

Assessment of Tairāwhiti's tradeable sector

for Trust Tairāwhiti

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Infometrics

Economics put simply

Authorship

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Introduction

Trust Tairāwhiti has commissioned Infometrics to assess the size of the region's tradeable sector, to help contextualise the significance of the tradeable sector in the region and help to inform discussions amongst regional stakeholders.

The term "tradeable" is defined as the portion of products produced in Tairāwhiti that are sold to parties outside the region – not only exports to overseas, but also 'exports' to other regions of New Zealand.

Defining the tradeable sector

Introduction

Trade normally refers to the export of goods and services between countries. However, the concentration of Tairāwhiti's economy in a number of industries means that Tairāwhiti is a significant producer for both overseas export and export to other regions within New Zealand.

In this report, we use a broader definition of trade, with the tradeable sector including anything traded outside the Tairāwhiti region, including exports to overseas and exports to other regions of New Zealand. In defining Tairāwhiti's tradeable sector, we attempt to estimate the share of Tairāwhiti's production which leaves the region, in other words, what is not consumed by Tairāwhiti residents, business, and the local economy.

Accounting for final demand

Our analysis is based on the concept of final demand, which means that we account for where production is finally consumed, even if it passes through other industries on the way. For example, if oranges are sold from a local farm to a local juice factory, and then the juice is exported, we would consider the oranges to be exported. This final demand approach also means that services which are delivered locally, such as farm fence building or veterinary services for sheep, are counted towards exports, to the extent that they contribute towards meat and wool exports.

Lower and upper bound applied

Through this process, we have developed a lower and upper bound estimate of the proportion of each industry's output which is traded in Tairāwhiti. The range between the upper and lower bound reflects that this process is an estimation, and helps to convey the associated uncertainty. We apply the lower and upper bound to our employment and GDP estimates for each of the 500 industries within Tairāwhiti. We then aggregate these results up to a higher-level industry classification for reporting and analysis.

Our central estimate for Tairāwhiti is based on the average of the lower and upper bound. Our central estimate for New Zealand is based on export final demand from Stats NZ's national input-output tables 2020.

Three-step approach

We define the tradeable sector in Tairāwhiti through a three-step approach, considering the relative size and nature of each of 500 industries at Level 4 of the Australia and New Zealand Standard Industry Classification (ANZSIC).

Step 1: We estimate the share of output from each industry which is exported overseas at the national level, using Stats NZ's national accounts input-output tables. The national

accounts input-output tables are published six-yearly, and we have used the most recent table – from 2020. The input-output tables quantify interactions between different industries and sectors, for example, what proportion of horticulture industry outputs are ultimately consumed in New Zealand or exported overseas, regardless of whether they are exported as raw products (e.g. fruit) or processed (e.g. turned into fruit juice) in New Zealand before being exported.

Step 2: We consider the proportion of Tairāwhiti's production which is more likely to be exported outside the region than the national average, including exports to other regions of New Zealand. We use alternative data sources, such as the share of population, to apportion production between consumption in Tairāwhiti and other regions. This process is outlined in more detail in the following sections.

Step 3: Finally, we will consider which industries in Tairāwhiti are less likely to export than the national average. For example, we might expect Tairāwhiti's technology sector to be more focused on servicing local businesses, than producing software for export, compared to areas with significant critical mass in software development such as Wellington City.

Our central estimate for Tairāwhiti is based on the average of the lower and upper bound. Our central estimate for New Zealand is based on export final demand from Stats NZ's national input-output tables 2020.

Groupings

In going through the three-step process, industries fell into several groupings. We have outlined some of the groupings below to illustrate the definition process.

Export-focused primary industries and niches

For export-focused primary industries (such as horticulture) and related processing industries (such as fruit and vegetable processing), we consider the share of production exported overseas and the share consumed within New Zealand. Then, we consider how much of the share consumed within New Zealand is consumed in Tairāwhiti.

Exported overseas: Stats NZ's national accounts input-output tables indicate the share of national production in each industry which is exported overseas. In the case of horticulture, 70% of production was exported overseas in 2020.

Consumed within New Zealand: The remaining share not exported is assumed to be consumed within New Zealand, in the case of horticulture, 30%.

Average consumption within Tairāwhiti: Our starting point is that residents and businesses in Tairāwhiti consume products in proportion to their share of the population. In 2023, Tairāwhiti accounted for 1.0% of New Zealand's population, so Tairāwhiti may consume 1.0% of the 30% of horticulture production consumed in New Zealand (for a total of 0.3% of total production).

Higher consumption within Tairāwhiti: Certain products such as citrus fruit are more widely and cheaply available in Tairāwhiti and can be consumed in higher quantities than elsewhere. Tairāwhiti might consume these locally abundant products at double the national rate, therefore accounting for 2.0% of the 30% of horticulture production consumed in New Zealand (for a total of 0.6% of total production).

Forming the upper bound: We form an upper bound estimate by assuming Tairāwhiti production is exported overseas at the same as the national rate (70% for horticulture) and is consumed at the same rate as the national average, with Tairāwhiti's share proportionate to its share of New Zealand's population (1.0%). Based on Tairāwhiti's population share (1.0%), 99.0% of consumption in New Zealand is outside of Tairāwhiti. Therefore, Tairāwhiti exports 70%, plus 99.0% of 30% (29.7%), for a total of 99.7% exported out of the region.

Forming the lower bound: We form a lower bound estimate by assuming Tairāwhiti production is exported overseas at the same as the national rate (70% for horticulture) and is consumed at a higher rate in Tairāwhiti (2.0%, assuming for the lower bound that price and access could increase local consumption). Tairāwhiti's higher rate of consumption (2.0%) means that 98.0% of consumption in New Zealand is outside of Tairāwhiti. Therefore, Tairāwhiti exports 70% internationally, plus 98.0% of 30% domestically (29.4%), for a total of 99.4% exported out of the region.

In the lower bound, Tairāwhiti consumes more of its own production, and therefore exports slightly less.

Bulky or heavy products

For bulky or heavy products (such as gravel quarrying, or wooden building component manufacturing), our lower bound estimate is that all of production is consumed locally, and the upper bound is that it is traded at the same rate as the national average. Products of a bulky or heavy nature are generally produced in each region and consumed locally, and we would doubly expect this to be the case for Tairāwhiti given its geographically-isolated location.

Largely servicing local consumers, local exporters, or tourists

For products delivered locally (such as veterinary services, or cafes and restaurants), these are likely to largely service local consumers, or to a lesser extent local exporters or tourists in the region. Services provided to exporters, such as veterinary services to a beef cattle farm, contribute to the value of exports, such as beef meat. For these industries, our lower bound estimate is that all production is consumed locally, and the upper bound is that it is traded at the same rate as the national average. Tairāwhiti's tourism sector is proportionately smaller than the national average, so we wouldn't expect its tourism-related industries to export at a higher rate than the national average.

Highly-tourism focused

For highly-tourism focused industries such as rental car hire or accommodation services, we have assumed a lower bound of the national export rate, and upper bound of 100%, reflecting that these industries are inherently focused on servicing tourists (from outside the region, and hence could be fully tradeable).

Inherently local

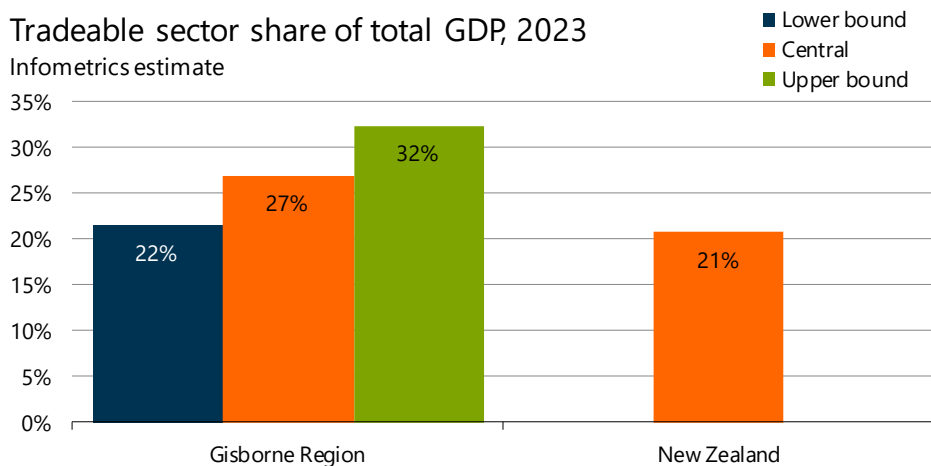
Several industries are considered to be inherently local, such as local government administration, and we have assumed that both the upper and lower bound is that no portion of these industries output is exported.

Significance of tradeable sector

Tradeable sector accounts for 22-32% of Tairāwhiti GDP

Tairāwhiti's tradeable sector is estimated to account for between 22% (lower bound) and 32% (upper bound) of the total Tairāwhiti economy, based on Infometrics gross domestic product (GDP) estimates (see Graph 1).

Graph 1

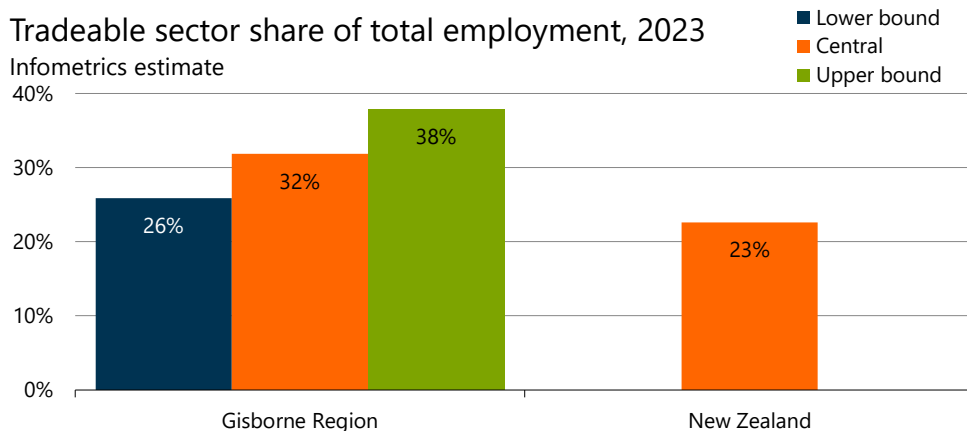


Our central estimate is that the tradeable sector accounts for 27% of the Tairāwhiti economy, and 21% of the national economy.

Tradeable sector accounts for 26-38% of Tairāwhiti employment

Tairāwhiti's tradeable sector is estimated to account for between 26% (lower bound) and 38% (upper bound) of total employment in Tairāwhiti (Graph 2).

Graph 2



Our central estimate is that the tradeable sector accounts for 32% of Tairāwhiti employment, and 23% of national employment.

Tairāwhiti more reliant on tradeable sector than national average

Both the central employment and GDP estimates indicate that Tairāwhiti is clearly more reliant on the tradeable sector than the national average. The tradeable sector underpins the broader economy by providing economic activity and employment that sustains the local population, indirectly sustaining local non-tradeable industries such as construction, retail, education, and health.

Forestry, logging and wood product manufacturing accounts for 32% of tradeable GDP

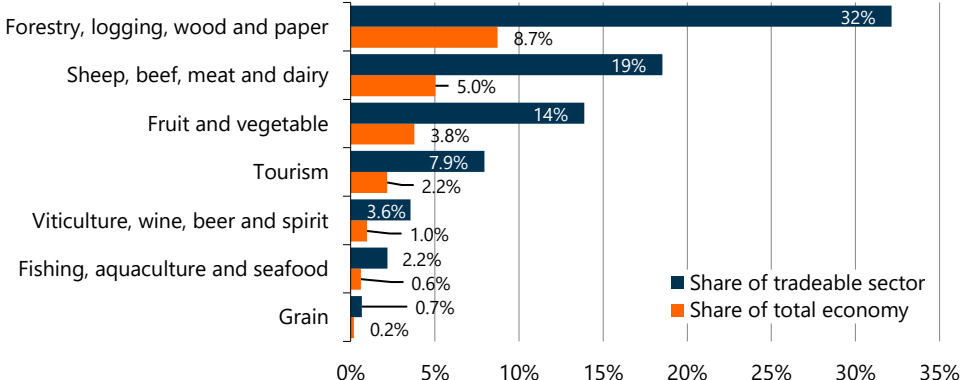
Focusing on the central estimate of Tairāwhiti's tradeable sector, we now turn to the relative significance of key tradeable industries. Expressing these industries as a percentage of tradeable sector GDP, rather than total GDP, emphasises their significance to the regional economy.

Forestry, logging, wood and paper product manufacturing captures the value chain from forests through to wood and paper production (although there is no paper or pulp production in Tairāwhiti). Forestry, logging and wood product manufacturing account for 8.7% of Tairāwhiti's total GDP in 2023, or 32% of Tairāwhiti's tradeable sector GDP (see Graph 3).

Graph 3

Tairāwhiti export industry share of GDP, 2023

Infometrics central estimate



Sheep, beef, meat and dairy captures a range of pastoral farming (including deer and beekeeping) and the post-harvest activities of meat and dairy product manufacturing. Sheep, beef, meat and dairy accounts for 5.0% of Tairāwhiti's total GDP, or 19% of Tairāwhiti's tradeable sector GDP.

Fruit and vegetable captures horticulture and fruit growing as well as related post-harvest activities of packing, processing, and food and beverage manufacturing. Fruit

and vegetables account for 14% of Tairāwhiti's tradeable sector GDP. Tourism¹ accounts for 8% of Tairāwhiti's tradeable sector GDP.

Viticulture, wine, beer and spirit making accounts for 3.6% of Tairāwhiti's tradeable sector GDP. Fishing, aquaculture and seafood processing accounts for 2.2% of Tairāwhiti's tradeable sector GDP. Grain harvesting and milling accounts for 0.7% of Tairāwhiti's tradeable sector GDP.

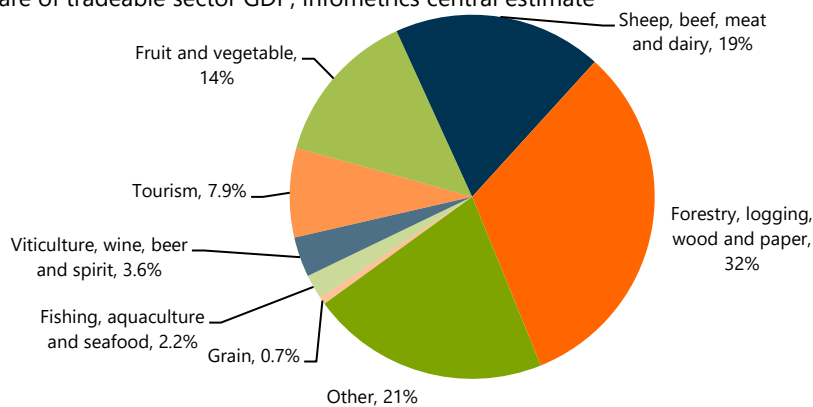
79% of tradeable GDP from six industry groupings

Graph 4 shows the six export industry groupings together, which collectively account for 79% of Tairāwhiti's tradeable sector GDP. Other industries account for 21% of tradeable sector GDP, and is spread across many industries. Most of the other industries are servicing these six export-focused industry groupings – for example, veterinarians providing services to sheep and beef cattle farming.

Graph 4

Tairāwhiti tradeable sector GDP, 2023

Share of tradeable sector GDP, Infometrics central estimate



Sheep and beef, fruit and vege each account for 23% of tradeable employment

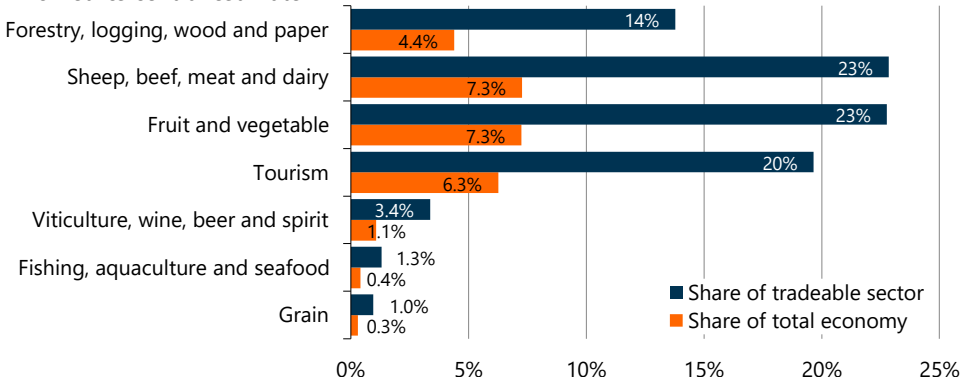
The largest tradeable groupings for employment in Tairāwhiti are sheep, beef, meat and dairy, and fruit and vegetables, each accounting for 7.3% of total jobs, or 23% of tradeable sector jobs (see Graph 5). Following closely behind, tourism accounts for 20% of jobs in Tairāwhiti's tradeable sector, followed by forestry, logging, wood and paper with 14%.

¹ Tourism is a sector, incorporating a range of components of different industries (including retail, accommodation and food services, etc) rather than a standalone industry. More details on the tourism sector are available [here](#).

Graph 5

Tairāwhiti export industry share of employment, 2023

Infometrics central estimate



Note: The order of the groupings is intentionally the same as Graph 3, for ready comparison.

Viticulture, wine, beer and spirit accounts for 3.4% of Tairāwhiti's tradeable sector jobs, fishing, aquaculture and seafood accounts for 1.3%, and grain accounts for 1.0%.

The six export industry groupings of Graph 5 account for 85% of Tairāwhiti tradeable sector employment, with the remainder spread across a range of industries.

Two tables detailing tradeable sector employment and GDP are included in the Appendix, at a coarse and finer level of industry definition.

Scope to add further value to primary production

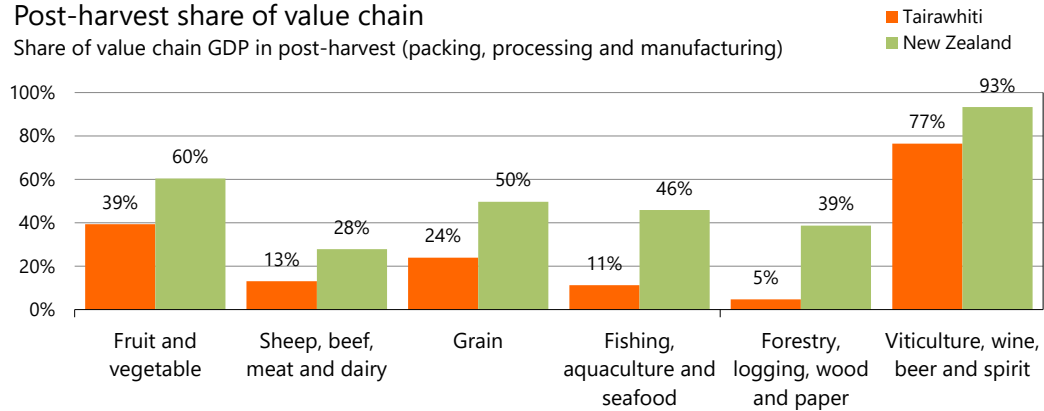
Primary production contributes to the economy directly and indirectly, through post-harvest activities. Across six main product value chains, Tairāwhiti's economy is under-represented in post-harvest aspects compared to the national average.

Graph 6 shows that post-harvest activities such as wood and paper production account for 39% of GDP in the forestry value chain nationally, but only 5% for Tairāwhiti. For fruit and vegetables, post-harvest activities such as processing and packing account for 60% of value chain GDP nationally, but only 39% in Tairāwhiti.

Graph 6

Post-harvest share of value chain

Share of value chain GDP in post-harvest (packing, processing and manufacturing)



The under-representation of post-harvest activities in Tairāwhiti's value chains reflects that the region is concentrated in primary production. Tairāwhiti's primary products are more likely to be exported in raw form than their counterpart industries in other parts of New Zealand. If Tairāwhiti could grow its role in post-harvest production of its primary products, this would help to grow the size of the tradeable sector, as these products are highly tradeable.

Appendix. Tradeable sector by industry

Table 1

Tairāwhiti tradeable sector by industry

Infometrics GDP and employment estimates, 2023

Industry	GDP (\$m)			Employment		
	Tradeable	Total	Tradeable %	Tradeable	Total	Tradeable %
Agriculture, Forestry and Fishing	\$451.5	\$453.3	100%	4,719	4,740	100%
Mining	\$0.8	\$3.6	24%	10	39	25%
Manufacturing	\$92.8	\$124.6	74%	1,390	1,909	73%
Electricity, Gas, Water and Waste Services	\$1.1	\$19.6	6%	2	57	4%
Construction	\$5.9	\$194.1	3%	72	2,225	3%
Wholesale Trade	\$15.2	\$90.6	17%	121	726	17%
Retail Trade	\$11.6	\$159.9	7%	144	2,042	7%
Accommodation and Food Services	\$10.4	\$50.2	21%	280	1,268	22%
Transport, Postal and Warehousing	\$20.5	\$97.1	21%	192	915	21%
Information Media and Telecommunications	\$4.7	\$34.8	13%	33	238	14%
Financial and Insurance Services	\$3.4	\$37.5	9%	23	245	9%
Rental, Hiring and Real Estate Services	\$18.8	\$191.6	10%	52	468	11%
Professional, Scientific and Technical Services	\$20.6	\$156.4	13%	200	1,519	13%
Administrative and Support Services	\$22.8	\$56.2	41%	436	1,025	43%
Public Administration and Safety	\$0.0	\$88.1	0%	0	919	0%
Education and Training	\$3.1	\$104.4	3%	69	2,261	3%
Health Care and Social Assistance	\$1.5	\$216.2	1%	20	2,880	1%
Arts and Recreation Services	\$0.9	\$19.7	4%	14	308	4%
Other Services	\$4.7	\$40.1	12%	115	981	12%
Not Elsewhere Included	\$0.0	\$194.2	0%			
Owner-Occupied Property Operation	\$0.0	\$207.8	0%			
Total	\$690.4	\$2,540.0	27%	7,891	24,765	32%

Table 2

Tairāwhiti tradeable sector by industry

Infometrics GDP and employment estimates, 2023

Industry	GDP (\$m)			Employment		
	Tradeable	Total	Tradeable %	Tradeable	Total	Tradeable %
Horticulture and Fruit Growing	\$63.9	\$64.2	100%	1,250	1,256	100%
Sheep, Beef Cattle and Grain Farming	\$108.4	\$108.8	100%	1,444	1,449	100%
Dairy Cattle Farming	\$3.0	\$3.0	100%	31	31	100%
Poultry, Deer and Other Livestock Farming	\$3.2	\$3.2	100%	85	85	100%
Fishing and Aquaculture	\$13.4	\$13.4	100%	78	78	100%
Forestry and Logging	\$193.7	\$194.4	100%	575	577	100%
Agriculture, Forestry and Fishing Support Services and Hunting	\$65.9	\$66.3	99%	1,257	1,264	99%
Mining	\$0.8	\$3.6	24%	10	39	25%
Meat and Meat Product Manufacturing	\$15.5	\$15.6	100%	278	279	100%
Seafood Processing	\$1.7	\$1.7	100%	26	26	100%
Dairy Product Manufacturing	\$1.2	\$1.2	100%	20	20	100%
Fruit, Oil, Cereal and Other Food Product Manufacturing	\$25.3	\$28.9	87%	474	554	85%
Beverage and Tobacco Product Manufacturing	\$18.9	\$19.0	99%	103	104	99%
Textile, Leather, Clothing and Footwear Manufacturing	\$3.6	\$3.6	99%	71	71	99%
Wood Product Manufacturing	\$10.8	\$13.7	79%	203	258	79%
Pulp, Paper and Converted Paper Product Manufacturing	\$0.0	\$0.0	0%	0	0	0%
Printing	\$0.6	\$5.1	13%	11	89	13%
Petroleum and Coal Product Manufacturing	\$0.0	\$0.0	0%	0	0	0%
Basic Chemical and Chemical Product Manufacturing	\$0.5	\$2.1	25%	6	25	25%
Polymer Product and Rubber Product Manufacturing	\$1.8	\$7.4	24%	30	122	24%
Non-Metallic Mineral Product Manufacturing	\$0.4	\$3.8	11%	4	40	11%
Primary Metal and Metal Product Manufacturing	\$0.0	\$0.0	0%	0	0	0%
Fabricated Metal Product Manufacturing	\$0.7	\$5.3	13%	13	100	13%
Transport Equipment Manufacturing	\$1.0	\$1.8	57%	14	23	59%
Machinery and Other Equipment Manufacturing	\$8.9	\$12.6	71%	104	147	71%
Furniture and Other Manufacturing	\$1.9	\$2.8	67%	34	51	67%
Electricity and Gas Supply	\$0.6	\$5.9	11%	1	5	11%
Water, Sewerage, Drainage and Waste Services	\$0.5	\$13.7	3%	2	52	3%
Building Construction	\$0.6	\$40.3	2%	10	615	2%
Heavy and Civil Engineering Construction	\$1.0	\$57.3	2%	6	366	2%
Construction Services	\$4.3	\$96.5	4%	55	1,244	4%
Wholesale Trade	\$15.2	\$90.6	17%	121	726	17%
Motor Vehicle and Motor Vehicle Parts and Fuel Retailing	\$3.5	\$27.0	13%	38	293	13%
Supermarket, Grocery Stores and Specialised Food Retailing	\$2.8	\$47.2	6%	39	661	6%
Other Store-Based Retailing and Non Store Retailing	\$5.3	\$85.7	6%	67	1,088	6%
Accommodation and Food Services	\$10.4	\$50.2	21%	280	1,268	22%
Road Transport	\$10.4	\$49.2	21%	115	546	21%
Rail, Water, Air and Other Transport	\$1.9	\$7.7	24%	14	58	24%
Postal, Courier Transport Support, and Warehousing Services	\$8.2	\$40.2	20%	63	311	20%
Information Media Services	\$3.4	\$22.2	15%	30	192	15%
Telecommunications, Internet and Library Services	\$1.3	\$12.6	10%	3	46	7%
Finance	\$2.5	\$27.8	9%	13	146	9%
Insurance and Superannuation Funds	\$0.0	\$0.5	9%	0	3	9%
Auxiliary Finance and Insurance Services	\$0.9	\$9.2	10%	9	96	10%
Rental and Hiring Services (except Real Estate)	\$7.3	\$35.6	21%	27	132	21%
Property Operators and Real Estate Services	\$11.5	\$156.0	7%	25	336	7%
Professional, Scientific and Technical Services	\$20.6	\$156.4	13%	200	1,519	13%
Administrative and Support Services	\$22.8	\$56.2	41%	436	1,025	43%
Central Government Administration, Defence and Public Safety	\$0.0	\$66.1	0%	0	615	0%
Local Government Administration	\$0.0	\$22.0	0%	0	304	0%
Education and Training	\$3.1	\$104.4	3%	69	2,261	3%
Health Care and Social Assistance	\$1.5	\$216.2	1%	20	2,880	1%
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