

THE NEW ZEALAND Sectors Report 2014

AN ANALYSIS OF THE NEW ZEALAND ECONOMY BY SECTOR

New Zealand Government



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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PART THREE CROSS-CUTTING SECTORS

HIGH-TECHNOLOGY MANUFACTURING MEDIUM-HIGH TECHNOLOGY MANUFACTURING

130 page in-depth available from www.mbie.govt.nz

See pages 92–94 for guide to reading snapshot pages.

What are the high and medium-high technology manufacturing sectors?

High and medium-high technology firms are defined by their level of expenditure on R&D

- The following charts provide a snapshot of New Zealand's high and medium-high technology manufacturing sectors, as defined by the OECD.*
- Data is provided for the high and medium-high technology sectors separately, to enable comparisons, and because they are made up of distinctly different industries.
- For a full analysis including some industry commentary see the separate report on high and medium-high technology manufacturing available from www.mbie.govt.nz

Medium-high technology manufacturing
 Many of the manufacturing firms in New Zealand commonly thought of as 'high tech' firms are in industries which are formally classified as medium-high technology manufacturing.
 Medium-high technology industries are those in which expenditure on R&D is between 2% and 8% of revenues, based on combined data from 25 developed countries.
- Industries captured include the manufacture of polymers, chemicals (excluding pharmaceuticals), transport equipment, and machinery and equipment. In New Zealand these industries spend between 0.3% (chemicals) and 2.3% (transport equipment)
of revenues on R&D.
 These R&D figures are aggregates. Individual firms may spend significantly more or less on R&D.

It is very important to keep the industry dimension in perspective. High tech industries... make up only a small component of manufacturing, and an even smaller component of GDP. This is true of all OECD economies... 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.

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

Long-term rise in export value

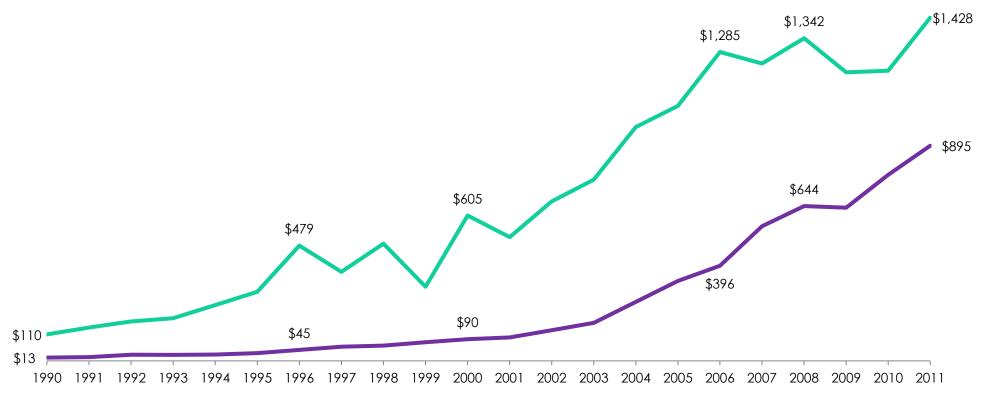
Like the wine industry, high technology manufacturing has developed from small beginnings to become a significant export earner

NZ exports of high technology manufactured goods and wine

<u>US\$m;</u> nominal; 1990–2012

Example chart from High Technology Manufacturing in-depth report

High Technology Manufacturing
 Wine



Note: data is taken from two different databases so should be treated as illustrative. Source: OECD STAN Bilateral Trade Database (high technology manufacturing data) and COMTRADE database (wine data).

High technology manufacturing Cross-cutting sector

The technology level of manufacturing is defined internationally by the average share of revenue that each industry spends on research and development. When examined across multiple countries combined, high technology manufacturing industries are currently defined as those that spend over 8% of their collective revenue on research and development.

Scorecard						Example firms			
Measure	Total	% of NZ*	Growth (1 year)	Growth (5 yr CAGR)	Growth (10 yr CAGR)	Firm	Turnover (\$m)	Employees	Ownership
GDP 2011 (nominal)	\$1,338m	1%	9.9%	3.5%	n/a	Fisher & Paykel Healthcare	\$517	2,600	Listed; NZ (NZX: FPH)
GDP 2013 (real)	n/a	n/a	n/a	n/a	n/a	Tait Communications	~\$200	930	Private; NZ (charitable
Goods exports 2013	\$1,430m	3.2%	2.7%	3.3%	3.6%		4200	,	trusts)
Employment 2012	14,310	0.6%	0.9%	-0.4%	1.6%	Rakon	\$178	2,300	Listed; NZ (NZX: RAX)
Value added / employees 2011	\$94,352	125%	9.6%	3.6%	n/a	Gallagher	\$187	760	Private; NZ (Gallagher
Investment in fixed assets 2011	\$94	0%	-10.5%	n/a	n/a	Callagrici	ψιον	700	family)
No. of firms 2013	1,036	0.2%	1.4%	0.9%	1.8%	Dynamic Controls	\$92	391	Listed; USA (NYSE: IVC)

Industry level financial performance								
	Тс	otal	Growth	ו (1yr)				
	This sector	All sectors	This sector	All sectors				
Total income per firm 2012#	\$3,829,746	\$1,377,888	-2.0%	6.5%				
Total income per employee 2012#	\$295,000	\$327,400	1.7%	4.9%				
Surplus per employee 2012#	\$20,600	\$32,100	-14.5%	32.1%				
Return on equity 2012#	17.2%	8.6%	down	up				
Debt ratio (liabilities/assets) 2012#	50.0%	57.4%	down	down				
Capital stock per worker 2011	n/a	\$168,533	n/a	1.1%				

* NZ is total employing firms, except for productivity where it is the total measured sector.

** Cross-cutting sector: uses value added per employee for productivity, NZ average = 100%.

All sectors total excludes some industries: refer to methodology and sources.

Export value by product		Export value b	y market
Product	Exports (NZ\$m; 2012)	Country	Exports (NZ\$m: 2012)
Therapeutic respiration devices	\$287.2	Australia	\$330
Piezo-electric quartz crystals	\$87.8	USA	\$286
Medicines for humans	\$62.5	China & HK	\$96
Medicines for animals	\$61.8	UK	\$75
Radio telephones	\$57.1	France	\$65
Other	\$897.4	Other	\$540
TOTAL all exports	\$1,392	TOTAL All countries	\$1,392

High technology manufacturing Cross-cutting sector

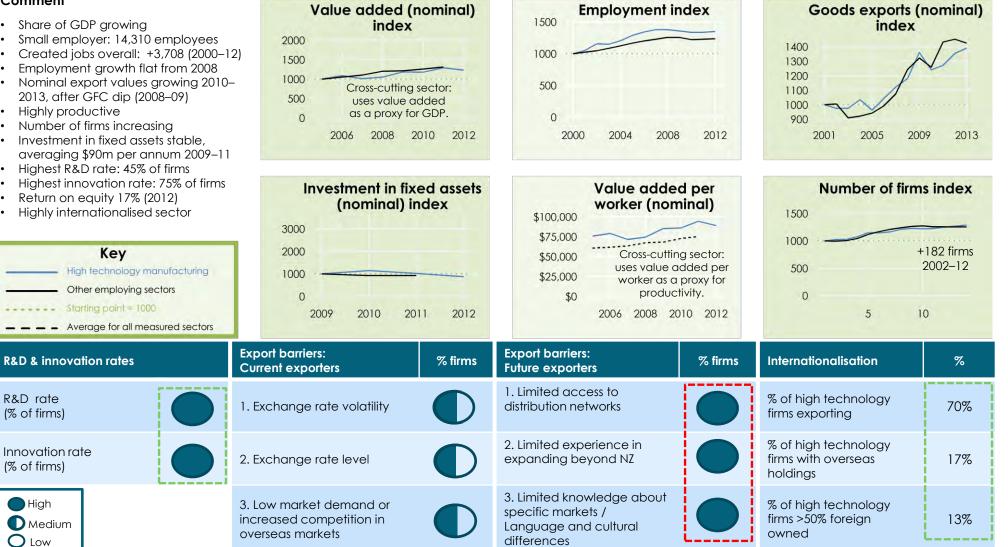
Performance

Key trends, various timeframes: 10-year index (base=1000) except productivity is \$ values – this sector vs all other sectors

Comment

- Share of GDP arowing
- Small employer: 14,310 employees
- Employment growth flat from 2008
- 2013, after GFC dip (2008-09)
- Highly productive
- Number of firms increasing
- Investment in fixed assets stable,
- Highest R&D rate: 45% of firms

- Highly internationalised sector



Medium-high technology manufacturing Cross-cutting sector

The technology level of manufacturing is defined internationally by the average share of revenue that each industry spends on research and development. When examined across multiple countries combined, medium-high technology manufacturing industries are currently defined as those that spend between 2% and 8% of their collective revenue on research and development.

Scorecard						Example firms				
Measure	Total	% of NZ*	Growth (1 year)	Growth (5 yr CAGR)	Growth (10 yr CAGR)	Firm	Turn	over (\$m)	Employees	Ownership
GDP 2011 (nominal)	\$2,826m	2%	17%	-0.4%	n/a	Fisher and Paykel Appliances		\$1,000	3,050	Foreign (Haier Group)
Real GDP 2013	n/a	n/a	n/a	n/a	n/a	Glidepath		\$75	200	Private
Goods exports 2013	\$2,634m	6%	-15.3%	-2.4%	-0.6%			ψισ	200	i nivolo
Employment 2012	33,876	1.5%	2.3%	-1.9%	-1.3%	Buckley Systems		\$70	270	Private
Value added / employees 2011	\$85,372	113.10%	18.4%	2.6%	n/a	Compac Sorting Equipment		\$83	310	Private
Investment in fixed assets 2011	\$164m	1%	n/a	n/a	n/a	Equipment				
No. of firms 2013	4,015	0.8%	-1.1%	-1%	0.4%	Scott Technology		\$54	225	Listed, NZX
Industry level financial	performan	ce				Export value by product Export value by market				by market
			Total	Grow	vth (1yr)	Product		Exports (NZ\$m; 2012)	Country	Exports (NZ\$m: 2012)
		This secto	or All sector	s This sector	r All sectors	Specialised machinery and	b	\$759	Australia	\$1,327
Total income per firm 2	012#	\$2,700,00	00 \$1,377,88	8 9.7%	6.5%	equipment			Australia	φ1,527
Total income per empl	oyee 2012#	\$358,900	\$327,400	5.6%	4.9%	Electrical equipment	\$509		USA	\$351
Surplus per employee 2	2012#	\$24,800	\$32,100	15.3%	32.1%	Other machinery and equi	d equipment \$315		China & HK	\$115
Return on equity 2012#		17.2%	8.6%	up	up	Domestic appliances	\$259		Japan	\$103
Debt ratio (liabilities/as	sets) 2012#	49.5%	57.4%	down	down	Motor vehicles and parts		\$173	UK	\$37

1.1%

n/a

Other

TOTAL

all exports

\$777

\$2,792

Other

TOTAL

All countries

* NZ is total employing firms, except for productivity where it is the total measured sector .

n/a

\$168,533

** Cross-cutting sector: uses value added per employee for productivity, NZ average = 100%.

All sectors total excludes some industries: refer to methodology and sources.

Capital stock per worker 2011

\$859

\$2,792m

Situation

Medium-high technology manufacturing

Cross-cutting sector

Performance

Index of key trends, various timeframes: (base =1000), this sector vs all other sectors (except productivity is \$ values)

Comment Value added (nominal) **Employment index** Goods exports (nominal) 1500 index index Share of GDP has fallen 2000 Medium sized sector for employment: 1400 1000 33.876 workers 1500 Lost jobs overall: -5,211 (2000-2012) 1200 \$3.1b in 2012 1000 500 Created jobs: +774 (2012) \$2.6b in 2013 Cross-cutting sector: 500 1000 Number of firms declining since 2009 uses value added Nominal export values declining 0 0 as a proxy for GDP Number of firms declining 2000 2004 2008 2012 2005 2009 2006 2008 2010 2012 2001 2013 Identification of distance and ٠ increased competition in overseas markets as barriers possibly reflects Investment in fixed assets Number of firms index Value added per nature of goods exported, e.g. whiteware versus health technologies worker (nominal) (nominal) index 1500 Almost exactly twice the size of high 3000 technology manufacturing \$75,000 -----1000 2000 Key \$50,000 Cross-cutting sector: 500 Medium-high technology manufacturing 1000 uses value added \$25,000 per employee as a Other employing sectors 0 0 \$0 proxy for productivity Starting point = 1000 2009 2006 2008 2010 2012 5 10 2010 2011 2012 Average for all measured sectors **Export barriers:** Export barriers: **R&D & innovation rates** % firms % firms Internationalisation % **Current exporters Future exporters** % of medium-high R&D rate 1. Limited experience in 1. Distance from markets 50% technology firms (% of firms) expanding beyond NZ exporting 2. Low market demand or % of medium-high Innovation rate 2. Distance from markets technology firms with 12% increased competition in (% of firms) overseas markets overseas holdings % of medium-high High 3. Exchange rate level / 3. Limited access to technology firms >50% 10% Medium exchange rate volatility, distribution networks foreign owned 🔘 Low



Cross-cutting sector

INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)

102 page in-depth available from www.mbie.govt.nz

See pages 92–94 for guide to reading snapshot pages.

Definition

OECD definition for information and communications technology (ICT)

The OECD definition includes telecommunications goods and services, but **excludes** internet publishing and broadcasting. The ICT sector is defined as:

- goods and services which enable the function of information processing and communication by electronic means including transmission and display
- goods which use electronic processing to detect, measure and/or record physical phenomena or control a physical process.

Applying the OECD's definition, four industries are classified as part of the ICT sector: telecommunications; IT services (software and computer services); ICT manufacturing; and IT wholesaling.

The full definition is provided in the in-depth publication on ICT available at www.mbie.govt.nz

Note on interpreting aggregated ICT data

How statisticians define the industry and how the industry sees itself is very different.

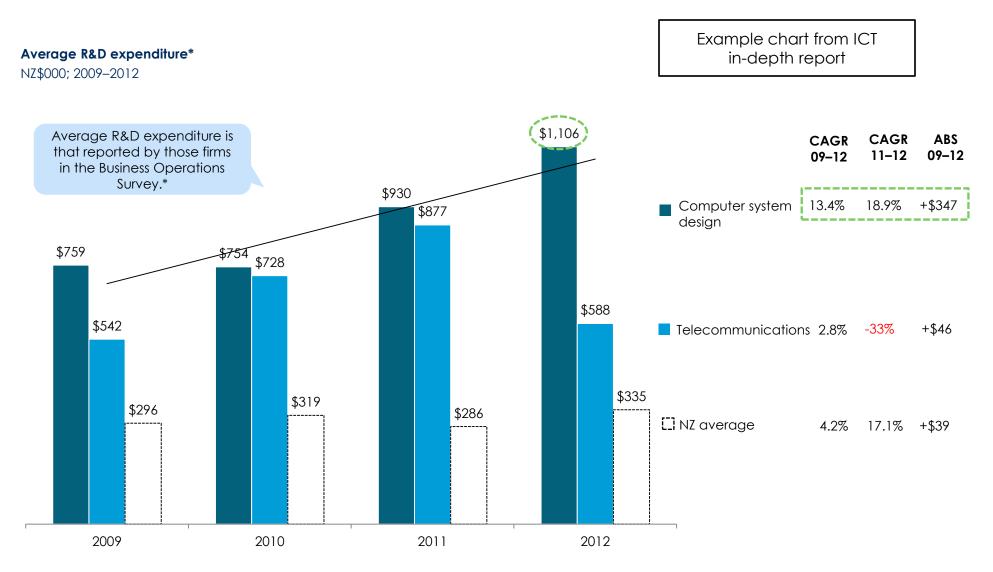
Industry leaders commented that aggregated data on the ICT sector is misleading. Firms in the three different activities captured by the definition for ICT – ICT manufacturing, IT services and telecommunications – have very different dynamics and capital requirements.

In response to feedback, the in-depth report on ICT focuses on the largest IT services subsector, computer systems design, which appears to capture firms in New Zealand's growing IT services export sector.

For the full analysis of this sector, see the ICT Sector Report available from www.mbie.govt.nz

Average R&D expenditure

The computer system design sector is significantly increasing investment in R&D



*Note: Total survey sample is 35,976 firms with six or more employee; 600 of the surveyed firms are in computer system design. Source, Statistics NZ, Business Operations Survey, 2012

ICT (OECD definition) Cross-cutting sector (data is aggregated and double-counted with other sectors)

Includes firms whose main activity is provision of goods and services which fulfil or enable the function of information processing and communication by electronic means including transmission and display. Also includes firms that provide goods which use electronic processing to detect, measure and/or record physical phenomena or control a physical process.

Scorecard						Example firms			
Measure	Total	% of NZ*	Growth (1 year)	Growth (5 yr CAGR)	Growth (10 yr CAGR)	Firm	Turnover (\$m)	Employees	Ownership
GDP 2011 (nominal)	\$9,189m	5%	8%	3%	n/a	Chorus	\$613m (7 months ending June 2012)		Listed NZX
GDP 2013 (real)	n/a	n/a	n/a	n/a	n/a	Talagara	4,576m	7,866	Listed NZX
Goods exports 2013	\$632m (su	bset of hig	h tech man	ufacturing exp	orts, see p.154)	Telecom	(2012)	(2012)	LISTED INZX
Employment 2012	76,665	3.30%	4%	1.3%	2.1%	Revera	\$38 (2012)	133	Acquired by Telecom
Value added / employees 2011	\$124,649	165.20%	5.4%	1.8%	n/a	Orion Health	\$100 (2012)	633	Private
Fixed capital investment 2011	\$1,317	4%	2.1%	n/a	n/a				
No. of firms 2013	15,188	3.2%	1.1%	0.9%	2.8%	Optimation (NZ)	\$48 (2012)	230	Private
Industry level financic	ıl performan	ce				Key services exports from	this sector	Export value by 1	narket
			Total	Gr	owth (1yr)	Service	Exports	Country	Exports
		This sec	ctor All sec	tors This sec	tor All sectors	(aggregated ICT data)	(\$m; 2012)	Coorniry	(\$m: 2012)
Total income per firm	2012#	\$1,780,	174 \$1,377,	888 -2.9%	6.5%	Computer services	\$391.3	n/a	
Total income per emp	ployee 2012	# \$437,1	00 \$327,4	00 -3.7%	4.9%	Communication services	\$183.6		
Surplus per employee	2012#	\$30,3	0 \$32,10	00 41.6%	32.1%	Software royalties	\$123.2		

News & information

Other royalties &

services

franchises Other

TOTAL

all exports

\$21.5

\$15.5

\$383.9

\$1,119

Other

TOTAL

all countries

Total income per employee 2012#	\$437,100	\$327,400	-3.7%	4.9%
Surplus per employee 2012#	\$30,300	\$32,100	41.6%	32.1%
Return on equity 2012#	16.1%	8.6%	up	up
Debt ratio (liabilities/assets) 2012#	62.9%	57.4%	down	down
Capital stock per worker 2011	n/a	\$168,533	n/a	1.1%

* NZ is total employing firms, except total measured sector for productivity

** Cross-cutting sector: uses value add per employee for productivity, NZ average = 100% #All sector total excludes some industries. Refer appendix, terms and definitions.

\$1,119

Situation

ICT (OECD definition) Performance Cross-cutting sector (data is aggregated and double-counted with other sectors)

Index of key trends, various timeframes: (base =1000), this sector vs all other sectors (except productivity is \$ values)

Comment

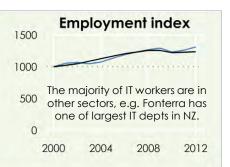
- Sector value add growing
- Large employer: 76,665
- Creating jobs overall: +11,820 (2000–12)
- Lost jobs: -3,627(2009)
- Created jobs: +4,722 (2010-12)
- Productivity improving
- Goods exports a subset of high
 technology manufacturing exports
- Services exports growing (not shown)
- Number of firms increasing
- Fixed capital investment stable
- R&D and innovation rates high
- See ICT report for a more granular analysis, available from www.mbie.govt.nz

Кеу
 ICT
 Other employing sectors
 Starting point = 1000
 Average for all measured sectors

Value added (nominal) index 2000 1500 1000 500 Cross-cutting sector: uses value added 0 as a proxy for GDP. 2006 2008 2010 2012

Investment in fixed assets (nominal) index

3000			averagir	0
			10m 2009	
2000			mmunico	ations,
1000		excludes	meala.	
1000				
0				
	2009	2010	2011	2012



Value added per

worker (nominal)

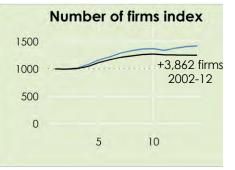
Cross-cutting sector: uses value added per worker

as a proxy for productivity. 2006 2008 2010 2012

\$124,649 per

worker (2012)

Goods exports (nominal) index



Results from Survey: 2011 R&D & innovation rates	Export barriers: Current exporters	% firms	Export barriers: Future exporters	% firms	Internationalisation	%
R&D rate	1. Distance from markets		1. Limited experience in expanding beyond NZ		% of ICT firms reporting overseas income	n/a
Innovation rate	2. Other		2. Limited access to finance for expansion beyond NZ		% of ICT firms with off- shore direct investment	11%
 High Medium Low 	3. Exchange rate volatility/ Limited access to finance for expansion beyond NZ		3. Limited knowledge about specific markets/ Low market demand or increased competition		% of ICT firms >50% foreign owned	19%

\$100,000

\$50,000

\$0



Cross-cutting sector KNOWLEDGE INTENSIVE SERVICES

140 PAGE IN-DEPTH REPORT AVAILABLE FROM WWW.MBIE.GOVT.NZ

See pages 92–94 for guide to reading snapshot pages

Definition

This report uses the OECD definition of knowledge intensive services as a starting point only

OECD definition

The OECD defines knowledge intensive services by using three criteria:

- the extent to which high technology is used within that service industry
- the workers' level of skills and education
- the amount that the service industry invests in research and development.

The result is a broad range: the definition encompasses one third of the GDP generated by all services industries in New Zealand.

Drawing on the OECD's definition, the following services industries are classified as knowledge intensive:

- information media and telecommunications;
- financial and insurance services
- professional scientific and technical services
- post and courier pick-up services
- rental and hiring services (except real-estate)
- commission based wholesaling;
- employment services
- other administrative services.

Wide range of activities

The OECD definition for knowledge intensive services captures a wide range of activities and a wide variety of firms that operate in different markets with different structures and dynamics.

The aggregated data should be treated with caution.

Starting point

The in-depth report in this series on knowledge intensive services takes this broad definition as a starting point only. The main focus of the analysis is confined to the professional, scientific and technical services sector (except computer systems design, which is covered in the ICT report).

This approach is chosen because it captures activities such as scientific research, architecture, engineering, design, law, accountancy, advertising, market research, veterinary science, management and other consultancy.

These parts of the economy are all of interest, either as activities where firms are expanding off-shore (such as the engineering firms Beca and Opus International) or in terms of providing services to support the growth and build the capability of the export sector. Design, marketing and scientific research are examples of the latter.

Exports

Exports that could be attributed to firms in the professional, scientific and technical services sector (excluding computers systems design) are likely to be captured in the 'miscellaneous business, professional and technical services' export category. In 2012 this category generated \$2 billion in exports, up from \$968 million in 2006.

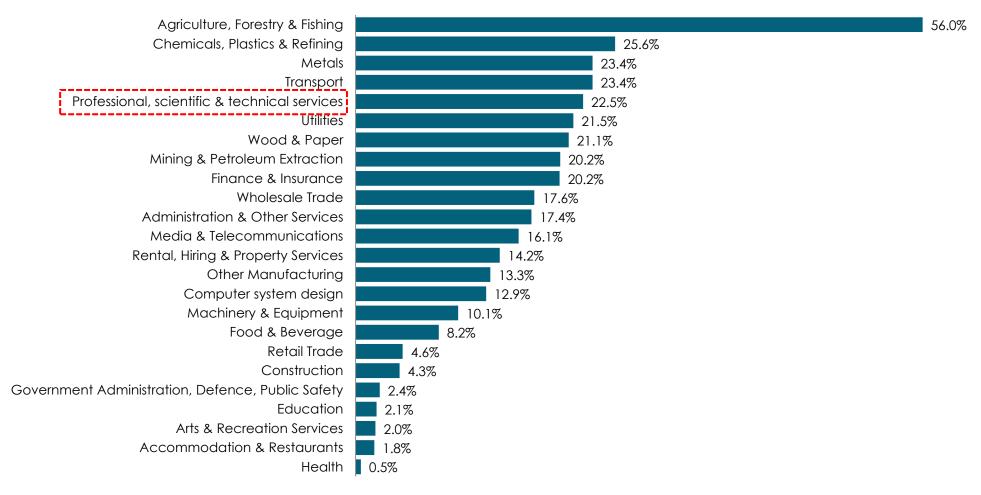
Share of income from exports: professional, scientific and technical services

22% of the output from professional, scientific & technical services firms contributed to other firms' exports

Direct exports as a % of total sector gross output

2007; nominal

Example chart from the Knowledge Intensive Services in-depth report



The definition of knowledge intensive services used in this report is based on the definition of knowledge intensive market services published in OECD Science, Technology and Industry Scoreboard 2011. While manufacturing technology intensity can be defined by R&D intensity, many service industries perform relatively limited amounts of formal R&D, so other metrics such as workforce skill composition and intensity of investment in ICT equipment have been used.

Scorecard						Example firms			
Measure	Total	% of NZ*	Growth (1 year)	Growth (5 yr CAGR)	Growth (10 yr CAGR)	Firm	Turnover (\$m)	Employees	Ownership
GDP 2011 (nominal)	\$33,752m	20%	-2.9%	2.6%	n/a	Веса	\$612m (2013 est)	2400	Private
Employment 2012	n/a	n/a	2.1%	0.7%	2.7%	Cawthron Institute	\$34m (2013 est)	200	Cawthron
Goods exports 2013	\$0m	0%	n/a	n/a	n/a		ço (2010 00.)	200	Trust
Value added / employees 2011**	\$79,789	105.7%	-5.4%	1.7%	n/a	PricewaterhouseCoopers	\$330m (2013 est)	1300	Private
Fixed capital investment in 2011	\$3,018	10%	-28.8%	n/a	n/a	AJ Park	\$37m (2013 est)	220	Private
No. of firms 2013	103,815	22%	0.2%	1%	4%	AJFUK	\$3711 (2013 est)	220	Flivule
GDP 2011 (nominal)	\$33,752m	20%	-2.9%	2.6%	n/a	Warren & Mahoney	\$17m (2013 est)	105	Private

Industry level financial performance								
	Tc	otal	Growth (1yr)					
	This sector	All sectors	This sector	All sectors				
Total income per firm 2012#	\$1,305,610	\$1,377,888	14.9%	6.5%				
Total income per employee 2012#	\$419,300	\$327,400	11.5%	4.9%				
Surplus per employee 2012#	\$106,300	\$32,100	78.4%	32.1%				
Return on equity 2012#	14.0%	8.6%	up	up				
Debt ratio (liabilities/assets) 2012#	77.0%	57.4%	down	down				
Capital stock per worker 2011#	n/a	\$168,533	n/a	1.1%				
Total income per firm 2012	\$1,305,610	\$1,377,888	14.9%	6.5%				

** Cross-cutting sector: uses value added per employee for productivity, NZ average = 100% # All sectors total excludes some industries: refer to methodology and sources

Leading export service types	Exports by des	tination	
Product (services) exported by knowledge intensive service firms	Exports (NZ\$m; 2011)	Country	Exports (NZ\$m: 2011)
Computer services	\$447	Australia	\$860
Management fees between related parties	\$290	USA	\$523
Communication services	\$243	UK	\$178
Financial services	\$207	Japan	\$72
Software royalties	\$168	France	\$55
Engineering consultancy	\$154	Singapore	\$52
TOTAL all service types	\$2,494	TOTAL all countries	\$2,494

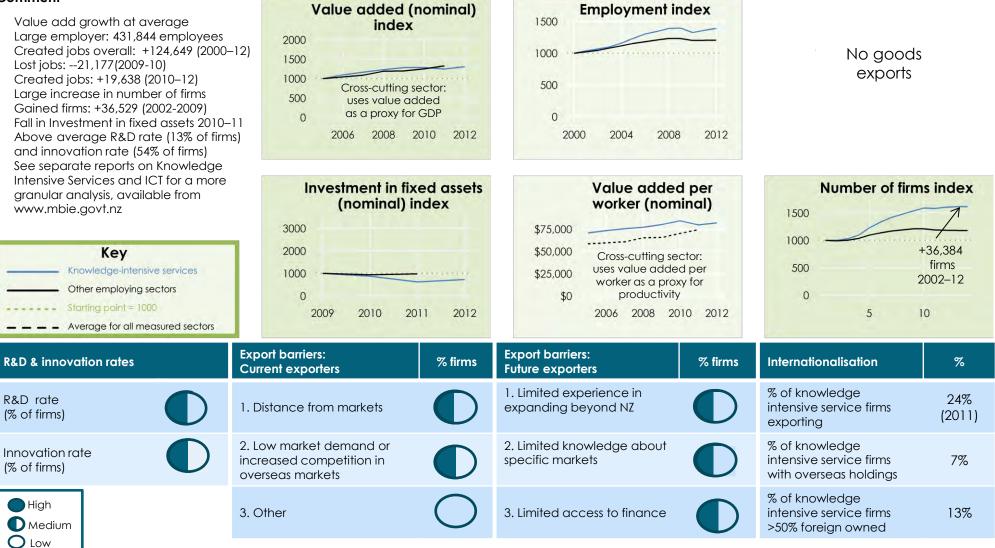
Knowledge intensive services Cross-cutting sector

Performance

Index of key trends, various timeframes: (base =1000), this sector vs all other sectors (except productivity is \$ values)

Comment

- Value add growth at average
- Large employer: 431,844 employees
- Created jobs overall: +124,649 (2000-12)
- Lost jobs: --21,177(2009-10)
- Created jobs: +19,638 (2010-12)
- Large increase in number of firms
- Gained firms: +36,529 (2002-2009)
- Fall in Investment in fixed assets 2010–11
- Above average R&D rate (13% of firms) and innovation rate (54% of firms)
- See separate reports on Knowledge Intensive Services and ICT for a more aranular analysis, available from www.mbie.govt.nz





Cross-cutting sector

TOURISM

150 PAGE IN-DEPTH REPORT AVAILABLE FROM WWW.MBIE.GOVT.NZ

See pages 92–94 for guide to reading snapshot pages.

International definition of tourism

- Tourism is defined internationally as the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes. This definition recognises tourism as comprising a broad range of activities, and goes beyond the common perception of tourism as being limited to holiday activity.
 - UNWTO technical manual: Collection of Tourism Expenditure Statistics. World Tourism Organization; 1995
- The definition includes domestic visitors (New Zealanders travelling to and staying in other parts of New Zealand) and international visitors (people from other countries, including New Zealand citizens living overseas, travelling to and staying in New Zealand for less than a year).
- Conventional industries such as construction and manufacturing are defined according to the goods and services they produce. By contrast, tourism is defined by the characteristics of the <u>customer</u> demanding the goods and services:
 - A restaurant meal bought by an Australian visiting New Zealand is a tourism export
 - The same meal bought by a New Zealand resident living down the road is not
 - The same meal bought by a New Zealander who resides in another part of the country is domestic tourism expenditure.
- Thus the tourism sector cuts across Australia and New Zealand Standard Industrial Classification (ANZSIC) codes. It requires a different approach to classification and analysis.
- A full analysis of New Zealand's tourism industry is provided in the Tourism Sector Report, available from www.mbie.govt.nz

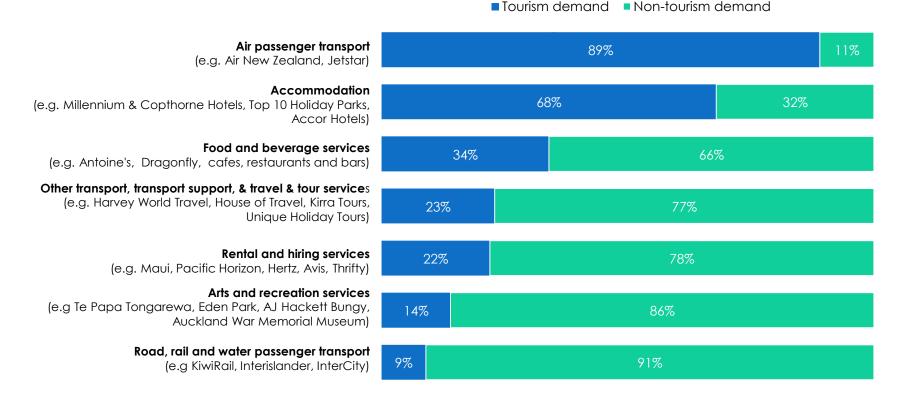
Who is in the tourism industry?

A number of key services sectors in New Zealand are significantly dependent on tourism demand (domestic and international)

Percentage of direct tourism demand for tourism-characteristic industries' output

% total demand; 2010° (year ended March)

Definition: A tourism-characteristic industry is one where (1) at least 25 per cent of the industry's output is purchased by visitors; or (2) industry output includes a tourism-characteristic product.



Tourism in-depth report

Tourism Cross-cutting sector

Tourism, unlike 'conventional' industries, is defined by the characteristics of the customer demanding tourism products. A 'tourismcharacteristic product' is defined as one that would cease to exist in a meaningful quantity, or for which the level of consumption would be significantly reduced, in the absence of visitors. A product is classified as a tourism-characteristic product if at least 25 per cent of its production is purchased by visitors.

Scorecard ^a						Example firms			
Measure	Total	% of NZ ^b	Growth (1 year)	Growth (5 yr CAGR ^c)	Growth (10 yr CAGR ^c)	Firm	Turnover (\$m)	Employees	Ownership
GDP contribution 2013 (nominal)	\$7,250m	3.7%	4.3%	0.5%	2.5%	Air New Zealand	\$4,500m (est)	10,453	Public – NZX; 75% NZG
Total exports 2013 ^e (nominal)	\$9,805m	16.1%	2.2%	0.8%	2.4%	SKYCITY Entertainment Group Ltd	\$861m (est)	3,684	Public – NZX and ASX
Tourism						Tourism Holdings Ltd	\$209m (est)	431	Public – NZX
employment (FTE) 2013	110,800	5.7%	1.8%	2.3%	2.0%	Small backpacker hostel	\$1m (est)	5 (est)	Limited liability company
GDP/employment (FTE) 2010 (nominal)	\$49,058	67.8%	-6.7%	-1.9%	1.2%	Small jet boat tour operator	\$500,000 (est)	Zero	Partnership
Investment in fixed assets 2010	\$5,904m	16.3%	-1.2%	-1.2%	6.3%	Key tourism exports by t	ype of export	Visitor spen	ding by country ^e
No. of 'tourism- characteristic'	25,833	5.5%	-0.7%	0.2%	2.1%	Service	Exports (\$m; 2013)	Country	Visitor spend (\$m: 2012)
firms 2012 ^d						Air passenger transport	\$2,290	Australia	\$1,660

- a. Reports latest available tourism data. It does not necessarily align with all sector scorecards, which have been prepared on a common basis to allow comparison across sectors.
- b. NZ is total employing sectors (excludes owner-occupied dwellings).
- CAGR = compound annual growth rate. с.
- d. Indicative data, based on applying tourism industry ratios to Statistics New Zealand Business Demography (2012) firm counts. Treat as directional.
- e. Visitor spending is direct spending by international visitors in New Zealand. Excludes non-visitor expenditure (plus GST), notably Air New Zealand's overseas earnings and foreign carrier landing fees, refuelling and catering costs.

SKYCITY Entertainment Group Ltd	\$861m (est)	3,684	Public – NZX and ASX
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Key tourism exports by t	ype of export	Visitor spen	ding by country ^e
Service	Exports (\$m; 2013)	Country	Visitor spend (\$m: 2012)
Air passenger transport	\$2,290	Australia	\$1,660
Food & beverage	\$1,688	China	\$555
Retail (other than fuel)	\$1,480	UK	\$545
Accommodation	\$1,137	US	\$430
Other passenger transpo	t \$871	Japan	\$285
Other	\$2,312	Other	\$2,018
TOTAL all exports	\$9,778 ^e	TOTAL all countries	\$5,493 ^e

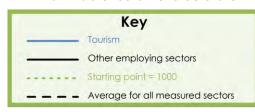
Tourism Cross-cutting sector

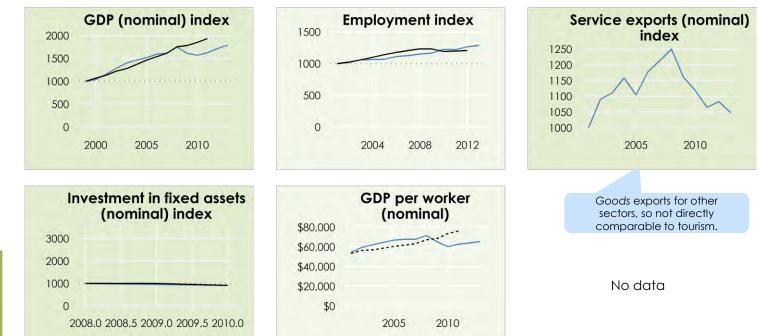
Performance

Key trends, various timeframes: 10 year index (base =1000) except productivity is \$ values — this sector vs all other sectors

Comment

- Nominal GDP flat to declining from 2008
- Large employer: 120,700
- Created jobs overall +15,900 (2001-11)
- Lost jobs: -3600 (2009–2011
- Created jobs: +1,455 (2011)
- Productivity (GDP per hour worked)
 declining
- Exports flat
- In 2009, the tourism sector was the largest investor in fixed assets due to significant airport infrastructure investment. *Note: 2008 & 09 investment data not directly comparable to earlier years due to classification changes.
 1 in 20 firms are tourism characteristic





Results from Survey 2011: R&D & innovation rates	Export barriers: Current exporters	Degree	Export barriers: Future exporters	Degree	Internationalisation	%
R&D rate	1. Exchange rate level		1. Limited access to distribution networks		% of tourism related firms reporting overseas income	100%
Innovation rate	2. Exchange rate volatility		2. Limited experience in expanding beyond NZ		% of tourism firms with off- shore direct investment	11%
	3. Low market demand or increased competition		Overseas government regulation or tariffs		% of tourism firms >50% foreign owned	19%



APPENDIX

glossary, definitions, sources, methodology and limitations

Glossary of terms This report uses the following acronyms and abbreviations

A\$/AUD	Australian dollar	NZ	New Zealand
ABS	Absolute	n/a	Not available/not applicable/no data
ANZSIC	Australia and New Zealand Standard Industry Classification	NZ\$/NZD	New Zealand dollar
AR	Annual report	Oceania	NZ, Australia & Pacific Islands
ASEAN	Association of Southeast Asian Nations	RoE	Return on equity
AU	Australia	R&D	Research & Development
Australasia	Australia and New Zealand	S Asia	South Asia (Indian sub-continent)
b	Billion	SE Asia	South East Asia
CAGR	Compound annual growth rate	SOE	State Owned Enterprise
C/S America	Central and South America (Latin America)	T/O	Turnover
CRI	Crown Research Institute	US/USA	United States of America
CY	Calendar years	US\$/USD	United States Dollar
E Asia	East Asia	UK	United Kingdom
EBITDA	Earnings before interest, tax, depreciation and amortization	YE	Year ending
FTE	Full time equivalent	YTD	Year to date
FY	Financial year		
GFC	Global financial crisis		
JV	Joint venture		
m	Million		

Terms and definitions The report uses the following economic metrics

Term	Definition	Comment
Nominal GDP (gross domestic product)	The value of goods and services produced in New Zealand, after deducting the cost of goods and services used in the production process. 'Nominal' means not adjusted for inflation.	Cross-cutting sectors (excluding tourism) Value added has been used to provide indicative estimates. These have not been verified through the System of National Accounts.
Real GDP (gross domestic product)	GDP adjusted to remove the effect of price changes/inflation to show the change in the volume of goods and services produced in New Zealand. In this report, it is expressed in constant 2010 prices.	Cross-cutting sectors (excluding tourism) Data not available.
Goods exports	The value of goods of domestic origin (excluding re-exports) exported from New Zealand to another country. Note: sector exports values will exclude items suppressed in accordance with Statistics NZ's confidentiality policy. Exclusions are noted where applicable.	All sectors: Merchandise (goods) exports have been obtained by matching commodities to the ANZSICO6 industry that characteristically produces them (Statistics NZ custom job).
Employment	The number of people who earned money from employment (wages and salary earners) and/or self-employment. For tourism it is full-time equivalent (FTE) employees producing goods and services sold directly to tourists.	Cross-cutting sectors (excluding tourism) Statistics NZ, Linked Employee Employer Database, LEED, custom job. Tourism Direct employment in tourism (FTEs) and employment (FTEs) in tourism as a % of total.
Productivity	A measure of how efficiently inputs are used within the economy to produce outputs. Productivity is calculated by dividing the sector's real GDP by the number of hours paid. Real GDP per hour paid is used. For the cross-cutting sectors nominal GDP per employee is substituted.	Cross-cutting sectors (excluding tourism) For cross-cutting sectors real GDP is replaced by nominal GDP, and hours paid is replaced by number of employees; hence calculation is nominal GDP by number of employees.
Investment in fixed assets (gross fixed capital formation)	A measure of the outlays of producers on durable fixed assets (e.g. buildings, vehicles, plant and machinery, hydro-electric construction, roading and improvements to land). 'Gross' indicates that consumption of fixed capital is not deducted from the value of the outlays.	Cross-cutting sectors (excluding tourism) Uses additions less disposals of fixed assets, (custom job). Note: this data has not been through the System of National Accounts, so is indicative only.
Number of firms (number of enterprises)	The number of businesses or service entities operating in the sector in New Zealand. It covers all types of business or service entities, including companies, self-employed individuals, voluntary organisations and government departments.	Cross-cutting sectors (excluding tourism) Uses customised Business Demography Statistics, number of enterprises.

Terms and definitions The report uses the following financial metrics

Term	Definition	Comment
Total income per firm	Total income of all firms in sector divided by the number of firms in the sector. Income includes sales, interest, dividends, donations, government funding, grants and subsidies, and non-operating income.	Cross-cutting sectors (excluding tourism) Statistics NZ, Annual Enterprise Survey statistics, custom job.
Total income per employee	Total income of all firms in sector divided by rolling mean employment. Total income includes sales, interest, dividends, donations, government funding, grants and subsidies, and non- operating income.	Cross-cutting sectors (excluding tourism) Statistics NZ, Annual Enterprise Survey statistics, custom job.
Surplus per employee	Surplus before income tax of all firms in sector divided by rolling mean employment.	Cross-cutting sectors (excluding tourism) Statistics NZ, Annual Enterprise Survey statistics, custom job.
Return on equity	Surplus before income tax divided by shareholders' funds.	Cross-cutting sectors (excluding tourism) Statistics NZ, Annual Enterprise Survey statistics, custom job.
Capital stock per worker	Indicates capital intensity. The capital stock includes fixed assets such as buildings, roads and machinery, and intangible items such as software and exploration expenditure, less accumulated depreciation.	Cross-cutting sectors (excluding tourism) Statistics NZ, Annual Enterprise Survey statistics, custom job. Tourism: Capital stock, divided by employment.
Debt ratio	Debt ratio equals total liabilities of all firms in sector divided by total assets of all firms in sector.	Cross-cutting sectors (excluding tourism) Statistics NZ, Annual Enterprise Survey statistics, custom job.

Sources: economic data

The following sources were used for economic data

Metric	Source Standard ANZSIC sectors	Source tourism	Source High technology manufacturing, knowledge intensive services and ICT
Nominal GDP	Statistics NZ, Infoshare Database, System of National Accounts 1993, SND, GDP(P), Nominal, Actual, ANZSIC06 industry groups (Annual–Mar).	Statistics NZ, Tourism Satellite Account: 2012, Table 1 Tourism expenditure by component, Direct tourism value added.	Statistics NZ, Value added estimates from customised Annual Enterprise Survey tables. Note: this data has not been through the System of National Accounts, so is indicative only.
Real GDP	Statistics NZ, Infoshare Database, National Accounts, System of National Accounts 1993, SND, GDP(P), Chain-volume, Actual, ANZSIC06 industry groups (Annual– k Mar). Adjusted so that 2010 real GDP = 2010 Nominal GDP. Does not incorporate revisions published by Statistics NZ in December 2012.	n/a	
Goods exports	Statistics NZ, merchandise exports, obtained by matching commodities to the ANZSIC06 industry that characteristically produces them. Note: sector exports values will exclude items suppressed in accordance with Statistics NZ's confidentiality policy. For more information, see http://www.stats.govt.nz/about_us/policies- and-protocols/trade-confidentiality.aspx		Statistics NZ, merchandise exports, obtained by matching commodities to the ANZSIC06 industry that characteristically produces them.

Sources: economic data continued

Metric	Source standard ANZSIC sectors	Source tourism	Source High technology manufacturing, knowledge intensive services and ICT
Employment	Statistics NZ, Table Builder, Linked Employer- Employee Data (LEED) Tables (annual), Table 1.6: Main Earnings Source by Industry (NZSIOC).	Statistics NZ, Tourism Satellite Account: 2012, Table 4, Direct employment in tourism (FTEs) and Employment (FTEs) in tourism as a percentage of total. See http://www.stats.govt.nz/browse_for_stats/in dustry_sectors/Tourism/tourism-satellite- account-2012/tourism-employment.aspx for more information on the tourism FTE measure.	Statistics NZ, LEED custom job.
Productivity	Real GDP divided by hours paid. Hours paid data from Statistics NZ, Infoshare Database, Productivity Input Series — Industry Level (ANZSICO6) (Annual–Mar), Hours, Gross. Manufacturing hours paid for 2010 split into manufacturing sub-sectors using QES hours paid and rated back using productivity indexes from Statistics NZ.	Substituted nominal GDP per employee.	Substituted nominal value added/employment.
Investment in fixed assets	Statistics NZ, Infoshare database, System of National Accounts 1993 - SND, Series, GDP(E), Nominal, Actual, Asset type (Annual–Mar), Gross Fixed Capital Formation.	Statistics NZ, Tourism Satellite Account - TSA, Table: Gross Fixed Capital Formation by Asset Type and by Industry (ANZSIC06) (Annual-Mar). NB data only available for certain years up to 2009.	Statistics NZ, Additions less disposals of fixed assets from customised Annual Enterprise Survey tables. Note: this data has not been through the System of National Accounts, so is indicative only. The all sector total excludes some industries – see note page following.
Number of firms	Statistics NZ Table Builder, Business Demography Statistics, Detailed Industry for Enterprises, number of enterprises.	n/a	Customised Business Demography Statistics, number of enterprises.

Sources: financial data The following sources were used for financial data

Metric	Source standard ANZSIC sectors	Source Tourism	Source High technology manufacturing, knowledge intensive services and ICT
Surplus per employee	Statistics NZ, Annual Enterprise Survey release, surplus per employee count. The all sector total excludes some industries. See note below.	n/a	Statistics NZ, Customised Annual Enterprise Survey data, surplus per employee count.
Return on equity	Statistics NZ, Annual Enterprise Survey release, return on equity. Total excludes some industries – see note below.	n/a	Statistics NZ, Customised Annual Enterprise Survey data, return on equity.
Debt ratio	Statistics NZ, Annual Enterprise Survey release, total liabilities (current and other) divided by total assets. The all sector total excludes some industries. See note below.	n/a	Statistics NZ, customised Annual Enterprise Survey data, total liabilities (current and other) divided by total assets.
Capital stock per worker	Statistics NZ, National Accounts (Industry Benchmarks): Year ended March 2010, Table 14 Net capital stock by industry, current prices (replacement cost), 1987–2010, divided by employment.	Statistics NZ, Tourism Satellite Account, capital stock, divided by employment. Note: capital stock data is only available for some years up to 2009 and does not incorporate the National Accounts revisions published in November 2012.	Substituted with fixed assets per worker from Statistics NZ, Customised Annual Enterprise Survey data, fixed tangible assets divided by employment. Note: the fixed assets data has not been through the system of National Accounts, so is indicative only. The all sector total excludes some industries - see note below.

Note: AES data excludes residential property operators, foreign government representation, religious services, private households employing staff and superannuation funds.

Business Operations Survey, 'example' firms and other sources

Business Operations Survey

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

Data from the Business Operations Survey was used to calculate:

- barriers to innovation and exporting
- rates of innovation and R&D by sector
- the rate of outward direct investment and foreign direct investment by sector
- percentage of firms in a sector reporting overseas income

Size of business operations survey

The survey is run annually and typically information is collected from approximately 36,000 firms operating in New Zealand with six employees or more.

Customised data for the New Zealand Sectors Report

Data for the cross-cutting sectors, information and communications technology, high technology manufacturing, tourism, knowledge intensive services and some of the manufacturing sectors was provided by Statistics NZ as a custom job. This data may be below the level the survey is designed for and so should be treated with caution.

Detailed information on the Business Operations Survey is available from the www.stats.govt.nz

Example firms: sources and limitations

The example firms are sourced form the Kompass database (quoted with permission) Management Magazine's top 200 firms (2012) plus various websites, annual reports and the TIN 100 publication (2012).

Firms allocated to sectors in this report may not match firms included in official statistics. Statistics NZ does not release firm level data. In most cases numbers employed and turnover quoted for example firms are estimates.

MBIE welcomes corrections to the example firms' data.

Other sources

Other data sources, such as the Comtrade database, are noted on the page on which they occur.

Exports by sector 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 generates the exports.

Statistics New Zealand collects goods trade statistics using the New Zealand Harmonised System Classification 2012 (NZHSC). This is based on the World Customs Organization's (WCO) Harmonized Commodity Description and Coding System (HS).

Firms are classified into sectors using the Australia and New Zealand Industrial Classification (ANZSIC) system.

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**. Hence logs and fruit are attributed to the agriculture, forestry & fishing sector, while sawn wood products are attributed to the wood & paper sector, and milk powder and frozen beef are attributed to food & beverage manufacturing.

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 which clearly do export, have no or few exports allocated.

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.

Services exports

Statistics New Zealand publishes services exports data by service type as part of its balance of payments statistics every quarter. These are calculated using a variety of different surveys and administrative data sources.

In this report, we have allocated exports of transportation, insurance and government services not included elsewhere to the logistics, finance & insurance, and government sectors respectively.

Commercial services by sector came from an industry breakdown from the Census of International Trade in Services and Royalties: Year ended June 2011 (not available for 2012).

There is no breakdown of travel exports by sector. Travel exports includes all spending on goods and services by non-resident visitors to New Zealand. It overlaps considerably with tourism exports (see below), but includes spending by international students here for more than a year as well as those here for up to a year (whereas tourism only includes those here for up to a year) and excludes tourists' international airfares (which are included in tourism, but are part of transportation exports in the Balance of Payments).

High level definitions: high and medium-high technology manufacturing*

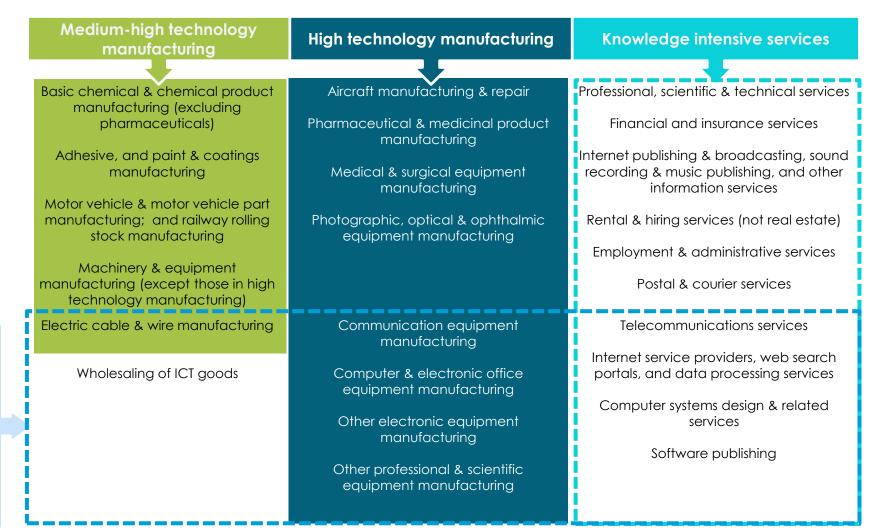
communications

technology)

(Information &

CT sector

High technology manufacturing includes manufacturing industries that are also classified as part of the ICT sector



*The full definition of the high and medium-high technology manufacturing sectors is provided in the Appendix

OECD definition for ICT*

(Information & communication

ICT sector

technologies)

The ICT sector includes activities which are also classified as part of high technology manufacturing and knowledge intensive services

Medium-high technology manufacturing	High technology manufacturing	Knowledge intensive services
Basic chemical & chemical product manufacturing (excluding pharmaceuticals) Adhesive, and paint & coatings manufacturing Motor vehicle & motor vehicle part manufacturing; and railway rolling stock manufacturing Machinery & equipment manufacturing (except those in high technology manufacturing)	Aircraft manufacturing & repair Pharmaceutical & medicinal product manufacturing Medical & surgical equipment manufacturing Photographic, optical & ophthalmic equipment manufacturing	 Professional, scientific & technical services Financial and insurance services Internet publishing & broadcasting; sound recording & music publishing; and other information services Rental & hiring services (not real estate) Employment & administrative services Postal & courier services
Electric cable & wire manufacturing Wholesaling of ICT goods	Communication equipment manufacturing Computer & electronic office equipment manufacturing Other electronic equipment manufacturing Other professional & scientific equipment manufacturing	Telecommunications services Internet service providers, web search portals, & data processing services Computer system design & related services (main focus of the ICT report) Software publishing

*The full definition of the ICT sector, including Australia and New Zealand Industrial Classification (ANZSIC) codes, is provided in the Appendix



FURTHER READING

Further reading: information on the New Zealand economy

Publication	Available from
The Regional Economic Activity Report 2013 The Regional Economic Activity Report presents available official economic data on New Zealand's 16 regions. The report, which will be annual, provides regional economic information sourced from a number of government agencies.	www.mbie.govt.nz
Regional Government Expenditure Report The Regional Government Expenditure Report provides the first ever snapshot and analysis of estimated central government spending for each region in New Zealand.	www.mbie.govt.nz
Situation and Outlook for Primary Industries (SOPI) 2013 Published annually, this report provides up-to-date information about the performance of New Zealand's primary sectors – dairy, meat and wool, forestry, horticulture, arable and, for the first time, seafood – and gives independent forecasts of future prospects.	www.mpi.govt.nz
The Food and Beverage Information Project reports The project pulls together all the available information on the food and beverage industry into one place, in a form which is familiar and useful to business. Over 20 reports are available on every aspect of New Zealand's food industry, including information on export market and investment opportunities. New and updated reports are released annually.	www.foodandbeverage.govt.nz
Tourism Satellite Account (2013). Published annually, the Tourism Satellite Account provides a picture of the role tourism plays in New Zealand, including the changing levels and impact of tourism activity, and the industry's contribution to the economy.	www.stats.govt.nz



Further reading: The Government's Business Growth Agenda reports

Publication	Available from:
Building innovation The building innovation work stream of the Business Growth Agenda aims to grow New Zealand's economy by encouraging and enabling investment in research and development, and lifting the value of public investments in science and research.	www.mbie.govt.nz
Export markets The export markets work stream of the Business Growth Agenda aims to increase exports by New Zealand businesses, which is necessary to lift New Zealand's economic growth and living standards.	www.mbie.govt.nz
Building infrastructure The building infrastructure work stream of the Business Growth Agenda aims to provide the physical platform that will support sustained economic growth.	www.mbie.govt.nz
Natural resources The building natural resources work stream of the Business Growth Agenda aims to make better use of New Zealand's abundant natural resources, so we can continue to grow our economy and look after our environment.	www.mbie.govt.nz
Skilled and safe workplaces The skilled and safe workplaces work stream of the Business Growth Agenda aims to improve the safety of the workforce and build sustained economic growth through a skilled and responsive labour market.	www.mbie.govt.nz
Building capital markets The building capital markets work stream of the Business Growth Agenda aims to ensure New Zealand has high performing capital markets that support investment, growth and jobs.	www.mbie.govt.nz
Business Growth Agenda Progress Report 2013 The Business Growth Agenda Progress Report 2013 shows the significant progress the Government has made across each of the six areas that are critical to business success and growth: Export Markets, Capital Markets, Innovation, Skilled and Safe Workplaces, Natural Resources and Infrastructure.	www.mbie.govt.nz

The Ministry of Business, Innovation & Employment (MBIE) welcomes comment and feedback on this report, and on the measures the Government is taking to facilitate the development of a competitive and successful economy. Email sectors.reports@mbie.govt.nz

