



# Core cities

## Comparative advantages & data needs

NZIER report to LGNZ and MBIE

20 July 2012



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# 1. Introduction

Local Government New Zealand (LGNZ) and the Ministry of Business, Innovation and Employment (MBIE) want to understand:

- comparative advantages of the six core cities
- broader regional economic data gaps and policy issues.

The report is a companion to an earlier report on the international evidence on city networks.

Comparative analysis, particularly of productivity, is made difficult by a lack of quality regional GDP data. The analysis is based on partial indicators, which are helpful but do not provide a full picture.

## Key economic issues

Our analysis of the economic data across the six core cities and the regions more broadly identifies a number of key issues:

- the regions are heterogeneous in their sector mix. But there is a bias towards low productivity and lower skill base in the provinces compared to the main centres
- there is a concentration of skills in the large regions (Auckland, Wellington and Canterbury), this may be caused by and causing young people to leave the regions. The ageing phenomenon is magnified in the provinces. This may constrain the provinces' economic potential
- cities' self-reported areas of comparative advantages do not always match with those evident in the data.

## Five emerging policy research issues

There are a number of research issues that have arisen from our investigation of the data for the six core cities, but they are not limited in application to the six cities. Key issues are:

- What is the economic region? There is clear evidence of complementarity in adjacent TAs and city specific research will miss the true 'economic region' picture
- Is there a problem? There needs to be a strong evidence base to quantify and understand productivity differences.
- What key proximate driver of economic growth is creating differences in economic performance (if any)? Is it labour, capital or the adoption and diffusion of technology?
- What key fundamentals are driving the regional differences in labour, capital or technology? Is it institutions, geography or culture?
- Which are the best placed institutions to address these issues? Is it local government, central government or the private sector? Examples of institutional settings may include spatial planning, allocation of education funding, provision of healthcare, investment in roads, investment in management and staff training and investment in research and development.

# 2. Sectors of industrial advantage

## 2.1 Core city identified sectors of advantage

As part of the core cities project, each member city provided a report that described its characteristics and highlighted its industries of strength. Table 4 in Appendix A summarises these self-assessed strengths.

Use of non-standard and inconsistent definitions (such as smart businesses and knowledge industries) means comparison is difficult. There are some omissions (such as Auckland does not identify an advantage in financial services) and some areas of identified advantage do not appear to hold (for example, Dunedin's dairy processing exposure is relatively small).

## 2.2 Our identified sectors of advantage

Based on the indicators presented in Table 1, we have identified the following sectors for each city. We calculated revealed comparative advantage (RCA)<sup>1</sup> based on employment concentrations by industry and region.<sup>2</sup>

We identify a much broader array of comparative advantages than those identified by the cities themselves (Table 1, Table 4, Table 5 and Table 6).

Any comparison across regions needs to be on the basis of objective and standardised data. The key factor to identify is productivity differences across regions and industries. Official GDP data is not available at the regional level and it is not possible to calculate accurate productivity differences across regions.

Because we look at employment concentrations, rather than value added concentrations, there can be geographic discrepancies if head offices are based in a different location than the producing region. This appears to be particularly important for the three main cities of Auckland, Wellington and Christchurch.

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<sup>1</sup> RCA is calculated as the ratio of regional share to the national share. A value of more than 1 indicates that there is a greater concentration in the region, than the national average.

<sup>2</sup> This calculation was undertaken at detailed 95 industry levels.

**Table 1 Revealed comparative advantage by industry, 2011 employee count by industry**

RCA <sup>(1)</sup>	A Agriculture, Forestry and Fishing	B Mining	C Manufacturing	D Electricity, Gas, Water and Waste	E Construction	F Wholesale Trade	G Retail Trade	H Accommodation and Food Services	I Transport, Postal and Warehousing	J Information Media and	K Financial and Insurance Services	L Rental, Hiring and Real Estate Services	M Professional, Scientific and	N Administrative and Support Services	O Public Administration and	P Education and Training	Q Health Care and Social Assistance	R Arts and Recreation Services	S Other Services
<b>Regional Councils</b>																			
Northland	1.41	1.23	0.90	1.83	1.08	0.59	1.17	1.13	0.92	0.44	0.57	1.10	0.55	0.67	0.86	1.16	1.38	0.91	1.09
Auckland	0.15	0.16	1.02	0.81	0.89	1.54	0.95	0.91	1.18	1.39	1.49	1.15	1.33	1.18	0.81	0.99	0.89	0.89	1.00
Waikato	1.68	2.50	1.08	1.61	1.16	0.75	1.03	1.01	0.70	0.63	0.54	0.93	0.85	0.70	0.89	1.08	1.00	1.11	1.04
Bay of Plenty	1.66	0.36	0.98	1.09	1.02	0.71	1.10	1.09	1.03	0.34	0.58	1.00	0.68	1.02	0.77	1.03	1.17	1.01	1.07
Gisborne	3.97	0.31	0.82	0.53	1.00	0.45	0.86	0.83	0.94	0.44	0.39	0.70	0.53	0.85	0.73	1.11	1.03	0.81	0.80
Hawke's Bay	3.06	0.40	1.19	0.99	0.90	0.62	0.93	0.80	0.81	0.36	0.52	0.88	0.56	1.21	0.68	0.91	1.04	0.82	0.81
Taranaki	1.27	5.90	1.52	1.58	1.36	0.63	1.02	0.92	0.98	0.81	0.48	0.89	0.67	0.77	0.61	0.87	1.01	0.84	0.96
Manawatu-Wanganui	1.48	0.38	0.93	0.90	1.07	0.82	1.09	0.90	0.80	0.64	0.49	0.76	0.57	0.72	1.58	1.19	1.19	0.84	0.95
Wellington	0.23	0.29	0.50	1.05	0.92	0.68	0.90	0.96	0.82	1.47	1.61	0.77	1.47	1.11	2.28	1.04	0.95	1.32	1.11
Tasman	4.64	1.10	1.18	0.77	0.99	0.43	1.08	1.24	0.79	0.35	0.31	1.00	0.60	0.63	0.29	0.64	0.47	1.00	0.78
Nelson	0.71	0.04	0.84	0.28	0.99	0.94	1.12	1.02	1.13	0.86	0.59	0.75	0.76	1.30	0.61	0.97	1.61	0.92	1.25
Marlborough	3.13	0.80	1.43	1.12	1.04	0.47	1.07	1.19	0.96	0.78	0.40	1.16	0.40	0.59	0.83	0.61	0.80	0.66	0.71
West Coast	1.36	28.62	0.82	0.50	1.52	0.42	1.04	1.87	1.10	0.47	0.32	0.64	0.41	0.47	0.57	0.75	0.98	1.45	0.73
Canterbury	0.96	0.53	1.21	1.00	1.07	1.00	1.05	0.99	1.10	0.89	0.68	1.11	0.84	0.98	0.77	0.95	1.08	0.94	1.01
Otago	1.53	2.04	0.78	0.81	1.14	0.56	1.10	1.60	0.84	0.83	0.54	1.05	0.63	0.99	0.72	1.14	1.04	1.47	0.85
Southland	2.76	0.98	1.64	0.62	0.97	0.62	1.00	0.95	1.17	0.63	0.63	0.72	0.49	0.45	0.59	0.70	0.87	0.87	0.99
<b>Selected cities</b>																			
Auckland	0.15	0.16	1.02	0.81	0.89	1.54	0.95	0.91	1.18	1.39	1.49	1.15	1.33	1.18	0.81	0.99	0.89	0.89	1.00
Hamilton	0.05	0.01	0.88	1.27	1.19	1.07	1.08	0.90	0.53	1.00	0.70	0.79	1.11	1.06	1.07	1.14	1.49	0.97	1.17
Tauranga	0.67	0.07	0.89	1.37	1.13	0.90	1.30	0.99	1.38	0.40	0.69	1.09	0.74	1.06	0.76	0.91	1.39	0.82	1.09
Wellington	0.01	0.31	0.26	0.97	0.55	0.52	0.67	0.99	0.79	2.08	2.43	0.73	1.96	1.26	3.08	0.87	0.77	1.40	1.19
Christchurch	0.14	0.58	1.17	0.85	1.04	1.14	1.07	0.98	1.15	1.03	0.80	1.18	0.95	1.19	0.73	0.95	1.22	1.01	1.10
Dunedin	0.31	0.29	0.66	0.79	1.00	0.71	1.14	1.18	0.89	1.08	0.66	0.99	0.76	0.98	0.91	1.59	1.45	1.36	1.02

Source: Statistics New Zealand

Key: Red is above national average (or has a revealed comparative advantage), white is around (+/-5%) national average, green is less than national average

Notes:

(1) RCA is revealed comparative advantage, calculated as the ratio of regional share to national share.

# 3. Database needs

## International measurement of success

Measurement of the success of city networks is not well considered. Only the United Kingdom's *Northern Way* and the Finnish *Centres of Expertise* have completed thorough evaluations. This lack of measurement probably reflects the difficulty in quantitatively measuring the outcomes from these networks, but qualitative targets and objectives can be developed.

## The local case

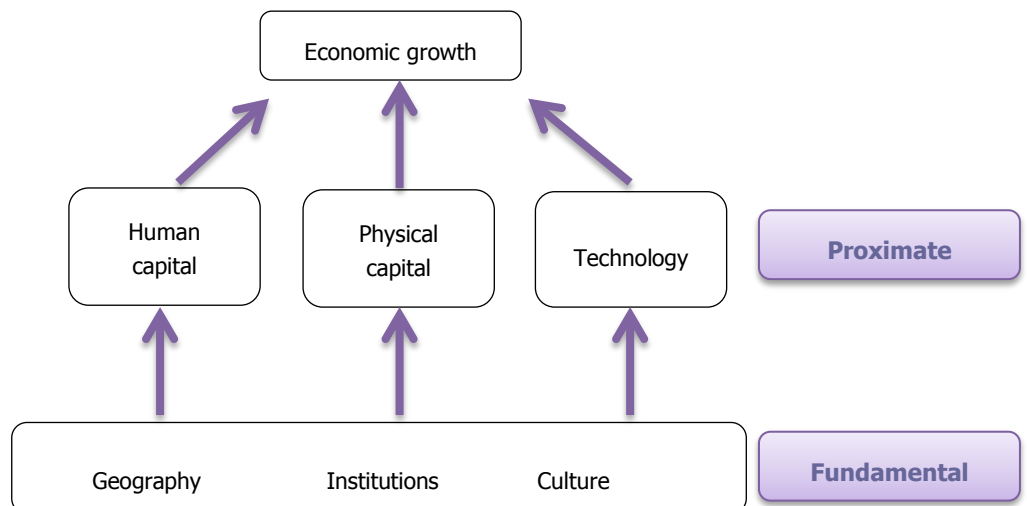
The task is even more difficult in New Zealand, where detailed regional data is of variable quality or unavailable. In addition, the exact data requirements will depend on what the network is trying to achieve.

As part of the project we reviewed the indicators provided by MED and LGNZ. This database is useful in a monitoring function. There are some duplications and gaps. We also have some concerns about the quality and dated nature of some of the underlying data.

Table 2 reviews the indicators provided by MED and LGNZ. We have provided our views on the data and next steps. We have not commented on all the data in the database, mainly because we could not see their relevance in comparing economic advantage. More is not always better. The data to be tracked should measure and give insights into the problem at hand: comparing regional comparative advantages.

We suggest using an easily understood economic framework to define the database. Figure 1 presents a theoretically robust but easy-to-communicate story of what drives economic growth. It starts by saying that economic growth is driven by the level of physical and human capital in the economy as well as how they work together. The latter is influenced by the level and application of technology in the economy. Familiar topics (skill levels, business assets, infrastructure, etc.) will provide a first cut for organising and comparing.

**Figure 1 Drivers of economic growth**



Source: Adapted from Acemoglu (2009)



But we also need to look at the underlying and more complex determinants of these “proximate sources” for growth – geography, institutions and culture. The more fundamental drivers, such as scale or distance to market, the location of natural resource, age structure etc. determine the level and types of production within an economy.

The initial dataset should focus on the proximate causes of economic performance divergence across the cities. This will give rise to potential insights and research questions, which will address fundamental drivers of economic growth and policy options.

Table 3 presents NZIER’s suggested dataset, where information gaps exist, and steps that can be taken to improve the quality of that data. However, we recommend that fundamental questions about the purpose and scope of any network need to be addressed before additional resources are spent on designing an evaluation framework.

**Table 2 Core city indicator data collated by local councils, MED and LGNZ**

Indicator*	Gaps
<b>City competitiveness</b>	
Real GDP	Approximate measures only and need to be mindful of quality issues when using in this context. Should use official data or use alternative indicators, such as employment or wages
Real GDP per capita	
<b>City outcomes</b>	
Average/median household/personal incomes	Out of date data, update
Participation and unemployment rates	Out of date data, update. Include employment rate
<b>City sources of advantage/areas of distinctiveness</b>	
<i>Image and identity</i>	Qualitative data that requires careful analysis to understand relevance
<i>Knowledge resources</i>	
Adult literacy and numeracy	Indicator of population skill levels (such as those based on census data below) would provide for a deeper understanding
Highest qualification of adult population	Indicator of population skill levels (such as those based on census data) would be better
Proportion of workforce in knowledge intensive occupations	This should be covered in industrial composition
Number of patent applicants per capita	Data quality issues and not necessarily best indicator of innovation/productivity
University rankings	Student numbers would provide a better indicator of knowledge resource
<i>Connectedness</i>	
Congestion	Out of date
Means of travel to work	
Number of airlines using airport	Indicator of airport capacity would be better
Proportion of people with internet/broadband connections	Indicator of internet speed would show connectedness better

Indicator*	Gaps
<i>Diversity with specialisation in key industrial segments</i>	
Industry analysis	Business demographics database is more up to date and useful
Revealed comparative advantages (RCA, also known as location quotients)	Business demographics database is more up to date and useful
Number of businesses and average size	Business demographics database is more up to date and useful
Specialisation and revealed comparative advantage	A consistent framework for this is needed. We recommend calculating revealed comparative advantages using a consistent dataset
Growth outlook	Need a consistent framework
<i>Amenities</i>	Qualitative data and not necessarily a true reflection of amenities
<i>Built environment</i>	Qualitative, need to gather information on physical capital
<i>Business environment</i>	
<b>Foundations of a well-functioning city</b>	
<i>Physical assets and infrastructure</i>	Indicators here would be useful, but obviously difficult to source
<i>Labour and educational base</i>	These indicators would be useful under a human capital type heading that sets out skill levels and the size of the education sector
<i>Institutions/governance</i>	Need a framework and benchmarks to compare these objectively
<i>Social and cultural capital</i>	Need a framework and benchmarks to compare these objectively
<i>Land and natural environment</i>	Need a framework and benchmarks to compare these objectively
<i>Entrepreneurial base</i>	These indicators are useful but may be better placed in a section around business indicators – based on business demographics data
<i>Capital base</i>	Necessary group of indicators, but difficult to source meaningful data

Table 3 NZIER's suggested database, gaps and next steps

Indicator	Source	Gaps	Next steps
<b>Economic and income indicators</b>			
Real GDP	Infometrics, NZIER	Quality doubts	Await official GVA estimates
Real GDP per capita	Infometrics, NZIER	Quality doubts	
Average/median household/personal incomes	Statistics New Zealand data request	Out of date	Update
<b>Infrastructure</b>			
Port infrastructure	Statistics New Zealand trade statistics	Really should show capacity instead of volumes	Cities to talk to ports to get better data
Schools	Education Counts		Keep up-to-date
Road density	Statistics New Zealand/ NZTA		Keep up-to-date
Number of Doctors	Medical Council Workforce	Out-of-date	Update
Households with broadband access	Statistics New Zealand	More interested in speeds in each city	Talk to local providers about data
<b>Human capital</b>			
Student numbers	Education counts		Keep up-to-date
Skill levels	Statistics New Zealand census data request	Out-of-date (2006)	Update when Census data is available
<b>Labour Market</b>			
Labour turnover rates*	Statistics New Zealand		Keep up-to-date
Employment by region and industry	Statistics New Zealand data request		Keep up-to-date
<b>Population</b>			
2011 population	Statistics New Zealand		Keep up-to-date
<b>Industrial composition</b>			
Industry RCA by employee count	Statistics New Zealand business demographics	Not a value added measure	Keep up-to-date and develop GVA measure
<b>Business indicators</b>			
Business births	Statistics New Zealand business demographics		Keep up-to-date
Business size	Statistics New Zealand business demographics		Keep up-to-date
Business density	Statistics New Zealand business demographics		Keep up-to-date
<b>Regional interconnectedness</b>			
Freight connections	Booz and Allen (2005)	Quality doubts, not business and population flows	Source business and population migration data

\*Labour turnover by regional and industry can indicate labour mobility and/or skills gaps.

# Appendix A Identified comparative advantages – self reported & NZIER

**Table 4 Cities' areas of industrial advantage – self identified**

This table summarises the comparative advantages the cities had identified using data sourced from Market Economics. Note that levels of detail vary by city and some industry groupings are non-standard.

Auckland	Hamilton	Tauranga	Wellington	Christchurch	Dunedin
Business services	Agriculture	Energy	Food and food processing	Agribusiness (focus on food and beverage)	Research
Metals and metal products	Agriculture related exports	Freight/logistics	Making places and connections	Specialised manufacturing	Tertiary education
Electronics and electrical equipment	Manufacturing	Marine	Caring sectors	ICT	Secondary education
Machinery	Health	Sport and recreation	Government	Business services	Knowledge industries
Marine	Energy	ICT	Culture and recreation	Health and community services	Engineering
Health	Tertiary education	Tourism	Smart businesses	Education services	Milk processing
Tourism	Research	Other food cultivation and processing	Finance	Tourism	
Technical services	Business services	Emerging technologies	Knowledge institutions	Construction	
Food	Retail	Kiwifruit	Smart entertainment		
Transport services		Dairy	Supporting vibrancy		
Paper products		Meat			
		Aquaculture			
		Forestry			

Source: Market Economics (2011), various member city reports

**Table 5 Cities' areas of industrial advantage – self identified in the NZ Core Cities Research Summary**

This table summarises the comparative advantages that had been refined from Table 4, for publication in the Core Cities Research Summary report.

Auckland	Hamilton	Tauranga	Wellington	Christchurch	Dunedin
Food & beverage	Agriculture, especially dairy	Agriculture, especially horticulture	Business and financial services	Agri-business	Creative industries
ICT	Education and research	High-value manufacturing	Creative digital	Business and finance	Education and research
Health tech	Energy generation	Logistics and supply chain	ICT	Education	Energy
Tourism/events	High value manufacturing	Business services	Science and technology	Health	ICT
Niche manufacturing	Health			ICT	Health
Biotechnology	Tourism			Specialist manufacturing	
International education				Tourism	
Screen					

Source: NZ Core Cities Research Summary (2012), accessed 24 August 2008

<http://www.med.govt.nz/sectors-industries/cities/pdf-docs-library/core-cities-research/Core%20Cities%20Research%20Summary.pdf>

**Table 6 Cities’ areas of industrial advantage – NZIER analysis**

This table identifies the comparative advantages of the cities, at a fairly granular level. Quite often aggregated levels of analysis miss comparative advantages at a finer level.

Auckland	Hamilton	Tauranga	Wellington	Christchurch	Dunedin
<b>Key themes*</b>					
Logistics Finance ICT Motion pictures & sound recording Business services Manufacturing (various)	Manufacturing (various) Healthcare Tertiary education Energy Logistics	Logistics Agriculture services Energy Manufacturing (various) Healthcare	Public-administration Finance Business services ICT Art and recreation	Logistics Manufacturing (various) Business services Healthcare	ICT Education & training Healthcare Arts and recreation
<b>Primary</b>					
		Seafood processing Agriculture & other support services	Oil & gas extraction (likely head office functions)	Seafood processing Coal mining (likely head office functions)	Sugar & confectionery manufacturing
<b>Logistics &amp; transport</b>					
Air transport, transport services	Rail	Road transport, transport services	Water & rail transport	Air transport, transport services	Other transport, transport services
Warehousing & storage	Postal & courier	Warehousing & storage, postal & courier		Wholesaling of food & liquor	
Wholesaling of machinery & equipment, motor vehicles & parts, food & liquor	Wholesaling of motor vehicles & parts, machinery & equipment, food & liquor	Wholesaling of motor vehicles & parts, basic materials			
<b>ICT</b>					
ISP, data processing, computer system design & related	Telecommunications		ISP, data processing, computer system design & related	Computer system design & related	
Telecommunications			Telecommunications	Telecommunications	
<b>Finance</b>					
Insurance & superannuation funds, finance, auxiliary finance and insurance services			Insurance & superannuation funds, finance, auxiliary finance and insurance services	Insurance & superannuation funds	

\*Tourism is not added as a theme in this analysis, as tourism is not an industry, rather a collection of sectors, such as accommodation, retail, hospitality and transport.

Auckland	Hamilton	Tauranga	Wellington	Christchurch	Dunedin
<b>Entertainment</b>					
Broadcasting	Publishing		Motion pictures & sound recording	Gambling	Gambling
Internet publishing & broadcasting			Publishing & broadcasting (excl. internet)	Printing	Publishing (excl. internet)
Gambling					
Motion pictures & sound recording					
Printing					
<b>Manufacturing</b>					
Chemical, metal, polymer & rubber, furniture, machinery & equipment, non-metallic minerals, textiles & related, beverage & tobacco, transport equipment	Polymer & rubber, metal, pulp & paper, machinery & equipment	Petroleum & coal, basic chemical, non-metallic mineral	Petroleum & coal manufacturing (likely head office functions)	Transport equipment, machinery equipment, textiles & related, polymer & rubber, non-metallic minerals, metal, furniture, chemical	
<b>Retailing</b>					
Non-store & commission based retailing	Non-store & commission based retailing, Motor vehicles & parts	Motor vehicles & parts, food			Accommodation
<b>Business &amp; professional services</b>					
Administrative	Heavy & civil engineering construction	Repair & maintenance	Administrative	Rental & hiring (excl. real estate)	Building cleaning, pest control & other
Rental & hiring (excl. real estate)		Property operators & real estate services	Professional, scientific & technical (excl. ICT related)	Administrative	
Professional, scientific & technical (excl. ICT related)					
<b>Health &amp; residential care</b>					
	Hospitals	Hospitals		Residential care	Hospitals
	Medical & other healthcare services	Medical & other healthcare		Hospitals	Residential care
				Medical & other healthcare	

Auckland	Hamilton	Tauranga	Wellington	Christchurch	Dunedin
<b>Education</b>					
	Tertiary education		Tertiary education		Tertiary education
			Adult, community & other education		
<b>Utilities</b>					
	Electricity supply	Electricity supply	Electricity & gas supply (likely related to head office functions)		Water supply, sewerage & drainage services
	Water supply, sewerage & drainage services				
<b>Government</b>					
	Public administration	Social assistance services	Public administration		Social assistance services
	Social assistance services		Public order, safety, and regulatory services		
<b>Other</b>					
			Artistic activities	Library & other information services	Library & other information services
			Heritage activities		Heritage activities
			Library & other information services		

Source: NZIER calculations from Statistics NZ Business Statistics database



# Appendix B Data snapshot

**Table 7 Economic and income Indicators**

	Real GDP, 1995/96 \$m <sup>(1),(5)</sup>	Real GDP per capita \$ <sup>(1),(5)</sup>	Average household income \$ <sup>(2),(6)</sup>	Median household income \$ <sup>(2),(6)</sup>	Average personal income \$ <sup>(2),(6)</sup>	Median personal income \$ <sup>(2),(6)</sup>
<b>New Zealand</b>	<b>134,870</b>	<b>30,878</b>	<b>1,484</b>	<b>1,236</b>	<b>687</b>	<b>529</b>
<b>Regional councils</b>						
Northland region			1,232	1,007	579	421
Auckland region	48,636	33,319	1,569	1,275	694	517
Waikato region	10,651	25,883	1,360	1,173	645	511
Bay of Plenty region	6,710	24,390	1,373	1,240	629	510
Gisborne region <sup>(3)</sup>			1,297	1,055	629	504
Hawke's Bay region <sup>(3)</sup>			1,297	1,055	629	504
Taranaki region			1,500	1,231	706	533
Manawatu-Wanganui region			1,274	1,077	623	515
Wellington region	20,970	43,390	1,726	1,400	815	632
Tasman region <sup>(4)</sup>			1,374	1,201	660	537
Nelson region <sup>(4)</sup>			1,374	1,201	660	537
Marlborough region <sup>(4)</sup>			1,374	1,201	660	537
West Coast region <sup>(4)</sup>			1,374	1,201	660	537
Canterbury region	15,248	26,954	1,459	1,247	687	540
Otago region	5,330	25,701	1,461	1,289	681	536
Southland region			1,481	1,228	713	540
<b>Selected cities</b>						
Auckland	25,523	56,693	1,569	1,291	687	504
Hamilton	4,372	30,551	1,409	1,189	677	572
Tauranga	2,759	24,142	1,489	1,354	696	575
Wellington	13,512	68,344	1,974	1,477	990	748
Christchurch	10,759	28,560	1,495	1,247	699	537
Dunedin	2,915	23,361	1,366	1,247	628	478

Sources and notes: (1) 2010 year, (2) June 2010 quarter, (3) Gisborne and Hawkes Bay are combined for household and personal incomes, (4) Tasman, Nelson, Marlborough, and West Coast are combined for household and personal incomes, (5) Infometrics regional database (6) Statistics New Zealand, New Zealand Income Survey.

**Table 8 Key international port indicators**

	International Airport passenger arrivals <sup>(1), (8)</sup>	International Airport Passenger departures <sup>(1), (8)</sup>	Airport exports (tonnes) <sup>(2), (9)</sup>	Airport imports (tonnes) <sup>(2), (9)</sup>	Seaport exports (tonnes) <sup>(2), (9)</sup>	Seaport (imports) tonnes <sup>(2), (9)</sup>
<b>New Zealand</b>	<b>4,766,563</b>	<b>4,801,575</b>	<b>98,112</b>	<b>96,662</b>	<b>31,356,281</b>	<b>18,457,320</b>
<b>Regional councils</b>						
Northland region					2,217,634	5,475,539
Auckland region	3,501,007	3,281,962	79,816	88,157	2,743,898	4,033,332
Waikato region	19,481	26,654	2	1	583,500	
Bay of Plenty region	11,356	10,949			8,683,022	3,360,924
Gisborne region					1,552,696	9
Hawke's Bay region					2,612,905	454,922
Taranaki region					3,162,488	685,916
Manawatu-Wanganui region						
Wellington region	309,072	312,270	456	732	1,197,947	1,100,661
Tasman region						
Nelson region					1,067,599	138,459
Marlborough region					591,459	0
West Coast region						
Canterbury region	817,960	799,882	17,838	7,772	4,144,346	1,518,481
Otago region	80,446	76,945	0	0	1,801,641	339,395
Southland region					997,146	1,349,682
<b>Selected cities</b>						
Auckland	3,501,007	3,534,339	79,816	88,157	2,743,898	4,033,332
Hamilton	19,481	19,207	2	1		
Tauranga					8,683,022	3,360,924
Wellington	350,790	351,090	456	732	1,197,947	1,100,661
Christchurch	705,360	717,215	17,838	7,772	3,684,123	1,187,675
Dunedin	32,148	32,225	0	0	1,801,641	339,395

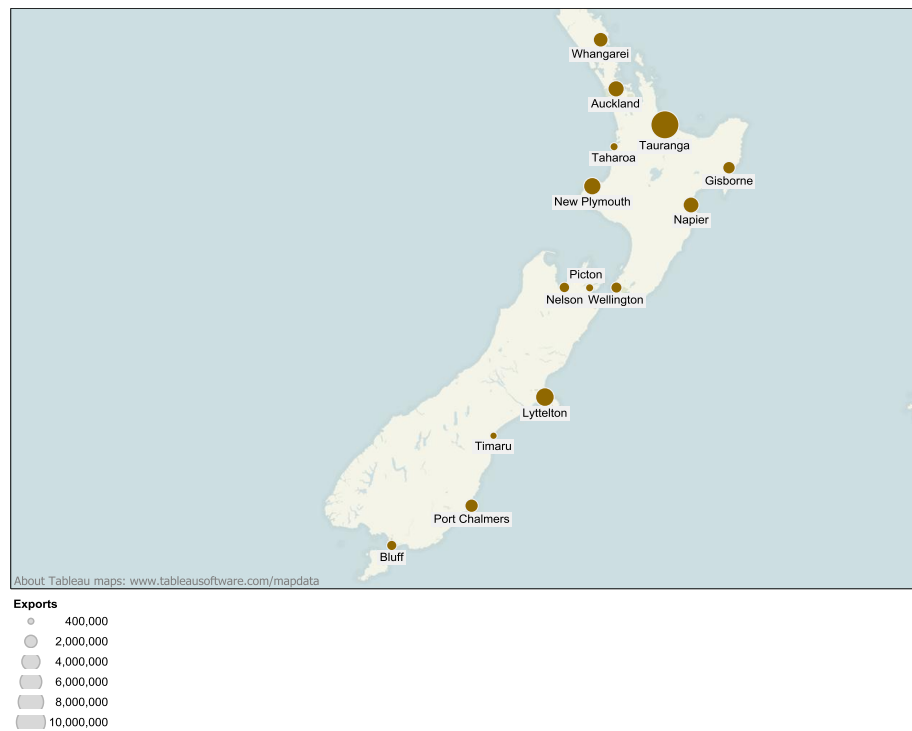
Sources and notes: (1) 2011 December year, (2) 2011 June year, (3) As at 3 March 2012, (4) The data combines the Tasman, Nelson, Marlborough, and West Coast regions. This total has been evenly distributed across these regions, (5) Roads (kms) per km2 (geographical area), (6) 2010, (7) December 2009, (8) Statistics New Zealand, International and Travel Migration - Total passenger movements by NZ port, (9) Statistics New Zealand, Overseas Cargo Statistics - Total Exports/Imports by New Zealand Port, (10) Education Counts - List of New Zealand Schools, (11) NZTA - Infrastructure and investment: Infrastructure size - Length of Local and State roads. Land area calculated from Statistics New Zealand Housing Density Data, (12) Medical Council Workforce 2010, (13) Statistics New Zealand, Household use of Information and Communication Technology 2009.

**Figure 2 International visitor arrivals, by airport**



Source: Statistics New Zealand

**Figure 3 Volume of international trade, by seaport**



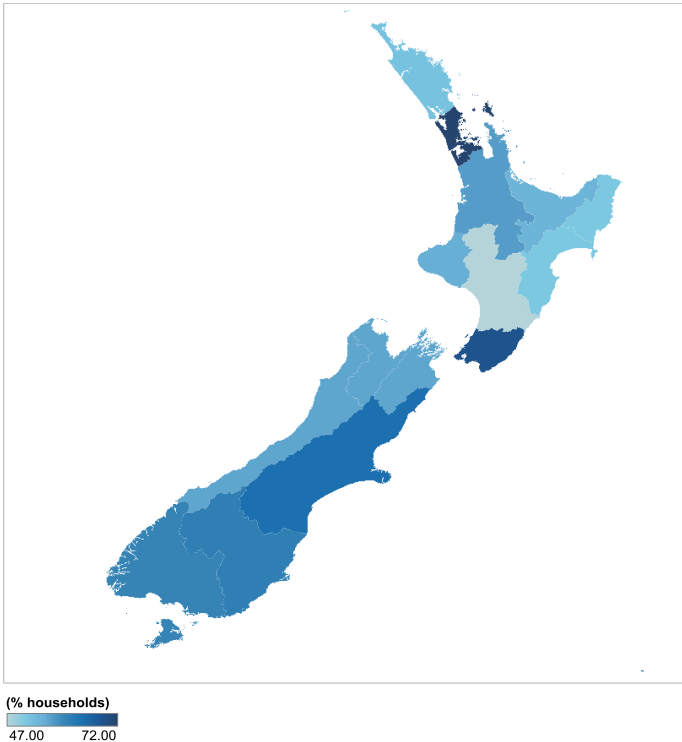
Source: Statistics New Zealand

**Table 9 Key soft and hard infrastructure indicators**

	Schools <sup>(3)</sup>	Road density <sup>(5), (11)</sup>	Number of doctors <sup>(6), (12)</sup>	Percent of households with broadband access <sup>(7), (13)</sup>
<b>New Zealand</b>	<b>393</b>	<b>0.34</b>	<b>11,478</b>	<b>63</b>
<b>Regional councils</b>				
Northland region	26	0.46		52
Auckland region	89	1.35		72
Waikato region	42	0.42		57
Bay of Plenty region	20	0.36		54
Gisborne region	6	0.24		51
Hawke's Bay region	22	0.32		51
Taranaki region	12	0.53		55
Manawatu-Wanganui region	29	0.39		47
Wellington region	39	0.50		69
Tasman region	5 (4)	0.18		56
Nelson region	5 (4)	0.18		56
Marlborough region	5 (4)	0.18		56
West Coast region	5 (4)	0.10		56
Canterbury region	52	0.34		64
Otago region	24	0.31		61
Southland region	12	0.22		60
<b>Selected cities</b>				
Auckland	89		3,898	
Hamilton	11		748	
Tauranga	5		389	
Wellington	14		937	
Christchurch	29		1,369	
Dunedin	10		586	

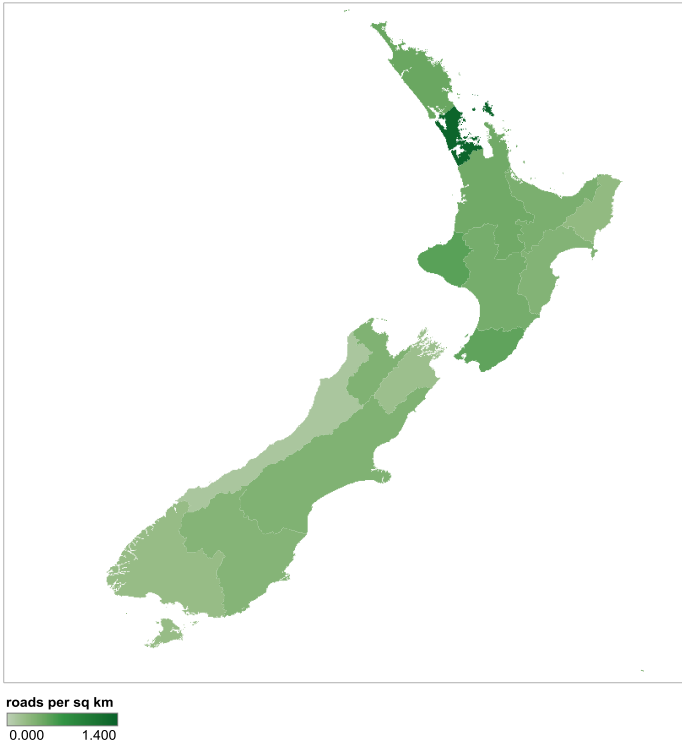
Sources and notes: (1) 2011 December year, (2) 2011 June year, (3) As at 3 March 2012, (4) The data combines the Tasman, Nelson, Marlborough, and West Coast regions. This total has been evenly distributed across these regions, (5) Roads (kms) per km2 (geographical area), (6) 2010, (7) December 2009, (8) Statistics New Zealand, International and Travel Migration - Total passenger movements by NZ port, (9) Statistics New Zealand, Overseas Cargo Statistics - Total Exports/Imports by New Zealand Port, (10) Education Counts - List of New Zealand Schools, (11) NZTA - Infrastructure and investment: Infrastructure size - Length of Local and State roads. Land area calculated from Statistics New Zealand Housing Density Data, (12) Medical Council Workforce 2010, (13) Statistics New Zealand, Household use of Information and Communication Technology 2009.

**Figure 4 Percentage of households with broadband access, 2009**



Source: Statistics New Zealand

**Figure 5 Road density**  
Roads (kms) per km<sup>2</sup> of geographic area



Source: Statistics New Zealand

**Table 10 Proxy of human capital, 2006**

	RCA in highly skilled labour	RCA in skilled labour	RCA in semi-skilled labour	RCA in elementary labour
Northland	0.98	1.05	0.92	1.11
Auckland	1.06	0.98	1.06	0.78
Waikato	0.98	1.05	0.93	1.12
Bay of Plenty	0.95	1.07	0.97	1.11
Gisborne	0.86	0.94	0.86	1.48
Hawke's Bay	0.84	0.94	0.90	1.43
Taranaki	0.96	1.08	0.86	1.20
Manawatu-Wanganui	0.89	0.97	0.99	1.15
Wellington	1.17	0.87	1.07	0.67
Tasman	0.90	0.98	0.85	1.54
Nelson	0.92	1.03	1.00	1.22
Marlborough	0.87	1.06	0.86	1.51
West Coast	0.84	0.96	0.84	1.55
Canterbury	0.93	1.05	1.01	1.10
Otago	0.93	1.07	1.00	1.14
Southland	0.88	1.03	0.85	1.51

Source: Statistics New Zealand - 2006 Census of Population and Dwellings, Area of Usual resident, occupation (ANZSCO), Industry (ANZSIC06 V1.0) by total personal income for the Employed Census Usually Resident Population Count Aged 15 years and over. JOB Reference Number: TRM27931

In this case, revealed comparative advantage is when the share of employment of a specific skill level in a region is higher than the national average of employment in that skill level. Red text is above national average (or has a revealed comparative advantage), white is around (+/- 5%) national average, green is less than national average.

Table 11 Student numbers

	University students				Polytechnic students			Tertiary students		
	School rolls	Domestic	International	Total	Domestic	International	Total	Diploma or Certificate	Bachelors or Graduate	Honours or Post-Graduate
<b>New Zealand</b>	270,535	119,186	17,540	136,726	73,483	7,281	80,764	67,882	118,658	30,950
<b>Regional councils</b>										
Northland	10,081	0	0	0	2,983	86	3,069	2,622	447	0
Auckland	90,705	44,392	6,840	51,232	14,776	2,060	16,836	14,598	41,979	11,492
Waikato	26,645	8,365	1,707	10,072	5,812	549	6,361	4,573	9,929	1,930
Bay of Plenty	16,163	0	0	0	6,194	486	6,679	6,048	631	0
Gisborne	3,216	0	0	0	939	1	940	896	44	0
Hawke's Bay	11,059	0	0	0	2,878	203	3,081	2,075	961	44
Taranaki	7,511	0	0	0	1,817	82	1,899	1,761	138	0
Manawatu-Wanganui	14,956	17,589	2,340	19,929	3,510	198	3,708	3,673	13,877	6,087
Wellington	28,233	15,669	2,068	17,737	13,329	1,667	14,997	12,207	17,607	2,919
Tasman	2,569	0	0	0	0	0	0	0	0	0
Nelson	2,569	0	0	0	2,845	754	3,598	3,115	483	0
Marlborough	2,569	0	0	0	0	0	0	0	0	0
West Coast	2,569	0	0	0	2,243	23	2,266	2,266	0	0
Canterbury	35,572	15,540	2,397	17,937	7,428	720	8,148	6,863	14,584	4,638
Otago	10,799	17,632	2,187	19,819	4,429	161	4,590	3,472	17,313	3,625
Southland	5,320	0	0	0	4,301	290	4,591	3,711	665	215
<b>Selected cities</b>										
Auckland	90,705	44,392	6,840	51,232	14,776	2,060	16,836	14,598	41,979	11,492
Hamilton	11,432	8,365	1,707	10,072	5,812	549	6,361	4,573	9,929	1,930
Tauranga	7,610	0	0	0	3,060	70	3,131	3,106	25	0
Wellington	12,543	15,669	2,068	17,737	0	0	0	684	14,359	2,694
Christchurch	23,061	15,540	2,397	17,937	5,275	696	5,970	4,685	14,584	4,638
Dunedin	6,230	17,632	2,187	19,819	3,365	157	3,522	2,404	17,313	3,625
Reference year	2012	2010	2010	2010	2010	2010	2010	2010	2010	2010
Source:	Education Counts	Education Counts	Education Counts	Education Counts	Education Counts	Education Counts	Education Counts	Education Counts	Education Counts	Education Counts

**Table 12 Key population metrics**

	Population 2011	Share of working age population 2011	Projected population 2031	Share of working age population 2031
<b>New Zealand</b>	4,405,300	66.3	5,148,500	61.2
<b>Regional councils</b>				
Northland	158,300	61.6	171,300	54.1
Auckland	1,486,000	68.6	1,944,700	64.7
Waikato	413,000	64.5	468,200	59.1
Bay of Plenty	277,100	62.1	323,400	57.0
Gisborne	46,600	62.7	45,900	56.9
Hawke's Bay	155,300	62.7	158,300	55.8
Taranaki	109,700	63.2	108,500	55.7
Manawatu-Wanganui	232,400	64	236,900	57.2
Wellington	487,700	68.1	541,200	62.9
Tasman	48,100	63.9	53,200	54.7
Nelson	46,200	66.1	49,900	57.7
Marlborough	45,600	63.1	48,700	55.0
West Coast	32,900	65.3	31,300	53.7
Canterbury	560,700	66.6	652,400	60.4
Otago	209,900	68.9	225,900	62.5
Southland	94,900	64.5	87,900	56.4
<b>Selected cities</b>				
Auckland	1,486,000	68.6	1,944,700	64.7
Hamilton	145,600	67.7	181,700	65.0
Tauranga	115,700	61.4	155,300	58.6
Wellington	200,100	74.2	238,700	70.2
Christchurch	367,700	68.2	424,000	62.7
Dunedin	126,000	71	129,700	65.0

Source: Statistics New Zealand



**Table 13 Key business indicators by region**

RCA <sup>(1)</sup>	New Business Births		Geographic units by firm size							Business density <sup>(2)</sup>
	Geographic Units	Employee counts	1 to 5	6 to 9	10 to 19	20 to 49	50 to 99	100+	Total	
<b>Regional Councils</b>										
Northland	0.74	0.79	1.06	0.96	0.89	0.81	0.74	0.63	0.77	1.00
Auckland	1.25	1.09	0.97	0.99	1.02	1.12	1.19	1.25	1.14	0.86
Waikato	0.86	1.06	1.07	0.92	0.91	0.83	0.81	0.76	0.83	1.10
Bay of Plenty	0.89	1.52	1.00	1.02	1.03	1.00	0.96	0.77	0.89	1.04
Gisborne	0.71	0.94	0.94	1.12	1.28	0.97	0.71	0.82	0.87	1.14
Hawke's Bay	0.85	0.84	0.98	1.04	1.00	1.05	1.12	0.88	0.99	1.11
Taranaki	0.78	0.68	1.09	0.92	0.78	0.78	0.85	0.74	0.82	1.25
Manawatu-Wanganui	0.72	0.76	1.04	1.03	0.90	0.89	0.81	0.82	0.91	1.06
Wellington	1.10	0.79	0.96	1.01	1.05	1.10	1.17	1.47	1.21	0.93
Tasman	0.78	0.89	0.99	1.13	1.01	0.91	0.79	0.64	0.78	1.12
Nelson	1.03	0.67	0.95	1.08	1.09	1.08	1.13	1.15	1.06	1.19
Marlborough	0.71	0.44	1.00	0.94	1.10	1.08	0.73	0.66	0.85	1.26
West Coast	0.78	1.28	1.06	0.96	0.90	0.81	0.96	0.62	0.80	1.34
Canterbury	0.95	0.92	0.99	1.03	1.04	1.01	0.96	0.98	1.00	1.04
Otago	0.87	1.35	0.99	1.03	1.09	0.94	0.92	0.71	0.93	1.15
Southland	0.70	0.87	1.04	1.04	0.96	0.78	0.65	0.67	0.83	1.40
<b>Selected cities</b>										
Auckland	1.25	1.09	0.97	0.99	1.02	1.12	1.19	1.25	1.14	2.83
Hamilton	1.15	1.17	0.91	1.11	1.14	1.21	1.27	1.54	1.25	0.96
Tauranga	1.09	1.78	0.97	1.03	1.08	1.08	1.05	0.85	0.96	1.07
Wellington	1.22	0.72	0.91	1.04	1.08	1.31	1.42	2.15	1.56	1.04
Christchurch	1.04	0.87	0.92	1.06	1.16	1.21	1.16	1.30	1.17	0.96
Dunedin	0.83	1.04	0.93	1.05	1.19	1.12	1.15	1.07	1.15	0.86

Source: Statistics New Zealand

Notes: Red is above national average (or has a revealed comparative advantage), white is around (+/-5%) national average, green is less than national average

(1) RCA is revealed comparative advantage, calculated as the ratio of regional share to national share

(2) Number of businesses per 1000 head of population, TA population count from 2010.