37.1*	
10 current grants from states			4 310
11 **adjusted tax revenue**[d]			**20 090**
as % GDP			*1.2*
as % total tax revenue			*4.5*

Source: Australian Bureau of Statistics, 5506.0, adjusted measures of government revenue, http://www.abs.gov.au/ausstats/abs@.nsf/Previousproducts/5506.0Main%20Features82014-15?opendocument&tabname=Summary&prodno=5506.0&issue=2014-15&num=&view= [viewed 2 September 2017]

Notes:
a data consolidations may affect comparisons with table 1
b adjusted tax revenue = 1-2-3-4
c adjusted tax revenue = 1+6-7-8
d adjusted tax revenue = 1+3+7
e the multi-jurisdictional sector contains units where jurisdiction is shared between two or more governments, or where classification of a unit to a jurisdiction is otherwise unclear. The main types of units currently falling into this category are the public universities.

Unless a specific tax is levied by a state or a local government to finance particular services or infrastructure, allocation of costs to the residents of a state would be a difficult exercise. Under the system of horizontal fiscal equity, it would be difficult, if not impossible, to determine the actual source by state of expenditure or who bears project costs. The Musgrave concept of equivalence of taxation areas and benefit regions therefore cannot be applied unambiguously to Australian states or local governments because of the blurring of the demographic and geographic incidence.

A strong counter-argument might be that it does not matter where government revenue originated. What matters is that a state or local government possesses a certain amount of revenue – from whatever source – and that it is thereafter faced with a choice between different possibilities of expenditure. Each choice of expenditure item involves an opportunity cost that reflects forgone alternatives. If this argument is accepted, then the benefit region should be limited strictly to the borders of the relevant state.

<u>Access to project benefit regions</u>

Determination of clearly defined benefit regions can be as problematic as identifying unambiguous taxation areas.

Australia is a common market with an external tariff regime controlled by the federal government. It has been argued that there is an underlying current of non-preference or non-discrimination that is apparent in the Australian Constitution. Simpson (2007, p. 265) discerns several provisions of the Constitution that expressly or implicitly 'require the Commonwealth to observe a principle of uniformity in dispensing benefits and burdens'.

More recently, French CJ in *Fortescue Metals Group* [2013] HCA 34 quoted approvingly from Windeyer J in an earlier case to the effect that:

> 'ss 90and 92, taken together with the safeguards against Commonwealth discrimination in s 51(ii) and (iii) and s 88, created a Commonwealth economic union, not an association of States each with its own separate economy.'

French CJ commented further (49) that 'the constraints imposed by … the Constitution serve a federal purpose – the economic unity of the Commonwealth and the formal equality in the Federation of the *States inter se and their people*' (emphasis added).

There is no analogous obligation for the states to treat Australia as a unitary economic entity. Indeed, the individual states have guarded their Constitutional powers jealously *vis a vis* both the Commonwealth and against each other. Nevertheless, the states have tended to adopt a pragmatic approach to a number of cross-border issues. Dollery & Wallis (2001) examine benefit areas in Australia, as well as related local government issues.

The problem of different rail gauges in Australia is well- known, but the existence of the *Border Railways Acts* of NSW and Victoria in 1922 is less familiar. Mirror legislation permitted Victoria to extend its railway network into southern NSW to facilitate transport of agricultural produce to more proximate ports from the Riverina. Similarly, the Silverton tramway linked Cockburn on the South Australian side of the border with Broken Hill in NSW, albeit with a break in gauge.

Section 92 of the Constitution declares that 'trade, commerce and intercourse among the States … [shall be] absolutely free'. While this section is complicated judicially in its interpretation, it is at least arguable that it would support unhindered access by residents of Victoria, or more particularly Wodonga, to goods and services purchased in or from Albury. It would be difficult to conceive, for example, of Victorian spectators being refused entry to a football game held in a NSW town or city. Non-NSW residents typically also have the same rights of access to services provided for NSW residents in terms of police protection, access to public roads, municipal abattoirs, parks or firefighting services.

Formal regional agreements have been concluded between the various Australian states and territories on the provision of cross-border services. The Cross-Border Justice Scheme is a partnership between Western Australia, the Northern Territory and South Australia. Covering the Ngaanyatjarra Pitjantjatjara Yankunytjatjara (NPY) lands, it allows police, judges, fine enforcement agencies, community corrections officers and prisons to deal with offences that may have occurred in another state or territory. Hufnagel (2011, p. 339) points out that of the 4,100 officers in NSW who have recognised enforcement powers (e.g. as 'special constables'), about half are serving police officers from other jurisdictions.

Queensland and NSW have cross-border arrangements covering policing and health services covering their respective Gold Coast and Tweed regions. In 2011 the Premiers signed a Memorandum of Understanding (MOU) to extend the scope of shared services along the entire NSW-Queensland border, but political changes in both states appear to have delayed signature of a more detailed agreement. Local governments on both sides of the NSW-Victorian border also collaborate in the Halve Waste program of waste management: http://halvewaste.com.au/organics/ .

An MOU signed by NSW and the Australian Capital Territory (ACT) in 2016 foreshadowed mutual recognition of occupation licences, improved transport links, health care (including sharing data on NSW residents using Canberra Hospital), tourism development, water catchment management, waste management, and emergency services following disasters. It is instructive that the Regional Director South & West of the NSW Environment Protection Authority felt able to write (29 March 2017) to the Chair of an ACT Inquiry Panel examining a proposal to construct a waste plastic to fuel facility about 500 metres from the border, in order to express his concerns about toxic emissions.

It is likely that at least some of the 537 Australian local governments limit access to municipal libraries, swimming pools or other facilities to their own ratepayers, or charge differential rates for entry. However, such arrangements can also exist in non-border regions, so they are not necessarily directly relevant to consideration of the issue of standing in border regions.

While it is essential to examine the specifics of any particular case, the Australian legal, cultural and social framework would suggest that it is at least arguable that 'benefit regions' are not clearly delineated in practice. It would therefore follow that an orthodox concept of 'standing' based on state borders is also not capable of clear and precise definition or application.

Some efficiency considerations

The general theory of second best, as formulated by Lipsey & Lancaster (1956, p. 12) is of relevance in the context of border regions:

> 'if one of the Paretian optimum conditions cannot be fulfilled a second best optimum situation is achieved only by departing from all other optimum conditions … nothing can be said about the direction or the magnitude of the secondary departures from optimum conditions made necessary by the original non-fulfilment of one condition.'

Lipsey & Lancaster (1956, pp. 15-16) refer to Smithies (1936), who considered the case of a multi-input firm seeking to maximize its profits but facing a constraint on one of the inputs. Given the constraint, marginal cost would not equal marginal productivity for the constrained input, so that 'profits will be maximized only by departing from the condition marginal cost equals marginal productivity for all other inputs'.

A conceptual constraint to efficient allocation of goods and services such as imposition of 'standing' based on the arbitrary economic geography of state borders[3], is also unlikely to produce Pareto-efficient outcomes.

An instructive example might be a proposed construction by the NSW Government or the local Council of a theatre or cultural centre in Albury. Assuming an orthodox CBA ex ante evaluation, benefits to non-NSW residents would not be counted. Assuming no Federal Government subsidies, the cost would be borne solely by the citizens of NSW. To ensure that social costs do not exceed social benefits, one might expect that the design seating capacity of the theatre would roughly match expected local demand, allowing for tourists and future population growth. But little or no allowance would be made for the residents of Wodonga, which is only about 5 km away across the Murray River.

Construction of a smaller-than-warranted theatre might result in an inability to attract prominent actors or accomplished musicians to Albury. Local consumers of drama or music would be forced to travel further afield (Melbourne, Canberra or Sydney), resulting in loss of consumer surplus because of the additional cost to them. Due to limited seating capacity, producer surplus could also be constrained because a larger theatre would have permitted attendance of patrons from Wodonga at little additional cost at each performance. Alternatively, consumer surplus could be transferred to producers if theatre prices were increased as a means of rationing demand from residents of Albury and Wodonga.

A quasi-Coasean solution might be to persuade the Wodonga Council to make at least a token financial contribution to the construction of the theatre in order to be granted formal 'standing' in the construction of the theatre in Albury. A Federal Government contribution would have the effect of making 'standing' a national matter. Alternatively, if Wodonga residents preferred to have the facility in their town, it might be possible for them to offer a Coasean side payment to Albury residents to forgo their own plans. However, simply duplicating a theatre in Wodonga would involve a loss of economies of scale and scope.

Some incongruities in the application of 'standing' by the Australian states

Application by the states of 'standing' in CBAs is not always consistent with a strict interpretation of the canonical concept. An orthodox specification of standing could be expected to include all the social costs incurred by the residents of a state, as well as the social benefits accrued by them. Effects on other states are typically not considered (Dobes et al., 2016, pp. 78-9).

[3] As Howard (2001, p. 90) points out, British Acts of Parliament established territorial borders in Australia along lines of longitude and parallels of latitude 'without necessary reference to the natural topographic or economic homogeneity of regions'.

One of the questions asked of state officials who were interviewed during the compilation of Dobes et al., (2016) was 'whose travel time savings would be counted in evaluating a proposed freeway from the airport to the CBD?'. The answer was invariably that the occupants of all vehicles would be considered because of the inability to distinguish between residents of the state and visitors from other states or other countries. It is difficult to believe that no downward adjustment could have been made using data produced by the Australian Government agency Tourism Research Australia. Including benefits to outsiders obviously biases the estimate of benefits upwards. However, one interlocutor suggested that governments generally wish to promote tourism so they would be unlikely to address any potential contradiction in methodology.

Transport agencies in the various states have also advocated for the inclusion of so-called Wider Economic Benefits in transport projects, and commissioned a supporting report from KPMG (2017). One of the claimed benefits of transport projects – an increase in the level of employment in the economy – is mooted as a source of increased income tax receipts. An increase in tax collections could be counted as an additional benefit, but income tax accrues to the Commonwealth rather than the states. A strict state-based specification of 'standing' should therefore not include income tax receipts as a benefit (Dobes & Leung 2015, p. 87).

The benefits of avoiding climate change can and should be estimated using stated preference methods, an approach adopted by authors such as Akter & Bennett (2011); Kotchen et al. (2013); and Williams (2015). However, it seems to have become the norm at all levels of government in Australia to allow for the cost of climate change by using carbon market prices. If the market price of carbon genuinely reflected the social cost of climate change in the particular state, it could be validly injected into the CBA. However, carbon markets can be affected by a range of factors, including domestic political considerations such as allocation of permits, auctions, recognition of abatement schemes, international agreements on the national quota to be met, etc. Depending on the details of the carbon market, the standing implied in carbon market prices could be global, national, or some other indeterminate type.

Conclusions

Defining 'standing' is a crucial step in any CBA because it determines whose benefits and costs are counted, and hence the bottom line of the estimated Net Present Value for a policy, project or program. More often than not, however, CBA studies fail to define standing explicitly, resulting in errors such as including federal income tax collections as a benefit for purely state-based projects (e.g. Capital Metro Agency, 2014).

Following a brief debate almost three decades ago, the academic literature generally ignored the issue of standing. The orthodox formulation is typically that costs and benefits should be counted for "society as a whole", although this begs the question of what constitutes society.

The answer is relatively straightforward at a national level if society is defined as legal citizenship, but is less clear at a sub-national level.

An alternative conceptual formulation of standing is that benefits should be counted only in respect of those who paid the taxes that are used to fund a project. This approach provides a rationale for taking a strictly state-based approach in a political federation where states or local governments have their own taxing powers. However, it is not entirely satisfactory if benefit regions do not match taxation areas, as if often the case in economically-linked border regions of contiguous states.

In federated countries like Australia or the USA there is a lack of strict concordance between taxation areas and benefit regions. States rarely if ever discriminate on the basis of residency of state in providing access to common goods or services such as police protection, emergency services, hospitals, parks or roads. New South Wales, for example, even accepts Seniors Cards from the Australian Capital Territory in providing train travel discounts to the elderly. Tax transfers between levels of government in the form of intergovernmental grants also muddy the source of funding for individual projects, especially where revenue is distributed by the Commonwealth Grants Commission.

An orthodox approach to standing is therefore inconsistent with reality, particularly in the border regions of Australia. The balance of argument would seem to favour a more universalist approach in border regions as a standard default position. In other words, in cases such as the Albury-Wodonga, Canberra-Queanbeyan or Tweed Heads-Coolangatta, standing should in general not be defined from a strictly state-based perspective unless the facts dictate otherwise.

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