



THE NEW ZEALAND KNOWLEDGE ECONOMY- AT A GLANCE

The Department of Labour has written a new report, *The New Zealand Knowledge Economy*, which establishes a methodology for measuring the knowledge economy and analyses the structure of the knowledge economy in New Zealand.

What is the knowledge economy, and why is it important?

The 'knowledge economy' is a term that has been widely used in international discussions of economic development. While there are some variations in usage, the term refers to those industries and occupations that are primarily based on highly skilled employment and sophisticated production. These sectors represent an increasing share of the New Zealand economy's output and employment, and are the most likely source of the future gains in innovation and knowledge that will be needed to improve productivity.

This report has followed international best practice in defining the knowledge economy as those industries that meet the following two criteria: at least 25 per cent of the workforce must be qualified to degree level or higher, and at least 30 per cent of the workforce must be employed in the professional, managerial and scientific and technical occupations.

The knowledge economy is an important concept in moving New Zealand away from a "low pay, low skills" labour market. This will enable New Zealand to retain advantages over our trade competitors, make our industries less vulnerable to off shoring and increase the unit price of our outputs. To support this development we need to be able to measure patterns in the employment of highly skilled workers, using indicators such as qualifications and occupation.

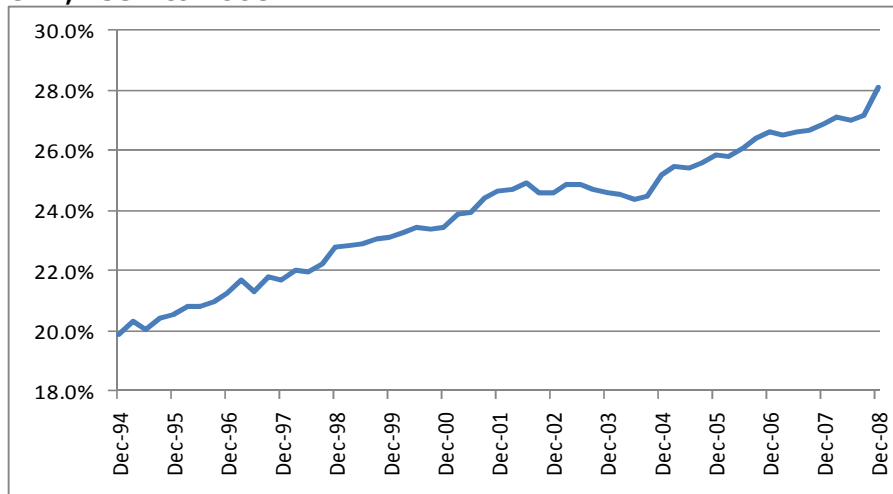
This report was produced in consultation with stakeholders, including the Canterbury Development Corporation. Further work planned on the knowledge economy includes international comparisons and contributing to economic development strategy.

Contribution to Gross Domestic Product (GDP)

The private knowledge intensive (KI) sectors have generated a steadily increasing proportion of national GDP over the past fourteen years, rising from 19.9% in 1994 to 28.1% in 2008 (as shown in the chart). When the public KI sectors are included, the total proportion of GDP generated by the knowledge economy in 2008 was 45.5%.



Indicator of the private knowledge intensive sectors' contribution to GDP, 1994 to 2008



Employment growth by industry

Over the eight year period from 2000 to 2008, employment across the combined KI industries increased by 28% (from 459,000 to 587,000).¹ This is significantly higher than the 23% employment growth seen across the rest of the economy over the same period. So the KI industries are responsible for an increasing share of national employment, as well as national GDP.

Among the major individual industries, the most rapid employment growth was seen in 'Professional and Scientific Equipment Manufacturing', 'Management and Related Consulting Services', 'Computer System Design and Related Services' and 'Architectural, Engineering and Technical Services'. The most significant employment drop was in 'Newspaper, Periodical, Book and Directory Publishing', while there was sharp growth in the much smaller industries of 'Software Publishing' and 'Internet Publishing and Broadcasting'.

¹ These figures represent the total employment in industries identified as knowledge intensive.

**Knowledge intensive industries experiencing the most rapid employment growth, 2000-2008**

Industry	Employment in 2008	Change 2000-08
Software Publishing	40	567%
Electricity Transmission	540	468%
Internet Publishing and Broadcasting	85	372%
Non-Financial Intangible Assets (Except Copyrights) Leasing	960	174%
Professional and Scientific Equipment Manufacturing	3,390	113%
Financial Asset Investing	2,610	107%
Internet Service Providers and Web Search Portals	930	94%
Management and Related Consulting Services	35,280	91%
Computer System Design and Related Services	19,730	89%
Educational Support Services	1,230	86%
Parks and Gardens Operations	3,850	83%
Non-Depository Financing	2,140	73%
Architectural, Engineering and Technical Services	29,670	67%
Auxiliary Finance and Investment Services	8,600	59%
Veterinary Services	4,060	52%
Advertising Services	4,770	51%

Inter-regional comparisons

In 2008, the private and public knowledge intensive (KI) sectors combined generated around 30% of all employment across New Zealand. The Wellington and Auckland regions were above the national average for the proportion of their workforce in these sectors (at 42% and 33% respectively), while the rural regions of Tasman, Marlborough and Southland were furthest below the national average (at 20%, 16% and 14% respectively).

Private sector employment in the knowledge-based economy is centred in the Auckland and Wellington regions, while public sector employment is much more decentralised. Central government administration is focussed around Wellington but the education, health and local government sectors provide knowledge intensive employment across the country.

In terms of employment growth in the KI industries, Auckland was the top region with growth of 37% over the period 2000-08. This is considerably faster than the 25% employment growth seen across Auckland's whole economy over the same period.



Employment growth in knowledge intensive sectors by region, 2000 to 2008



All regions saw growth in their private knowledge intensive sector employment, and generally quicker growth than in their public KI sectors (with the exception of Wellington). This indicates a broad development towards a more business-driven knowledge economy in New Zealand.

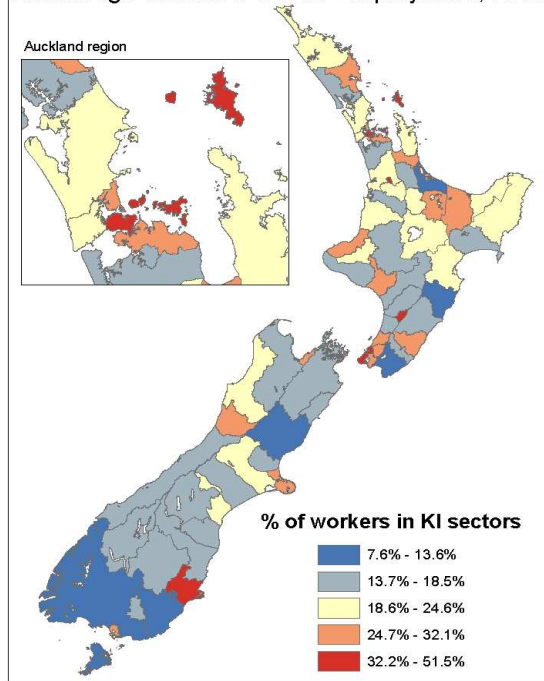
The sub-regional picture

The results are most interesting at the territorial authority (TA) level, due to the significant economic differences within some regions. There were strong results for private knowledge intensive sector employment for North Shore City and Hamilton City, and one factor may be that these cities are successfully exploiting their proximity to Auckland. In the South Island, Christchurch City had the highest proportion of workers in the private KI sectors while Dunedin City had the highest proportion in the public KI sectors. Christchurch is behind Auckland, Wellington and a couple of the smaller North Island cities in terms of the proportion of its workforce in the private KI sectors. But Christchurch has seen significantly faster employment growth (50% in eight years) in the private KI sectors than Auckland or Wellington, so it is gaining ground.

There is a lot of growth happening around Auckland City, more so than in the city itself, and Manukau City in particular has developed its private KI sectors quickly (85% employment growth in eight years). The suggestion is that more knowledge intensive businesses are seeing advantages in locating themselves just outside of the main city. North Shore City and Hamilton City have seen strong growth, while Auckland City and Wellington City continue to grow at a healthy rate. There have also been high rates of growth, albeit from a low baseline, in areas around the South Island with Queenstown-Lakes District standing out.



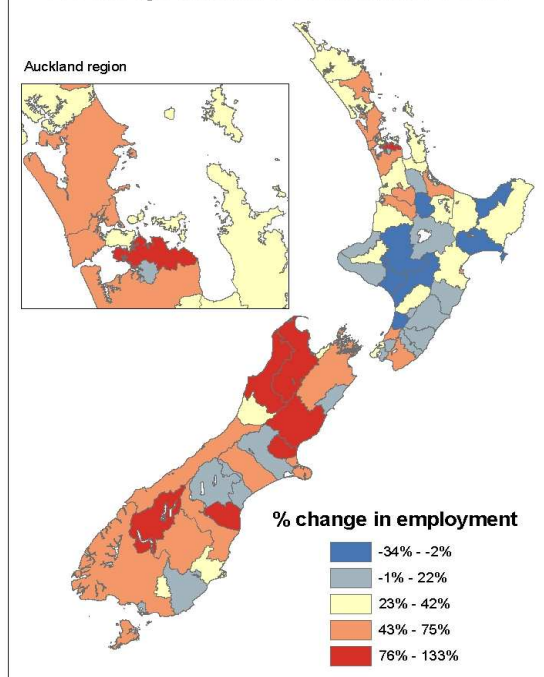
The Sub-Regional Geography of All Knowledge Intensive Sector Employment, 2008



The knowledge economy is concentrated in urban centres. The TAs with the highest proportion of workers in the KI sectors are Wellington City, Auckland City, Porirua City, Hamilton City, Palmerston North City and Dunedin City. It is notable that these are all TAs with a local university or polytechnic. Christchurch City is a little further down the list behind North Shore City, Whakatane District, Nelson City and Whangarei District.

Not only are Auckland and Wellington cities the only areas with more than a fifth of their workforce in the KI sectors, but they are supported by neighbouring areas in their region with a balance of private and public KI employment (North Shore and Manukau cities in Auckland region, Upper and Lower Hutt cities in Wellington region). Other cities and urban areas, such as Christchurch, are isolated by comparison.

Employment Change in Private Knowledge Intensive Sectors, 2000-2008



Of the three major cities, Christchurch has seen the fastest employment growth in the private KI sectors with its 50% increase being significantly higher than Auckland's 32% increase and Wellington's 23% increase. There seems to be considerable growth across many areas of the South Island. In the rural areas this will be from a very low base, but is nonetheless a positive result reflecting more opportunities for highly skilled workers in the private sector.

Christchurch City dominates the Canterbury region in terms of private KI sector employment but there is a valuable centre of 'Scientific Research Services' and Lincoln University based in Selwyn district. Recent growth in private KI sector employment in Christchurch has been across a broad range of sectors, including rapid expansion in 'Architectural, Engineering and Technical Services' and 'Computer System Design and Related Services'