Print whole section

Small business benchmarks

The 2022–23 small business benchmarks help you compare your business's performance against similar businesses in the same industry.

Types of benchmarks

There are different types of small business benchmarks that help compare your business' performance.

Compare your business now

You can compare your business's performance against others in your industry by using our small business benchmarks.

What it means to be outside the benchmark range

Find out why your benchmark is above or below the range for your business turnover in your industry.

Correcting a mistake

If you find a mistake in your tax when checking against small business benchmarks, you need to correct the information.

How we use business performance benchmarks

Benchmarks are one of the tools we use to identify businesses that may be avoiding their tax obligations.

Benchmarks A-Z

Access all small business benchmarks listed in alphabetical order.

Small business benchmarks methodology and ratio calculations

What you need to know about the methodology and labels used to develop small business benchmarks.

QC 22307

Types of small business benchmarks

There are different types of small business benchmarks that help compare your business' performance.

Last updated 17 March 2025

Performance benchmarks

Performance benchmarks are financial ranges for your industry. They help you work out how you compare to other businesses and decide if you need to make any changes. Performance benchmarks apply to 100 industries.

Performance benchmarks include:

- tax return benchmark ranges from information provided by businesses on their tax returns.
- activity statement benchmark ranges – from information provided by businesses using complete financial year activity statement data. These benchmarks haven't been produced since 1 July 2017 with the introduction of Simpler BAS.

Tax return benchmark ranges include:

- cost of sales to turnover (excluding labour)
- total expenses to turnover
- labour to turnover
- rent to turnover
- motor vehicle expenses to turnover.

Activity statement benchmark ranges (before 1 July 2017) included:

- non-capital purchases to total sales
- GST-free sales to total sales.

Key benchmark range

Use the key benchmark range when you compare your business's performance to others in your industry.

We use this range to protect honest businesses. We may also use it to determine how much tax a business should have paid when there are insufficient or no records available. This is the most accurate when predicting business turnover.

Search for your industry key benchmark range by alphabetical order – Benchmarks A-Z

If your industry isn't represented in our small business benchmarks, use the industry benchmarks information in taxation statistics.

Compare your business now

You can compare your business's performance against others in your industry by using our small business benchmarks.

Last updated 17 March 2025

Media: Small business benchmarks https://tv.ato.gov.au/ato-tv/media? v=bd1bdiubqhwkq5 (**Duration:** 1:26)

About our benchmarks

Our benchmark methodology has been verified as statistically valid by an independent organisation and is consistent with international approaches.

Our benchmarks:

- are based on the biggest data set available – covering over 2 million small businesses
- account for businesses with different turnover ranges across 100 industries
- are published as a range to recognise the variations between businesses and differing location and circumstances.

We allocate business data to a business type based on a combination of:

- business industry code
- the main business activity listed on the tax return
- the trading name label of the business.

Compare your business performance

Step 1: Get your information ready

First, make sure you have your information ready and see what you need to calculate your benchmark.

Step 2: Start calculating

When you compare your business performance:

- choose the right industry code for your business using the business industry code tool
- if you operate more than one business, calculate information for each of them separately and indicate this on your income tax return.

To compare your business performance, you can:

- use the ATO app
- calculate it manually by
  - finding your industry benchmark
  - comparing your business performance manually.

You can use the benchmarks:

- to see how your business is tracking against the benchmarks at least once a year, before lodging your tax return
- as a guide to help you set up and understand industry standards if you are new to business.

Step 3: Check your results

After you check your results, consider what it means if you are outside the benchmark.

Other business performance tools

Benchmarks are only part of the analysis of your business. You can also use the:

- business viability assessment tool
- personal living expenses worksheets.

If you need help understanding how to improve your business performance, consult a business adviser or tax professional.

What you need to calculate your benchmark

Use our checklist to make sure you have the information you need to start comparing your business performance.

How to compare your business performance manually

How to manually calculate your business benchmark and compare your performance.

QC 47935

What you need to calculate your benchmark

Use our checklist to make sure you have the information you need to start comparing your business performance.

Last updated 17 March 2025

The information about your business will help you compare your business performance when you:

- use the ATO app
- calculate your performance manually.

Checklist for manually working out your benchmark

For	Examples of information you need
Gross business income	Sales records, which can include: • tax invoices for goods and services provided • sales invoices, vouchers or receipts

	• cash register tapes, credit card statements • bank deposit books and account statements.
Salary and wages	• your salary or wages • your employees' salaries or wages • payments to associates • remember to include any super paid.

Vehicles	Car operating expenses:
	• cents per kilometre – your business kilometres
	• logbook method
	  – business kilometres
	  – fuel and oil receipts or other information about how you estimated the expenses.

Interest	• credit card statement • overdraft statement.
Other	• statements of purchases from suppliers or tax invoices • contractor and labour hire records • purchase or expense records, for example cheque butts, bank account and credit card statements • records of goods taken for own use.
Cost of sales	The cost of anything produced, manufactured, acquired or purchased, for either:

	• manufacture • sale or exchange in deriving the gross proceeds • earnings of the business.

QC 47936

How to compare your business performance manually

How to manually calculate your business benchmark and compare your performance.

Last updated 17 March 2025

Calculating your benchmark figures

The basic formula for calculating each benchmark figure is:

- relevant benchmark figure ÷ turnover × 100 = benchmark percentage

Calculate cost of sales to turnover

To calculate the key benchmark cost of sales to turnover, divide the cost of your sales by your turnover and multiply by 100.

Example: calculating the cost of sales to turnover

This year the cost of sales for Steff's business was $137,983 while her turnover was $456,790.

She would calculate the cost of sales to turnover benchmark percentage as:

cost of sales ÷ turnover × 100

$137,983 ÷ $456,790 = 0.30207

0.30207 × 100 = 30.21%

Steff's cost of sales to turnover is 30.21%

Compare your performance

The following example demonstrates how to:

- compare your business performance using the benchmarks
- confirm that you are performing within the benchmark range
- clarify what it may mean if your business is outside a benchmark range.

Definitions of terms used in this example:

- **Associated parties** – people and entities closely associated with you, such as relatives, partners in a partnership, directors of companies or closely connected companies or trusts.
- **Cost of sales** (excludes labour) – the cost of anything produced, manufactured, acquired or purchased, for either
  - manufacture
  - sale or exchange in deriving the gross proceeds
  - earnings of the business.
- **Labour** – salary and wage payments, including contractor payments (amounts exclude GST). Amounts not included are payments to associated parties for example, labour provided by a business owner or business partner.

Example: calculating key benchmark ranges

Elizabeth operates a coffee shop. She enters the following figures on her tax return.

Elizabeth's tax return figures

Total business income	$705,200
Cost of sales	$253,300
Salary, wages and superannuation	$189,400
Payments to associated parties (This is Elizabeth's wages and superannuation)	$50,000
Rent	$85,800
Other expenses	$97,000

Coffee shops benchmark

The key benchmark range for coffee shops is cost of sales to turnover.

Key benchmarks

Annual turnover range	**$65,000 – $250,000**	**$250,001 – $600,000**	**More than $600,000**
'Cost of sales' divided by 'Annual turnover'	35% to 43%	35% to 41%	33% to 39%
Average cost of sales	39%	38%	36%

'Total expenses' divided by 'Annual turnover'	74% to 86%	81% to 90%	86% to 93%
Average total expenses	80%	85%	89%

Elizabeth calculates her key benchmark ranges as follows:

1. Calculating cost of sales to turnover

Using her tax return figures, Elizabeth does the following calculations:

> Turnover is $705,200
>
> Cost of sales is $253,300
>
> ($253,300 ÷ $705,200) = 0.35918
>
> 0.35918 × 100 = 35.92%

Elizabeth's turnover of $705,200 places her business in the highest turnover range (more than $600,000) for coffee shops.

Her cost of sales to turnover benchmark figure is 35.92%. This is within the benchmark range of 33% to 39% for coffee shops.

2. Calculating total expenses to turnover

'Total expenses' is the total expenses reported on the tax return **minus** payments to associated parties. In Elizabeth's case her wages and superannuation payment of $50,000 is counted as a payment to an associated party.

Elizabeth does the following calculations:

> Turnover is $705,200
>
> Total expenses is $675,500 − $50,000 = $625,500
>
> $625,500 ÷ $705,200 = 0.88698
>
> 0.88698 × 100 = 88.70%

Elizabeth's turnover of $705,200 places her business in the highest turnover range for coffee shops.

Her total expenses to turnover benchmark figure is 88.70%. This is within the benchmark range of 86% to 93% for coffee shops.

Result

Based on her calculations, Elizabeth is satisfied that her record keeping and business practices are in good order.

QC 47938

What it means to be outside the benchmark range

Find out why your benchmark is above or below the range for your business turnover in your industry.

Last updated 17 March 2025

Reporting inside the benchmark range

If your business is reporting **inside** the benchmark range for your industry, you:

- don't need to do anything else
- can identify where adjustments can be made to costs and expenses and consider profit margins to improve your business performance
- can consider if your record keeping or business operations need any improvement to increase profitability and performance.

Reporting above a benchmark range

If your business is reporting **above** the benchmarks, it means your expenses are high relative to your sales.

This may indicate that your:

- wastage is higher – research best practice for your industry
- goods taken for personal use have been counted as business stock – find out more about using trading stock for private purposes
- competitors may be able to source inputs at lower cost than you – it might be time to see if you can buy stock or materials at a lower rate
- rent or labour costs are high considering your volume of sales – for example, having too many staff during off-peak times
- mark-up is lower than your competitors – check average sales prices
- sales are not completely recorded – check till tapes or point-of-sale (POS) reports
- internal cash controls may need to be examined – ensure cash taken for expenses is recorded as sales.

Example: business above the benchmark

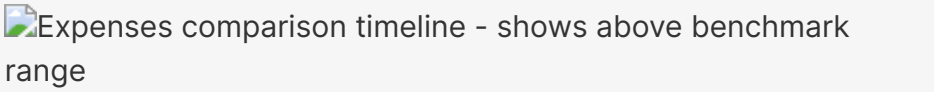
Robert operates a plumbing services business with an annual turnover of $704,500. He decides to see how his business is performing compared to similar businesses in the plumbing services industry.

Robert's tax return figures

Total business income	$704,500
Payments to contractors	$285,000
Salary, wages and superannuation (including $240,000 of his own salary and superannuation)	$260,000
Motor vehicle	$15,000
Depreciation	$5,650
Purchases	$35,000

Other expenses	$245,000

Robert enters his tax return figures into the **Business performance check** tool. The result for his total expenses to turnover key benchmark range is 120%. This is above the benchmark range of 76–87% for businesses in his industry with turnover of more than $600,000.


Expenses comparison timeline - shows above benchmark range

Key benchmarks

Annual turnover range	$50,000–$150,000	$150,001–$600,000	More than $600,000
'Total expenses' divided by 'Annual turnover'	50% to 67%	61% to 76%	76% to 87%
Average total expenses	59%	69%	82%

Robert checks his records of business income and expenses. He realises that he accidentally included the wages and superannuation he paid to himself in the calculation. These should have been reported separately on his tax return.

Making sure he excludes this amount, Robert re-enters the figures into the **Business performance check** tool. His new key benchmark range is 85.97%. This is within the key benchmark range for his industry.

Robert lodges an amended tax return to correctly report the wages and superannuation he paid to himself.

Reporting below a benchmark range

If your business is reporting **below** the benchmarks, it means your expenses are low relative to sales.

This may indicate that:

- your expenses are recorded under the wrong label – for example, cost of goods sold under another expense label
- some of your expenses may not have been recorded – for example, salary, wages or cash wages
- your mark-up is higher than your competitors
- you are more efficient – for example, you have less wastage.

Example: business below the benchmark

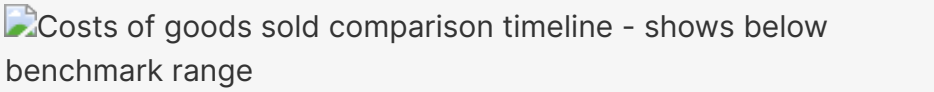
Belinda operates a designer footwear retail business with an annual turnover of $230,000. She decides to see how her business is performing compared to similar businesses in the footwear retailing industry.

Belinda's tax return figures

Total business income	$230,000
Cost of sales	$92,000
Salary, wages and superannuation	$40,000
Payments to associates (including superannuation)	$20,000
Motor vehicle	$2,000
Depreciation	$4,000
Rent	$24,000
Other expenses	$8,000

Belinda enters her tax return figures into the **Business performance check** tool. The result for her cost of sales/turnover key benchmark range is 40%. This is below the

benchmark range of 48–59% for similar businesses in this industry.



Key benchmarks

Annual turnover range	$65,000–$180,000	$180,001–$600,000	More than $600,000
'Cost of sales' divided by 'Annual turnover'	44% to 59%	48% to 59%	49% to 55%
Average cost of sales	51%	54%	52%

Belinda checks her records and is confident that she has reported her income and expenses correctly. However, she wants to ensure she can explain and support why her business is reporting below the small business benchmarks for her industry.

She reviews the costs of sales for her business. She sees that her ability to source stock at lower prices (and then sell shoes at a greater profit than similar businesses) has resulted in her current benchmark range.

She collects the necessary records to support her business transactions, such as evidence of the cost of her stock and her sale prices.

QC 47939

Correcting a mistake

If you find a mistake in your tax when checking against small business benchmarks, you need to correct the information.

Last updated 17 March 2025

For more information on fixing a mistake, see how to:

- fix a mistake or amend a return
- fix a mistake by making a voluntary disclosure.

If you voluntarily tell us about mistakes, the tax law allows us to reduce penalties that would normally apply.

If you tell us before we begin an audit, we may be able to reduce these penalties even further.

QC 47944

How we use business performance benchmarks

Benchmarks are one of the tools we use to identify businesses that may be avoiding their tax obligations.

Last updated 17 March 2025

Identifying businesses outside of the benchmarks

We use benchmarks and other risk indicators to identify businesses that may be avoiding their tax obligations by not reporting some of their income.

We compare information reported in business tax returns with the key performance benchmark for their industry. Their industry is based on:

- business industry codes
- the description of the main business activity on their tax return
- the business's trading name.

When we choose to investigate a business's tax records, we use a wide range of factors. We never use the benchmarks in isolation when deciding to review a business or when looking at the business's records.

Example: identifying a business outside of the benchmark

A supermarket operator was selected for audit due to several issues identified through our risk modelling.

When looking at the small business benchmarks, their cost of sales to turnover ratio was 88%. This was high compared to the key benchmark range of 71% to 77% in their industry.

During the audit, tax officers found the business directors had been operating for several years without reconciling their sales and banking records. This resulted in under reported sales.

They submitted a voluntary disclosure, which usually means we would reduce administrative penalties and interest charges. However, following a review of banking records, tax officers found the amount disclosed didn't match, so it wasn't accepted.

Given the length of time the owners had been in business and their level of experience (they were also co-directors of another company), it was reasonable to expect them to keep correct records.

They were required to pay over $275,000 in tax and $44,000 in penalties.

QC 47943

Benchmarks A–Z

Access all small business benchmarks listed in alphabetical order.

Last updated 14 March 2024

A-C

- Air conditioning, refrigeration and heating services
- Alarm systems installation – fire and security
- Architectural services
- Automotive electrical services
- Bakeries and hot bread shops
- Barber and men's hairdressing
- Beauty services
- Blocklaying services
- Book retailing
- Bottle shops and liquor retailing
- Bricklaying services
- Cabinet makers
- Cake shops and patisseries
- Carpentry services
- Carpet laying services
- Catering services
- Cement rendering

- Chicken shops
- Child care services
- Chiropractic and osteopathic services
- Cleaning services – building and other industrial
- Cleaning services – carpet, rug and furniture upholstery
- Clothing retailing
- Coffee shops
- Computer retailing
- Concreting services
- Confectionery retailing
- Courier services
- Craft shops

D-F

- Delicatessen
- Delivery services
- Dental specialists
- Dental surgeons – general
- Discount and variety stores
- Domestic appliance repair and maintenance
- Driving schools and instructors
- Electrical and electronic product retailing
- Electrical services
- Entertainment media retailing
- Fence construction
- Fish and chips shops
- Fish and seafood retailing – fresh

- Floor covering retailing
- Florists
- Footwear retailing
- Fruit and vegetable retailing
- Fuel retailing
- Furniture removalists
- Furniture retailing

G-K

- Garden supplies retailing
- Gift stores
- Glazing services
- Grocery retailing and convenience stores
- Hairdressers
- Hardware and building supplies retailing
- Health and fitness centres
- Health food retailing
- Homewares retailing
- Ice cream retailing
- Kebab shops

L-Q

- Landscape construction
- Laundry and dry-cleaning services
- Lawn mower retailing
- Lawn mowing and garden services
- Machinery and equipment repair and maintenance
- Manchester and other textile goods retailing

- Meat and poultry retailing – fresh
- Motor vehicle parts and batteries retailing
- Motor vehicle retail – new and used
- Musical instruments retail
- Newsagents
- Painting services
- Panel beating and smash repairs
- Pest control services
- Pets and pet supply retailing
- Pharmacy
- Physiotherapy services
- Picture framing retailing
- Pizza shops – takeaway
- Plastering and ceiling services
- Plumbing services
- Printing
- Printing support services
- Pubs, taverns and bars

R-Z

- Restaurants
- Road freight transport services
- Roofing services – includes roof tiling, guttering and metal roofing
- Sports, camping and fishing retailing
- Sports and physical recreation instruction
- Stationery goods retailing
- Takeaway food services

- Tiling services – floor and wall
- Timber floor sanding
- Tobacco retailing
- Towing services
- Toy and game retailing
- Tutoring and coaching
- Tyre retailing
- Veterinary services
- Watch and jewellery retailing

QC 72813

Small business benchmarks methodology and ratio calculations

What you need to know about the methodology and labels used to develop small business benchmarks.

Last updated 17 March 2025

Benchmarking methodology

Our benchmarking methodology consists of 10 steps.

How we calculate benchmark ratios

Find out how we calculate benchmark ratios.

Review of Statistical Methodology used in producing SBB

A review of our statistical methodology, undertaken in 2013.

QC 37143

Benchmarking methodology

Our benchmarking methodology consists of 10 steps.

Last updated 17 March 2025

Step 1: Identify industries to benchmark

This step determines the industries we benchmark.

Small business benchmarks are currently limited to businesses that supply goods and services directly to consumers. We identify an industry type to benchmark based on a number of factors such as the size of the industry.

We base industries on their ATO business industry codes (BICs). BICs are unique 5-digit identifiers adapted from the 4-digit Australian and New Zealand Standard Industry Classification (ANZSIC) code. To help you find the correct code, use the BIC tool. The 5-digit codes refine the industry classifications.

We allocate businesses to a benchmark industry based on both:

- BICs
- keywords reported at the main business activity and trading name labels on their tax returns and business registration (see step 3).

Step 2: Identify the starting population

This step determines the starting population that are in business.

The starting population for a benchmarked industry is identified 12 months after the statutory due date for lodging the tax return.

This allows for most of the tax return and activity statement lodgments to occur, including for those businesses with extended lodgment periods. For example, the starting population for the 2022–23 financial year was identified after 31 October 2024.

Businesses included

The starting population of a benchmarked industry is selected based on businesses that:

- lodged their tax return for the year to be benchmarked
- are registered and have an active ABN
- report the selected BIC on their tax returns or business registrations.

Businesses excluded

Businesses are excluded from the starting population if they:

- are currently insolvent
- are deceased
- are in the not-for-profit, government or large market segments
- are not companies, partnerships, trusts or individuals
- have a compromised tax file number (TFN).

Further exclusions and filters

Further data is captured and filters applied to:

- exclude businesses with turnovers of less than $30,000 and more than $15,000,000
- exclude businesses that reported multiple activities on their tax returns
- exclude those that have been in business for less than one year before the start of the financial year
- capture the latest returns lodged for the benchmark year, including amendments

- limit the population to those that have lodged returns within one year from the statutory due date.

Step 3: Industry allocation – group businesses into industries

This step allocates businesses to specific industry sub-groups, based on having a common business model.

We use keywords in the **Main business activity** and **Trading name** labels on tax returns and business registrations to allocate a business to a sub-group.

BICs may include more than one industry sub-group. For example, 32430 – **Tiling and Carpeting Services** has 3 benchmark industry sub-groups:

- Carpet laying services
- Tiling services – floor and wall
- Timber floor sanding.

A benchmark industry can also include multiple BICs where similar sub-groups report within multiple codes. This is because businesses can have diverse product lines but similar financial performance. For example, the **Meat and poultry retailing – fresh** benchmark industry consists of:

- Meat retailing – BIC 41211
- Fresh poultry retailing – BIC 41213.

Industry allocation keyword process

The keyword process allocates a business to an industry sub-group based on a 3-step keyword process.

1: Tax return

We assign a business to an industry sub-group population if they have reported either of the relevant:

- BIC and keyword description at the **Trading name** label
- keyword description at the **Main business description** label.

We also use keywords to exclude businesses that report certain descriptions at the **Trading name** label.

2: Business registration

We assign a business to an industry sub-group population if they report the relevant information for **all** the following:

- BIC in their GST business registration
- keyword description at the **Trading name** label on the tax return
- keyword description at the **Main business description** label on the GST business registration.

We also use keywords to exclude businesses that report certain descriptions at the **Trading name** label on their tax return.

3: Keyword

The keyword process identifies businesses that incorrectly reported their BICs and allocates them into an appropriate industry sub-group.

We only apply this to businesses already within a BIC selected for benchmarking. The process is not applied to all benchmark industry sub-groups.

The process can consist of up to 4 parts:

- Allocate the business to an industry sub-group only when the **Trading name** and **Main business description** labels from the tax return both contain one of the key words.
- Allocate the business to an industry sub-group only when the **Trading name** and **Main business description** labels from the GST business registration both contain one of the key words.
- Allocate the business to an industry sub-group only when the **Main business description** label from the tax return and the **Main business description** label from the GST business registration both contain one of the key words.
- Use keywords from the trading name or the main business descriptions to exclude a particular business from an industry sub-group.

Step 4: Calculate benchmark ratios

This step calculates the benchmark ratios using labels on the tax returns and activity statements.

Step 5: Calculate the outliers

This step removes statistical outliers so the benchmarks are based on data representative of the population.

Outliers are taxpayers whose reported data is significantly different from the majority of the other observations in the population. Outliers are removed because they may be:

- extreme cases
- mistakes
- not part of the industry population, for example, if a business has an incorrect BIC, or changed industry but didn't change its name.

We identify outliers using *Mahalanobis Distances*, a statistical measure that examines each ratio in relation to the sample mean and the distribution of all the other ratios. Those with a high *Mahalanobis Distance* measure are considered to have a significant influence on the rest of the sample so we exclude them as an outlier.

Step 6: Assign turnover ranges to benchmark industries

This step assigns the turnover ranges to the industry.

Benchmark industry populations are segmented into turnover groups to account for the variations in business performance that may occur due to the size, location and turnover of a business.

The turnover ranges are different for each of the benchmarked industries.

Three turnover ranges are used for most of the benchmarked industries – low, medium and high.

Benchmarked industries with smaller populations may be presented with only 2 turnover ranges.

Turnover ranges are determined by analysing the distribution of results for each benchmark industry. Industry specific factors, including

clusters and trends in reporting are considered. The ranges may be influenced by:

- variability in the distributions of results
- the gradual increase in the average of the key benchmark ratios.

Step 7: Calculate the benchmark ranges

This step assigns the ratio ranges around the average (mean), for example, the ratio of total expenses to turnover for each range.

For every industry benchmarked, we calculate the average ratio for each turnover range. Business model, location and region affects business performance, so we determine a range around the average.

The range is represented by 30% of the population around the average. For example, a benchmarked industry with a regional area ratio of 37% and a metro area ratio of 35% would be captured in the benchmark range of 32% to 40%.

All benchmark ratios are published as whole numbers. We apply conventional rounding rules.

Step 8: Statistical assurance

This step ensures the populations are statistically valid and allows us to determine whether the ratio is a valid indicator of turnover.

Normality and homogeneity testing

The statistical validity of the benchmarks is tested by checking that the benchmark populations are normally distributed and homogenous. The selection of the key benchmark ratios and the secondary benchmark ratios for publication is dependent on the outcome of the normality and homogeneous testing.

We only publish benchmark ratios if they pass these tests.

Key benchmark ratios

The key benchmark ratio is the benchmark we use to identify businesses that may not be reporting some or all their income.

We identify these ratios to make it clear to businesses and tax practitioners the benchmark we consider to be the most accurate

predictor of business turnover.

For a benchmark ratio to be selected as a key benchmark ratio, the benchmark industry population must satisfy the following requirements:

- It is normally distributed and homogenous.
- 50% or more of the population in the industry is reporting the benchmarked expense.
- There are 50 or more businesses in the industry within the turnover range.

If more than 2 tax return benchmark ratios satisfy the key benchmark ratio test, we consider the percentage of the population reporting the expense to select the most accurate predictor of turnover for an industry. For example, cost of sales is considered an accurate determinant of sales for retailers because it is a variable cost that generally changes in direct proportion to the increase or decrease in sales.

Secondary benchmark ratios

Secondary ratios are those not identified as a key benchmark ratio. For us to select a benchmark ratio as a secondary benchmark ratio, the benchmark industry population will satisfy the following requirements:

- It is normally distributed and homogenous.
- 25% or more of the population in the industry is reporting the benchmarked expense.

Not all benchmark ratios apply to every industry as they do not satisfy the 2 requirements given above. For example, many service entities are unlikely to have significant cost of sales.

Step 9: Quality assurance testing

A quality assurance process is conducted on both the benchmark process and the final output.

All benchmark ratios are reviewed before publication. This review ensures:

- there have not been any calculation errors

- the results are consistent with our expectation of the relevant industry.

For example, a decrease in the average of a key benchmark may indicate a change in the industry population reporting.

We may compare the **Small business** benchmarks to external information and other published industry benchmarks when developing a new industry benchmark.

Step 10: Industry names and overviews

We publish benchmarks by industry name and include an overview of the industry to describe the businesses captured within the benchmarked industry.

QC 81798

How we calculate benchmark ratios

Find out how we calculate benchmark ratios.

Last updated 17 March 2025

Overview – benchmark ratio calculations

Benchmark ratios are calculated from information reported at specific labels on tax returns and activity statements of businesses that operate in similar industries.

Depending on the entity type, we use labels from the company, partnership, trust or individual tax returns.

Each ratio has a set of rules for instances where a label is blank or zero, for example, the labels used to calculate turnover.

Not all benchmark ratios apply to every business. Refer to the performance benchmark specific to your business.

Tax return – benchmark ratio calculations

All tax return benchmark ratios are expressed as a percentage of turnover (excluding GST).

The basic formula to calculate the tax return benchmark ratio is:

> (amount at the relevant labels ÷ turnover) × 100 = benchmark ratio %

There are 5 tax return benchmark ratios:

- Total expenses to turnover
- Cost of sales to turnover
- Labour to turnover
- Rent expenses to turnover
- Motor vehicle expenses to turnover

Turnover

We use turnover to calculate the tax return benchmark ratios. Turnover is the revenue businesses receive from providing goods or services. This amount excludes GST.

For turnover, we generally use the amount reported at the **Other sales of goods and services** label on the tax return.

The **Other sales of goods and services** labels vary according to the type of tax return.

Other sales of goods and services label by tax return type

Tax return type	Label
Company	**6C - Other sales of goods and services**
Partnership or trust	**5G + 5H**
Individual	**P8 I + P8 J**

If the amount reported in these labels is blank, zero, or less than 50% of the amount at the total business income label, we use the total

business income amount instead.

Total business income labels by tax return type

Tax return type	Label
Company	**6S - Total income**
Partnership or trust	**5** – Total business income primary production plus non-primary production
Individual	**P8** – Total business income primary production plus non-primary production

If the amount in the **Total business income** label is zero, blank or incomplete, we calculate the total business income as the sum of the following labels for the relevant entity type.

Companies – labels summed to calculate the total business income

Item	Label
Gross payments subject to foreign resident withholding (excluding capital gains)	**6B**
Gross payments where ABN not quoted	**6A**
Other sales of goods and services	**6C**
Gross distribution from partnerships	**6D**
Gross distribution from trusts	**6E**
Forestry managed investment scheme income	**6X**
Gross interest	**6F**
Gross rent and other leasing and hiring income	**6G**
Total dividends	**6H**

Fringe benefits employee contributions	**6I**
Assessable Government industry payments	**6Q**
Unrealised gains on revaluation of assets to fair value	**6J**
Other gross income	**6R**

Partnerships and trusts – labels summed to calculate the total business income

Item	Label
Gross payments where ABN not quoted	**5C + 5D**
Gross payments subject to foreign resident withholding (excluding capital gains)	**5B**
Assessable government industry payments	**5E + 5F**
Other business income	**5G + 5H**

Individuals – labels summed to calculate the total business income

Item	Label
Gross payments where Australian business number not quoted	**P8C + P8D**
Gross payments subject to foreign resident withholding (excluding capital gains)	**P8B**
Gross payments – voluntary agreements	**P8E + P8F**
Gross payments – labour hire or other specified payments	**P8N + P8O**
Assessable governments industry payments	**P8G + P8H**

Other business income	**P8I + P8J**

Total expenses to turnover

For this ratio, we divide the total expenses amount by the turnover amount.

Total expenses amount is calculated as total expenses **minus** the payments to associated persons.

Total expenses labels by tax return type

Tax return type	Label
Company	**6Q - Total expenses**
Partnership or trust	**5O**
Individual	**P8S + P8T**

Payments to associated persons labels by tax return type

Tax return type	Label
Company	**8Q - Payments to associated persons**
Partnership or trust	**45 M**
Individual	**P16 H**

If the amount reported at the **Total expenses** label is zero, blank or incomplete, then we calculate the total expenses amount as the sum of the following labels for the relevant entity type.

Companies – labels summed to calculate the total expenses

Item	Label

Foreign resident withholding expenses (excluding capital gains)	**6B**
Cost of sales	**6A**
Contractor, sub-contractor and commission expenses	**6C**
Superannuation expenses	**6D**
Bad debts	**6E**
Lease expenses within Australia	**6F**
Lease expenses overseas	**6I**
Rent expenses	**6H**
Interest expenses within Australia	**6V**
Interest expenses overseas	**6J**
Royalty expenses within Australia	**6W**
Royalty expenses overseas	**6U**
Depreciation expenses	**6X**
Motor vehicle expenses	**6Y**
Repairs and maintenance	**6Z**
Unrealised losses on revaluation of assets to fair value	**6G**
All other expenses	**6S**

Partnerships and trusts – labels summed to calculate the total expenses

Item	Label
Foreign resident withholding expenses (excluding	**5P**

capital gains)	
Contractor, subcontractor and commission expenses	**5C**
Superannuation expenses	**5D**
Cost of sales	**5E**
Bad debts	**5F**
Lease expense	**5G**
Rent expenses	**5H**
Total interest expenses	**5I**
Total royalty expenses	**5J**
Depreciation expenses	**5K**
Motor vehicle expenses	**5L**
Repairs and maintenance	**5M**
All other expenses	**5N**

Individuals – labels summed to calculate the total expenses

Item	Label
Cost of sales	**P8 K** + **L** – **M** expenses
Foreign resident withholding expenses (excluding capital gains)	**P8 U**
Contractor, subcontractor and commission expenses	**P8 F**
Superannuation expenses	**P8 G**

Bad debts	**P8 I**
Lease expenses	**P8 J**
Rent expenses	**P8 K**
Interest expenses within Australia	**P8 Q**
Interest expenses overseas	**P8 R**
Depreciation expenses	**P8 M**
Motor vehicle expenses	**P8 N**
Repairs and maintenance	**P8 O**
All other expenses	**P8 P**

Cost of sales to turnover

For this ratio, we divide the cost of sales amount by the turnover amount.

The cost of sales amount excludes salary and wages.

When the **Total salary and wages expenses** code equals **C** – meaning that the total salary and wages expenses are included in the cost of sales figure – we deduct the **Total salary and wages expenses** from the **Cost of sales**.

Otherwise, we use the **Total cost of sales** amount reported on tax return.

Cost of sales labels by tax return type

Tax return type	Label
Company	**6A - Cost of Sales**
Partnership or trust	**5E**
Individual	**P8 K + L – M** expenses

To identify if total salary and wages are included in cost of sales, we use the codes below based on the tax return type.

Total salary and wages label codes by tax return type

Tax return type	Label codes
Company	**8D** code
Partnership or trust	**44 L** code
Individual	**P15 G** code

For total salary and wages expenses, we use the amount reported at the labels below based on the tax return type.

Total salary and wages expenses by tax return type

Tax return type	Label
Company	**8D - Total salary and wage expenses**
Partnership or trust	**44 L**
Individual	**P15 G**

Labour to turnover

For this ratio, we divide the labour amount by the turnover amount.

The labour amount is calculated as follows:

> Total salary and wages expenses + Contractor subcontractor and commissions expenses − Payments to associated persons

If the amount reported at label **W1** (total salary, wages and other payments) on the **activity statement** is greater than the total salary and wages expenses reported on the **tax return,** then we use the activity statement amount in the calculation.

Total salary and wages labels by tax return type

Tax return type	Label
Company	**8D - Total salary and wage expenses**
Partnership and Trust	**44 L**
Individual	**P15 G**

Contractor, subcontractor and commission expenses labels by tax return type

Tax return type	Label
Company	**6C - Contractor, subcontractor and commission expenses**
Partnership or trust	**5C**
Individual	**P8 F**

Payments to associated persons labels by tax return type

Tax return type	Label
Company	**8Q - Payments to associated persons**
Partnership or trust	**45 M**
Individual	**P16 H**

Rent expenses to turnover

Not all businesses have rent expenses.

For this ratio, we divide the rent expenses amount by the turnover amount.

Rent expenses by tax return type

Tax return type	Label
Company	**6H - Rent expenses**
Partnership or trust	**5H**
Individual	**P8 K**

Motor vehicle expenses to turnover

Not all businesses have motor vehicle expenses.

For this ratio, we divide the motor vehicle expenses amount by the turnover amount.

Motor vehicle expenses by tax return type

Tax return type	Label
Company	**6Y - Motor vehicle expenses**
Partnership or trust	**5L**
Individual	**P8 N**

Activity statement – benchmark ratio calculations

From 1 July 2017, Simpler BAS reduced GST reporting for small businesses with a GST turnover of less than $10 million. Therefore, activity statement benchmark ratios will not be available for 2017–18 or later years.

The information in this section is **only relevant for 2016–17 and earlier financial years**.

All activity statement benchmark ratios are expressed as a percentage of total sales (including GST) from a complete year's activity statement data.

The activity statement benchmark ratios were developed using a complete financial year's activity statement data. To compare your performance against the benchmarks, you should use your activity statements for the complete financial year.

The formula to calculate the activity statement benchmark ratios is:

> (amount at the relevant labels ÷ total sales) × 100 = benchmark ratio %

There are 2 activity statement benchmark ratios:

- Non-capital purchases/total sales
- GST-free sales/total sales

Total sales

We use the total sales amount, including GST, to calculate the activity statement benchmark ratios. This is label **G1** total sales.

Before using the data in our calculation, we check the status of the GST-inclusive indicator 'Does the amount shown at label **G1** include GST?'.

If the 'GST Included' indicator is marked as 'Yes' we use the amount shown at label **G1** total sales in our calculation.

If the indicator is marked 'No' we use the sum of label **G1** Total sales and label **1A** GST on sales.

Working out whether GST has been included

If the GST-inclusive indicator is **blank,** we use the formula below to determine if it should be set to 'Yes' or 'No':

> ((**G1** Total sales + **G7** Sales adjustments) − (**G2** Export sales + **G3** GST-free sales + **G4** Input taxed sales)) ÷ 11

If this result is equal to label **1A** GST on sales then the GST-inclusive indicator is set to 'Yes'.

If it isn't, we do a similar calculation but divide by 10:

> (G1 + G7) − (G2 + G3 + G4)÷ 10

If this result is equal to label **1A** GST on sales then the GST-inclusive indicator is set to 'No'.

We also do these calculations if businesses have been inconsistent in their reporting of the GST-inclusive indicator throughout the financial year.

Non-capital purchases/total sales

To calculate this ratio, we divide the label **G11** Non-capital purchases amount by the total sales amount.

GST-free sales/total sales

To calculate this ratio, we divide the label **G3** GST-free sales amount by the total sales amount.

Where label **G3** GST-free sales is zero, we calculate the figure by multiplying the label **1A** GST on sales by 11 and then subtracting this amount from the **G1** total sales amount.

QC 81799

Review of statistical methodology used to produce small business benchmarks

A review of our statistical methodology, undertaken in 2013.

Last updated 17 March 2025

Who undertook the review

This *Review of Statistical Methodology used in producing Small Business Benchmarks was* undertaken by David Heath, Director of Cumpston Sarjeant Pty Ltd and Fellow of the Institute of Actuaries of Australia. It was delivered to us on 30th September 2013.

Review contents

The following is the report's executive summary.

Executive summary

Cumpston Sarjeant Pty Ltd is an actuarial consulting firm, based at 160 Queen Street, Melbourne. As actuaries we have expertise in statistics and probability, as well as economic and financial analyses. Cumpston Sarjeant were appointed to review the statistical methodology in accordance with a recommendation from the Inspector General of Taxation (IGT) within its July 2012 report, *'Review into the ATO's use of benchmarking to target the cash economy'* ('the IGT report').

That IGT report was prompted by concerns from stakeholders over the production and use of the Small Business Benchmarks (SBB). It is not possible to assess the statistical methodology without simultaneous consideration of the context in which the SBB are used by the ATO and other stakeholders. Accordingly, our analyses and findings occur within the context in which the SBB are used.

Many of the aspects of the development and use of the SBB are regarded as policy decisions of the ATO, so are beyond the scope of our investigation. Nevertheless, there is considerable overlap between the policy decisions of the ATO and the practical assessment of the statistical methodology. The SBB have several uses in practice, including:

- To provide guidance to users on the typical ranges of certain financial ratios which can be calculated from data used in the completion of tax returns and Business activity statements.
- Use as a tool (amongst other tools) by the ATO to select higher risk businesses for the purpose of audit activity.
- In some cases, where a taxpayer cannot provide sufficient taxation records, the ratios may be used to provide deemed assessments for taxpayers. These are known as default assessments.

Having gained an understanding of the derivation of the published benchmarks, we requested further clarifying information from the ATO.

In order to perform some independent tests of the methodology, we selected 6 industries, and requested relevant data. This was supplied by the ATO, but in order to preserve confidentiality, did not contain any data that would allow identification of individual taxpayers.

For the sample industries, we are able to confirm that the published benchmarks for the 2010 financial year are in accordance with the methodology described by the ATO in its document, *Small Business Benchmarks methodology and ratio calculations*. The methodology outlined in that document is consistent with that described in the IGT report.

The document, *Small Business Benchmarks methodology and ratio calculations* provides a clear description of the process of the development of published benchmarks. Our analyses and assessment follow a similar path as described in that document.

In our assessment, we believe there are components of the methodology which while not strictly necessary, contribute to the objective whereby the published SBB appropriately reflect the financial performance of like businesses. The discrete steps employed by the ATO in the derivation of Small Business Benchmarks have been considered in our analyses. Some steps may be regarded as policy decisions, so are outside the scope of our investigation. Nevertheless, we believe that all steps described contribute to the appropriate identification of like businesses, and the derivation of ratios that reflect typical behaviour of these groups of like businesses.

While we have identified some steps which could be removed without significant differences to the published SBB, and without major loss of robustness, the use of all the procedures in the derivation of the SBB reflect an underlying thorough approach by the ATO in developing useful ratios for homogeneous groups. This is further indicated by the use of keywords to identify business type in order to maximise the relevant datasets.

Benchmark ratios are published as bands for relevant business types and within specified turnover ranges for a financial year. Clearly, they are calculated using business data from the relevant business type, turnover range and financial year. In turn, the ratios are used as a basis of comparison for businesses within that same business type and turnover range.

I understand the use of SBB is just one method to identify taxpayers for audit activity. I support the policy that SBB is not the sole indicator of further investigation. Given the relatively narrow range from which published ratios are derived, only those entities with ratios significantly outside the benchmark ratios should be targeted for audit on the basis of the benchmark ratios.

Overall, it is my opinion that the statistical methodology adopted in the production of Small Business Benchmarks is sound and robust. Our analyses indicate the published benchmarks are correctly calculated and published.

We thank the staff of the ATO for their assistance in this process, particularly members of the Cash Economy Risk and Strategy Tax Practitioner and Lodgement Strategy Division.

You can download the complete report Review of statistical methodology used in producing small business benchmarks (PDF, 1.5MB).

Introduction to the Cumpston Sarjeant review

Introduction to the Review of statistical methodology used in producing small business benchmarks by David Heath.

Cumpston Sarjeant review steps 1 to 6

Steps from the Review of statistical methodology used in producing small business benchmarks by David Heath.

Cumpston Sarjeant review steps 7 to 12

Steps from the Review of statistical methodology used in producing small business benchmarks by David Heath.

Cumpston Sarjeant review Appendix A

Turnover ranges from the Review of statistical methodology used in producing small business benchmarks.

Cumpston Sarjeant review Appendix B

Exclusion of outliers from the Review of statistical methodology used in producing small business benchmarks.

QC 81800

Introduction to the Cumpston Sarjeant review

Introduction to the Review of statistical methodology used in producing small business benchmarks by David Heath.

Published 17 March 2025

Review

This *Review of Statistical Methodology used in producing Small Business Benchmarks* was undertaken by David Heath, Director of Cumpston Sarjeant Pty Ltd and Fellow of the Institute of Actuaries of Australia. It was delivered to us on 30th September 2013.

Introduction

The following is the report's introduction. You can download the complete report Review of statistical methodology used in producing small business benchmarks (PDF, 1.5MB).

You have requested that we review the statistical methodology employed in the derivation of Small Business Benchmarks (SBB).

I understand this assignment arose following a report published by the Inspector General of Taxation, 'Review into the ATO's use of benchmarking to target the cash economy' ('the IGT report'), in July 2012.

I am aware that the IGT report included several recommendations following their investigation, and that the ATO has acted on many of these recommendations.

In recommendation 3.1 in the report, the IGT recommends improvement in community understanding and confidence in the benchmarks, including: (b) assurance from an independent party with

statistical expertise about the robustness of the benchmarking methodology

It is important to define the scope of our investigation. The recommendation in the IGT report and our subsequent brief call for an independent assessment of the statistical methodology used in the SBB process. However, we believe that it is not possible to confine our investigations and report to the mere calculation of the SBB, and the statistical methodology employed. The derivation of the benchmarks, the decisions on their publication, and their use by the ATO and other stakeholders reflect policy decisions that are wider than mere statistical techniques. The statistical methodology must be assessed within this context of the use of the benchmarks.

It should be remembered that while the process of the calculation, publishing and use of the SBB include statistical methodology, that methodology is merely a tool as part of the overall process and objectives.

Similarly, the assessment of the validity or otherwise of the statistical methodology employed must consider the context of the ultimate use of the SBB. As statistics are merely a tool, they still contain significant levels of judgment in their use. For example, in using confidence interval testing (a commonly applied statistical technique) the user must decide on an appropriate level of confidence.

The Inspector General of Taxation (IGT) report was a review into the ATO's use of benchmarking to target the cash economy.

That report took a broad approach in considering the derivation and use of the benchmark ratios. In our review of the statistical methodology, we are unable, nor are we required to consider all aspects of the benchmarks, particularly in the usage of the final published ratios by the ATO.

However, where appropriate we may make comments in areas that are not purely statistical in nature.

For example, the use of benchmarks in issuing default or amended assessments – this is really a policy issue so not really within our assessment of statistical methodology. However, in discussions with representatives of the ATO, we understand that in applying the benchmarks, taxpayers subject to such assessments receive some 'benefit of the doubt'. Default assessments may be made where a taxpaying entity is unable to produce adequate records. In applying a

benchmark in such cases, the ATO chooses the higher end of the relevant benchmark range.

This has the effect, of assuming the taxpayer in question has below average profitability; indeed the default assessment effectively assumes a profitability close to the lower 35% of profitability of comparable taxpayers.

The choice to use a particular ratio, and the resultant degree of 'leeway' in applying the chosen ratio (rather than an average, or some ratio that implicitly considers the taxpayers in question in a punitive manner) is a policy choice. As part of the scope of our assignment, we can only comment on our understanding of derivation of applied ratios.

Material used in our investigation

We began our investigation by reading the July 2012 report, published by the Inspector General of Taxation, 'Review into the ATO's use of benchmarking to target the cash economy' ('the IGT report').

We also perused the relevant sections of the ATO website, which contained the published Small Business benchmarks, as well as additional background material.

Having gained this initial understanding we had meetings with relevant ATO staff, and at our request were supplied with further documents, as well as answers to particular questions. We chose six industries in order to verify the methodology and practise by the ATO, and were supplied with relevant datasets that enabled our own calculations.

Perhaps the most useful document for our investigation was an internal document , 'Small Business Benchmarks, A summary of the small business (performance) benchmark development process'. I am aware this is an internal document, and that a version entitled 'Small Business Benchmarks methodology and ratio calculations' shall be published on the ATO website. References below are still to the internal document.

The SBB document provides a clear and inherently sensible description of the process of the development of published benchmarks. I understand this is an internal document. Clearly its focus is the description of the development and derivation of the benchmarks, rather than their application. Accordingly it forms a good description of the process that we are required to assess, being the statistical validity robustness of the derivation of the benchmarks.

Rather than be concerned with coding our broad process has been to understand and assess the process whereby SBB are derived, and then perform some specific testing.

We have relied on this document to provide an outline of the framework used to determine the benchmarks. Having gained an understanding of the methodology used, we then took several steps:

- asked for clarification of some areas of the process, both during meetings with ATO representatives and by email
- gained an understanding of the derivation of the population to be used in the calculation of benchmark ratios and ranges. In particular we looked at the number of businesses before and after each data cull
- tested sample data, in particular that used to derive the ranges.

The Small Business benchmarks document describes twelve steps. We have described our investigations in terms of these twelve steps.

QC 103950

Cumpston Sarjeant review steps 1 to 6

Steps from the Review of statistical methodology used in producing small business benchmarks by David Heath.

Last updated 17 March 2025

Step 1 – Identification of industries to benchmark

Note this is from the *Review of Statistical Methodology used in producing Small Business Benchmarks* was undertaken by David Heath, Director of Cumpston Sarjeant Pty Ltd.

There are 233 business industry codes and associated titles that have been chosen as having higher risk relevant to the cash economy. In

essence, the identification of this initial set of industries is a policy decision.

Clearly some of the 233 industries are not suitable for benchmarking due to their small population size. Others may be excluded for policy reasons including assessment of their risk rating. It is more appropriate for us to comment on the methodological approach employed, once the 102 industries are chosen by the ATO. These 102 industries are shown in Appendix B.

Step 2 – Identify the starting population of the selected business industry codes

Having identified the 102 industries that are to be benchmarked, steps 2 and 3 of the process involve the attempt to define and produce appropriate populations prior to the calculation of any ratios. We sought clarification of some aspects of the process in steps 2 and 3, as well as requesting the numbers at each stage for the 2010–11 financial year.

Initially, starting populations are derived by culling some of the available data. The starting population includes businesses that:

- lodged their income tax return for the year to be benchmarked (as benchmarks for a particular year are derived from tax returns in that year)
- are registered and have a current Australian business number (ABN)
- are in one of the identified Business Industry Codes.

For the 2010-11 financial year there were 1,328,737 such entities.

The exclusions from the entire potential dataset must involve some judgment by the relevant staff of the ATO, but the exclusions at this point appear to be inherently sensible and reasonable.

The next stage of exclusions is to exclude certain businesses; those that are:

- currently insolvent (presumably these would not form a good benchmark)
- deceased

- not a company, partnership, trust or individual sole trader – I understand this excludes entities such as superannuation funds
- in not for profit, government or large market segments
- a tax file number culled from the system (often for reasons of fraud).

Having made these exclusions the 1,328,737 entities reduce to 1,307,155, representing a reduction of 1.6%.

Again, these exclusions appear inherently sensible when considering the objective to reach a representative population prior to the calculation of any ratios.

The next set of filters (together with my comments) are to:

- limit to business income turnover between $30,000 and $15,000,000. I note this excludes a large number, reducing the 1,307,155 businesses down to 596,925 (that is, by a further 54%)
- exclude those with mixed business activities (the IGT report includes commentary on the issue of mixed businesses – I concur with the view that it is difficult to compare mixed businesses. Their financial behaviour will be difficult to capture in a process which has the grouping of like businesses at its heart).
- exclude new businesses (so for the 2010–11 financial year, any businesses registered after July 2009 are excluded – presumably on the basis that set up costs involved in the establishment of a new business may distort the financial ratios. Further, newer businesses may have lower turnover in their initial stages).

These two exclusions reduce the 596,925 businesses down to 492,441 (that is, by a further 17.5%).

All the exclusions are an attempt to derive a usable population for the calculation of ratios which will later be published as benchmarks. They are inherently sensible in attempting to gain relatively homogeneous groups. Other than their qualitative objective to remove records that may not be typical of the remaining groups, there is little to say regarding the statistical basis for the exclusions.

Step 3 – Industry allocation – grouping of businesses into industry sub-groups

Having made the exclusions as described in Step 2, the next main step is to group businesses into sub-groups, being the 102 industry groups.

This is done on 2 bases (use of codes and keywords).

First, the ATO bases sub-groups on Business Industry Codes; these are a modified version of the ANZSIC codes (Australian and New Zealand Standard Industry Classification). The ANZSIC codes represent a hierarchical four digit coding. The ATO achieves further stratification of business type with the addition of a fifth digit. The IGT report provides a description of the ANZSIC and Business Industry Codes (at Appendix 4).

Beginning with the 5 digit Business Industry Codes, some industries are further divided into sub-groups. Examples are given in the Small Business Benchmarks document, including the division of Business Industry Code 32430 into 3 industry sub-groups (Carpet laying services, Tiling services and Timber Floor Sanding).

The division is on the basis that the sub-group divisions are a further attempt to arrive at similar or like groups for the purpose of calculating benchmark ratios. For the 3 sub-groups, this heterogeneity is demonstrated by the different published ratios for each sub-group. The division of the Business Industry Code is useful as it produces 3 distinct sub-groups rather than an amalgam of three separate business types which share a Business Industry Code.

Other divisions are made on the basis of ATO knowledge regarding the characteristics of different businesses. As with the culling of data, as described in step 2 above, the objective is to produce like groups. From a statistical point of view, this qualitative approach should improve the homogeneity in a quantitative sense of the groupings.

The second basis uses key-words in an attempt to improve the groupings. This is another method to classify businesses into like groups. The example given in the Small Business Benchmarks document is the classification of entities with the same ANZSIC code into sub-groupings of Restaurants and Cafes.

The identification of relevant words such as 'restaurant', 'coffee shop', or 'café' in a business description or name, allows the division of those businesses which have the same business industry code. In addition, the use of key words can also be used to classify businesses regardless of the business industry code.

For the 2010–11 benchmark year, there were 492,441 entities following the completion of the culling described in step 2. After the key-word process and the resultant assignment to benchmark industries, there were 403,908 entities remaining (that is, a further 18% reduction).

Clearly the process of the selection of appropriate key words, and the division into particular sub-groups necessarily involves judgment on the part of the relevant staff of the ATO. However, I believe this is done in a sensible manner which assists in the production of benchmark groupings that contain sufficiently homogeneous groups of entities in terms of their essential business characteristics.

I understand that in the application of the benchmarks, and the identification of businesses for potential investigation, an equivalent process is followed. This ensures the business entity does indeed belong in the relevant industry and turnover range.

Step 4 – Calculation of the ratios

Section 2.4 of the SBB document describes the calculation of the benchmark ratios. The ratios are calculated on 2 bases; first, from the Income Tax Return, and second from Activity Statements.

For the Income Tax return ratios, all ratios use turnover (revenue from goods and services excluding GST) as the denominator. The benchmark ratios are:

- Total expenses to Turnover
- Cost of Sales to Turnover
- Labour to Turnover
- Rent to Turnover
- Motor Vehicle Expenses to Turnover.

For the Activity Statement ratios, all ratios use the denominator of Total Sales (including GST), aggregating across a complete financial year. The benchmark ratios are:

- Non-capital purchases
- GST-free sales.

Clearly some ratios are relevant to a lower proportion of businesses (for example, GST-free sales). In turn, as the steps below shall outline,

publishing of ratios depends on their being sufficient observations for a business industry and turnover range. Accordingly, the ratios with lower numbers of observations are less likely to be published as benchmark ratios.

The SBB document provides several descriptions of logical steps taken to ensure data integrity. In order to gain a better understanding of the source of the financial ratios we requested, and received, pro-forma blank copies of the relevant Income tax returns and activity statements. This enabled us to better understand some of the adjustments and checks used by the ATO.

Step 5 – Calculate and remove the outliers

Outliers are those observations that are considered to have values that are significantly different from the majority of other observations in the dataset.

The method to remove the outliers is the Mahalonobis Distance technique. In broad terms this technique is useful for identifying distance measured from a central point in an n-dimensional space.

As outlined in step 5, above, the possible ratios calculated from both tax returns and activity statements for a particular industry are:

- Cost of sales to turnover
- Total expenses to turnover
- Rent to turnover
- Motor vehicle expenses to turnover
- Non-capital purchases to total sales
- GST-free sales to total sales.

In theory, each business' ratios could be compared with the distribution of all ratios for an industry as a whole. A distance measure would consider the degree to which the combined ratios differ from those of the industry. If the distance measure is higher than some pre-determined level, that business' ratios would all be excluded on the basis that in aggregate they are significantly different from those of the industry.

This is not the approach taken to removing outliers in the derivation of SBB. Rather than the exclusion of outliers occurring across all ratios

combined for a business, each ratio is considered separately, with distance calculations being made for each individual ratio for a business.

So for a given ratio, say Total expenses to turnover, a distance is calculated for each business' individual ratio. The ratio is excluded if the Mahalanobis distance is greater than two.

I make the following observations.

It is possible to graph each ratio, for example, the ratio of total expenses to turnover could be graphed against turnover i.e a two dimensional graph. If a line was fitted to this relationship, distance from this line would achieve a similar (though not equivalent) result. This approach would effectively remove outliers if their standard deviation from the fitted line was greater than some pre-determined value.

While the distance measures may be calculated without any judgment being involved, it is still necessary to apply some judgment in choosing the level.

Given the calculations utilise a two dimensional calculation of distance, a symmetrical distribution and a distance threshold of 2, is expected to lead to the exclusion of 15–16% of observations as outliers. The data in Appendix B, where numbers pre and post outliers are shown result in such an exclusion across all 102 industries.

As shall be seen later in step 7, further ratios are excluded from calculation when the ranges are calculated, with yet more exclusions prior to the publication of ratios. Accordingly, if this particular step was not performed a portion of the outliers would be excluded at a later step. It is important to note that the exclusion of the outliers at this step is made on the basis of the relationship between the ratio and turnover; that is an individual ratio will be excluded if it differs markedly from 'typical' ratios for that level of entity turnover. The exclusions in step 7 are made on a different basis.

While we have not received detailed data regarding the outliers excluded in this step, we have observed scatter plots of the Total Expenses to Turnover ratio in the IGT report, the SBB document, and for data we requested to assess steps 6 and 7 (below). In each case we can observe significant proportions of ratios at or close to 100%. Given the clusters near this value, it is unlikely such values would be

considered outliers; rather it is expected that excluded outliers would tend to be the lower values for the Total Expenses to Turnover ratio.

It is stated in the SBB document that outlier exclusion may be 'extreme cases, mistakes or not part of the population intended to be benchmarked'. It should be remembered that outliers could also reflect entities engaged in the type of cash economy avoidance activities that the benchmarking is meant to detect. While it is appropriate to exclude these outliers from the development of published benchmarks, it would still seem correct to then assess these individual ratios against the benchmarks. For such ratios that are significantly above the published ranges, this could provide an indication of further investigation.

Not surprisingly, as shown in the graph below it is those industries with fewer business entities that tend to have relatively more outliers excluded. Those industries with fewer entities will have greater relative variability in individual ratios.

Step 6 – Assign turnover ranges to benchmark industries

The process of division of each of the 102 industries into turnover ranges involves some judgment as to the bounds of each range. Each industry has either two or three ranges which may be used for the publication of ratios.

In Step 2, above, it was noted that by definition, those businesses with turnover below $30,000 were excluded. This stage of the exclusion process eliminated a significant number of observations. However, examination of the published ranges, shows the lowest range (for 2010) as $50,000, with many industries having a low range of $65,000. So the published ranges, whether an average or a band for a particular industry and turnover range, exclude even more data than indicated in Step 2 (above).

For the 102 industries, the distribution of the bottom end of the lowest range are as follows

Start point of lowest range	Number of industries
$50,000	36

$65,000	57
$75,000	4
$100,000	4
$400,000	1
Total	102

From discussions with the ATO, I understand the decision regarding this 'floor' level of turnover for each benchmark industry is a matter of judgment, taking into consideration relevant aspects of each individual industry.

One aspect considered in the choice of the 'floor' level is the threshold for GST registration. This threshold is the point at which a business entity must register for GST, although some businesses below the threshold still register for GST. I understand that prior to 30 June 2007, the threshold for GST registration was $50,000. Since then it has been $75,000. The first published benchmarks considered both these thresholds.

In general, retail businesses are expected to have higher turnover than service based businesses where the turnover reflects a greater proportion of labour on the part of the provider. As such retail businesses will tend to have a higher starting point (say, $65,000). Other industries, by their nature typically have a higher turnover (for example, pubs), so have higher starting points

For the top of the lowest range, and in turn the higher ranges, there is some judgment involved for the relevant analysts. While primarily looking at the Total Expenses to Turnover range, analysts look at scatter plots of the ratios by Turnover. I understand they are looking for ranges whereby the data within each range shall be 'alike' and distinct from the other ranges. Apart from 'eyeballing' the scatter plots, there are other considerations that influence the choice of range, including having sufficient entities in each range to increase statistical validity. It is also desirable to have homogeneity within each range (step 8).

In looking at this step, and the following step (7), we have three broad aims:

- gain a better understanding of the assignment of turnover ranges and its statistical validity
- test the establishment of turnover ranges
- gain insight into the sensitivity of the published bands of ratios to the turnover ranges.

In order to achieve these objectives, we chose six relevant industries (two smaller, two medium, and two larger), and requested some underlying data from the ATO.

The requested data was provided for the following industries:

- Entertainment media retailing (smaller)
- Ice cream retailing (smaller)
- Beauty services (medium)
- Sports, camping and fishing retailing (medium)
- Electrical services (larger)
- Plumbing services (larger).

The initial data provided showed Sales (Turnover) for each relevant business as well as ratios based on tax return information, being the Total Expense ratio, and the Cost of Goods Sold ratio. We were also provided with relevant data for ratios from the Activity statement.

This was the extent of the information provided for the six industries, so no data was provided that could identify an individual entity. In order to further protect the confidentiality of the data, Sales were stratified into bands of $5,000, rather than the raw dollar amount being provided. Given the stratification of the data into bands of Sales is consistent with the classification of the data into turnover ranges, the lack of precise turnover data has no effect on our analysis.

Cumpston Sarjeant review steps 7 to 12

Steps from the Review of statistical methodology used in producing small business benchmarks by David Heath.

Published 17 March 2025

Step 7 – Calculation of the benchmark ranges

The process of establishment of benchmark ranges is described in the SBB document. 85. Having chosen ranges, as described in Step 6, the process for each range is as follows:

- Calculate arithmetic mean of ratios in each range.
- Having calculated the mean, calculate the absolute difference of each ratio from the mean within the range.
- Choose a range that represents 30% of the population within that range – the range is not necessarily symmetrical around the mean. As it minimises the aggregate absolute differences calculated in the preceding step, it will include the mean, but won't necessarily have an equal number of observations above and below the mean. Round the top and bottom points (that is, ratios) of each range to the nearest percentage point. The rounding means the ranges can be greater or less than 30% of that range's population.

Initially we replicated the published ratios for each of the 6 industries. We were able to re-produce the results as provided when adopting the same ranges as selected by the ATO analysts. These ratios are shown in Appendix A, below.

We also were able to check these ratios against those published on the Small Business Benchmarks pages of the ATO website.

As noted above, the published ranges are rounded to the nearest percentage, which can result in more or less than 30% of the population in the published range. For example, the medium range for the Total expenses ratio for Ice Cream retailing covers about 34% of the medium range population.

The decision to make the published range cover about 30% of a turnover range's population is a policy decision, but we note that given it is a relatively narrow range, there are many observations that are outside the range.

It should be remembered that for a ratio such as Total Expenses to Turnover, entities with ratios below the mean are not a cause for concern unlike those with high values for this ratio. Entities with a low value are effectively declaring relatively high profit margins compared to their peers so are less likely to be in breach. It is the entities with higher Total Expenses to Turnover ratios that are of greater concern.

The graph on page 17 Review of statistical methodology used in producing small business benchmarks (PDF, 1.5MB) shows a plot of the individual Total Expenses to / Turnover ratios for the 'High' turnover range (greater than $600,000) for Ice Cream Retailing. The horizontal lines show the average, as well as the upper and lower bands for the published ratios (84% to 93%).

- See page 17 Review of statistical methodology used in producing small business benchmarks (PDF, 1.56MB).

As the plot of the individual ratios for each entity show, the progression is not smooth and symmetrical. The published range captures the observations surrounding the mean, but as this range is intended to cover only 30% of the range population, there are many entities' ratios outside the range. Concentrating on those entities with ratios above the top of the published range, there are 24 entities (out of a population of 53) with ratios above the range.

Ice Cream retailing is an industry with relatively low numbers of members; indeed the 'High' range population is only just above the minimum threshold (of 50) for publication for a key benchmark ratio (Step 8).

A similar graph may be derived for Beauty Services. As one of the selected 'medium-sized' industries, the 'High' range (more than $400,000 turnover) for Beauty Services contains 355 entities in the population for the Total Expenses to / Turnover ratio.

See page 18 Review of statistical methodology used in producing small business benchmarks (PDF, 1.5MB).

Nevertheless, it may be observed that there are 130 entities with Total Expenses to Turnover ratios higher than the top of the published

range. This represents about 37% of the 'High' population for the Total Expenses to / Turnover ratio.

For a selected 'Large' industry, such as Plumbing Services, there are even greater numbers of entities within the population. For the 'High' range (more than $600,000 turnover) for Plumbing Services, there are 2,114 business entities.

The distribution of ratios as shown on page 19 Review of statistical methodology used in producing small business benchmarks (PDF, 1.5MB) appears to be a lot smoother than the previous graphs. This reflects the larger number of entities.

- See page 19 Review of statistical methodology used in producing small business benchmarks (PDF, 1.5MB).

For Plumbing Services there are 810 entities (or about 38%) that have Total Expenses to Turnover ratios higher than the upper threshold of the published ratio.

It may be observed that the published range in each of the 3 graphs above is quite narrow, as it is selected to only encompass 30% of the observations within each range. The top and the bottom of the range are selected so the 30% range minimises the differences in absolute value from the average. In other words, rather than take 15% on each side of the average, the range is effectively shifted slightly so a flatter part of the distribution will form the range.

In general, the 'High' range for the Total Expenses to Turnover ratio exhibits a greater degree of variability that the 'Low' or 'Medium' range. The graph on page 20 Review of statistical methodology used in producing small business benchmarks (PDF, 1.5MB) is adjusted to show the 3 ranges on the same axes for the 'Low', 'Medium' and 'High' ranges.

- See page 20 Review of statistical methodology used in producing small business benchmarks (PDF, 1.5MB).

The 'Low' range ($65,000 to $200,000 turnover) contains the highest population. It may be observed that this range is relatively less skewed than the 'Medium' ($200,000 to $400,000 turnover) or 'Large' (over $400,000 turnover) ranges. The 'Low' range also has a wider range (68% to 82%) than the 'Medium' or 'Large' range.

The percentage of entities with Total Expenses to Turnover range higher than the top end of the published range are 38% for the 'Low'

range, 41% for the 'Medium' range, and 37% for the 'High' range.

Our analysis has confirmed the correct calculation of averages and ranges for the Total Expenses to Turnover, and Cost of Sales to Turnover benchmarks; that is the calculations are in accordance with the description provided in the SBB document. Further the resulting benchmarks are the same as those published on the ATO website.

The decision to publish ranges (provided the tests of step 8 are met) that reflect a band containing 30% of the range population is a policy decision. However, this choice has implications, in that high proportions of entities exhibit ratios that are higher than the published bands.

In making a comparison between an individual business entity's ratio and the published benchmark, relevant staff of the ATO must be aware of the large proportions of entities that are higher than the published ranges. If using the ratio (together with other measures) to select an entity as a candidate for audit, it would seem reasonable to only select entities with ratios significantly above the published ratios.

Clearly the use of benchmark ratios cannot be a sole indicator of breaches regarding the cash economy, but it is reasonable to expect that entities with a higher probability of breach would exhibit a higher Total Expenses to Turnover or Cost of Sales to Turnover ratio.

In order to capture just the top 5% in each range for Beauty Services, the top end of each range would be as follows

Beauty services – top of range	**Key benchmark ratio annual turnover range $65,000–$200,000**	**Key benchmark ratio annual turnover range $200,000–$400,000**	**Key benchmark ratio annual turnover range more than $400,000**
Cost of sales to turnover published	25%	24%	24%
Only 5% of population	41%	37%	35%

higher			
Total expenses to turnover published	82%	87%	92%
Only 5% of population higher	97%	98%	99%

In statistical terms, the calculations of the ranges is valid, but the analysis above shows the relationship between the chosen ranges (broadly reflecting 30% of the population) and the subsequent use. In applying the ratios, particularly to identify potential audit targets, it would not be reasonable to choose a business entity with a ratio slightly above the published band.

The distribution and skewness of ratios within each turnover range determines the width of ranges that capture differing proportions of the population. The preceding table shows differing amounts between the top of the published bands and a band designed to exclude only the top 5% of individual ratios.

The ATO may consider the publication of other bands for internal use, particularly for audit targeting. These could be constructed on the basis of traffic lights, whereby bands could be calculated reflecting red, amber or green risk profiles.

From their past experience, the ATO may be able to reach an appropriate 'a priori' expectation of the proportion of businesses in an industry that shall require further investigation. This proportion could then be used as the basis to calculate ranges of ratios for ATO internal use. Such ranges could better formalise the identification of entities whose ratios are 'significantly outside the published ranges'.

Alternative range testing

As stated earlier, the establishment of turnover ranges (generally 'Low', 'Medium' and 'High') requires some judgment. In order to better understand the impact of the chosen ranges, we re-calculated the average and 'published' ratio ranges, after changing the turnover ranges.

The results are shown in Appendix A, following the Key benchmark ratios which were published, and confirmed in our calculation.

An analysis of these alternative calculations yields few surprises. The 'published' ratios vary from the actual published ratios as would be expected; a greater turnover range leads to a greater range of ratios in the 30% band surrounding the mean.

These alternative calculations confirm the view that while the statistical methodology and calculation is correct, the usage of the ratios is circular. Ratios should only be used for benchmarking the relevant industry and turnover range for which they have been derived.

Step 8 – Normality and homogeneity testing

The selection of key benchmark ratios and secondary benchmark ratios for publication is dependent on normality and homogeneity testing.

Given the earlier steps of the culling of the starting population, the exclusion of outliers, the further exclusion of entities with turnover from $30,000 to the bottom end of the 'Low' range, and the classification into 2 to 3 turnover ranges, the final groupings for analysis and potential publication have been significantly adjusted. Accordingly it would be surprising if a large number did not meet the normality and homogeneity tests, at least for those industries with larger populations.

It is those industries and turnover ranges with smaller populations that could fail these tests, leading to a decision not to publish the benchmark ratios.

Step 9 – Review of the benchmark ratio output – quality assurance and other testing

119. This step involves several tests to provide confidence of correct calculation, and accordance with expectation. The steps include:

- Comparison with previous year’s benchmarks, on the expectation there would not be significant variation in the space of a year.

- Size and spread across the benchmark range, whereby those ranges that are relatively wide are investigated further.
- Trends of the benchmark ratios across a turnover range. For most industries it would be reasonable to expect consistent patterns across the three turnover ranges (for example, middle range between low and high ranges). Any discrepancies are investigated.

These processes are sensible, and another indicator of the thorough approach taken by the ATO in the derivation of the Benchmarks.

Step 10 – Preparation of industry names and overviews

This step is primarily a policy decision without statistical methodology implications.

Step 11 – Preparation of documents for publication

This step is primarily a policy decision without statistical methodology implications.

Step 12 – Small business benchmark publication approval

This step is primarily a policy decision without statistical methodology implications.

QC 103952

Cumpston Sarjeant review Appendix A

Turnover ranges from the Review of statistical methodology used in producing small business

benchmarks.

Published 17 March 2025

Using Appendix A

This is taken from the *Review of Statistical Methodology used in producing Small Business Benchmarks*. It was undertaken by David Heath, Director of Cumpston Sarjeant Pty Ltd and Fellow of the Institute of Actuaries of Australia and delivered to us on 30th September 2013.

Entertainment media retailing

Confirmation of calculations, published on Small Business Benchmark website.

Entertainment media retailing – key ratio population counts

Counts	Low	Medium	High
Total expenses	142	85	51
Cost of sales	152	113	69

Entertainment media retailing – key benchmark ratios and turnover ranges

Key benchmark ratio	Annual turnover range $65,000–$350,000	Annual turnover range $350,000–$1,000,000	Annual turnover range more than $1,000,000
Income tax return – Cost of sales to turnover	41% – 59%	42% – 62%	55% – 65%

Income tax return – Average cost of sales	50%	52%	59%
Income tax return – Total expenses to turnover	72%–85%	86%–94%	90%–94%
Income tax return – Average total expenses	79%	90%	92%

Alternative calculations, with varied annual turnover ranges

Entertainment media retailing – key ratio population counts

Counts	Low	Medium	High
Total expenses	154	86	62
Cost of sales	157	114	83

Entertainment media retailing – key benchmark ratios and turnover ranges

Key benchmark ratio	Annual turnover range $50,000–$300,000	Annual turnover range $300,000–$900,000	Annual turnover range more than $900,000
Income tax return – Cost of sales to turnover	40%–59%	44%–62%	52%–65%

Income tax return – Average cost of sales	49%	53%	58%
Income tax return –Total expenses to turnover	70%–82%	84%–94%	89%–94%
Income tax return – Average total expenses	76%	89%	92%

Ice cream retailing

Confirmation of calculations, published on Small Business Benchmark website.

Ice cream retailing – key ratio population counts

Counts	Low	Medium	High
Total expenses	65	148	53
Cost of sales	113	177	64

Ice cream retailing – key benchmark ratios and turnover ranges

Key benchmark ratio	Annual turnover range $65,000–$250,000	Annual turnover range $250,000–$600,000	Annual turnover range more than $600,000
Income tax return – Cost of sales to turnover	30%–39%	30%–34%	30%–32%

Income tax return – Average cost of sales	34%	32%	31%
Income tax return – Total expenses to turnover	80%–85%	86%–92%	84%–93%
Income tax return – Average total expenses	82%	89%	89%

Alternative calculations, with varied annual turnover ranges

Ice cream retailing – key ratio population counts

Counts	Low	Medium	High
Total expenses	57	148	75
Cost of sales	103	179	93

Ice cream retailing – key benchmark ratios and turnover ranges

Key benchmark ratio	Annual turnover range $50,000–$200,000	Annual turnover range $200,000–$500,000	Annual turnover range more than $500,000
Income tax return – Cost of sales to turnover	29%–40%	30%–35%	29%–32%
Income tax return –	34%	33%	31%

Average cost of sales			
Total expenses to turnover	77%–83%	84%–91%	86%–93%
Average Total expenses	78%	87%	90%

Beauty Services

Confirmation of calculations, published on Small Business Benchmark website.

Beauty services – key ratio population counts

Counts	Low	Medium	High
Total expenses	1,160	516	355
Cost of sales	1,002	559	376

Beauty services – key benchmark ratios and turnover ranges

Key benchmark ratio	Annual turnover range $65,000–$200,000	Annual turnover range $200,000–$400,000	Annual turnover range more than $400,000
Income tax return – Cost of sales to turnover	17%–25%	17%–24%	18%–24%
Income tax return –	21%	21%	21%

Average cost of sales			
Total expenses to turnover	68%–82%	79%–87%	83%–92%
Average Total expenses	75%	83%	87%

Alternative calculations, with varied annual turnover ranges

Beauty services – key ratio population counts

Counts	Low	Medium	High
Total expenses	1,231	878	244
Cost of sales	985	926	256

Beauty services – key benchmark ratios and turnover ranges

Key benchmark ratio	Annual turnover range $50,000–$150,000	Annual turnover range $150,000–$500,000	Annual turnover range more than $500,000
Income tax return – Cost of sales to turnover	16%–25%	17%–23%	18%–25%
Income tax return – Average cost of sales	21%	20%	21%

Total expenses to turnover	64%–79%	79%–87%	83%–92%
Average Total expenses	72%	83%	87%

Sports, camping and fishing retailing

Confirmation of calculations, published on Small Business Benchmark website.

Sports, camping and fishing retailing – key ratio population counts

Counts	Low	Medium	High
Total expenses	379	721	675
Cost of sales	447	869	827

Sports, camping and fishing retailing – key benchmark ratios and turnover ranges

Key benchmark ratio	Annual turnover range $65,000–$250,000	Annual turnover range $250,000–$750,000	Annual turnover range more than $750,000
Income tax return – Cost of sales to turnover	54%–65%	56%–65%	60%–65%
Income tax return – Average cost of sales	59%	60%	62%
Total expenses to	78%–88%	84%–91%	89%–94%

turnover			
Average Total expenses	83%	87%	91%

Alternative calculations, with varied annual turnover ranges

Sports, camping and fishing retailing – key ratio population counts

Counts	Low	Medium	High
Total expenses	706	548	568
Cost of sales	829	664	697

Sports, camping and fishing retailing – key benchmark ratios and turnover ranges

Key benchmark ratio	Annual turnover range $50,000–$400,000	Annual turnover range $400,000–$900,000	Annual turnover range more than $900,000
Income tax return – Cost of sales to turnover	54%–65%	57%–65%	59%–65%
Income tax return – Average cost of sales	60%	61%	62%
Total expenses to turnover	80%–89%	85%–92%	89%–94%
Average Total	84%	89%	91%

expenses			

Electrical services

Confirmation of calculations, published on Small Business Benchmark website.

Electrical services – key ratio population counts

Counts	Low	Medium	High
Total expenses	7,957	3,787	3,094

Electrical services – key benchmark ratios and turnover ranges

Key benchmark ratio	**Annual turnover range $50,000–$200,000**	**Annual turnover range $200,000–$500,000**	**Annual turnover range More than $500,000**
Income tax return – total expenses to turnover	54%–69%	65%–79%	78%–88%
Income tax return – average total expenses	61%	72%	83%

Alternative calculations, with varied annual turnover ranges

Electrical services – key ratio population counts

Counts	Low	Medium	High
Total expenses	9,930	2,717	2,191

Electrical services – key benchmark ratios and turnover ranges

Key benchmark ratio	Annual turnover range $50,000–$300,000	Annual turnover range $300,000–$700,000	Annual turnover range more than $700,000
Income tax return total expenses to turnover	55%–70%	70%–83%	80%–89%
Income tax return average total expenses	63%	76%	85%

Plumbing services

Confirmation of calculations, published on Small Business Benchmark website.

Plumbing services – key ratio population counts

Counts	Low	Medium	High
Total expenses	5,745	5,521	2,114

Plumbing services – key benchmark ratios and turnover ranges

Key benchmark	Annual turnover	Annual turnover	Annual turnover

ratio Annual turnover range	range $50,000–$150,000	range $150,000–$600,000	range more than $600,000
Income tax return – Total expenses to turnover	50%–67%	66%–79%	79%–89%
Average total expenses	59%	72%	84%

Alternative calculations, with varied annual turnover ranges

Plumbing services – key ratio population counts

Counts	Low	Medium	High
Total expenses	7,287	3,529	2,564

Plumbing services – key benchmark ratios and turnover ranges

Key benchmark ratio	Annual turnover range $50,000–$200,000	Annual turnover range $200,000–$500,000	Annual turnover range More than $500,000
Income tax return total expenses to turnover	53%–69%	68%–79%	78%–88%
Income tax return average total expenses	61%	74%	83%

QC 103953

Cumpston Sarjeant review Appendix B

Exclusion of outliers from the Review of statistical methodology used in producing small business benchmarks.

Published 17 March 2025

Using Appendix B

This is taken from the *Review of Statistical Methodology used in producing Small Business Benchmarks*. It was undertaken by David Heath, Director of Cumpston Sarjeant Pty Ltd and Fellow of the Institute of Actuaries of Australia and delivered to us on 30th September 2013.

2011

Exclusion of outlier 2011 financial year

Industry Group	Number after outliers excluded	Number before outliers excluded	Proportion excluded
Total	334,662	397,540	16%
Air conditioning, refrigeration and heating services	3,771	4,578	18%
Alarm installation services	1,576	1,926	18%

Architectural services	7,226	8,052	10%
Automotive electrical services	1,994	2,342	15%
Bakeries and hot bread shops	2,476	3,000	17%
Barber and men's hairdressing	650	696	7%
Beauty services	2,984	3,810	22%
Blocklaying services	548	621	12%
Book retailing	644	926	30%
Bottle shops and liquor retailing	760	1,089	30%
Bricklaying services	8,725	9,244	6%
Cabinet makers	5,429	6,676	19%
Cake shops and patisseries	468	601	22%
Carpentry services	30,396	32,190	6%
Carpet laying services	3,694	4,059	9%
Catering services	1,454	1,899	23%
Cement rendering	820	908	10%

Chicken shops	395	515	23%
Child care services	3,988	4,516	12%
Chiropractic and osteopathic services	2,686	2,953	9%
Cleaning services - building and other industrial	14,180	15,179	7%
Cleaning services - carpet, rug and furniture upholstery	913	999	9%
Clothing retailing	3,594	5,381	33%
Coffee shops	4,006	5,854	32%
Computer retailing	1,643	2,235	26%
Concreting services	7,981	8,916	10%
Confectionery retailing	255	358	29%
Courier services	8,403	9,583	12%
Craft shops	405	621	35%
Delicatessen	684	870	21%
Delivery services	2,545	2,909	13%
Dental specialists	577	634	9%

Dental surgeons	5,325	6,027	12%
Discount and variety stores	339	430	21%
Domestic appliance repair and maintenance	1,687	1,917	12%
Driving schools and instructors	1,506	1,710	12%
Electrical and electronic product retailing	1,560	2,173	28%
Electrical services	16,317	18,914	14%
Entertainment media retailing	356	550	35%
Fence construction	2,456	2,962	17%
Fish and chips shops	791	945	16%
Fish and seafood retailing	518	668	22%
Floor covering retailing	1,341	1,752	23%
Florists	1,069	1,482	28%
Footwear retailing	684	962	29%
Fruit and vegetable retailing	1,354	1,756	23%
Fuel retailing	1,388	1,907	27%

Furniture removalists	692	870	20%
Furniture retailing	1,450	2,140	32%
Garden supplies retailing	1,457	2,080	30%
Gift stores	1,006	1,453	31%
Glazing services	1,789	2,068	13%
Grocery retailing and convenience stores	3,486	4,426	21%
Hairdressers	9,378	11,121	16%
Hardware and building supplies retailing	1,770	2,417	27%
Health and fitness centres	2,314	3,016	23%
Health food retailing	445	629	29%
Homewares retailing	622	908	31%
Ice cream retailing	302	470	36%
Kebab shops	198	249	20%
Landscape construction	5,554	6,413	13%
Laundry and dry-cleaning services	1,279	1,615	21%

Lawn mower retailing	340	412	17%
Lawn mowing and garden services	8,698	9,472	8%
Machinery and equipment repairs and maintenance	1,417	1,642	14%
Manchester and other textile goods retailing	1,025	1,446	29%
Meat and poultry retailing	2,172	2,643	18%
Motor vehicle parts and batteries retailing	644	856	25%
Motor vehicle retail	1,678	2,617	36%
Musical instruments retail	292	416	30%
Newsagents	2,017	2,705	25%
Painting services	16,728	17,791	6%
Panel beating and smash repairs	5,171	6,335	18%
Pest control services	1,728	1,908	9%
Pets and pet supply retailing	550	818	33%

Pharmacy	2,680	3,096	13%
Physiotherapy services	3,216	3,467	7%
Picture framing retailing	474	563	16%
Pizza shops	851	1,116	24%
Plastering and ceiling services	10,567	11,114	5%
Plumbing services	14,637	16,782	13%
Printing	2,333	3,140	26%
Printing support services	1,230	1,671	26%
Pubs, taverns and bars	2,035	3,437	41%
Restaurants	7,204	10,216	29%
Road freight transport services	22,647	29,270	23%
Roofing services, including roof tiling, guttering and metal roofing	4,410	4,876	10%
Sports and physical recreation instruction	2,755	3,271	16%
Sports, camping and fishing retailing	1,888	2,638	28%

Stationery goods retailing	473	633	25%
Takeaway food services	5,047	6,696	25%
Tiling services	5,474	5,920	8%
Timber floor sanding	804	873	8%
Tobacco retailing	386	461	16%
Towing services	575	744	23%
Toy and game retailing	491	744	34%
Tutoring and coaching	2,939	3,481	16%
Tyre retailing	1,080	1,367	21%
Veterinary services	1,728	2,014	14%
Video and other electronic media rental and hiring	627	964	35%
Watch and jewellery retailing	1,348	1,755	23%

2010

Exclusion of outlier 2010 financial year

Industry Group	Number after	Number before	Proportion excluded

	outliers excluded	outliers excluded	
Total	340,727	403,236	16%
Air conditioning, refrigeration and heating services	3,868	4,714	18%
Alarm installation services	1,613	1,918	16%
Architectural services	7,095	7,963	11%
Automotive electrical services	1,926	2,289	16%
Bakeries and hot bread shops	2,453	2,962	17%
Barber and men's hairdressing	620	666	7%
Beauty services	2,972	3,754	21%
Blocklaying services	537	587	9%
Book retailing	606	913	34%
Bottle shops and liquor retailing	782	1,161	33%
Bricklaying services	8,620	9,078	5%
Cabinet makers	5,289	6,445	18%
Cake shops and patisseries	446	585	24%

Carpentry services	31,484	33,314	5%
Carpet laying services	4,142	4,500	8%
Catering services	1,562	2,012	22%
Cement rendering	810	888	9%
Chicken shops	371	476	22%
Child care services	4,555	5,103	11%
Chiropractic and osteopathic services	2,775	3,076	10%
Cleaning services - building and other industrial	14,773	15,764	6%
Cleaning services - carpet, rug and furniture upholstery	846	943	10%
Clothing retailing	3,641	5,541	34%
Coffee shops	3,738	5,321	30%
Computer retailing	1,667	2,216	25%
Concreting services	7,975	8,880	10%
Confectionery retailing	224	335	33%

Courier services	8,626	9,926	13%
Craft shops	337	533	37%
Delicatessen	609	777	22%
Delivery services	2,236	2,568	13%
Dental specialists	558	632	12%
Dental surgeons	5,577	6,400	13%
Discount and variety stores	330	436	24%
Domestic appliance repair and maintenance	1,589	1,829	13%
Driving schools and instructors	1,496	1,671	10%
Electrical and electronic product retailing	1,610	2,252	29%
Electrical services	16,952	19,536	13%
Entertainment media retailing	340	497	32%
Fence construction	2,360	2,813	16%
Fish and chips shops	752	880	15%
Fish and seafood retailing	499	635	21%

Floor covering retailing	1,359	1,782	24%
Florists	1,079	1,432	25%
Footwear retailing	695	975	29%
Fruit and vegetable retailing	1,343	1,731	22%
Fuel retailing	1,349	1,859	27%
Furniture removalists	683	827	17%
Furniture retailing	1,439	2,133	33%
Garden supplies retailing	1,347	1,984	32%
Gift stores	908	1,341	32%
Glazing services	1,758	2,038	14%
Grocery retailing and convenience stores	3,398	4,352	22%
Hairdressers	10,007	11,808	15%
Hardware and building supplies retailing	1,727	2,378	27%
Health and fitness centres	2,687	3,468	23%
Health food retailing	408	580	30%
Homewares	674	994	32%

retailing			
Ice cream retailing	263	417	37%
Kebab shops	198	240	18%
Landscape construction	5,836	6,728	13%
Laundry and dry-cleaning services	1,271	1,599	21%
Lawn mower retailing	341	400	15%
Lawn mowing and garden services	9,256	10,089	8%
Machinery and equipment repairs and maintenance	1,678	1,935	13%
Manchester and other textile goods retailing	1,009	1,403	28%
Meat and poultry retailing	2,097	2,563	18%
Motor vehicle parts and batteries retailing	706	959	26%
Motor vehicle retail	1,617	2,561	37%
Musical instruments retail	292	403	28%
Newsagents	1,925	2,601	26%

Painting services	17,086	18,115	6%
Panel beating and smash repairs	5,156	6,229	17%
Pest control services	1,759	1,969	11%
Pets and pet supply retailing	578	840	31%
Pharmacy	2,604	3,145	17%
Physiotherapy services	3,417	3,703	8%
Picture framing retailing	440	531	17%
Pizza shops	766	973	21%
Plastering and ceiling services	10,661	11,140	4%
Plumbing services	15,034	17,122	12%
Printing	2,298	3,070	25%
Printing support services	1,210	1,642	26%
Pubs, taverns and bars	2,083	3,364	38%
Restaurants	7,855	11,005	29%
Road freight transport services	22,795	29,125	22%
Roofing services,	4,425	4,870	9%

including roof tiling, guttering and metal roofing			
Sports and physical recreation instruction	2,614	3,055	14%
Sports, camping and fishing retailing	1,895	2,717	30%
Stationery goods retailing	459	649	29%
Takeaway food services	5,518	7,203	23%
Tiling services	5,272	5,669	7%
Timber floor sanding	806	878	8%
Tobacco retailing	386	471	18%
Towing services	598	748	20%
Toy and game retailing	496	788	37%
Tutoring and coaching	3,243	3,824	15%
Tyre retailing	1,119	1,418	21%
Veterinary services	1,720	2,060	17%
Video and other electronic media rental and hiring	547	846	35%

Watch and jewellery retailing	1,276	1,698	25%

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If you follow our information and it turns out to be incorrect, or it is misleading and you make a mistake as a result, we will take that into account when determining what action, if any, we should take.

Some of the information on this website applies to a specific financial year. This is clearly marked. Make sure you have the information for the right year before making decisions based on that information.

If you feel that our information does not fully cover your circumstances, or you are unsure how it applies to you, contact us or seek professional advice.

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