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TOURISM'S
CONTRIBUTION TO
THE AUSTRALIAN
ECONOMY

1997–98 to 2012–13

TOURISM'S CONTRIBUTION TO THE AUSTRALIAN ECONOMY

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EXECUTIVE SUMMARY

The tourism industry is a major contributor to Australia's economy, worth \$91 billion in terms of gross domestic product (GDP). It is also a major source of employment, providing jobs for around 929,000 persons, when taking total¹ (direct and indirect) contributions into account.

This report presents Tourism Research Australia's (TRA) estimates of tourism's indirect and total economic contribution in relation to tourism GDP, gross value added (GVA) and employment. Together with the Australian Bureau of Statistics' (ABS) latest estimates of tourism's direct contribution from the Tourism Satellite Account² (TSA), these estimates present a complete picture of the tourism industry's contribution to Australia's economy for the period 1997–98 to 2012–13. This report equips policy makers with the means to effectively gauge the value of tourism and to use this to inform their decision making.

KEY HIGHLIGHTS

- 1 Tourism consumption experienced continuous growth between 1997-98 and 2012-13; rising by 3.9 per cent per year, with only a slight dip in visitor confidence in 2008-09 due to the global financial crisis (GFC).
- 2 Tourism once again proved itself to be a resilient industry, with *total* tourism GDP rising by 3.9 per cent annually on average in the post-GFC period (2009–10 to 2012–13). This rate is well on the way to reaching tourism's long-term (1997–98 to 2012–13) annual growth rate of 4.5 per cent.

Tourism consumption^(a) 2012-13

TOTAL	\$94.4 billion	↑ 4.4%
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Tourism Gross Value Added (GVA) 2012-13

TOTAL	\$80.1 billion	↑ 4.4%	(5.6% of total GVA)
Direct ^(b)	\$38.8 billion	↑ 3.8%	(2.7% of total GVA)
Indirect ^(c)	\$41.3 billion	↑ 4.9%	(2.9% of total GVA)

Transport services (Road transport, Rail transport and Air and water transport) and Accommodation and food services industries accounted for 17.7% and 17.4% of total tourism GVA, respectively.

¹ Hereafter, "total" is referred to as the sum of direct and indirect contribution

² ABS Cat. No. 5249.0

Tourism Gross Domestic Product (GDP)

TOTAL	\$90.7 billion	↑ 4.3%	(6.0% of total GDP)
Direct ^(b)	\$42.3 billion	↑ 3.7%	(2.8% of total GDP)
Indirect ^(c)	\$48.5 billion	↑ 4.8%	(3.2% of total GDP)

Tourism employment ('000 persons)

TOTAL	929.0	↑ 2.9%, or 26,000 persons	(8.0% of total employment)
Direct ^(b)	543.6	↑ 2.2%, or 11,500 persons	(4.7% of total employment)
Indirect ^(c)	385.4	↑ 3.9%, or 14,500 persons	(3.3% of total employment)

More than half (54%) of total flow-on tourism employment was shared among three main industries:

• Accommodation and food services	29%
• Retail trade	14.0%
• Transport services (Road transport, Rail transport and Air and water transport)	11.5%

Tourism employment grew by a stronger rate (2.9%) than the total employment growth rate of 1.2%, when compared to 2011–12

Tourism output multiplier^(d)

Tourism **1.87***

In 2012–13, tourism's output multiplier was valued **higher** than all these industries:

<i>Retail trade</i>	1.77
<i>Mining</i>	1.70
<i>Healthcare & social assistance</i>	1.49
<i>Finance & insurance services</i>	1.44
<i>Education & training</i>	1.41

*This value of 1.87 means for every dollar that tourism earns directly in the Australian economy, it generates an additional 87 cents in other parts of the economy.

Sources:

- (a) ABS unpublished data measured at basic prices
- (b) ABS Cat. No. 5249.0
- (c) TRA calculations
- (d) TRA calculations derived from ABS Cat. No. 5209.0

Tourism's multiplier measures the increase in the production of intermediate inputs in the economy (indirect contribution) resulting from increased visitor consumption of tourism goods and services. The larger the multiplier value, the larger the indirect/flow-on impact in the economy.

INTRODUCTION

This report is the sixth in this series and estimates the full value of tourism to the Australian economy. By combining the ABS' direct contribution estimates from the 2012–13 edition of the Tourism Satellite Accounts (TSA), and TRA's estimates of the indirect value of tourism's contribution, the total flow-on of tourism output from 1997–98 to 2012–13 is provided.

WHAT HAS CHANGED FROM THE PREVIOUS REPORT?

This report updates the time series estimates provided in TRA's July 2013 publication with additional 2012–13 results based on the ABS' updated TSA publication. In addition, TRA's estimates of the indirect/flow-on contribution employ the latest available (2009–10) input-output (I-O) tables from the ABS.

Estimates in this report are provided in nominal terms unless stated otherwise, with results presented in combination with the direct contribution reported in ABS' TSA (2012–13). The analysis provides total contribution estimates for tourism GDP, GVA (by industry) and employment.

TOURISM'S CONTRIBUTION TO GDP AND GVA

Economic measures such as GVA and GDP are recognised as the primary measures for economic contribution and performance of an industry or the economy as a whole. At the industry level, GVA accounts for the sum of an industry's output less the costs of intermediate inputs used in the production (of that good or service). The remainder is the value-added from the industry. Thus, GVA is always smaller than total output and more accurately reflects the contribution of an industry to the whole economy. GVA and GDP are presented in simple formulas below and illustrated in Table 1.

GVA Compensation of employees + gross operating surplus + other taxes on production

GDP GVA + net taxes on products (taxes less subsidies)

TABLE 1: RELATIONSHIP BETWEEN GVA AND GDP

	DIRECT CONTRIBUTION (\$ BILLION)
Output (basic prices)	94.4
GVA	38.8
Net taxes on products	3.5
GDP	42.3

Source: ABS Cat. No. 5249.0

DIRECT TOURISM CONTRIBUTION, 2012–13

The direct economic contribution of tourism to the Australian economy, as represented by the ABS' TSA, occurs where a direct physical or economic relationship exists between the visitor and producer of the good or service³.

The direct contribution of Australia's tourism industry primarily refers to the immediate effect of expenditure made by visitors. For example, an increase in the number of visitors staying overnight in hotels directly affects sales in the hotel sector. The 'direct' effects are the sales and associated changes in payments for:

- wages and salaries
- net taxes
- supplies and services.

According to the latest TSA (2013), in 2012–13:

- tourism consumption (at basic prices) was **\$94 billion**⁴; representing an annual increase of 4.4 per cent
- the direct GDP contribution of Australia's tourism industry was **\$42 billion**; an annual increase of 3.7 per cent
- the direct tourism GVA, or net income generated by the industry, amounted to **\$39 billion**; an annual increase of 3.8 per cent.

INDIRECT TOURISM CONTRIBUTION, 2012–13

The introduction of direct and indirect definitions in Australia's TSA framework overlaps with similar terminology (not the concept itself) that has been historically used in input-output (I-O) modelling.

In this report, the direct effect analysis will remain consistent with the TSA direct concept for easy comparison between the two. The I-O modelling concept captures the flow-on effect generated by the tourist's consumption on other industries in the supply chain.

Using the direct tourism contribution alone will under-estimate the total contribution of tourism to the economy. In order to account for tourism's contribution correctly, the consumption of TSA direct and TSA indirect tourism output are combined to calculate the flow-on effects using the I-O multipliers. The flow-on or 'indirect' effects are the changes in supply that result from spending of the tourism industry's receipts on goods and services from other industries. For example, when a *visitor purchases a meal from a hotel*:

- the hotel purchases vegetables and meat from a food supplier
- the food supplier purchases these from a farming company
- the farming company 'purchases' labour and transport to deliver the produce to market.

³ The Tourism Satellite Account (TSA) estimates the value of tourism within the national accounting framework. A satellite account allows an expansion of the traditional national accounting framework for selected areas of interest while maintaining the concept and structures of the core National Accounts methodology.

⁴ This is the price received by the producers after deducting margins, net commodity taxes and imports from the price the tourists actually paid in the market to obtain goods and services from tourism consumption at purchasers' price value of \$110 billion in 2012–13. Thus, value of consumption measured at the basic prices equals the value of output produced.

Interestingly, Australia and New Zealand are the only countries that produce a full set of indirect estimates for tourism GVA, GDP and employment. New Zealand's (NZ) TSA (2013) reported that in the year ended March 2013:

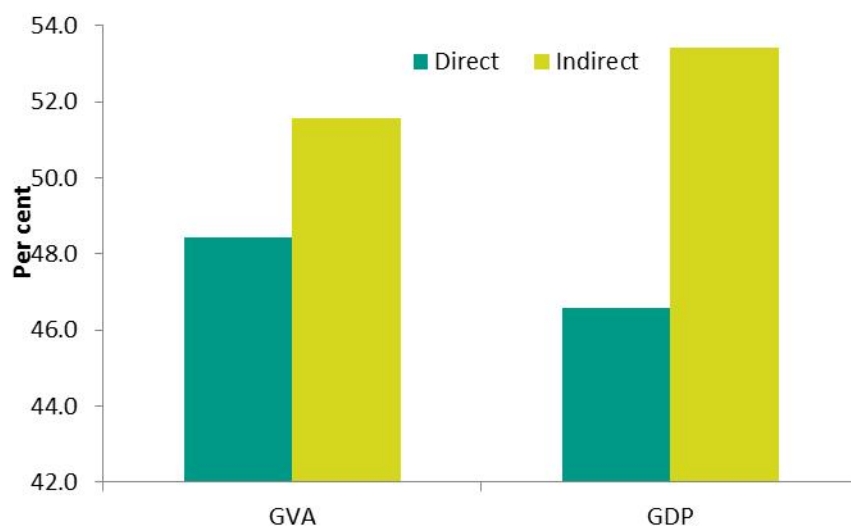
- tourism's total contribution to NZ GDP was 8.7 per cent:
 - equivalent to AU\$5.7 billion (or 3.7 per cent) directly
 - equivalent to AU\$7.7 billion (or 5.0 per cent) indirectly^{5,6}.
- tourism employed a full-time equivalent of 172,100 employees (or 8.8 per cent of total employment in New Zealand):
 - Of total employment, around 110,800 were employed directly and 61,300 indirectly.

TRA estimates the economic impact of these indirect effects in order to complement the direct effects that are reported in the national TSA. Together, they provide a more complete picture of the economic contribution of tourism. (Refer to Appendices A and B for detail on the I-O methodology employed in deriving the indirect contribution of tourism on output and employment.)

In 2012–13:

- Australia's tourism industry indirectly contributed a further **\$49 billion of GDP** and **\$41 billion of GVA** (Figure 1):
- The indirect GDP contribution accounted for **3.2 per cent of national GDP**.
- The indirect GVA contribution accounted for **2.9 per cent of national GVA**.

FIGURE 1: DIRECT^(a) AND INDIRECT^(b) SHARE OF TOURISM GVA AND GDP



Sources: ^(a) ABS Cat. No. 5249.0, ^(b) TRA estimates

⁵ When emphasising the importance of estimating the full impact of tourism, Statistics New Zealand (2013), states that, "Direct value added does not measure the full impact of tourism on the New Zealand economy because it is limited to those businesses that have a direct relationship with tourists. Additional value added comes from tourism through the production of the intermediate inputs used in the production of goods and services sold to tourists, although there is no direct relationship between the producer of the intermediate inputs and the tourist. This additional value added is known as indirect value added".

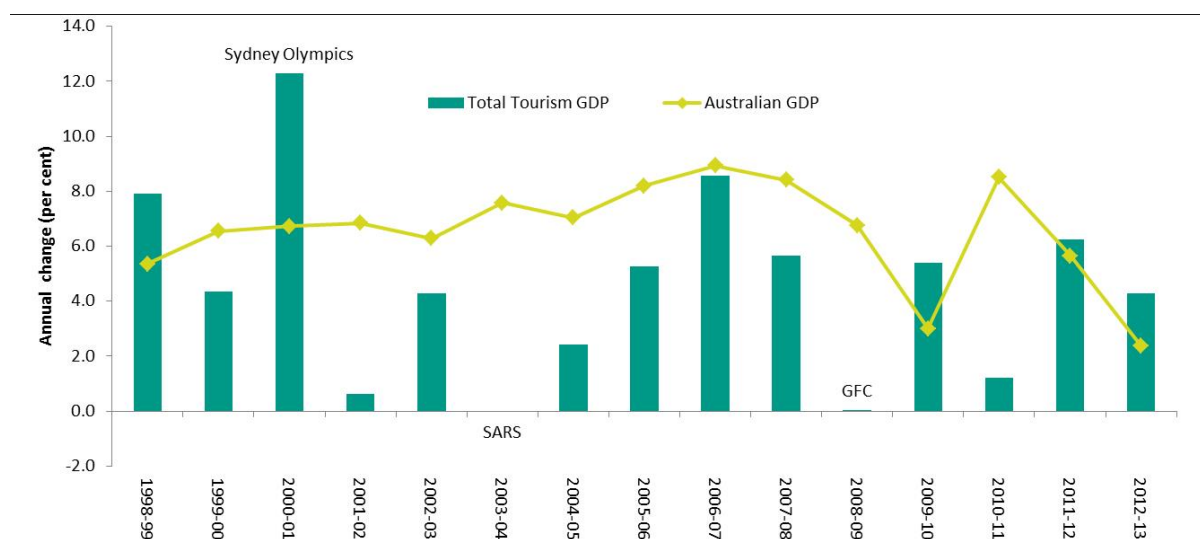
⁶ NZ dollar converted to AUD based on 2012–13 FX (Foreign Exchange) average (1NZD=0.7835AUD) from OANDA (www.oanda.com/currency/converter/).

TOTAL TOURISM CONTRIBUTION, 2012–13

In 2012–13:

- Combining tourism's direct and indirect components, a total of **\$91 billion** was contributed to national GDP, **up \$3.7 billion** (or 4.3 per cent), year-on-year.
- Collectively, tourism's direct and indirect contributions amounted to **5.6 per cent of national GVA**:
 - Tourism's direct measure contributed **2.7 per cent to national GVA**.
 - Tourism's indirect measure contributed **2.9 per cent to national GVA**.
- Compared to 2000–01—when tourism's total contribution to Australia's GVA peaked at 8.1 per cent—this represents a decline of 2.5 percentage points. However, the Sydney Olympic Games and the introduction of the goods and services tax (GST) were influencing factors during this period.
- Total tourism GDP has more year-to-year fluctuations than Australian GDP:
 - Following a solid annual growth of 6.3 per cent in 2011–12, total tourism GDP increased by 4.3 per cent in 2012–13, which reflected a solid recovery after the severe downturn associated with the global financial crisis (GFC) in 2008–09.
 - Over the longer term—1997–98 to 2012–13—total tourism GDP has grown at an average annual rate of 4.5 per cent, while Australian GDP has increased at a stronger rate, averaging 6.5 per cent annually over the same period (refer Figure 2).

FIGURE 2: ANNUAL GROWTH IN TOTAL TOURISM GDP AND AUSTRALIAN GDP



Source: TRA estimates derived from ABS Cat. No. 5204.0; direct tourism contribution estimates derived from ABS Cat. No. 5249.0, 2012–13, and indirect estimates derived by TRA

TOURISM'S CONTRIBUTION TO GVA BY INDUSTRY

Tourism is a construct of 28 industries. Each industry's contribution to tourism varies depending upon how closely it is related to tourism. Some industries interact heavily with visitors, such as *Cafés, hotels and restaurants*. Other industries work in the supply line to the tourism industry, such as *Manufacturing, Agriculture, forestry and fishing* and the *Wholesale trade* industries. These industries interact with tourism more indirectly.

- Tourism's indirect contribution to GVA is larger than its direct contribution. In 2012–13:
 - Tourism's total GVA contribution was **\$80 billion**; 48 per cent was contributed directly and 52 per cent indirectly.

Tourism has a GVA multiple of 1.07, measured as a ratio of tourism indirect value added to direct value added. The value of 1.07 (greater than one) indicates that total GVA for indirect contribution of the "upstream" industries toward tourism consumption is actually larger than the direct GVA generated by the initial tourism consumption⁷. In 2012–13, tourism generated \$41 billion worth of GVA indirectly to the Australian economy, in addition to its direct contribution of \$39 billion.

The *Ownership of dwellings, Accommodation and food services, Retail trade, Arts and recreation, Education and training* and *Air, water and other transport services* industries had direct contact with visitors, therefore had a larger direct contribution. It is the output from these industries that prompted further demands for inputs from the "upstream" industries, thereby generating the indirect effect (Table 2). For example, most of the services provided by a restaurant are by direct contact, but the services of a baker or wholesaler, who may be in Food services and provides the raw material such as bread, flour, rice or meat, are considered indirect.

The following four industries collectively contributed more than two-thirds (70 per cent) of total direct GVA in 2012–13 (Table 2)⁸:

- *Accommodation and food services*—\$13.4 billion, or 35 per cent of total GVA
- *Air, water and other transport services*—\$5.9 billion, or 15.2 per cent of total GVA
- *Retail trade*—\$5.4 billion, or 13.9 per cent of total GVA
- *Education and training*—\$2.5 billion, or 6.3 per cent of total GVA.

A large part of the total flow-on effect of visitor consumption was felt in other industries represented by '*All other industries*', where approximately 73 per cent of total GVA contribution was indirect.

⁷ GVA multiple is the ratio of indirect GVA to direct GVA and is not a multiplier. Indirect GVA for tourism is calculated using the ratio of Industry GVA to Gross Output from input-output tables and multiplying this ratio to the indirect output relating to tourism in an industry.

⁸ Excluding Ownership of dwellings industry

TABLE 2: TOURISM GVA BY INDUSTRY, 2012–13

TOURISM INDUSTRIES	DIRECT VALUE ADDED ^(A) (1)	INDIRECT VALUE ADDED ^(B) (2)	INDIRECT VALUE ADDED MULTIPLE (M) (3)	TOTAL VALUE ADDED= DIRECT VALUE ADDED* (1+M) (4)
	\$ MILLION		RATIO	\$ MILLION
Accommodation and food services	13,387	541	0.0	13,928
Rail transport	526	159	0.3	685
Road transport and motor vehicle hire and lease	1,841	3,233	1.8	5,074
Air, water and other transport	5,896	2,500	0.4	8,396
Travel agency and tour operator services	1,893	2,904	1.5	4,797
Arts and recreation services	1,609	290	0.2	1,899
Retail trade	5,404	1,391	0.3	6,795
Education and training	2,455	208	0.1	2,663
Ownership of dwellings	3,383	0	0.0	3,383
All other industries	2,389	30,085	12.6	32,474
Total tourism industry	38,783	41,309	1.07	80,092

Sources: (a) ABS Cat. No. 5249.0, and (b) TRA estimates

DECOMPOSITION OF INDIRECT GVA IN 'ALL OTHER INDUSTRIES'

All other industries is a group of industries that by nature or activity are not considered tourism-related, but are nonetheless affected by rises and falls in tourism. For example, increasing visitor numbers to cafés and restaurants increases demand for flour from grain processing industries; this in turn increases grain production by the agricultural industry.

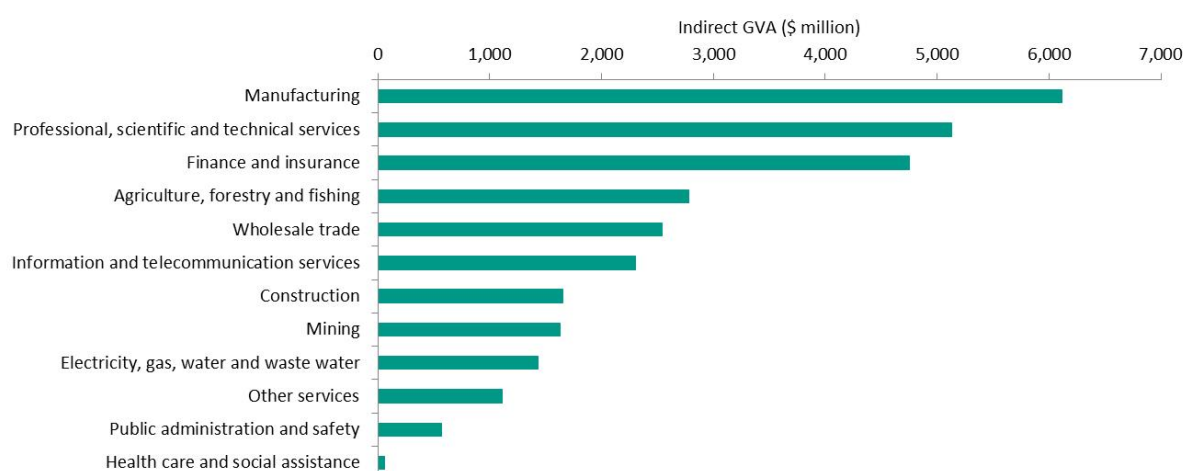
Disaggregation of the \$30 billion of indirect tourism GVA in *All other industries* in 2012–13 is presented in Figure 3. More than half (53 per cent) of total tourism GVA in this category occurred in three industries:

- *Manufacturing*—\$6.1 billion
- *Professional, scientific and technical services*—\$5.1 billion
- *Finance and insurance services*—\$4.8 billion.

Additionally, around one-third (31 per cent) of total tourism GVA was contributed by:

- *Agriculture, forestry and fishing*—\$2.8 billion
- *Wholesale trade*—\$2.5 billion
- *Information and telecommunication services*—\$2.3 billion
- *Mining*—\$1.6 billion.

FIGURE 3: TOURISM INDIRECT GVA IN ALL OTHER INDUSTRIES, 2012–13



Source: TRA estimates

GROWTH IN TOTAL TOURISM GVA, BY INDUSTRY

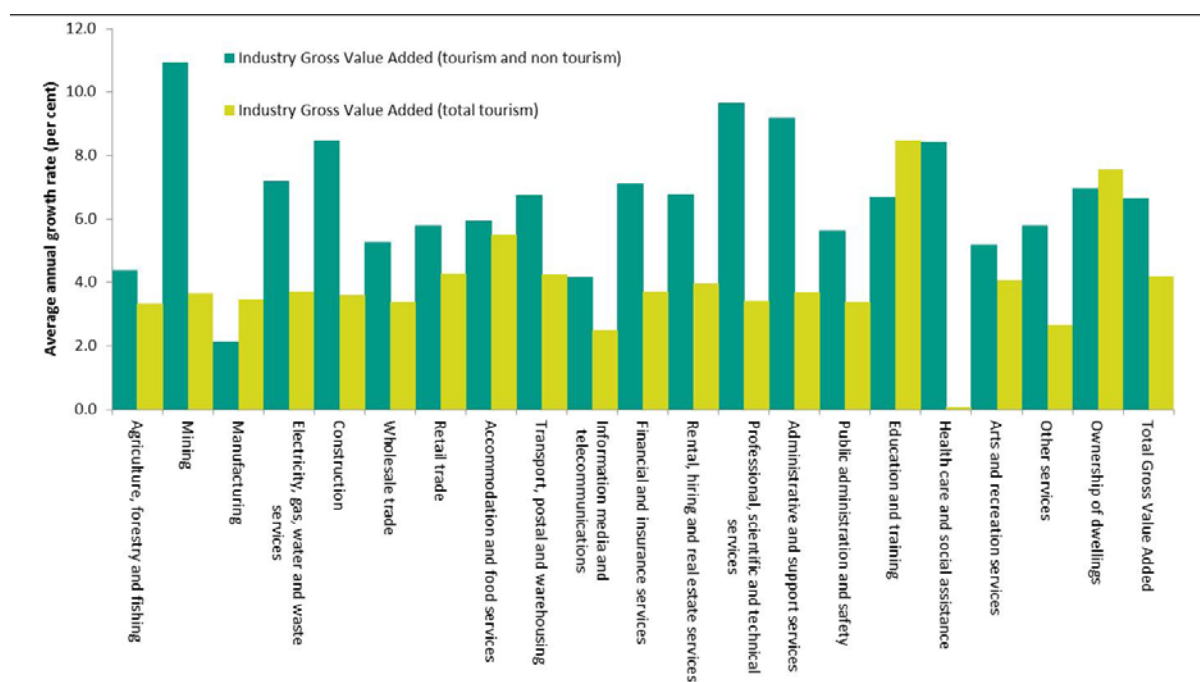
Between 1997–98 and 2012–13:

- Total tourism GVA grew at an average annual rate of 4.2 per cent; lower than the average GVA growth of 6.6 per cent for the whole economy (Figure 4).
- Three industries (*Mining; Professional, scientific and technical services; and Administrative and support services*) grew at approximately 10 per cent per annum (10.9, 9.6 and 9.2 per cent, respectively). Together, these industries contributed 18.9 per cent of total Australian GVA.
- The highest growth rate in tourism GVA was achieved by the *Education and training* industry, which grew at an average annual rate of 8.5 per cent.

In 2012–13:

- A little more than one-third (35 per cent) of tourism’s total GVA was shared among two main industries:
 - *Accommodation and food services* at 17.4 per cent, with average annual GVA growth of 5.5 per cent (lower than its growth rate at total industry GVA levels of 5.9 per cent)
 - *Transport industries (Road, Rail, Air and Water transport)* at 17.7 per cent, with average annual tourism GVA growth of 4.4 per cent (lower than its growth rate at total industry GVA levels of 6.7 per cent).

FIGURE 4: AVERAGE ANNUAL GROWTH IN GVA, TOURISM AND ALL INDUSTRIES, 1997–98 TO 2012–13



Sources: Direct contribution from ABS Cat. No. 5249.0, 2012–13, and indirect estimates derived by TRA

INDUSTRY SHARE OF TOTAL TOURISM GVA

Over the period 1997–98 to 2012–13, industry share in total tourism GVA varied. This depended on changes in visitor types and numbers, and the price and quantity of tourism products and services demanded (Table 3). For example:

- the *Accommodation and food services* industry's share increased by 3.0 percentage points from 14.4 per cent in 1997–98 to 17.4 per cent in 2012–13; largely due to changes in overnight visitor expenditure pattern on accommodation⁹,
- the *Education and training* industry increased its share of tourism GVA from 1.8 per cent in 1997–98 to 3.3 per cent in 2012–13; due to an increase in short-term student visitors to Australia in recent years¹⁰
- the *Health care and social assistance* industry experienced decreasing shares since 2004–05; most likely due to the appreciation of the exchange rate which meant that Australian domestic health services were more expensive for inbound visitors to access, compared to other countries.

The share of total tourism GVA for all other industries remained more or less unchanged over the whole period.

⁹ Between 1997–98 and 2012–13, total overnight expenditure rose 80 per cent, while accommodation expenditure rose almost double the rate at 158 per cent (compiled from ABS TSA 2012–13 publication).

¹⁰ Short-term visitor arrivals for education to Australia rose at an average annual rate of 6.8 per cent between 1997–98 and 2012–13 (compiled from ABS, 2013b).

TABLE 3: INDUSTRY SHARE IN TOTAL TOURISM GVA (PER CENT)

TOURISM INDUSTRIES	1997/ 98	1998/ 99	1999/ 00	2000/ 01	2001/ 02	2002/ 03	2003/ 04	2004/ 05	2005/ 06	2006/ 07	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13
Agriculture, forestry and fishing	3.9	4.1	4.0	4.1	4.0	4.0	3.9	3.7	3.7	3.7	3.6	3.4	3.4	3.3	3.4	3.5
Mining	2.2	2.2	2.2	2.5	2.4	2.3	2.2	2.1	2.0	2.3	2.2	2.1	2.0	2.0	2.0	2.0
Manufacturing	8.5	8.6	8.5	8.4	8.4	8.3	8.2	8.1	8.1	8.1	7.9	7.7	7.6	7.5	7.6	7.6
Electricity, gas, water and waste services	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8
Construction	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1
Wholesale trade	3.6	3.6	3.6	3.5	3.5	3.5	3.4	3.4	3.4	3.3	3.3	3.2	3.1	3.1	3.1	3.2
Retail trade	8.4	8.2	8.5	8.7	8.5	8.5	8.5	8.9	9.1	9.2	8.9	8.8	8.5	8.6	8.5	8.5
Accommodation and food services	14.4	15.1	14.8	14.6	15.1	15.2	15.2	15.4	15.4	15.3	16.3	16.7	16.9	17.2	17.6	17.4
Transport, postal and warehousing	14.9	14.9	14.9	15.2	14.9	15.6	15.4	15.5	15.9	16.0	15.9	15.6	15.7	15.5	15.3	15.1
Information media and telecommunications	4.6	4.4	4.4	4.2	4.1	4.1	4.1	3.9	3.7	3.6	3.6	3.6	3.6	3.6	3.5	3.6
Financial and insurance services	6.5	6.4	6.4	6.4	6.3	6.3	6.2	6.2	6.1	6.1	6.0	6.0	6.0	5.9	6.0	6.0
Rental, hiring and real estate services ^(c)	6.2	6.1	6.3	6.1	6.3	6.2	6.3	6.6	6.6	6.6	6.8	7.2	7.4	7.5	7.5	7.7
Professional, scientific and technical services	7.2	7.2	7.1	7.1	7.0	6.9	6.9	6.9	6.8	6.7	6.6	6.5	6.4	6.4	6.4	6.4
Administrative and support services	6.7	6.6	6.5	6.2	6.3	6.3	6.3	6.2	6.4	6.3	6.3	6.1	6.0	6.1	6.2	6.2
Public administration and safety	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Education and training	1.8	1.9	2.0	2.3	2.7	2.6	3.0	3.1	3.0	3.0	3.1	3.6	3.6	3.6	3.4	3.3
Health care and social assistance	1.5	1.4	1.4	1.2	1.2	1.2	1.2	1.0	0.8	0.8	0.8	0.8	0.9	0.9	0.8	0.8
Arts and recreation services	2.4	2.4	2.3	2.4	2.4	2.3	2.5	2.5	2.5	2.4	2.3	2.4	2.5	2.4	2.4	2.4
Other services	2.2	2.0	2.1	2.0	2.0	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.7
Total tourism GVA (direct^(a) and indirect^(b))	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Sources: ^(a) ABS Cat. No. 5249.0, and ^(b) TRA estimates,

^(c) Renting, hiring and real estate services also includes Ownership of dwellings

TOURISM'S CONTRIBUTION TO EMPLOYMENT

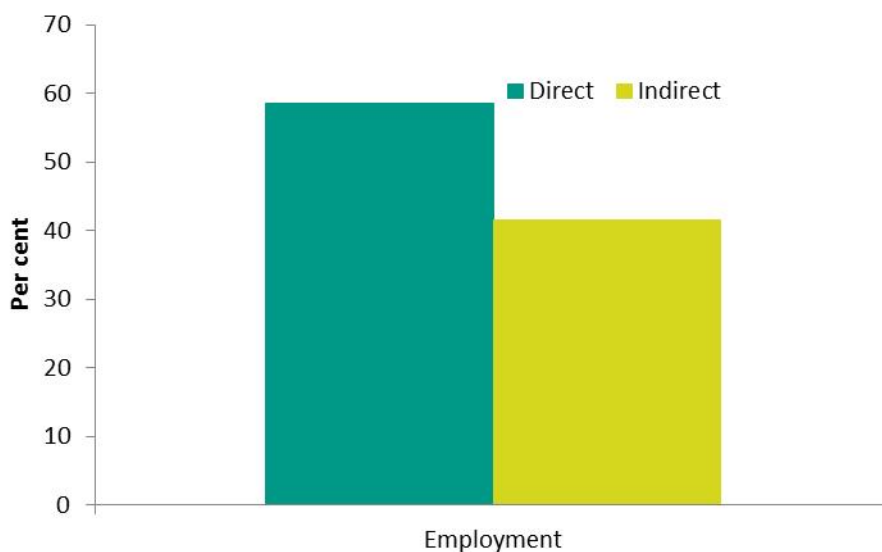
TRA estimates that tourism directly and indirectly employed an estimated 929,026 persons in 2012–13 (or 8.0 per cent of total employment in Australia):

- 543,600 persons (or 4.7 per cent of the Australian workforce) employed directly (2.2 per cent higher when compared to 2011–12)
- 385,426 persons (or 3.3 per cent) employed indirectly (3.9 per cent higher when compared to 2011–12).

Of total tourism employment:

- 59 per cent was provided directly and 41 per cent indirectly (Figure 5 and Table 4)
- tourism's *total* flow-on employment share (8.0 per cent) in national employment was higher than tourism's *total* flow-on GVA (5.6 per cent) in national GVA; largely due to tourism being more labour intensive than many other industries¹¹
- in 2012–13, total tourism employment rose by 26,020 persons (or by 2.9 per cent), with increased employment of 11,500 (or 2.2 per cent) in industries directly related to tourism and 14,520 (or 3.9 per cent) in industries related indirectly to tourism
- *total* tourism employment increased at an average annual rate of 2.8 per cent between 1997–98 and 2012–13, driven by indirect tourism growing 4.5 per cent and direct tourism employment growing 1.8 per cent over the same period.

FIGURE 5: DIRECT AND INDIRECT SHARE OF TOURISM EMPLOYMENT IN 2012–13



Sources: (a) ABS Cat. No. 5249.0, (b) TRA estimates

¹¹ A business is labour intensive if labour accounts for the largest proportion of all inputs to the business outputs.

TABLE 4: SUMMARY, TOURISM'S DIRECT AND INDIRECT CONTRIBUTION TO THE AUSTRALIAN ECONOMY

TOURISM INDUSTRIES	1997/ 98	1998/ 99	1999/ 00	2000/ 01	2001/ 02	2002/ 03	2003/ 04	2004/ 05	2005/ 06	2006/ 07	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13
Direct contribution^(a)																
Tourism GDP (\$m)	18,496	20,067	20,892	24,844	25,518	26,966	27,173	28,260	29,898	32,454	35,100	35,757	37,955	38,846	40,738	42,255
<i>Share of national (%)</i>	3.1	3.2	3.2	3.5	3.4	3.4	3.2	3.1	3.0	3.0	3.0	2.8	2.9	2.8	2.7	2.8
Tourism GVA (\$m)	18,791	20,358	21,191	22,724	23,332	24,678	24,859	25,837	27,389	29,594	32,035	32,704	34,821	35,615	37,354	38,783
<i>Share of national (%)</i>	3.5	3.6	3.5	3.5	3.4	3.4	3.2	3.0	3.0	3.0	2.9	2.8	2.9	2.7	2.7	2.7
Tourism employment ('000)	413.8	425.8	432.1	449.0	456.4	460.1	459.2	475.3	488.2	499.1	513.0	513.8	519.3	530.4	532.1	543.6
<i>Share of national (%)</i>	4.8	4.9	4.9	5.0	5.0	4.9	4.8	4.8	4.8	4.8	4.8	4.7	4.7	4.7	4.6	4.7
Indirect contribution^(b)																
Tourism GDP (\$m)	28,283	30,418	31,787	34,305	34,006	35,105	34,879	35,285	36,996	40,160	41,620	40,978	42,926	43,024	46,255	48,457
<i>Share of national (%)</i>	4.8	4.9	4.8	4.9	4.5	4.4	4.0	3.8	3.7	3.7	3.5	3.3	3.3	3.1	3.1	3.2
Tourism GVA (\$m)	24,405	26,441	27,282	29,295	29,205	30,195	30,038	30,470	31,846	34,575	36,092	35,475	36,775	37,217	39,391	41,309
<i>Share of national (%)</i>	4.5	4.6	4.5	4.5	4.2	4.1	3.8	3.6	3.5	3.4	3.3	3.0	3.0	2.8	2.8	2.9
Tourism employment ('000)	200.5	216.6	223.4	269.5	270.4	279.0	280.3	289.5	306.5	328.7	341.6	336.1	342.7	348.7	370.9	385.4
<i>Share of national (%)</i>	2.3	2.5	2.5	3.0	2.9	3.0	2.9	2.9	3.0	3.1	3.2	3.1	3.1	3.1	3.2	3.3
Total contribution																
Tourism GDP (\$m)	46,779	50,485	52,679	59,149	59,524	62,071	62,052	63,545	66,894	72,614	76,720	76,735	80,881	81,870	86,993	90,712
<i>Share of national (%)</i>	7.9	8.1	8.0	8.4	7.9	7.7	7.2	6.9	6.7	6.7	6.5	6.1	6.2	5.8	5.9	6.0
Tourism GVA (\$m)	43,196	46,799	48,473	52,019	52,537	54,873	54,897	56,307	59,235	64,169	68,127	68,179	71,596	72,832	76,745	80,092
<i>Share of national (%)</i>	8.0	8.2	8.0	8.1	7.6	7.5	7.0	6.6	6.4	6.4	6.3	5.8	5.9	5.5	5.5	5.6
Tourism employment ('000)	614.3	642.4	655.5	718.5	726.8	739.1	739.5	764.8	794.7	827.8	854.6	849.9	862.0	879.1	903.0	929.0
<i>Share of national (%)</i>	7.2	7.4	7.4	7.9	7.9	7.8	7.7	7.8	7.8	7.9	7.9	7.8	7.8	7.7	7.9	8.0

 Sources: ^(a) ABS Cat. No.5249; ^(b) TRA estimates

TOURISM EMPLOYMENT BY INDUSTRY

Applying a strict definition for tourism employment is problematic as employees in tourism-related industries generally provide services for both visitors and non-visitors. To overcome this, the TSA provides estimates for tourism employment by applying tourism GVA ratios from the benchmark year to ABS Labour Force Survey estimates for tourism-related industries (ABS Cat. No. 6251.0.55.003) (Table 5).

While *All other industries* comprised a majority of indirect total tourism-related employment (91 per cent or 252,800 persons), the following industries had high direct components:

- *Accommodation and food services*—95 per cent (or 252,600 persons) of total tourism employment in that industry in 2012–13
- *Education and training*—93 per cent (or 38,300 persons)
- *Arts and recreation*—87 per cent (or 36,200 persons)
- *Retail trade*—79 per cent (or 102,300 persons).

Six industries collectively accounted for 70 per cent of total tourism employment:

- *Accommodation, cafés and restaurants*—265,800 (29 per cent of total)
- *Retail trade*—130,300 employees (14.0 per cent of total)
- *Air and water transport plus road and rail transport*—106,500 (11.5 per cent of total)
- *Travel agency and tour operator services*—67,100 (7.2 per cent of total)
- *Arts and recreation services*—41,400 (4.5 per cent of total)
- *Education and training*—41,300 (4.4 per cent of total).

The remaining 30 per cent (or 276,700) of total tourism employment was generated in *All other industries*.

TABLE 5: DIRECT AND INDIRECT EMPLOYMENT BY TOURISM INDUSTRIES, 2012–13

TOURISM INDUSTRIES	DIRECT EMPLOYMENT ^(A) (A)	INDIRECT EMPLOYMENT ^(B) (B)	TOURISM INDIRECT EMPLOYMENT MULTIPLE (B)/(A) = (C)	TOTAL TOURISM EMPLOYMENT = DIRECT EMPLOYMENT*(1+E)
	'000		RATIO	'000
Accommodation and food services	252.6	13.2	0.1	265.8
Rail transport	3.2	1.3	0.4	4.5
Road transport and motor vehicle hiring	20.1	28.3	1.4	48.4
Air, water and other transport	35.3	18.3	0.5	53.6
Travel agency and tour operator services	31.8	35.3	1.0	67.1
Arts and recreation services	36.2	5.2	0.1	41.4
Retail trade	102.3	28.0	0.3	130.3
Education and training	38.3	3.0	0.1	41.3
All other industries	23.9	252.8	10.2	276.7
Total tourism employment	543.6	385.4	0.7	929.0

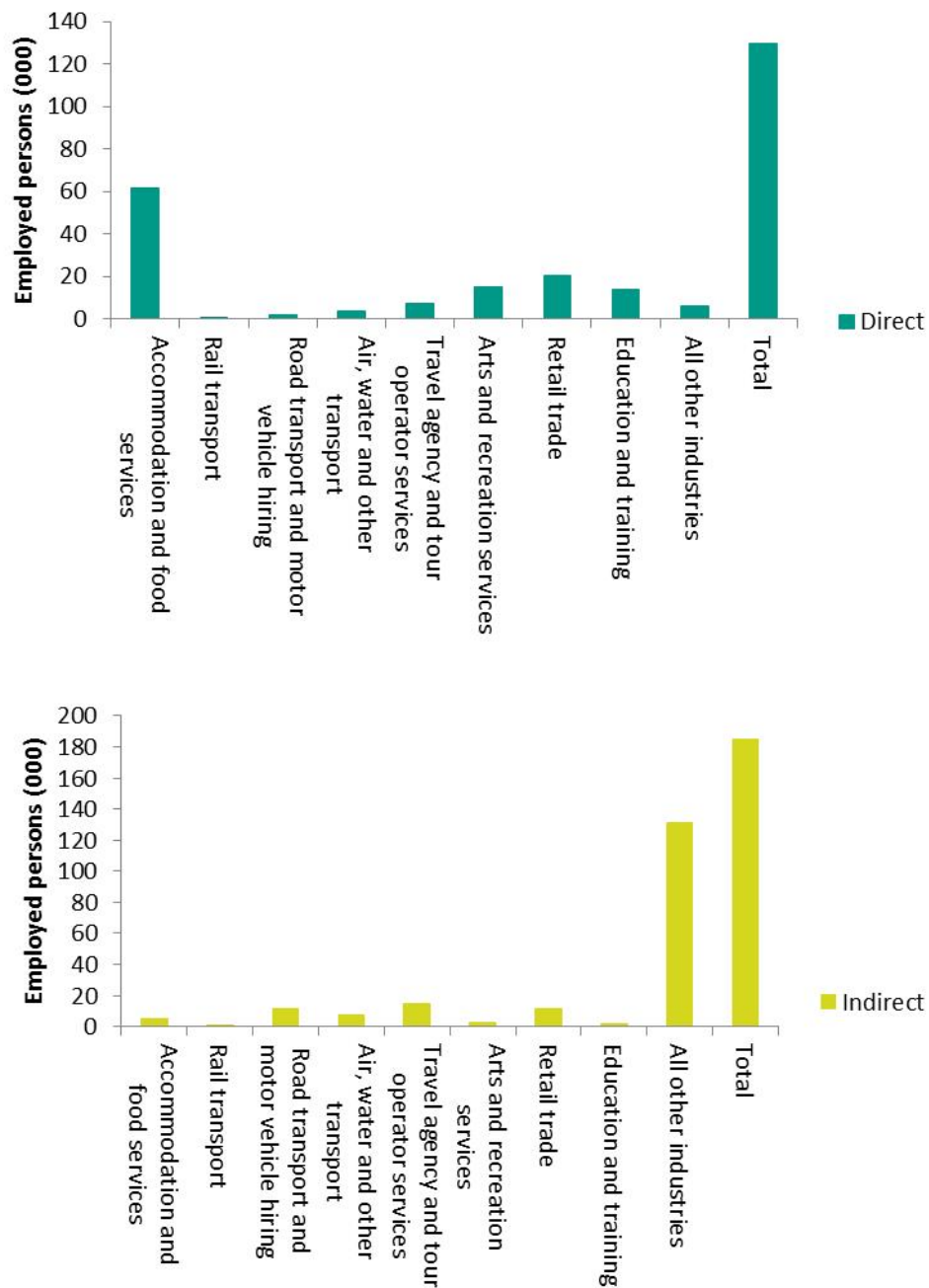
Sources: ^(a) ABS Cat. No. 5249.0, and ^(b) TRA estimates

Growth in the contribution of main tourism industries to total tourism employment has been mixed (Figure 6 and Table 6). Tourism added 314,700 employed-person jobs in total (129,800 directly and 184,900 indirectly) to the Australian workforce between 1997–98 and 2012–13, with the following industries also showing growth during this period:

- *Accommodation and food services* added around 67,100 employed-person jobs (61,800 jobs employed directly and 5,300 indirectly)
- *Retail trade* added 31,800 employed-person jobs (20,400 jobs employed directly and 11,400 persons indirectly)
- *Travel agency and tour operator services* added 21,800 employed-person jobs (7,200 jobs directly and 14,600 indirectly).

During this period, total employment in the tourism industry grew at an average annual rate of 2.8 per cent; higher than the 2.1 per cent growth for total employment in the economy.

FIGURE 6: DIRECT ^(a) AND INDIRECT ^(b) EMPLOYMENT GROWTH IN THE TOURISM INDUSTRY, 1997–98 TO 2012–13, ('000)



Sources: ^(a) ABS Cat. No. 5249.0, and ^(b) TRA estimates

TABLE 6: TOTAL (DIRECT ^(a) AND INDIRECT ^(b)) EMPLOYMENT IN TOURISM ('000 PERSONS)

TOURISM INDUSTRIES	1997/ 98	1998/ 99	1999/ 00	2000/ 01	2001/ 02	2002/ 03	2003/ 04	2004/ 05	2005/ 06	2006/ 07	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13
Accommodation and food services	198.7	204.1	209.6	221.5	224.7	224.2	220.1	227.1	226.0	231.0	236.8	241.0	253.6	258.8	255.6	265.8
Rail transport	3.5	3.4	3.0	3.3	3.0	3.3	3.5	3.4	3.7	3.5	3.5	4.7	4.7	4.8	4.5	4.5
Road transport and motor vehicle hiring	35.3	36.9	37.2	39.1	40.0	40.5	42.0	40.1	41.0	43.5	45.3	45.6	44.7	44.5	46.3	48.4
Air, water and other transport	42.6	44.1	45.4	49.2	47.5	45.8	45.7	47.2	50.2	50.6	51.7	51.6	49.8	51.4	55.4	53.6
Travel agency and tour operator services	45.3	47.5	46.7	47.5	47.4	46.6	46.8	49.5	53.1	56.5	62.4	58.8	63.2	63.6	66.4	67.1
Arts and recreation services	24.0	25.3	25.7	26.6	28.1	29.1	30.0	32.5	35.8	37.1	38.1	39.2	38.2	38.9	40.4	41.4
Retail trade	98.5	102.9	104.4	106.2	109.5	116.4	116.0	123.4	128.8	134.9	136.1	130.9	124.7	127.9	128.0	130.3
Education and training	26.4	27.4	27.8	28.3	29.3	30.4	31.8	30.3	31.8	31.4	34.2	35.7	37.7	39.2	39.5	41.3
All other industries	139.7	150.7	155.6	197.0	197.4	203.0	203.4	211.3	224.1	239.1	246.4	242.3	245.5	250.3	267.0	276.7
Total	614.3	642.4	655.5	718.5	726.8	739.1	739.5	764.8	794.7	827.8	854.6	849.9	862.0	879.1	903.0	929.0

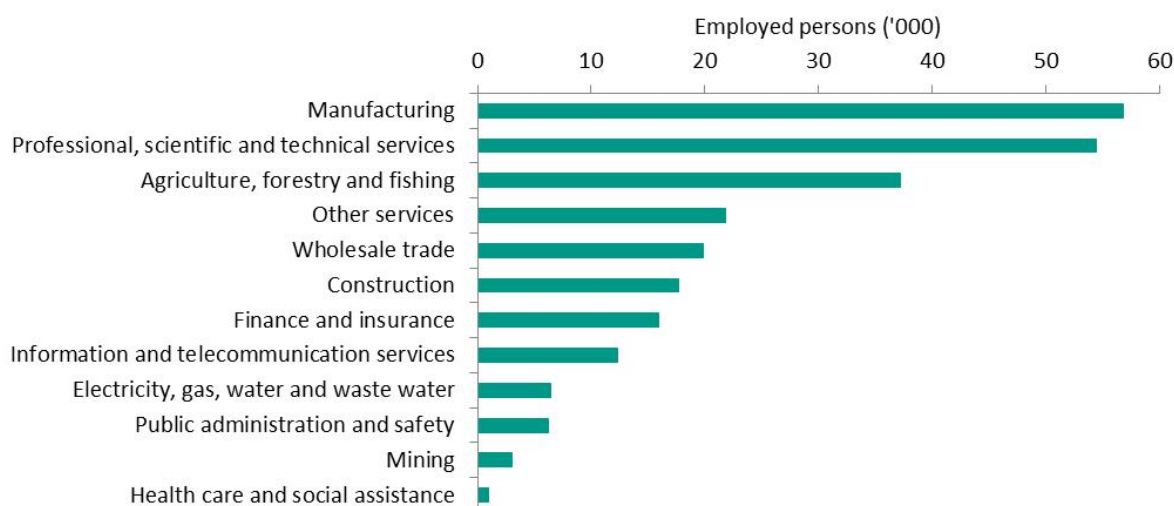
Sources: ^(a) ABS Cat. No. 5249.0, and ^(b) TRA estimates

DECOMPOSITION OF INDIRECT EMPLOYMENT IN 'ALL OTHER INDUSTRIES'

In 2012–13:

- Indirect employment for *All other industries* increased by 4.0 per cent to 252,800 persons, compared to 2011–12.
- More than half (59 per cent) of total tourism-related indirect employment in this category occurred in *Manufacturing* (56,800 persons); *Professional, scientific and technical services* (54,500 persons); and *Agriculture, forestry and fishing* (37,200 persons).
- Around 21,900 persons were indirectly employed in *Other services* industries and 19,900 persons were indirectly employed in the *Wholesale trade* industry.
- *Construction*, *Finance and insurance services*, and *Information and telecommunication services* industries indirectly employed around 17,700, 15,900, and 12,300 persons, respectively (Figure 7).

FIGURE 7: TOURISM EMPLOYMENT IN ALL OTHER INDUSTRIES, 2012–13



Source: TRA estimates

TOURISM MULTIPLIERS

The concept of indirect (and total) contribution to the Australian economy seeks to fully value tourism's supply chain. This is different to the concept of total and indirect multipliers, which reflects the economy-wide impacts on other sectors of the Australian economy.

Care should be taken in using multipliers as they are a measure of average effects, not marginal effects, and consequently do not account for economies of scale, unused capacity, or technological changes (ABS, 1995).

The calculation for the indirect contribution of tourism requires output multipliers. These are sourced from ABS' input-output tables (ABS Cat. No. 5209.0.55.001). Details on the output multipliers used in this analysis are presented in Table 7 in Appendix B, and are from the latest available (2009–10) input-output tables, released in September 2013.

Applying these output multipliers to tourism consumption expenditure in Australia in 2012–13 also provides tourism multiplier values for indirect output. Similarly tourism indirect employment multipliers are generated from the output multipliers by employment ratios from the I-O tables. These indirect employment multipliers are multiplied by the tourism consumption expenditure to generate indirect employment multipliers for tourism. Appendix B shows in detail how these measures are calculated.

Using this methodology, TRA estimates tourism's output multiplier for 2012–13 at 1.87. This means for every dollar tourism earns directly in the Australian economy, it value-adds an additional 87 cents to other parts of the economy¹². At 1.87, tourism's multiplier is larger than *Mining* (1.70), *Retail trade* (1.77) and *Education and training* (1.41).

For example, when applying both (output and employment) multipliers, a one per cent increase (\$944 million) in tourism direct consumption expenditure (\$94 billion) in 2012–13, generated an output outside tourism of \$822 million (in nominal terms) and created additional employment for 2,894 persons outside tourism.

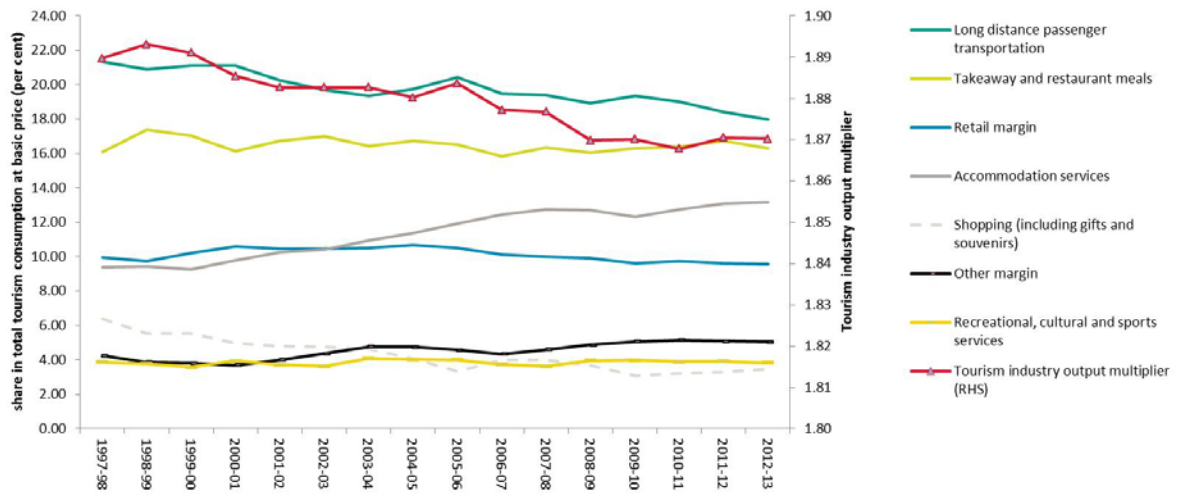
TOURISM MULTIPLIERS OVER TIME

The output multiplier value for the tourism industry may change depending upon the composition of tourism products consumed by visitors and the total multiplier value of the industries producing these products. The tourism industry output multiplier value seems to be influenced by three main products: *Long distance transport*, *Takeaway and restaurant meals*; and *Accommodation services*. These three products contributed around half (47 per cent) of total tourism consumption in 2012–13.

As can be seen in Figure 8, the tourism industry output multiplier value was highest at 1.89 in 1998–99, but declined marginally to 1.87 in 2012–13. This was consistent with the decline in the share of *Long distance transport* consumption expenditure, which declined 3 percentage points from 21 per cent in 1997–98 to 18.0 per cent in 2012–13. The share of *Takeaway and restaurant meals* expenditure increased slightly from 16.1 per cent to 16.3 per cent, whereas *Accommodation services* share rose 3.8 percentage points from 9.4 per cent in 1997–98 to 13.2 per cent in 2012–13. In 2012–13, the multiplier value remained unchanged from 2011–12 at 1.87, in line with the share of *Accommodation services*. The *Long distance transport* consumption expenditure also remained unchanged.

¹² Tourism output multiplier changes every year depending upon the proportion of consumption by visitors. For 2011–12, the tourism output multiplier value was 1.88, which was lower than the multiplier value of 1.91 in 1998–99.

FIGURE 8: RELATIONSHIP BETWEEN TOURISM PRODUCT SHARE AND TOURISM OUTPUT MULTIPLIER



Source: Derived from ABS unpublished data

CONCLUSION

This report provides estimates of tourism's indirect contribution to Australian GDP, GVA and employment for the period 1997–98 to 2012–13. The indirect contribution estimates in this report complement the direct contribution estimates presented in the ABS TSA 2012–13 and provide a more complete picture of the Australian tourism industry. The report highlights the relative importance of the direct and indirect contribution of tourism and the distribution of the flow-on effects to various industries in the economy.

In 2012-13:

- tourism's total contribution to Australian GDP increased by 4.3 per cent to \$91 billion compared to 2011-12 (\$42 billion directly and \$49 billion indirectly)
- tourism's total contribution to Australian GVA rose by 4.4 per cent to \$80 billion—\$39 billion directly and \$41 billion indirectly
- tourism employed 929,026 persons in total (544,000 persons directly and 385,000 persons indirectly), representing 8.0 per cent of total employment in Australia
- strong growth in tourism GDP and GVA was driven by solid growth (4.4 per cent) in visitor consumption (3.8 per cent in the domestic and 6.1 per cent in international consumption), compared to 2011–12.

Latest economic indicators available from TRA and other research show that in light of economic changes happening at national and international levels, tourism is at the forefront of Australia's future prosperity. These changes include:

- the economic balance tilting from the West to the East
- recovery in European and US economies from the recent economic turmoil of the GFC
- growing significance of service industries resulting from peaking of the investment boom in the mining and resources sector
- rising unemployment and increasing wage costs mean that many labour-intensive manufacturing businesses are unviable in Australia.

However, among these challenges there are opportunities for the Australian tourism industry. For example, prosperity in the eastern part of the world, especially China, is leading the growth in international visitor expenditure. Nearly half of the \$1.3 billion increase in international visitor expenditure in the year ending September 2013 was provided by China alone (TRA 2013c). Further, the Australian dollar is weakening against a range of important tourism-related currencies, improving the price competitiveness of international and domestic tourism. Leisure travel from Australia's domestic and traditional inbound markets—the main source of economic value—is also starting to pick up.

With a depreciating currency and Australia's proximity to the Asia-Pacific, wide ranging government policies seeking to generate greater tourism economic growth are necessary. Longer term, these will likely have a favourable impact on both tourism and the broader economy.

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APPENDIX A: METHODOLOGY FOR CALCULATING INDIRECT CONTRIBUTION

The indirect contribution model developed and implemented by TRA uses relationships derived from the latest available input-output (I-O) table for 2009–10 from the ABS. The model assumes that from 1997–98 to 2012–13, the industry structure of the Australian economy remained consistent with 2009–10 input-output tables.

This also means that the model produces estimates based on the supply and demand relationships generated by the 2009–10 input-output tables. It does not take into account any year-to-year variation in supply and demand ratios. This assumption holds in terms of recently revised supply-use tables for the whole time-series based on *Australian and New Zealand Standard Industrial Classification 2006* (ANZSIC 2006).

Direct and indirect effects are measured in terms of three key economic indicators: tourism GDP, tourism GVA and tourism employment. It is difficult to directly measure employment in tourism because employees in tourism-related industries generally provide services to both visitors and non-visitors. The TSA measures direct tourism employment by applying the tourism GVA ratio in the benchmark year to the ABS Labour Force Survey estimates for tourism-related industries in subsequent years.

This method assumes that the employment generated by tourism is directly proportional to the 'value added' generated by tourism in the benchmark year. While this might not be strictly accurate, the method provides a way of apportioning total industry employment between servicing demands of visitors and non-visitors.

Tourism industry GVA ratios are used for generating employment estimates for the subsequent years until a new benchmark is produced using revised estimates in terms of supply-use tables, service industry surveys and other new information. Employment estimates presented in this report are based on the 2009–10 benchmark year.

THE MODEL

The Australian TSA measures the direct effects of tourism activity. This is the activity of those businesses which directly supply a product to a visitor (tourist). For example, it includes a hotel providing accommodation to a visitor, or a retailer selling a souvenir to a visitor. When a visitor buys a meal in a restaurant, the direct tourism demand is the price of the meal.

However, it does not include the indirect effects of tourism, which are of considerable interest. These are the up-stream effects of tourism demand on businesses which provide goods and services to the tourism industry. The indirect tourism demand generated from the supply of a meal to a visitor, for example, begins with the production of intermediate inputs used by the restaurant (e.g. the production of meat and vegetables used to make the meal, electricity for cooking etc). Producers of these inputs have no direct relationship with the visitor.

Indirect tourism demand is calculated through input-output analysis. This analysis provides a breakdown of the supply and demand of commodities in the Australian economy.

Input-output analysis is based on a fundamental identity which equates supply and demand as follows:

Let, in a simple production function form, $t_{ij} = At_i + f_i$

where: t = total outputs of industry sectors

A = inter-industry coefficients

f = final demand for outputs of the industry sectors

Solving the input-output model:

$$t = At + f$$

$$t - At = f$$

$$(I-A) t = f$$

$$t = (I-A)^{-1} f$$

where $(I-A)^{-1}$, is the Leontief inverse, or input-output inverse/multiplier.

TRA uses the following mathematical relationships to estimate indirect tourism contribution:

$$\text{Indirect output} = [(I-A)^{-1} - I] F$$

$$\text{Indirect employment} = E [(I-A)^{-1} - I] F$$

A = a matrix (coefficient) derived from the I-O table. This table contains data on the flow of goods and services in the economy (e.g. who buys what, and who produces what)

I = Identity matrix (ones in the diagonal and zeros elsewhere)

$(I-A)$ = matrix calculated by subtracting the coefficient matrix (A) from the identity matrix (I)

$(I-A)^{-1}$ = An inverse matrix showing by what factor (row) industry sells goods and services to (column) industry because of change in final demand

F = Tourism consumption at basic prices

E = Employment/output ratios

The model uses input coefficients generated by econometric equations that predict input purchases based on an economy's characteristics. Output from the model includes total industry output, employment, and value-added for all industries in the Australian economy. Total industry output is defined as the value of production by industry per year. Employment represents total wages and salaried employees for both full-time and part-time workers.

Total value added is defined as:

- all income paid to workers by employers
- self-employed income
- interests
- rents
- royalties
- dividends
- profit payments
- excise and sales taxes paid by individuals to businesses.

APPENDIX B: INPUT-OUTPUT MULTIPLIERS AND TOURISM MULTIPLIERS

INPUT-OUTPUT MULTIPLIERS:

The introduction of direct and indirect definitions in TSA has overlaps with a similar terminology (not the concept) that has been used historically in the input-output modelling technique. In the I-O modelling concept, direct contribution is the initial consumption demanded in the economy. The indirect contribution is the total flow-on effect on industries providing intermediate inputs to the industry supplying goods and services to the initial consumption.

In order to account for tourism contribution correctly, the consumptions of TSA Direct and Indirect are combined to calculate the flow-on effects using the I-O multipliers. As mentioned, this report adopts and reports the TSA direct tourism contribution as those in the national TSA, the indirect contribution of the TSA is also combined with the flow-on effect of tourism contribution in this report for the reporting purposes. Figures 9 and 10 summarise our process.

As seen from Figures 9 and 10, total contribution is the same in both TSA and I-O multiplier approaches. Estimates in this report are provided separately for direct and indirect tourism effects in nominal terms unless stated otherwise. The report provides mainly tourism GDP, tourism GVA and tourism employment.

FIGURE 9: FLOW-ON EFFECT OF TOURISM CONSUMPTION

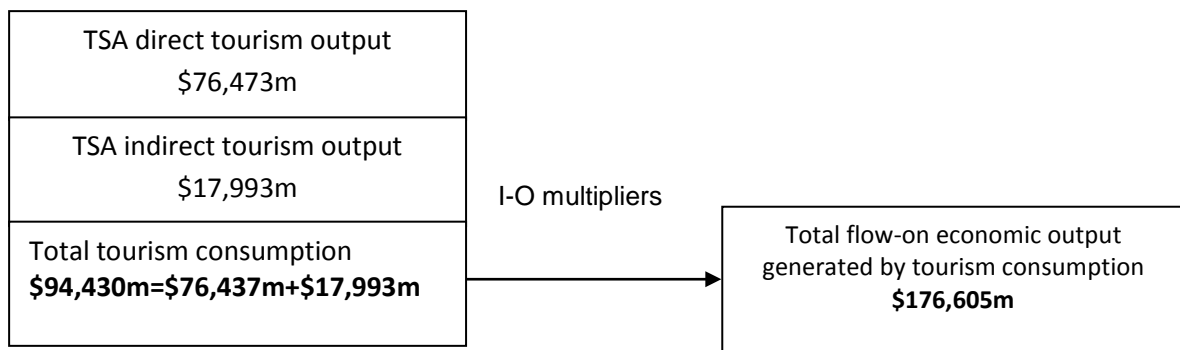
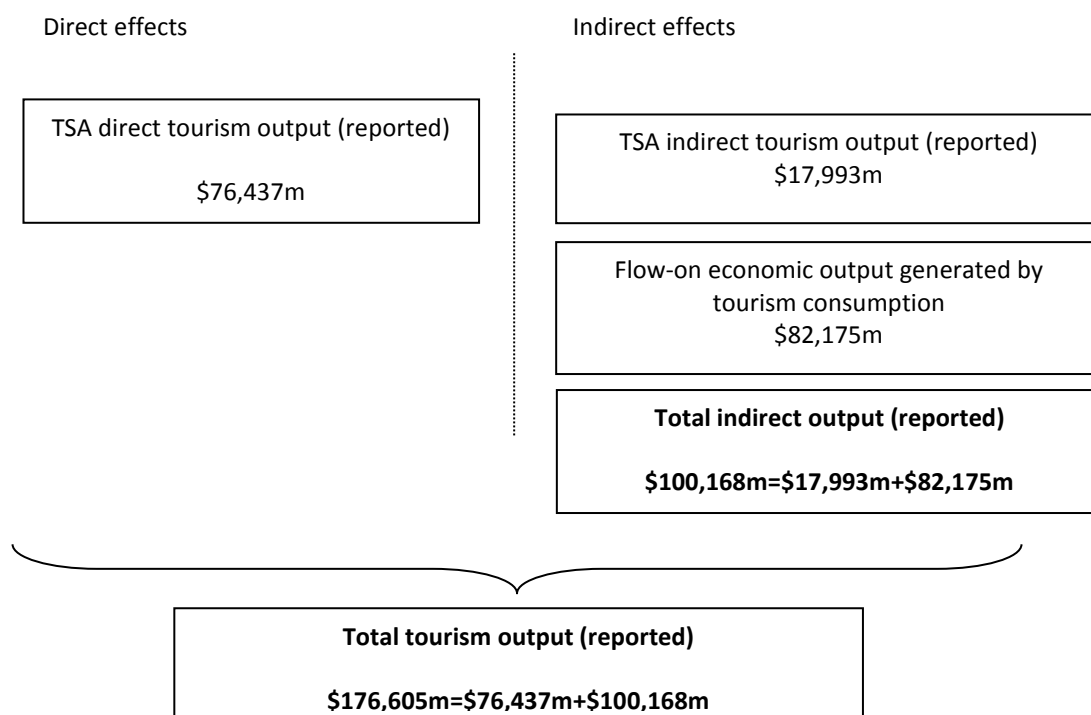


FIGURE 10: PRESENTATION OF RESULTS



A multiplier reflects the flow-on effect on output or employment, due to a unit increase in the output of a given industry resulting from increased demand for a particular commodity. They are not tourism specific multipliers, but can be used to discuss the multiplier effect of increases in consumption expenditure in tourism characteristic industries.

Input-output multipliers are summary measures used for predicting the total impact on all industries, in an economy of changes in demand for the output of any one industry. The multipliers describe average effects, not marginal effects, and consequently do not take account of economies of scale, unused capacity or technological changes (ABS 1995).

Industry multipliers provide the basis for calculating tourism's indirect effects, derived from the latest available input-output data from the ABS: the 2009–10 input-output tables published in late 2013.

For example, \$1.0 million worth of increased demand in the *Accommodation and food services* industry will require \$1.98 million (Column B) worth of goods and services to be produced throughout the economy generating around 15 jobs (Column F*1000). This increase in output in the economy will increase tourism-related output in *Accommodation and food services* industries by \$598,000 (tourism consumption ratio being 30.2%) and will increase total tourism employment by 4.6 persons, of which 1.2 persons will be employed indirectly (refer Table 7).

TABLE 7: TOURISM INDUSTRY MULTIPLIERS (2012–13) BASED ON 2009–10 INPUT-OUTPUT TABLES

Industries	Tourism consumption at basic price (tourism output) identified as direct or indirect in tsa		Total tourism consumption (\$ million) at basic price (sum of direct and indirect)	Output multipliers*	Tourism consumption ratio	Share weighted consumption (col.b*col.c)	Indirect output (\$ million)	Total employment multipliers*	Share weighted tourism employment (col.c*col.f*1000)	Indirect employment multipliers*	Share weighted indirect tourism employment (col.c*col.h*1000)
	Direct	Indirect									
Agriculture, forestry and fishing	0.000	739.2	739.2	1.968	0.008	0.015	5531	0.010	0.077	0.004	0.033
Mining	0.000	0.0	0.0	1.701	0.000	0.000	2395	0.003	0.000	0.002	0.000
Meat and dairy	0.000	1598.3	1598.3	2.453	0.017	0.042	2193	0.010	0.166	0.007	0.114
Other food	0.000	1550.9	1550.9	2.336	0.016	0.038	2546	0.009	0.149	0.006	0.097
Beverages and tobacco	0.000	1728.9	1728.9	2.092	0.018	0.038	2381	0.007	0.121	0.005	0.088
Textiles	0.000	217.3	217.3	1.908	0.002	0.004	175	0.008	0.019	0.004	0.009
Clothing and footwear	0.000	382.5	382.5	1.678	0.004	0.007	103	0.008	0.032	0.003	0.013
Wood	0.000	4.4	4.4	2.185	0.000	0.000	351	0.009	0.000	0.005	0.000
Printing and publishing	0.000	133.0	133.0	1.939	0.001	0.003	1311	0.008	0.012	0.004	0.006
Petroleum and coal	0.000	3429.6	3429.6	1.498	0.036	0.054	2244	0.002	0.067	0.001	0.049
Chemicals	0.000	612.9	612.9	2.058	0.006	0.013	888	0.006	0.036	0.004	0.026
Rubber and plastic	0.000	122.9	122.9	1.884	0.001	0.002	783	0.006	0.008	0.003	0.004
Non-metallic mineral	0.000	49.6	49.6	2.154	0.001	0.001	497	0.007	0.003	0.004	0.002
Basic metal	0.000	1.9	1.9	2.266	0.000	0.000	473	0.004	0.000	0.003	0.000
Fabricated metal	0.000	58.2	58.2	2.112	0.001	0.001	1545	0.006	0.004	0.004	0.002
Transport equipment	0.000	801.7	801.7	1.942	0.008	0.016	1691	0.007	0.058	0.004	0.031

Industries	Tourism consumption at basic price (tourism output) identified as direct or indirect in TSA		Total tourism consumption (\$ million) at basic price (sum of direct and indirect)	Output multipliers*	Tourism consumption ratio	Share weighted consumption (col.b*col.c)	Indirect output (\$ million)	Total employment multipliers*	Share weighted tourism employment (col.c*col.f*1000)	Indirect employment multipliers*	Share weighted indirect tourism employment (col.c*col.h*1000)
	Direct	Indirect									
Other machinery and equipment	0.000	686.8	686.8	1.950	0.007	0.014	769	0.008	0.056	0.003	0.025
Miscellaneous manufacturing	0.000	460.6	460.6	2.035	0.005	0.010	136	0.011	0.052	0.004	0.019
Electricity	0.000	0.0	0.0	2.172	0.000	0.000	2023	0.004	0.000	0.003	0.000
Gas	0.000	0.0	0.0	2.518	0.000	0.000	121	0.008	0.000	0.005	0.000
Water supply and waste collection	0.000	0.0	0.0	1.720	0.000	0.000	702	0.006	0.000	0.003	0.000
Construction	0.000	0.0	0.0	2.344	0.000	0.000	4605	0.008	0.000	0.005	0.000
Wholesale trade	0.000	2756.2	2756.2	1.858	0.029	0.054	4376	0.007	0.210	0.003	0.100
Retail trade	9317.3	845.3	10162.6	1.767	0.108	0.190	1866	0.015	1.634	0.003	0.356
Accommodation and food services	28355.9	65.7	28421.6	1.926	0.301	0.580	1100	0.015	4.563	0.004	1.101
Road transport	2055.4	747.7	2803.1	1.877	0.030	0.056	2287	0.009	0.275	0.004	0.123
Rail transport	860.8	115.0	975.8	1.874	0.010	0.019	189	0.008	0.082	0.003	0.033
Air, space, and water transport	16174.5	120.9	16295.4	1.973	0.173	0.341	1027	0.007	1.122	0.004	0.641
Other transport	1296.6	9.7	1306.3	1.868	0.014	0.026	4144	0.007	0.102	0.004	0.051
Information media and telecommunications	779.1	731.6	1510.8	1.818	0.016	0.029	3891	0.006	0.095	0.003	0.053

Industries	Tourism consumption at basic price (tourism output) identified as direct or indirect in TSA		Total tourism consumption (\$ million) at basic price (sum of direct and indirect)	Output multipliers*	Tourism consumption ratio	Share weighted consumption (Col.B*Col.C)	Indirect output (\$ million)	Total employment multipliers*	Share weighted tourism employment (Col.C*Col.F*1000)	Indirect employment multipliers*	Share weighted indirect tourism employment (Col.C*Col.H*1000)
	Direct	Indirect									
Financial and insurance services	96.4	11.2	107.6	1.437	0.001	0.002	5769	0.004	0.004	0.001	0.002
Ownership of dwelling	4454.4	0.0	4454.4	1.405	0.047	0.066	0	0.001	0.061	0.001	0.061
Rental, hiring and real estate services	1330.9	0.0	1330.9	2.134	0.014	0.030	5032	0.007	0.102	0.005	0.065
Professional, scientific and technical services	6.9	0.0	6.9	1.893	0.000	0.000	9154	0.009	0.001	0.004	0.000
Administrative support services	3202.9	11.0	3213.9	1.906	0.034	0.065	6051	0.010	0.334	0.004	0.136

Industries	Tourism consumption at basic price (tourism output) identified as direct or indirect in TSA		Total tourism consumption (\$ million) at basic price (sum of direct and indirect)	Output multipliers*	Tourism consumption ratio	Share weighted consumption (Col.B*Col.C)	Indirect output (\$ million)	Total employment multipliers*	Share weighted tourism employment (Col.C*Col.F*1000)	Indirect employment multipliers*	Share weighted indirect tourism employment (Col.C*Col.H*1000)
	Direct	Indirect									
Public administration and safety	0.000	0.000	0.0	1.780	0.000	0.000	879	0.009	0.000	0.003	0.000
Education and training	3286.5	0.000	3286.5	1.414	0.035	0.049	278	0.013	0.439	0.002	0.062
Health care and social assistance	861.0	0.000	861.0	1.488	0.009	0.014	72	0.013	0.123	0.002	0.020
Arts and recreation services	3971.1	0.000	3971.1	1.956	0.042	0.082	738	0.012	0.485	0.004	0.187
Other services	387.5	0.000	387.5	1.677	0.004	0.007	1860	0.013	0.052	0.003	0.012
Total	76437	17993	94430		1.000	1.870**	82175.2		10.545**		3.521**

Source: TRA estimates derived from 2009–10 input-output tables

*Generated from the input-output tables

** The total tourism multiplier (sum of share weighted output, employment and indirect employment)

