

# Potential Outputs from the Longitudinal Business Database

December 2007

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## Note

The outputs shown in this paper were compiled using data from the IBULDD (Improved Business Understanding via Longitudinal Database Development) feasibility project. Therefore, the results are to be regarded as illustrative of potential outputs only. The purpose of this document is to inform potential users of the data's ability to produce ongoing official statistics and to demonstrate the types of new indicators that can be produced.

Statistics New Zealand confidentialised the results to protect individual firms from identification. Only people authorised by the Statistics Act 1975 are allowed to see enterprise-level data.

The results are based, in part on tax data supplied by Inland Revenue to Statistics NZ under the Tax Administration Act 1994. This tax data must be used only for statistical purposes, and no individual information is published or disclosed in any other form, or provided back to Inland Revenue for administrative or regulatory purposes. Any discussion of data limitations or weaknesses is in the context of using the IBULDD data for statistical purposes, and is not related to the data's ability to support Inland Revenue's core operational requirements. Careful consideration has been given to the privacy, security and confidentiality issues associated with using tax data in this project. Any person who had access to the unit-record data has certified that they have been shown, have read and have understood section 81 of the Tax Administration Act 1994, which relates to privacy and confidentiality.

Statistics NZ protocols were applied to the data sourced from the New Zealand Customs Service, the Foundation for Research, Science and Technology, New Zealand Trade and Enterprise and Te Puni Kōkiri. Any discussion of data limitations is not related to the data's ability to support these government agencies' core operational requirements.

## 1. Summary

This section introduces IBULDD, gives examples of possible official statistical outputs and summarises selected results.

### Introduction to IBULDD

IBULDD was a two-year feasibility project designed to link business-related data from both administrative and sample survey data. The resulting dataset is a prototype Longitudinal Business Database. Statistics New Zealand received a significant financial contribution from the Ministry of Economic Development (MED) to undertake this project, which was funded by the Cross Departmental Research Pool.

The project had four main objectives:

- produce new and improved official statistics
- improve the access and usability of microdata for researchers
- reduce respondent burden
- improve the efficiency of Statistics NZ's data handling (statistical architecture).

Policymakers and a range of interest groups need official statistics that allow them to look at issues in different and dynamic ways. IBULDD developed and tested the methodology to produce new official statistics that measure the dynamics of business growth and performance. The project successfully delivered the prototype for the Longitudinal Business Database, which will be a key element in Statistics NZ's new statistical architecture.

This paper presents a selection of some of the outputs that can be produced using IBULDD's Longitudinal Business Database. These outputs were produced both as experimental outputs in their own right and as tests of the fitness for use of IBULDD data. In addition, there are a number of researchers using IBULDD data in the Statistics NZ Data Lab to produce specific analyses. Their work will also help test the fitness for use of IBULDD data. Some of these outputs are new and cannot be produced from existing data held by Statistics NZ.

### New and enhanced outputs

Linking data from different administrative sources and surveys on a longitudinal basis gives a range of new and enhanced outputs including:

- more in-depth analyses on the impacts of various business practices, government policies and environmental factors
- broader research into the motivating factors behind business decisions
- the development of new firm-level performance metrics
- the use of administrative data in statistical surveys to reduce respondent load
- the potential to integrate administrative data from other government agencies for the purposes of evaluating policy and supporting decisions
- ongoing research outputs that cannot be produced using the unlinked source data.

Some of the user groups and the benefits they could derive from the new and enhanced outputs are as follows:

- **government** – enhanced understanding of the economy and improved evaluation of policy
- **government and academic researchers** – more informed debate and government
- other **national statistics offices** – for example, the Australian Bureau of Statistics and Statistics Canada have consulted Statistics NZ about the lessons learnt from IBULDD to aid with the development their own integrated, longitudinal databases.

IBULDD fits within Statistics NZ's mission to efficiently turn data into relevant knowledge, by:

- reducing respondent load
- producing new official statistics from existing data
- adding value to data through research
- verifying other Statistics NZ data.

See Section 4 for more examples of the benefits of IBULDD.

### **Selected results**

- The property and business services industry had the largest number of enterprises and the industry grew 29 percent from 2000–2005.
- The percentage of manufacturers that export goods increased from 9.1 percent in 2000 to 11.4 percent in 2005.
- Most businesses that received government assistance had an employment<sup>1</sup> count of fewer than 10.
- The manufacturing industry had the highest rate of government assistance, both in absolute numbers and as a proportion of the enterprises in that industry in 2003 and 2005.
- Enterprises that subsequently received government assistance were growing faster in the year before receiving the assistance than the general population (41 percent had annual sales growth of 10 percent or more in 2004, compared with 32 percent of the overall population).

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(1) Employment is defined as the number of employees and the number of working proprietors.

## **2. Source data**

All the results presented in this paper were produced using data from the IBULDD Longitudinal Business Database. One of IBULDD's greatest strengths is that it integrates administrative and survey data that is already in existence, and so does not add to respondent load.

The core of IBULDD is the Longitudinal Business Frame (LBF). This dataset is a longitudinal register of businesses and contains the demographic characteristics necessary for many of the results presented in this paper.

Administrative data from other government agencies and a number of Statistics NZ sample surveys were then linked to the LBF. A key part of the IBULDD work evolved around establishing common linkages, units and timeframes to all the source data. Table 2.01 presents the integrated components of IBULDD.

**Table 2.01 – Integrated components of IBULDD**

Component	Years	Description
<b>The backbone of IBULDD</b>		
<u>Longitudinal Business Frame (LBF)</u>	2000–2006	Contains longitudinally linked data for most enterprises operating in New Zealand. It includes information on employment, location, industrial activity, and firm ownership relationships. The LBF enables individual business units to be tracked over time.
<b>Administrative data linked to the LBF</b>		
<u>Business Activity Indicator (BAI)</u>	1992–2006	The BAI is a monthly series based on the supply of administrative data from Inland Revenue. The main source of this data is the GST (Goods and Services Tax) 101 form. GST is a tax based on the sale of goods and services.
Financial accounts (IR 10)	2000–2006	The Accounts information form (IR 10) collects a general summary of information relating to the business and its operations (profit and loss statement and balance sheet). Inland Revenue supplies IR 10 data to Statistics NZ where it is transformed and linked to IBULDD.
Company tax returns (IR 4)	2000–2006	The IR 4 income tax return is compulsory for businesses that are registered as companies. It includes income, tax calculation, refunds and/or transfers, provisional tax, and disclosures. IR 4 data is supplied to Statistics NZ by Inland Revenue and is then linked to IBULDD.
<u>Linked Employer-Employee Database (LEED)</u>	2000–2006	A Statistics NZ integrated database that provides an insight into the operation of New Zealand's labour market, such as job and worker flows. Created by linking a longitudinal employer series from the Business Frame to a longitudinal series of Employer Monthly Schedule (EMS) payroll data from Inland Revenue.
<u>Overseas Merchandise Trade data</u>	1988–2007	A monthly series based on administrative data supplied by the New Zealand Customs Service. It provides information on the importing and exporting of merchandise goods between New Zealand and other countries.
Government assistance data	2000–2006	Provides information on the assistance provided directly to businesses by the Foundation for Research, Science and Technology, New Zealand Trade and Enterprise, and Te Puni Kōkiri.
<b>Survey data linked to the LBF</b>		
<u>Annual Enterprise Survey (AES)</u>	2000–2006	Provides annual financial performance and financial position information about industry groups operating within New Zealand. AES is the basis of the national accounts (produced by Statistics NZ).
<u>Business Operations Survey (BOS)</u>	2005–2006	Collects measures of business performance and a range of practices and behaviours which may have some impact on that performance, including innovation and business use of information and communication technology.
<u>Innovation Survey</u>	2003	Collected information on the characteristics of innovation in New Zealand private-sector businesses.
<u>Research &amp; Development Survey (R&amp;D)</u>	Biennially 1996–2006	Collects information on business, government and higher education (university) spending on R&D.
<u>Business Practices Survey (BPS)</u>	2001	Collected information on business and management practices.
<u>Business Finance Survey (BFS)</u>	2004	Collected information on the capital structure of businesses in New Zealand, the sources of finance they use and their recent financing experiences.



## Measures

This paper uses measures of employment, sales, income, and business age. Table 2.02 shows the IBULDD data used for each measure.

**Table 2.02 – Measures used**

Measure	Source
Employment	LEED
Sales	AES, BAI and IR 10
Income	AES and IR 10
Business age	LBF

These measures are described in more detail in the Technical notes.

## Unit of observation

IBULDD data is enterprise-based. An enterprise is defined as a business or service entity operating in New Zealand. Some base data is not recorded at this level. In particular, Overseas Merchandise Trade data records consignments. Consignments are then aggregated to enterprise level within IBULDD. The Annual Enterprise Survey is based on Kind of Activity Units (KAUs) and is aggregated to enterprise level before it is linked into IBULDD. Government assistance data records grants, advice or other services provided. This data is probabilistically matched to the LBF and then aggregated to enterprise level within IBULDD.

IBULDD data has been aggregated to an annual basis by allocating the balance date of each business to the nearest March year.

## Imputation

Survey data linked to IBULDD, as well as the BAI series, has already had some imputation applied during the survey processing stage. IBULDD runs imputation on BAI and IR 10 data. The imputation methods used in IBULDD were linear interpolation, historical imputation with an industry trend, and donor imputation. These methods are explained in more detail in the Technical notes.

Cases that lead to an enterprise receiving an imputed value for sales or income include:

- enterprises that fall below mandatory size thresholds (currently \$40,000) for filing GST
- enterprises that file an incomplete or internally inconsistent IR 10
- enterprises that are GST exempt
- misidentification of start up and ceasing dates for enterprises (eg due to administrative lags in filing).

Imputed values used in this paper are BAI values for sales and IR 10 values for income. Imputed sales made up 1.9 percent of enterprises and imputed income made up 28 percent of enterprises. However, both these figures are much lower when the proportion of value imputed is considered (partly because AES is used as the first source and it has full coverage for large enterprises). Imputed values were used for 0.4 percent of sales and 10 percent of income. Tables 24 and 25 of the appendix provide the detailed imputation rates.

## Population

The target population is economically active enterprises in the private, for-profit sector. The private, for-profit sector is defined in the Technical notes. Economically active enterprises are defined as enterprises that met at least one of the following criteria in a particular year:

- LEED rolling mean employment (RME) greater than zero
- GST sales greater than zero
- GST purchases greater than zero
- IR 10 total income greater than zero
- IR 10 total expenditure greater than zero
- IR 10 total fixed assets greater than zero.

The population of this analysis consists of economically active enterprises that have at any time been included on the Statistics New Zealand Business Frame (and consequently been allocated an industry classification). Enterprises are included on this frame when they meet at least one of the criteria detailed in the Technical notes.

The number of distinct enterprises from 2000–2005 that met the population criteria was 698,703. A large number (157,875) of these had zero employment over the entire period they were active.

The number of economically active enterprises in the private, for-profit sector that met the population criteria in each year was as follows:

- 2000            444,531
- 2001            458,775
- 2002            461,934
- 2003            472,563
- 2004            487,566
- 2005            499,950

### 3. Results

This section illustrates the types of outputs that can be produced using IBULDD data, but cannot be produced using any other data. It includes results on:

- the economically active, private, for-profit sector (industry growth, distribution of sales and income, and growth in sales and income)
- the proportions of this sector that are foreign-owned limited liability companies or exporting manufacturers
- outcomes of and motivations behind business practices – innovation and business expansion
- enterprises that receive government assistance (financial grants and other services such as advice or training).

#### **The economically active, private, for-profit sector**

Please view tables 1 to 5 and figures 1 and 2 from the appendix with this section.

#### **Industry growth**

Each year there were 51 thousand to 61 thousand start-up enterprises – enterprises that became economically active (ie 11–13 percent entry per annum). The number of enterprises that ceased economic activity each year was less than the number of start-ups and varied between 38 thousand and 48 thousand. The total number of economically active enterprises increased each year from 445 thousand in 2000 to 500 thousand in 2005.

Between 2000 and 2005, most growth in enterprise numbers occurred in the services sector, particularly in the professional services. The number of enterprises in the finance and insurance, and the property and business services industries increased by 38 percent and 29 percent, respectively. One-third of all enterprises in the private, for-profit sector are in the professional services.

After property and business services (with 152 thousand enterprises in 2005), the industry with the most enterprises is agriculture, forestry and fishing (92 thousand in 2005 or 18 percent of the private, for-profit sector)<sup>2</sup>. The number of enterprises in this industry declined 6 percent from 2001–2005.

#### **Distribution of sales**

Table 4 shows the percentages of enterprises in each industry that are in each sales and income quintile of the population. In 2005, the industries with the largest proportion of enterprises in the top (fifth) income quintile were wholesale trade (42 percent) and mining and quarrying (40 percent). These industries also have the largest proportion of enterprises in the top sales quintile.

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(2) Note that the population coverage of the agriculture, forestry and fishing industry is better than that of other industries for small enterprises. This is because enterprises in the agriculture or forestry industries are included on the Business Frame if their GST sales are greater than zero.

## Distribution of income

Figure 1 in the appendix shows smoothed distributions of total income in 2005 for each industry against the distribution for the entire population<sup>3</sup>. For some industries, the distributions are similar to that of the entire population. However, a number of industries have distributions that are quite different, for example:

- The agriculture, forestry and fishing industry has, on average, higher income than the entire population. However, there are a lot of enterprises with an income lower than the population average (perhaps simply reflecting the wider Business Frame coverage in this industry).
- The mining and quarrying industry has a much more dispersed distribution and a higher income (on average) than the entire population.
- The manufacturing industry has, on average, a slightly higher income than the entire population, but includes a group of high-income firms.
- The electricity, gas and water supply industry has a bi-modal distribution, which means there are two groups of firms. The larger of these two groups has, on average, income that is slightly below the population average. The second group consists of high-income enterprises.
- The wholesale trade industry has a much more dispersed income distribution than the entire population. This industry also has a group of high-income enterprises.

Figure 1 shows the power of IBULDD compared with aggregate sample-based statistics. The size of the database allows us to consider the distribution of firms within classification groups, such as industry. It enables us to consider not only the considerable heterogeneity within industries, but also whether or not the chosen classificatory groups are useful.

Tables 2, 3 and 5 are alternative representations of the results in figure 1. Tables 2 and 3 have the advantage of including enterprises with zero sales or income (enterprises with zero income are excluded from the logged distributions in figure 1), but do not include the same level of detail as for full distributions.

## Sales growth

Figure 2 shows 2005 sales growth by industry. It uses a ratio of change in sales over combined sales, which allows entering and exiting enterprises to be included on the graph. Across the electricity, gas and water supply, and communication services industries there was broad growth in sales. Just over three-quarters of the enterprises in the electricity, gas and water supply industry had positive sales growth, as did 70 percent of the enterprises in the communications services industry.

While figure 2 suggests a very dynamic picture for sales growth, table 5 shows that many enterprises maintain their relative position in the distribution of sales. That is, the majority of enterprises move, at most, one decile over time, conditional on survival.

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(3) These distributions are displayed in natural logs because the underlying distributions are highly skewed.

## Subsets of the sector

Please view tables 6 and 7 from the appendix with this section.

### Foreign-owned limited liability companies

This result focuses on a subset of the private, for-profit sector – those enterprises that are limited liability companies – and investigates the proportion of these companies that are foreign-owned. This restriction is made because foreign-ownership is partly identified from IR 4s, which are only filed by limited liability companies.

The percentage of limited liability companies that were foreign-owned has steadily decreased from 3.4 percent in 2000 to 2.6 percent in 2005 (perhaps because most growth in enterprise numbers is in property and business services). Although the percentage of foreign-owned limited liability companies is small, these companies are much larger in employment terms.

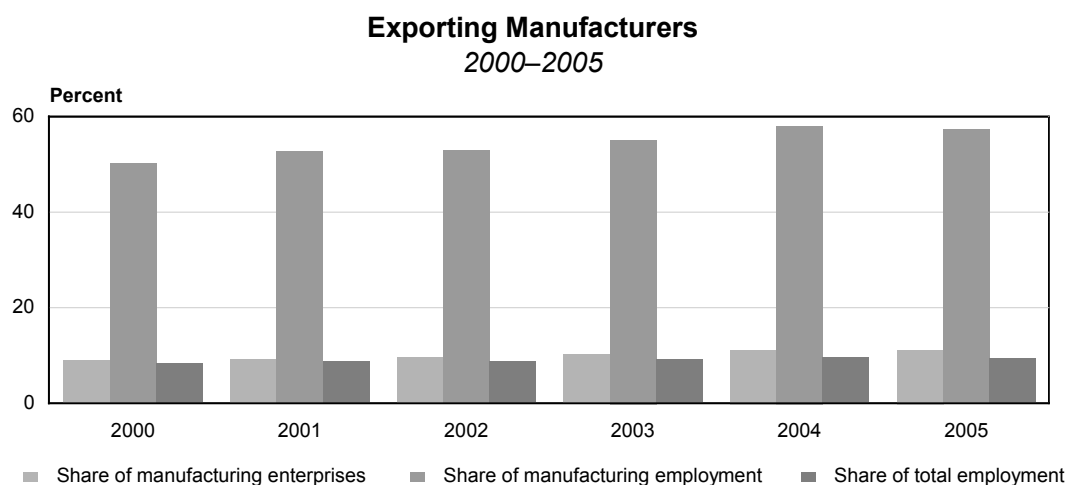
This is illustrated by the fact that three-quarters of foreign-owned limited liability companies have higher employment than the median employment for all limited liability companies. A quarter of foreign-owned limited liability companies are 12 to 13 times larger than the median (in terms of employment).

### Exporting manufacturers

This result focuses on another subset of the private, for-profit sector – the manufacturing industry – and investigates the proportion of manufacturers that export. This analysis is restricted to manufacturing because Overseas Merchandise Trade data is used to identify exports (that is, exports of services are not measured).

The percentage of manufacturers that export has increased from 9.1 percent in 2000 to 11.4 percent in 2005. The exporting manufacturers' share of employment in the manufacturing industry is much higher than their share of enterprises, and has been growing steadily. In 2005, exporting manufacturers accounted for 58 percent of employment in the manufacturing industry, rising from 50 percent in 2000 (figure 3.01).

**Figure 3.01**



**Source:** Statistics New Zealand's Longitudinal Business Database.

## **Business practices – outcomes and motivations**

Please view tables 8 to 10 from the appendix with this section.

IBULDD allows a longitudinal analysis to be added to any cross-sectional result of a business survey. The analysis period can be both before, and after, the survey period. An analysis before the survey period can identify motivating factors and an analysis afterwards can show outcomes. This section demonstrates examples of both types of analysis.

### **Innovation outcomes**

To measure an effect of innovation on firm performance, the sales and employment growth of 'product innovators' (those that reported that they had offered new, or significantly improved products to customers in the survey) was compared with that of 'not product innovators' for a period following the introduction of a product innovation.

This analysis uses the subset of the population that responded to the Business Practices Survey 2001 and were still economically active in 2005<sup>4</sup> – approximately 2,400 enterprises. These enterprises are grouped into product innovators and not product innovators.

In 2001, the average sales figure for product innovators was \$21 million – higher than for not product innovators (\$15 million). Between 2001 and 2005, sales for product innovators grew an average of over \$600,000 per year. Not product innovators initially had declining sales in 2002 and 2003, but over the 2001–2005 period, sales grew on average less than \$400,000.

Similarly, average employment growth was greater for product innovators than for not product innovators. In 2001, the average employment count for product innovators was 90 and this increased an average of 0.8 per year up to 2005. The average employment count for not product innovators in 2001 was 53 and this increased an average of 0.2 per year over the same period.

### **Expansion motivation**

To illustrate a potential motivating factor for business expansion, the income growth of enterprises that reported investing in expansion in 2005 was analysed over the years 2001–2004, and compared with the income growth of enterprises that did not expand.

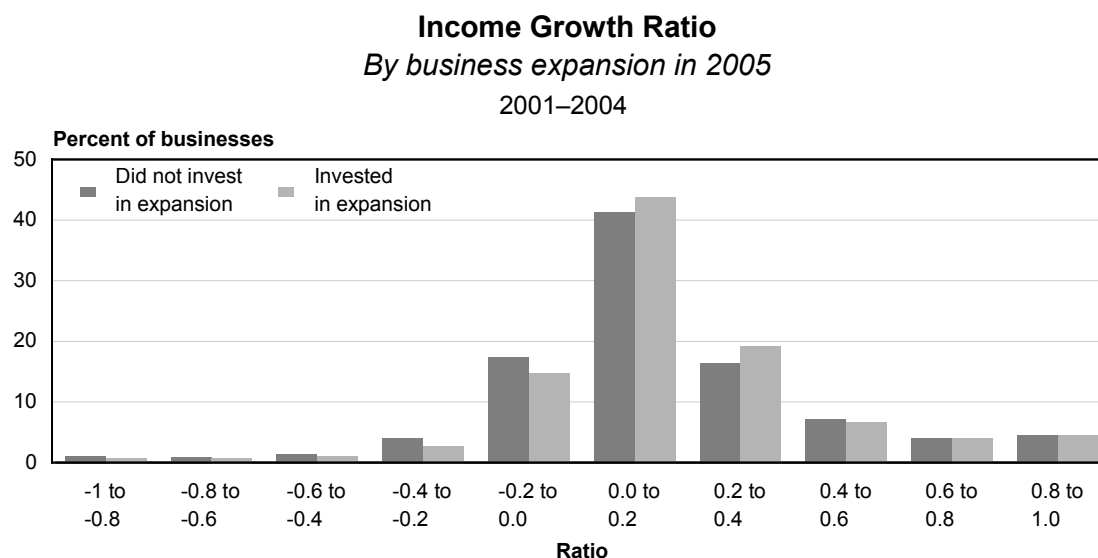
This analysis uses the subset of the population that responded to the Business Operations Survey 2005 and that were economically active in 2001 and 2004 – roughly 5,900 respondents.

Figure 3.02 compares the income growth rates (calculated as the ratio of change in income from 2001–2004, over combined income for the two years) of enterprises that had invested in expansion with those that did not.

The percentage of enterprises that had positive income growth is higher for those enterprises that reported expanding in 2005. The difference is only small, but it does support income growth being considered as a motivating factor for business expansion.

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(4) **Note:** The attrition rate for product innovators and not product innovators is very similar (at around 12 percent).

**Figure 3.02**

**Source:** Statistics New Zealand's Longitudinal Business Database.

**Note:** Using a ratio of change in income to the combined income transforms the growth rate to between -1 and 1. Enterprises with growth in income have a positive ratio and enterprises with declining income have a negative ratio.

## Government assistance

Please view tables 11 to 23 from the appendix with this section.

The following statistics on government assistance to businesses are examples of the types of microdata analyses that are now possible due to IBULDD.

For the purpose of this analysis government assistance is defined as assistance (either financial grants or other services such as advice or training) provided directly to businesses during the three years ended June 2005, by the following government agencies:

- Foundation for Research, Science and Technology
- New Zealand Trade and Enterprise
- Te Puni Kōkiri.

See the Technical notes for a list of the schemes offered by these agencies.

The number of businesses in the private, for-profit sector that received government assistance was 1,656 in the year ended June 2005, or 0.3% of the total number of businesses in that sector. The results for 2003 are similar (1,593 businesses).

### Enterprises receiving assistance, by size

More small businesses received assistance than large businesses. In 2005, 56 percent of recipients had an employment count of fewer than 10 and 27 percent had an employment count of 10–49. The results for 2003 are similar. Of the total population, 97 percent had an employment count of fewer than 10 and 4 percent had an employment count of 10–49.

### Enterprises receiving assistance, by industry

In 2003 and 2005, the manufacturing industry had the largest number of businesses receiving government assistance; 36 percent of all recipients were in the manufacturing industry in 2005. In both years it was also the industry with the largest proportion of its businesses receiving assistance (Table 3.01).

In 2005, other industries with large numbers of recipients were property and business services (26 percent of all recipients) and wholesale trade (14 percent of all recipients).

Although the education industry had a smaller number of businesses receiving assistance in 2005 (4 percent of all recipients), it was the industry with the second-largest proportion of its businesses receiving assistance in 2005.

**Table 3.01 – Rank of industries for businesses receiving assistance, by industry**

Industry	Rank, by number of recipients		Rank, by percentage of population	
	2003	2005	2003	2005
Agriculture, forestry and fishing	4	4	10	9
Mining and quarrying	13	14	4	3
Manufacturing	1	1	1	1
Electricity, gas and water supply <sup>(1)</sup>	16	16	2	16
Construction	7	6	14	13
Wholesale trade	3	3	5	4
Retail trade	5	7	12	12
Accommodation, cafes and restaurants	14	11	16	14
Transport and storage	10	10	11	10
Communication services	12	15	9	8
Finance and insurance	8	9	7	7
Property and business services	2	2	6	6
Education	6	5	3	2
Health and community services	11	13	13	15
Cultural and recreational services	9	8	8	5
Personal and other services	15	12	15	11

**Source:** Statistics New Zealand's Longitudinal Business Database.

(1) The rank by percentage of population for the electricity, gas and water supply industry should be treated with caution due to the small number of enterprises in the industry.

### Enterprises receiving assistance, by business age

In 2005, 38 percent of all recipients became economically active less than five years before receiving assistance and 11 percent received assistance within their first year of activity.

### Enterprises receiving government assistance, by sales growth

Enterprises receiving government assistance appear to register higher growth rates than the general population before receiving assistance (41 percent of recipients had sales growth of 10 percent or more, compared with 32 percent of the overall population).



## 4. Discussion

### The benefits of IBULDD

***IBULDD has a unique ability to turn data into relevant knowledge by:***

- providing answers on more specific questions on the economy, business behaviour and performance distributions than could be answered using unlinked raw data
- meeting the expectations of a national statistical office to adapt to a changing world and provide information as and when it is needed
- providing the information needed to meet the increasing demand for evidence-based policy
- promoting new insights on the impact of policy and business practices through the linking of different datasets
- giving information on the economy that can be used to inform government, businesses, communities, and citizens.

An example of a key issue of interest to business owners, commentators and policymakers is the effect of exchange rate volatility on business performance. IBULDD has provided key information on exporters' hedging behaviours; information that is critical to understanding the exchange rate issue. This data is not available elsewhere. Aggregate statistics alone do not provide the depth of understanding that is now possible through microdata research within IBULDD.

***IBULDD is a world-class tool for intelligent data usage by:***

- increasing the amount of information extracted from data already collected
- enabling longitudinal analysis
- increasing and maximising the use of administrative data
- providing a valuable tool for government that does not increase respondent load
- increasing the quality of information (by giving alternatives to using imputed data) and improving imputation methods.

In October 2006, IBULDD was peer reviewed by international representatives of the Australian Bureau of Statistics, the United States Bureau of the Census and the United Kingdom Office for National Statistics. The review team was impressed by the quantity and quality of work and offered its strongest support for the project to continue. They concluded that the work was sound and the direction it was taking was in line with other countries.

***IBULDD is an enduring resource***

- IBULDD has the framework necessary to integrate data using common linkages, units and timeframes.
- The framework enables additional datasets to be efficiently integrated into IBULDD.
- The population coverage is extensive.

- IBULDD enables the production of new official statistics and enables existing official statistics to be produced more efficiently.
- IBULDD supports the production of new financial performance metrics and is a valuable resource for microdata research.

The database became available in April 2007. Within only three months, the Ministry of Economic Development used the database to produce four research papers. They were presented at the New Zealand Association of Economists Conference 2007 and covered these topics:

- firm level patterns in merchandise trade
- firm dynamics, market structure and performance
- currency hedging behaviours of exporters
- comparison of quantitative and qualitative performance measures.

Research papers on the following topics are currently underway:

- Evaluating government business assistance programmes by the Ministry of Economic Development.
- OECD cross-country micro study on innovation and productivity by the Reserve Bank of New Zealand and Statistics New Zealand.
- The impact of immigration and local workforce characteristics on innovation and firm performance by the Department of Labour, Motu, and the Reserve Bank of New Zealand.
- International engagement and firm performance (including the determinants of entry and exit, and the effects of exchange rate volatility on exporting) by the Ministry of Economic Development and the Reserve Bank of New Zealand.
- Productivity and Agglomeration in Auckland by Motu and the Ministry of Economic Development.
- Business Practices & Firm Performance by the Ministry of Economic Development and the Reserve Bank of New Zealand.
- Evaluation of government assistance by the Ministry of Economic Development.

## Quality statements

### *Confidentiality*

Linking data from different sources raises issues about privacy, confidentiality and security. IBULDD data has the following protection methods in place:

- Access to IBULDD data is restricted to the IBULDD project team.
- Government departments and researchers may only access an anonymised version of the IBULDD data and only through Statistics NZ's [Data Lab](#). A rigorous application process and strict eligibility criteria apply based on the requirements of the Statistics Act 1975 and Inland Revenue.

- The anonymised version of IBULDD data has had all variables removed that might identify an enterprise.
- IBULDD data is protected by Statistics NZ's strict security policy that applies to both the IT system and the physical building.
- All outputs from the Data Lab are checked to ensure they do not breach confidentiality.

### ***2000–2006 time span***

Data is available for the period 2000–2006. While this is good, it can only be improved by adding the data for future years as it becomes available<sup>5</sup>. IBULDD has established systems and processes for linking additional years of data to the prototype LBD. The costs of an annual update are comparatively small, but the benefits are significant. This will be particularly true as the LBD extends to encompass complete business cycles.

### ***Unit of observation***

As the unit of observation, the enterprise, is based on a legal entity, it is subject to 'false' births and deaths. For example, if a business is sold, it will be assigned a different enterprise number and the original enterprise number will appear to have ceased operating even though the same economic activity may be continuing in the same location. The proposed solution to this issue is to develop the concept of a longitudinal enterprise, which will refer to the business itself, not the legal entity. The LBF is doing a proportion of this by tracking the enterprises that a Permanent Business Number (PBN) is linked to. Further work is needed for groups that are more complex, such as using LEED data to track the enterprises that a group of employees is linked to.

### **Population under coverage of small enterprises**

Note that in order to be assigned an industry classification on the Business Frame (and therefore be classified to the private, for-profit sector), an enterprise must have met the economically significant criteria at some stage, although not necessarily during the period 2000–2005 used in this paper. The LBF contains a number of enterprises that have not received such classification, but could in future.

### **The way forward**

The outputs in this paper show the potential that the integrated data from IBULDD has to enhance the understanding of New Zealand firm performance and business dynamics. Statistics NZ is exploring ways of maintaining, supporting and annually updating the IBULDD database with a view to creating a production model to produce official statistics and enable more microdata research.

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(5) This report only covers the 2000–2005 years because imputation and the Annual Enterprise Survey were not available at the time of writing for the 2006 year.

## 5. Technical notes

### Population

The target population is economically active enterprises in the private, for-profit sector.

### Economically active

Economically active enterprises are defined as enterprises that met at least one of the following criteria in a particular year:

- LEED rolling mean employment (RME) greater than zero
- GST sales greater than zero
- GST purchases greater than zero
- IR 10 total income greater than zero
- IR 10 total expenditure greater than zero
- IR 10 total fixed assets greater than zero.

The population of this analysis consists of economically active enterprises that have at any time been included on the Statistics NZ Business Frame (and consequently been allocated an industry classification). Enterprises are included on this frame when they meet at least one of the following criteria:

- GST turnover greater than \$30,000
- classified in the forestry industry and GST turnover is greater than 0
- a member of a GST group
- a member of a Business Frame group
- employee count greater than 0 (apart from employers that are classified by Inland Revenue in their client register as 'individuals' and are not GST registered)
- classified in the agriculture industry and GST turnover is greater than 0
- IR 10 income greater than \$40,000 or IR 10 expenses greater than \$1 million
- birthed within the last 12 months (as identified by non-tax sources)
- new to the Inland Revenue register and is GST registered and files PAYE (Pay As You Earn) and meets any of the other criteria above within a 12-month window.

### Private, for-profit sector

The private, for-profit sector is defined as those enterprises that for the entire period 2000–2005:

- were classified to Australian and New Zealand Standard Industrial Classification – New Zealand Version 1996 (ANZSIC96) codes listed as 'in scope' in List 1 below
- were classified to New Zealand Institutional Sector 1996 Classification (NZISC96) listed as 'in scope' in List 2 below

- were classified to Business Type – New Zealand Standard Classification 1996 (BT96) listed as ‘in scope’ in List 3 below.

In addition, enterprises that were classified as a State Owned Enterprise (BT96 of 7 and NZISC96 of 1311) at any time from 2000–2005 were also included in the population.

### **List 1 – ANZSIC96 codes**

ANZSIC96 code – description

#### ***In scope***

- A – Agriculture, Forestry and Fishing
- B – Mining and Quarrying
- C – Manufacturing
- D – Electricity, Gas and Water Supply
- E – Construction
- F – Wholesale Trade
- G – Retail Trade
- H – Accommodation, Cafes and Restaurants
- I – Transport and Storage
- J – Communication Services
- K – Finance and Insurance
- L – Property and Business Services
- N – Education
- O – Health and Community Services
- P – Cultural and recreational Services
- Q – Personal and Other Services

#### ***Out of scope***

- M – Government Administration and Defence

### **List 2 – NZISC96 codes**

NZISC96 code – description

#### ***In scope***

- 1 – Producer Enterprises
- 2 – Financial Intermediaries
- 3 – General Government
- 4 – Private Non-Profit Organisations Serving Households

#### ***Out of scope***

- 5 – Households
- 6 – Rest of World

### List 3 – BT96 codes

BT96 code – description

#### *In scope*

- 1 – Individual Proprietorship
- 2 – Partnership
- 3 – Registered Limited Liability Company (non Co-op)
- 4 – Co-operative Companies
- 5 – Joint Ventures and Consortia
- 6 – Branches of Companies Incorporated Overseas
- 7 – Government Owned Trading Entity (and NZISC96 code is 1311)

#### *Out of scope*

- 7 – Government Owned Trading Entity (and NZISC96 code is not 1311)
- 8 – Central Government
- 9 – Local Authority Trading Enterprise (LATE)
- 10 – Local Government
- 11 – Incorporated and Unincorporated Societies and Associations
- 12 – Charitable Trusts
- 13 – Trusts/Estates
- 14 – Consulates and Foreign Embassies.
- 20 – Other Business Types

### Final population size

The number of distinct enterprises that met the population criteria from 2000–2005 was 698,703. The number of economically active enterprises in the private, for-profit sector that met the population criteria in each year was:

- |        |         |
|--------|---------|
| • 2000 | 444,531 |
| • 2001 | 458,775 |
| • 2002 | 461,934 |
| • 2003 | 472,563 |
| • 2004 | 487,566 |
| • 2005 | 499,950 |

### Comparison with Business Demography Statistics

The counts of enterprises in the population of this paper are not comparable with the counts of enterprises in Business Demography Statistics (BDS) for three reasons:

- BDS counts are at a single point in time (February), whereas the population in this paper counts businesses that are economically active at any time during a particular year.

- BDS counts are of economically significant enterprises, whereas the population in this paper counts economically active enterprises.
- BDS counts are not limited to the private, for-profit sector.

### **Comparison with LEED statistics**

The counts of enterprises in the population of this paper are not comparable to the counts of enterprises in LEED for four reasons:

- The LEED population includes enterprises that have not met the criteria to be included on the Business Frame, if they have RME (rolling mean employment) greater than zero.
- The LEED population does not include enterprises with zero employment, but the population for this paper does.
- Most employer statistics from LEED are based on PBN (Permanent Business Number) level rather than enterprise level.
- LEED is not limited to the private, for-profit sector.

### **Imputation**

Three imputation methods were used to impute missing BAI and IR 10 values in IBULDD data. Interpolation was the first method of choice and if this was not applicable historical imputation with industry trend was used, and if this was not applicable then donor imputation was used.

#### **Linear interpolation**

For missing values where previous and subsequent values exist, the imputed values are the average of the values existing in the previous and subsequent years. For the purposes of linear interpolation, an enterprise that is not active is assumed to have existing values of zero.

#### **Historical imputation with an industry trend**

If a previous value exists, but not a subsequent value, the imputed value is the value from the previous year plus the median industry growth of the variable (defined at the 2-digit ANZSIC level).

#### **Donor imputation**

The imputed value is the value of the nearest neighbour. The nearest neighbour is determined by first grouping enterprises into subgroups based on industry and lifespan<sup>6</sup>. The following matching variables are then used to determine the nearest neighbour from within an enterprise's subgroup:

- LEED count of employees not including working proprietors
- LEED count of working proprietors
- LEED salaries and wages
- IR 10 gross income from sales and/or services
- IR 10 value of land and buildings (fixed assets variable)
- BAI total GST sales.

---

(6) Lifespan refers to the period of economic activity of an enterprise.

Please view tables 24 and 25 from the appendix for details on the rates of imputation.

### Government assistance data

The government assistance data used in this paper is defined as the direct assistance to businesses provided by the government agencies and schemes listed in table 5.01.

**Table 5.01 – Government assistance schemes**

Government agency	Assistance scheme
Foundation for Research, Science and Technology	Technology for Business Growth Grants for Private Sector Research and Development TechLink Technology for Industry Fellowships
New Zealand Trade and Enterprise	Services provided to businesses that are then invoiced Other programmes that directly assist businesses
Te Puni Kōkiri	Māori Business Facilitation Service Māori Tourism Facilitation Service

### Measures

This section defines the measures of employment, sales, income, and business age used and gives details on how growth rates are calculated.

#### Employment

Employment refers to total employment count and includes both employees and working proprietors. It is defined as the rolling mean employment (RME) plus the number of working proprietors. RME is a 12-month moving average of the monthly employee count figure. Both the employee and working proprietor counts are obtained from tax data.

#### Sales

Sales refers to the total sales obtained from the sale of goods and services. The values for sales used throughout this paper are in real (2000) dollars, deflated using Producers Price Index (output) series applied at the industry level of official outputs.

Sales is defined as the sales reported in the Annual Enterprise Survey. Where this is unavailable, the unimputed BAI (GST) sales is used, and then the unimputed IR 10 sales, then the imputed BAI (GST) sales.

**Table 5.02 – Total sales sources**

Source	Percentage of enterprises	Percentage of total sales
Annual Enterprise Survey	3.1	56.8
Unimputed BAI (GST)	89.7	42.0
Unimputed IR 10	5.3	0.8
Imputed BAI (GST)	1.9	0.4



## Income

Income refers to total income and includes income from sales as well as other sources of income, such as renting, leasing, interest and dividends. The values for total income used throughout this paper are in real (2000) dollars, deflated using PPI (output) series applied at the industry level of official outputs.

Income is defined as the total income reported in the Annual Enterprise Survey, where this is unavailable the unimputed IR 10 total income is used, then the imputed IR 10 total income.

**Table 5.03 – Total income sources**

Source	Percentage of enterprises	Percentage of total income
Annual Enterprise Survey	3.1	61.5
Unimputed IR 10	68.9	28.5
Imputed IR 10	28.0	10.0

## Growth rates

There are two types of growth rates used in this paper. Firstly, the growth ratio used in this analysis is the ratio of change over combined value. ie  $(S_t - S_{t-1}) / (S_t + S_{t-1})$ . For example, the sales growth ratio between 2004 sales ( $S_{t-1}$ ) and 2005 sales ( $S_t$ ) is the change in sales from 2004 to 2005, over the sum of sales in 2004 and 2005.

This calculation, referred to throughout the paper as the growth ratio, provides a growth rate between -1 and 1. A growth rate of 1 includes new entrants and other firms with a previous value of 0. A growth rate of -1 includes exiting enterprises and those with a current value of 0.

Secondly, the straight growth rate is used ie  $(S_t - S_{t-1}) / (S_{t-1})$ . This is referred to throughout the paper as the growth.

## Business age

For enterprises with an LBF birth date before April 1999, the business age is calculated using this date. For enterprises with later birth dates, the business age is calculated from when they first became economically active.

## **Glossary**

### **ANZSIC**

Australia and New Zealand Standard Industrial Classification System – New Zealand Version 1996

### **BAI**

Business Activity Indicator – derived by Statistics New Zealand using GST data.

### **Balance date**

The date of the end of the financial year.

### **BT96**

Business Type – New Zealand Standard Classification 1996.

### **Business Frame**

A register of all businesses operating in New Zealand.

### **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.

### **GST**

Goods and Services Tax

### **IBULDD**

Improved Business Understanding via Longitudinal Database Development – Statistics New Zealand's feasibility project to develop a longitudinal database of business information.

### **IR 4**

Company income tax return filed with Inland Revenue .

### **IR 10**

Accounts information form filed with Inland Revenue.

### **KAU**

Kind of Activity Unit – a subdivision of an enterprise that carries out one kind of activity.

### **LEED**

Linked Employer-Employee Database – an administrative dataset of integrated employer and employee information.

### **Longitudinal Business Database**

Statistics New Zealand's prototype longitudinal database of business information developed by the IBULDD project.

### **Longitudinal Business Frame**

An annual longitudinal register of all businesses operating in New Zealand.

### **Multiple assistance**

Government assistance received over two or more years or from two or more schemes.

### **NZISC96**

New Zealand Institutional Sector 1996 Classification.

### **PBN**

Permanent Business Number – a unique identifier assigned to a geographical location, eg site, factory or shop.

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## Appendix 1

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Table 1

**Population Counts**  
*By industry*  
2000–2005

	Year					
	2000	2001	2002	2003	2004	2005
	Number of enterprises <sup>(1)</sup>					
<b>Industry<sup>(2)</sup></b>						
Agriculture, forestry and fishing	96,972	98,367	98,307	96,156	95,070	92,400
Mining and quarrying	510	516	525	534	531	525
Manufacturing	28,542	29,091	29,175	29,235	29,622	29,724
Electricity, gas and water supply	120	138	141	156	177	201
Construction	48,978	50,367	49,899	50,523	52,950	55,719
Wholesale trade	23,040	23,517	23,265	23,073	23,409	23,376
Retail trade	49,194	49,896	49,317	49,278	50,394	50,970
Accommodation, cafes and restaurants	13,233	14,031	14,553	15,291	16,179	16,635
Transport and storage	14,874	15,195	15,114	15,318	15,813	16,317
Communication services	4,494	4,662	4,551	4,488	4,545	4,557
Finance and insurance	8,457	9,096	9,789	10,410	10,800	11,706
Property and business services	118,014	123,651	126,279	135,861	144,234	152,118
Education	2,562	2,700	2,880	3,135	3,327	3,435
Health and community services	14,430	15,282	15,273	15,513	15,993	16,557
Cultural and recreational services	9,615	10,329	10,767	11,097	11,652	12,360
Personal and other services	11,502	11,943	12,102	12,492	12,864	13,350
<b>Total<sup>(3)</sup></b>	<b>444,531</b>	<b>458,775</b>	<b>461,934</b>	<b>472,563</b>	<b>487,566</b>	<b>499,950</b>
<b>Entries and exits</b>						
Entries (start-up enterprises)		52,593	51,432	57,753	61,320	60,654
Exits (ceasing enterprises)		38,349	48,279	47,121	46,320	48,267

(1) For more information on the enterprises included, refer to the Technical notes.

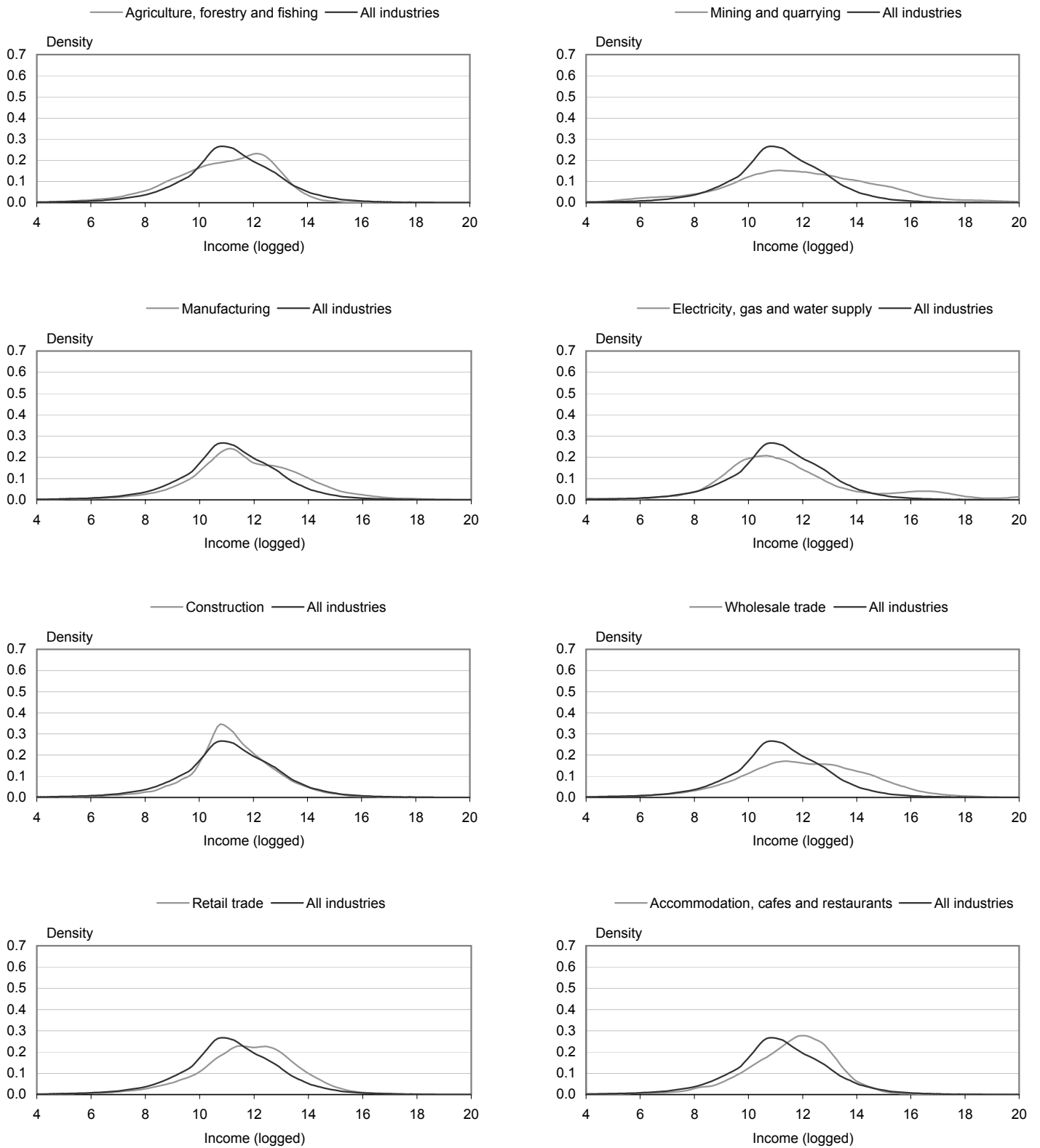
(2) Refers to the industry the enterprises were in for the predominant part of the year (weighted by employment).

(3) The number of distinct enterprises over the 2000–2005 period was 698,703.

**Note:** All counts were randomly rounded to base 3 to protect confidentiality, so actual figures may differ from those stated. Due to rounding, some figures may not add to stated total.

Figure 1

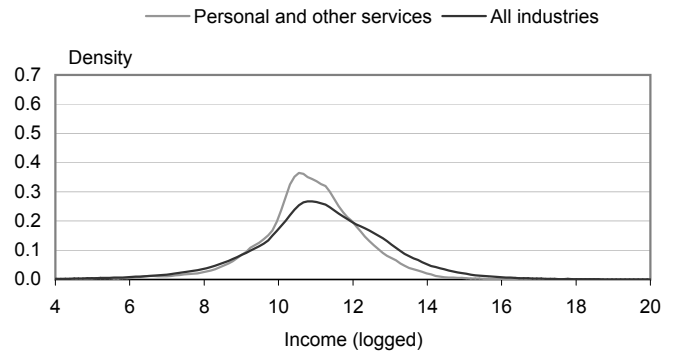
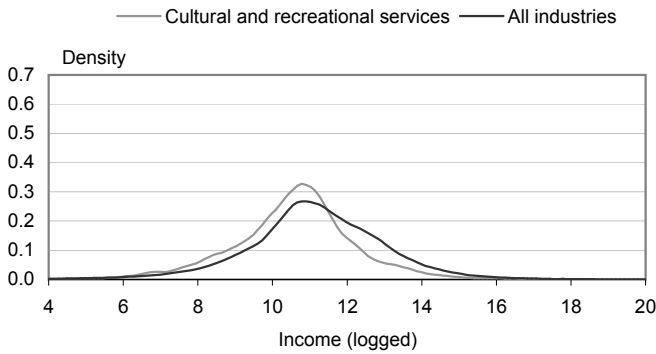
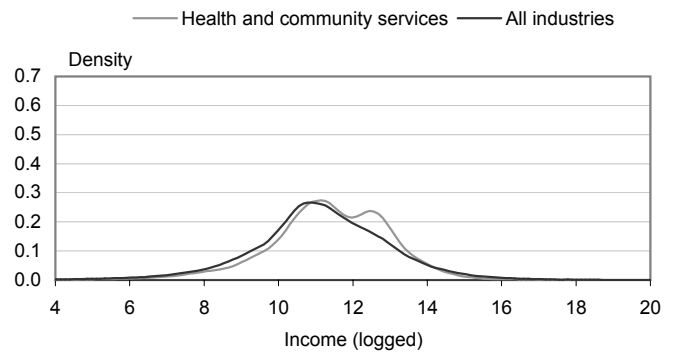
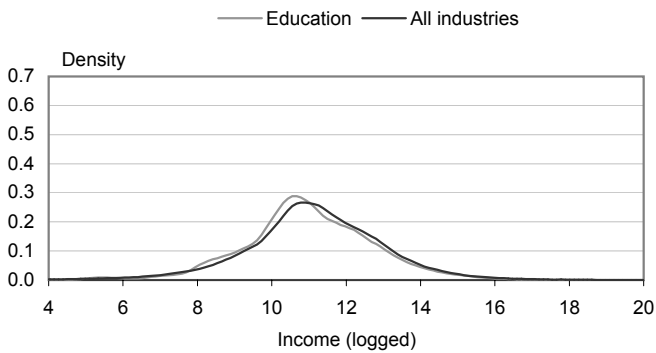
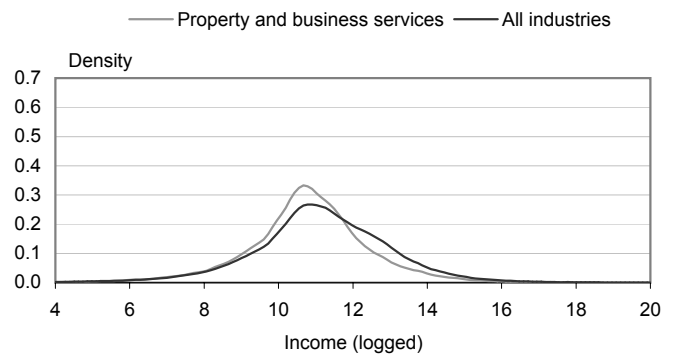
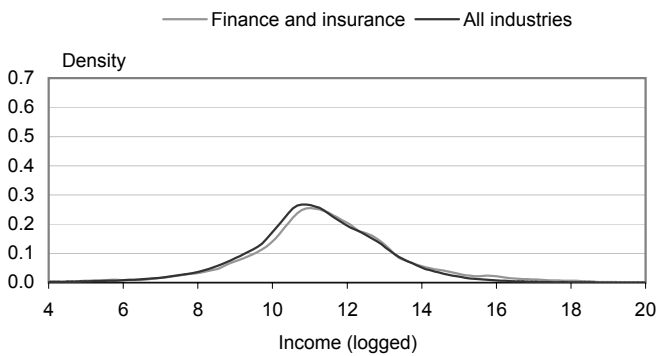
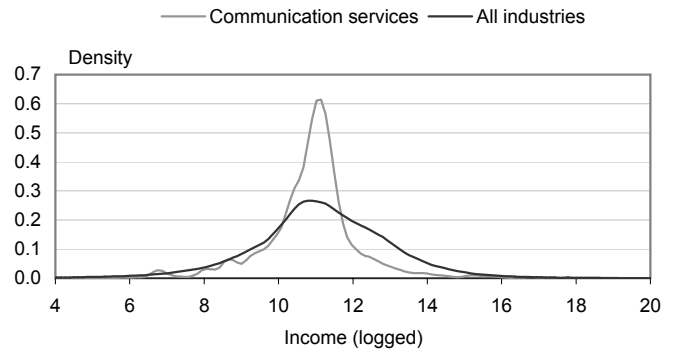
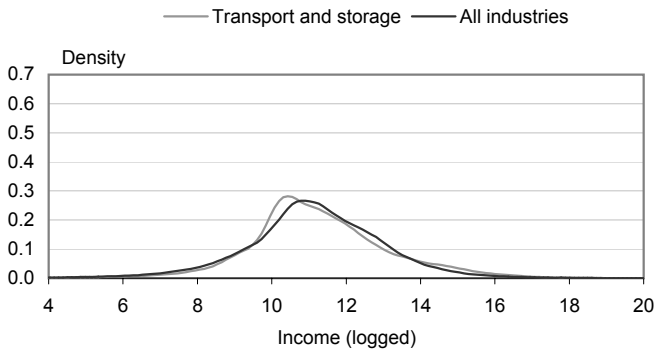
**Income**  
*By industry*  
2005



**Note:** The x-axis has been restricted to between 4 and 20 to protect confidentiality.

Figure 1  
continued

**Income**  
*By industry*  
2005



**Note:** The x-axis has been restricted to between 4 and 20 to protect confidentiality.

Table 2

**Sales**  
*By industry*  
2001 and 2005

Industry <sup>(1)</sup>	Sales							
	Base: Year 2000 (\$NZ)							
	Zero	Up to 1,000	1,000 to 10,000	10,000 to 100,000	100,000 to 1 million	1 million to 10 million	10 million plus	Total
Number of enterprises <sup>(2)</sup>								
<b>2001</b>								
Agriculture, forestry and fishing <sup>(3)</sup>	8,733	2,994	12,948	33,594	37,515	2,523	63	98,367
Mining and quarrying	99	9	39	120	153	69	21	516
Manufacturing	1,422	486	2,232	10,815	10,179	3,324	636	29,091
Electricity, gas and water supply	21	0	6	36	36	15	27	138
Construction	2,235	549	3,636	26,451	15,360	2,019	114	50,367
Wholesale trade	1,728	540	1,968	6,987	7,593	3,945	753	23,517
Retail trade	2,337	1,098	3,744	16,248	21,303	4,755	417	49,896
Accommodation, cafes and restaurants	840	198	885	4,581	6,666	831	30	14,031
Transport and storage	774	207	1,233	7,167	4,416	1,230	165	15,195
Communication services	222	45	357	3,264	654	90	33	4,662
Finance and insurance <sup>(4)</sup>	2,697	186	735	2,907	1,995	441	126	9,096
Property and business services <sup>(4)</sup>	14,454	2,541	14,016	59,781	28,821	3,693	342	123,651
Education	189	63	333	1,356	699	63	0	2,700
Health and community services	669	228	1,173	6,492	6,204	510	3	15,282
Cultural and recreational services	642	261	1,299	5,748	2,085	273	27	10,329
Personal and other services	456	168	1,056	6,909	3,150	192	9	11,943
<b>2005</b>								
Agriculture, forestry and fishing <sup>(3)</sup>	9,579	2,628	11,892	30,906	33,996	3,321	78	92,400
Mining and quarrying	117	9	36	123	141	78	24	525
Manufacturing	1,596	450	1,995	10,665	10,482	3,819	714	29,724
Electricity, gas and water supply	21	0	21	78	45	15	24	201
Construction	2,763	498	3,435	27,660	18,273	2,895	198	55,719
Wholesale trade	1,674	429	1,677	6,411	7,860	4,398	927	23,376
Retail trade	2,514	894	3,150	16,206	22,395	5,280	528	50,970
Accommodation, cafes and restaurants	1,134	234	990	5,367	7,887	987	36	16,635
Transport and storage	975	222	1,224	7,539	4,746	1,389	213	16,317
Communication services	189	45	246	3,066	870	102	33	4,557
Finance and insurance	3,429	240	993	3,780	2,583	558	126	11,706
Property and business services	19,305	2,745	14,922	72,306	37,113	5,322	402	152,118
Education	195	60	357	1,701	984	129	6	3,435
Health and community services	789	213	1,116	7,149	6,579	690	21	16,557
Cultural and recreational services	792	264	1,446	6,888	2,613	315	45	12,360
Personal and other services	567	198	1,113	7,587	3,654	222	12	13,350

(1) Refers to the industry the enterprises were in for the predominant part of the year (weighted by employment).

(2) For more information on the enterprises included, refer to the Technical notes.

(3) Unlike in other industries, enterprises in the agriculture, forestry and fishing industry are not required to reach economic significance before they are registered on the Business Frame.

(4) Many enterprises in the finance and insurance and the property and business services industries have non-sales income.

**Note:** All counts were randomly rounded to base 3 to protect confidentiality, so actual figures may differ from those stated. Due to rounding, some figures may not add to stated total.



Table 3

**Income**  
*By industry*  
2001 and 2005

Industry <sup>(1)</sup>	Income							
	Base: Year 2000 (\$NZ)							
	Zero	Up to 1,000	1,000 to 10,000	10,000 to 100,000	100,000 to 1 million	1 million to 10 million	10 million plus	Total
Number of enterprises <sup>(2)</sup>								
<b>2001</b>								
Agriculture, forestry and fishing <sup>(3)</sup>	4,596	3,195	13,953	37,503	37,320	1,746	54	98,367
Mining and quarrying	57	18	39	138	171	72	21	516
Manufacturing	609	501	2,238	11,913	10,065	3,147	615	29,091
Electricity, gas and water supply	9	0	9	42	33	15	30	138
Construction	1,128	762	3,768	27,558	15,213	1,821	117	50,367
Wholesale trade	801	741	2,247	7,572	7,626	3,816	711	23,517
Retail trade	987	990	3,786	17,436	21,591	4,695	414	49,896
Accommodation, cafes and restaurants	297	297	1,038	4,851	6,744	768	33	14,031
Transport and storage	315	198	1,362	7,539	4,602	1,029	147	15,195
Communication services	72	48	333	3,516	597	69	27	4,662
Finance and insurance	912	255	798	3,405	2,811	687	231	9,096
Property and business services	5,649	3,132	14,643	67,443	29,022	3,444	315	123,651
Education	63	96	327	1,410	693	114	3	2,700
Health and community services	51	183	1,143	6,660	6,633	588	27	15,282
Cultural and recreational services	540	291	1,542	5,580	2,097	246	33	10,329
Personal and other services	156	126	1,086	7,182	3,192	189	12	11,943
<b>2005</b>								
Agriculture, forestry and fishing <sup>(3)</sup>	5,097	3,147	13,002	34,701	34,098	2,271	84	92,400
Mining and quarrying	69	21	45	138	138	84	24	525
Manufacturing	828	480	2,100	11,376	10,527	3,717	693	29,724
Electricity, gas and water supply	12	3	18	87	45	12	21	201
Construction	1,563	795	3,909	28,119	18,378	2,757	204	55,719
Wholesale trade	924	555	1,842	6,804	8,037	4,371	843	23,376
Retail trade	1,125	900	3,678	16,743	22,752	5,268	504	50,970
Accommodation, cafes and restaurants	606	258	1,113	5,679	8,055	891	33	16,635
Transport and storage	432	255	1,341	7,983	4,836	1,272	195	16,317
Communication services	111	69	309	3,156	798	90	27	4,557
Finance and insurance	1,020	312	981	4,545	3,735	837	279	11,706
Property and business services	8,112	3,615	16,689	81,642	36,792	4,854	417	152,118
Education	87	57	405	1,698	1,017	168	9	3,435
Health and community services	123	243	1,230	7,197	6,951	759	48	16,557
Cultural and recreational services	825	336	1,767	6,660	2,436	285	48	12,360
Personal and other services	231	210	1,161	7,914	3,612	213	12	13,350

(1) Refers to the industry the enterprises were in for the predominant part of the year (weighted by employment).

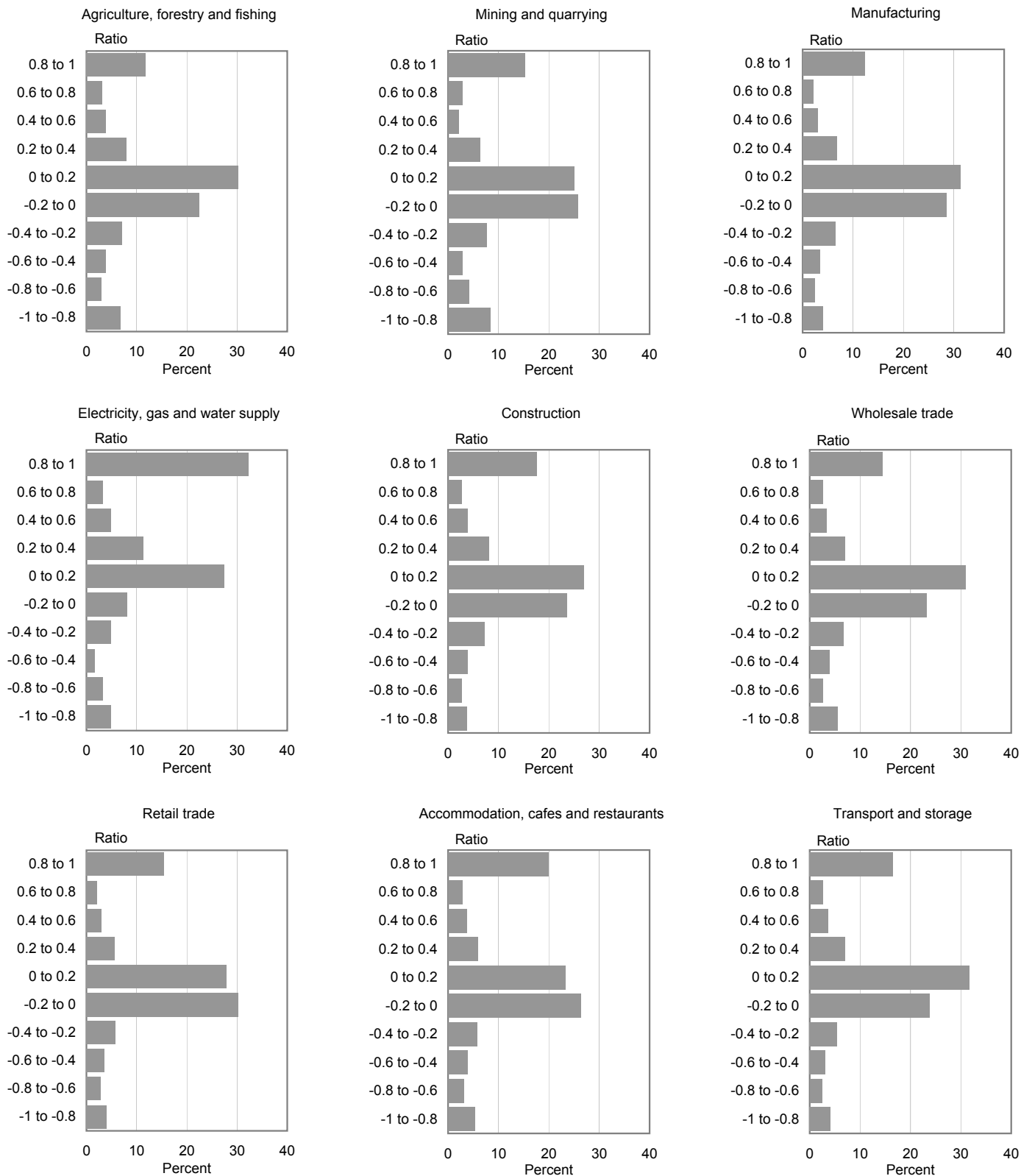
(2) For more information on the enterprises included, refer to the Technical notes.

(3) Unlike in other industries, enterprises in the agriculture, forestry and fishing industry are not required to reach economic significance before they are registered on the Business Frame.

**Note:** All counts were randomly rounded to base 3 to protect confidentiality, so actual figures may differ from those stated. Due to rounding, some figures may not add to stated total.

Figure 2

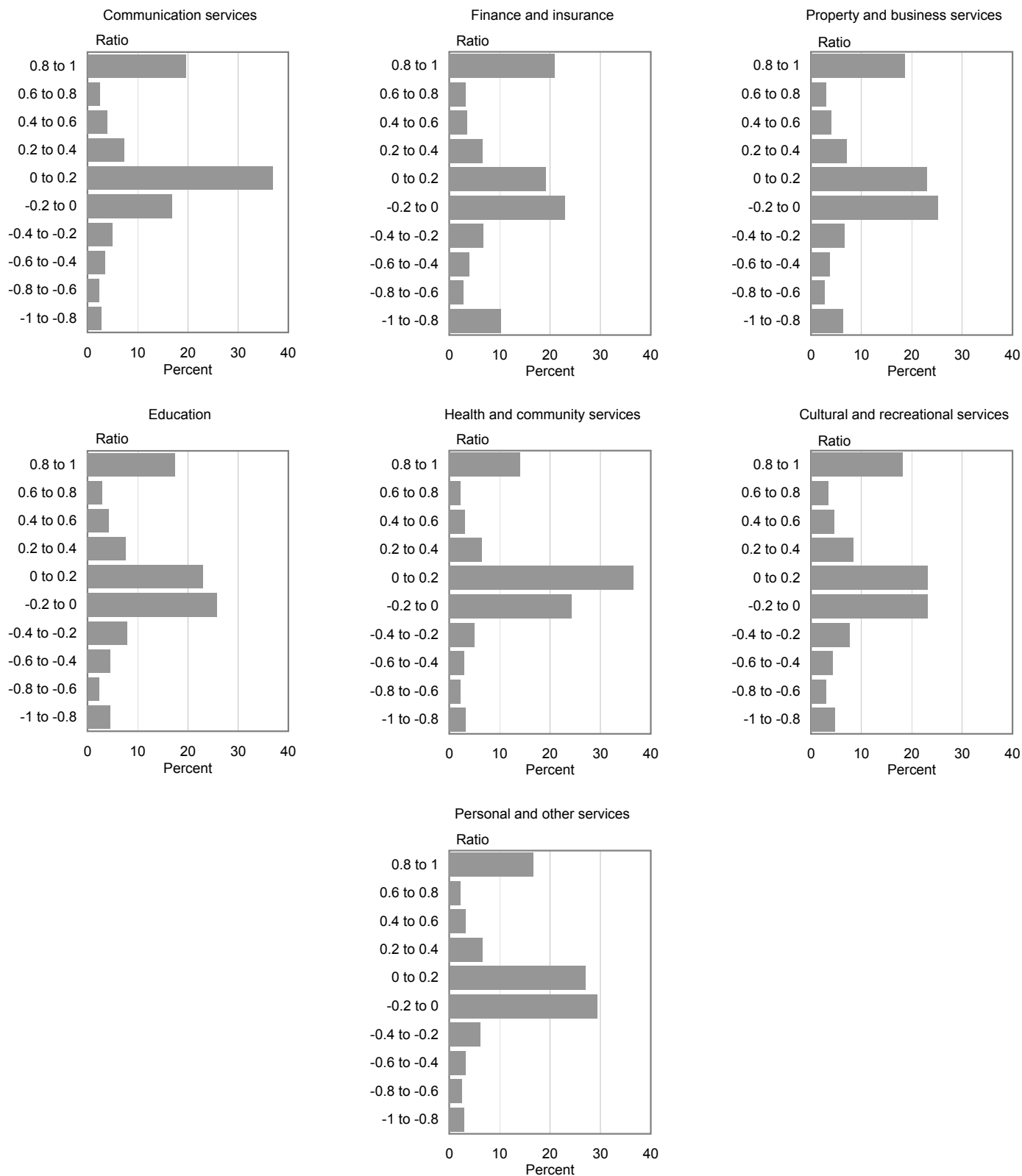
**Sales Growth Ratio**  
By industry  
2004–2005



**Note:** Using a ratio of change in sales to combined sales [ $(S_t - S_{t-1}) / (S_t + S_{t-1})$ ] allows entering and exiting enterprises to be included on the graph. Those entering during the period have zero sales in 2000 and a ratio of 1, those exiting have zero sales in 2005 and a ratio of -1. Enterprises with sales growth have a positive ratio and enterprises with declining sales have a negative ratio.

Figure 2  
continued

**Sales Growth Ratio**  
*By industry*  
2004–2005



**Note:** Using a ratio of change in sales to combined sales [ie  $(S_t - S_{t-1}) / (S_t + S_{t-1})$ ] allows entering and exiting enterprises to be included on the graph. Those entering during the period have zero sales in 2000 and a ratio of 1, those exiting have zero sales in 2005 and a ratio of -1. Enterprises with sales growth have a positive ratio and enterprises with declining sales have a negative ratio.

Table 4

**Sales and Income Quintiles**  
*By industry*  
2005

Industry <sup>(1)</sup>	Quintile				
	First	Second	Third	Fourth	Fifth
Percentage of enterprises <sup>(2)</sup>					
<b>Sales<sup>(3)</sup></b>					
Agriculture, forestry and fishing	26.4	15.1	15.6	23.8	19.1
Mining and quarrying	16.2	14.0	11.8	16.2	41.2
Manufacturing	14.8	16.2	17.7	18.4	32.8
Electricity, gas and water supply	21.3	21.3	14.8	13.1	27.9
Construction	14.0	23.9	24.5	20.5	17.1
Wholesale trade	15.4	12.5	13.1	17.3	41.7
Retail trade	13.6	13.5	17.0	23.4	32.4
Accommodation, cafes and restaurants	13.9	13.9	17.4	28.2	26.6
Transport and storage	18.2	23.6	19.2	17.9	21.0
Communication services	13.3	24.8	42.1	13.0	6.9
Finance and insurance	24.0	20.2	18.7	18.5	18.6
Property and business services	23.6	24.4	22.5	17.0	12.6
Education	22.4	26.3	19.1	19.0	13.2
Health and community services	15.6	19.3	21.6	22.6	21.0
Cultural and recreational services	25.3	27.0	24.6	14.0	9.1
Personal and other services	19.1	29.3	24.0	18.6	9.0
<b>Overall</b>	<b>20.0</b>	<b>20.0</b>	<b>20.0</b>	<b>20.0</b>	<b>20.0</b>
<b>Income<sup>(4)</sup></b>					
Agriculture, forestry and fishing	27.1	16.3	15.2	23.3	18.1
Mining and quarrying	19.7	13.8	13.2	13.8	40.1
Manufacturing	14.4	15.7	18.5	18.2	33.2
Electricity, gas and water supply	23.4	20.3	14.1	15.6	25.0
Construction	14.5	21.8	24.7	21.0	17.9
Wholesale trade	16.0	12.1	13.1	16.7	42.0
Retail trade	14.1	12.8	16.4	23.2	33.5
Accommodation, cafes and restaurants	13.8	13.8	16.8	28.2	27.4
Transport and storage	17.2	24.6	18.8	18.5	20.9
Communication services	14.5	23.1	42.5	13.1	6.8
Finance and insurance	18.0	17.5	19.5	20.4	24.5
Property and business services	22.9	25.6	22.7	17.1	11.7
Education	21.2	24.1	19.4	18.5	16.7
Health and community services	14.8	17.3	21.3	23.1	23.5
Cultural and recreational services	28.0	25.3	23.0	14.3	9.4
Personal and other services	18.2	27.5	25.4	19.2	9.6
<b>Overall</b>	<b>20.0</b>	<b>20.0</b>	<b>20.0</b>	<b>20.0</b>	<b>20.0</b>

(1) Refers to the industry the enterprises were in for the predominant part of the year (weighted by employment).

(2) Percentages are of enterprises in each industry classification. For more information on the enterprises included, refer to the Technical notes.

(3) Excludes enterprises that had zero sales in 2005.

(4) Excludes enterprises that had zero income in 2005.

Table 5

**Movement between Sales Deciles**  
2000 and 2005

2000 decile	2005 decile									
	1	2	3	4	5	6	7	8	9	10
	Number of enterprises <sup>(1)</sup>									
1	10,614	5,187	2,526	1,968	1,578	1,395	1,218	966	867	672
2	3,495	8,262	5,682	3,021	2,043	1,599	1,167	858	630	234
3	2,226	4,137	7,326	5,628	3,075	1,830	1,143	879	528	219
4	1,590	2,493	4,011	7,191	5,541	2,868	1,581	888	597	225
5	1,536	1,881	2,412	3,750	6,936	5,487	2,622	1,281	777	312
6	1,431	1,440	1,644	2,079	3,567	7,161	5,655	2,397	1,170	450
7	1,410	1,230	1,260	1,308	1,815	3,537	7,818	5,775	2,124	711
8	1,491	1,023	972	984	1,182	1,644	3,585	9,243	5,631	1,233
9	1,584	843	750	687	882	1,020	1,608	3,702	11,511	4,398
10	1,614	495	408	372	369	453	594	1,002	3,150	18,534

(1) Limited to those enterprises that had total sales greater than zero in 2000 and 2005 (269,895 enterprises). For more information on the enterprises included, refer to the Technical notes.

**Note:** All counts were randomly rounded to base 3 to protect confidentiality, so actual figures may differ from those stated. Due to rounding, some figures may not add to stated total.

Table 6

**Foreign-owned Limited Liability Companies<sup>(1)</sup>**  
2000–2005

	Year					
	2000	2001	2002	2003	2004	2005
	Percent					
<b>Share of enterprises<sup>(2)</sup></b>						
Foreign-owned	3.4	3.3	3.1	2.9	2.7	2.6
<b>Distribution of employment<sup>(3)</sup></b>						
25th percentile	100	100	100	100	97	97
50th percentile	325	319	317	303	296	300
75th percentile	1,278	1,273	1,208	1,192	1,204	1,233

(1) Limited liability companies are defined as those enterprises of business type 3 plus those IR4 filers that are not recorded as business type 3 on the Longitudinal Business Frame.

(2) As a percentage of all limited liability companies. For more information on the enterprises included, refer to the Technical notes.

(3) As a percentage of the median employment count for all limited liability companies.

**Note:** All counts were randomly rounded to base 3 (before percentages were calculated) to protect confidentiality, so actual figures may differ from those stated. Due to rounding, some figures may not add to stated total.

Table 7

**Exporting Manufacturers**  
2000–2005

	Year					
	2000	2001	2002	2003	2004	2005
	Percent					
<b>Share of manufacturers<sup>(1)</sup></b>						
Exporting manufacturers <sup>(2)</sup>	9.1	9.3	9.7	10.5	11.3	11.4
<b>Share of employment</b>						
Exporting manufacturers as a percentage of manufacturing industry	50.4	52.8	53.1	55.3	58.2	57.5
Manufacturing industry as a percentage of all industries	16.9	16.9	16.8	16.8	16.7	16.5
Exporting manufacturers as a percentage of all industries	8.5	8.9	8.9	9.3	9.7	9.5

(1) As a percentage of enterprises in the manufacturing industry. For more information on the enterprises included, refer to the Technical notes.

(2) Export status is determined by whether the enterprise has Overseas Merchandise Trade data or not.

**Note:** All counts were randomly rounded to base 3 (before percentages were calculated) to protect confidentiality, so actual figures may differ from those stated. Due to rounding, some figures may not add to stated total.

Table 8

**Average Sales Growth**  
*By innovation status*  
2001–2005

Innovation status	Number of enterprises <sup>(1)</sup>	Average sales (2001)	Average annualised sales growth			
			Years			
			2001–2002	2001–2003	2001–2004	2001–2005
Base: Year 2000 (\$NZ)						
Product innovators <sup>(2)</sup>	1656	21,341,958	691,724	532,671	777,495	620,522
Not product innovators	759	15,437,754	-655,280	-89,869	78,021	375,079

(1) Enterprises that responded to the 2001 Business Practices Survey and were economically active in 2005. For more information on the enterprises included, refer to the Technical notes.

(2) Enterprises in the 2001 Business Practices Survey that reported that they had offered new or significantly improved products to customers in the last three years. Note this definition no longer corresponds with the OECD's *Oslo Manual* (2005) definition of innovation used in Statistics New Zealand innovation reports.

**Note:** All counts were randomly rounded to base 3 to protect confidentiality, so actual figures may differ from those stated. Due to rounding, some figures may not add to stated total.

Table 9

**Average Employment Growth**  
*By innovation status*  
2001–2005

Innovation status	Number of enterprises <sup>(1)</sup>	Average employment count (2001)	Average annualised employment growth			
			Years			
			2001–2002	2001–2003	2001–2004	2001–2005
Employment count <sup>(2)</sup>						
Product innovators <sup>(3)</sup>	1656	90.0	2.7	1.6	1.6	0.8
Not product innovators	759	53.0	0.6	0.4	0.3	0.2

(1) Enterprises that responded to the 2001 Business Practices Survey and were economically active in 2005. For more information on the enterprises included, refer to the Technical notes.

(2) Employment count is defined as the number of employees plus the number of working proprietors.

(3) Enterprises in the 2001 Business Practices Survey that reported that they had offered new or significantly improved products to customers in the last three years. Note this definition no longer corresponds with the OECD's *Oslo Manual* (2005) definition of innovation used in Statistics New Zealand innovation reports.

**Note:** All counts were randomly rounded to base 3 to protect confidentiality, so actual figures may differ from those stated. Due to rounding, some figures may not add to stated total.

Table 10

**Income Growth Ratio<sup>(1)</sup>**  
*By business expansion in 2005*  
 2001–2004

Business expansion	Ratio									
	-1 to -0.8	-0.8 to -0.6	-0.6 to -0.4	-0.4 to -0.2	-0.2 to 0	0 to 0.2	0.2 to 0.4	0.4 to 0.6	0.6 to 0.8	0.8 to 1
Percentage of businesses <sup>(2)</sup>										
Expanded in 2005	0.9	0.9	1.2	3.0	14.9	43.9	19.4	6.9	4.2	4.7
Did not expand in 2005	1.3	1.1	1.6	4.2	17.6	41.5	16.5	7.4	4.2	4.6

(1) Using a ratio of change in sales to combined sales [ $(S_t - S_{t-1}) / (S_t + S_{t-1})$ ] allows entering and exiting enterprises to be included on the graph. Those entering during the period have zero sales in 2000 and a ratio of 1, those exiting have zero sales in 2005 and a ratio of -1. Enterprises with sales growth have a positive ratio and enterprises with declining sales have a negative ratio.

(2) Enterprises that responded to the 2005 Business Operations Survey and that were economically active in 2001 and 2004. For more information on the enterprises included, refer to the Technical notes.

**Note:** All counts were randomly rounded to base 3 (before percentages were calculated) to protect confidentiality, so actual figures may differ from those stated. Due to rounding, some figures may not add to stated total.



Table 11

**Population Counts**  
*By industry and business size*  
2002 and 2004

Industry <sup>(1)</sup>	Business size				
	Employment count <sup>(2)</sup>				
	0-9	10-49	50-99	100+	Total
	Number of businesses <sup>(3)</sup>				
<b>2002</b>					
Agriculture, forestry and fishing	96,771	1,416	84	39	98,307
Mining and quarrying	459	54	6	3	525
Manufacturing	25,326	3,147	366	339	29,175
Electricity, gas and water supply	123	9	3	6	141
Construction	48,579	1,212	72	39	49,899
Wholesale trade	21,411	1,617	147	96	23,265
Retail trade	46,338	2,601	189	186	49,317
Accommodation, cafes and restaurants	12,657	1,728	111	54	14,553
Transport and storage	14,166	780	93	75	15,114
Communication services	4,452	75	9	18	4,551
Finance and insurance	9,507	204	30	45	9,789
Property and business services	123,708	2,187	207	177	126,279
Education	2,613	240	18	6	2,880
Health and community services	14,109	1,014	96	51	15,273
Cultural and recreational services	10,398	327	24	21	10,767
Personal and other services	11,772	309	6	15	12,102
<b>Total</b>	<b>442,386</b>	<b>16,920</b>	<b>1,455</b>	<b>1,173</b>	<b>461,934</b>
<b>2004</b>					
Agriculture, forestry and fishing	93,459	1,476	90	42	95,070
Mining and quarrying	465	54	9	3	531
Manufacturing	25,662	3,222	387	348	29,622
Electricity, gas and water supply	162	6	0	6	177
Construction	51,312	1,515	84	39	52,950
Wholesale trade	21,432	1,728	147	99	23,409
Retail trade	47,109	2,871	207	207	50,394
Accommodation, cafes and restaurants	14,091	1,935	105	51	16,179
Transport and storage	14,820	807	105	81	15,813
Communication services	4,452	72	6	15	4,545
Finance and insurance	10,488	237	30	45	10,800
Property and business services	141,411	2,403	246	180	144,234
Education	2,979	312	30	9	3,327
Health and community services	14,748	1,071	120	51	15,993
Cultural and recreational services	11,247	357	27	24	11,652
Personal and other services	12,495	342	15	12	12,864
<b>Total</b>	<b>466,338</b>	<b>18,414</b>	<b>1,596</b>	<b>1,212</b>	<b>487,566</b>

(1) Refers to the industry the enterprises were in for the predominant part of the year (weighted by employment).

(2) Employment count is defined as the number of employees plus the number of working proprietors.

(3) For more information on the businesses included, refer to the Technical notes.

**Note:** All counts were randomly rounded to base 3 to protect confidentiality, so actual figures may differ from those stated. Due to rounding, some figures may not add to stated total.

Table 12

**Enterprises Receiving Government Assistance***By industry and business size<sup>(1)</sup>*

2003 and 2005

Industry <sup>(2)</sup>	Business size				
	Employment count <sup>(3)</sup>				
	0-9	10-49	50-99	100+	Total
	Number of businesses <sup>(4)</sup>				
<b>2003</b>					
Agriculture, forestry and fishing	69	24	3	6	99
Mining and quarrying	0	0	0	0	6
Manufacturing	234	228	66	102	630
Electricity, gas and water supply	0	0	0	3	3
Construction	27	6	3	6	36
Wholesale trade	192	51	12	9	261
Retail trade	36	6	3	3	48
Accommodation, cafes and restaurants	3	3	0	0	6
Transport and storage	9	3	0	3	15
Communication services	3	0	0	6	9
Finance and insurance	15	3	0	3	24
Property and business services	291	51	6	21	372
Education	15	21	3	3	45
Health and community services	9	0	0	0	12
Cultural and recreational services	21	3	3	0	24
Personal and other services	6	0	0	0	6
<b>Total</b>	<b>930</b>	<b>405</b>	<b>99</b>	<b>159</b>	<b>1,593</b>
<b>2005</b>					
Agriculture, forestry and fishing	66	33	6	6	111
Mining and quarrying	0	0	3	0	6
Manufacturing	207	222	72	105	603
Electricity, gas and water supply	0	0	0	0	0
Construction	27	6	0	6	42
Wholesale trade	156	51	12	6	225
Retail trade	39	6	0	0	42
Accommodation, cafes and restaurants	9	6	0	0	12
Transport and storage	15	3	0	3	18
Communication services	3	0	0	3	6
Finance and insurance	24	6	0	0	27
Property and business services	318	75	18	21	435
Education	21	30	9	3	60
Health and community services	6	0	0	0	9
Cultural and recreational services	36	6	0	3	42
Personal and other services	12	0	0	0	12
<b>Total</b>	<b>930</b>	<b>447</b>	<b>120</b>	<b>153</b>	<b>1,656</b>

(1) Industry and business size refer to the year before receiving assistance.

(2) Refers to the industry the enterprises were in for the predominant part of the year (weighted by employment).

(3) Employment count is defined as the number of employees plus the number of working proprietors.

(4) For more information on the businesses included, refer to the Technical notes.

**Note:** All counts were randomly rounded to base 3 to protect confidentiality, so actual figures may differ from those stated. Due to rounding, some figures may not add to stated total.

Table 13

**Population Counts**  
*By industry and sales*  
2004

Industry <sup>(1)</sup>	Tier <sup>(2)</sup>			Total
	Tier 1	Tier 2	Tier 3	
Number of businesses <sup>(3)</sup>				
Sales				
Agriculture, forestry and fishing	357	17,022	77,688	95,070
Mining and quarrying	54	111	366	531
Manufacturing	1,677	7,923	20,022	29,622
Electricity, gas and water supply	27	21	126	177
Construction	693	8,745	43,515	52,950
Wholesale trade	2,223	6,990	14,193	23,409
Retail trade	1,401	15,282	33,711	50,394
Accommodation, cafes and restaurants	153	4,281	11,745	16,179
Transport and storage	561	2,808	12,441	15,813
Communication services	60	258	4,224	4,545
Finance and insurance	270	1,287	9,243	10,800
Property and business services	1,401	16,002	126,828	144,234
Education	27	432	2,865	3,327
Health and community services	96	3,369	12,528	15,993
Cultural and recreational services	105	1,005	10,542	11,652
Personal and other services	36	1,221	11,607	12,864
<b>Total</b>	<b>9,141</b>	<b>86,766</b>	<b>391,659</b>	<b>487,566</b>

(1) Refers to the industry the enterprises were in for the predominant part of the year (weighted by employment).

(2) Tiers are defined in \$NZ as at the year 2000: Tier 1 is over \$3.5 million, Tier 2 is \$280,001-3.5 million, Tier 3 is \$280,000 or less.

(3) For more information on the businesses included, refer to the Technical notes.

**Note:** All counts were randomly rounded to base 3 to protect confidentiality, so actual figures may differ from those stated. Due to rounding, some figures may not add to stated total.

Table 14

**Enterprises Receiving Government Assistance**  
*By industry and sales*<sup>(1)</sup>  
 2003 and 2005

Industry <sup>(2)</sup>	Sales <sup>(3)</sup>							
	2003				2005			
	Tier 1	Tier 2	Tier 3	Total	Tier 1	Tier 2	Tier 3	Total
Number of businesses <sup>(4)</sup>								
Agriculture, forestry and fishing	15	45	39	99	21	48	42	111
Mining and quarrying	3	0	0	6	3	0	0	6
Manufacturing	270	249	108	630	282	228	93	603
Electricity, gas and water supply	3	0	0	3	0	0	0	0
Construction	9	9	15	36	12	15	15	42
Wholesale trade	90	105	66	261	78	99	48	225
Retail trade	6	9	30	48	3	24	21	42
Accommodation, cafes and restaurants	0	0	3	6	0	6	6	12
Transport and storage	3	6	6	15	9	3	9	18
Communication services	6	3	0	9	6	0	3	6
Finance and insurance	3	6	12	24	3	9	18	27
Property and business services	51	129	189	372	69	159	204	435
Education	9	21	15	45	9	39	15	60
Health and community services	0	3	6	12	0	3	3	9
Cultural and recreational services	3	9	9	24	6	15	21	42
Personal and other services	0	0	3	6	3	0	12	12
<b>Total</b>	<b>480</b>	<b>603</b>	<b>510</b>	<b>1,593</b>	<b>504</b>	<b>645</b>	<b>504</b>	<b>1,656</b>

(1) Industry and total sales refer to the year before receiving assistance.

(2) Refers to the industry the enterprises were in for the predominant part of the year (weighted by employment).

(3) Tiers are defined in \$NZ as at the year 2000: Tier 1 is over \$3.5 million, Tier 2 is \$280,001-3.5 million, Tier 3 is \$280,000 or less.

(4) For more information on the businesses included, refer to the Technical notes.

**Note:** All counts were randomly rounded to base 3 to protect confidentiality, so actual figures may differ from those stated.  
 Due to rounding, some figures may not add to stated total.

Table 15

**Population Counts**  
*By business size, sales and income growth, and business age*  
 2004

	Business age					Total
	Less than 1 year	1–4.9 years	5–9.9 years	10–14.9 years	15 years +	
Number of businesses <sup>(1)</sup>						
<b>Business size by employment count<sup>(2)</sup></b>						
0–9	49,965	149,946	113,532	64,455	88,434	466,338
10–49	522	5,160	4,317	2,781	5,634	18,414
50–99	27	300	348	255	669	1,596
100+	27	159	216	213	600	1,212
<b>Sales growth<sup>(3)</sup></b>						
Zero sales in current or previous year	50,544	21,693	17,673	8,199	7,698	105,804
Decrease of 30 percent or more	n/a	27,816	23,562	13,296	17,373	82,044
Decrease of 10–29 percent	n/a	13,776	14,337	8,367	12,354	48,831
Less than 10 percent change	n/a	25,428	27,129	16,641	27,585	96,783
Increase of 10–29 percent	n/a	15,969	13,635	8,442	13,686	51,729
Increase of 30 percent or more	n/a	50,889	22,077	12,762	16,647	102,375
<b>Income growth<sup>(3)</sup></b>						
Zero income in current or previous year	50,544	12,087	11,256	4,938	4,023	82,851
Decrease of 30 percent or more	n/a	26,985	24,135	13,341	17,262	81,723
Decrease of 10–29 percent	n/a	13,581	13,857	8,337	12,762	48,534
Less than 10 percent change	n/a	35,016	33,519	20,589	31,986	121,110
Increase of 10–29 percent	n/a	17,817	14,910	9,114	14,907	56,748
Increase of 30 percent or more	n/a	50,079	20,736	11,385	14,400	96,600
<b>Total</b>	<b>50,544</b>	<b>155,565</b>	<b>118,410</b>	<b>67,704</b>	<b>95,340</b>	<b>487,566</b>

(1) For more information on the businesses included, refer to the Technical notes.

(2) Defined by total employment count (number of employees plus number of working proprietors).

(3) Straight growth rate [ie (St - St-1) / St-1].

**Note:** All counts were randomly rounded to base 3 to protect confidentiality, so actual figures may differ from those stated. Due to rounding, some figures may not add to stated total.

Table 16

**Enterprises Receiving Government Assistance**  
*By business size and business age*<sup>(1)</sup>  
 2003 and 2005

Business size by employment count <sup>(2)</sup>	Business age					Total
	Less than 1 year	1–4.9 years	5–9.9 years	10–14.9 years	15 years +	
	Number of businesses <sup>(3)</sup>					
<b>2003</b>						
0–9	168	384	204	90	84	930
10–49	6	84	96	87	135	405
50–99	3	6	18	12	57	99
100+	3	15	21	33	90	159
<b>Total</b>	<b>180</b>	<b>489</b>	<b>339</b>	<b>219</b>	<b>366</b>	<b>1,593</b>
<b>2005</b>						
0–9	138	363	222	111	99	930
10–49	6	96	120	96	126	447
50–99	3	15	21	18	66	120
100+	3	9	18	39	87	153
<b>Total</b>	<b>150</b>	<b>483</b>	<b>378</b>	<b>264</b>	<b>381</b>	<b>1,656</b>

(1) Business size and business age refer to the year before receiving assistance.

(2) Defined by total employment count (number of employees plus number of working proprietors).

(3) For more information on the businesses included, refer to the Technical notes.

**Note:** All counts were randomly rounded to base 3 to protect confidentiality, so actual figures may differ from those stated. Due to rounding, some figures may not add to stated total.

Table 17

**Enterprises Receiving Government Assistance***By sales growth and business age<sup>(1)</sup>*

2003 and 2005

Sales growth <sup>(2)</sup>	Business age					
	Less than 1 year	1–4.9 years	5–9.9 years	10–14.9 years	15 years +	Total
	Number of businesses <sup>(3)</sup>					
<b>2003</b>						
Zero sales	180	51	12	9	6	258
Decrease of 30 percent or more	n/a	45	42	18	24	132
Decrease of 10–29 percent	n/a	45	48	42	66	201
Less than 10 percent change	n/a	69	87	51	129	333
Increase of 10–29 percent	n/a	51	63	48	78	240
Increase of 30 percent or more	n/a	228	87	51	60	423
<b>Total</b>	<b>180</b>	<b>489</b>	<b>339</b>	<b>219</b>	<b>366</b>	<b>1,593</b>
<b>2005</b>						
Zero sales	150	60	12	9	6	237
Decrease of 30 percent or more	n/a	60	54	42	36	189
Decrease of 10–29 percent	n/a	42	45	48	48	183
Less than 10 percent change	n/a	60	81	75	153	366
Increase of 10–29 percent	n/a	60	69	45	81	255
Increase of 30 percent or more	n/a	201	117	48	57	426
<b>Total</b>	<b>150</b>	<b>483</b>	<b>378</b>	<b>264</b>	<b>381</b>	<b>1,656</b>

(1) Sales growth and business age refer to the year before receiving assistance.

(2) Straight growth rate [ie (St - St-1) / St-1 ].

(3) For more information on the businesses included, refer to the Technical notes.

**Note:** All counts were randomly rounded to base 3 to protect confidentiality, so actual figures may differ from those stated. Due to rounding, some figures may not add to stated total.

Table 18

**Population Counts**  
*By industry and sales and income growth*  
2004

Industry <sup>(1)</sup>	Growth <sup>(2)</sup>				
	Decrease of 30 percent or more	Decrease of 10–29 percent	Less than 10 percent change	Increase of 10–29 percent	Increase of 30 percent or more
	Number of businesses <sup>(3)</sup>				
<b>Sales growth<sup>(4)</sup></b>					
Agriculture, forestry and fishing	17,004	9,645	16,074	11,658	22,992
Mining and quarrying	81	30	57	51	123
Manufacturing	4,737	3,543	6,573	4,101	6,090
Electricity, gas and water supply	21	36	21	9	30
Construction	9,285	5,979	8,943	6,084	12,396
Wholesale trade	4,236	2,502	4,638	2,913	4,704
Retail trade	8,190	5,313	13,638	5,982	8,253
Accommodation, cafes and restaurants	2,916	1,533	3,483	1,299	3,015
Transport and storage	2,634	1,893	3,612	1,716	2,919
Communication services	750	354	1,140	489	801
Finance and insurance	1,509	819	1,344	645	1,827
Property and business services	23,505	12,741	27,330	11,664	30,273
Education	573	351	555	363	765
Health and community services	2,211	1,392	4,368	2,331	3,063
Cultural and recreational services	2,340	1,314	1,821	969	2,676
Personal and other services	2,049	1,383	3,186	1,449	2,442
<b>Total</b>	<b>82,044</b>	<b>48,831</b>	<b>96,783</b>	<b>51,729</b>	<b>102,375</b>
<b>Income growth<sup>(5)</sup></b>					
Agriculture, forestry and fishing	16,650	9,852	20,034	14,889	20,748
Mining and quarrying	81	39	72	66	129
Manufacturing	4,590	3,360	7,881	4,326	5,685
Electricity, gas and water supply	24	42	24	9	24
Construction	9,114	5,673	11,295	6,114	11,511
Wholesale trade	4,293	2,490	5,484	2,853	4,629
Retail trade	8,352	5,067	15,594	5,889	7,794
Accommodation, cafes and restaurants	2,997	1,539	4,335	1,290	2,673
Transport and storage	2,559	1,854	4,410	1,734	2,661
Communication services	777	324	1,308	534	741
Finance and insurance	1,860	1,059	2,115	903	2,211
Property and business services	23,199	12,960	36,801	12,879	29,553
Education	549	342	750	342	762
Health and community services	2,280	1,416	5,139	2,397	2,844
Cultural and recreational services	2,301	1,203	2,286	969	2,406
Personal and other services	2,100	1,317	3,585	1,551	2,229
<b>Total</b>	<b>81,723</b>	<b>48,534</b>	<b>121,110</b>	<b>56,748</b>	<b>96,600</b>

(1) Refers to the industry the enterprises were in for the predominant part of the year (weighted by employment).

(2) Straight growth rate [ie (St - St-1) / St-1].

(3) For more information on the businesses included, refer to the Technical notes.

(4) Excludes businesses that had zero sales in current or previous year.

(5) Excludes businesses that had zero income in current or previous year.

**Note:** All counts were randomly rounded to base 3 to protect confidentiality, so actual figures may differ from those stated. Due to rounding, some figures may not add to stated total.



Table 19

**Enterprises Receiving Government Assistance**  
*By industry and sales growth*<sup>(1)</sup>  
 2003 and 2005

Industry <sup>(2)</sup>	Sales growth <sup>(3)</sup>						Total
	Zero sales	Decrease of 30 percent or more	Decrease of 10–29 percent	Less than 10 percent change	Increase of 10–29 percent	Increase of 30 percent or more	
Number of businesses <sup>(4)</sup>							
<b>2003</b>							
Agriculture, forestry and fishing	18	3	15	27	9	27	99
Mining and quarrying	0	0	3	0	0	0	6
Manufacturing	63	42	93	174	123	135	630
Electricity, gas and water supply	0	0	3	0	0	0	3
Construction	6	3	6	6	6	12	36
Wholesale trade	39	18	33	66	39	69	261
Retail trade	12	6	3	12	6	9	48
Accommodation, cafes and restaurants	0	0	0	3	0	0	6
Transport and storage	3	0	3	3	3	3	15
Communication services	0	0	3	0	3	3	9
Finance and insurance	9	6	3	0	0	9	24
Property and business services	96	42	33	39	42	120	372
Education	9	0	0	0	6	27	45
Health and community services	3	0	0	3	0	3	12
Cultural and recreational services	6	6	6	3	3	6	24
Personal and other services	3	0	0	0	0	3	6
<b>Total</b>	<b>258</b>	<b>132</b>	<b>201</b>	<b>333</b>	<b>240</b>	<b>423</b>	<b>1,593</b>
<b>2005</b>							
Agriculture, forestry and fishing	21	12	12	15	27	24	111
Mining and quarrying	0	0	0	3	0	3	6
Manufacturing	45	45	75	183	108	144	603
Electricity, gas and water supply	0	0	0	0	0	0	0
Construction	9	6	6	3	6	9	42
Wholesale trade	33	27	27	48	36	51	225
Retail trade	9	9	6	9	3	6	42
Accommodation, cafes and restaurants	3	0	3	3	3	0	12
Transport and storage	6	6	3	3	3	3	18
Communication services	0	0	3	3	0	0	6
Finance and insurance	6	6	0	3	3	9	27
Property and business services	81	57	39	69	48	138	435
Education	9	12	9	12	9	15	60
Health and community services	3	0	0	3	0	3	9
Cultural and recreational services	9	6	3	6	6	15	42
Personal and other services	0	6	0	3	0	0	12
<b>Total</b>	<b>237</b>	<b>189</b>	<b>183</b>	<b>366</b>	<b>255</b>	<b>426</b>	<b>1,656</b>

(1) Industry and sales growth refer to the year before receiving assistance.

(2) Refers to the industry the enterprises were in for the predominant part of the year (weighted by employment).

(3) Straight growth rate [ie (St - St-1) / St-1].

(4) For more information on the businesses included, refer to the Technical notes.

**Note:** All counts were randomly rounded to base 3 to protect confidentiality, so actual figures may differ from those stated. Due to rounding, some figures may not add to stated total.

Table 20

**Population Counts**  
*By industry and employment growth*  
2004

Industry <sup>(1)</sup>	Employment growth <sup>(2)</sup>				
	Decrease of 30 percent or more	Decrease of 10–29 percent	Less than 10 percent change	Increase of 10–29 percent	Increase of 30 percent or more
Number of businesses <sup>(3)</sup>					
Agriculture, forestry and fishing	11,487	5,175	47,814	4,212	4,755
Mining and quarrying	51	27	135	30	42
Manufacturing	3,507	1,887	12,780	2,142	2,184
Electricity, gas and water supply	15	0	33	6	9
Construction	5,826	2,121	23,541	2,856	4,248
Wholesale trade	2,703	1,050	7,890	1,539	1,761
Retail trade	6,774	3,312	19,998	3,471	4,020
Accommodation, cafes and restaurants	2,877	1,266	4,284	1,119	1,800
Transport and storage	1,920	675	6,732	861	1,086
Communication services	594	120	2,196	147	207
Finance and insurance	900	306	2,478	333	564
Property and business services	14,250	2,481	44,916	2,793	5,169
Education	378	168	1,221	207	321
Health and community services	1,512	690	8,886	837	843
Cultural and recreational services	1,215	315	4,680	345	501
Personal and other services	1,614	717	5,532	681	1,080
<b>Total</b>	<b>55,617</b>	<b>20,304</b>	<b>193,122</b>	<b>21,582</b>	<b>28,587</b>

(1) Refers to the industry the enterprises were in for the predominant part of the year (weighted by employment).

(2) Straight growth rate [ie (St - St-1) / St-1 ]. Employment count is defined as number of employees plus number of working proprietors.

(3) Excludes businesses that had a zero employment count in current or previous year. For more information on the businesses included, refer to the Technical notes.

**Note:** All counts were randomly rounded to base 3 to protect confidentiality, so actual figures may differ from those stated. Due to rounding, some figures may not add to stated total.

Table 21

**Enterprises Receiving Government Assistance***By industry and employment growth<sup>(1)</sup>*

2003 and 2005

Industry <sup>(2)</sup>	Employment growth <sup>(3)</sup>				
	Decrease of 30 percent or more	Decrease of 10–29 percent	Less than 10 percent change	Increase of 10–29 percent	Increase of 30 percent or more
	Number of businesses <sup>(4)</sup>				
<b>2003</b>					
Agriculture, forestry and fishing	3	6	33	12	21
Mining and quarrying	0	0	3	0	3
Manufacturing	18	54	264	123	84
Electricity, gas and water supply	0	0	3	0	0
Construction	3	0	21	9	3
Wholesale trade	12	15	81	39	48
Retail trade	6	3	12	6	6
Accommodation, cafes and restaurants	3	0	0	0	0
Transport and storage	0	0	3	3	6
Communication services	0	0	6	0	0
Finance and insurance	6	0	3	0	3
Property and business services	21	18	72	33	87
Education	0	0	6	6	21
Health and community services	0	0	3	3	0
Cultural and recreational services	3	0	9	0	6
Personal and other services	0	0	0	0	3
<b>Total</b>	<b>72</b>	<b>102</b>	<b>519</b>	<b>237</b>	<b>288</b>
<b>2005</b>					
Agriculture, forestry and fishing	6	12	33	21	15
Mining and quarrying	0	0	0	3	0
Manufacturing	27	60	279	102	63
Electricity, gas and water supply	0	0	0	0	0
Construction	6	6	12	3	6
Wholesale trade	15	12	81	33	33
Retail trade	6	3	9	3	6
Accommodation, cafes and restaurants	0	3	0	3	3
Transport and storage	3	0	6	3	0
Communication services	0	0	3	0	0
Finance and insurance	0	0	6	0	6
Property and business services	42	33	117	48	60
Education	6	6	27	9	9
Health and community services	3	0	3	3	0
Cultural and recreational services	3	3	9	6	3
Personal and other services	0	0	6	0	0
<b>Total</b>	<b>120</b>	<b>138</b>	<b>594</b>	<b>237</b>	<b>207</b>

(1) Industry and employment growth refer to the year before receiving assistance.

(2) Refers to the industry the enterprises were in for the predominant part of the year (weighted by employment).

(3) Straight growth rate [ie (St - St-1) / St-1 ]. Employment count is defined as number of employees plus number of working proprietors.

(4) Excludes businesses that had a zero employment count in either this year or the previous year. For more information on the businesses included, refer to the Technical notes.

**Note:** All counts were randomly rounded to base 3 to protect confidentiality, so actual figures may differ from those stated. Due to rounding, some figures may not add to stated total.

Table 22

**Enterprises Receiving Multiple Assistance<sup>(1)</sup>**  
*By business size and business age<sup>(2)</sup>*  
 2003 and 2005

Business size by employment count <sup>(3)</sup>	Business age					Total
	Less than 1 year	1–4.9 years	5–9.9 years	10–14.9 years	15 years +	
	Number of businesses <sup>(4)</sup>					
0–9	81	270	165	78	60	654
10–49	9	81	114	99	141	444
50–99	0	12	21	15	66	114
100+	6	9	24	48	120	207
<b>Total</b>	<b>93</b>	<b>375</b>	<b>327</b>	<b>237</b>	<b>387</b>	<b>1,422</b>

(1) Businesses that received assistance from multiple schemes or over multiple years.

(2) Business size and business age refer to the year before receiving assistance.

(3) Defined by total employment. For more information on total employment, refer to the Technical notes.

(4) For more information on the businesses included, refer to the Technical notes.

**Note:** All counts were randomly rounded to base 3 to protect confidentiality, so actual figures may differ from those stated. Due to rounding, some figures may not add to stated total.

Table 23

**Enterprises Receiving Multiple Assistance<sup>(1)</sup>**  
*By industry and business size<sup>(2)</sup>*  
 2003 and 2005

Industry <sup>(3)</sup>	Business size					Total
	Employment count <sup>(4)</sup>					
	0–9	10–49	50–99	100+	Total	
Number of businesses <sup>(5)</sup>						
Agriculture, forestry and fishing	39	21	0	6	66	
Mining and quarrying	0	0	0	0	3	
Manufacturing	153	240	78	144	615	
Electricity, gas and water supply	9	6	0	6	24	
Construction	147	60	12	6	219	
Wholesale trade	18	6	0	0	27	
Retail trade	0	3	0	0	3	
Accommodation, cafes and restaurants	3	3	0	0	6	
Transport and storage	0	3	0	3	6	
Communication services	9	3	0	0	12	
Finance and insurance	243	69	12	36	360	
Property and business services	15	27	12	3	57	
Education	3	0	0	0	3	
Health and community services	3	9	0	0	12	
Cultural and recreational services	3	0	0	0	3	
Personal and other services	0	0	0	0	0	
<b>Total</b>	<b>654</b>	<b>444</b>	<b>114</b>	<b>207</b>	<b>1,422</b>	

(1) Businesses that received assistance from multiple schemes or over multiple years.

(2) Industry and business size refer to the year before receiving assistance.

(3) Refers to the industry the enterprises were in for the predominant part of the year (weighted by employment).

(4) Defined by total employment count (number of employees plus number of working proprietors).

(5) For more information on the businesses included, refer to the Technical notes.

**Note:** All counts were randomly rounded to base 3 to protect confidentiality, so actual figures may differ from those stated. Due to rounding, some figures may not add to stated total.

Table 24

**Imputation Rates for Business Activity Indicator (BAI) Data<sup>(1)</sup>**  
2000–2005

Industry	Imputation type		
	Donor	Historical with industry trend	Linear interpolation
	Percentage of enterprises <sup>(2)</sup>		
<b>Year</b>			
2000	5.0	0.0	0.0
2001	4.3	0.5	2.5
2002	4.7	0.5	2.8
2003	4.9	0.4	2.5
2004	4.9	0.4	2.4
2005	5.7	2.7	0.0
<b>Industry<sup>(3)</sup></b>			
Agriculture, forestry and fishing	2.6	0.5	1.2
Mining and quarrying	2.1	0.3	1.0
Manufacturing	3.0	0.7	1.4
Electricity, gas and water supply	6.1	1.0	1.3
Construction	4.3	0.9	2.0
Wholesale trade	2.4	0.6	1.4
Retail trade	3.2	0.8	1.9
Accommodation, cafes and restaurants	3.1	0.9	1.9
Transport and storage	3.5	0.9	1.9
Communication services	3.8	1.0	2.7
Finance and insurance	30.3	1.0	1.4
Property and business services	6.5	0.8	1.8
Education	8.5	1.3	2.1
Health and community services	5.1	0.9	1.8
Cultural and recreational services	6.6	1.1	2.4
Personal and other services	6.5	1.2	2.2
<b>Entries and exits</b>			
Entries (start-up enterprises)	11.9	0.0	3.7
Exits (ceasing enterprises)	10.4	0.0	13.5
<b>Overall</b>	<b>4.9</b>	<b>0.8</b>	<b>1.7</b>

(1) Refers to the BAI data that is imputed by IBULDD (Improved Business Understanding via Longitudinal Database Development).

(2) For more information on the enterprises included, refer to the Technical notes.

(3) Refers to the industry the enterprises were in for the predominant part of the year (weighted by employment).

Table 25

**Imputation Rates for Tax Data<sup>(1)</sup>**  
2000–2005

Industry	Imputation type		
	Donor	Historical with industry trend	Linear interpolation
	Percentage of enterprises <sup>(2)</sup>		
<b>Year</b>			
2000	29.3	0.0	0.0
2001	16.3	3.6	8.1
2002	15.7	4.1	8.6
2003	16.3	4.3	7.8
2004	17.3	4.6	8.2
2005	19.4	10.5	0.0
<b>Industry<sup>(3)</sup></b>			
Agriculture, forestry and fishing	16.2	4.7	5.7
Mining and quarrying	30.1	4.4	4.8
Manufacturing	19.9	4.4	5.1
Electricity, gas and water supply	32.8	4.3	4.0
Construction	19.1	4.5	5.4
Wholesale trade	22.1	4.6	5.3
Retail trade	18.1	4.5	5.8
Accommodation, cafes and restaurants	20.0	5.1	6.3
Transport and storage	18.6	4.7	5.5
Communication services	19.9	5.2	7.0
Finance and insurance	20.1	3.6	3.9
Property and business services	20.9	4.8	5.2
Education	16.5	4.3	5.6
Health and community services	15.4	4.3	5.5
Cultural and recreational services	20.3	4.8	5.2
Personal and other services	16.0	4.5	5.7
<b>Entries and exits</b>			
Entries (start-up enterprises)	24.0	0.0	7.5
Exits (ceasing enterprises)	42.2	0.0	24.8
<b>Overall</b>	<b>19.0</b>	<b>4.6</b>	<b>5.5</b>

(1) Refers to the Inland Revenue-supplied IR10 data that is imputed by IBULDD (Improved Business Understanding via Longitudinal Database Development). IR10 is not a compulsory form.

(2) For more information on the enterprises included, refer to the Technical notes.

(3) Refers to the industry the enterprises were in for the predominant part of the year (weighted by employment).