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The Economic Core? The Aboriginal Contribution to the Alice Springs/ Central Australian Economy

Abstract

The purpose of this paper is to estimate the contribution that expenditure by Aboriginal people, and related institutions and activities, makes to the Central Australian/Alice Springs economy. Expenditures estimated include: those by Aboriginal people in Alice Springs; expenditure in Alice Springs by institutions which deal exclusively or extensively with Aboriginal people; and the expenditures which persons and organisations located in adjacent Aboriginal communities and outstations make within Alice Springs. In addition, the contribution to tourism expenditure of Aboriginal people and culture will be estimated. Sources of data for this study include the ABS 2006 Census, survey results from institutions in Alice Springs and from community organisations that purchase supplies from Alice Springs, and a survey of tourists. Our conclusions are that the Aboriginal proportion of the Alice Springs and Central Australian economy is both core to that economy and has grown slightly in relative measure over the past two decades.

Cover Page Footnote

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Introduction

This paper estimates the contribution made by Aboriginal people and their organisations, plus linked services, to the Alice Springs economy specifically, as well as more broadly to the Central Australian economy, of which Alice Springs is the focus. Alice Springs is a modern service centre, broadly operating in the mainstream capitalist economy of Australia. This is an economy unlike, but closely linked, to its predominantly Aboriginal hinterland economy. There is clear evidence to suggest that the economic structure of Aboriginal communities is quite different from that of non-Aboriginal communities. Altman (2001, p. 2), for example, notes that in some remote Aboriginal communities "...the market (or the private sector) is at best small, at worst non-existent". That is true for many Aboriginal communities in Central Australia. As well there is evidence to suggest that many Aboriginal people are not 'connected' to the market economy in the same ways as many non-Aboriginal people. The two forces that have driven inequality in Australia over the past three decades – globalisation and technological change (Gaston and Rajaguru, 2009) – have disproportionately disadvantaged remote Central Australian Aborigines. Thus Aboriginal people are less likely to have formal employment than non-Aboriginal people, and many of those supposedly 'employed' are in the Community Development Employment Program (CDEP¹), essentially 'earning' money from outside the region. Yet many publicly funded data collection institutes do not collect data that specifically enables researchers to determine what proportion of the Alice Springs economy is attributable to the presence of Aboriginal families and communities.

In 2008, for example, the Northern Territory Government released a report on the Alice Springs economy (NTG, 2008). Despite the fact that this report provided extensive information about the Alice Springs economy, and about the numbers of Aboriginal people within the region, most of the economic/financial data were not disaggregated by Aboriginal status. So whilst the report contains much good quality information about the Alice Springs economy overall, there is a paucity of relevant information about the regional Aboriginal economy, or about the way in which the Aboriginal economy interacts with the non-Aboriginal economy. Indeed, it has been 20 years since the last, extensive, study of the Aboriginal

¹ Initiated in 1977, the CDEP program provided work for its participants in lieu of unemployment benefits. Participants worked four days per week at award wages for the number of hours that equalled their entitlements from unemployment benefits. In effect it was/is a "work-for-the-dole" scheme. For more information see <http://www.fahcsia.gov.au/sa/indigenous/progserv/families/cdep/Pages/default.aspx>

economies of the Alice Springs region (Crough et al., 1989). This paper aims to address the paucity of information by examining the importance of Aboriginal people to the Alice Springs economy.

Methodologically, one way of trying to determine the importance of Aboriginal people to the Alice Springs economy is to raise the hypothetical question:

What would be the economic impact on Alice Springs of a change in the Aboriginal population?

One could then seek to answer this question by determining how much regional expenditure is directly attributable to the Aboriginal population, and then use some sort of general equilibrium model, preferably a computable general equilibrium (CGE) model but an Input-Output model might suffice, to calculate indirect impacts of that expenditure. These could be applied because this region does not exhibit “cross-hauling” (both exporting and importing the same product – cf Kronenberg, 2008). However, one can not use either a CGE or an Input-Output model to make predictions about the way in which the Alice Springs economy might be affected by a change in the Aboriginal population if one does not understand the expenditures associated with Aboriginal people. In other words, to answer the question posed above, one must first answer the following question:

How would regional demand (spending patterns) change if there was a change in the Aboriginal population?

It is on this second question that this paper focuses. The authors seek to quantify expenditures within Alice Springs that are directly or indirectly associated with Aboriginal people, thereby providing important information about the economic ‘importance’ of the Aboriginal population to Alice Springs.

There are three ways in which Aboriginal people impact on the Alice Springs economy. These are:

1. Through the effects of government and private expenditures due to the presence of Aboriginal people.
2. Through the beneficial effects for industries from the presence of local Aboriginal people (for example, tourism) and through the detrimental effects (for example, the possible discouragement of tourists because of anti-social behaviour by some Aborigines. However this is probably counter-balanced by increased public agency expenditures because of

Aboriginal social problems).

3. The multiplier effects of (1) and (2).

The research reported in this paper concentrates on (1), and also on part of (2) – specifically the beneficial effects which the presence of local Aboriginal people have on regional tourism revenues (which can be loosely be thought of as the regional export earnings attributable to the presence of Aboriginal people). The – paper is structured as follows.

- 1 Section two defines the Central Australian geographic region of which Alice Springs is the service hub and business centre.
- 2 Section three focuses on effect (1), namely government and private (residential) expenditures that occur because of the presence of Aboriginal people. It starts with a general description of the methods used to estimate this type of impact, and then goes on to provide detailed estimates of its magnitude.
- 3 Section four looks at the extent to which Aboriginal culture & heritage supports and contributes to the local tourism industry. Here too, we start the section by providing some general methodological background to our approach, and then go on to give results – carefully explaining the way in which those results were derived.
- 4 Section five offers some concluding remarks.

The Central Australian Economic Region

This study is concerned with communities, outstations and locations that have an impact on the Alice Springs economy. It examines the region used by Crough et al. (1989) in their earlier study, and includes the following communities:

- Petermann/ Simpson
- Mutitjulu
- Tanami
- Yuendumu
- Sandover
- Hermannsburg (Ntaria)
- Tjuwanpa Outstation
- Anmatjere
- Urapuntja Outstation
- Ltyentye Purte
- Ingkerreke Outstation/
Iwupataka
- Mindibungu
- Warburton Community
- Balgo
- Anangu Pitjantjatjara (AC)

Because it includes areas adjacent to the Northern Territory, the Ngaanyatjara

lands in Western Australia and the Pitjantjatjara and Yankutjatjara areas of South Australia, our 'region' is larger than that used in the NT Government study (NTG, 2008).

Estimating the Government and Private Expenditure that is Attributable to the Presence of Aboriginal People

Methodological approach

It is not just the Aboriginal people who live in Alice Springs who spend money in, and thus bring financial benefit to, the town of Alice Springs. There are many people living in outstations and communities in the surrounding region who rely upon Alice Springs-based businesses and organisations to supply their goods and services. Consequently, the economy of Alice Springs depends upon (a) the expenditure of people and organisations within outlying communities and outstations; and (b) the expenditure of people and organisations within Alice Springs itself.

Formally, the total expenditure within Alice Springs that is attributable to the existence of the Aboriginal population (E) can thus be quantified as:

$$E = E^C + E^A \quad (\text{Equation 1})$$

Where

E^C = total expenditure in Alice Springs by those who live in communities outside Alice Springs that is directly attributable to the existence of the Aboriginal population

E^A = total expenditure in Alice Springs by Aboriginal people living in Alice Springs and by organisations located in Alice Springs that exist because of the presence of the Aboriginal population there and in the broader region.

So far as the communities and associated outstations are concerned, one can calculate the effects of government and private expenditures in the area that occur because of the presence of Aboriginal people as the sum of:

- 1 the local expenditures by Aboriginal people plus expenditures by non-Aboriginal people working in Aboriginal related institutions, plus
- 2 the expenditures by Aboriginal related institutions in the region on non-labour items.

Formally:

$$E^C = \alpha_1\beta_1Y^C + \alpha_2\beta_2Y_n^C + \alpha_3NWE^C \quad (\text{Equation 2})$$

Where

Y^C = incomes of Aboriginal people who live in communities - from all sources, including wages, pensions, family benefits, royalties paid to persons (would not have been paid to non-Aboriginal people)

α_1 = the proportion of expenditures by Aboriginal people spent on goods and services supplied in Alice Springs

β_1 = the Aboriginal average propensity to consume

Y_n^C = same as Y^C only for non-Aboriginal people living in communities

α_2 = the proportion of expenditures by non-Aboriginal people living on Aboriginal communities spent on goods and services provided in Alice Springs

β_2 = the average propensity to consume of Non-Aboriginal employees living in Aboriginal communities

NWE^C = non-wage expenditures by community-based organisations in the communities (including the community store, council, community organisations, school, police station, clinic, cattle company, etc.)

α_3 = the proportion of non-wage expenditures by these organisations that is spent on goods and services provided in Alice Springs

So far as Alice Springs is concerned, one can calculate the effects of government and private expenditures in the area because of the presence of Aboriginal people as the sum of:

- the local expenditures by Aboriginals, plus
- the expenditures by Aboriginal-related institutions in the region on both labour and non-labour items.

More formally:

$$E^A = \alpha_4\beta_4Y^A + \alpha_5EO^A \quad (\text{Equation 3})$$

Where

Y^A = The incomes of Aboriginal people who live in Alice Springs - from all sources, including wages, pensions, family benefits, and mining royalties

α_4 = The proportion of expenditures by Aboriginal people who live in Alice Springs that is spent on goods and services in Alice Springs

$\beta_4 = \beta_1$ = The Aboriginal average propensity to consume

EO^A = expenditures by the organisations in Alice Springs which exist because of the presence of Aboriginal people but does not include Aboriginal wages

α_5 = the proportion of expenditures by those organisations that is spent on goods and services in Alice Springs

Consequently, the total expenditure within Alice Springs that is attributable to the presence of the Aboriginal population can be calculated as:

$$E = E^C + E^A = \alpha_1\beta_1Y^C + \alpha_2\beta_2Y^C_n + \alpha_3NWE^C + \alpha_4\beta_4Y^A + \alpha_5EO^A \quad (\text{Equation 4})$$

Equation 4 clearly indicates the information needed about the expenditure patterns of individuals (to estimate α_1, β_1, Y^C , α_2, β_2, Y^C_n , α_4, β_4 , and Y^A) and about organisations whose existence depends upon the presence of Aboriginal people (this allows one to estimate ($\alpha_3, NWE^C, \alpha_5$, and EO^A)).

Results

As is evident from the foregoing discussion, if one wishes to estimate the contribution Aboriginal people make to the Alice Springs economy, one must collect data on a variety of different variables relating to the incomes and expenditures of individuals and institutions. Our estimates are as follows:

Individual data

$$\alpha_1 = 0.95$$

$$\beta_1 = 1 \text{ (assumed)}$$

$$Y^C = \$82,949,100$$

$$\alpha_2 = 0.66$$

$$\beta_2 = 0.66$$

$$Y^C_n = \$68,793,764$$

$$\alpha_4 = 1 \text{ (assumed)}$$

$$\beta_4 = 1 \text{ (assumed)}$$

Organisational data

$$\alpha_3 = 34\text{percent}$$

(assumed)

$$NWE^C = \$16,432,187$$

$$\alpha_5 = 70\text{percent}$$

$$EO^A = \$100,000,000+$$

$$Y^{AS} = \$43,656,600$$

Substituting those estimates into Equation 4 allows us to estimate the economic contribution which Aboriginal people make to Alice Springs economy:

$$\begin{aligned} E &= E^C + E^{AS} \\ &= \alpha_1\beta_1 Y^C + \alpha_2\beta_2 Y_n^C + \alpha_3 NWE^C + \alpha_4\beta_4 Y^A + \alpha_5 EO^A \dots (4) \\ &= 0.95 \times 1 \times 82,949,100 + 0.66 \times 0.66 \times 68793,764 + \alpha_3 ECnw \\ &\quad + 1 \times 1 \times 43,656,600 + \alpha_5 EO^A \\ &= \$152,424,808.6 + \alpha_3 ECnw + \alpha_5 EO^A \end{aligned}$$

Details on the way in which we arrived at that estimate are given below.

Individual Income and Expenditure

To calculate Y^C , Y_n^C and Y^A , one needs information about Aboriginal and Non-Aboriginal Income and Expenditure within Alice Springs and the surrounding communities. Here we used data from the ABS 2006 Census and ABS Expenditure Surveys (ABS 2005a, 2005b)

Table 1: Aboriginal and Non-Aboriginal Income in Alice Springs and surrounding Communities and Outstations

Region	Total Aboriginal Income \$ per region p. a. Y	Total Non-Aboriginal Income \$ per region p. a Y _N	Total income – Aboriginal and Non- Aboriginal \$ per region p. a Y + Y _N
Petermann/ Simpson	\$6,398,600 N=556	\$28,360,332 N=787	\$34,758,932
Mutitjulu	\$2,115,100 N=150	\$1,967,680 N=43	\$4,082,780
Tanami	\$11,839,100 N=1082	\$10,707,840 N=220	\$22,546,940
Yuendumu	\$5,723,900 N=427	\$2,647,008 N=63	\$8,370,908
Sandover	\$4,797,000 N=425	\$3,561,324 N=111	\$8,358,324
Hermannsburg (Ntaria)	\$3,807,700 N=310	\$1,518,192 N=36	\$5,325,892
Tjuwanpa Outstation	\$2,037,100 N=182	\$254,800 N=7	\$2,291,900
Anmatjere	\$6,448,000 N=545	\$2,915,328 N=73	\$9,363,328
Urapuntja Outstation	\$5,479,500 N=462	\$702,000 N=15	\$6,181,500
Ltyentye Purte	\$3,055,000 N=287	\$297,960 N=15	\$3,352,960
Ingkerreke Outstation/ Iwupataka	\$3,689,400 N=299	\$1,462,864 N=52	\$5,152,264
Mindibungu	\$2,589,600 N=248	\$1,638,000 N=36	\$4,227,600
Warburton Community	\$527,800 N=54	\$537,992 N=14	\$1,065,792
Balgo	\$2,856,100 N=336	\$1,887,340 N=35	\$4,743,440
Anangu Pitjantjatjara (AC)	\$14,220,700 N=1245	\$9,108,736 N=224	\$23,329,436
Alice Springs Town Camps	\$7,364,500 N=697	\$1,226,368 N=32	\$8,590,868
Total for communities and Outstations	Y ^c = \$82,949,100 N=7,305	Y ^c _N = \$68,793,764 N=1,763	\$151,742,864
Alice Springs (excluding town camps)	\$43,656,600 N=1890		
Total for Alice Springs and Town Camps	Y ^A = \$52,247,468		\$52,247,468

Data source: ABS 2006 Aboriginal Profiles for Aboriginal Areas (specified in column 1), ABS 2005a, 2005b)

As regards expenditure patterns (the propensity to consume and to purchase goods and services from Alice springs), the only comprehensive study of income and expenditure in Australia is the *Household Expenditure Survey*, conducted by the Australian Bureau of Statistics at five yearly intervals. Yet the survey does not collect information about the Aboriginal status of respondents, and households in collection districts defined as very remote or Aboriginal communities are excluded from the ABS's sample. We therefore use information from the ABS, in conjunction with that of other studies to help draw inferences about income and expenditure in our target regions, acknowledging that our estimates, are just that – estimates – and stressing the need for better data.

β_1 (Aboriginal average propensity to consume). We have assumed that the overall average propensity to consume for Aboriginal people living in communities and outstations (β_1) is unity. That is, there are no net savings over a year. This accords with findings of Musharbash (2001), who reports that expenditures on food and clothing exhausted 93 percent of income for Aboriginal persons living in Yuendumu – the remaining 7 percent of income was spent on items such as ‘oranges, candles and rent’.

α_1 (The proportion of expenditures by Aboriginals spent on goods and services supplied in Alice Springs). We have assumed that all goods and services consumed by Aboriginal people are either purchased within their local community (E^C), or within Alice Springs (E^{AS})

E^C : *Purchases within the local community* are generally on items such as groceries, clothing, camp gear, fuel for vehicles, travel to destinations outside the community, rent, fast food (mainly chicken), and alcohol (where available). This means that almost all expenditures go through a small number of community institutions: the store (groceries, clothes, camp gear, fast food, fuel, etc.), the canteen, and the housing association.

E^{AS} : *Direct purchases from Alice Springs*. Probably the main direct expenditures in Alice Springs are: purchases of motor vehicles; and purchases of fuel, clothing, alcohol and food, and some accommodation, while in Alice Springs. Given that we are only looking at communities that are closely linked with Alice Springs, we have assumed that all of the non-community expenditure takes place in Alice Springs.

Without detailed expenditure data, we cannot estimate E^C or E^{AS} directly

however it is, nonetheless, possible to use data from the 2003-04 Household expenditure survey (ABS, 2005) to draw inferences about the likely proportion of expenditure that is spent within the communities rather than within Alice Springs. Specifically, we have assumed that the expenditure patterns of Aboriginal persons within communities are similar to those included in the HES – in terms of the proportion of total expenditure being spent on different goods and services. We have then identified broad categories of goods and services which are not readily available within communities, assuming that other items must be purchased within Alice Springs. This has allowed us to estimate that $E^C \approx 0.67Y$ and that $E^{AS} \approx 0.33Y$ (see Table 2) again assuming that savings are equal to zero. Consequently, the proportion of Aboriginal expenditure that is spent within Alice Springs will be approximately equal to:

$$\begin{aligned}\alpha_1 &= (E^{AS} + \phi E^{LC})Y / Y \\ &= E^{AS} + \phi E^{LC} \\ &= 0.67 + \phi 0.33 \\ &= 0.67 + 0.85 \times 0.33 \\ &= 0.95\end{aligned}$$

Where:

ϕ is the proportion of income earned within community (and outstations) stores that is spent within Alice Springs – as ascertained in the survey of community stores.

Table 2: The proportion of total goods and services expenditure – for all Households in Australia

Broad expenditure group	Proportion of total goods and services expenditure spent within this broad expenditure group
Goods and services which are likely to be available within communities	
Recreation	12.8
Personal care	1.9
Food and non-alcoholic beverages	17.3
Current housing costs (selected dwelling)	15.3
Household services and operation	6.4
Domestic fuel and power	2.7
Tobacco products	1.3
Clothing and footwear	4
Household furnishings and equipment	5.9
Proportion of total expenditure likely to be spent within community	67.6
Goods and services which are less likely to be available within communities	
Transport	15.8
Medical care and health expenses	5.2
Alcoholic beverages	2.6
Miscellaneous goods and services	8.9
Proportion of total expenditure likely to be spent within community	32.5

Data source: Household Expenditure Survey (ABS, 2005, p. 34)

β_2 (The average propensity to consume of non-Aboriginal employees living in Aboriginal communities). Here too, there are no readily available data. However, it is worth noting that since December 2005, Australia's National Accounts indicated that final consumption expenditure has been close to 90

percent of gross disposable income and approximately 34 percent of gross total income (Econdata, 2009). This indicates that the national average propensity to consume out of total income is approximately 66 percent, and it is this figure that is used here.

α_2 (The proportion of expenditures by non-Aboriginal people spent on goods and services provided in Alice Springs). Many non-Aboriginal people who live in communities surrounding Alice Springs are able to purchase at least some goods and services outside the local area. Specifically, they will spend some of their money within the local community (E_N^C), some within Alice Springs (E_N^{AS}), and some outside the region (E_N^O). So the non-Aboriginal propensity to purchase goods locally (α_2) is likely to differ from the Aboriginal propensity α_1 (calculated above as 0.95). In Table 3 we have, therefore, incorporated information from the Gulf Savannah Report (2008), concerning the propensity of residents in remote areas to purchase different types of goods or services ‘locally’ with that of the ABS’s HES to draw inferences about α_2 . Specifically, we estimated E_N^C by multiplying the entries in column *a* with those of column *b*, and adding to get column *c*. Similarly, E_N^{AS} was estimated by multiplying the entries in column *a* with those of column *c* and summing the results. Consequently, our estimate of α_2 is:

$$\begin{aligned}\alpha_2 &= (E_N^{AS} + \phi E_N^C)Y / Y \\ &= E_N^{AS} + \phi E_N^C \\ &= 0.23 + \phi 0.50 \\ &= 0.23 + 0.85 \times 0.50 \\ &= 0.66\end{aligned}$$

Where:

ϕ is the proportion of income earned within community (and outstation) stores that is spent within Alice Springs – as ascertained in the survey of community stores.

β_4 (The Aboriginal average propensity to consume) was assumed equal to $\beta_1 = 1$.

α_4 (The proportion of expenditures by Aboriginal people who live in Alice Springs on goods and services provided in Alice Springs) was also assumed equal to one.

Table 3: The propensity of non-Aboriginal people living within Communities to purchase goods and services within Alice Springs ‘locally’

Broad expenditure group	Proportion of total goods and services expenditure spent within this broad expenditure group (a)	Assumed proportion of goods purchased within ‘local’ community – taken from the Gulf Savanna Economic Leakage Report unless otherwise specified (b)	Assumed proportion of goods purchased in Alice Springs – assumed equal to one-half of (1-(b)) unless otherwise specified (c)
Recreation	12.8	0	0.5
Personal care	1.9	0	0.5
Food and non-alcoholic beverages	17.3	0.7	0.15
Current housing costs (selected dwelling)	15.3	1	0
Household services and operation	6.4	1	0
Domestic fuel and power	2.7	1	0
Tobacco products	1.3	0.58	0.31
Clothing and footwear	4	0.22	0.39
Household furnishings and equipment	5.9	0.22	0.39
Transport	15.8	0.51	0.25
Medical care and health expenses	5.2	0.10	0.05
Alcoholic beverages	2.6	0	0.5
Miscellaneous goods and services	8.9	0.22	0.39

Organisational Income and Expenditure

When compiling information about the income and expenditure patterns of individuals, we were, at least to some extent, able to rely upon published literature – e.g. from the ABS. However, there is almost no published literature on the expenditure patterns of organisations that operate in and around Aboriginal communities (hereafter referred to as Community organisations), or about the expenditure patterns of organisations which are located in Alice Springs, and which exist because of the presence of Aboriginal people. That data had to be collected as part of this research process.

To that end, the authors set out to compile a list of Community organisations and Organisations located in Alice Springs, which are, essentially, Aboriginal organisations. Twenty three of these voluntarily participated in our survey. The remainder either did not provide information or could not be contacted (i.e., they were smaller organisations where the key staff may have been out of town or on leave). Also, most organisations that are located within Aboriginal Communities are but local/branch offices of larger organisations (e.g., all schools, all clinics, all police stations, and some community stores). In most cases, these ‘branch offices’ do not make expenditure decisions: it is the parent organisation – most frequently located in Alice Springs – that allocates any expenditure. Consequently, researchers did not need to contact each and every community-based organisation individually: data could be collected from head-offices in Alice Springs. We secured the participation of the major/largest Aboriginal Organisations, so we are confident that we have included at least 85 percent of expenditure in our data.

NWE^C the non-wage expenditures by the organisations located in the communities and outstations.

Researchers were able to collect data on the expenditure patterns of 7 community stores – approximately 30 percent of all stores in the region. In total, these stores had non-wage expenditures of approximately \$2,250 per resident Aboriginal person. Assuming that the spending patterns of the non-surveyed stores are similar to those included in our survey, this indicates that the total non-wage expenditures of community stores within our region of enquiry is approximately \$16,432,187 (2250 x 7305)

α_3 the proportion of expenditures by these organisations that are spent in Alice Springs – our survey indicated that approximately 70 percent of the non-wage expenditures of community-based stores were in the Alice Springs

region. The figure is slightly higher for most other Aboriginal organisations.

EO^A expenditures by the organisations in Alice Springs which exist because of the presence of Aboriginal people.

α_5 = the proportion of expenditures by these organisations that are spent in Alice Springs

Estimating the Tourism Revenues that are Attributable to the Presence of Aboriginal People

Methodological background

If the opportunity to see/experience Aboriginal culture encourages visitation to Alice Springs (and added expenditure), then it is clear that the presence of Aboriginal people is of benefit to the regional economy because they are helping the region earn export dollars. Yet one cannot claim that it is Aboriginal culture itself that is directly responsible for all tourism in the Alice Springs region. Some people, for example, come to the region to visit friends and relatives, pass through it en route to other destinations, some come on business trips, and some travel to the region especially to see Uluru (Tourism Australia, 2008). Consequently, only some of the region's tourism earnings are directly attributable to presence of Aboriginal people.

The key problem here, however, is that without more information, one cannot determine what proportion of total visitor expenditure is attributable to Aboriginal culture (Heaney and Salma, 2003). The approach taken here, therefore, was to follow the lead of researchers who have tried to estimate the economic impact of other components of the overall tourism 'product' – such as wildlife (see Crabtree et al., 1994; Utech, 2000; Parsons et al., 2003; and SQW Co UK, 2006) – by designing a survey instrument which allows one to elicit such information directly from the tourists.

To be even more specific, this study collected data from a sample of 178 visitors who went to Uluru during April, 2009. This was done because, unlike in Alice Springs, large numbers of tourists are more concentrated in particular places at Uluru. Visitors were selected randomly from various locations, mostly car parks, around tourist sites or the Uluru viewing area. Consequently, self-drive tourists are slightly over-represented in the survey and tourists on coach or guided tours are under-represented.

The survey asked visitors to provide information about their expenditure while in the Alice Springs region (including information about expenditure on Aboriginal arts, crafts and cultural shows) and also sought to determine the extent to which the presence of local Aboriginal culture encouraged them to visit the region. This allowed us to estimate the regional economic impact of visitor expenditure that is generated by the presence of Aboriginal ‘culture’ (hereafter termed *Aboriginal Cultural Tourism*).

Results

In the first instance, respondents were asked to indicate the approximate amount that they had spent per day on different categories of goods. This was done by asking them to tick an appropriate expenditure category, as per the questionnaire excerpt below:

Item – Cost PER DAY	\$0	\$1-20	\$21-50	\$51-100	\$101-150	\$151 - 200	\$201-300	>\$300
<i>Food or drinks from a takeaway</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Meals in a café or restaurant</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Groceries</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Accommodation</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Other (please specify):</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sample question from visitor survey.

When estimating total expenditure on each category of goods, we used the mid-point of each (e.g. \$35 for the range \$21-\$50; \$75 for the range \$51–100, etc.) – although the lowest amount (e.g. \$300) was used for the top category, giving an unambiguous conservative (downward) bias to final estimates.

These mid-points were then added together to arrive at an estimate of daily regional expenditures across all items – as shown in the table below. Visitors were also asked to indicate the total number of days they spent in the Uluru and Alice Springs region, and the total regional expenditure was calculated by multiplying their daily expenditure by the total days spent within the region.

Table 4: Mean daily expenditure, days in region and total expenditure – \$AUS per visitor by visitor type

Expenditure Category	International visitor	Domestic visitor	Mean
Daily regional expenditure	247.52	221.09	233.18
Days spent within the region	4.08	5.78	4.99
Total regional expenditure per visitor	950.41	1156.19	1062.12

Mean preliminary estimates indicate that respondents spent between \$950 and \$1,150 while in the region (Table 4). These figures are higher than those reported in Tourism Australia's profile of visitors to the Town of Alice Springs (Tourism Australia, 2008), where expenditure per visit for domestic and international visitors was \$660 and \$369 per person, respectively. Nevertheless, it should be noted that the Tourism Australia study includes all visitors to Alice Springs – at least some of whom may not have visited Uluru. And since there is a wider variety of tourism establishments in Alice Springs than there are in Uluru, prices can be expected to be lower in the former than the latter location. That the mean daily expenditure of visitors to Uluru is higher than that of visitors to Alice Springs thus seems to be consistent with expectations. Furthermore, the expenditure of visitors to Uluru is approximately consistent with that of visitors to Northern Territory as a whole - \$952 per person for domestic visitors and \$1077 for international visitors (Tourism Australia, 2008).

Clearly, the money which visitors spend on Aboriginal souvenirs, and at attractions which focus on Aboriginal culture and heritage is money that one can directly attribute to the presence of Aboriginals: indeed each visitor to Uluru spent approximately \$50 per day on goods and services directly related to Aboriginal culture and heritage (a total of approximately \$230 per visitor for the entire stay). However, it is possible that at least some of the other expenditure is also attributable to Aboriginal people. This is because some visitors may have come to the region specifically for the opportunity to experience Aboriginal culture and heritage.

To ascertain the importance of the presence of Aborigines to regional tourists, respondents were asked to indicate whether they would or would not have come to the region if they were not able to see/experience Aboriginal culture and heritage – as per the question below.

Would you have taken this trip to the Alice Springs/Uluru region if you had ***not*** been able to see/experience Aboriginal Culture and Heritage? ***Please tick appropriate box***

Yes, and would have spent the same amount of time in the region

Yes, but I would have spent less time/fewer days in the Alice Springs/Uluru region

If so, how much LESS time? (e.g. two days less, one-half day less)

.....

No, I would not have come to the Alice Springs / Uluru region

I don't know

Responses to that question were used to determine how much total (per visitor) regional expenditure was attributable to *Aboriginal Cultural Tourism* - hereafter termed *Attribution*. Specifically,

- 1 If the respondent said that he/she would have come to region even if they could not see/experience Aboriginal culture and heritage, Attribution was set to zero.
- 2 If the respondent said that he/she would not have come to the region if they could not see/experience Aboriginal culture and heritage (i.e., they would have travelled elsewhere or not taken the trip away from home) *Attribution* was set to one.
- 3 If the respondent said that he/she would have still come to region but would have spent less time, then Attribution was calculated as:
the reduction in time that would have occurred, divided by the total time actually spent in the region
- 4 If the respondent said that he/she did not know if they would still have come to the region, then Attribution was set to zero – creating an unambiguous downward bias in our final estimates.

This information was then used to calculate the total regional expenditure attributable to Aboriginal culture (hereafter referred to as *Attributable Expenditure*) by multiplying Attribution by total regional expenditure:

(per-person) Attributable Expenditure =

Expenditure directly attributable to Aboriginal culture
+
Expenditure that is indirectly attributable to Aboriginal culture

Where:

- Expenditure that is indirectly attributable to Aboriginal culture = Monies spent on Aboriginal cultural attractions and on Aboriginal art and souvenirs.
- Expenditure that is indirectly attributable to Aboriginal culture = Total regional expenditure (excluding monies spent on Aboriginal cultural attractions and on Aboriginal art and souvenirs) multiplied by Attribution

As is evident from the table below, a relatively small proportion of total expenditure is directly attributable to the presence of Aboriginal culture and heritage.

Table 5: Expenditures, and the proportion of expenditures attributable to Aboriginal Culture and Heritage (\$AUS, per visitor)

	International visitor	Domestic visitor	Mean
Total expenditure on all goods and services	950.41	1156.19	1062.12
Total expenditure on Non-Aboriginal goods and services	717.17	915.28	824.11
Proportion of Non-Aboriginal expenditure attributable to Aboriginal Culture	.08	.13	.11
Total expenditure on Non-Aboriginal goods that is indirectly attributable to Aboriginal Culture	60.20	196.24	132.81
Expenditure on Aboriginal goods and services	221.51	240.90	231.98
Total expenditure attributable to Aboriginal Culture	276.37	437.14	362.18
Average percent of total expenditure attributable to Aboriginal Culture	29.08	37.81	34.10

One way of attempting to use this data to draw inferences about the importance of Aboriginal culture to the local tourism industry is to multiply the per-person expenditures that are attributable to Aboriginal culture by estimates of the total

number of visitors to Alice Springs in any given year. However, as noted before, the expenditure patterns of visitors to Uluru are not likely to be representative of the expenditure patterns of all regional visitors (e.g., those who do not travel to Uluru). Consequently, such an approach would be likely to generate an overestimate. The approach taken here, therefore, was to use our survey data to generate an estimate of the percentage of total regional expenditure that is attributable to Aboriginal culture, and to multiply that percentage by external estimates of the total expenditure of tourists to the Alice Springs region - \$67 million for International Visitors, and \$164 million for Domestic Visitors (Tourism Australia, 2008).

This indicates that Aboriginal culture and heritage may be directly responsible for the creation of more than \$80 million dollars of regional tourism income (29 percent of \$67m + 38 percent of \$164m).

Discussion

The NT Government's Alice Springs economy report (NTG, 2008) indicated that in 2007/08 the Gross Regional Product (GRP) in Alice Springs was equal to \$1,478m. If we also include the greater Alice Springs/Central Australian economic region, then we get a GRP of \$2,302m. The latter is the more correct measure since it aligns with our Central Australian economic region, which includes across-border communities in eastern WA and northern South Australia.

The incomes and expenditures of (a) Aboriginals and (b) non-Aboriginals working on Aboriginal communities amount to more than \$150 million per annum, which is approximately 6.5 percent of the Alice and surrounding regional economy.

Adding tourism expenditure that is Aboriginal inspired - some \$80 million - brings the Aboriginal impact up to \$230m, or 10 percent of the regional economy.

Then we need to allow for organisational expenditure. Our survey of 23 Alice Springs-based Aboriginal organisations found that their expenditure within the region was of the order of over \$120m. Because a proportion of these organisations' expenditure (less than 15 percent of the aggregate) was spent outside the region (for consultants, certain types of supplies, etc) we have assessed these bodies' in-region expenditure at \$100m. Again this is a very conservative estimate because there were Aboriginal-controlled organisations that we were unable to include in the survey. In addition, some of the Aboriginal

organisations surveyed for this paper have investment income that is not included in the total. For example, the Central Land Council has a controlling interest in an investment company, CentreCorp that owns, either wholly or partly, significant real estate and business investments in Alice Springs. Lhere Terpe, an Aboriginal landowners organisation also holds significant real estate investment (partly through a beneficial interest in CentreCorp) and is currently engaged in property development. We did not attempt to attribute values to the capital of Aboriginal Organisations' investments, we merely sought to obtain the income figures from those investments. Interestingly no other economic study here cited outlines these investments, suggesting that they have developed relatively recently.

Aboriginal organisational expenditure brings the directly Aboriginal-derived proportion of regional GRP up to at least 14.3 percent. If we add \$17m in mining and park lease royalties that are paid annually, the Aboriginal proportion of the Central Australian economy rises to about 15 percent.

If (as in Crough et al., 1989) we then allocate a *pro rata* proportion of total Northern Territory agency expenditures in Central Australia to Aboriginal purposes, the figures become even more impressive. We assume 40 percent of regional expenditure by the NT Government is for services to Aboriginal people. Again this is a very conservative estimate. Although they form only 38 percent of the Central Australian population, almost certainly health and public safety expenditures for Aborigines are much higher than 40percent of the total outlays in those areas. For example, in 1999, the Australian Aboriginal-non-Aboriginal ratio for health expenditure was about 1:63 (excluding MBS and PBS costs, which do not apply to many Aboriginal Central Australians). Given that remote schools are much more expensive to run than urban schools (as the NT Government annually tells the Commonwealth Grants Commission) it is probable that this estimate also under-states the Aboriginal impact on educational expenditures. So we have under-estimated Aboriginal-related expenditure for the three largest portfolio outlays. In any case our *a priori* assumption that 40 percent (of about \$310m) means that at the very least a further \$120m of NT expenditures are for services to Aboriginal people. In fact it could easily be as high as \$180m. In any case these outlays add at least 5 percent and possibly as much as 10 percent to the Aboriginal-derived proportion of the Alice Springs economy.

Being more definitive is difficult because of the difficulty of separating Commonwealth government outlays from NT ones. Our figures do not include direct Commonwealth expenditure on its own program grants (as distinct from the income transfers noted above). Commonwealth specific purpose program budgets do not indicate if the NT Government's agencies (or NGOs) deliver Federal

programs. The NT Government's expenditures, as outlined in its annual Budget Papers, undoubtedly include some Commonwealth financed Specific Purpose Payments. And several NGOs, such as Greening Australia, deliver Commonwealth programs. We have excluded the Commonwealth and NGO expenditures because we cannot produce accurate estimates for their outlays separately from the NTG outlays. Because of this exclusion, our estimates for governmental program expenditure are exceedingly conservative. Only further detailed analysis, to separate out where expenditures actually derive, could prevent us from double-counting if we incorporated Federal government outlays into our global estimates. Nevertheless, anecdotal evidence suggests that the Commonwealth is supposedly spending at the very least \$50m on its own purpose outlays (that are not accounted for here). However, in the interests of conservatism we do not add this figure to our calculations. It should also be noted that after our survey period, under the rubric of the NT Emergency Response (the "Intervention"), introduced in 2007, the Commonwealth has been putting hundreds of millions (even billions) of dollars into programs such as Remote Service Delivery, Remote Indigenous Housing and other programs in the health and early childhood areas (e.g., Russell, 2010: Table 1). Significant amounts of these outlays would be expended in the Central Australian regions.

We have also excluded some organisations that do not allow for a derivation of Aboriginal-directed expenditure as a proportion of their total expenditure. For example, the Alice Springs-based *Imparja* TV is formally an Aboriginal owned and controlled television station with a footprint over most of remote Australia. *Imparja* operates as if it were a franchise of Channel 9 so we have not included it here. Similarly we have excluded organisations such as the Centre for Appropriate Technology, the Institute for Aboriginal Development and Charles Darwin University (Alice Springs campus), where we could only make guesstimates of Aboriginal-derived expenditure on training and consultancy. These latter three would probably add \$10-15m to the Aboriginal-derived expenditure in Central Australia. So it is clear that at least 30 percent of the GRP of Alice Springs and its region are derived from the existence of the Aboriginal people of the town and region. And in all probability the figure is closer to if not greater than 35 percent for the period 2005-2007. As noted above, Commonwealth derived expenditure has increased rapidly since 2007.

Conclusion

The 1989 study of the Aboriginal impact in the central Australian economy (Crough et al., 1989) found that about one-third of the region's economic activity was generated by Aboriginal and Aboriginal-related activity. Two decades later the income/expenditure (but not the capital) figures we report are at first glance much the same, with the caveats we noted immediately above, which indicate a higher figure.

Our consistent use of conservative assumptions means that in all likelihood the Aboriginal-derived proportion of the Alice Springs regional economy has increased slightly over the past two decades. Indeed it is possible it has increased by at least 15 percent in relative terms over the past two decades.

That is a little surprising, because some forms of welfare income transfers, especially unemployment benefits, have declined in value relative to the growth of wages and salaries over the past two decades. This means that individual Aboriginal incomes have not kept relative pace with increases in non-Aboriginal wages and salaries. In addition, most analysis assumes that all persons on the CDEP scheme earn the equivalent of unemployment benefits. This may not be so. Because of the administrative requirements of the scheme, which have tightened dramatically over the past decade, many CDEP participants earn less than the unemployment benefit. Indeed some studies have shown that a significant minority of participants actually receive no money at all for some periods of time (Mitchell et al., 2005, p. 18).

It appears that the resources expended by Aboriginal organisations, or organisations that focus upon delivering different kinds of services to Aboriginal people, have increased in real terms over the past two decades. Certainly, since Crough's (1989) study some Aboriginal organisations have secured significant capital resources. An illustration of this development is that in July 2010 Yeperene Pty Ltd (mentioned above) reportedly paid \$16 million for the Kmart shopping complex in Alice Springs (Finnane, 2010).

Some of the increase in Aboriginal-derived expenditure is in amounts sufficient to offset the relative decline of the personal income of Aboriginal individuals. As noted above, since 2007/08, there has also been a large increase in Commonwealth outlays associated with the NT Emergency Response (the "Intervention"). In the interests of more accurate comparability, these outlays have not been incorporated here (most of our data is from the fiscal years 2006/07 and 2007/08). So it is probable that Aboriginal-related outlays have increased,

particularly recently, at a greater rate than that postulated here.

The importance of this study is that the Aboriginal contribution to the Alice Springs region's economy is increasingly crucial. To return to the theme of the counter-factual with which we began this paper; what would happen if all the Aboriginal people in Central Australia and Alice Springs suddenly disappeared? Obviously the result would be economic catastrophe: the Alice Springs economy would shrink by about 40 percent almost immediately and there would be widespread non-Aboriginal out-migration. What would be left is a residuum of the current infrastructure, thus encouraging further out-migration. The Alice Springs economy would embark upon a downward spiral of economic decline. The focus in Aboriginal affairs is too often on social problems. This paper illustrates that the Aboriginal people of Central Australia are an essential and intrinsic part of its economy.

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