

Australia's Growth Industries in the Age of the Knowledge Economy

Introduction

Change is normal for an economy. The Australian economy is no exception. Over the last 100 years it has undergone many transformations in response to economic and technological developments. In 1901 agriculture was the most dominant sector. By the middle of the century manufacturing had become the dominant sector. Since the 1970s the Australian economy has evolved into one based on service with more than 70 per cent of its wealth and jobs now falling into this sector.

During the 1990s the world's leading economies started to undergo another transformation. The latest developments in advanced economies, like Australia, have seen the emergence of a phenomenon variously referred to as the 'new economy', 'knowledge economy' or 'information economy'. This is a change that has shifted resources into sectors of the economy that produce or use high technology goods. This includes high to medium technology manufacturing industries, and 'knowledge intensive' services such as finance, insurance, business services, communications, community, social and personal services¹ that use this technology.

Australia's Fastest Growing Industries

In the period 1995–96 to 2000–01, the economy grew at an average annual rate of 3.9 per cent a year. Several industries grew faster than the economy wide average. The fastest growth occurred in many of the industries identified by the OECD as knowledge intensive.

Communications (10.4 per cent) and property and business services (7.5 per cent) grew the fastest.

Unlike the knowledge intensive service industries, growth rates in manufacturing were low. Overall, manufacturing grew at a sluggish average annual rate of 2.5 per cent.

The manufacturing sector most likely to be involved in the production of high technology goods, the machinery and equipment sector, experienced an annual average growth rate of 3.8 per cent. This was slightly less than the economy wide growth rate. As a result its importance to the overall economy declined slightly.

The only manufacturing industry to outperform the wider economy was the food, beverage and tobacco sector. This producer of low technology goods grew at an average rate of 6.6 per cent.

As a result of these differing growth rates, the relative importance of industries has changed over the last few years. The property and business services industry has increased its share the most. Since 1996 its Gross Value Added (GVA)² as a share of Gross Domestic Product (GDP) has grown from 9.2 per cent to 11.2 per cent. This makes it the second largest industry of the economy. In the same time manufacturing's GVA as a share of GDP fell from 12.7 per cent to 11.7 per cent.³

The table below highlights those industries that grew at a faster rate than the economy wide average. The fastest growing industries are

Industry Growth Rates (a)

	Average annual 1996–2001 (Per cent change)
Highlighted areas grew faster than GDP	
<i>Agriculture</i>	2.8
<i>Forestry and fishing</i>	4.1
Agriculture, forestry and fishing Total	2.9
<i>Mining (excluding services to mining)</i>	4.5
<i>Services to mining</i>	-1.0
Mining including services Total	4.3
<i>Food, beverage and tobacco</i>	6.6
<i>Textile, clothing, footwear and leather</i>	-1.7
<i>Wood and paper products</i>	-0.9
<i>Printing, publishing and recorded media</i>	0.9
<i>Petroleum, coal, chemical, etc.</i>	2.9
<i>Non-metallic mineral products</i>	0.9
<i>Metal products</i>	0.0
<i>Machinery and equipment</i>	3.8
<i>Other manufacturing</i>	-2.0
Manufacturing Total	2.5
<i>Electricity</i>	2.0
<i>Gas</i>	4.2
<i>Water supply, sewerage and drainage services</i>	1.6
Electricity, gas and water supply Total	2.1
Construction	1.1
<i>Wholesale trade</i>	4.2
Retail trade	3.8
<i>Accommodation, cafes and restaurants</i>	4.9
<i>Road</i>	3.4
<i>Air and space</i>	3.8
<i>Water</i>	0.3
<i>Rail, pipeline and other transport</i>	1.9
<i>Transport services and storage</i>	1.8
Transport and storage Total	2.5
<i>Communication services</i>	10.4
<i>Finance and insurance</i>	5.1
<i>Property and business services (b)</i>	7.5
Government administration and defence	2.2
Education	2.0
Health and community services	2.7
<i>Cultural and recreational services</i>	4.9
<i>Personal and other services</i>	5.8
Gross domestic product	3.9

(a) At basic prices. Reference year for chain volume measures is 1999–2000. (b) Excludes ownership of dwellings.

Source: Australian System of National Accounts, ABS Cat No. 5204.0

clustered in the 'knowledge intensive' service industries.

International Comparisons

A key source of comparative data on the knowledge economy is the OECD. From its latest publication on the knowledge economy⁴ the following observations can be made.

In 1998 high to medium-high technology manufactures⁵ accounted for 5.7 per cent of total GVA in Australia. This compares with an OECD and European Union average of 8.9 per cent and 8.4 per cent respectively. Ireland came top of the league in this category with 16.4 per cent of its total GVA attributed to this sector.

Although the OECD reported a relatively low intensity of technology based manufacturing industries for

Australia, the picture for service based industries was quite different. The postal and telecommunications industries accounted for 3.1 per cent of total GVA and finance and insurance services accounted for 6.8 per cent. This compares with an OECD average of 2.7 per cent and 6.5 per cent respectively. In total these industries accounted for 10.0 per cent of Australia's total GVA. Only in Switzerland and the USA do these industries account for a greater share of the economy than they do in Australia.

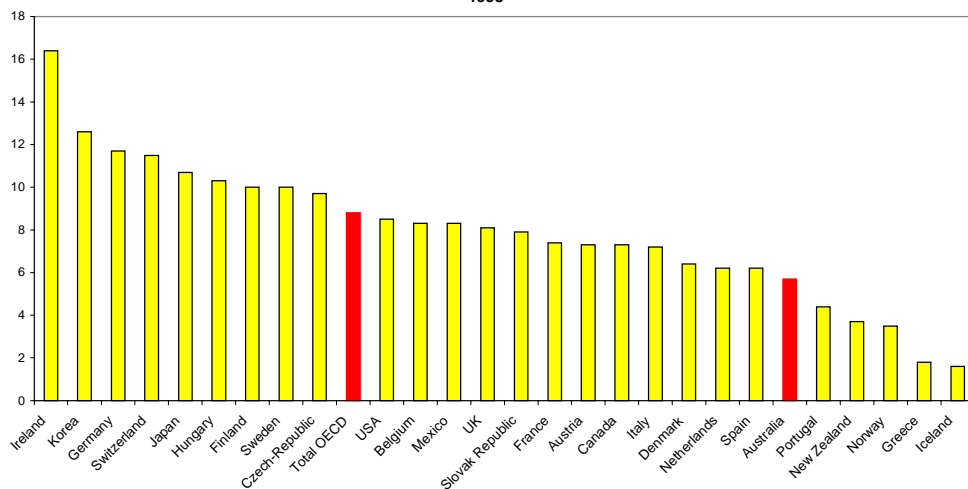
Conclusion

The latest transition of a developed economy into one increasingly based on knowledge industries is evident in Australia. The ABS data indicate that in Australia's case this is most evident in those industries that utilise

high technology products rather than produce them. This conclusion seems to be supported by the OECD's analysis of industry data.⁶

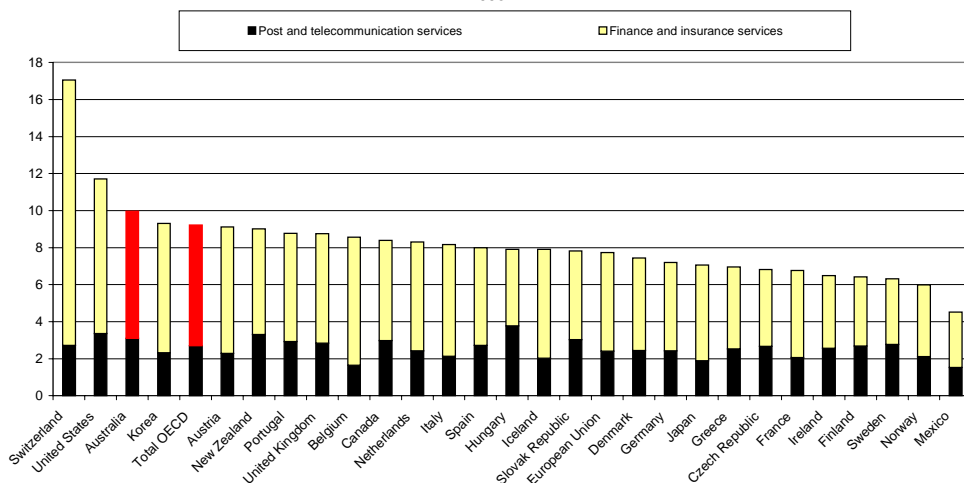
1. OECD, *Science, Technology and Industry Outlook*, Paris, 2000.
2. Value of output, including subsidies, less inputs and taxes
3. Australian Bureau of Statistics, *Australian System of National Accounts*, ABS Cat No. 5204.0, 2001.
4. OECD, *OECD Science, Technology and Industry Scoreboard*, Paris, 2001.
5. Includes aircraft and spacecraft; pharmaceuticals; office accounting and computing machinery; radio, television and communications equipment; medical precision and optical equipment; electrical machinery and apparatus; motor vehicles; trailers and semi-trailers; chemicals; railroad equipment and transport equipment; other machinery and equipment.
6. Science, Technology and Industry Scoreboard, op. cit.

High to Medium-High Technology Manufactures
Per Cent of GVA
1998



Source: OECD Science, Technology and Industry Scoreboard

Knowledge Intensive Industries
Per Cent of GVA
1998



Source: OECD Science, Technology and Industry Scoreboard

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