

→ MAIN REPORT

THE NEW ZEALAND Sectors Report 2014

AN ANALYSIS OF THE NEW ZEALAND ECONOMY BY SECTOR





**MINISTRY OF BUSINESS,
INNOVATION & EMPLOYMENT**
HĪKINA WHAKATUTUKI

MBIE develops and delivers policy, services, advice and regulation to support economic growth and the prosperity and wellbeing of New Zealanders.

MBIE combines the former Ministries of Economic Development, Science + Innovation, and the Departments of Labour and Building and Housing.

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New Zealand Sectors Report 2014

The New Zealand Sectors Report Series comprises the Main Report and six additional, separate, reports providing an in-depth analysis of six individual sectors. The seven reports are:

- 1 The New Zealand Sectors Report 2014: Main Report (this report)**

Featured Sector Reports

- 2 Information and communications technologies (ICT)**
- 3 High technology manufacturing**
- 4 Construction**
- 5 Petroleum and minerals**
- 6 Tourism**
- 7 Knowledge intensive services**

All reports available from www.mbie.govt.nz





Minister's foreword

I am pleased to present this report, which provides the first ever comprehensive overview of the economic performance of all the sectors that make up New Zealand's economy.

The defining theme of this report is change. New Zealand, like many developed countries, is witnessing a transformation in our economy and in employment opportunities.

Our traditional exporting sectors, such as dairy, meat, forestry and tourism, remain important drivers of growth. But increasingly we are seeing strong growth in emerging export sectors such as information technology services, high-technology manufacturing and processed foods.

This report highlights the ever-increasing importance of Asia as a key export region. It also reinforces the importance of our relationship with Australia, which continues to be a vital first market for many of our exporting businesses.

As is the case in other developed economies, some traditional manufacturing and service sectors face a challenging future, driven by low-cost manufacturing overseas and the game changing impact of digital technologies and automation.

The digitisation of the economy also offers huge opportunities to create new value and drive productivity. Traditional exports are increasingly enabled by digital technologies. Manufacturers are developing services around their products, often based around a software component.

The Government's Business Growth Agenda (BGA) sets out an integrated programme of work with around 350 separate initiatives, focusing on the six key inputs businesses need to succeed, grow, and add jobs. The six areas are: export markets, capital markets, innovation, skilled and safe workplaces, natural resources and infrastructure.

Be it rolling out ultra-fast broadband or establishing Callaghan Innovation, the BGA initiatives are about configuring the New Zealand economy to succeed in the increasingly complex and competitive global economy of the 21st century.

This report, and the six other reports in the Sectors Report Series, is not policy. Rather it provides a range of key data on the New Zealand economy from a sector perspective to enable a more informed debate on New Zealand's economic development.

Hon Steven Joyce
MINISTER FOR ECONOMIC DEVELOPMENT
MINISTER OF SCIENCE AND INNOVATION
MINISTER FOR TERTIARY EDUCATION, SKILLS AND EMPLOYMENT
MINISTER FOR SMALL BUSINESS
ASSOCIATE MINISTER OF FINANCE

Key terms and data limitations

Defining sectors

A sector is an area of economic activity in which businesses or other organisations (e.g. government or voluntary organisations) share a similar market or produce a similar product or service. Examples are retailing (businesses that sell products directly to consumers) and telecommunications (provision of communications services using wired or wireless infrastructure).

This report uses data grouped into sectors using the Australian and New Zealand Standard Industrial Classification codes (ANZSIC codes). A business or other type of organisation is classified to an ANZSIC code based on its predominant activity. The term 'sector' is often used interchangeably with the term 'industry'.

Sources

The numbers in this report come from multiple sources. Data sourced from Statistics New Zealand is the latest that was available as at mid-December 2013. Some of this data is provisional and may change.

The data used covers different time periods for different metrics. For example, goods exports is for the year ended June 2013, while labour productivity is for the year ended March 2011.

Customised data

Customised data has been provided by Statistics New Zealand for the manufacturing sectors and for the cross-cutting sectors (high technology manufacturing, information & communications technology, knowledge intensive services, and tourism).

Export data

Some export data for cross-cutting sectors uses international sources

in order to provide a longer time series. These sources may not agree with Statistics New Zealand data due to differences in the group of exported products being allocated to the relevant sector.

Use of the term 'firm'

The term 'firm' is used generically. It includes all relevant entities, some of which are not firms at all, such as those in the charities, government, education and health sectors.

Example firms

This report provides examples of firms which are believed to belong to the different sectors. The example firms provide a partial answer to a key question on the composition of a sector: which firms are in it?

Firms are classified by Statistics New Zealand as being part of an industry sector according to their predominant activity. This is explained fully on the Statistics New Zealand website. The classification of each firm to a sector using the Australian and New Zealand Standard Industrial Classification (ANZSIC) system is **confidential** to Statistics New Zealand.

Because of the confidentiality rules, MBIE has used other publicly available sources to determine which firms are likely to belong to a sector. These sources may be inaccurate or incomplete.

Quotes and interviews

A limited number of interviews with sector leaders were carried out in the preparation of this report. Anonymous quotes from these interviews that illustrate key themes have been included. The opinions expressed are those of the industry participants. Additional quotes from public sources have also been used.

A full explanation of data sources and limitations is provided in the Appendix.

Report objective

The New Zealand Sectors Report series is a set of seven publications that provide a factual source of information in an accessible format on all the sectors that make up the New Zealand economy.

As a set of facts and figures the series provides a platform for discussion. It is intended to inform public debate, and be a resource for business people, exporters, policy makers, media commentators, economists, academics, students and anyone with an interest in New Zealand's economic development.

The report does not draw policy conclusions.

This report provides information on 23 sectors and five additional 'cross-cutting' sectors both comparatively and in individual snapshots.

Some of the data is provided interactively on the www.mbie.govt.nz website



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Executive summary

General

- New Zealand is part of a constantly evolving global economy. Change is ongoing, driven by global markets, for example the rise of China, and by technological advances, particularly in information and communication technologies.
- These forces are driving change in the New Zealand economy at the sector level. Many sectors are benefiting, particularly food and beverage and New Zealand's growing cohort of information technology businesses. Other sectors are needing to adapt to technological change or increased international competition, e.g. some manufacturing sectors, and telecommunications and media.

GDP and productivity

- New Zealand has a complex and varied economy with a wide range of sectors. Like other developed economies, services generate the majority of GDP.
- In the last 10 years all sectors of the economy have shown growth, except wood and paper. Petroleum and minerals grew fastest, followed by the health and utilities sectors.
- Petroleum and minerals, utilities and property, rental and hiring services have the highest labour productivity. The majority of workers are employed in labour intensive, lower labour productivity sectors such as accommodation and restaurants, retail trade, administration and construction.
- There is a wide variation in labour productivity *within* sectors; all sectors have high performing and low performing firms.
- Several sectors generating employment have tended to show low productivity growth, while those sectors with higher productivity growth have tended to show reduced employment.

Firms and employment

- New Zealand has one very large firm – Fonterra – and a long tale of large to mid-sized firms.
- Similar to other developed economies, the majority of jobs – and job growth – are in the services sectors, although in New Zealand agriculture, forestry and fishing is still a significant employer (7% of employment).
- Manufacturing accounts for one in 10 workers, but just 4.3% of all firms. Employment in the manufacturing sectors in aggregate is declining, but this is significantly out-weighted by the growth in employment in services sectors. Food and beverage manufacturing stands out for some employment growth.
- In 2013 New Zealand had in total 2,123 firms and other enterprises (e.g. schools, government departments, hospitals, charities etc.) that employed more than 100 people. These organisations employed 41% of the working population (employed and self-employed).
- The proportion of large firms to small firms in New Zealand is similar to the OECD mean. But New Zealand's large firms are smaller than large firms in other OECD countries.

Exports

- New Zealand exported a total of \$62.4b in 2013, \$46.3b of goods and \$16.1b of services. At 4.5% per annum in the 10 years to 2013, goods exports have grown faster than services exports (1.5% per annum in the same period). Commercial services now make up 29% of total services exports compared to 18% in 2004.
- Despite the dominance of dairy, New Zealand's exports are becoming more diverse, with emerging strengths in processed foods, high technology manufacturing, computer services and commercial services more generally.

Executive summary

- Taking the long view, New Zealand's export mix is considerably more diverse today than it was in 1966. Food and beverage remains the engine of New Zealand's exports, with strengths in dairy and meat increasingly supplemented by a growing range of high-growth potential high-value categories, including for example honey, salmon, wine and infant formula.*
- New Zealand has undergone a fundamental shift in the last 40 years from supplying northern hemisphere markets such as the United Kingdom, to being increasingly the source of high quality temperate climate foods for Asia.
- At the same time, the key markets for New Zealand's IT services and high technology manufactured goods tend to be the developed rather than the emerging economies, particularly Australia, the United States and Europe.
- Exports to Australia include a wide variety of goods and services outside of New Zealand's traditional commodity exports. This points to the critical importance of both proximity and economic integration as drivers of growth for complex goods and services.

Innovation

- In 2011, 9% of all firms reported R&D activities and 46% of all firms reported innovation activities.
- Significantly more firms in manufacturing sectors engage in R&D compared to firms in the services sectors.
- On the other hand, some services sectors have very high rates of innovation, with education, arts and recreation, and finance and insurance being examples.
- Large firms are more likely to engage in R&D and innovation activities than small firms, and firms reporting innovation report improved performance on a range of financial measures.

Financial performance

- In 2012 five sectors generated a return on equity of 19% or more: construction, retail trade, wholesale trade, professional services, and machinery & equipment. The average for all sectors in 2012 was 9%. Return on equity can vary significantly from year to year.

New Zealand and the world

- New Zealand is less well connected to the global economy than other small developed economies on measures of inward and outward direct investment, trade and tourism visits.
- In 2012 New Zealand firms had \$24b in direct investment overseas. Manufacturing sectors account for 41% of this investment, followed by wholesale trade (11%) and finance and insurance (6%).
- A number of firms in construction, logistics, retailing, utilities and professional services are succeeding in building international businesses.
- In 2012** foreign firms had \$97b in direct investment in New Zealand. Of this \$37b (38%) is in the finance and insurance sector, followed by \$6.9b (7%) in food and beverage and \$5b (5%) in retail trade.
- In terms of connectedness, emerging export sectors such as ICT and high technology manufacturing have higher rates of both inward and outward direct investment, reflecting the need for knowledge intensive firms to be close to customers, have access to distribution networks and take advantage of lower manufacturing cost structures to remain competitive.
- Consistent with trans-Tasman economic integration, 53% of New Zealand outward direct investment is in Australia, and 64% of foreign direct investment (FDI) in New Zealand is Australian. At 0.4% of total FDI (\$391m) China is to date a minor investor.

*See the food and beverage information project for detailed analysis of these and other categories, www.foodandbeverage.govt.nz

**Latest data available with breakdown for manufacturing sub-sectors. FDI in New Zealand in 2013 was \$101b



HIGHLIGHTS, KEY THEMES AND INTRODUCTION TO SECTORS

Sector highlights

There is a wide variation in the contribution to economic growth by different sectors

New Zealand overview	
Population (2014)	4.5m
Land area	267,710km ² (similar to Italy)
Coastline	15,134 km (more than China, less than USA)
Population density	16/km ² 200 th highest in the world
GDP nominal (2012)	NZ\$199.1b 0.27% of global GDP
GDP/capita (2012)	US\$28,800
GDP employing sectors (2011)	NZ\$172.4b
Labour productivity (2011)	NZ\$48 per hour worked
Total exports (June 2013)	NZ\$62.4b
Goods exports (2013)	NZ\$46.3b
Commercial services exports (2013)	NZ\$4.7b
Travel and transport services exports	NZ\$11.4b
Top 3 trading partners* (imports & exports)	1. Australia 2. China 3. US

*As at June 2013, Australia accounted for 17.8% of trade in goods (imports and exports) and China 16.8%. See pages 64 and 65.

Metric	Sector ranking		
	1st	2nd	3rd
Largest share of GDP (2011)	Professional services \$13.9b (8.1%)	Property, rental & hiring services \$13.3b (7.1%)	Agriculture, forestry & fishing \$13.25b (7.7%)
Highest growth GDP (CAGR, 2001–2011)	Petroleum & minerals 12.1%	Health 8.1%	Utilities 7.7%
Largest sectors by employment (2012)	Retail trade 215,500 FTEs (9.4%)	Health 210,100 FTEs (9.1%)	Professional services 201,100 FTEs (8.7%)
Sectors adding most jobs (2002–2012; absolute)	Health +55,700	Professional services +51,200	Construction +46,300
Highest productivity (GDP per hour worked, 2011)	Petroleum & minerals \$330 per hour worked	Utilities \$210 per hour worked	Property, rental & hiring services \$192 per hour worked
Top goods exporting sectors 2013	Food & beverage manufacturing \$24b	Agriculture, forestry & fishing \$5b	Machinery & equipment \$3.2b
Sectors with fastest goods export growth (2003–2013 CAGR)	Petroleum & minerals 10.5%	Food and beverage manufacturing 6.1%	Agriculture, forestry & fishing 5.4%
Top services exports (YE Mar 2012)	Personal travel \$6.4b	Transport services \$2.6b	Other business services \$2.1b
Fastest growing services exports 2003–2013 CAGR	Personal, cultural and recreational services 9.4%	Computer and information services 8.4%	Other business services 7.7%

Key themes

New Zealand is part of the constantly evolving global economy

Theme	Description	Details
Changing markets	New Zealand has undergone a fundamental transition from supplying northern hemisphere markets to supplying the Asia-Pacific region.	<ul style="list-style-type: none"> Goods exports to China have tripled in four years, from \$2.5b in the year ending June 2008 to \$7.7b in the year ending June 2013; by contrast the UK accounted for just 3% of New Zealand's goods exports in the year ending June 2013, compared to around 50% 40 years ago.
Developed vs emerging markets	Rich countries tend to import a higher proportion of 'rich country products' (e.g. consumer products, services); imports into emerging economies are typically weighted more towards commodities, e.g. inputs into manufacturing (iron ore, coal) or protein for a growing middle class (dairy).	<ul style="list-style-type: none"> New Zealand's key markets for knowledge intensive services, high technology manufacturing and ICT exports are the traditional markets of Australia, the UK and the US. Dairy typically spearheads New Zealand's exports into emerging economies and/or new markets, e.g. China, India, ASEAN, Middle East, and other sectors follow.
Australia matters	Australia plays a critical role in the development of New Zealand's higher value export industries and in building New Zealand-owned multinationals.	<ul style="list-style-type: none"> With Australia, our closest neighbour, we share a similar history, culture, language, time zone and proximity to the world. Australia is our largest market for tourism, manufactured goods (including high technology manufacturing), commercial services (including IT), processed foods, oil, gold and wine. 54% of New Zealand's outward direct investment is in Australia; 63% of foreign direct investment in New Zealand is from Australia.
Changing export mix	New Zealand's export mix has changed significantly in 40 years. Past major export products have declined (e.g. wool) and new categories have emerged (e.g. wine, processed foods).	<ul style="list-style-type: none"> Emerging export categories in the last decade include: <ul style="list-style-type: none"> high technology manufacturing: \$1.4b (2012) commercial services (particularly computer services): \$4.6b (2013) processed foods: \$2.5b (2013). Tourism's 15% share of total exports in 2012 was the lowest since the series began in 1999 (tourism peaked at 20.2% of total exports in 2006).
Internationalisation	Export sectors showing growth potential tend to attract foreign investment and have a higher proportion of New Zealand-owned firms investing off-shore.	<ul style="list-style-type: none"> High technology manufacturing and ICT sectors have higher rates of foreign ownership and outward investment than other sectors. High technology manufacturing generates 30% of sales from off-shore. Multinational firms are increasing investment in New Zealand's processed foods industry, e.g. infant formula. Significant foreign investment is underpinning historically high expenditure in petroleum exploration.

Key themes

Change is ongoing, driven by technology and global markets

Theme	Description	Details
Scale matters	Large firms (100+ employees) are more likely to engage in innovation and R&D activities, invest off-shore and in forwards or backwards supply chain integration. They generate the vast majority of exports and create more jobs.	<ul style="list-style-type: none"> Firms with 100+ employees generated 63% of job growth in the last decade. Fonterra generates 50% of food and beverage exports and accounts for 70% of all R&D expenditure in the food and beverage sector. F&P Healthcare accounts for circa 22% of all high technology exports. Fulton Hogan has built a large vertically integrated business in Australia. <i>It takes companies of scale to be involved in serious R&D and serious exporting</i>. – CEO, technology company.
Changing labour markets and nature of work	<p>There is a continuation of the long-term shift from manufacturing jobs to services jobs, similar to other developed countries.</p> <p>The pattern in developed countries is job growth generated at the high-skill, high-paid end and the low-skill, low-paid end, with the middle flat to declining.*</p>	<ul style="list-style-type: none"> Service industries (largely domestically and tourism focused) plus education and health generated 90% of job growth from 2002–2012. Routine functions across all industries are being automated (e.g. automated pickers, packers, sorters, check-out counters). Sectors increasing productivity, often also reducing employment. IT services are creating jobs and demand appears to be outstripping supply. <i>There is such a shortage of skills in the ICT sector, and that's only going to grow</i>. – CEO, ICT company.
From wider research and interviews with industry leaders some other key themes emerged		
Sectors in transition	<p>Digital technology is destroying old business models and generating new ones.</p> <p>Low cost manufacturing from emerging economies is affecting the competitiveness of manufacturing in developed countries.</p> <p>The continued high New Zealand exchange rate is driving structural change at the sector level.</p>	<ul style="list-style-type: none"> New Zealand manufacturers are developing digital services around their products to create advantage (e.g. Framacad's architectural design software). Manufacturers are investing in expansion off-shore (F&P Healthcare in Mexico). Traditional media businesses are struggling with digital business models. Online sales are changing retailing. <i>The internet has revolutionised completely everything... retail has got to become a really sophisticated animal</i>. – retired fashion designer Ashley Fogel, Radio NZ interview.
Everything going digital	<p>New technologies are changing the structure and competitiveness of all industries.</p> <p>Automation of manufacturing combined with rising wages in emerging economies is (at least potentially) improving the economics of manufacturing in developed countries.</p>	<ul style="list-style-type: none"> Examples include digital modelling, simulation and visualisation; advances in industrial robotics; additive manufacturing (e.g. 3D printing); and information technology trends such as big data, advanced analytics, social technologies and remote sensing.** <i>3D printing is fantastic for prototyping, and may have broader applications in the longer term. We have three or four 3D printing machines running 24/7. We've been buying a new one every six months or so. The cost has gone down... and it's just astonishing what they can do for you. ...[for prototyping] you're going from months, to days to hours</i>. – CEO, large technology company.

*See International Monetary Fund; World Economic Outlook, Sept 2011

**McKinsey Global Institute 2012: Manufacturing the future: the next era of global growth and innovation

Key themes

New Zealand is a young country, still developing a mix of strengths

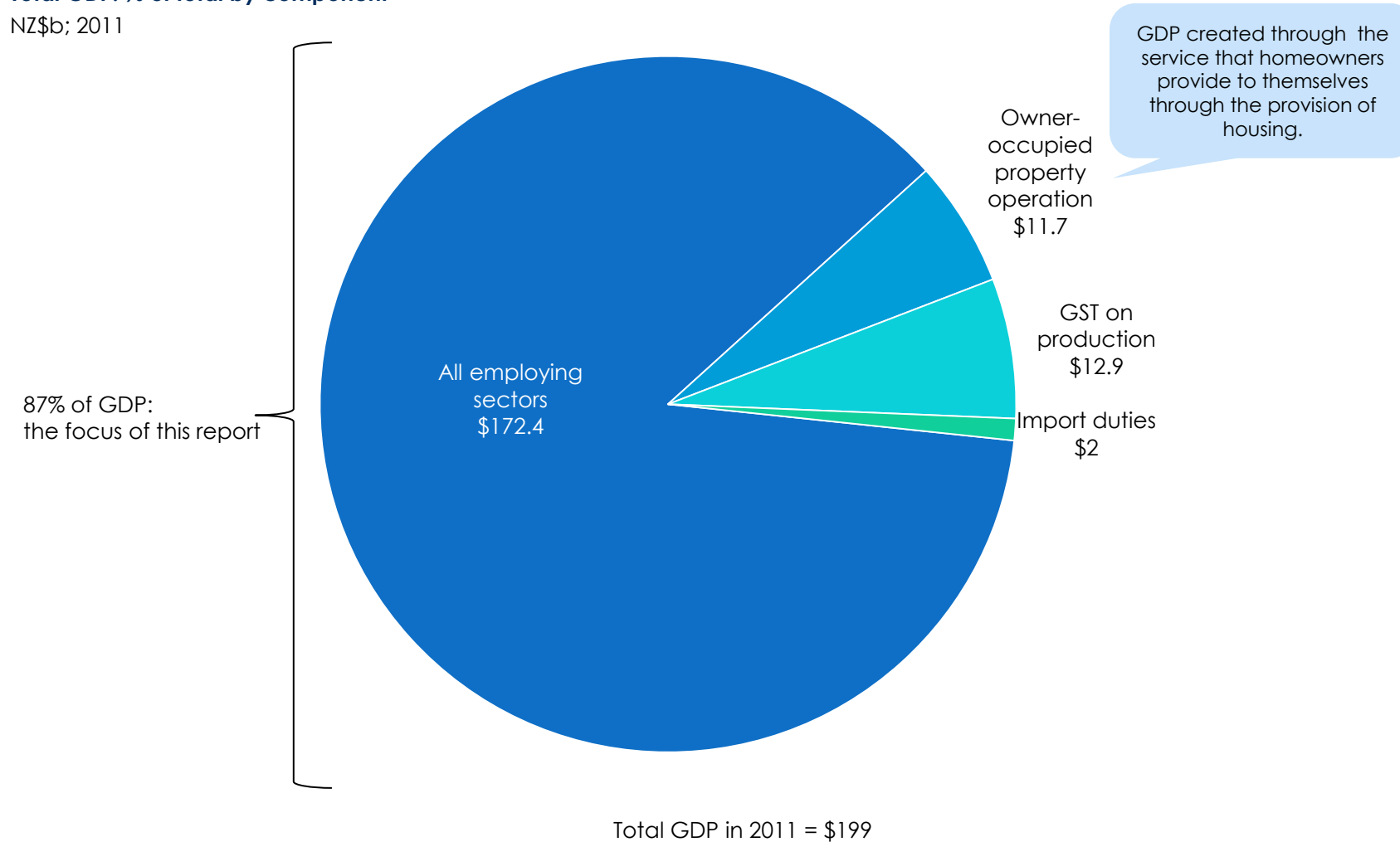
Theme	Description	Details
Research & development advantage	There is a widespread perception that New Zealand has some cost and culture advantages in research and development.	<ul style="list-style-type: none"> Exports of R&D services in year to June 2013: \$162m. These grew at 4.8% per annum 2008–2013. The US takes 34% of the total and Australia 23%. <i>When you compare us to other developed countries, New Zealand is probably half the cost per R&D person. Mainly remuneration is why New Zealand is a pretty good location.</i> – CEO, large technology company. <i>We have a huge advantage to the rest of the world, in that our people often span silos. In the rest of the world you get real silo expertise, but oftentimes the best innovation comes from applying something done in one silo to another.</i> – CEO, small technology company. <i>[The R&D team] punch considerably above their wait when you compare them to other companies, and the culture in New Zealand is very unique.</i> – CEO, Fisher and Paykel Appliances, nzherald.co.nz, April 8, 2013
Serial entrepreneurs	Entrepreneurs in the emerging export sectors (e.g. IT services, high technology manufacturing, processed foods) are developing the capabilities and acquiring the experience needed to succeed internationally.	<ul style="list-style-type: none"> A number of entrepreneurs are on their second or third businesses, recycling both capital and skills. Examples include Rod Drury – Xero; Geoff Ross – Ecoya, Moa Beer; Derek Handley – SnakkMedia, Booktrack; Grant Ryan – SLI systems.
Building strengths in the supporting ecosystem to support emerging export sectors	The supporting network of service providers (e.g. accountants, lawyers, investors, bankers, consultants, government departments, universities, Crown Research Institutes) are also developing in their knowledge of and sophistication in dealing with the emerging export sectors.	<ul style="list-style-type: none"> National and local government, universities and others are investing in the infrastructure, skills and capability development that supports emerging export sectors, including the Food Innovation Network, the Health Hubs, Callaghan Innovation, The Icehouse and the Canterbury Innovation Incubator. <i>People might look at the VIF [Venture Investment Fund] as not a great success story, but there are a lot of lessons learned off the back of money going into ventures and people. We're probably in high-school at the moment in our evolution .</i> – CEO technology company.
Historical precedent	New Zealand's competitive advantage in the production and export of protein is based on 100 years of private and public investment in all parts of the system. The resulting sophistication and complexity of this system is hard for competitors to replicate (unless there are radical game changers, e.g. synthetic milk, vat grown meat).	<ul style="list-style-type: none"> <i>The rise and rapid adaptation of New Zealand protein farming was intertwined with the development of finance, processing, distribution and shipping to form a sophisticated mechanism connecting the farms to their markets.</i> – James Belich, <i>Paradise Reforged</i>.

Sectors' component of GDP

The 'employing sectors' of the economy are 87% of total GDP; the remaining 13% is GST, import duties and owner-occupied property

Total GDP: % of total by component

NZ\$b; 2011

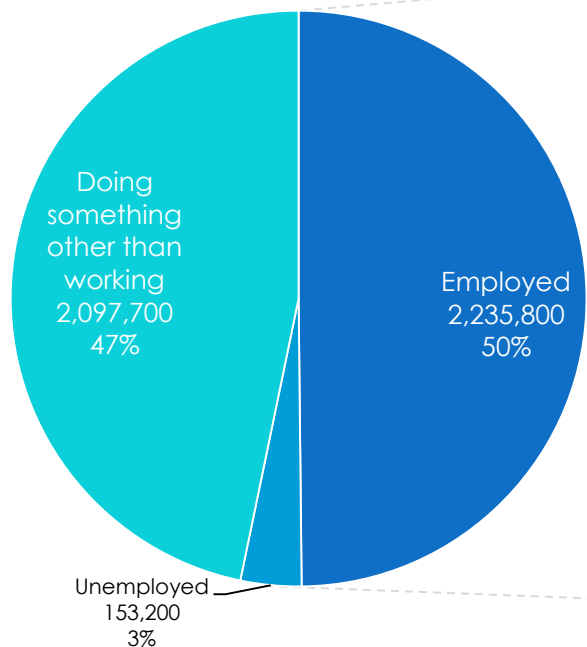


Employing sectors

The employing sectors cover the activities of 50% of the population; 'employed' includes the self-employed

Employment status of New Zealand resident population

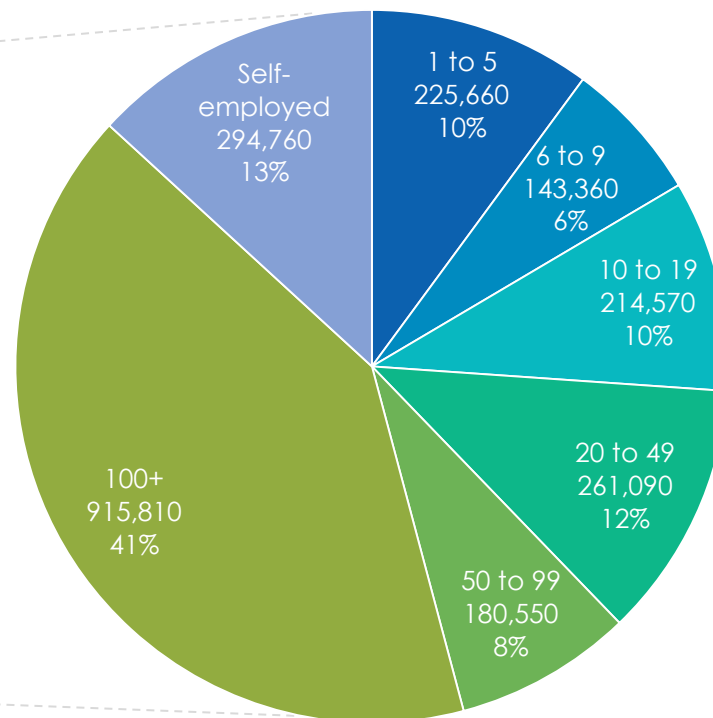
% of NZ residents; 2013



Total = 4,486,700 New Zealand residents

Employment by firm size

% employees and self-employed; 2013



Total = 2,227,000 people employed or self-employed

The New Zealand economy by sector

This report examines 23 sectors using standard sector definitions*; petroleum and minerals and construction are the subject of separate in-depth reports

ANZSIC Code*	Sector	Examples
Primary		
A	Agriculture, forestry & fishing (production and harvesting of primary products on farms, forests, fishing boats, etc)	Landcorp, Sealord, Ernslaw One, farms, orchards
B	Petroleum & minerals (featured sector)	Tag Oil, Todd Energy, OceanaGold, New Zealand Oil & Gas
Manufacturing		
C14, C15	Wood & paper	Carter Holt Harvey, Tenon, Norske Skog Tasman
C11, C12	Food & beverage manufacturing (processing of raw materials into ingredients or finished products, e.g. milk powder or wine) Shortened title: food & beverage	Fonterra, ANZCO, Mudhouse Wines, Whittaker's, Tasti
C23, C24	Machinery & equipment	Fisher & Paykel Appliances, Compac Sorting, Gallagher Security
C17, C18, C19	Chemicals, plastics & refining (including petroleum refining)	Nuplex, Ravensdown Fertiliser, Dulux, Resene
C21, C22	Metal & metal products Shortened title: Metals	New Zealand Steel, New Zealand Aluminium Smelters, Methven
C13, C16, C20, C25	Other manufacturing (textiles, leather, clothing and footwear, printing, non-metallic mineral products, furniture and other manufacturing)	Firth Industries, Cavalier Bremworth, NZ Comfort Group (Sleepyhead)
Services		
D	Utilities (electricity, gas, water, waste)	Contact Energy, Meridian Energy, Vector
E	Construction: featured sector (featured sector)	Fulton Hogan, Fletcher Construction, many small building firms
F	Wholesale trade	Carter Holt Harvey, Placemakers, Combined Rural Traders Society (CRT)

The New Zealand economy by sector

ANZSIC Code*	Sector	Examples
Services		
G	Retail trade	Progressive Enterprises (Countdown), Z Energy, The Warehouse, Hallenstein Glasson Holdings
H	Accommodation & restaurants	SkyCity Entertainment Group, Restaurant Brands NZ, Millennium and Copthorne Hotels
I	Logistics (transport, postal and warehousing) Shortened title: Logistics	Mainfreight, NZ Post, Kiwirail
J	Media & telecommunications	Vodafone, Sky Network, Fairfax Media, Chorus
K	Finance & insurance	ANZ, BNZ, Accident Compensation Corporation, AMP
L	Property, rental & hiring services	Housing NZ, Harcourts, Jucy Rentals, Hirepool
M	Professional, scientific & technical services Shortened title: Professional services	Datacom, BECA, Opus International, PwC
R	Arts & recreation services	New Zealand Lotteries Commission, New Zealand Racing Board (TAB), Te Papa Museum of New Zealand
S, N	Administration & other services	Flight Centre, AWF Group, NZ Rugby Union
Government, education & health		
O	Government, defence & public safety	Auckland Council, New Zealand Defence Force, Ministry of Education, New Zealand Police, Ministry of Business, Innovation & Employment
P	Education	University of Auckland, UNITEC, Wellington Institute of Technology, secondary and primary schools, kindergartens and day care centres
Q	Health & social assistance Shortened title: Health	Canterbury District Health Board, Ryman Healthcare, lab tests, rest homes, medical centres

Cross-cutting sectors

Four non-standard cross-cutting sectors are also the subject of separate in-depth reports

Sector	Description	Examples
Tourism	Significant economic activity in some sectors is due to tourists. Examples include accommodation and restaurants, retail trade and logistics (travel). Tourism data derived from these sectors is a sub-set of the total data for these sectors, and so is double-counted.	SKYCITY Entertainment, Air New Zealand, Auckland International Airport, Intercity, Tourism Holdings
High technology manufacturing and medium high technology manufacturing	The OECD definition for high technology manufacturing is used. The definition is based on the amount an industry spends on research and development. Industries which typically spend 8% or more of their revenue are classified as 'high technology'. Examples are aircraft manufacturing, pharmaceuticals and electronics. The in-depth report on high technology manufacturing also provides data on medium-high technology manufacturing, which includes the manufacture of polymers and chemicals, transport equipment and machinery. Snapshot pages for medium-high technology manufacturing are included in this report.	Pacific Aerospace, Argenta, Rakon, Fisher & Paykel Healthcare, Dynamic Controls, Tait Communications
Knowledge intensive services	The OECD definition for knowledge intensive services is used. Firms operating in post and telecommunications, finance and insurance, and professional services are defined as 'knowledge intensive'. It is a wide definition that captures activities in a large number of sectors. The separate report on knowledge intensive services focuses mainly on professional, scientific and technical services (excluding computer systems design).	Datacom, Orion, SmartPay, Beca, KPMG, Opus International, Chapman Trip.
Information & communications technology (ICT)	The OECD definition for knowledge intensive services is used. This includes components of both services industries (e.g. telecommunications, software development) and manufacturing (e.g. manufacture of telecommunications equipment). There are significant overlaps between high technology manufacturing and knowledge intensive services. The separate report on ICT focuses mainly on the computer systems design sub-sector, which appears to capture the bulk of New Zealand's IT exporting firms.	Datacom, Xero, Diligent Board Member Services, Vista Entertainment.

Double-counting between cross-cutting sectors: treat with caution

Some activities are classified in more than one of the above cross-cutting sectors. For example computer system design (ANZSIC Code M7000) is included in both ICT and knowledge intensive services. Manufacture of telecommunications equipment is included in both ICT and high technology manufacturing. Data is thus double-counted and care should be taken in interpretation.

A more selective approach to the data is taken in the individual reports on knowledge intensive services and ICT, which largely resolves this issue.



THE GOVERNMENT'S BUSINESS GROWTH AGENDA



The Business Growth Agenda

The Government's Business Growth Agenda is a key part of achieving the Government's priority of building a more productive and competitive economy.

There are six key ingredients that businesses need to succeed and grow: innovation, capital markets, skilled and safe workplaces, natural resources, infrastructure and export markets to sell their products.

These six areas are the focus of the Government's Business Growth Agenda.

The Business Growth Agenda Progress Report 2013 outlines the scope and reach of the Agenda and reports on progress in implementing around 350 separate initiatives.

Available from:

www.mbie.govt.nz/what-we-do/business-growth-agenda





The Government's Business Growth Agenda

Focus on export markets and capital markets, excerpt from BGA Progress Report, 2013

Export markets

- Increased exports and stronger international linkages are central to lifting New Zealand's economic growth and productivity. With a small domestic market, the greatest opportunities for growth for New Zealand businesses are in overseas markets. In addition, businesses that export internationally tend to be more productive than businesses that just supply the domestic market because of their greater access to resources, knowledge and ideas, and the increased competition they face against other global firms.
- New Zealand's exports have not kept pace with a range of similar countries over the last 30 years. While exports of goods and services make up around half of GDP for similar-sized countries in the OECD, they represent less than a third of New Zealand's GDP. What is more, growth in the economy has been greatest in those sectors of the economy that don't export goods and services. New Zealand also has relatively low levels of outward direct investment, which constrains our ability to participate in global supply chains.
- The Government is working with businesses to lift the value and volume of our exports, by ensuring the rules, regulations and policies – both here and overseas – promote exports, and by helping ensure that resources are able to flow to the most productive areas. We are also helping New Zealand firms to better leverage the value of the 'New Zealand brand' in overseas markets.

Capital markets

- New Zealand firms need access to capital to take advantage of opportunities and grow their business – and the economy. Investors also need to be able to identify and take advantage of opportunities to generate the best returns from their capital. When all parts of our capital markets are working well, increased investment in New Zealand's economy – particularly in the export sector – will help to drive stronger growth.
- We have set a target to lift exports to 40 per cent of GDP by 2025. This will require an extra \$160 billion to \$200 billion of new productive capital to achieve this goal.
- New Zealand's capital markets generally work well, but there is scope for reductions in the cost of capital faced by New Zealand businesses, compared to their offshore competitors. Improving access to capital for growth will also be critical.
- The Government is supporting effective capital markets by providing stable and competitive macroeconomic settings; creating the right incentives to save and invest; and ensuring New Zealand is open to international investment flows.



The Government's Business Growth Agenda

Focus on innovation and skilled and safe workplaces, excerpt from BGA Progress Report, 2013

Innovation

- Innovation – the introduction of new or improved products, processes or methods into our economy – can increase the amount we produce, add value, lift productivity, and increase our competitiveness. Innovation can open new markets or develop existing ones, and is essential to improving environmental, social and health outcomes.
- There is significant opportunity for New Zealand firms to increase their investment in innovation and get greater value from it and for the Government to improve the impact of public investment in science and innovation.
- The Government is working to increase the benefits to New Zealand from science and innovation by creating a high-performing and responsive innovation system. This includes working to improve the alignment, co-ordination and collaboration within the system – from the generation of new ideas, to the conversion of these ideas into value. Callaghan Innovation has been established to work across the whole innovation system to accelerate the growth, scale, intensity and success of innovation in New Zealand firms.
- We are focusing future investments in science and innovation on addressing issues and opportunities New Zealanders have identified as important for improving environmental, health and economic outcomes. We are also focused on creating the environment that businesses need to invest more in science, to access and use relevant research and development, and have the confidence to innovate.

Skilled and safe workplaces

- Successful businesses operating in a competitive global economy need skilled people who can help them create and deliver high-value products and services, cultivate new markets, and sell to the world. Workers and jobseekers need access to education and training to help them lift their skills, and opportunities to use those skills in safe workplaces – leading to increased productivity and higher wages.
- While New Zealand has one of the most highly-qualified workforces in the OECD, there is scope to better align our education and training with the needs of business. New Zealand's rates of employment are also relatively high, but long-term welfare dependency is still experienced by too many New Zealanders.
- The Government is helping by working to lift New Zealanders' skills and qualifications, reduce long-term unemployment and improve workplace health and safety.



The Government's Business Growth Agenda

Focus on natural resources and infrastructure, excerpt from BGA Progress Report, 2013

Natural resources

- New Zealand businesses are dependent on our natural resources which underpin much of our economic activity and support thousands of jobs. Our resource base offers major opportunities for future economic growth.
- New Zealand has abundant natural resources, and these provide us with a clear economic advantage. However, the challenge is how to make best use of these resources, while maintaining and enhancing the quality of our environment.
- The Government is helping by encouraging business to use our natural resources more effectively, and ensuring they use them responsibly. This includes improvements to the resource management systems to enable faster economic growth while maintaining strong environmental standards.

Infrastructure

- Resilient, efficient and coordinated infrastructure networks are vital to a well-running economy. Transport, energy and telecommunications networks enable the movement of people, goods and information around our country and around the world. They are vital to linking business with their customers, suppliers and employees, and for increasing the flows of information, trade and finance that businesses need to grow.
- Historically, New Zealand has had inconsistent investment in our infrastructure. Population growth and distribution, and the changing make-up of New Zealand's economy over the years, have also placed pressure on key infrastructure networks and changed the mix of services required from infrastructure. The devastating Canterbury earthquakes have had a major impact on New Zealand's second largest city, and restoring confidence in Christchurch's physical environment will be critical.
- The Government is focused on ensuring we better use our existing infrastructure, as well as making smart, transparent decisions about investment in future infrastructure, to make sure we get maximum benefit from our total infrastructure investment.



PART ONE

OVERVIEW OF THE ECONOMY BY SECTOR

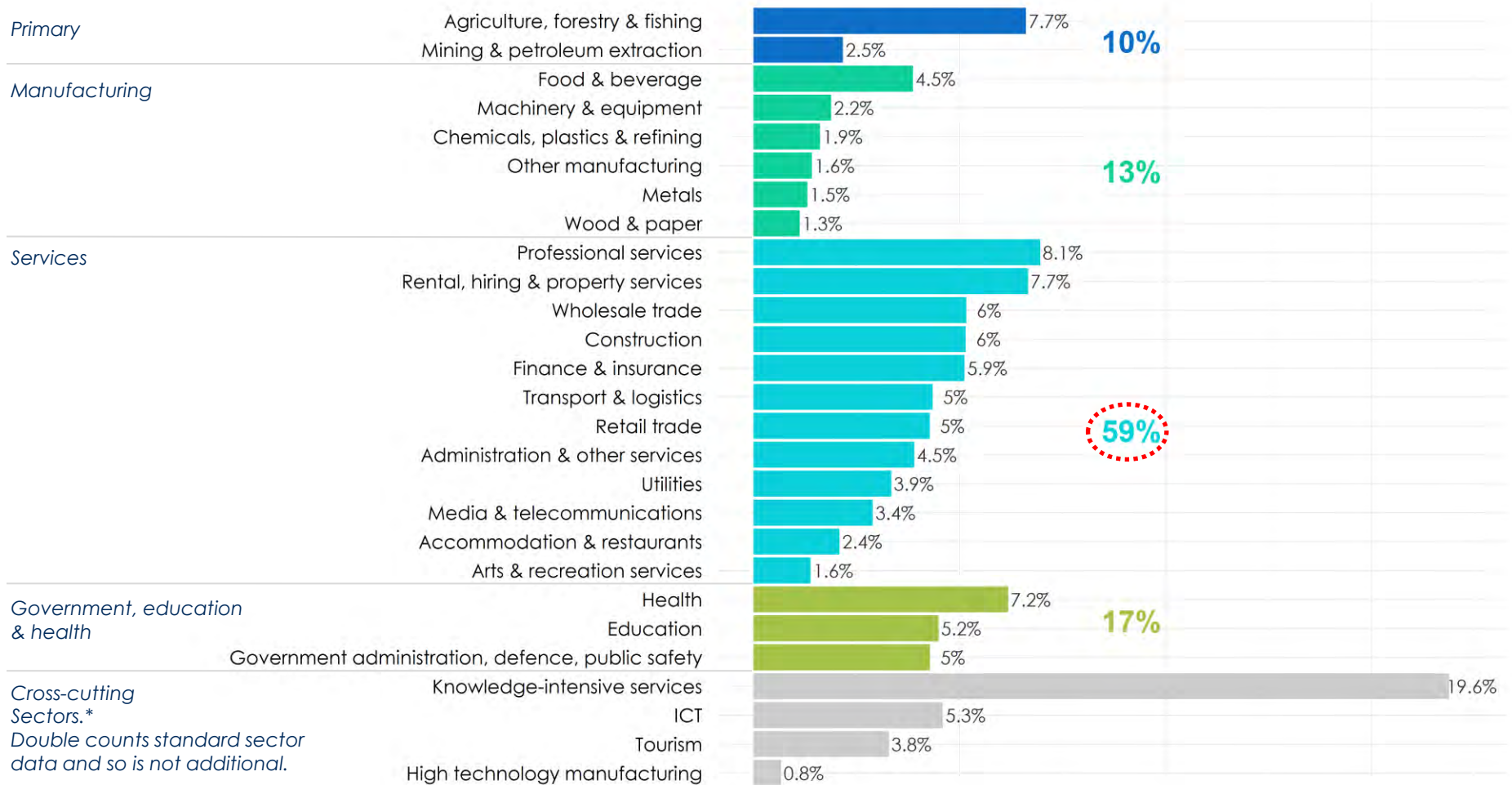
GDP AND PRODUCTIVITY

Share of GDP (value added) by sector

New Zealand has a complex and varied economy with a wide range of sectors; like other developed economies, services generate most GDP

Share of nominal GDP (total employing sectors)

% GDP; 2011



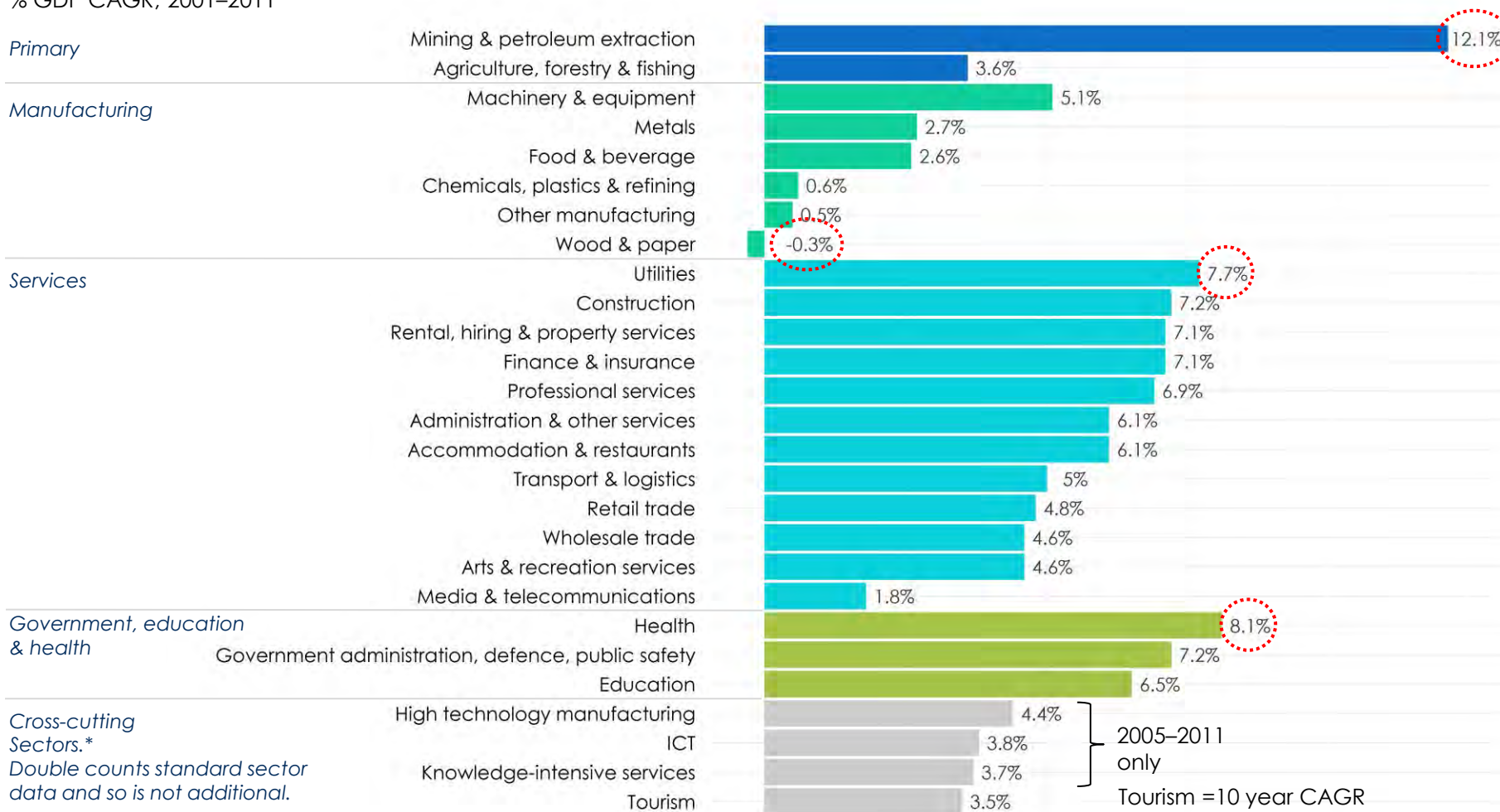
*Cross-cutting sectors have been double-counted and, tourism aside, have not been through the system of National Accounts so should be considered indicative only. Nominal GDP for 2011 used rather than 2013 real GDP because real GDP includes volume changes between 2010 and 2013, not only price changes. Source: Statistics New Zealand, National Accounts (2013)

GDP growth by sector

All sectors of the economy have grown, other than wood and paper manufacturing; petroleum and minerals grew fastest, followed by health and utilities

Nominal GDP 10 yr growth rate

% GDP CAGR, 2001–2011



*ICT, high technology manufacturing and knowledge intensive services data is only available since 2005; treat as indicative only.

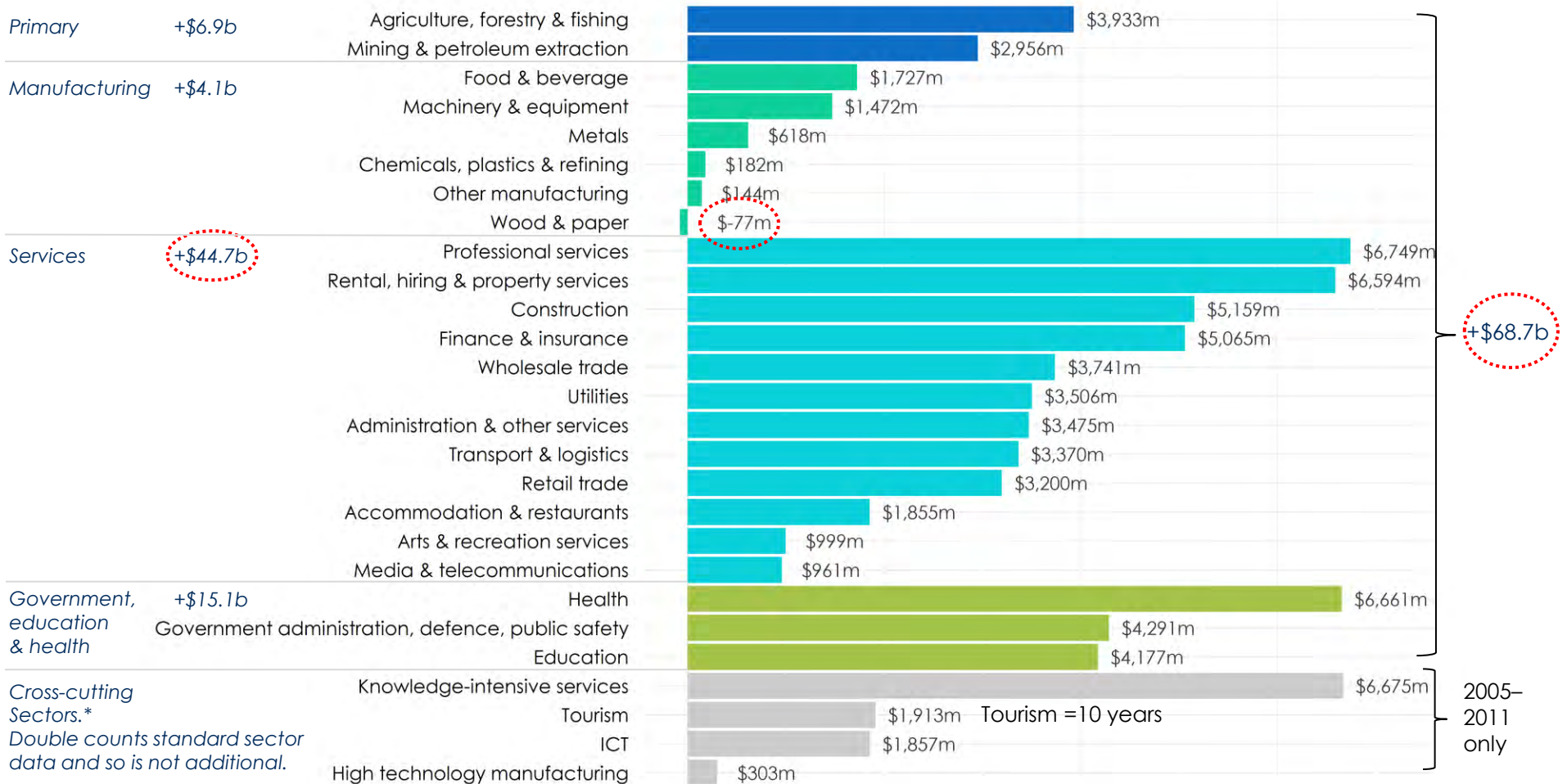
Source: Statistics New Zealand, National Accounts (2013).

Absolute growth (dollar value) in GDP by sector

In nominal dollar terms, the employing sectors expanded by \$68.7b in 2001–2011; of this services contributed \$44.7b

Absolute change in GDP (employing sectors)

NZ\$m; 2001–2011



*ICT, high technology manufacturing and knowledge intensive services data is only available since 2005; treat as indicative only.

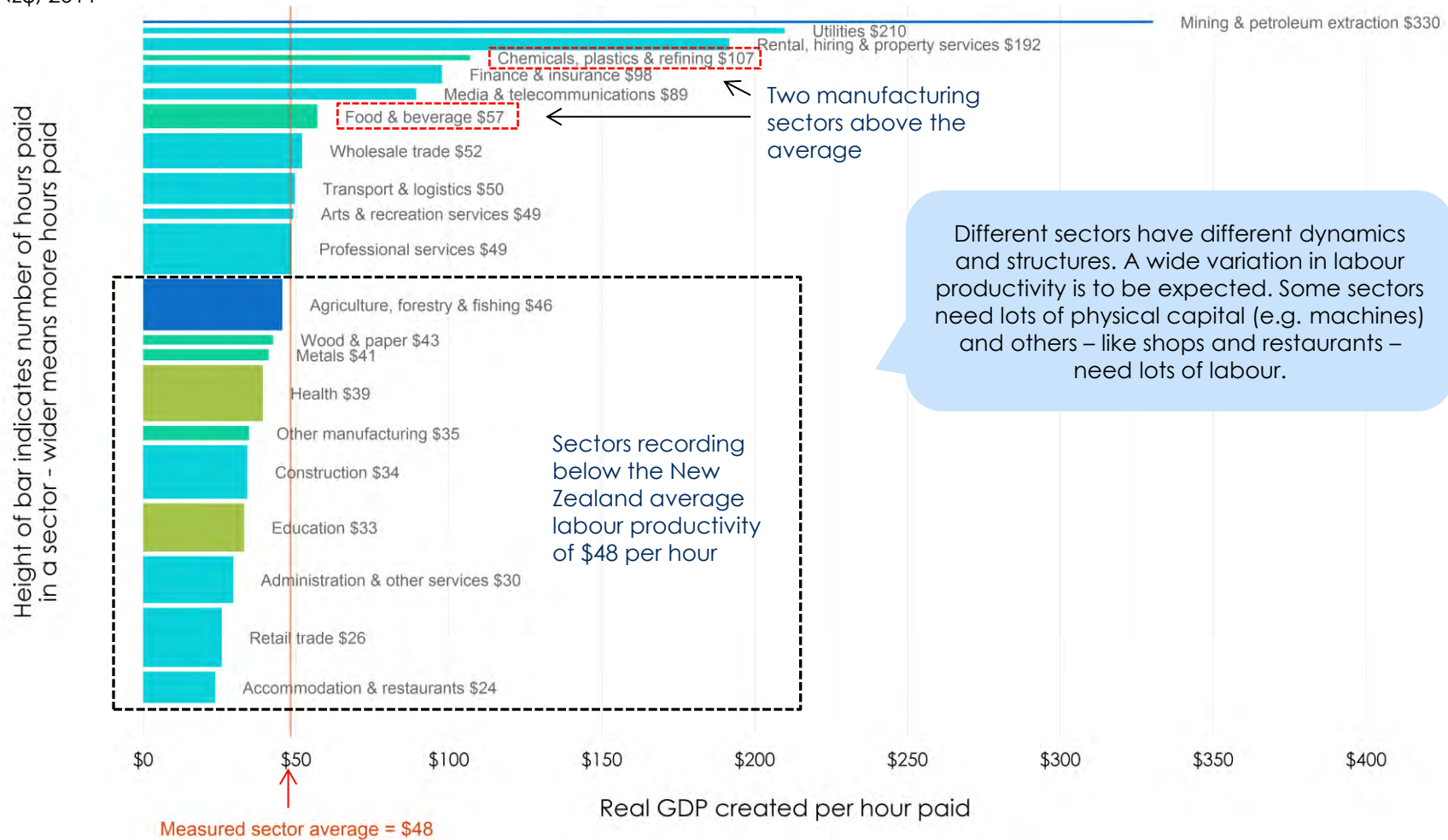
Source: Statistics New Zealand, National Accounts (2013).

Labour productivity by sector

There is a wide variation in labour productivity between sectors; most workers are employed in lower labour productivity sectors

Sector employment (total hours paid) vs sector GDP (real) per hour paid

NZ\$, 2011



Note: data for government administration, education, health, ICT, high technology manufacturing and knowledge intensive services is not measured.

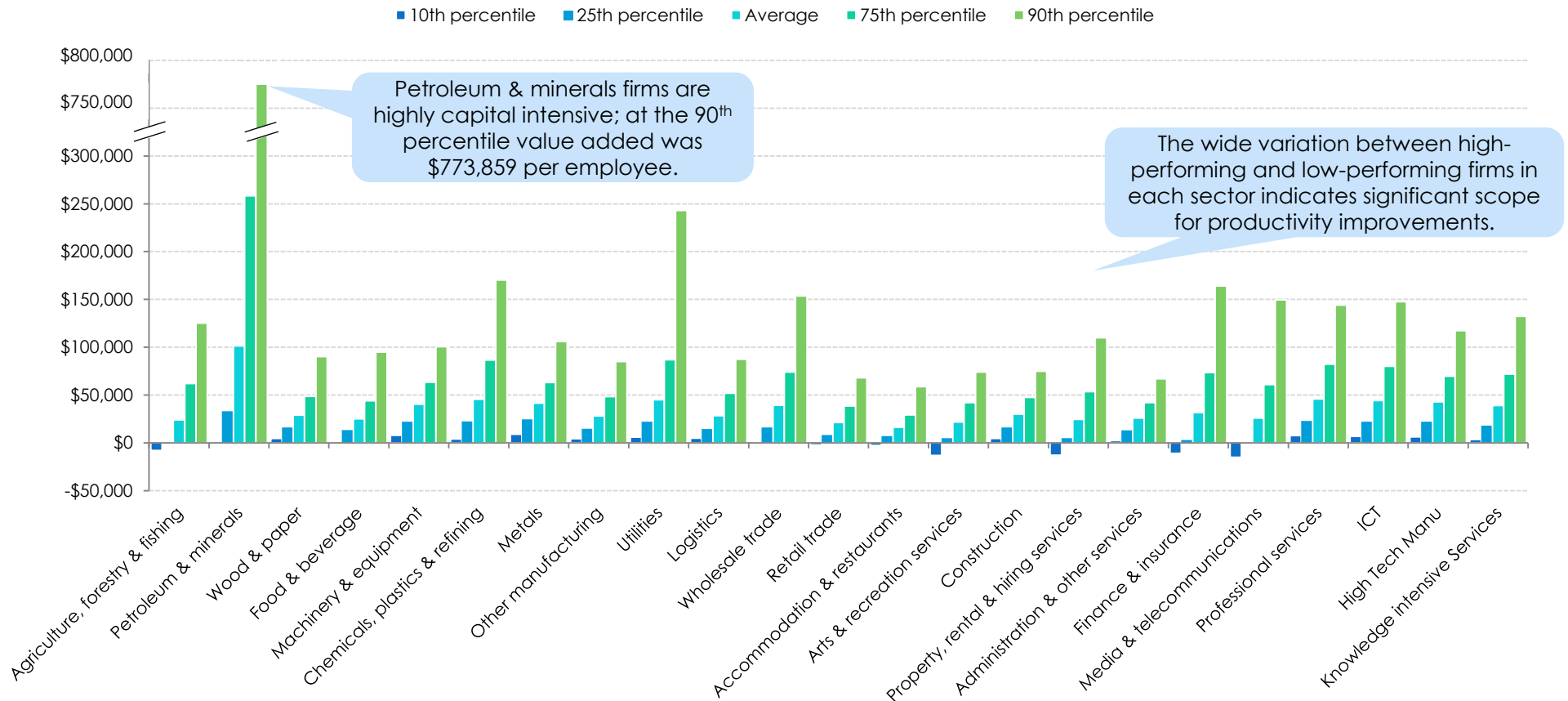
Source: Statistics New Zealand, National Accounts – Productivity Input Series year ended March 2012 (2013).

Labour productivity within sectors

Labour productivity also varies within sectors; every sector has high-performing and low-performing firms

Value added per employee, measured at selected percentile of the labour productivity distribution

Value added per employee; 2010



Note: government, education and health sectors are not included owing to the difficulty in measuring sectors whose primary objectives are social rather than financial.

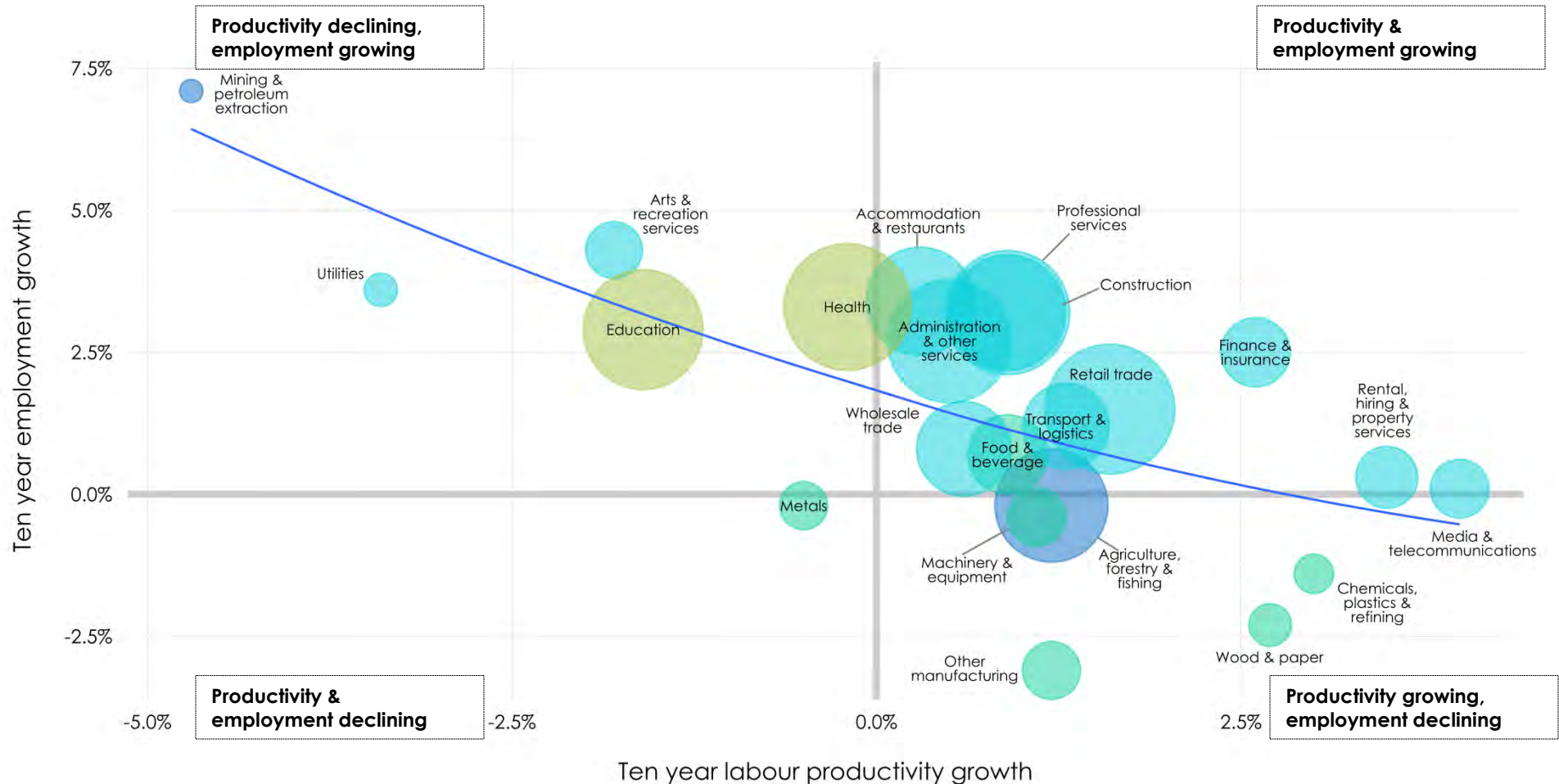
Source: Statistics New Zealand, customised data drawn from the Longitudinal Business Database (2012), customised data drawn from the Annual Enterprise Survey(2010), Ministry of Business, Innovation & Employment calculations.

Labour productivity growth

Labour productivity growth varies by sector; while some sectors are increasing productivity, others are becoming less productive

10 year labour productivity growth (x axis) vs 10 year employment growth (y axis); size of bubble indicates number employed

Labour productivity CAGR; 2001–2011



Note: productivity data is unavailable for the cross-cutting, government, education and health sectors

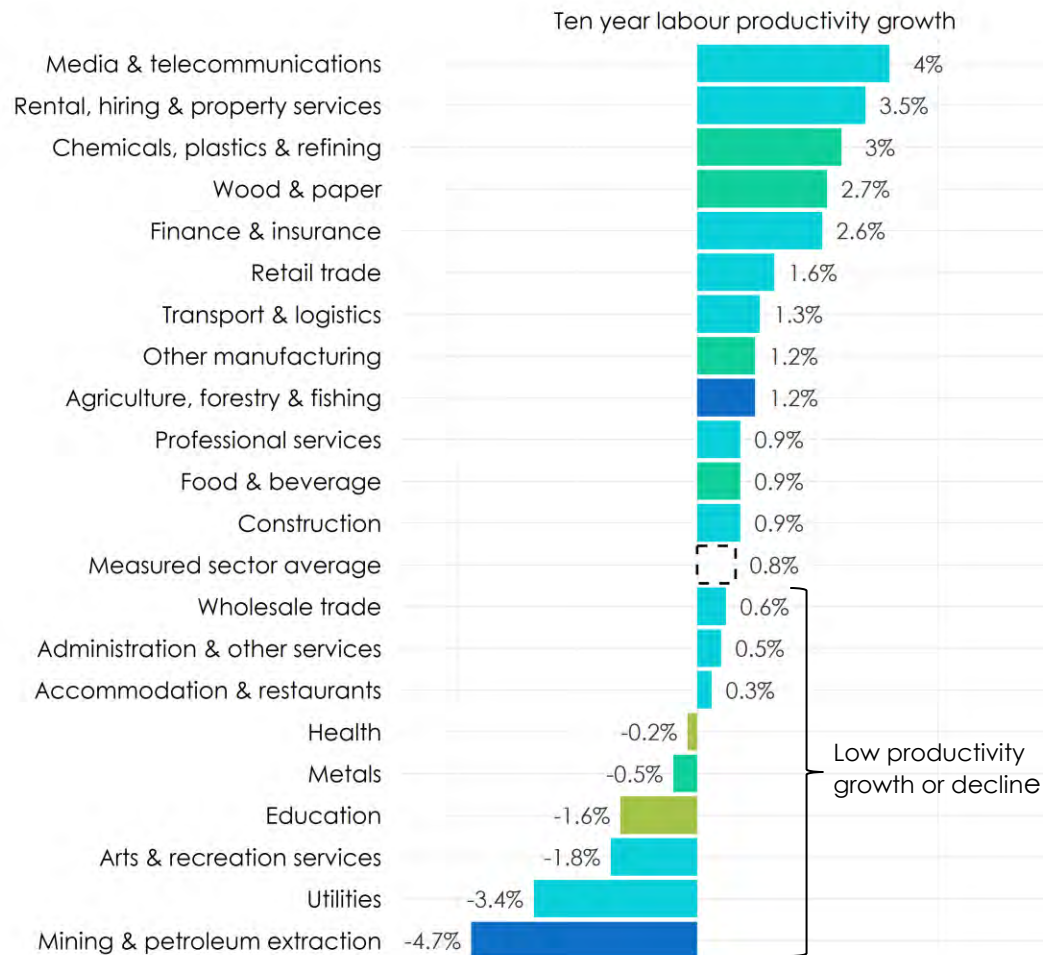
Source: Statistics New Zealand (2013), National Accounts, Linked Employer-Employee Database, and customised data drawn from the Quarterly Employment Survey

Sector labour productivity growth versus employment growth

Sectors increasing productivity are often reducing employment; sectors creating employment often show low/negative productivity growth

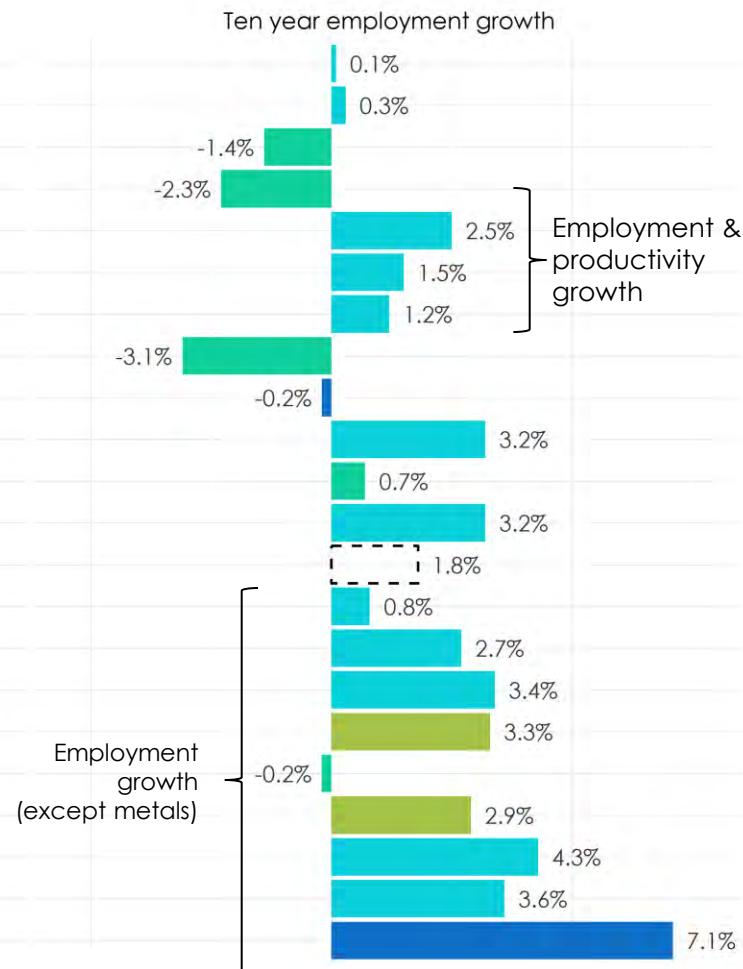
10 year labour productivity growth

Labour productivity CAGR; 2001–2011



10 year employment growth by employing sector

Employment CAGR; 2001–2011



Note: data is unavailable for cross-cutting sectors and government, education and health.

Source: Statistics New Zealand (National Accounts, Annual Enterprise Survey and Linked Employer-Employee Database)



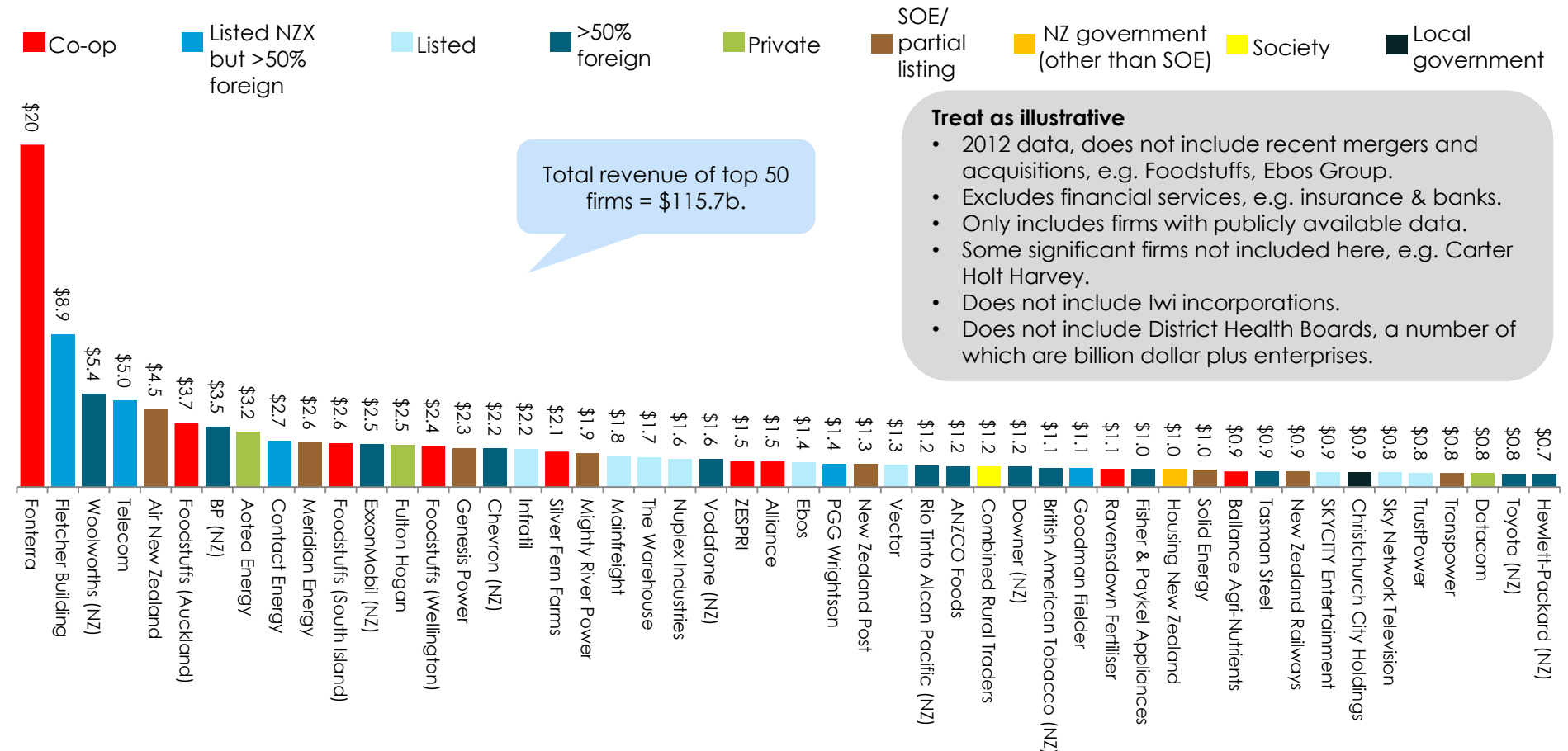
FIRMS AND EMPLOYMENT

Largest New Zealand resident firms by total global revenue

New Zealand has one very large firm, Fonterra, and a long tail of large to mid-sized firms

50 largest NZ firms by total global revenue

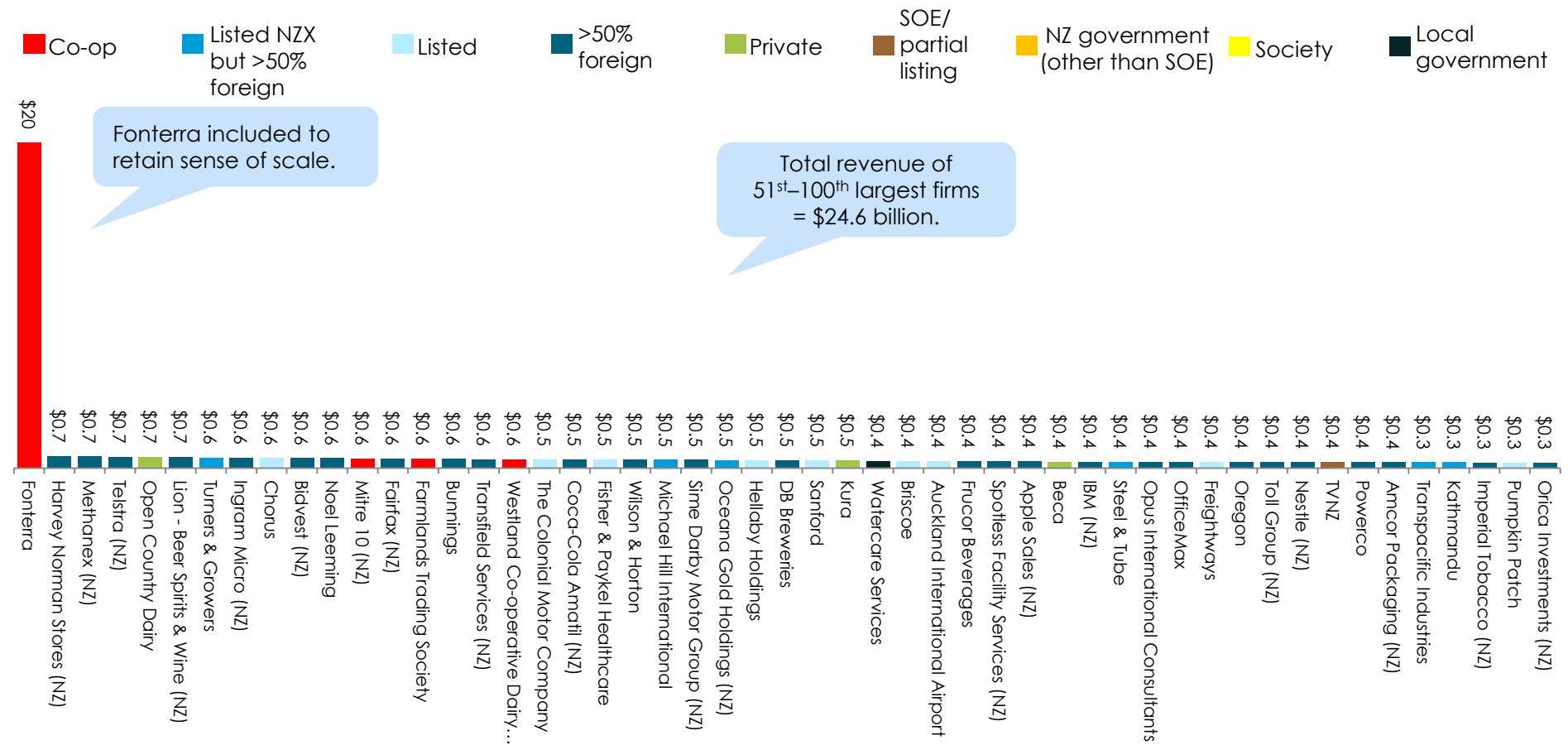
NZ\$b; 2012



Largest New Zealand resident firms by total global revenue

51st–100th largest NZ firms by total global revenue

NZ\$b; 2012



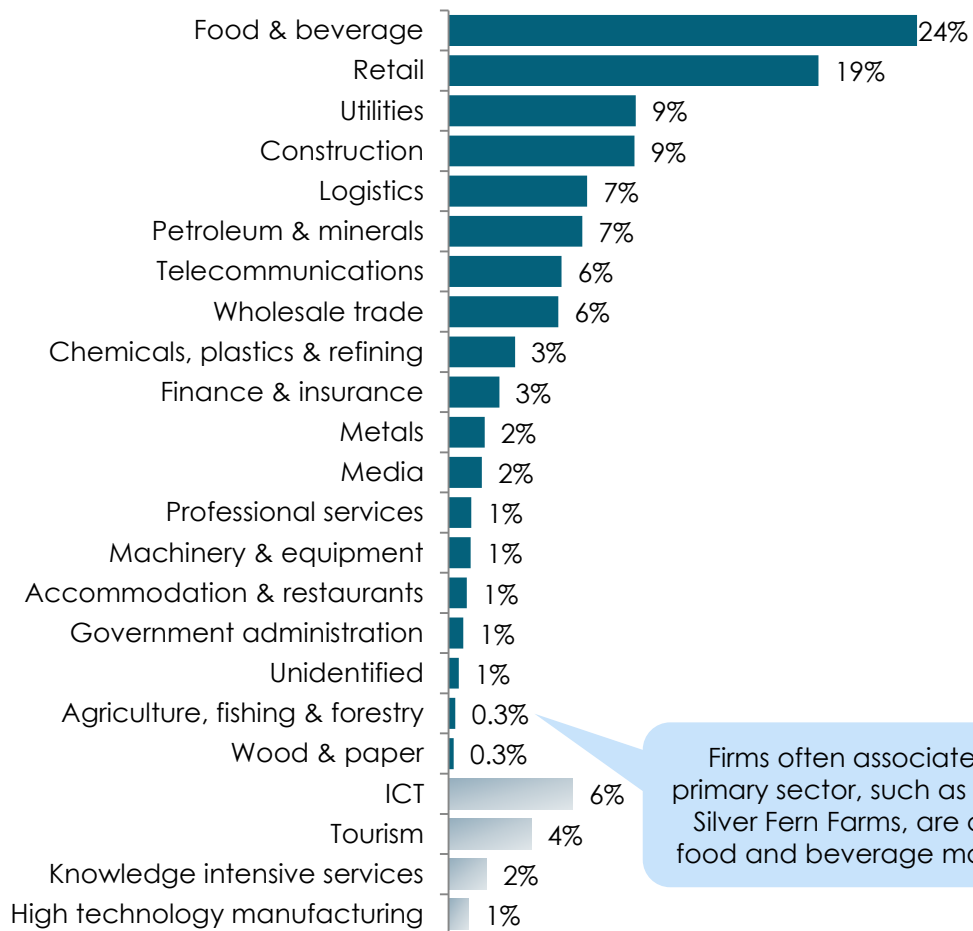
Source: New Zealand Management Magazine (2012); various financial years; includes some estimates and excludes firms for which data not available. Used with permission

Largest firms by sector and ownership

Food and beverage generates a quarter of total revenues; revenues for cooperatively owned firms are 27% of the total

Share of global revenue of largest 100 NZ firms by sector

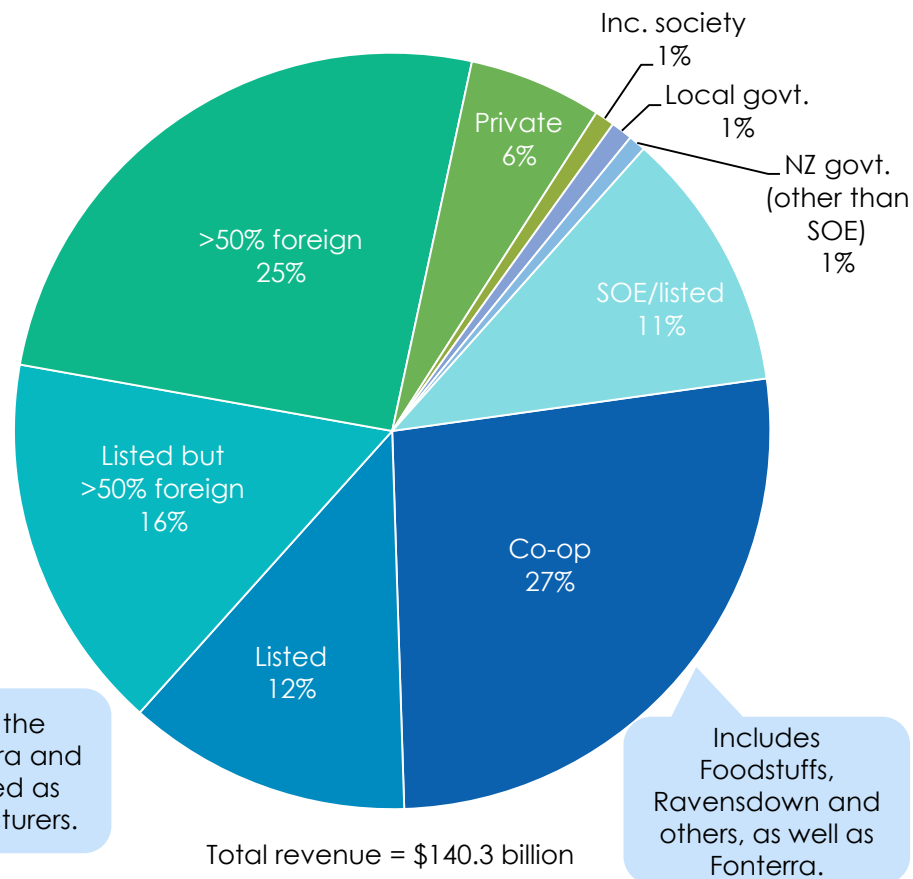
% of top 100 revenue; 2012



Firms often associated with the primary sector, such as Fonterra and Silver Fern Farms, are classified as food and beverage manufacturers.

Share of global revenue of largest 100 NZ firms by ownership

% of top 100 revenue; 2012



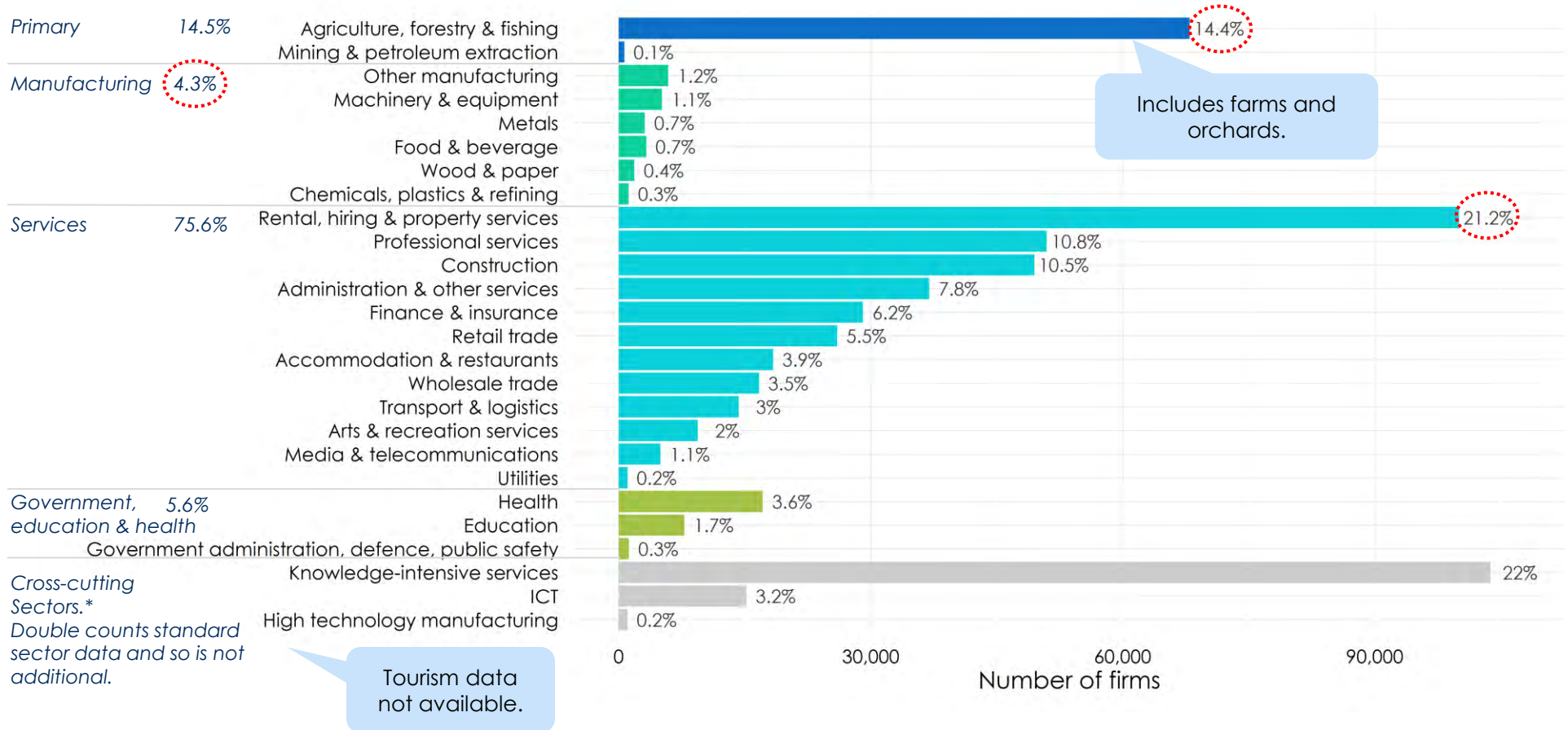
Note: telecommunications refers to retailers such as Telecom and Vodafone; Media refers to firms such as TVNZ or Fairfax; ICT, knowledge intensive services and high technology manufacturing have been double-counted. Source: New Zealand Management Magazine (2012); used with permission. MBIE analysis; contains estimates and assumptions

Total firms by sector

There is a wide variation in the number of firms in each sector

Share of firms by sector, classified by principal activity of firm

% of firms; 2013



*Cross-cutting sectors have been double-counted; data unavailable for tourism sector.

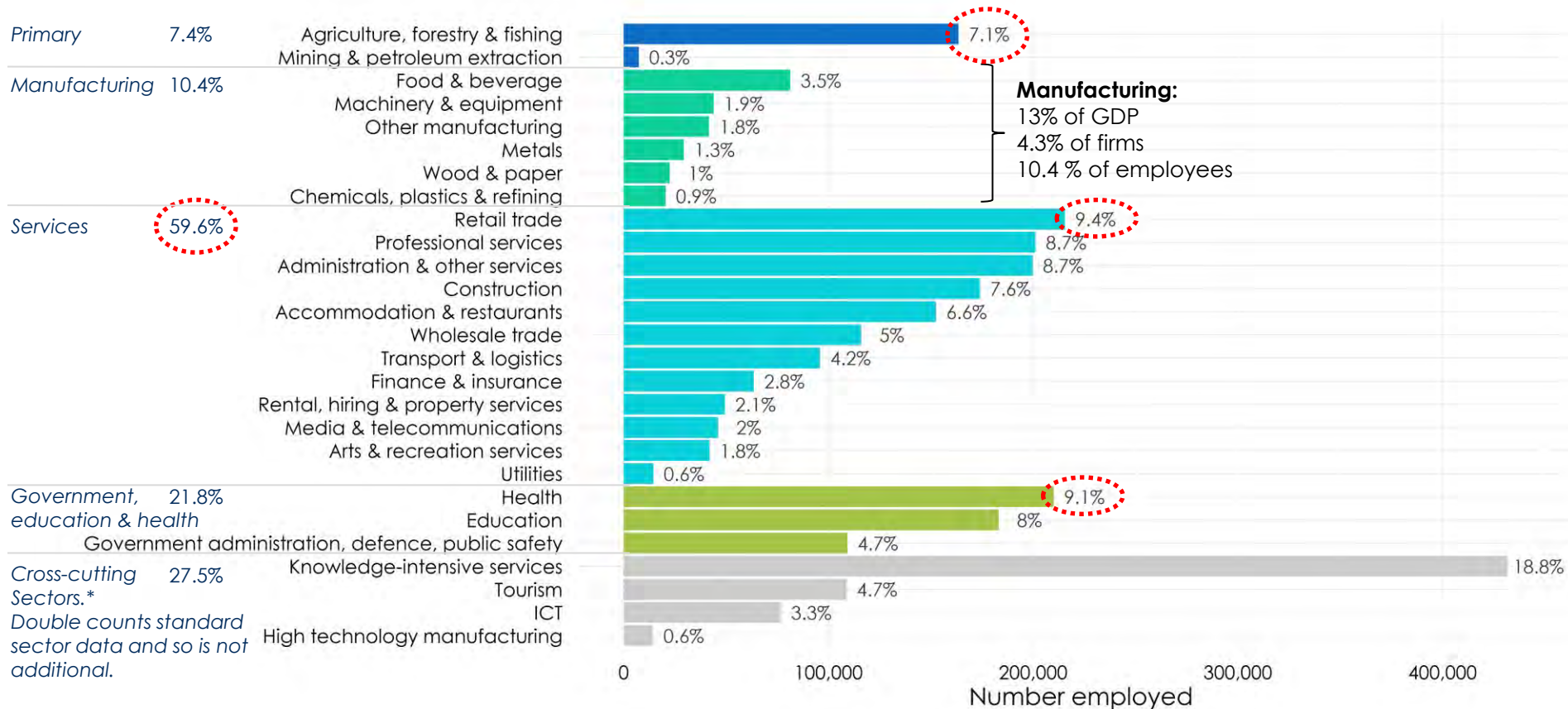
Source: Statistics New Zealand, Business Demography Statistics (2013)

Total employment by sector

Similar to other developed economies, the majority of jobs are in the services sectors; agriculture, forestry and fishing is still a significant employer

Share of employment by sector

% employed (including self-employed); 2012



Note: total employment does not equal 100% as 0.8% of employment cannot be allocated to sectors.

*Employment in cross-cutting sectors has been double-counted

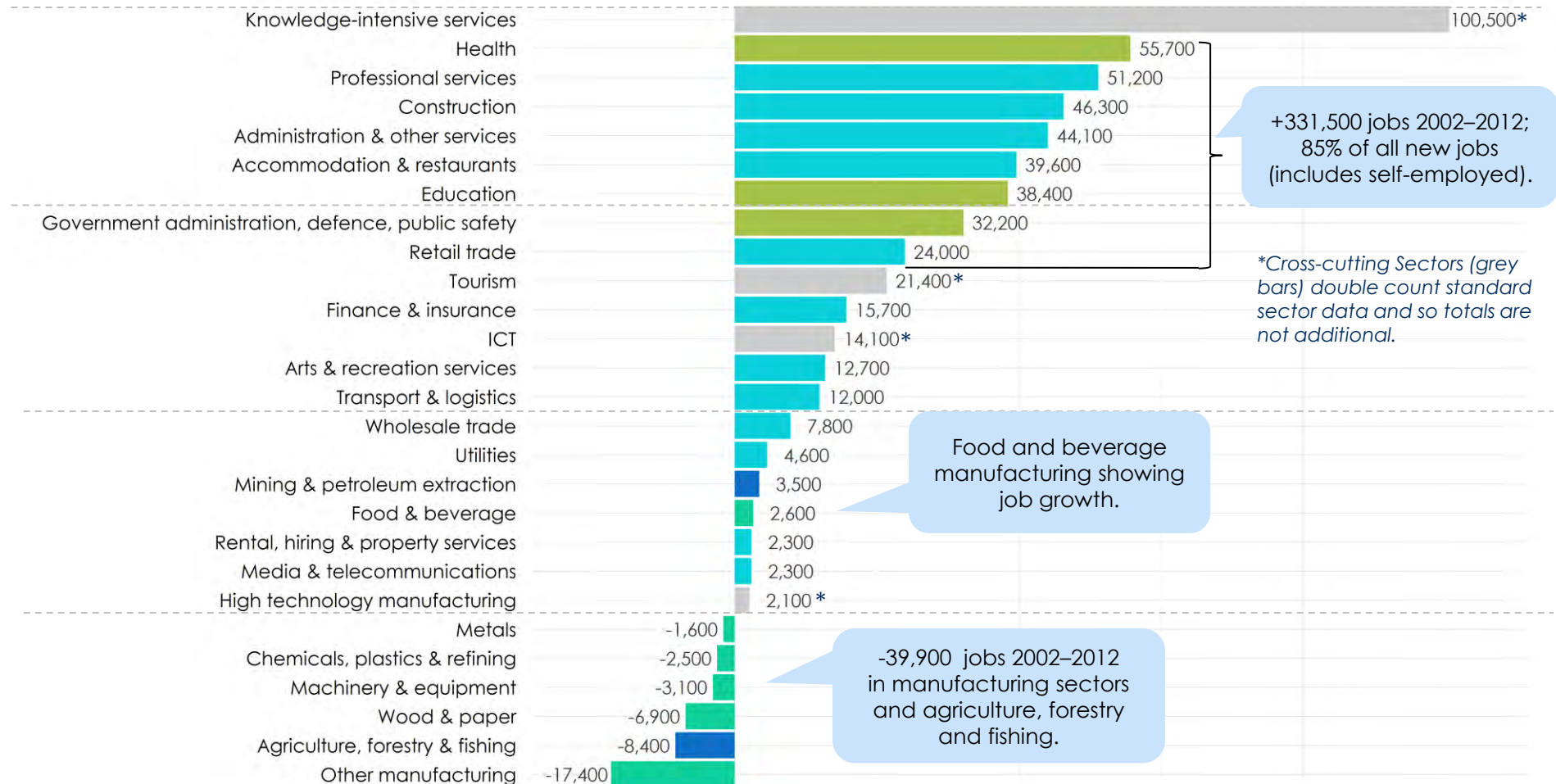
Source: Statistics New Zealand (2012), Linked Employer-Employee Database and Tourism Satellite Account

Change in employment by sector

Jobs added in service sectors and in government, education and health have significantly outweighed jobs lost in manufacturing

Absolute change in sector employment

Employed (including self-employed); 2002–2012

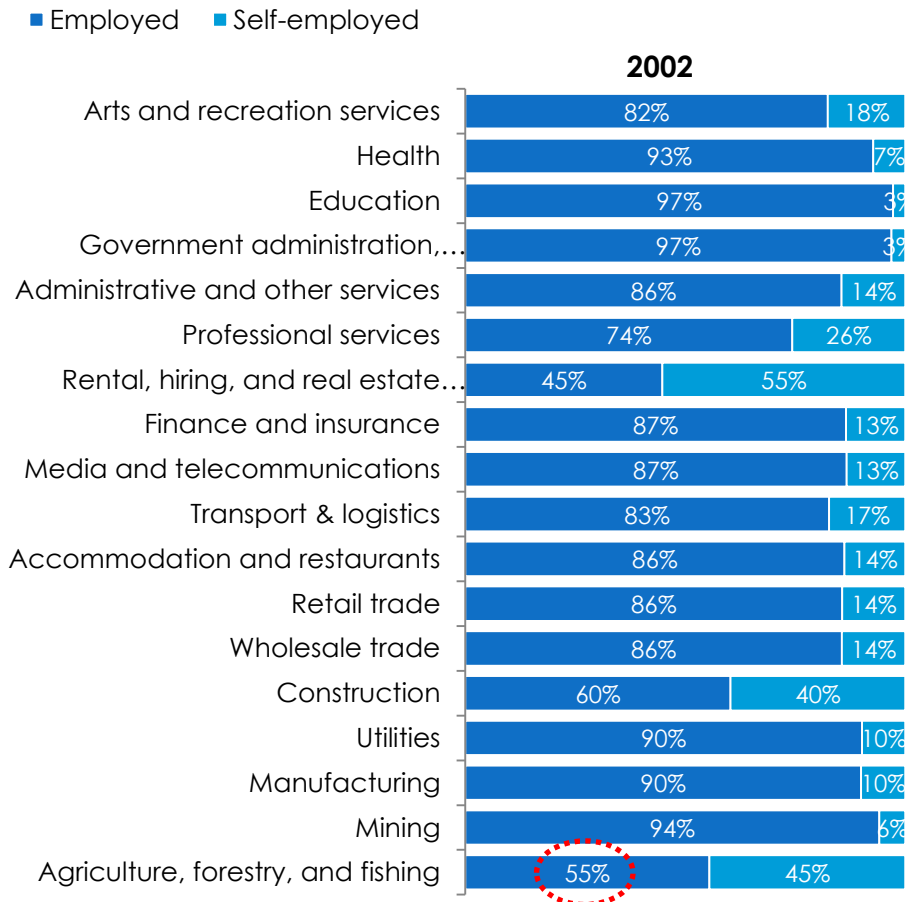


Composition of workforce: employed versus self-employed

The rental, hiring and real estate and construction sectors have the highest percentage of self-employed workers

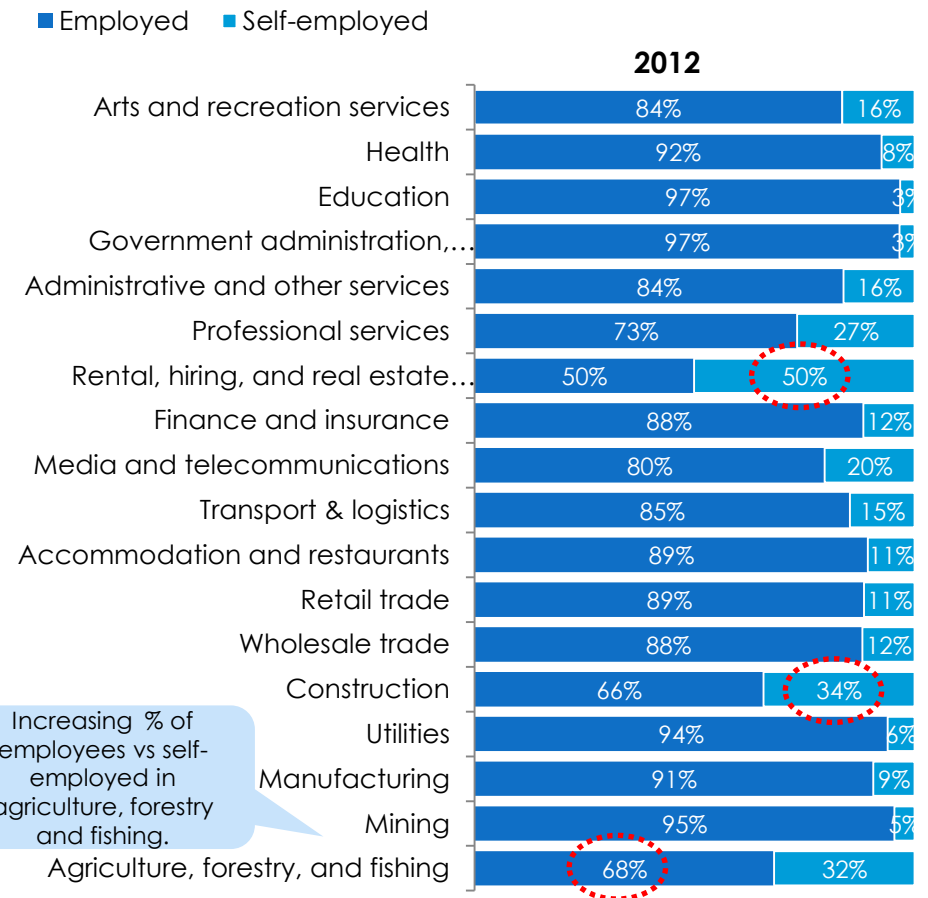
Employed and self-employed by sector

% workers, 2002



Employed and self-employed by sector

% workers, 2012



Employees by firm* size

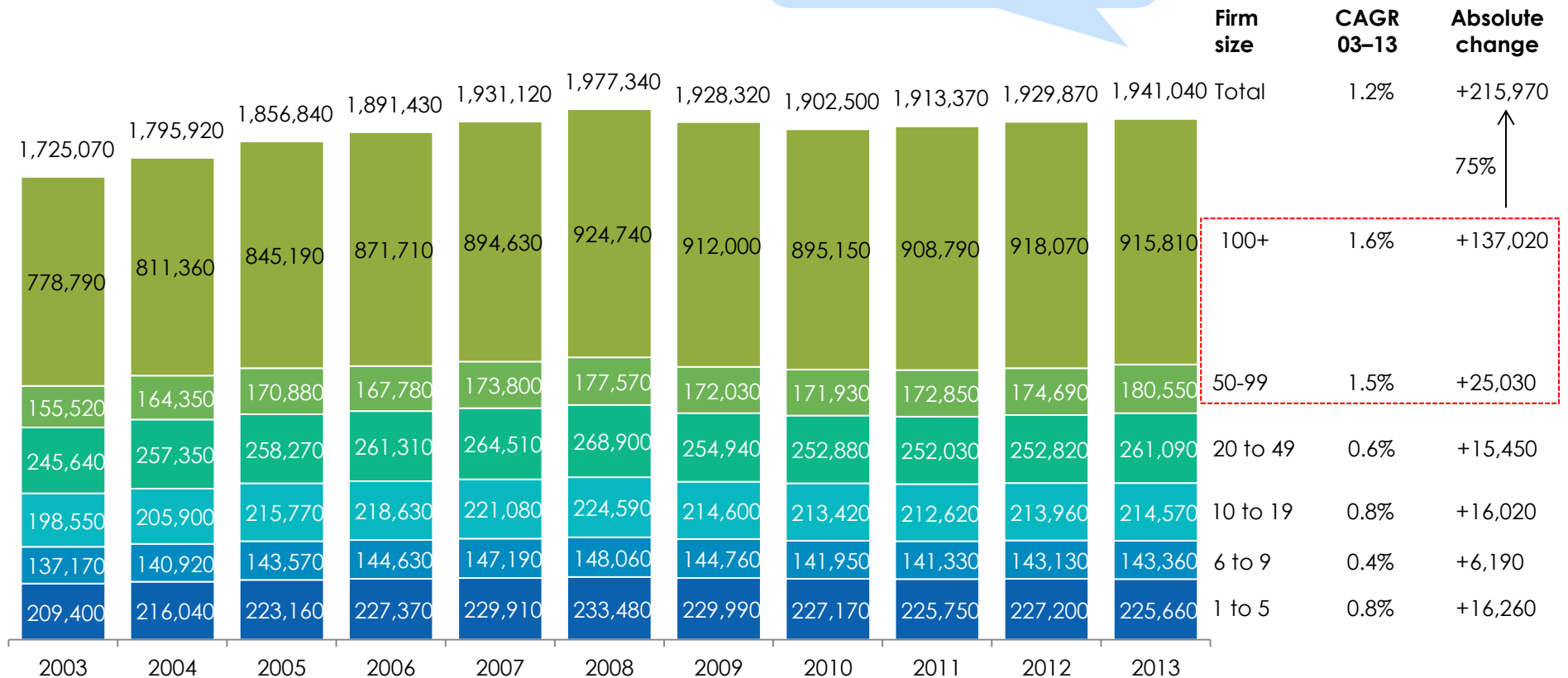
Larger firms (50+ and 100+ employees) generating employment at a faster rate than smaller firms

Employment (head count) distribution by firm size

Employees; 2003–2013

Note: excludes self-employed and other non-employing businesses.

Firms with 50 or more employees generated 162,000 jobs or 75% of job growth since 2003. They employ 56% of all workers (excluding self-employed)



Note: employment as at February 2013

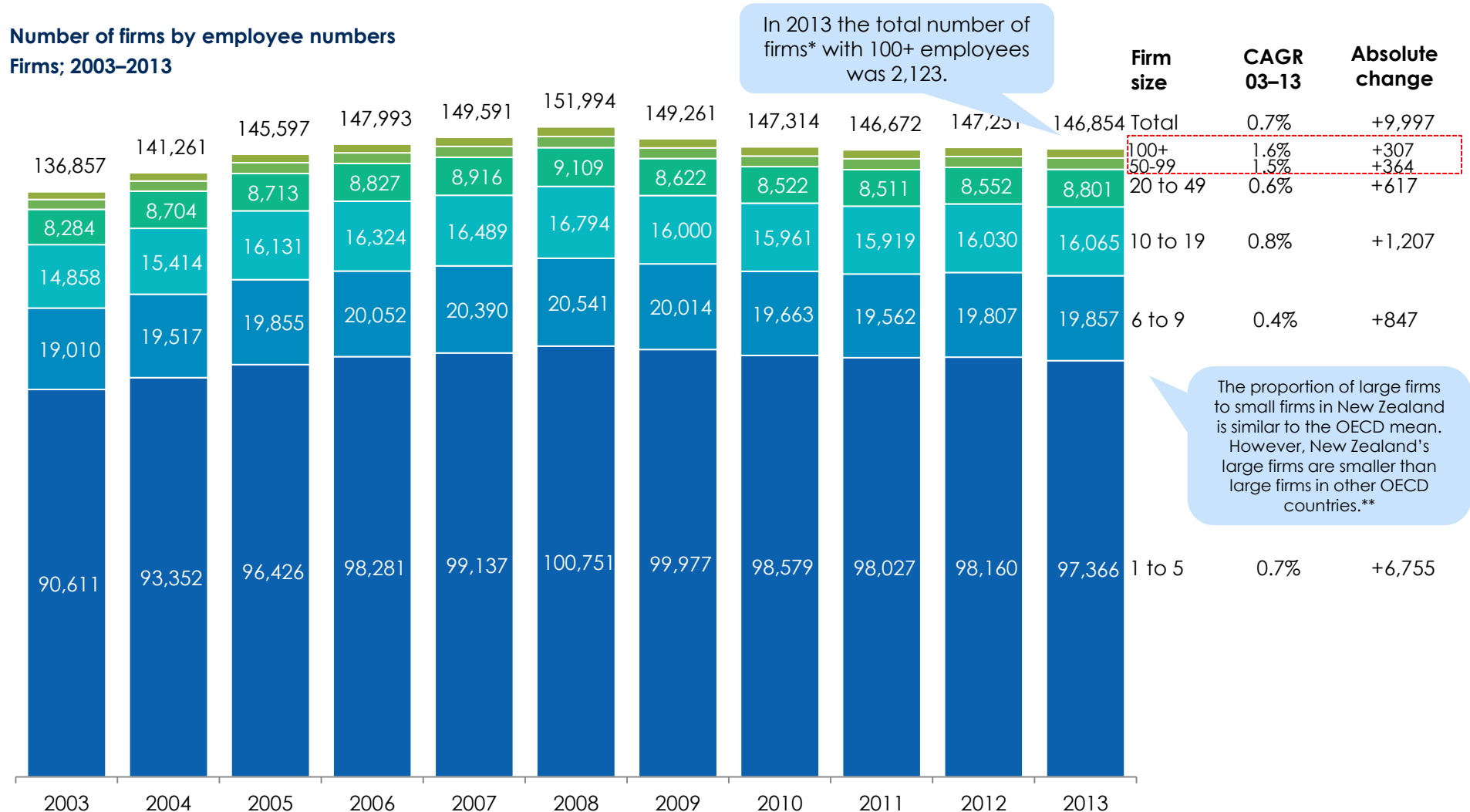
*Includes all entities, some of which are not firms such as those in charities, government, education and health

Source: Statistics New Zealand, New Zealand Business Demography Statistics (2013)

Firms* by employment size

Firm numbers peaked in 2008; in percentage terms the economy added larger firms (50+ and 100+ employees) at a faster rate than smaller firms

Number of firms by employee numbers
Firms; 2003–2013



Includes all entities, some of which are not firms such as those in charities, government, education and health

Source: Statistics New Zealand, Business Demography Statistics (2013). Employment as at February 2013

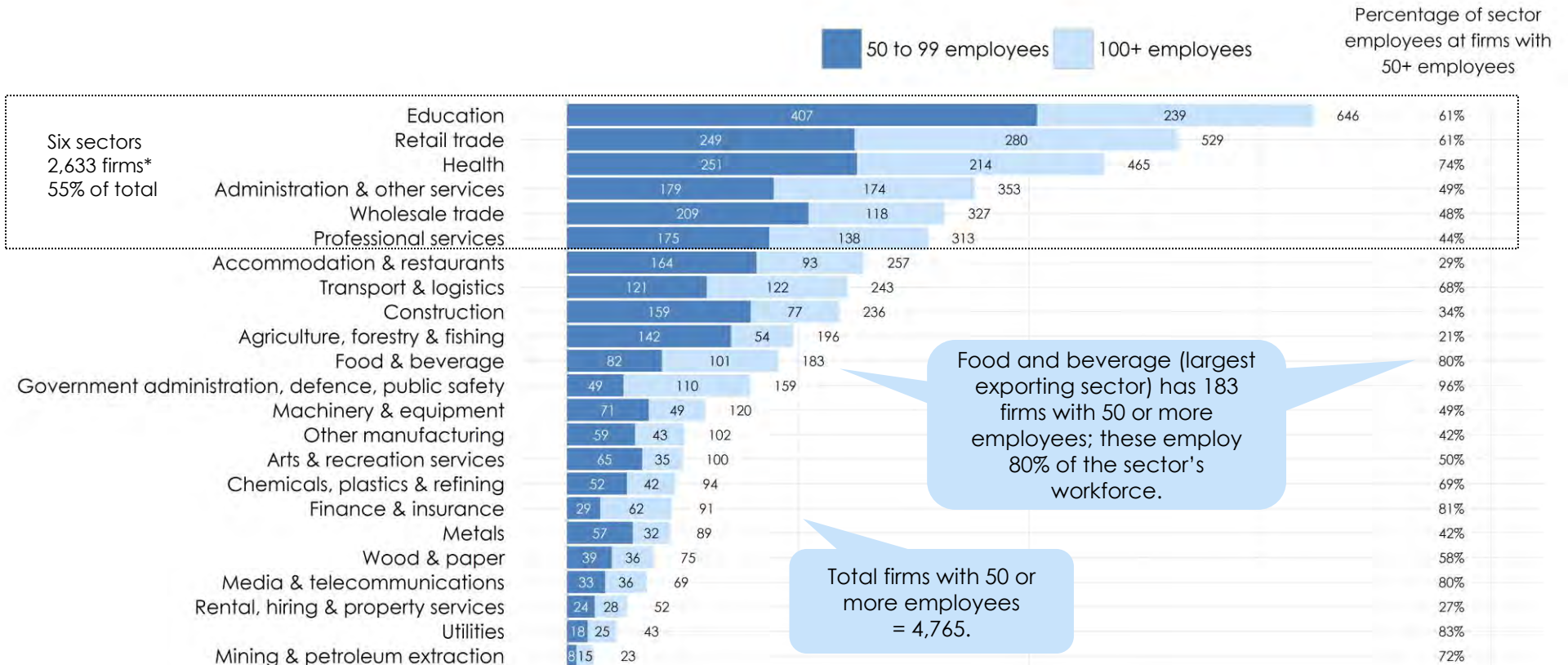
**Economic Development Indicators, 2011. Available from <http://www.med.govt.nz/about-us/publications/publications-by-topic/economic-indicators>

Large firms* by sector

Large firms are largely concentrated in the domestically focused economy

Firms with 50–99 and 100+ employees

Firms; % total sector employment; 2013



*Includes all entities, some of which are not firms such as those in charities, government, education and health.

Source: Statistics New Zealand, Business Demography Statistics (2013)



EXPORTS

Exports by sector: data limitations

This report attributes exports to sectors by mapping products and services to the sector most likely to produce them

Classifying exports by sector

Statistics on exports are collected according to product or service type and not according to the sector that produced them.

To obtain insight into the export performance of sectors for this report, Statistics New Zealand prepared a concordance that maps HS codes (how goods exports are classified) to ANZSIC codes (how sectors are classified).

This concordance allocates exports to sectors based on the type of product the sector is most likely to produce. Thus logs and fruit are attributed to the agriculture, forestry and fishing sector, while sawn wood products are attributed to the wood and paper sector, and milk powder and frozen beef are attributed to the food and beverage manufacturing sector.

Tourism exports

International tourism expenditure data was sourced from the Tourism Satellite Account published by Statistics New Zealand. A breakdown by main product allowed spending on transport, retail trade, restaurants and hotels and education to be attributed to sectors.

Export education

The term 'export education' is usually used to refer to spending by international students in New Zealand. Spending by international students in New Zealand for more than a year is included in the travel exports data but not in the contribution of international visitor expenditure to total tourism exports.

The 2012/13 value of international education is measured at \$2.6 billion. See report by Infometrics available from the Education New Zealand website: www.enz.govt.nz

The education sector also provides education services overseas. This is a sub-set of commercial services exports.

Treat with caution

The export data for sectors provided in this report is believed to be broadly correct, but should be treated with caution. The method used means that some sectors are shown as having no exports, which in some cases is not factually true.

The clearest example is the wholesaling sector. Many wholesalers operating in New Zealand export products on behalf of the producers of those products, or purchase and on-sell them overseas. These exports are attributed to the sector that manufactured, grew, harvested or mined them, rather than to the wholesaling sector.

Experimental data from Statistics New Zealand indicates that the value of goods exports by wholesale trade firms was around \$8b in 2011.

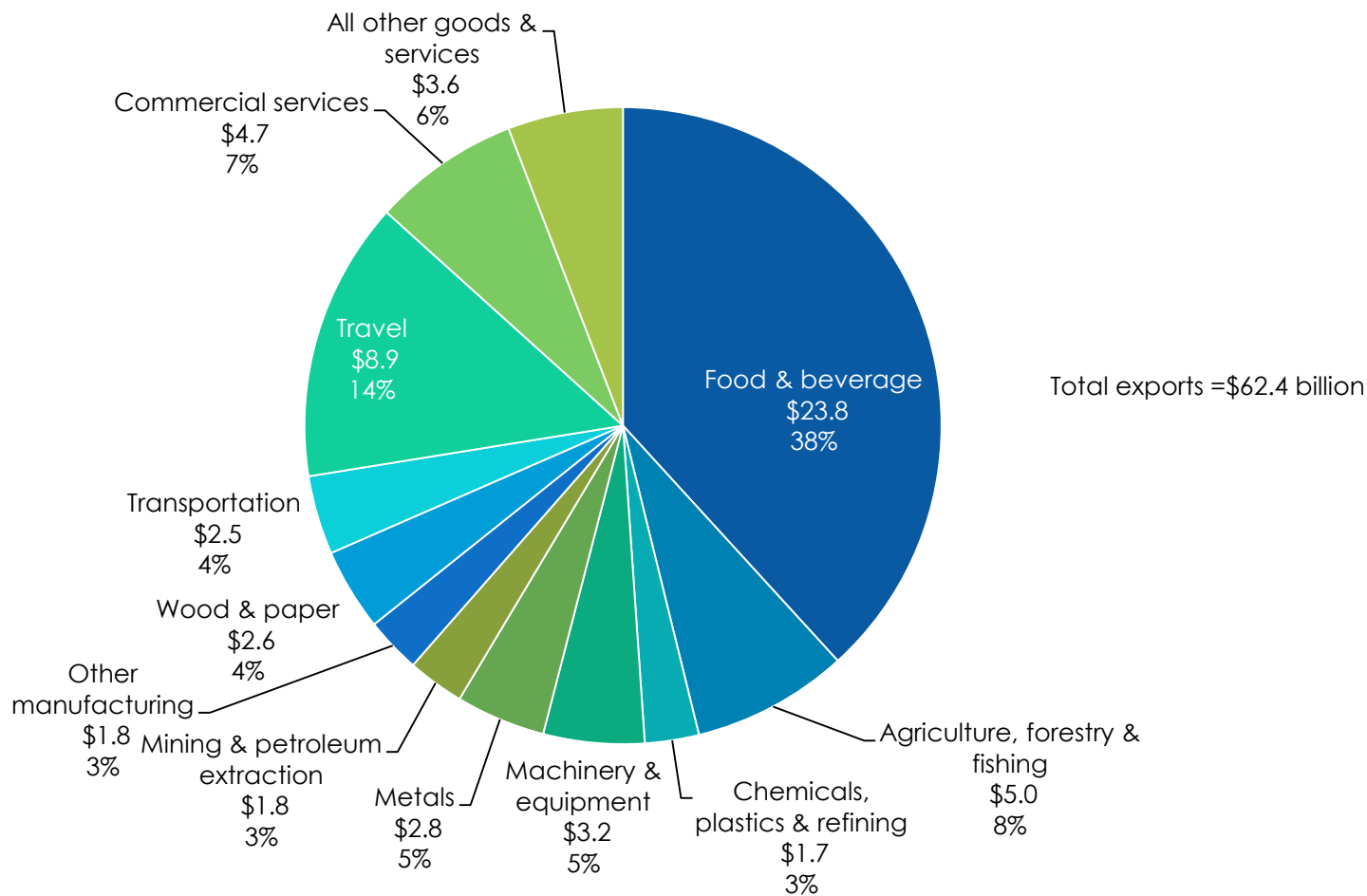
See Appendix for further details.

New Zealand exports

New Zealand exported \$62.4b worth of goods and services in 2013; exports occurred across a wide range of categories; food and beverage stands out for absolute size

Total exports

NZ\$b; goods exports by sector (ANZSIC); services exports by type; year to June 2013

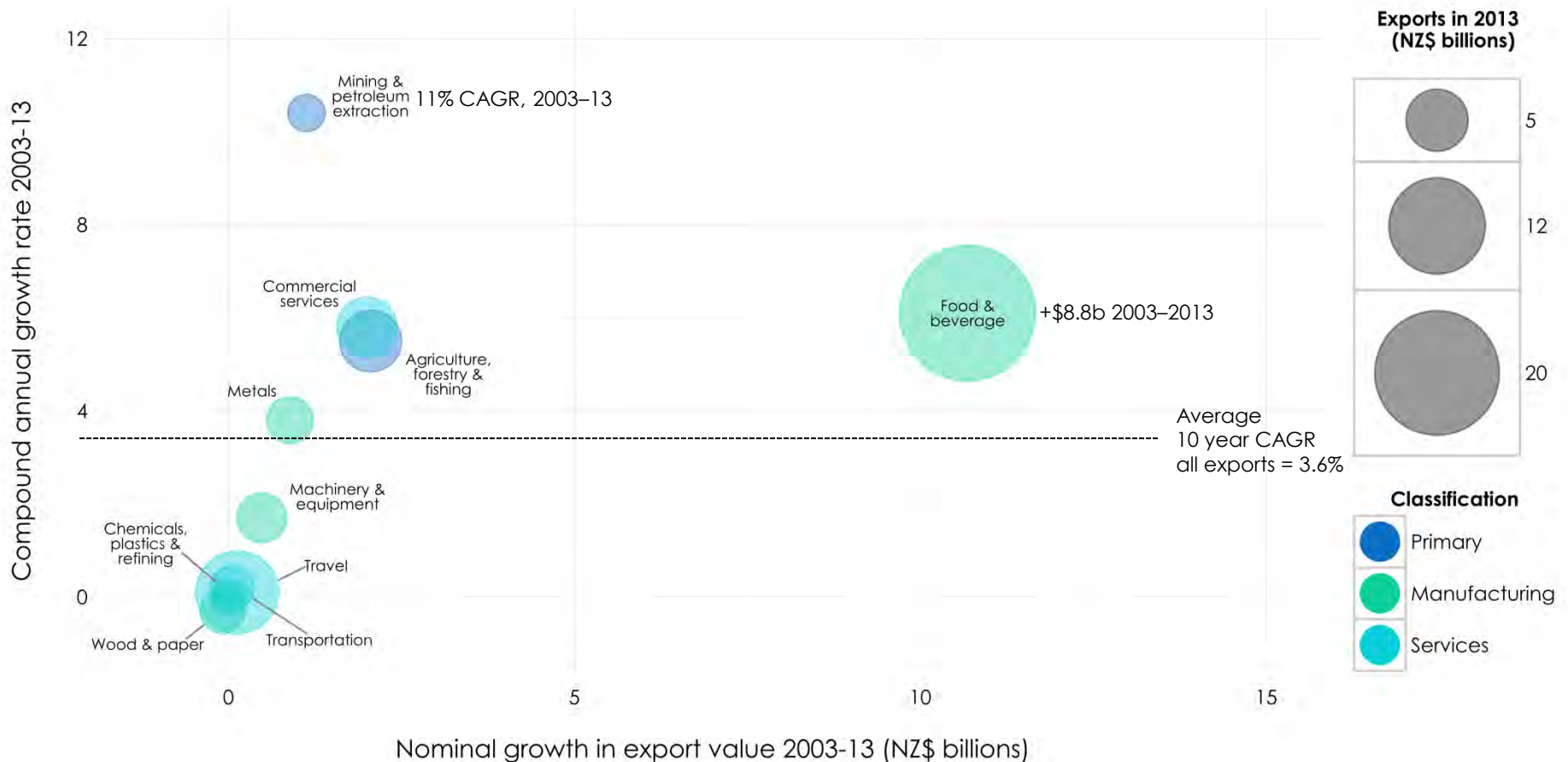


Export growth

The food and beverage sector has added the most export value in the last decade (\$8.8b), but the fastest growth has been in petroleum and minerals (11% p.a.)

Export growth matrix: absolute value growth vs rate of growth vs export value in 2013

NZ\$b; nominal values; 2013



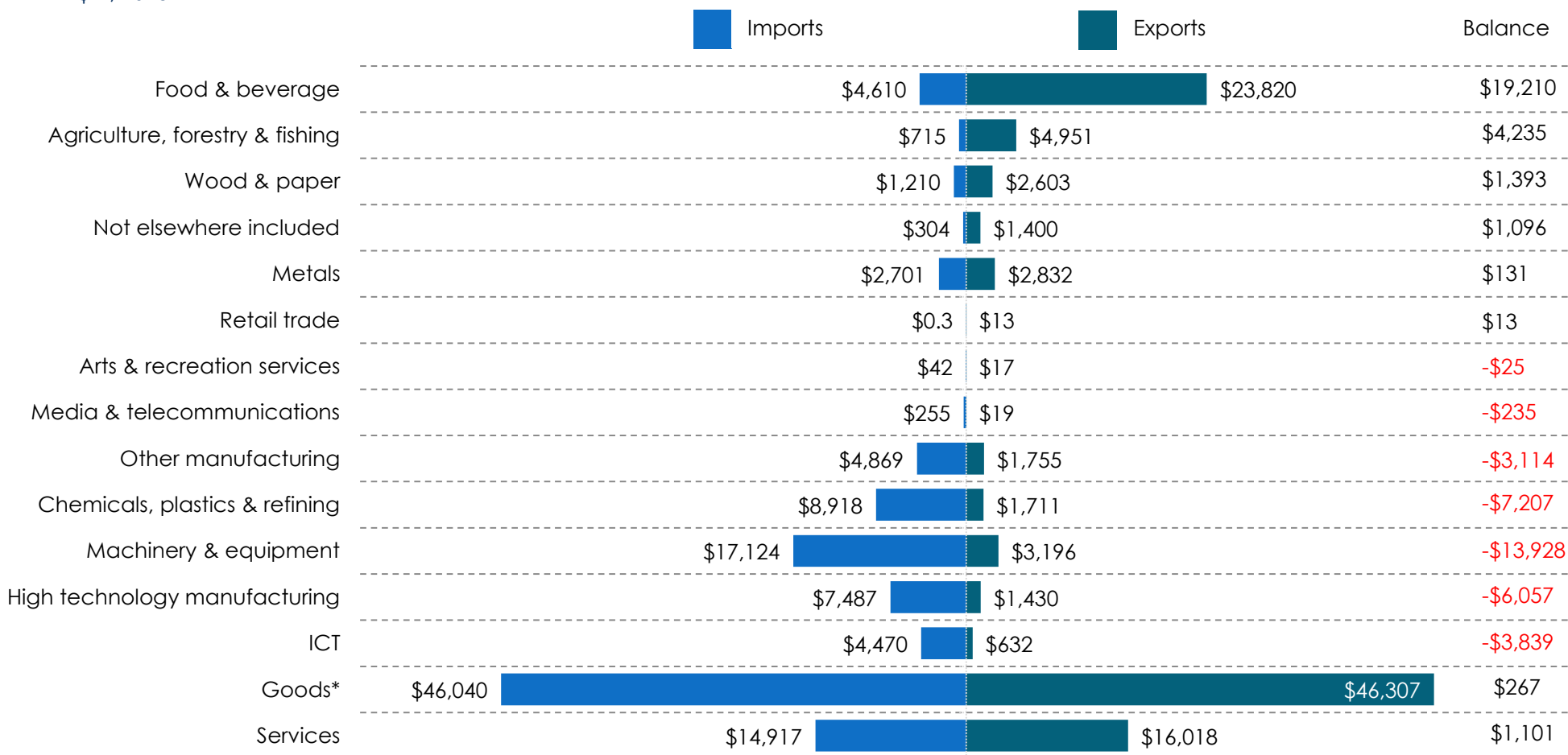
Source: Statistics New Zealand, Merchandise Exports, and Balance of Payments for service exports (2013)

Trade balance by sector: 2013

New Zealand has a trade surplus in food and beverage, primary products and services and a trade deficit in 'other' manufactured goods and petroleum

Import and export data by sector

NZ\$m; 2013



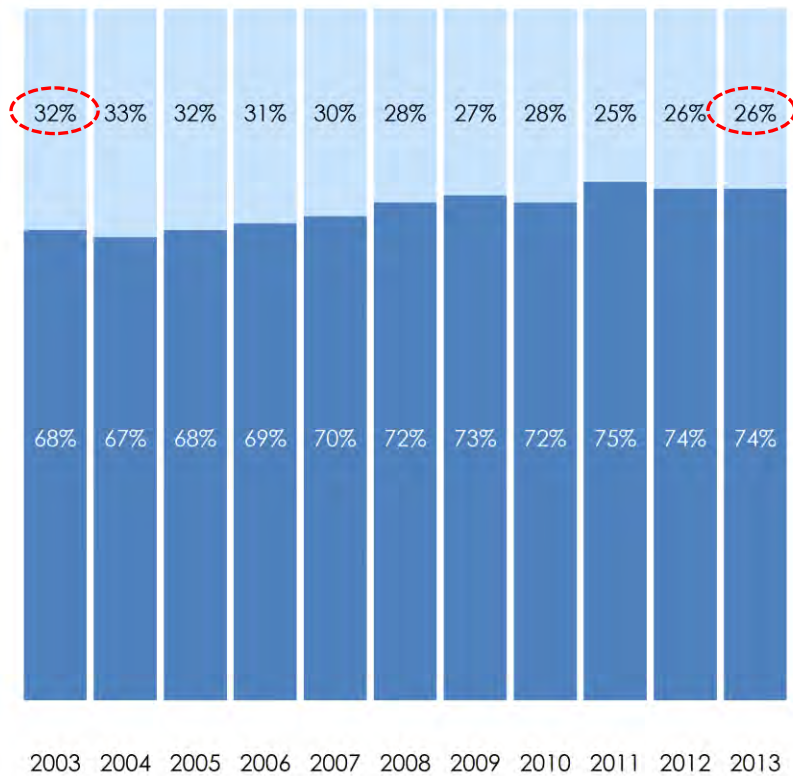
*Cross-cutting sectors have been double-counted. Includes exports and re-exports. Source: Statistics New Zealand, Merchandise Trade Data for imports and exports (2013) and Balance of Payments data – International Trade in Services (2013)

Change in export mix; goods versus services

Services export growth is lagging behind that of goods; services share of total exports is declining

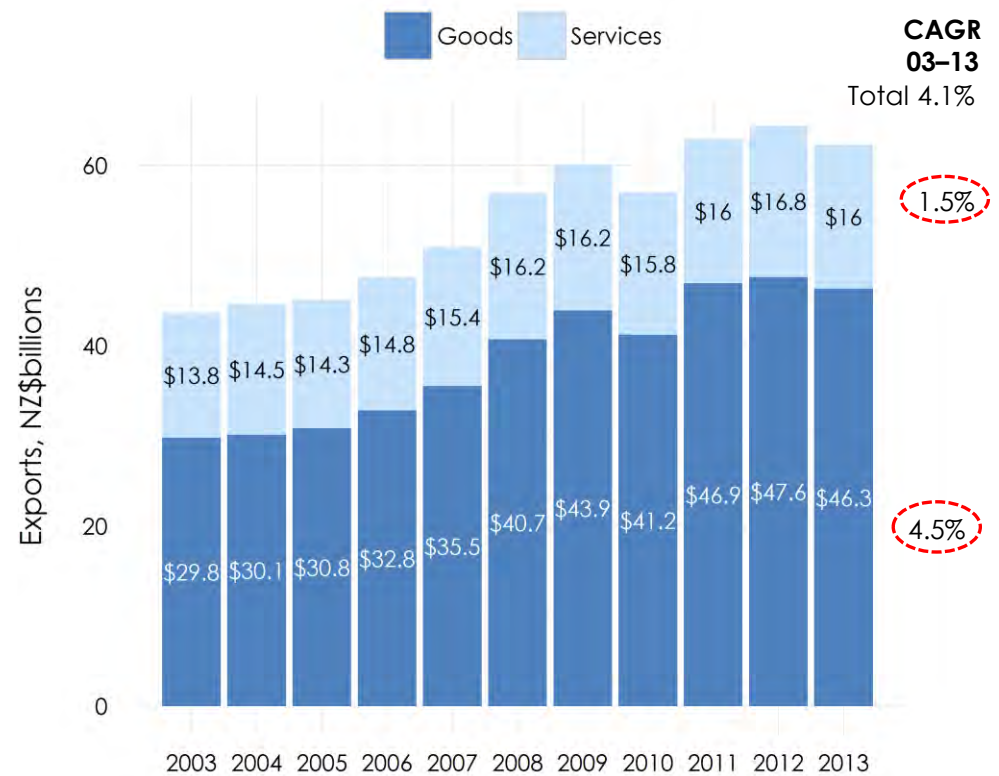
Share of exports, goods vs services

%; 2003–2013



10 year export growth, goods and services

NZ\$b; 2003–2013

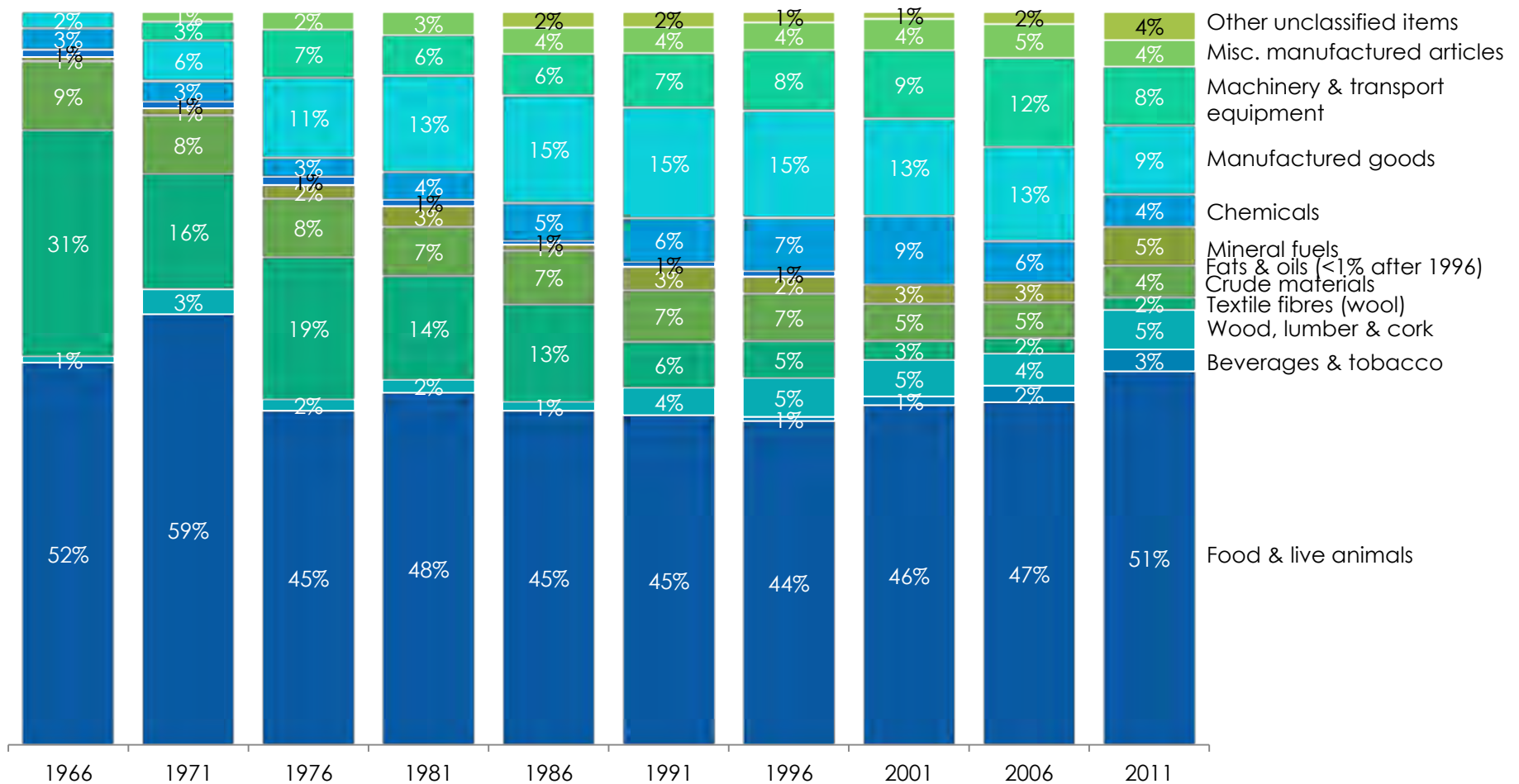


Change in export mix; goods exports

The composition of goods exports has changed over time; food remains the mainstay and is becoming relatively more important

Share of New Zealand's merchandise trade exports by type

Export goods; 1966–2011

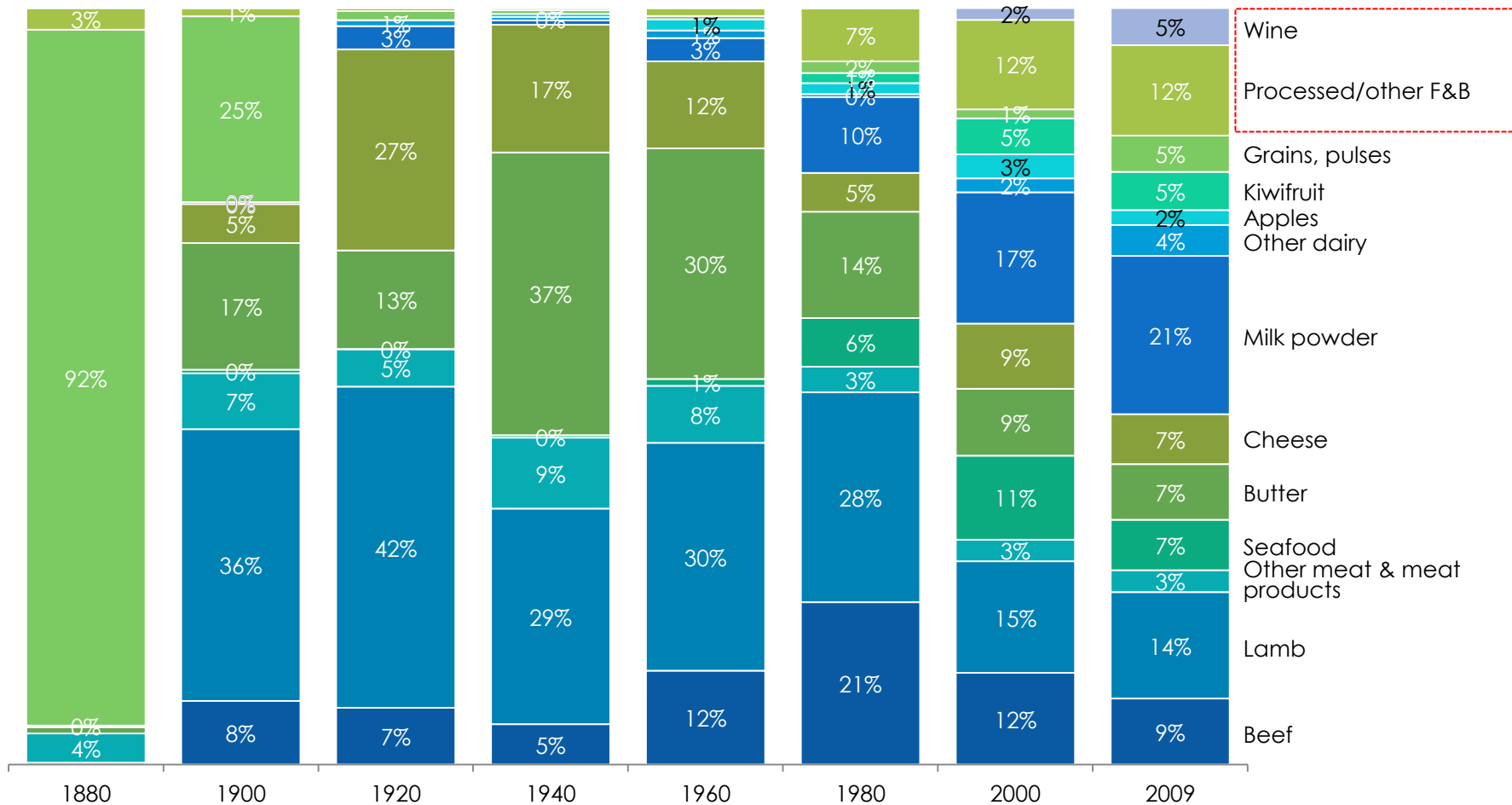


Change in export mix; food and beverage exports

Food and beverage exports exhibit similar significant changes; the shift is currently towards beverages and processed/other foods

NZ food & beverage export value mix by product

% of export food and beverage sales; given years



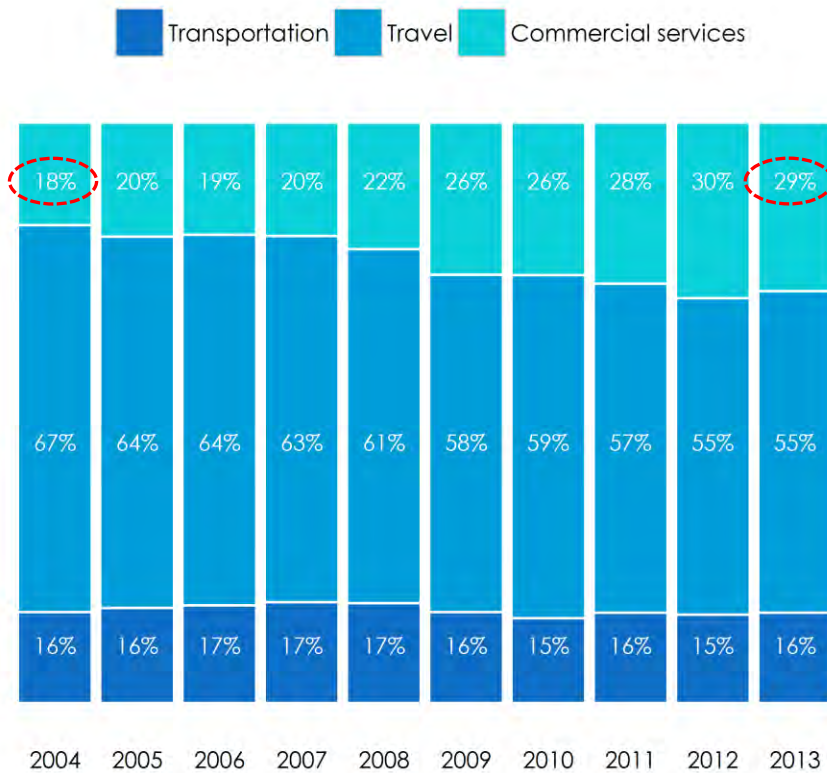
Source: Coriolis Research, Food and Beverage Information Project Industry Snapshot (2011); further information available from www.foodandbeverage.govt.nz

Change in export mix; services exports

Change is also occurring in services exports; commercial services now make up 29% of the total services exports, up from 18% in 2004

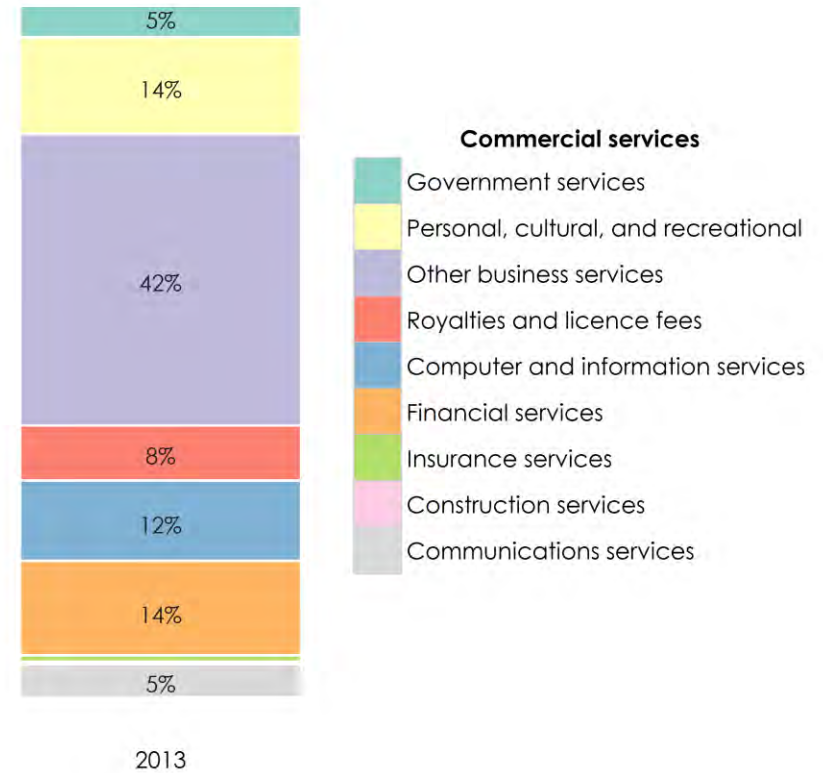
Exports of services

%; 2003–2013



Composition of commercial services exports

% commercial services, 2013

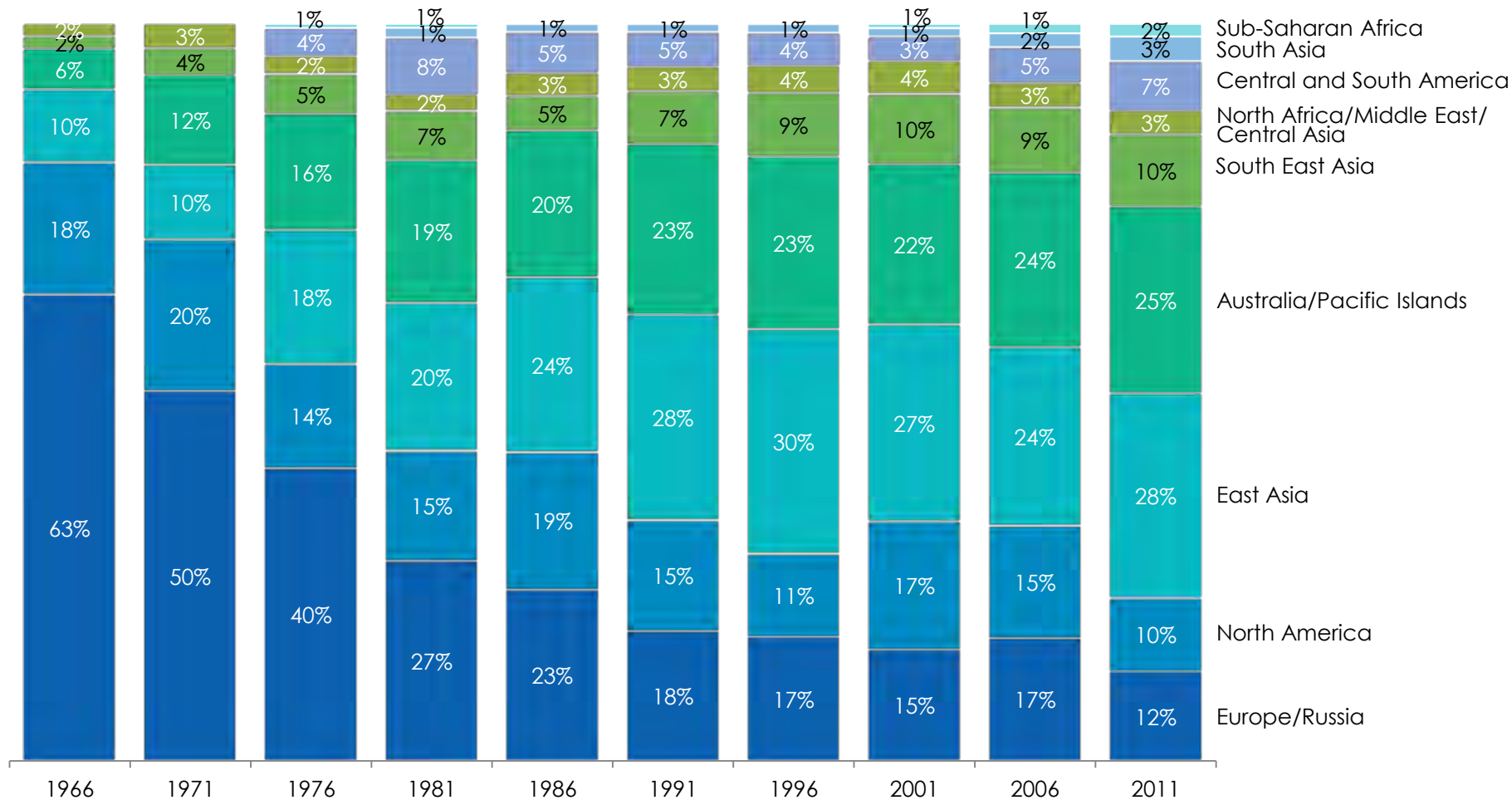


Changing markets

New Zealand has undergone a fundamental transition from supplying northern hemisphere markets to supplying the Asia-Pacific region

Share of New Zealand's export goods by destination region

Export goods; 1966–2011

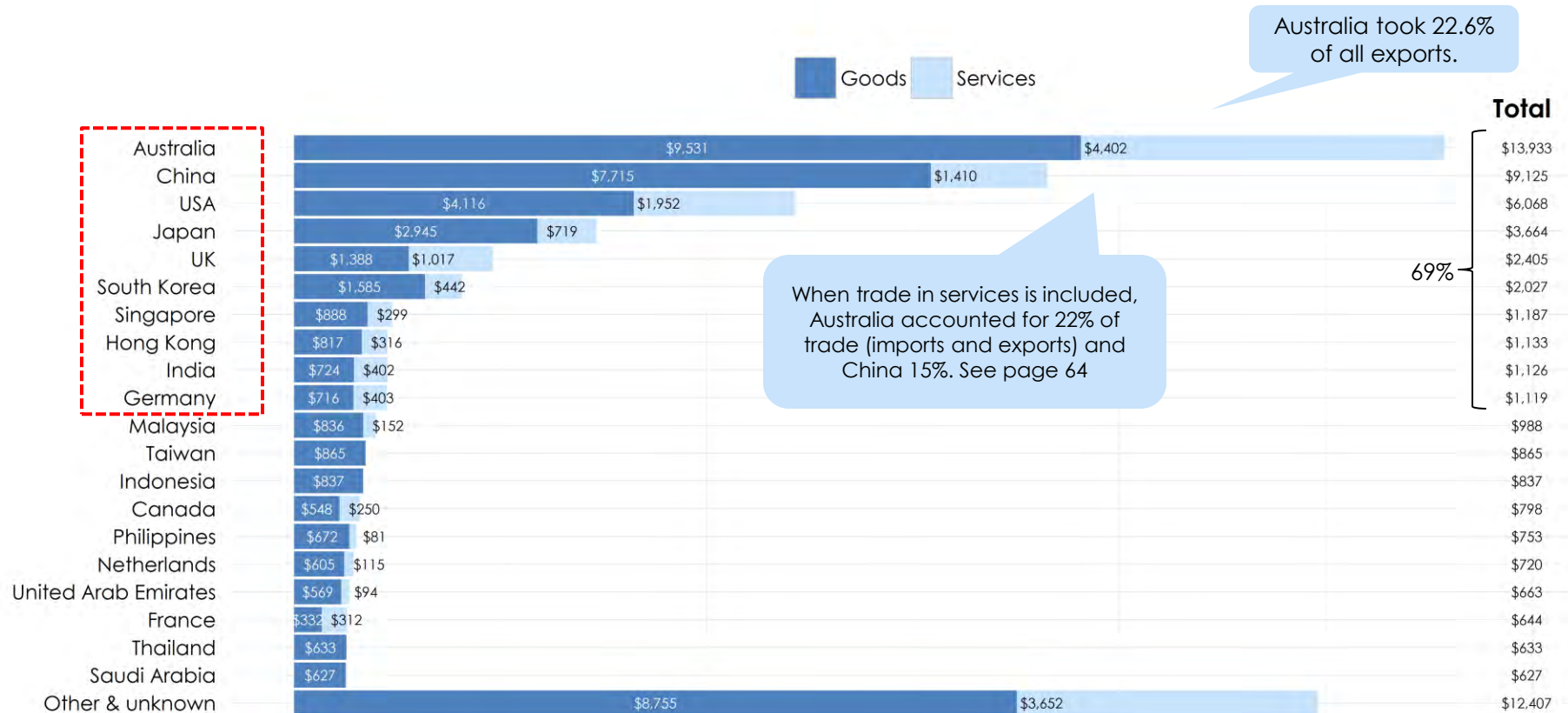


Top 20 markets: goods and services

In 2013 there were 10 countries which imported \$1b or more in goods and services from New Zealand; these 10 accounted for 69% of the total value of New Zealand's exports

Top 20 markets for exports of goods and services

NZ\$m; goods and services exports value, year ended June 2013



Total exports (good and services) = \$62.4b, year ended June 2013
Numbers may not total due to rounding

Note: services data for Indonesia, Taiwan, Thailand and Saudi Arabia is not available.

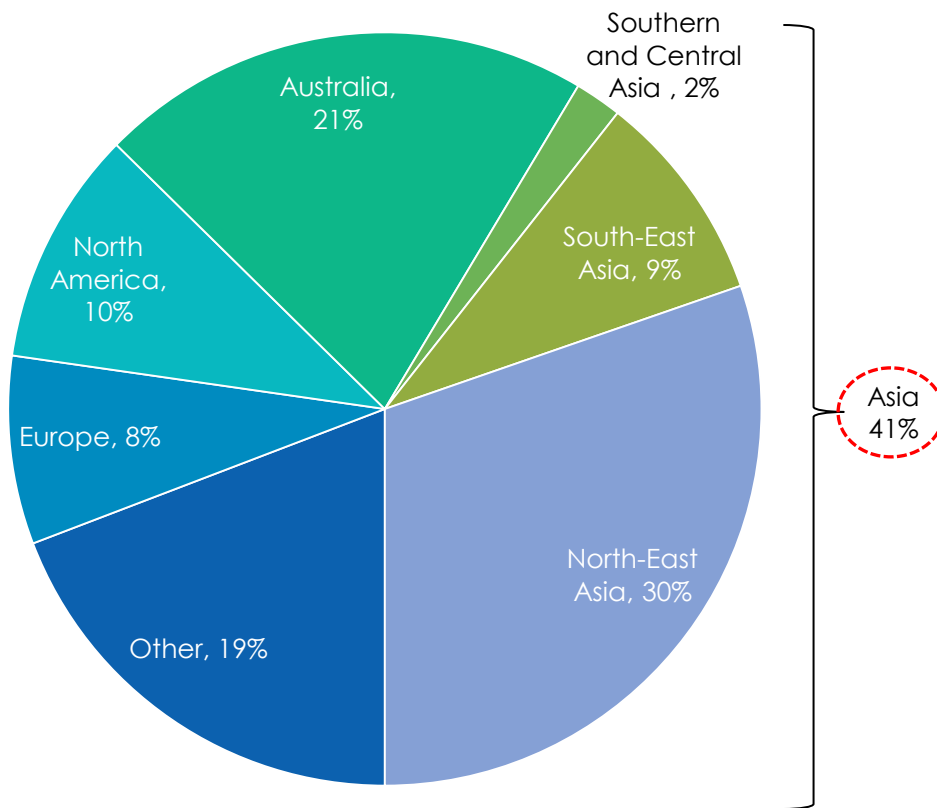
Source: Statistics New Zealand, Global New Zealand and Balance of Payments – International trade in services by country (2013)

Export destinations: goods versus services

Asia now takes 41% of goods exports; but 54% of all service exports are to our traditional western trading partners; Australia alone accounts for 27%

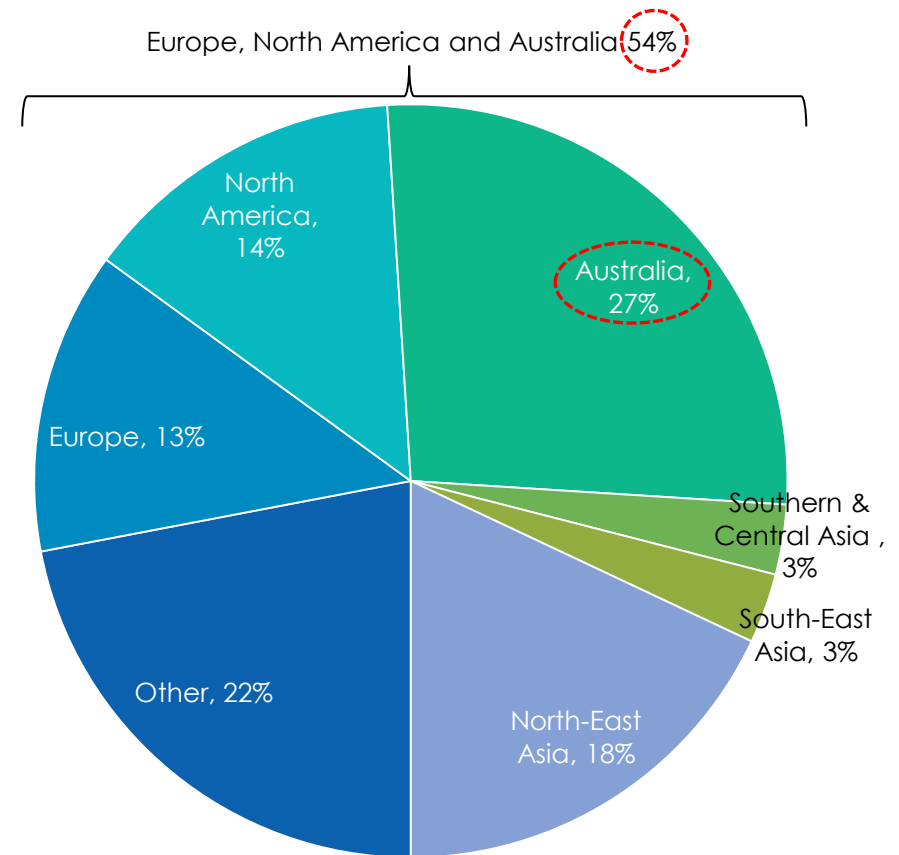
Share of export goods by destination region

Export goods; year ended June 2013



Share of services exports by selected country

Export services; year ended June 2013



Note: services exports are reported only for the first 20 countries which means that services exports for the regions may be slightly larger than shown in the graph.

Source: Statistics New Zealand (2013), Global New Zealand and Balance of payments - International Trade in Services by Country

Top three export markets by sector

Australia is the leading importer of goods and services for New Zealand's emerging export sectors and for most manufactured products

Sector	Total exports 2013	All markets CAGR 2003–13	Market 1	% of total	Market 2	% of total	Market 3	% of total
Traditional exporting sectors								
Agriculture, forestry & fishing	\$4,951m	5.5%	China	40%	Japan	10.5%	Korea	7.3%
Petroleum & minerals	\$1,795m	10.4%	Australia	91.2%	China	3.9%	Japan	2.8%
Wood & paper	\$2,603m	-0.3%	Australia	26.6%	China	15.9%	Japan	15.7%
Food & beverage	\$23,820m	6.1%	China	18.6%	US	11.3%	Australia	10.6%
Tourism (international visitor spend)*	\$6,431m	-0.6%	Australia	34.1%	China	11.2%	UK	9.3%
Machinery & equipment	\$3,196m	1.7%	Australia	34.6%	US	17.9%	India	4.9%
Chemicals, plastics & refining	\$1,711m	0%	Australia	48.2%	US	8%	Singapore	5.4%
Metals & metals products	\$2,832m	3.8%	Australia	42.7%	Japan	17.4%	Korea	6.8%
Other manufacturing	\$1,755m	-2.2%	Australia	25.4%	China	22.6%	Italy	12.6%
Emerging exporting sectors								
High technology manufacturing (cross-cutting sector)	\$1,430m	3.6%	US	21%	Australia	19.6%	India	10%
ICT	\$632m	0.1%	Australia	34.5%	US	16.9%	Hong Kong	6.7%
Processed Foods (subset of food and beverage)	\$2,469m	4.7%	Australia	43%	China	12%	Japan	9%
Commercial services	\$4,652m	5.8%	Australia	29.0%	US	22.6%	UK	5.2%

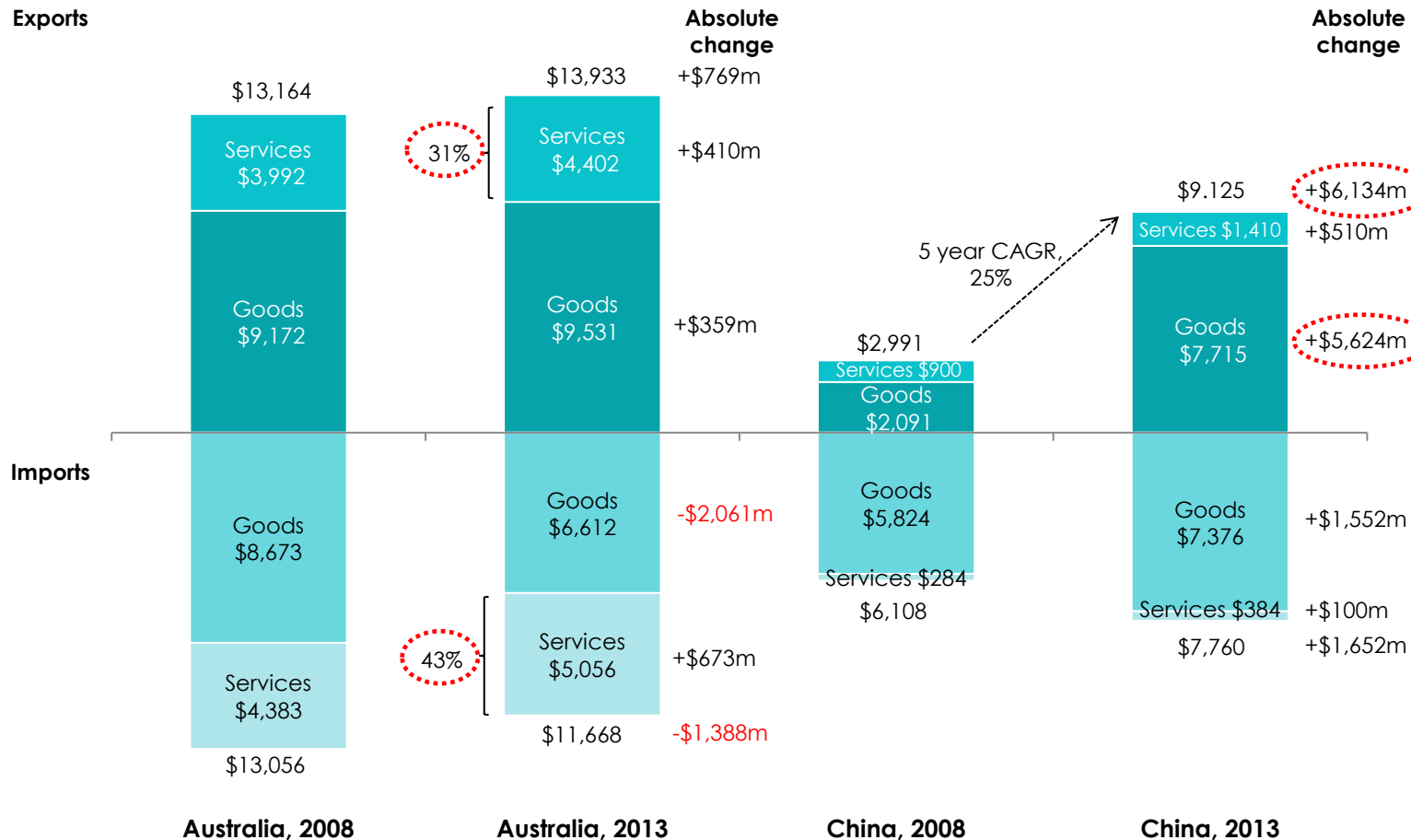
* International visitor spend is the only tourism export measure that can be broken down by market. It differs from the 2013 Tourism Satellite Account estimate of \$9,778m for the year ending March 2013. This difference is because the International Visitor Survey excludes airfares and education spending, and was significantly revised in 2013

Total trade growth (goods and services): Australia versus China

Merchandise goods driving growth in trade with China; Australia remains our major trading partner when trade in both goods and services is included

Goods and services exports to Australia and China; 2013 versus 2008

Exports and Imports: NZ\$m (nominal); year ended June 2008 & June 2013



As at June 2013, Australia accounted for 17.8% of all trade in goods (imports and exports) and China 16.8%.

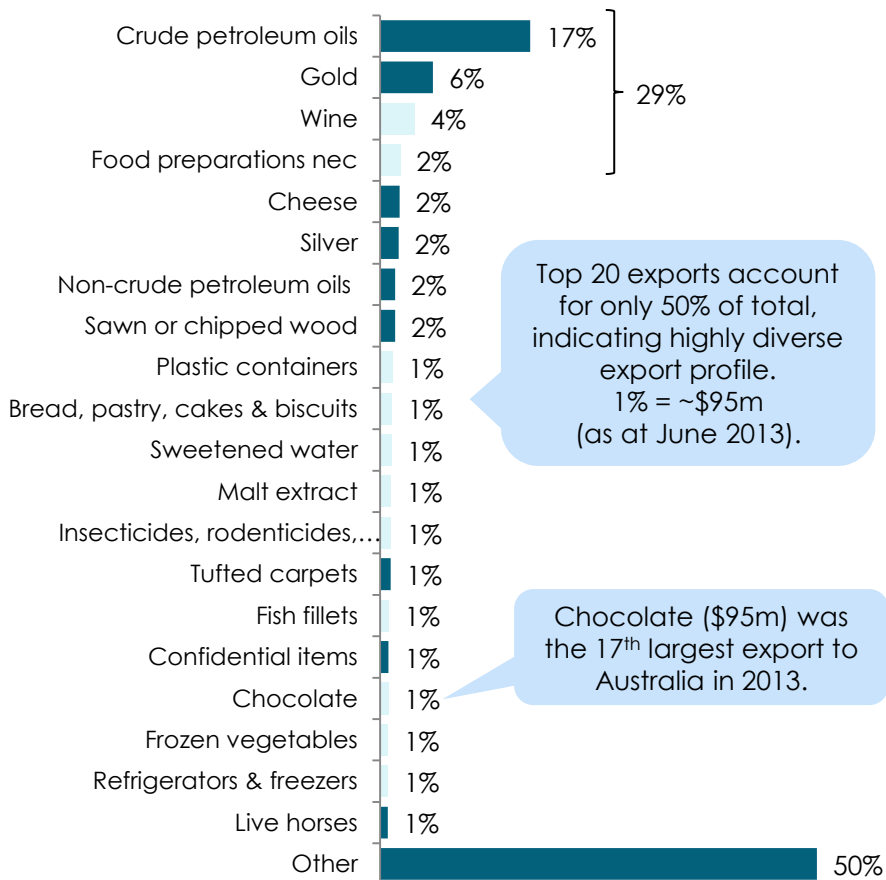
When trade in services is included, Australia accounted for 22% of total trade (imports and exports) and China 15%.

Composition of goods exports: Australia versus China

Australia imports a wide variety of goods from New Zealand, many high/added value; exports to China dominated by New Zealand's traditional commodities

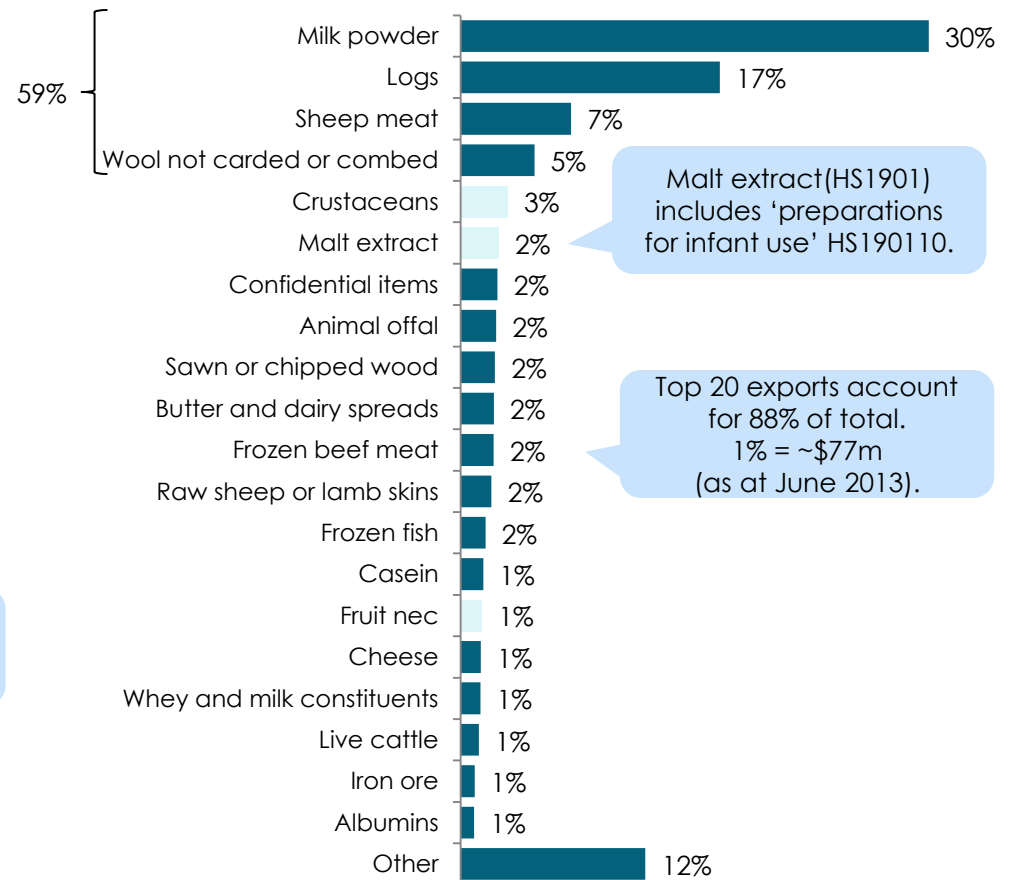
Top 20 goods exports to Australia (HS4)

% exports, year ended June 2013



Top 20 goods exports to China (HS4)

% exports, year ended June 2013



Share of exports by firm

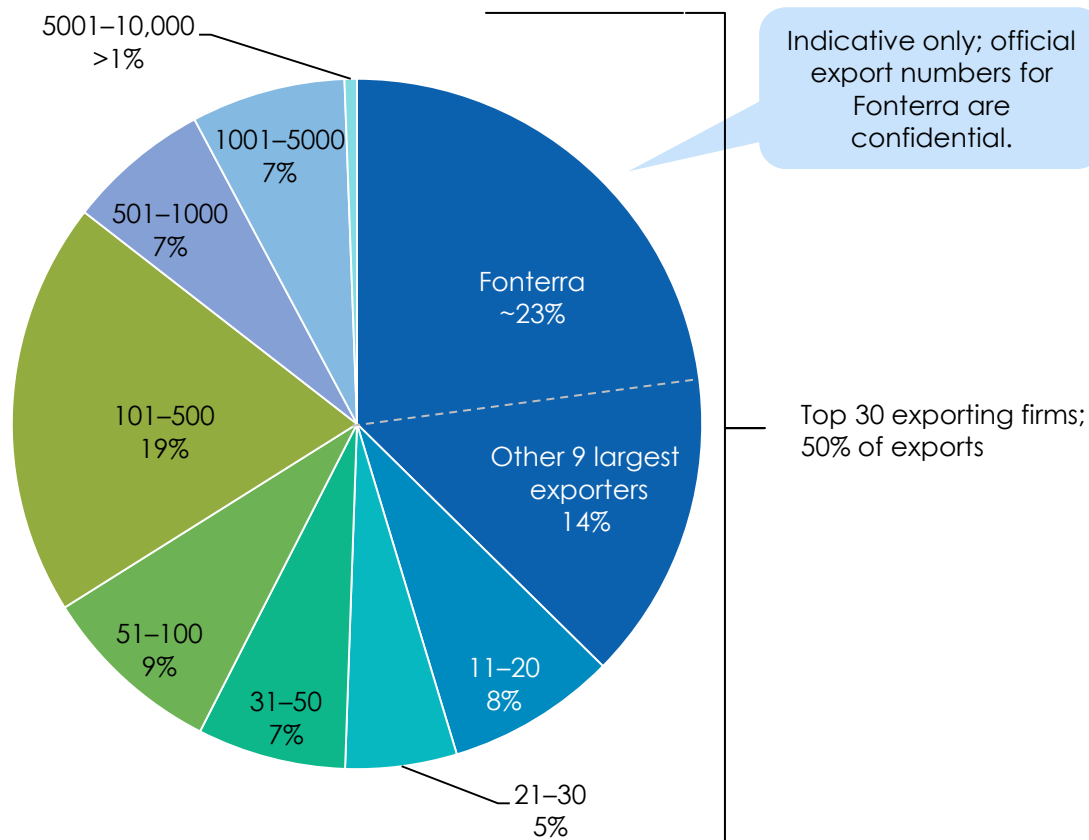
50% of New Zealand's total exports are generated by 30 firms; Fonterra alone generates around 23%

Share of New Zealand's total exports by top 10,000 exporting firms

% of exports; 2011

Treat as illustrative

Includes goods exports and commercial services exports. Excludes transport, travel, insurance and government services exports.



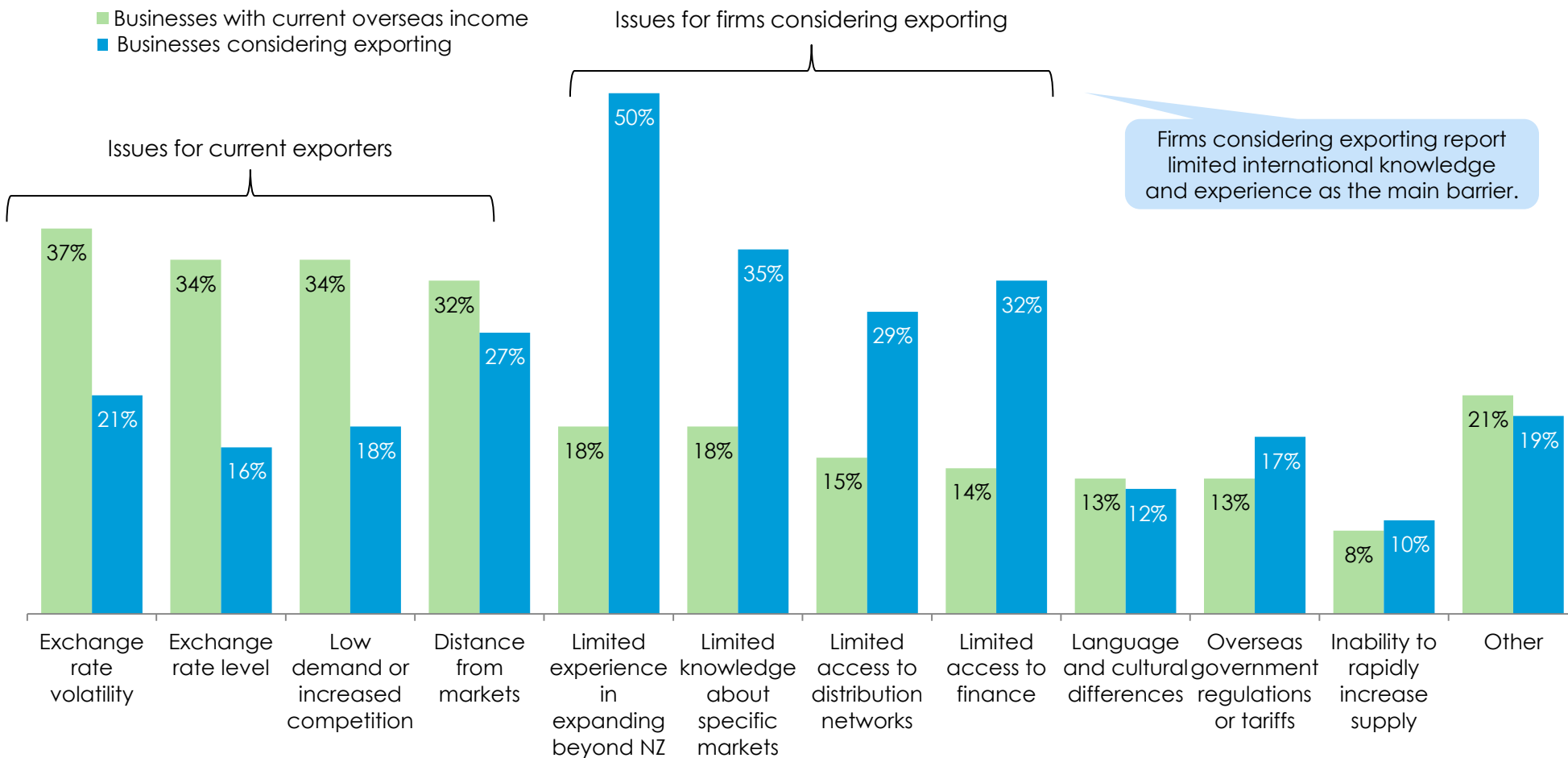
Total (2011): \$49.9 b
Total differs from 2013 numbers

Export barriers

Around a third of exporting firms report the exchange rate, low demand, increased competition and/or distance from markets as barriers

Firm reported barriers to exporting

% of total current exporting firms; % of total firms considering exporting; 2011





INNOVATION

Definitions

This report uses the following definition for ‘innovation’

Innovation

The **innovation rate** is the percentage of firms in a sector that undertook any activity during the last two financial years that resulted in the development or introduction of something new or significantly improved. **This is a different measure from expenditure on innovation.**

The following are the measured activities.

Activity	Definition	Examples
Goods or services	Significant changes in or introduction of new goods or services – this does not include selling new goods or services wholly produced and developed by other firms.	Xero: online accounting services. Fonterra: new light-resistant plastic milk bottle.
Operational processes	Methods of producing or distributing goods or services.	E-books, Spotify, iTunes, Xero. New machines used in manufacturing.
Organisational or managerial	Significant changes in the firm's strategies, structures or routines.	Fonterra: trading among farmers. Manufacturers developing services or software around their products.
Marketing method	Includes sales and marketing methods intended to increase the appeal of goods or services for specific market segments, or to gain entry to new markets.	Hellers' redesigned packaging for shaved ham.

Definitions

This report uses the following definition for 'research and development' (R&D)

Research & development

The **R&D rate** is the percentage of firms in a sector that have undertaken R&D activity in the last two years.

R&D covers any activity characterised by originality. It should have investigation as its primary objective, and has an outcome of gaining new knowledge and/or new or improved materials, products, services or processes. Buying technical knowledge or information from abroad is included.

Market research, efficiency studies, and style changes to existing products are not included.

The R&D rate is a different measure from business or government expenditure on R&D.

R&D is divided into the following activities.

Activity	Definition	Examples
Experimental development	Systematic work, drawing on knowledge gained from research and practical experience that is directed at producing new materials, products and devices; installing new processes, systems and services; or improving substantially those already produced or installed.	Development and commercialisation of products for wound and tissue repair by Wellington firm Mesynthes.
Applied research	Undertaken in order to acquire new knowledge. It is, however, directed primarily towards a specific practical aim or objective and determines possible uses of basic research.	AgResearch's work on new grass types to reduce environmental impacts from farming.
Basic research	Carried out to pursue a planned search for new knowledge with either a broad underpinning reference, or no reference to a likely application.	Investigating natural 'superhydrophobic' surfaces (highly repellent to liquids); may have application to condensation management, ice-prevention or as self-cleaning surfaces.

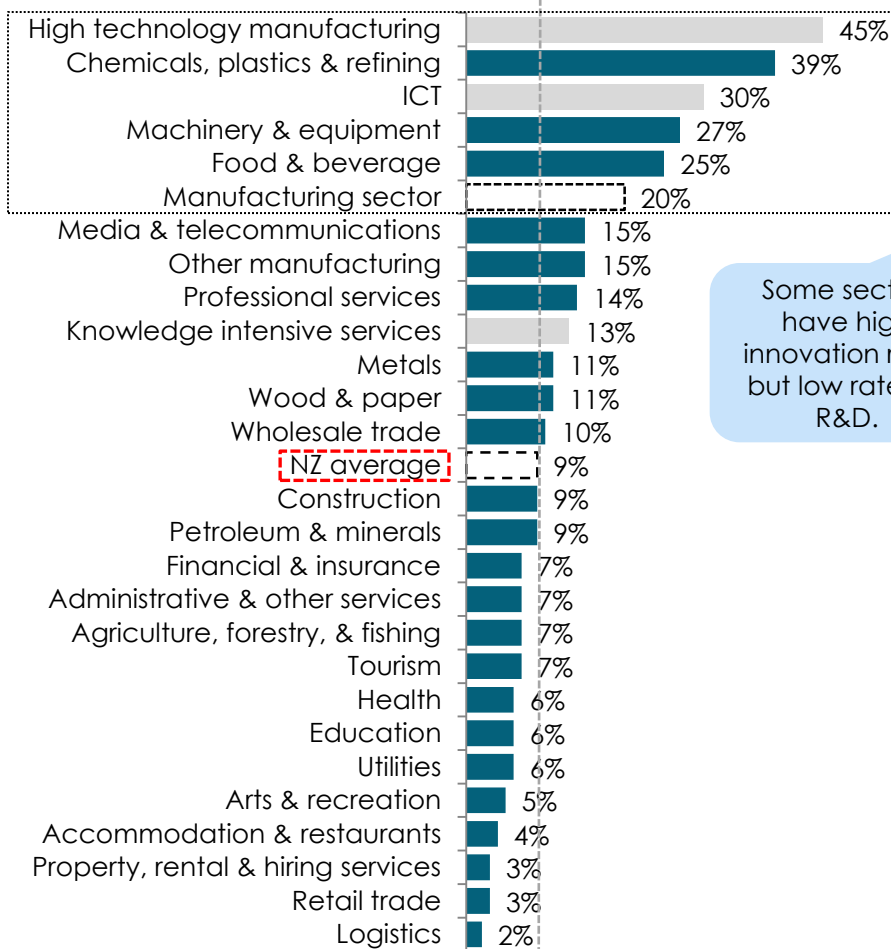
R&D and innovation rate by sector

Significantly more firms in the manufacturing sectors engage in both R&D and innovation activities than firms in most other sectors

Firms reporting R&D activity

% of total firms in sector; 2011

Avg = 9%

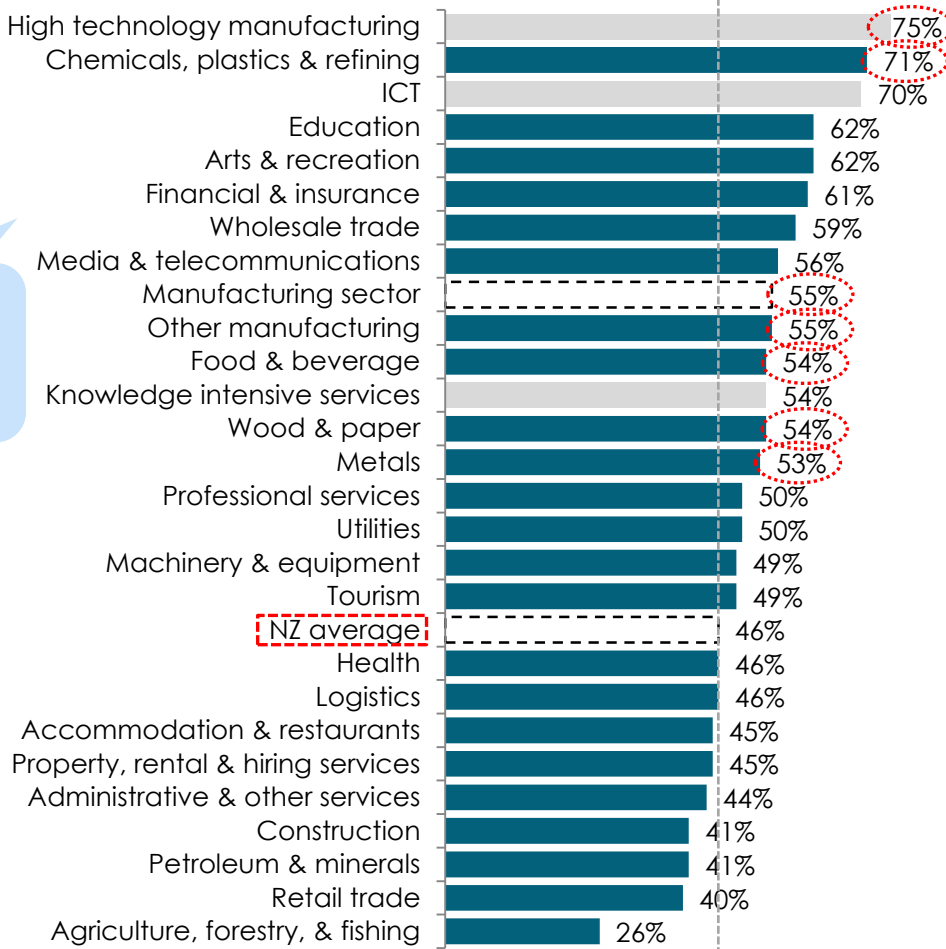


Some sectors have high innovation rates but low rates of R&D.

Firms reporting innovative activity

% of total firms in sector; 2011

Avg = 46%



Note: only firms with six or more employees are surveyed

Sources: Statistics New Zealand, customised data drawn from the Business Operations Survey (2011)

Innovation across sectors

Innovation is pervasive across all sectors, as this excerpt from a paper on New Zealand's innovation system shows

All OECD economies rest on a combination of large medium-technology and low-technology manufacturing industries (such as food and beverages, or fabricated metal products), and large-scale service activities (of which the largest are education, and health and social services).

Innovation surveys carried out in many countries show that these industries contain significant proportions of innovating firms, that develop new products, and generate significant amounts of sales from new and technologically changed products.

The expanding data and evidence on innovation in these low and medium-technology industries and services suggests that we should take a wide view of innovation and its effects, recognising that growth is generated across many sectors of the economy.

Of course we should not deny the existence and importance of radical technological breakthroughs. But it is important to challenge the oversimplified idea that high-tech industries are 'leading' sectors, and that growth rests on their technologies in some simple way. Rather, we should recognise that innovation and hence growth impulses are pervasive across the economic system, which would explain why many so-called low-tech sectors and low-tech economies have been growing rapidly.

In other words, growth impulses are dispersed across the system because innovation also is widely dispersed - it is not the case that innovation is confined to a small group of high-tech sectors.

Growing sectors innovate in different ways, with a great deal of variety in methods, approaches and results. This diversity among industries is particularly important with respect to knowledge creation.

So the specific engagement with innovation that faces New Zealand is the problem of innovation across the low-tech sectors.

Low tech sectors have a specific characteristic in terms of knowledge creation, which is that they draw heavily on knowledge created outside the industry. They do not innovate on the basis of internal R&D, but rather on the basis of a flow of knowledge from external sources.

Such knowledge can flow in a number of ways: via contract R&D, via joint ventures, via labour mobility, via consulting, via informal know-how, and above all, via the purchase of capital and intermediate inputs. Many of these background flows of knowledge emanate from the publicly-supported knowledge infrastructure, and it is this that connects public policy with the need to focus on the sectoral structure of innovation.

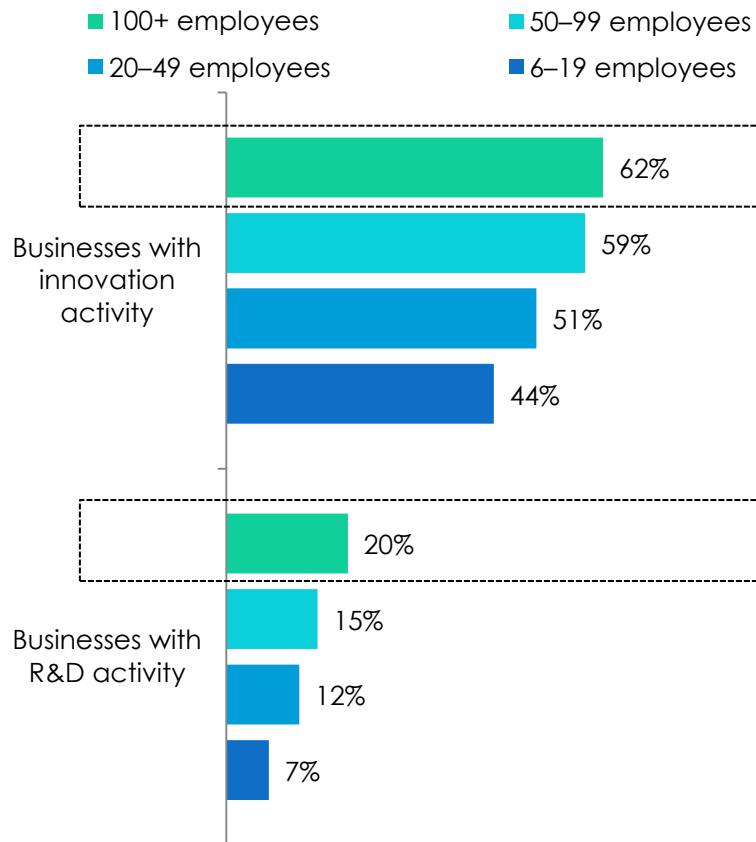
Source: Keith Smith, Public Policy Framework for the New Zealand Innovation System, Ministry of Economic Development Occasional Paper 06/06 May 2006

R&D and innovation

Large firms are more likely to engage in R&D and/or innovation activities; innovating firms out-perform non-innovating firms

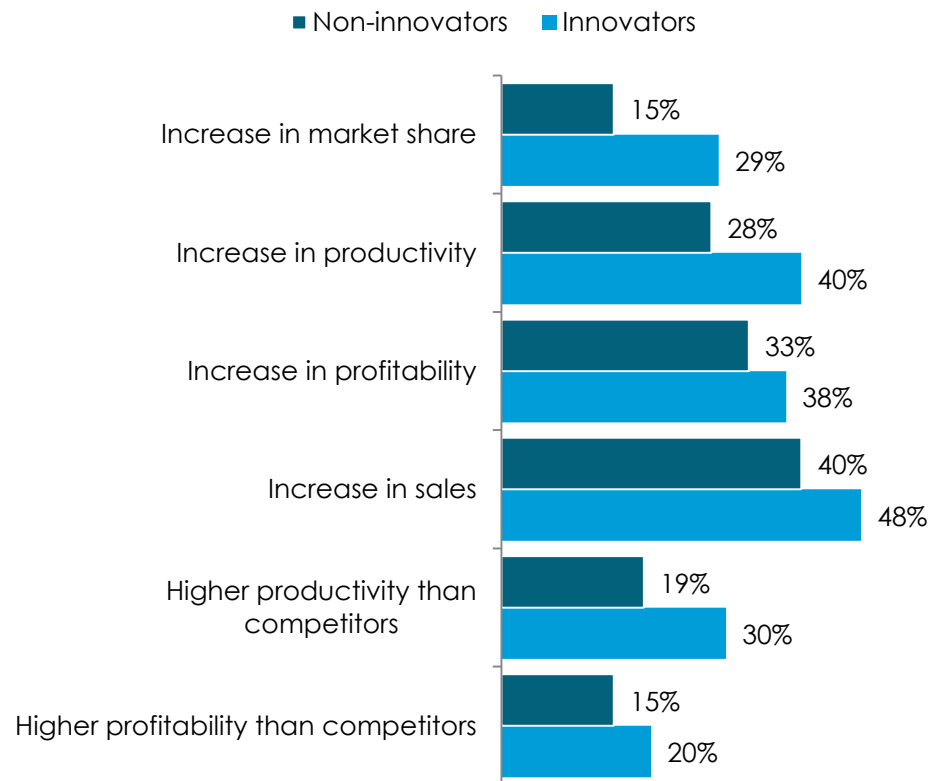
Firms with innovation and R&D activity by firm size

% of total respondents; 2011



Improved firm performance, various financial metrics

% of total respondents; 2011



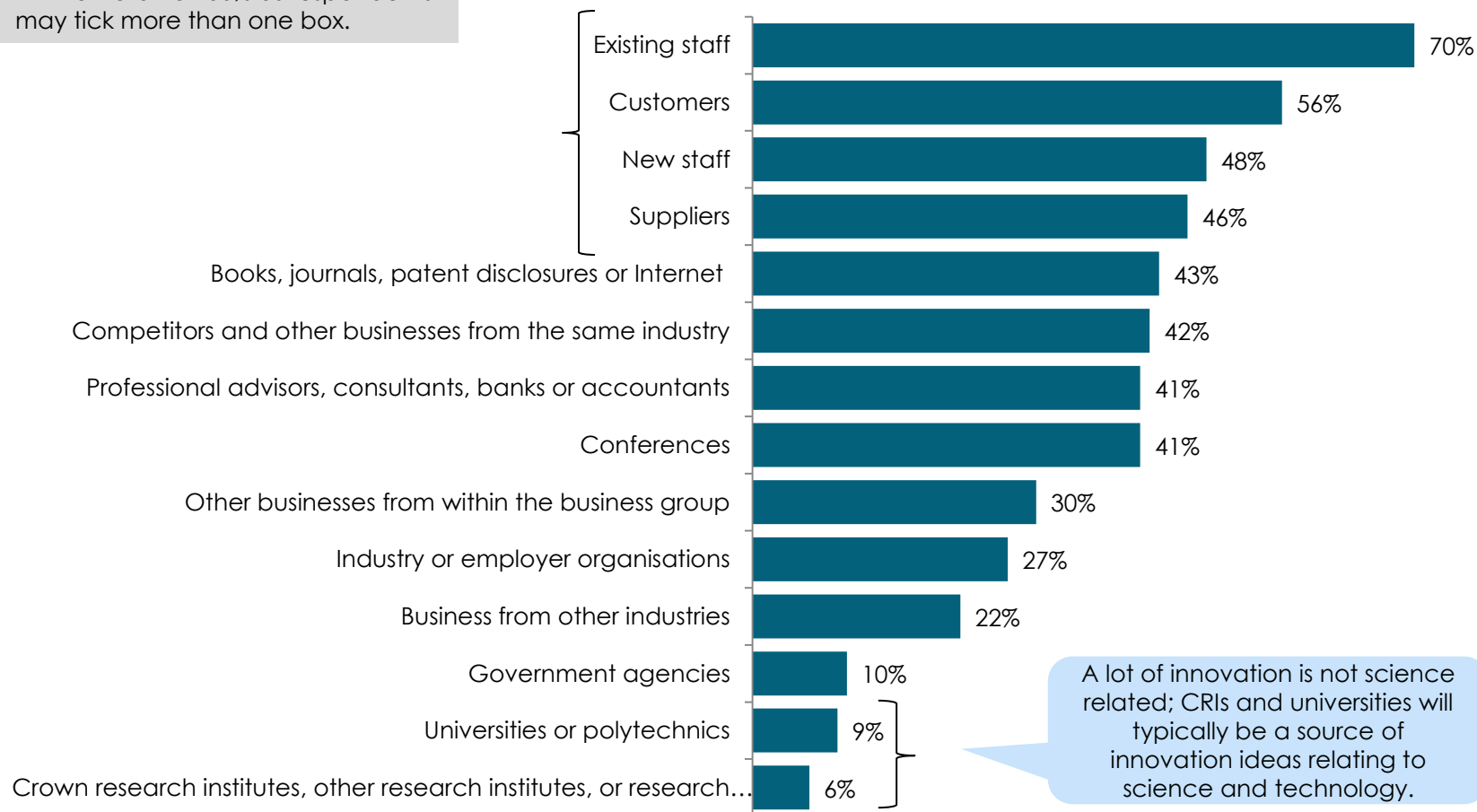
Sources of innovation

For those firms reporting innovation activity, the majority, by far, source their ideas from staff, suppliers or customers

Sources of innovation for firms

% of total respondents; 2011

Will not total to 100% as respondents may tick more than one box.

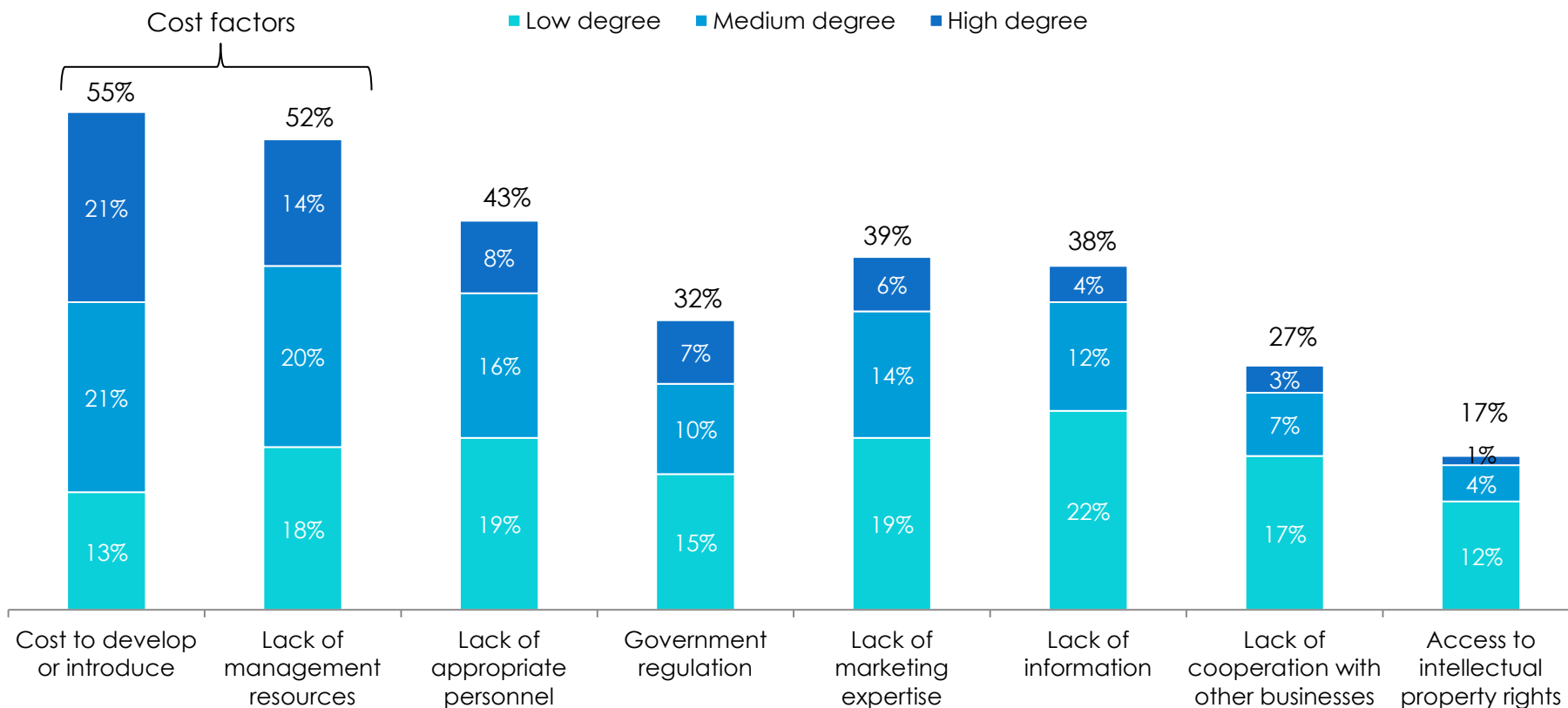


Barriers to innovation

Over half of firms reported that innovation was hampered by cost and lack of management resources e.g. time

Issues that hampered innovation

% of total respondents; 2011





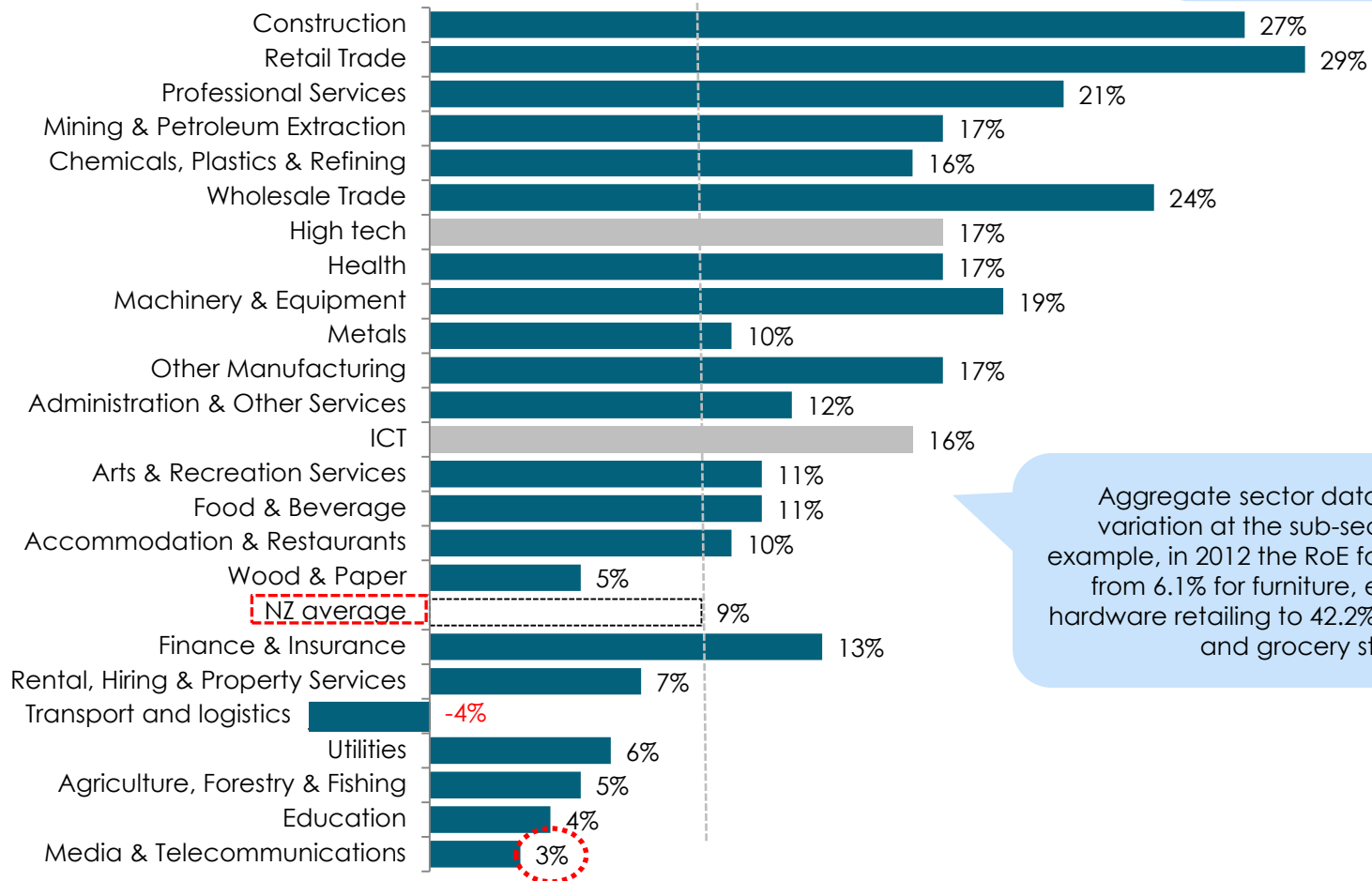
FINANCIAL PERFORMANCE

Return on equity (RoE)

There is a wide variation in return on equity between sectors; seven sectors (plus high technology manufacturing) return 19% and above

Return on equity (surplus before income tax as % of shareholders' funds or owners' equity)

Return on equity; 2012



In the construction sector a lot of large machinery is hired rather than owned e.g. cranes.

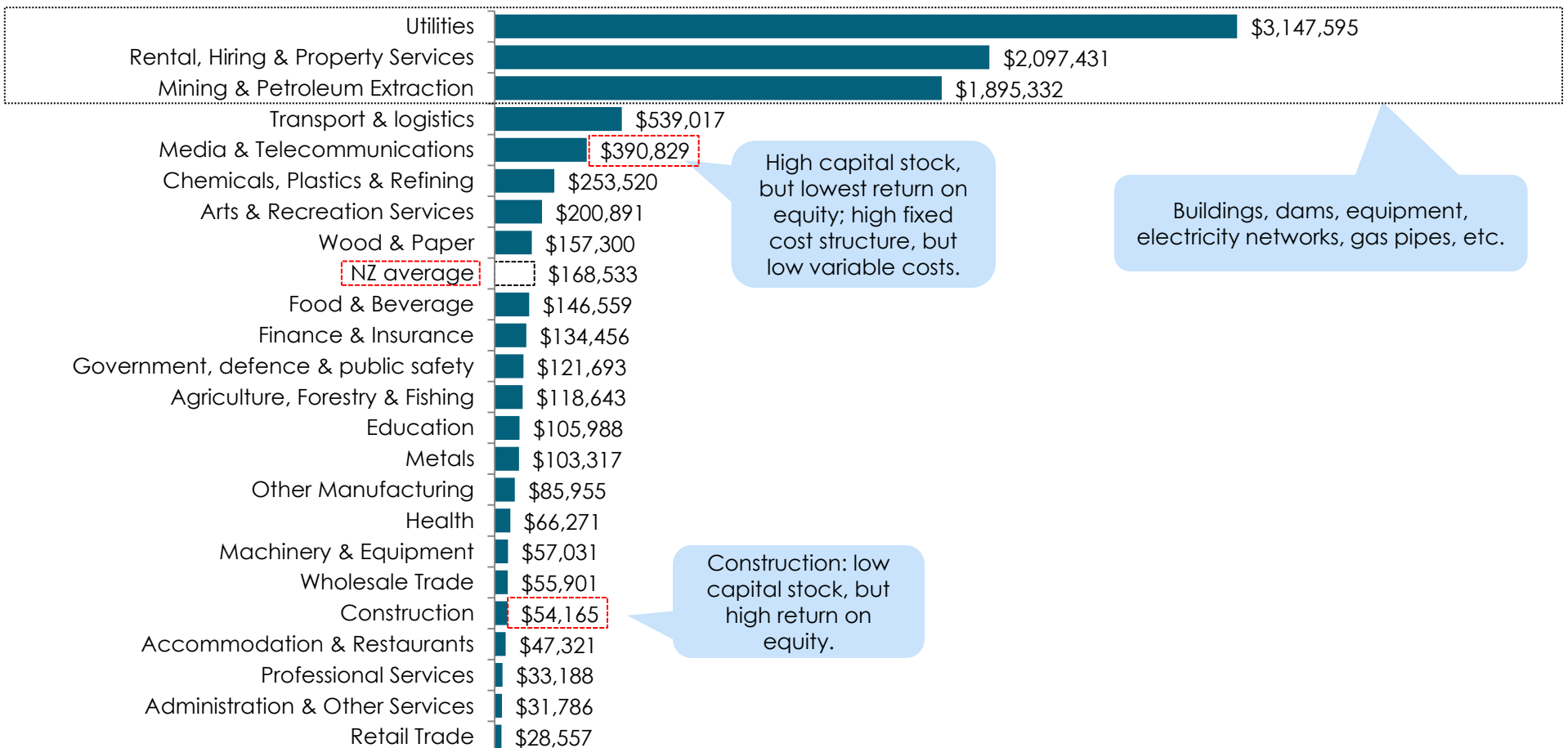
Aggregate sector data masks wider variation at the sub-sector level. For example, in 2012 the RoE for retailers ranged from 6.1% for furniture, electrical, and hardware retailing to 42.2% for supermarkets and grocery stores.

Capital stock (fixed assets) per worker

Capital stock per worker is highest in the utilities, property and petroleum and minerals sectors

Capital stock (or fixed assets) per worker

2011



Note: data on fixed assets has not been through National Accounts system so should be considered as indicative only; data unavailable for cross-cutting sectors

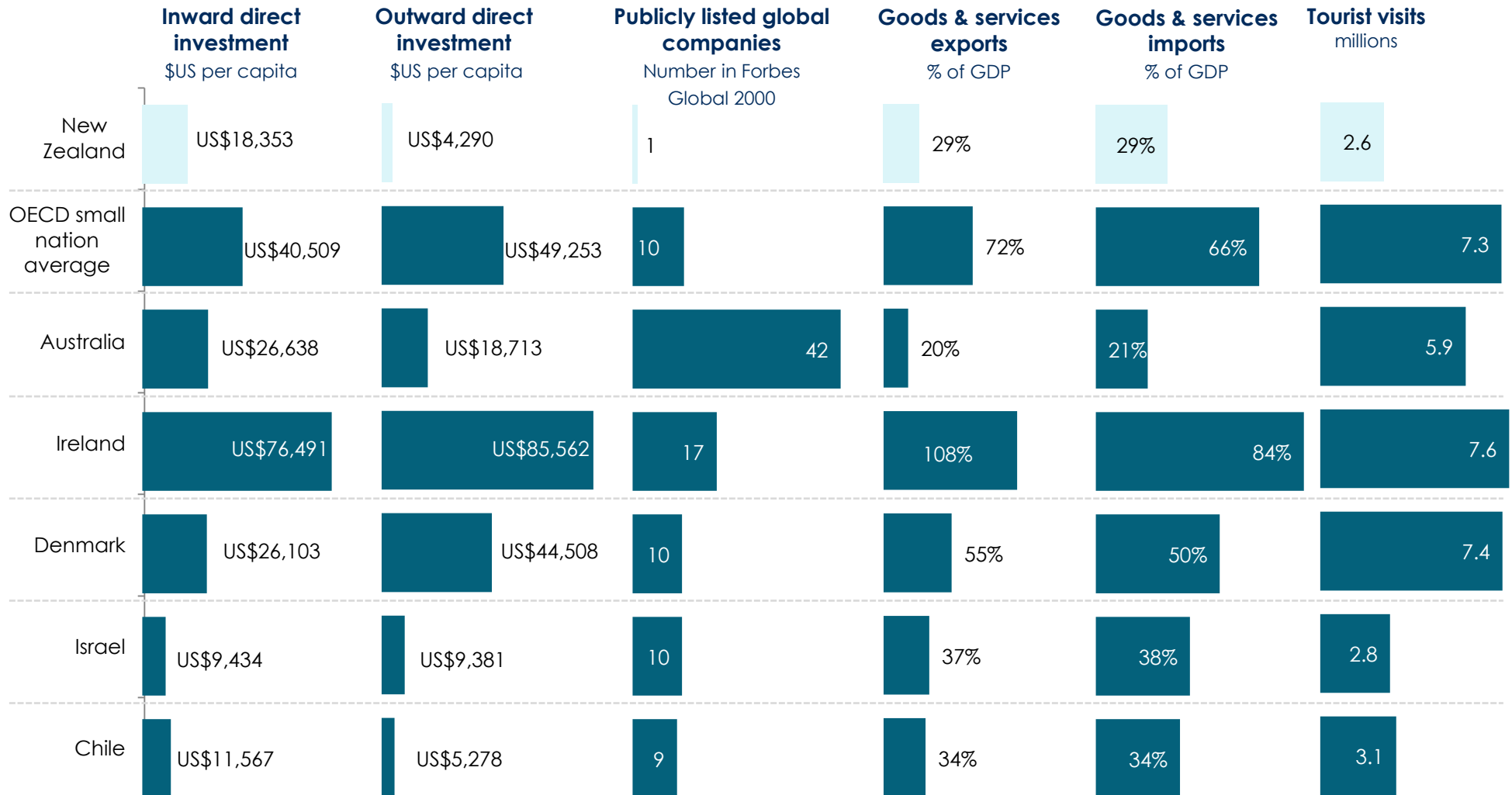
Source: Statistics New Zealand, National Accounts and Tourism Satellite Account (2012)



NEW ZEALAND AND THE WORLD

International connections

New Zealand is less connected with the global economy than similarly developed small countries



Note: OECD small nation peers are Austria, Belgium, Czech Republic, Estonia, Finland, Greece, Hungary, Iceland, Luxembourg, Netherlands, Portugal, Slovak Republic, Slovenia, Sweden and Switzerland

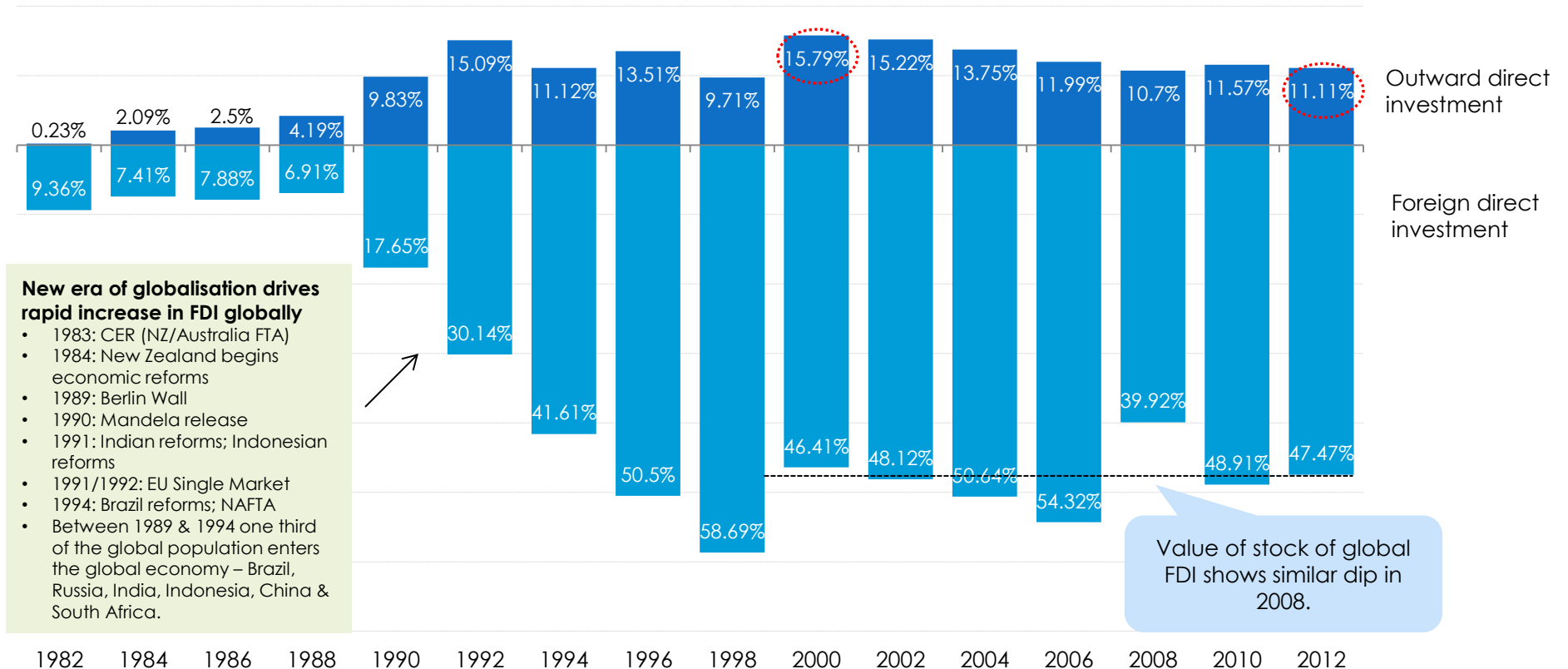
Sources: OECD StatExtract database and World Bank database (2010 or latest available year) and Forbes Global 2000 (2013)

Growth in stocks of outward and foreign direct investment

Foreign direct investment in New Zealand grew strongly from 1988 to 1998 but has been relatively stable since; outward direct investment has declined since 2000

Outward direct investment and foreign direct investment as a percentage of GDP

% GDP; 1982–2012

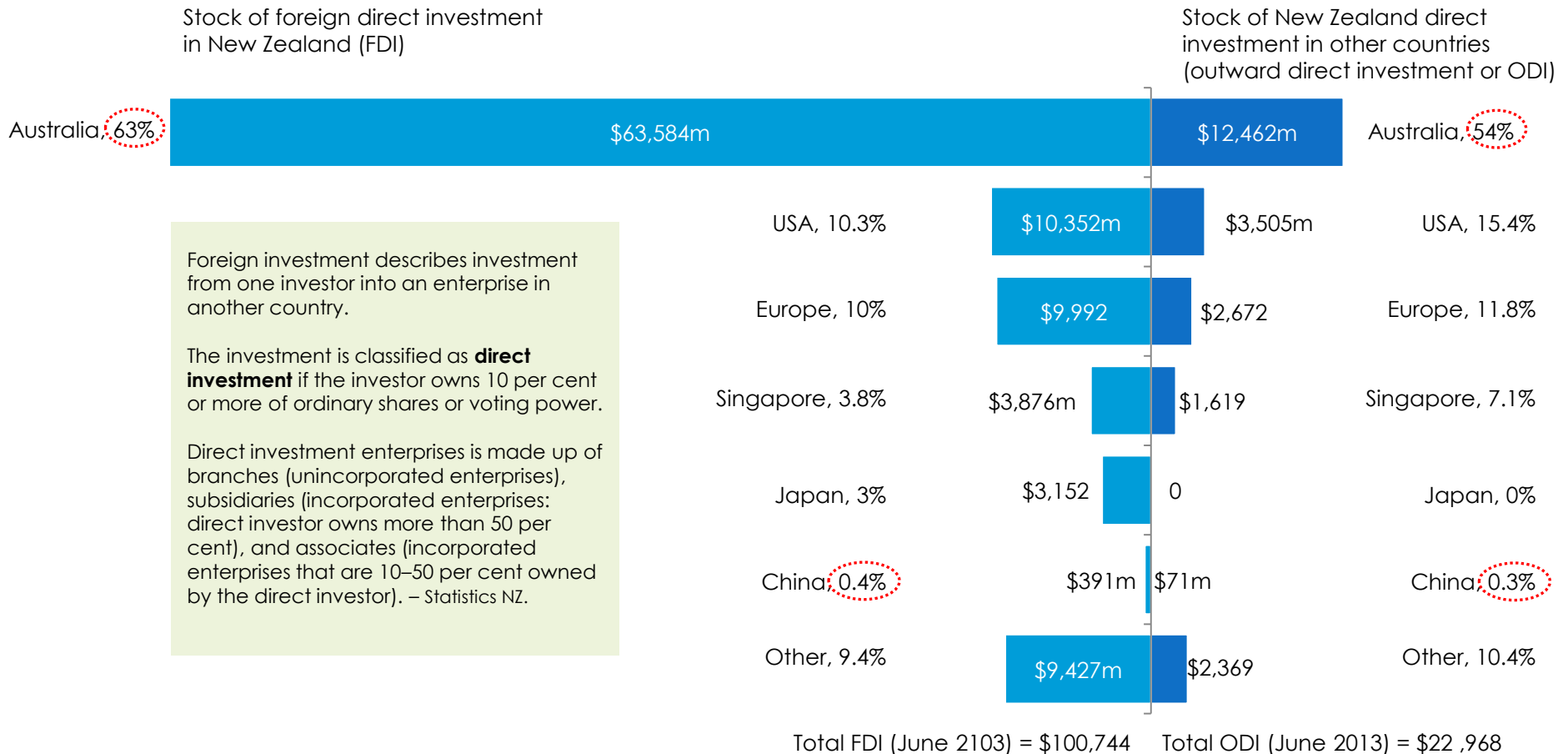


New Zealand's major direct investment partners (and China)

54% of New Zealand outward direct investment is in Australia, and 63% of foreign direct investment in New Zealand is Australian; China is a minor investor

New Zealand stocks of foreign and outward direct investment

NZ\$m, year ended June 2013

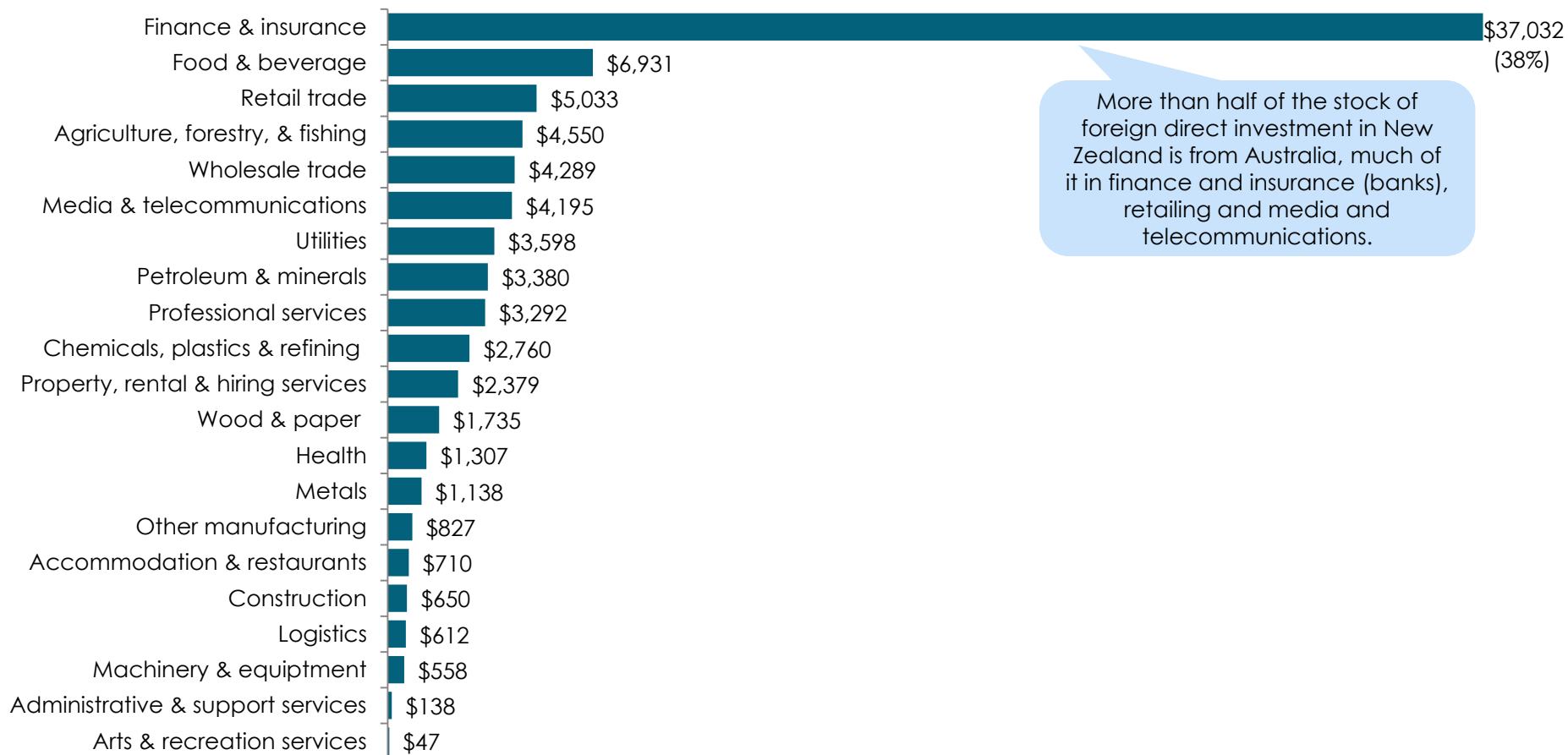


Stock of foreign direct investment (FDI) in New Zealand by sector

Foreign direct investment totalled \$97.3b in 2012; over a third of this is in the finance and insurance sector

Foreign direct investment in New Zealand

NZ\$m; as at March 2012 (latest data by sector available)



Note: some data omitted owing to allocation and confidentiality issues; data for government, defence and public safety is confidential (an example of data that would fall into the sector would be Mt Eden Corrections Facility which is operated by British firm Serco)

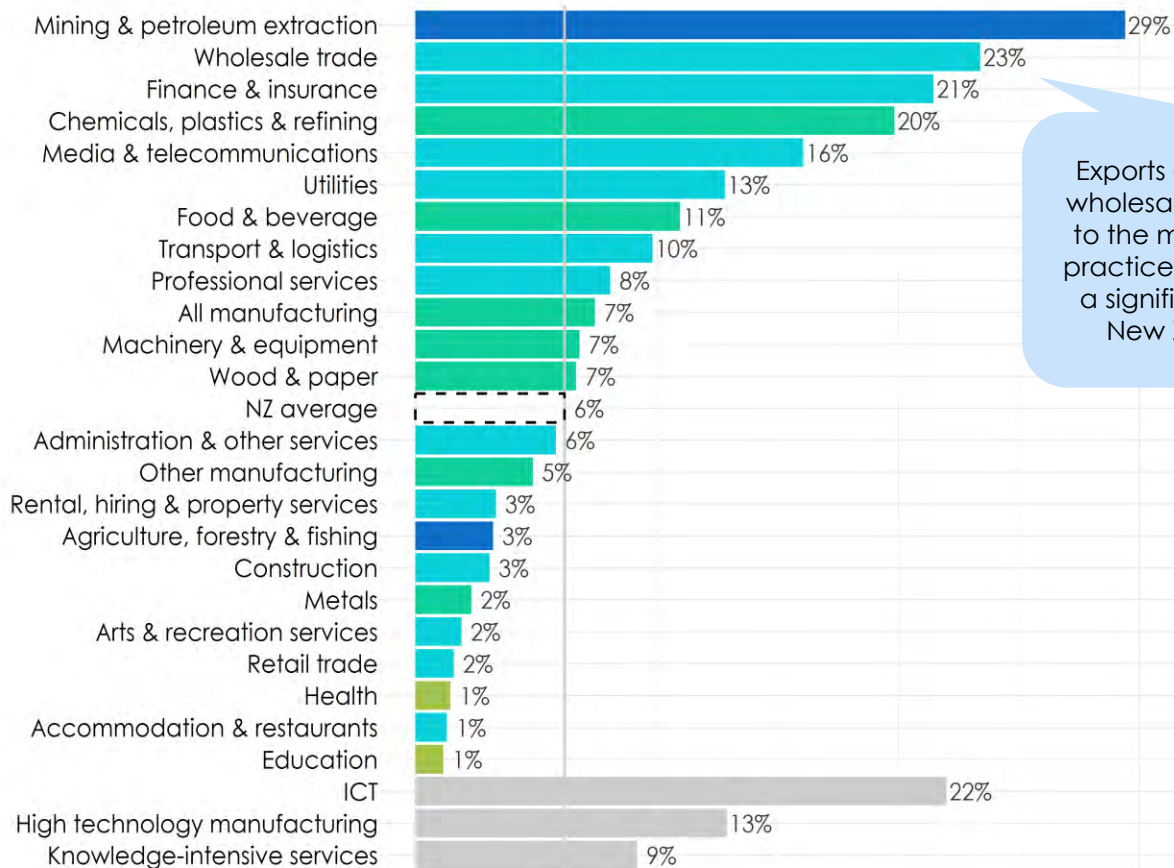
Source: Statistics New Zealand, Balance of Payments and International Investment Position (2013)

Rate of foreign direct investment by sector

23% of all wholesale trade firms are majority foreign owned; larger firms are more likely to be foreign owned

Firms with more than 50% foreign ownership

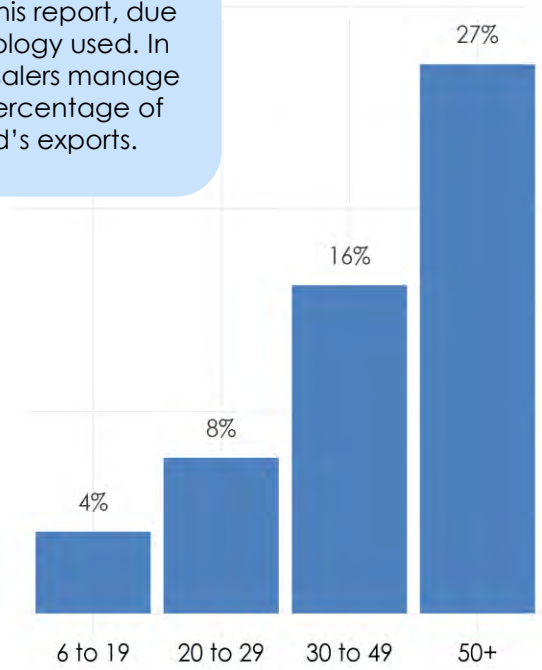
% of firms with six or more employees; 2012



Firms with more than 50% foreign ownership, by firm size

% of firms with six or more employees by firm size; 2012

Exports are not attributed to wholesaling in this report, due to the methodology used. In practice wholesalers manage a significant percentage of New Zealand's exports.



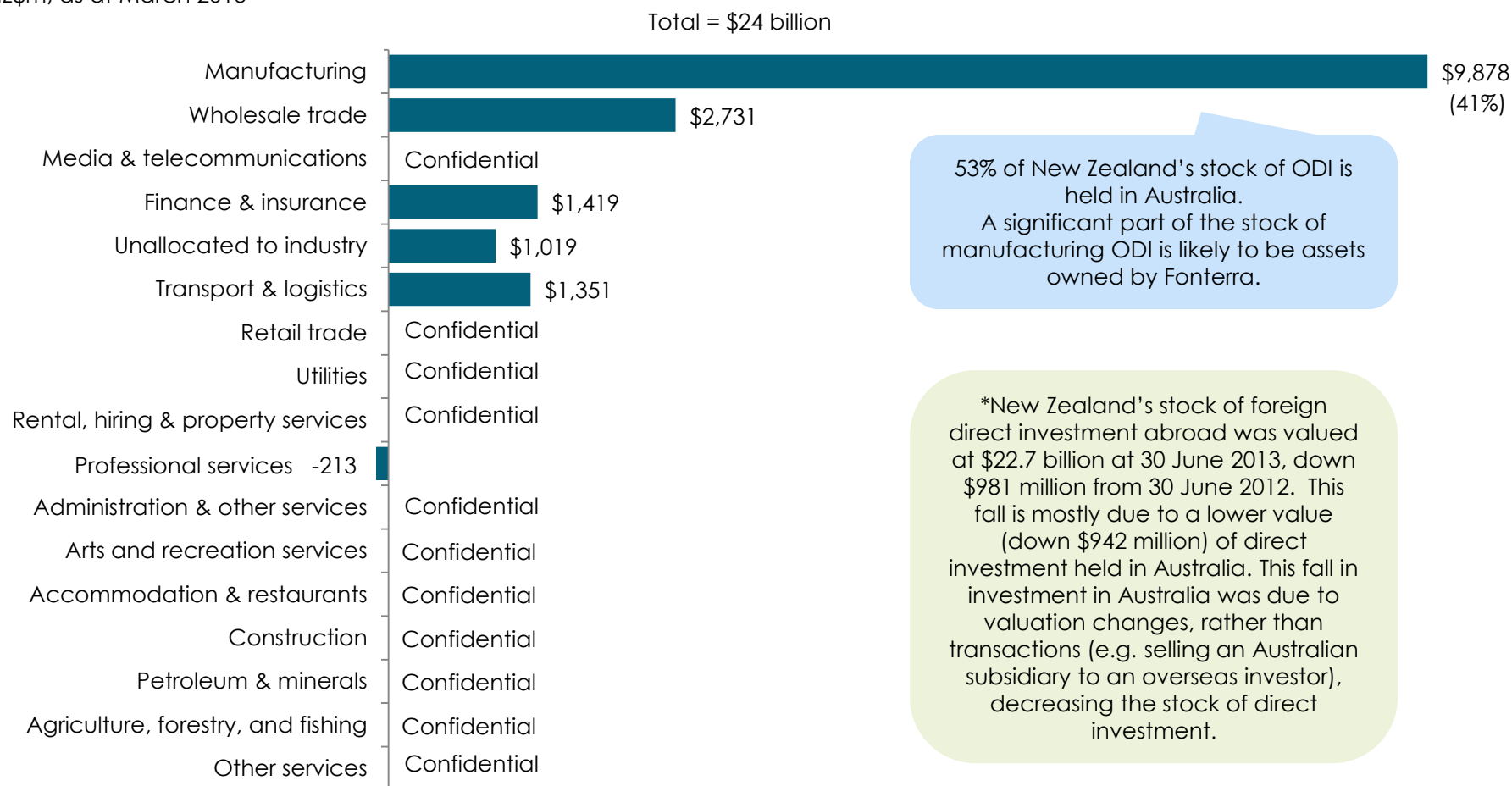
Source: Statistics New Zealand, Business Operations Survey (2012)
 Numbers may differ from those published by Statistics New Zealand due to random rounding of data

Stock of New Zealand outward direct investment (ODI) by sector

New Zealand firms had \$24b in direct investments overseas as at March 2013*; the manufacturing sectors account for 41% of the total

New Zealand's direct investment abroad

NZ\$m; as at March 2013

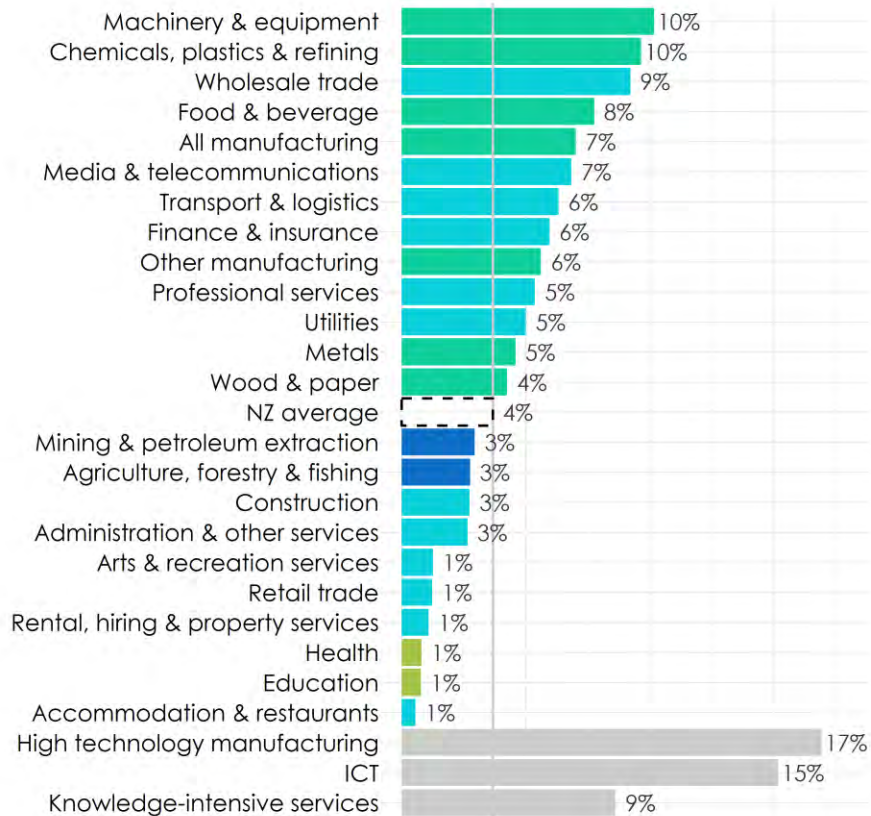


Rate of outward direct investment by sector

A mix of service and manufacturing sectors are leading the rate of outward direct investment

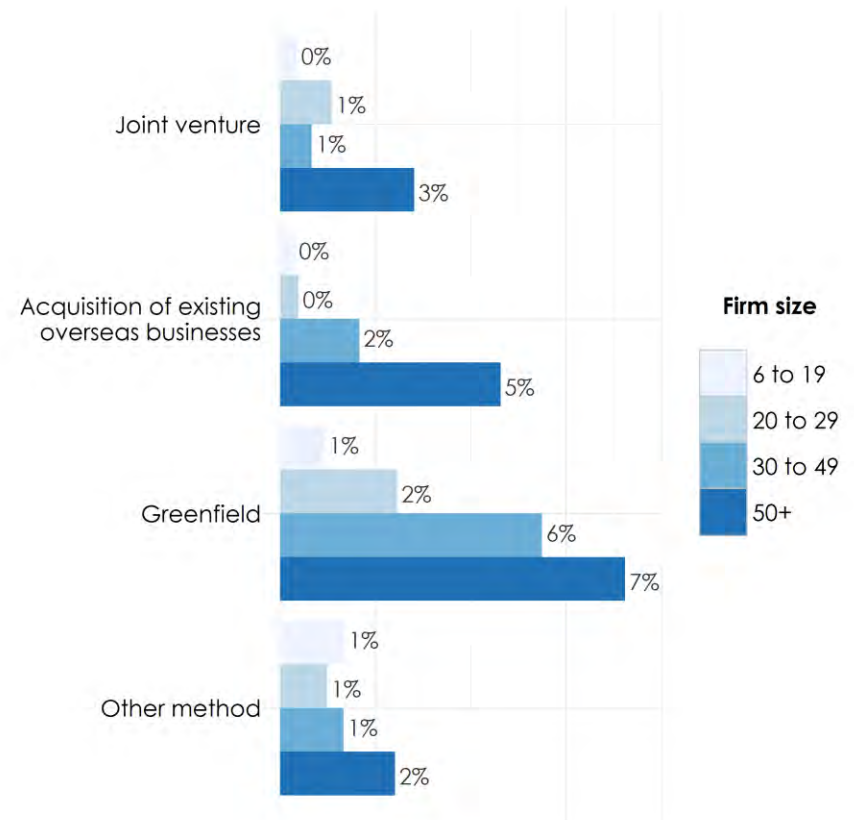
Firms with overseas holdings, selected sectors

% of firms with six or more employees; 2012



Method of gaining overseas ownership interest or shareholdings, by firm size

% of firms with six or more employees; 2012



Source: Statistics New Zealand, Business Operations Survey (2012)

Numbers may differ from those published by Statistics New Zealand due to random rounding of data

Outward investment in services

A number of firms in services sectors have been successful in building significant international businesses, as these examples show

Sector	Firm	Examples
Construction	Fulton Hogan Private Revenues: \$3.2b (2013) (includes some manufacturing, mining and logistics activities)	Significant acquisitions in Australia include Standard Roads Group; Astec; 50% of South East Asphalt Pty Ltd in Melbourne; Central Precast in Victoria; Belmadar Constructions Pty Ltd in NSW; Tylden Quarry in Victoria; PMP in South Australia; Specialised Tanker Transport and Pioneer Road Services. Fulton Hogan is now a leader in the Australasian asphalt and surfacing market.
Logistics	Mainfreight Listed NZX Revenues: \$1.9b (2013)	The company was founded in 1978 by Executive Chairman, Bruce Plested. Substantial operations are now well-established in Australasia, Asia and the US. The acquisition of the Wim Bosman Group in April 2011 has given Mainfreight a significant footprint in Europe.
Retailing	Pumpkin Patch Listed: NZX Revenues: \$0.3b (2013)	Employing over 2,000 people, Pumpkin Patch has company-owned retail stores in New Zealand, Australia and Ireland, and it has distribution agreements in South Africa, the Middle East, Asia, Europe and Africa. The company also sells online and in high-profile department stores in Australia and the US.
Utilities	Mighty River Power State Owned Enterprise / listed NZX/ASX Revenues: \$1.4b (2013)	Mighty River Power is the major shareholder in Geoglobal Energy LLC (GGE), which focuses on the worldwide acquisition, exploration, development and operation of geothermal resources. GGE has established a broad portfolio of geothermal concessions and assets in various stages of development in the US, Chile and Germany.
Professional services	Datacom Private Revenues: \$0.9b (2013)	Datacom has built a significant business in Australia through organic growth and acquisition. Now expanding into the Philippines and Malaysia.
Professional services	BECA Private Revenues: \$0.4b (2013)	BECA has five offices in Australia with over 400 employees. Singapore is now the headquarters of BECA's Asia hub with over 400 employees in five countries.