

# Business Operations Survey: 2012

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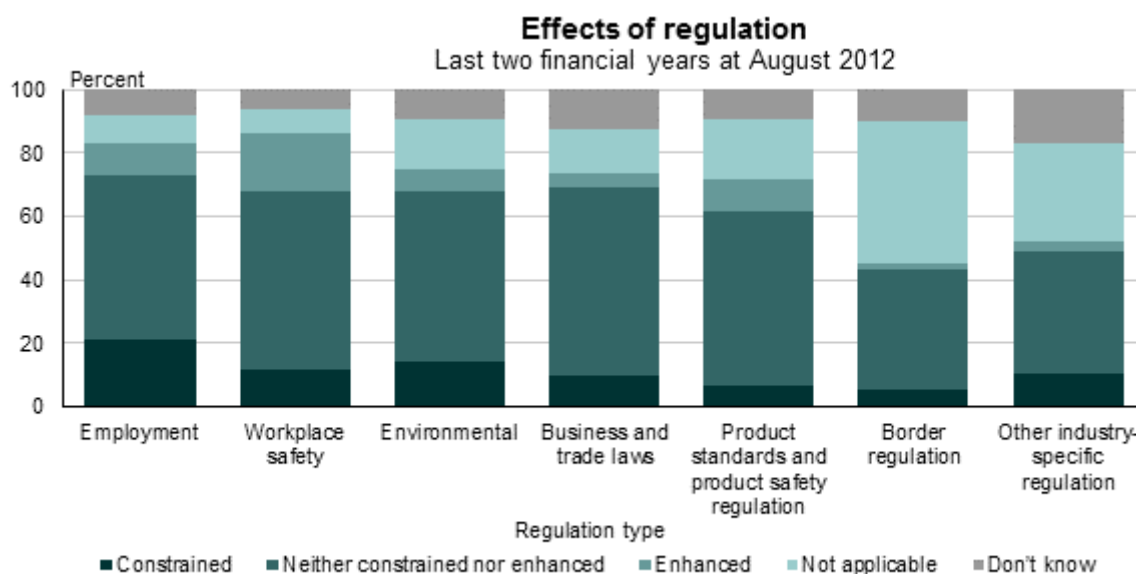
## Key facts

In 2012, the main impacts of regulation were:

- 1 in 10 businesses had enhanced performance from workplace safety regulation.
- 1 in 5 businesses had constrained performance from employment regulation.
- 41 percent of businesses raised the skill level of employees in response to regulation.
- Absorbing costs was the most common method of dealing with increased compliance costs.

Other results showed:

- Tradespersons were still the most difficult occupation group to recruit in 2012.
- Businesses with broadband connections have plateaued at 94 percent.



Geoff Bascand  
Government Statistician

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## Commentary

- Around one-quarter of businesses still have difficulty recruiting employees
- New insights into exports
- Information and communication technology – reaching saturation levels
- Effects of regulation – employees and safety are central

The Business Operations Survey is a modular survey that contains a repeating business operations module, an alternating information and communications technology (ICT) or innovation module, and a contracted module. In 2012, the contracted module focused on the impact of regulation.

### **Around one-quarter of businesses still have difficulty recruiting employees**

Businesses need to find the right person for the right job, but in 2012 businesses found it just as hard to recruit employees as in 2011.

At least one-quarter of businesses had either moderate or severe difficulty in recruiting employees in 2012. The occupation type that businesses found most difficult to recruit was tradespersons and related workers – 9 percent had severe difficulty, compared with 6 percent in 2011. This was followed by 6 percent reporting severe difficulty in recruiting managers and professionals.

The latest detailed results available, from the Business Operations Survey: 2008, found the most common reason businesses had difficulty recruiting the right people was that applicants lacked the desired attitude, motivation, or personality. Other common reasons included lack of work experience, or lack of qualifications or skills. This information will be collected again in 2013, and updated results will be published in April 2014.

Quarterly Employment Survey: December 2012 quarter showed that the actual number of filled jobs (not people employed) increased 1.4 percent between September 2011 and September 2012. There are many reasons why filled jobs can increase (eg job creation, change in population), so the increase does not necessarily indicate that it is getting easier for employers to fill roles.

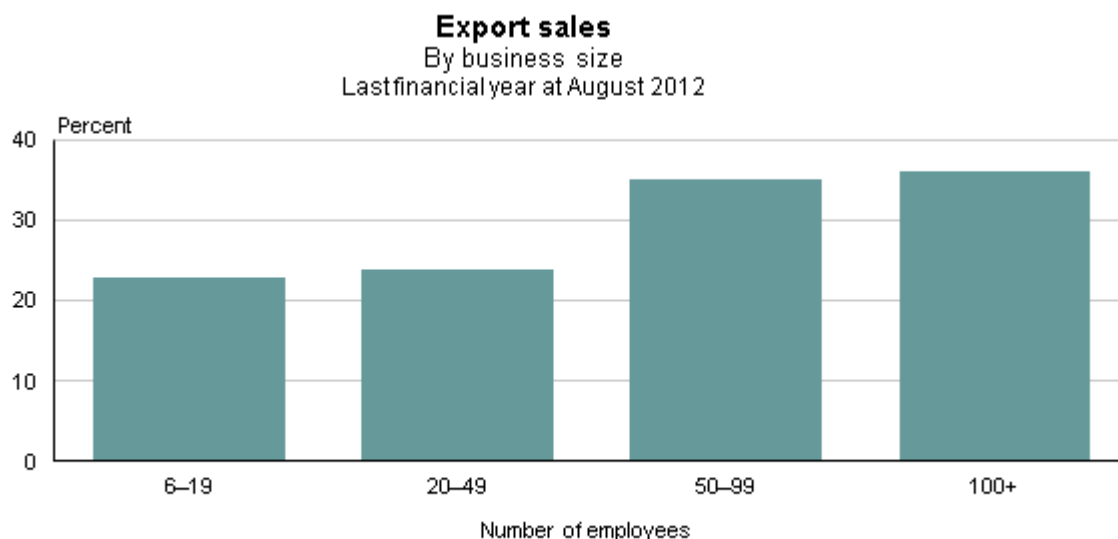


Source: Statistics New Zealand

## New insights into exports

Twenty-five percent of businesses gained sales from exports in 2012, up from 18 percent in 2011. This increase mainly reflects the survey capturing more smaller exporters (those with between 0 and 1 percent of total sales) than in past years. Therefore, the figures for the percentage of exporters in 2012 are more accurate than they have been in the past.

Overseas Merchandise Trade: August 2012 shows that the actual value of exports increased 0.8 percent in 2012.



Source: Statistics New Zealand

The number of businesses that export increases in relation to business size. Twenty-three percent of small businesses (6 to 19 employees) exported in 2012, compared with 36 percent of large businesses (100 or more employees).

Exporting is one activity that can help a business grow. The survey also collected information on other growth activities, such as investment in expansion, research and development, tourism sales, and requesting finance. In 2012, there were increases in three of these five key indicators of business activity.

In 2012, 26 percent of businesses invested in expansion, but the survey did not collect information on the value of this investment. Investment in expansion includes purchase of new assets or entry into new markets.

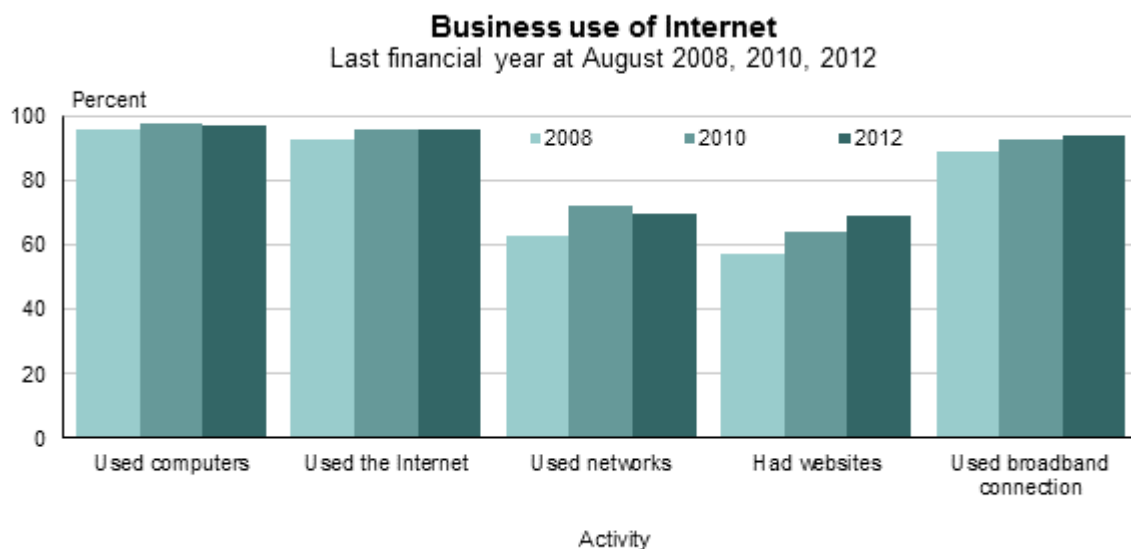
Eight percent of businesses undertook research and development (R&D) in 2012, down from 9 percent in 2011. However, the average value of R&D expenditure increased 17 percent between 2011 and 2012. Results from Research and Development Survey: 2012 also show an increase in businesses' R&D expenditure (up 23 percent between 2010 and 2012).

Twenty-two percent of businesses gained sales from tourism in 2012. Tourism Satellite Account: 2012 shows that tourism expenditure increased 2.4 percent for the year ended March 2012.

Twenty-seven percent of businesses requested finance in 2012, up from 24 percent in 2011. Most of this increase came from businesses who requested debt finance.

The small increases in these activities indicate that although the last few years have been difficult for businesses, they maintained similar levels of operations and have started to overcome a period of low or no growth.

## Information and communication technology – reaching saturation levels



Source: Statistics New Zealand

Of the businesses surveyed in 2012:

- 97 percent used computers, down from 98 percent in 2010. Increased use of smartphones and other devices (Interген, 2012) may mean businesses are no longer using computers to the same degree they used to.
- 96 percent used the Internet, the same as in 2010.

- 70 percent used networks, down from 72 percent in 2010, mostly due to an increase in the number of businesses that did not know if they used networks.
- 69 percent had websites, up from 64 percent in 2010. Businesses now have cheaper and easier access to the tools, systems, and information for creating and maintaining websites (MYOB Business Monitor, 2012).
- 94 percent used broadband connections, similar to 2010. Lack of broadband access in some areas could be why broadband connections have not increased (see table 33 of the detailed tables in the 'Downloads' box).

The stable nature of these activities suggests that business use of ICT (computers and the Internet) has plateaued and has now reached saturation levels.

Businesses also showed a stable rate of sales received via the Internet. There was some confusion among respondents about the difference between sales gained through conventional email compared with more sophisticated Internet mechanisms. This survey clearly does not collect sufficiently detailed information about Internet sales outside of New Zealand by individuals, but future survey development may correct this. More information on this subject will be published on 22 April in *Household Use of Information and Communication Technology: 2012*, which provides a picture of individual, private use of the Internet.

## **Effects of regulation – employees and safety are central**

The 2012 Business Operations Survey collected information on the effects of regulation for the first time. This was to fill an information gap about how businesses are affected by, and respond to, the regulations they have to comply with.

Most regulations target specific activities, practices, or industries, so businesses in different industries will be affected by different regulations. For example, environmental regulations may only be applicable to businesses whose activities affect the environment, so they are not as commonly reported as other regulations. (Eighty percent of businesses in the mining industry spent significant time and resource on environmental regulation, compared with only 4 percent in the arts and recreation industry.)

The survey found that, in 2012:

- the type of regulation that businesses spent the most time on was workplace safety regulation
- employment regulation most constrained businesses' performance
- workplace safety regulation most enhanced businesses' performance
- many businesses up-skilled their employees in response to regulation.

Businesses of all sizes, industries, and activities need to comply with employment and workplace safety regulations, so they are the ones most commonly reported across the New Zealand economy.

## **One-quarter of businesses affected by regulation for hazardous substances**

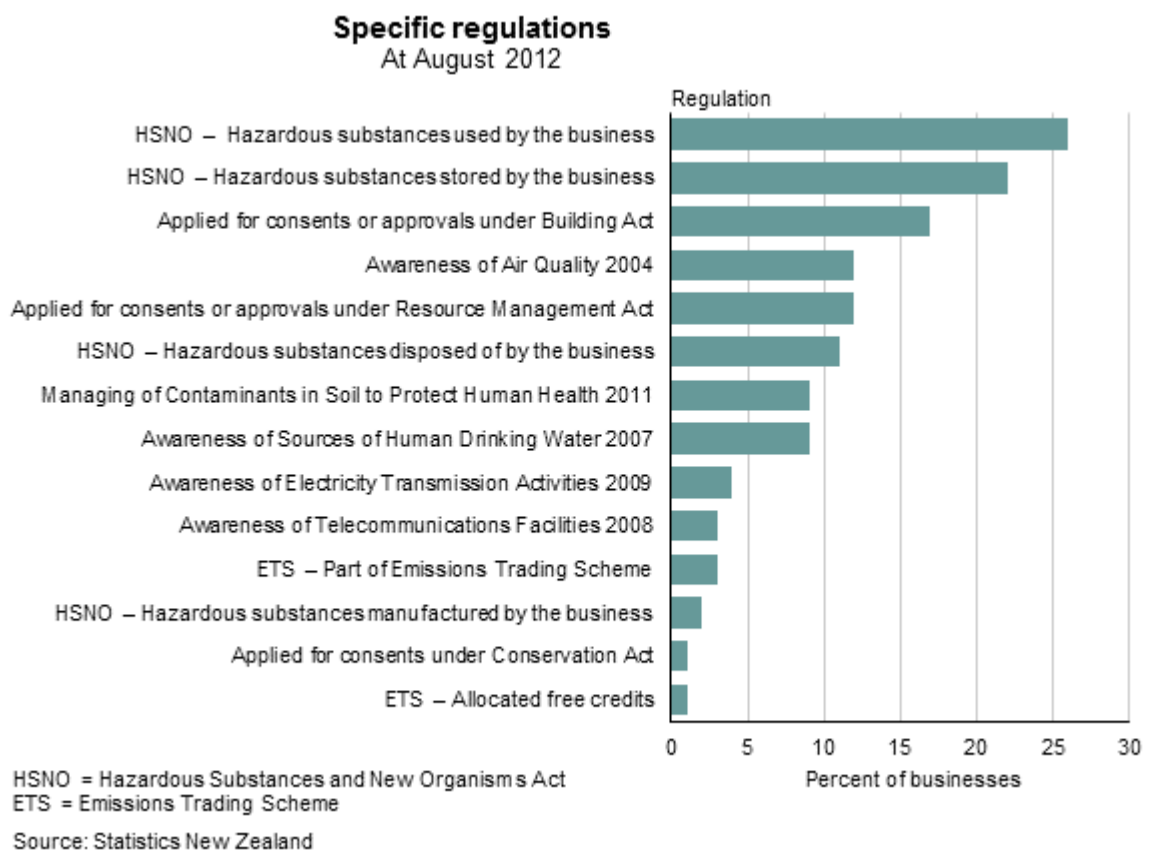
Businesses may need to comply with many specific regulations. Examples of these that the survey collected information on include:

- local body planning and regulatory processes including:

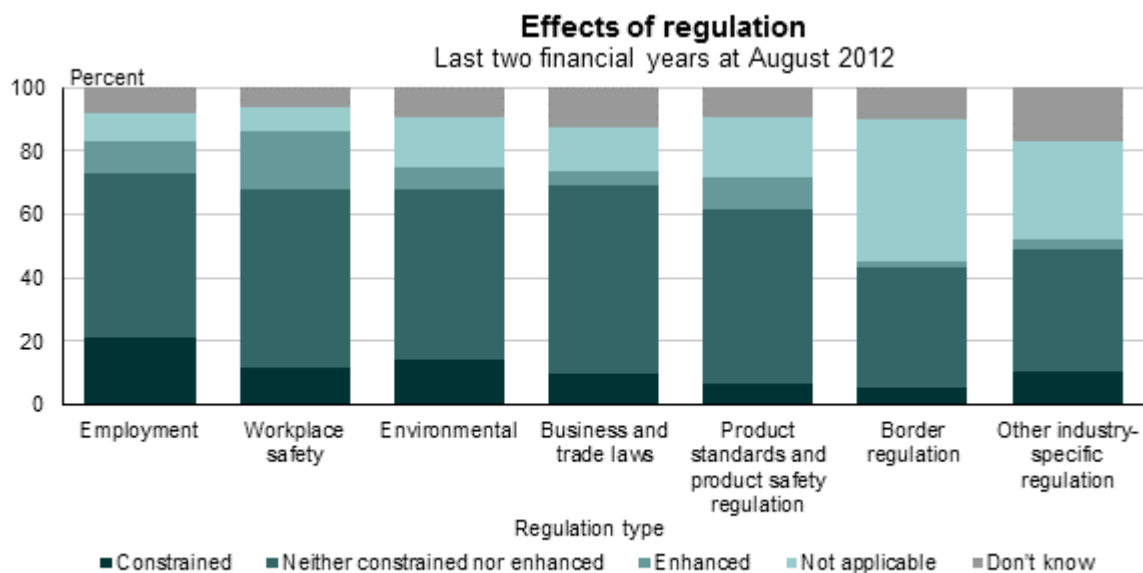
- Resource Management Act 1991
- Building Act 2004
- Conservation Act 1986
- national environment standards, including Air Quality 2004
- Hazardous Substances and New Organisms Act 1996
- Emissions Trading Scheme.

In 2012, around one-quarter of all businesses had obligations related to the hazardous substances they used. This was followed by obligations to the hazardous substances they stored (22 percent of businesses). Regulations related to approved hazardous substances are in place to ensure any dangerous substances are safely produced, used, stored, or disposed of.

Another 17 percent of businesses applied for consents or approvals under the Building Act (not related to hazardous substances).



## Employment regulation constrains while workplace safety enhances



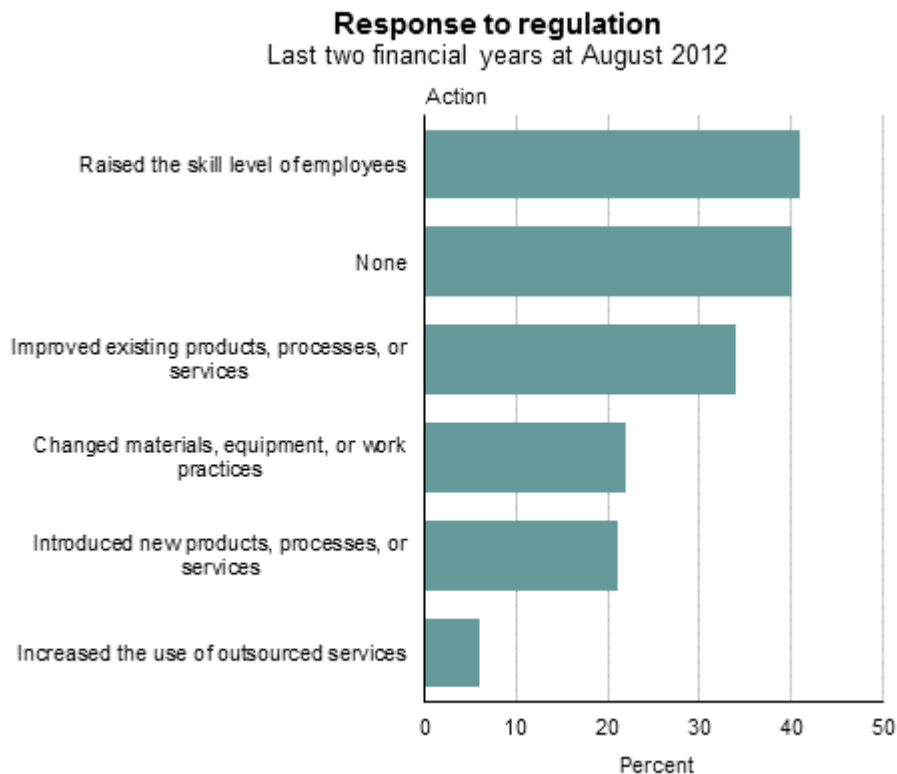
Source: Statistics New Zealand

The regulation that businesses most reported as constraining their performance to some degree in 2012 was employment regulation (21 percent of businesses), followed by environmental regulation (14 percent). The regulation that businesses most reported as enhancing their performance to some degree was workplace safety regulation (19 percent), followed by employment regulation (11 percent).

Employment regulation ensures that employees are treated fairly across different businesses. It includes Acts related to pay, leave, and working conditions.

For most types of regulation, more businesses reported being constrained rather than enhanced. However, for workplace safety regulation, and for product standards and product safety regulation, the opposite was true. Overall, most businesses felt that all the regulation types had no effect on their performance. This indicates that some businesses can be constrained by one type of regulation, but other businesses can be enhanced by it. This is evident in the wide range of results for different business sizes and industries.

## Raising the skill level of employees most common response to regulation



Source: Statistics New Zealand

Forty-one percent of businesses raised the skill level of employees in response to regulation. This was followed by businesses that did nothing in response to regulation (40 percent) and businesses that used the opportunity to improve existing products, processes, or services (34 percent). This last category is innovation – 46 percent of businesses innovated between 2009 and 2011 (see [Business Operations Survey: 2011](#)).

There are significant differences across industries in their response to regulation. For example, 54 percent of construction businesses increased the skill level of their employees in response to regulation, compared with 21 percent of businesses in the information media and telecommunications industry.

## Businesses spend significant time on workplace safety regulation

Regulation related to people (eg workplace safety and employment regulation) required significant amounts of time and resources from businesses. This could be attributed to the physical nature of changes required by regulations (eg, safety checks, training, signage).

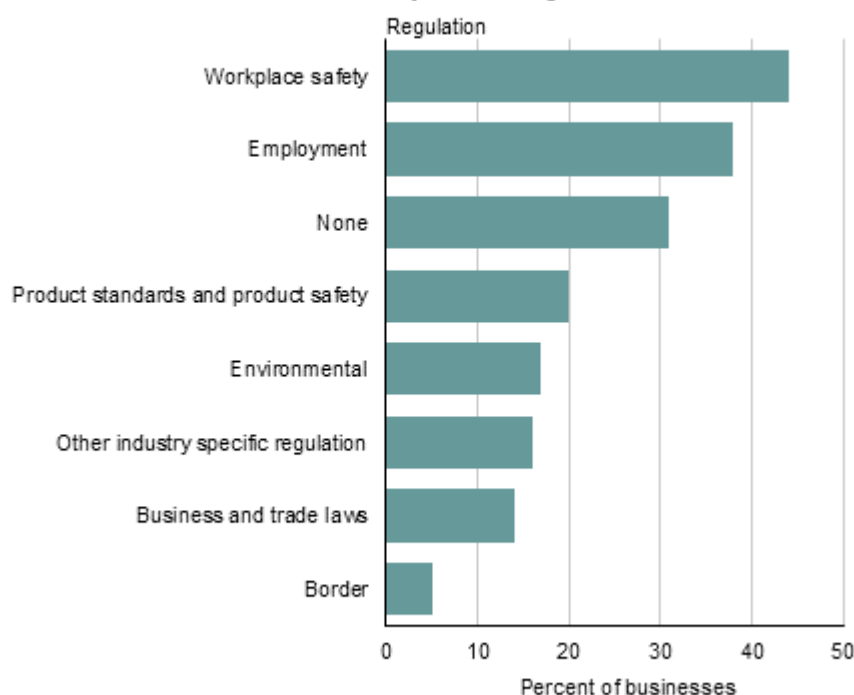
Forty-four percent of businesses spent significant time on workplace safety regulation, followed by 38 percent of businesses for employment regulation. There were significant differences across different industries and regulation types.

Workplace safety regulation requires businesses to have standards and protocols to deal with risks and accidents to employees, and the public.



### Regulation that significant time was spent on

Last two financial years at August 2012



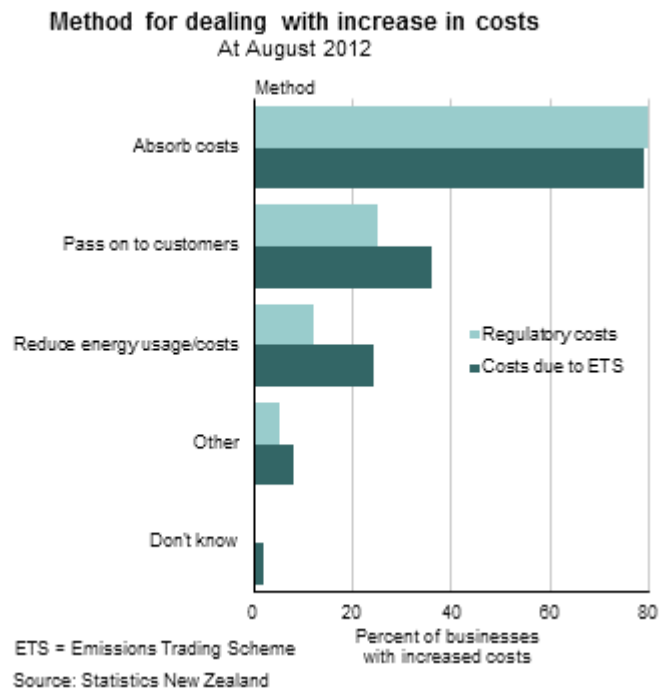
Source: Statistics New Zealand

### Absorbing costs preferred method of dealing with increased compliance costs.

Information was collected on how businesses dealt with increased compliance costs, including their response to increased energy costs due to the Emissions Trading Scheme (ETS).

Fifty-eight percent of businesses experienced an increase in the cost of complying with regulation in 2012, and 80 percent of these absorbed the increased costs. Twenty-four percent of businesses experienced increased energy costs due to the Emissions Trading Scheme, and 79 percent of these absorbed the increased costs.

This shows that many businesses are willing to bear some increased cost of compliance, rather than passing it all on to customers through higher prices. Latest detailed results, from the Business Operations Survey: 2010, showed that over one-quarter of businesses could not pass on increased costs to customers, as they had formal contracts specifying fixed prices.



For more detailed data see the Excel tables in the 'Downloads' box.

## References

Intergen (2012). *The engaged web in New Zealand 2012*. Available from [www.intergen.co.nz](http://www.intergen.co.nz).

MYOB Business Monitor (2012). *The state of the New Zealand digital economy*. Available from <http://myob.co.nz>.

## Definitions

### About the Business Operations Survey

The Business Operations Survey collects information on the operations of New Zealand businesses. This information is used to quantify business behaviour, capacity, and performance. The survey gives insights into business activities, barriers, and motivations, and effects behind New Zealand business operations.

### More definitions

**ANZSIC06:** Australian and New Zealand Standard Industrial Classification System 2006.

**Business Frame:** a register of all businesses operating in New Zealand.

**Employees:** the number of employees is defined by an enterprise's rolling mean employment (RME) count. RME is a 12-month moving average of the monthly employment count (EC) figure. The EC is obtained from tax data.

**Enterprise:** a business or service entity operating in New Zealand. It can be a company, partnership, trust, estate, incorporated society, producer board, local or central government organisation, voluntary organisation or self-employed individual.

**Goods and services tax (GST):** Respondents are asked to exclude GST if possible in the financial figures they provide in the questionnaire. If they do not exclude GST, Statistics NZ takes out GST to make all enterprises comparable.

**Last financial year:** for this survey, refers to the last financial year for which the business had results available at August.

### Types of regulation

Employment regulation, which includes:

- Employment Relations Act 2000
- Holidays Act 2003
- Parental Leave and Employment Protection Act 1987
- Minimum Wage Act 1983.

Workplace safety regulation, which includes:

- Health and Safety in Employment Act – commonly known as Occupational Safety and Health (OSH) 1992
- Accident Compensation Act 2001.

Environmental regulation, which includes:

- Resource Management Act 1991
- Hazardous Substances and New Organisms Act 1996
- Emissions Trading Scheme

- Conservation Act 1986.

Business and trade laws regulation, which includes:

- Companies Act 1993
- Commerce Act 1986
- Fair Trading Act 1986
- Consumer Guarantees Act 1993.

Product standards and product safety regulation, which includes:

- Building Act 2004
- Food Act 1981
- Animal Product Act 1999
- Wine Act 2003
- standards developed by organisations like Standards New Zealand, New Zealand Food Safety Authority.

Border regulation, which includes:

- Customs and Excise Act 1996
- Biosecurity Act 1993
- Immigration Act 2009.

National environmental standards regulation, which includes:

- Air Quality Act 2004
- Sources of Human Drinking Water 2007
- Telecommunications Facilities 2008
- Electricity Transmission Activities 2009
- Managing of Contaminants in Soil to Protect Human Health 2011.

Tax regulation was not included in the survey.

New Zealand Legislation has more on the regulation types detailed above.

Climate change information New Zealand has more on the Emissions Trading Scheme.

## **Related links**

### **Upcoming releases**

*Business Operations Survey: 2013* will be released in April 2014.

Subscribe to information releases, including this one, by completing the online subscriptions form.

The release calendar lists all our upcoming information releases by date of release.

### **Past releases**

Business Operations Survey has links to past releases.

### **Related information**

Read the survey questionnaire posted to respondents in 2012:  
Business Operations Survey 2012

# Data quality

## Period-specific information

This section contains information that has changed since the last release.

- [Reference period](#)
- [Response rate](#)
- [Interpreting the data](#)
- [Consistency with other periods](#)
- [Data not released](#)
- [Manufacturing by technology level tables](#)

## General information

This section contains information that does not change between releases.

- [Data source](#)
- [Population and sample selection](#)
- [Interpreting the data](#)
- [Accuracy of the data](#)
- [Consistency with other periods or datasets](#)

## Period-specific information

### Reference period

The survey was posted out in August 2012 and collected information for the last financial year for which the business had data available at that point.

### Response rate

The Business Operations Survey 2012 targeted an 80 percent response rate. The survey achieved an actual response rate of 80.3 percent, which represented 5,588 businesses. The final estimated population size was 35,976 enterprises.

### Interpreting the data

#### Sampling errors

Most of the tables in this release contain percentages of the total number of New Zealand businesses within each size and industry. The absolute sampling errors for the overall New Zealand business population are presented in the following table (table 1.01). These errors should be used as a guide for judging the reliability of figures contained in the Excel tables that accompany this release. Table 1.01 should only be used on the overall estimates that are percentages of the different types of businesses mentioned below.

Table 1.01

<b>Sample errors for Business Operations Survey: 2012</b>															
	Size of estimate (percentage)														
	1	2	3	5	10	20	30	50	70	80	90	95	97	98	99
	Sampling error														
All businesses	0.4	0.6	0.8	1.0	1.3	1.8	2.1	2.2	2.1	1.8	1.3	1.0	0.8	0.6	0.4

Table 1.02 presents the sample errors for the different size and industry groups in the survey. This table should only be used on the overall estimates that are percentages of all New Zealand businesses.

Table 1.02

<b>Business Operations Survey: 2012 sample errors by size and industry</b>				
Business size or industry category	Estimate size (percent)			
	1	5	20	50
	Sampling error			
<b>Business size</b>				
6–19 employees	0.6	1.3	2.4	3.0
20–49 employees	0.7	1.4	2.6	3.3
50–99 employees	0.3	0.8	1.4	1.7
100+ employees	0.4	0.9	1.6	2.0
<b>Industry</b>				
Agriculture, forestry, & fishing	1.3	2.7	5.0	6.3
Agriculture	1.7	3.8	7.0	8.7
Commercial fishing	2.0	4.3	7.9	9.9
Forestry and logging	2.0	4.4	8.4	10.0
Agriculture, forestry, and fishing support services	1.7	3.7	6.7	8.4
Mining	1.0	2.1	3.9	4.9
Manufacturing	0.6	1.4	2.6	3.2
Food, beverage, & tobacco	1.6	3.6	6.6	8.3
Textile, clothing, footwear, & leather	1.6	3.5	6.4	8.0
Wood & paper product	2.1	4.7	8.5	10.7
Printing, publishing, & recorded media	1.6	3.6	6.5	8.2
Petroleum, coal, chemical, & associated product	1.8	4.0	7.4	9.3
Non-metallic mineral product	2.0	4.3	7.9	9.9
Metal product	1.8	3.9	7.1	8.9
Transport & industrial machinery & equipment	1.9	4.2	7.7	9.6
Other machinery & equipment	1.6	3.4	6.2	7.8
Other manufacturing	1.9	4.1	7.5	9.4
Electricity, gas, water, & waste services	1.1	2.3	4.2	5.3
Construction	1.9	4.1	7.6	9.5
Wholesale trade	1.4	3.1	5.7	7.1
Machinery & equipment wholesaling	1.9	4.1	7.5	9.4
Other wholesale trade	1.9	4.1	7.6	9.4
Retail trade	1.7	3.8	6.9	9.5
Accommodation & food services	2.0	4.4	8.0	10.0

Transport, postal, & warehousing	1.8	4.0	7.3	9.1
Information media & telecommunications	1.1	2.4	4.4	5.5
Publishing	2.1	4.5	8.3	10.3
Motion picture	2.0	4.4	8.1	10.2
Telecommunications	1.3	2.8	5.1	6.3
Financial & insurance services	1.2	2.7	5.0	6.3
Finance	0.8	1.7	3.2	4.0
Insurance	1.0	2.3	4.2	5.2
Auxiliary	2.0	4.4	8.1	10.2
Rental, hiring, & real estate services	2.1	4.5	8.3	10.3
Professional, scientific, & technical services	1.4	3.0	5.5	6.8
Computer systems design	1.5	3.3	6.0	7.5
Other professional scientific	1.6	3.5	6.5	8.1
Administrative & support services	1.2	2.6	4.7	5.9
Education & training	1.5	3.4	6.2	7.8
Health care & social assistance	1.3	3.1	5.7	7.1
Arts & recreation services	1.9	4.3	7.8	9.8
Other services	1.9	4.1	7.6	9.4
Overall	0.4	1.0	1.8	2.3

The sampling errors provided in tables 1.01 and 1.02 are measured at the 95 percent confidence level.

### How to use the sampling errors

For example, suppose the estimated proportion of businesses in New Zealand reporting an activity is 20 percent. This estimate is subject to a sampling error of approximately plus or minus 1.8. This means that 95 percent of the possible samples of the same size will produce an estimate between:  $20 - 1.8$  and  $20 + 1.8$ , that is, between 18.2 and 21.8.

For example, suppose the estimated proportion of businesses in the agriculture, forestry, and fishing industry reporting an activity is 50 percent. This estimate is subject to a sampling error of approximately plus or minus 6.3. This means that 95 percent of the possible samples of the same size will produce an estimate between:  $50 - 6.3$  and  $50 + 6.3$ , that is, between 43.7 and 56.3.

The sampling errors detailed in table 1.02 only show the sample errors for some estimates. This is because sample errors for estimates higher than 50 percent mirror those below 50 percent. For example, an estimate of 30 percent of businesses will have the same sample error as an estimate of 70 percent.

For more information refer to sampling errors under general information.

### Consistency with other periods

The modular structure of the Business Operations Survey means its content changes each year as results are released. Statistics NZ works with other organisations to develop the mix of content for this survey. Table 1.03 shows how these groups contributed to the development of the survey.



Table 1.03

<b>Business Operations Survey module structure</b>				
	Module content			
	Module A	Module B	Module C	Module D
2005	Business operations	Innovation	Business practices	N/A
2006	Business operations	ICT	Employment practices	N/A
2007	Business operations	Innovation	International engagement	N/A
2008	Business operations	ICT	Business strategy and skills	N/A
2009	Business operations	Innovation	Business practices	N/A
2010	Business operations	ICT	Price and wage setting	Financing
2011	Business operations	Innovation	International engagement	N/A
2012	Business operations	ICT	Impact of regulation	N/A
<b>Note:</b> ICT – Information and communication technology; N/A – Not applicable				

Table 1.04

<b>Contribution to content</b>										
	Organisation									
	MBIE	MED	MSI	DOL	Treasury	NZTE	ComCom	RBNZ	Vic Uni	MFE
2005	N	Y	Y	Y	Y	N	N	N	N	N
2006	N	Y	N	Y	Y	N	N	N	N	N
2007	N	Y	Y	N	Y	Y	Y	N	N	N
2008	N	Y	Y	Y	Y	N	N	N	N	N
2009	N	Y	Y	N	N	N	N	N	N	N
2010	N	Y	N	N	N	N	N	Y	Y	N
2011	N	Y	Y	N	N	N	N	N	N	N
2012	Y	N	N	N	N	N	N	N	N	Y
<b>Note:</b> Y – Yes; N – No; N/A – Not applicable; MBIE – Ministry of Business, Innovation and Employment, previously separate agencies of MED, DOL and MSI; MED – Ministry of Economic Development; MSI – Ministry of Science and Innovation, previously the Ministry of Research, Science & Technology; DOL – Department of Labour; NZTE – New Zealand Trade & Enterprise; ComCom – Commerce Commission; RBNZ – Reserve Bank of New Zealand; Vic Uni – Victoria University; MFE – Ministry for the Environment										

In addition, each module in the survey has its own specific objectives. The modules included in the Business Operations Survey 2012 and their objectives are listed below.

### **Module A: Business operations**

This module aims to provide a longitudinal series of information relating to business performance. This will assist in the development of models aimed at investigating causal relationships. As well as traditional measures of performance such as turnover and profitability, there is also a need to collect information on such areas as export intensity. The purpose of collecting business environmental information is to analyse any relationships between the environment in which a business operates and the results it achieves.

## **Module B: Information and communications technology (ICT)**

Module B alternates between innovation (in odd years) and information and communication technology (ICT) (in even years). The objective of the information and communications technology module is to provide a core set of comprehensive, official statistics on businesses use of:

- computers, ICT services, and security
- impact of ICT
- Internet use and connection
- purchases and sales of goods or services via the Internet
- web presence
- computer networks
- cellphones.

## **Module C: Impact of regulation**

This module covers data not collected before. This information was of interest as there is a lack of good quality evidence on how regulation affects different types of businesses in New Zealand.

The objectives of this module echo and extend those of the overall survey. The module collects information on a range of practices and behaviours associated with either current, past, or future regulation that may have either positive or negative impacts on a business's performance. This module has topics that measure:

- business factors
- impacts of regulation
- compliance with regulation
- regulation for resource management
- impact of the Resource Management Act
- national environment standards
- Hazardous Substances and New Organisms Acts (HSNO)
- Emissions Trading Scheme
- compliance costs.

## **Data not released**

Some information that is collected in the survey has not been released due to quality issues. For 2012, this included the expenditure on regulation compliance. It is difficult to collect information on these expenditure figures, as evident from talking to respondents of the survey. The accuracy and quality of this data is not sufficient to publish. Reasons for the low quality include:

- Larger sample errors than any other variable in the survey. This indicates that there are large variations in responses (even within businesses of the same size and industry), meaning that the sample may not have been big enough to capture a figure close to the real-world expenditure on compliance costs.
- Inconsistent reporting with other available financial data. For example, some respondents have reported regulation expenditure that is greater than their total expenditure.
- Large regulation compliance expenditure in terms of the business size (eg employees)
- The subjective nature of the topic of compliance costs means that respondents can have very different interpretations of what to include or exclude. For example, a business may purchase a new piece of equipment in order to comply with a regulation, but the

equipment may have extra features not related to compliance. Therefore, it is difficult for the business to split out the cost of this item.

- Expenditure on regulation compliance is not measured by businesses, meaning any figures they provide will be very rough estimates. Therefore, their figures may include large amounts of expenditure that is not part of regulation compliance, as respondents cannot separate them out. For example: steel-toe-capped boots. Businesses that usually provide boots to workers may be unable to separate out how much expenditure on the boots is related to regulation compliance (ie the steel toe-cap), and how much is not (ie the rest of the boot).

## **Manufacturing by technology level tables**

The manufacturing industry is of interest, as it makes a significant contribution to the New Zealand economy. Due to increased interest, this year selected tables have been released for the manufacturing industry, broken down by technology level. These breakdowns are:

- high technology
- medium- high technology
- medium-low technology
- low technology.

This stratification is based on the research and development intensity of industries, as defined by the Organisation for Economic Co-operation and Development (OECD). This is detailed in the Excel file 'Classification – manufacturing by technology level', available from the 'Downloads' box.

Because these tables have been produced using a stratification that is different to the sample design, new weights have been applied to these tables. The new weights are to ensure that the figures produced are representative of the technology level of the manufacturing industry, rather than representative of the manufacturing industry in the entire New Zealand economy. These new weights mean these tables are not comparable with those in the detailed tables file.

## **General information**

### **Data source**

For New Zealand's economic performance to be measured against initiatives aimed at increases in economic growth, data of a variety of measures needs to be collected.

Because of the large range of data needed, Statistics NZ developed an integrated, modular survey – the Business Operations Survey – as a way of collecting the required information while minimising the reporting load for New Zealand businesses. The survey was designed to include a range of 'modules' and has been run annually by Statistics NZ since 2005.

The Business Operations Survey was a postal survey. Initial contact was made to key and/or complex businesses in the survey by telephone, before the mail-out, to determine the appropriate person(s) within the business to whom the survey questions could be directed. For all other businesses, the survey form was addressed to the managing director. The survey was posted out in August and collected information for the last financial year for which the business had data available at that point.

## Population and sample selection

The target population for the Business Operations Survey was live enterprise units on Statistics NZ's Business Frame that at the population selection date:

- were economically significant enterprises (those that have an annual GST turnover figure of greater than \$30,000)
- had six or more employees
- had been operating for one year or more
- were classified to ANZSIC06 codes as 'in scope' in list 1 below
- were private enterprises as defined by New Zealand Institutional Sector 1996 Classification (NZISC96) as in list 2 below.

An enterprise is defined as a business or service entity operating in New Zealand, such as a company, partnership, trust, government department or agency, state-owned enterprise, university, or self-employed individual.

### List 1 – ANZSIC 06 codes

ANZSIC06 code – description

A – Agriculture, forestry, and fishing  
B – Mining  
C – Manufacturing  
D – Electricity, gas, water, and waste services  
E – Construction  
F – Wholesale trade  
G – Retail trade  
H – Accommodation and food services  
I – Transport, postal, and warehousing  
J – Information media and telecommunications  
K – Financial and insurance services  
L – Rental, hiring, and real estate services  
M – Professional, scientific, and technical services  
N – Administrative and support services  
P – Education and training  
Q – Health care and social assistance  
R91 – Sport and recreation activities  
R92 – Gambling activities  
S94 – Repair and maintenance.

### Out of scope

O – Public administration and safety  
R89 – Heritage activities  
R90 – Creative and performing arts activities  
S95 – Personal and other services  
S96 – Private household employing staff and undifferentiated goods and service producing activities of households for own use

### List 2 – NZISC96 codes

NZISC96 code – description

1111 – Private corporate producer enterprises  
1121 – Private non-corporate producer enterprises  
1211 – Producer boards  
1311 – Central government enterprises

2211 – Private registered banks  
2221 – Private other broad money (M3) depository organisations  
2291 – Private other depository organisations nec  
2311 – Private other financial organisations excluding insurance and pension funds  
2411 – Private insurance and pension funds.

### **Out of scope**

1321 – Local government enterprises  
21 – Central bank  
2212, 2213, 2222, 2223, 2292, 2293, 2312, 2313, 2412, 2413 – Central and local government financial intermediaries  
3 – General government  
4 – Private non-profit organisations serving households  
5 – Households  
6 – Rest of world

### **Sample design**

The sample design was a two-level stratification according to ANZSIC industry and employment size groups. This information was obtained using enterprise ANZSIC industry and employment information from Statistics NZ's Business Frame.

The first level of stratification was 36 ANZSIC groupings. Within each of the ANZSIC groups there is a further stratification by employment size group. The four employment size groups used in the sample design are:

- 6–19 employees (small)
- 20–29 employees (medium 1)
- 30–49 employees (medium 2)
- 50 or more employees (large).

The two medium groups have been amalgamated, and the large size group further broken down for this publication, as these businesses were of particular interest for some of the results.

The survey has been designed to produce aggregate statistics at a national level. This design does not facilitate statistics to be produced at a regional level.

### **Interpreting the data**

#### **Unit non-response**

Unit (or complete) non-response occurs when units in the sample do not return the questionnaire. The initial selection weight of the remaining units in the stratum was adjusted to account for the unit non-response (no item non-response imputation would occur for the units that did not return the questionnaire).

#### **Item non-response**

Item (or partial) non-response is when units return the questionnaire but some questions are not answered. No item non-response imputation was carried out for units that did not answer 60 percent or more of the questions they were required to answer (based on questionnaire routing rules). The respondents who did not meet this criterion were classified as unit non-responses and the weights were adjusted accordingly.

## **Imputation of numeric questions**

The imputation methods used were weighted mean imputation and donor imputation. Using the weighted mean method, a weighted mean was calculated from linked responding units for each numeric linecode within each imputation cell. Non-responding units were then imputed with the weighted mean for their imputation cell. Weighted mean imputation was used to impute totals.

Donor imputation randomly selected a donor from within each imputation cell. The non-respondent was then imputed with the value(s) from the donor. Donor imputation was used to impute components and percentages so that the distribution was maintained.

## **Imputation of categoric variables**

For categoric imputation the method used was nearest neighbour imputation, which involved finding a donor with the most similar responses. The donor supplied responses for all categoric variables requiring imputation. If the donor unit did not respond to any of the variables requiring a response, then we chose the next best donor to supply this information. This was continued until all the variables had a response.

## **Accuracy of the data**

### **Treatment of sub-industries**

The sub-industries presented in this release (indented industries in the tables) should be treated with caution since they have higher sample errors than those mentioned in Table 1.02. Further disaggregation below design level results in further loss of data quality.

The Business Operations Survey results are subject to measurement errors, including both non-sample and sample errors. These errors should be considered when analysing the results from the survey.

### **Non-sample errors**

Non-sample errors include mistakes by respondents when completing questionnaires, variation in the respondents' interpretation of the questions asked, and errors made during the processing of the data. In addition, the survey applied imputation methodologies to cope with non-respondents. Statistics NZ adopts procedures to minimise these types of error, but they may still occur and are not quantifiable.

Given the nature of the data collected, there are limitations on the level of accuracy that can be expected from the survey. Businesses' records may not be kept in the form required for the survey and some estimation by the respondent may be required.

### **Sampling errors**

The estimates in this report are based on a sample of business. Somewhat different figures might have been obtained if a complete census of the entire business population had been taken using the same questionnaire and processing methods etc. Because the estimates are based on a sample of businesses, all estimates have a sampling error associated with them. The variability of a survey estimate, due to the random nature of the sample selection process, is measured by its sampling error.

Sampling errors vary from estimate to estimate, and with population breakdown and population size. Exact sampling errors can be produced for each variable within the Business Operations Survey upon request if required.

## **Consistency with other periods or datasets**

### **Industry classification change**

From 2008, the design of the survey was updated to the Australian and New Zealand Standard Industrial Classification 2006 (ANZSIC06). See the technical notes of [Business Operations Survey: 2008](#) for more information.

### **Information collected**

Due to the modular nature of the survey, different data is released each year from the Businesses Operations Survey. Where possible, the current information has been compared with the most recent data from previous iterations of the surveys.

### **Research and Development Survey**

It should be noted that results on research and development from the Business Operations Survey differ slightly from those from the Research and Development Survey because of differences in sample selection, target population, and reporting periods.

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## Revisions

Expenditure on research and development (R&D) can be difficult to collect. Businesses may have difficulty in interpreting the definitions of R&D, causing differences in their reported figures each year.

During the process of verifying the 2012 figures, we contacted some businesses to identify any reporting errors in previous years' data. Therefore, some figures from 2011 have been revised to make them comparable with 2012 data.

Questionnaire changes and improved editing methods have caused tables 36, 37 and 38 to be revised so that the 2010 data is consistent with the 2012 data.

Table 38 – in 2010, businesses that did not know what percentage of their total sales were received via the Internet answered the question about Internet sales outside of New Zealand. In 2012, these businesses did not have to answer this question. To make the data consistent, the businesses that did not know their proportion of sales were removed from the 2010 data.

Therefore, some of the data published in this release for previous years differs from earlier data published.



## Contacts

**For media enquiries contact:**

Hamish Hill

Wellington 04 931 4600

**Email:** [info@stats.govt.nz](mailto:info@stats.govt.nz)

**For technical information contact:**

Kathy Jackson

Wellington 04 931 4600

**Email:** [info@stats.govt.nz](mailto:info@stats.govt.nz)

**For general enquiries contact our Information Centre:**

Phone: 0508 525 525 (toll-free in New Zealand)

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## Tables

The following tables are available in Excel format from the 'Downloads' box. If you have problems viewing the files, see [opening files and PDFs](#).

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