

Appendix 5D

Australia's Exports and Primary Industries

Appendix 5C provided a brief summary of Australian exports in Table 5C-1. This appendix now further describes Australia's exports and their major mineral resources and agricultural components, and related factors considered relevant to the assessment of alternative government structures for Australia, with an emphasis on international comparisons.

Appendix 5D has five sections. The first shows that Australia's export levels as a percentage of GDP are very low compared to other countries. The second describes Australia's mineral resources exports and compares Australia's mineral resources export levels with those of other countries. The third similarly describes and compares Australia's agricultural exports and related factors such as the amount of land suitable for agricultural activity. The fourth section presents a compilation of selected literature extracts on Australia's primary industry and the link between primary industry dependence and economic growth. The fifth section then presents a brief list of products for which Australia is the world's leading producer or exporter, as established through internet (Google) searches.

Australia's Low Level of Exports as a Percentage of GDP

Table 5D-1 below compares 37 selected countries in terms of their exports as percentages of GDP averaged over the period from 1999 to 2003. It is seen that Australia's 21.1% export figure is well below the median level of the 37 selected countries (38.1%), the 30 OECD countries (37.7%) and all countries in the world (34.9%). Australia ranks 33rd out of the 37 selected countries on this measure, and 28th of the 30 OECD countries, ahead of just Japan (10.9%) and the United States (10.5%).

Table 5D-1: Exports as a Percentage of GDP for 37 Selected Countries

Country	OECD?	Average (1999 to 2003)	Rank
Singapore	no	146.39	1
Luxembourg	YES	145.48	2
Malaysia	no	118.24	3
Ireland	YES	94.27	4
Belgium	YES	82.62	5
Slovak Republic	YES	71.09	6
Hungary	YES	69.94	7
Netherlands	YES	63.91	8
Czech Republic	YES	62.35	9
Austria	YES	50.57	10
Nigeria	no	44.84	11
Sweden	YES	44.46	12
Switzerland	YES	44.15	13
Canada	YES	43.84	14
Denmark	YES	42.94	15
Norway	YES	42.86	16
Finland	YES	39.28	17
South Korea	YES	38.22	18
Russian Federation	no	38.10	19
Iceland	YES	37.10	20
Germany	YES	34.11	21
New Zealand	YES	33.60	22
Portugal	YES	30.60	23
Mexico	YES	28.89	24
Spain	YES	28.78	25
Turkey	YES	27.57	26
China	no	27.37	27
France	YES	27.05	28
Italy	YES	26.92	29
United Kingdom	YES	26.62	30
Poland	YES	25.77	31
Greece	YES	22.51	32
Australia	YES	21.06	33
India	no	13.77	34
Brazil	no	13.33	35
Japan	YES	10.86	36
United States	YES	10.48	37
maximum of 37		146.39	
minimum of 37		10.48	
mean of 37		46.75	
median of 37		38.10	
# selected countries > 25% (/37)		31	
% selected countries > 25%		83.8	
OECD median		37.66	
# OECD countries > 25% (/30)		26	
% OECD countries > 25%		86.7	
World median		34.92	

Source: World Bank World Development Indicators Database

Australia's Mineral Resources Exports

Mining and Energy Exports

According to the Australian Bureau of Agricultural and Resource Economics (Australian Mineral Statistics, 2005b), mineral resources contributed \$55.0b towards Australia's total

exports in 2002-03 (37.1% of total exports) and \$52.4b in 2003-04 (36.5% of total exports), or, if petroleum products (oil, gas and refinery feedstock and products) are excluded: \$44.0b in 2002-03 (29.7%) and \$43.6b in 2003-04 (30.4%).

According to the World Bank and the International Finance Corporation (2002: 7), mining is the *dominant* sector of a country's economy if it contributes more than 50 percent of that country's exports, a *critical* sector if it contributes between 15 and 50 percent of exports, and a *relevant* sector if contributing 6 to 15 percent of exports. According to these classifications, Australia, then, is clearly a country in which mining assumes a critical role.

Australia's Mineral Industries Compared to Other Countries

Table 5D-2 below, adapted from Cranstone (2000: 63.6-63.7; see Table 5D-14 below), lists the 25 countries with the highest value of non-petroleum mineral production in 1998, along with associated per capita and per square kilometre figures for 1996, and rank orders for measures provided.

Table 5D-2: Value of Non-Petroleum Mineral Production of the World's Top 25 Producers of Non-Petroleum Minerals in 1998

Country	Production in 1998 (US\$ millions)	Production Rank	Production Per Capita in 1996 (US\$)	Production Per Capita Rank	Production Per Sq km in 1996 (US\$)	Production Per sq km Rank
China ¹	80,208	1	64	19	8,283	11
United States	56,715	2	222	5	6,255	12
South Africa	17,192	3	409	4	14,747	8
Russia ¹	17,039	4	111	12	997	25
Australia	16,311	5	928	1	2,187	20
India	15,728	6	16	25	4,707	16
Canada	12,843	7	488	3	1,465	22
Germany	10,226	8	115	10	26,303	2
Brazil	10,060	9	61	20	1,164	24
Japan	8,808	10	74	17	24,370	3
Chile	8,169	11	642	2	12,096	9
Poland	7,260	12	174	8	21,419	4
Indonesia	6,722	13	30	24	3,176	19
Mexico	6,566	14	98	14	3,563	18
Italy	6,416	15	91	15	17,352	7
Turkey	6,066	16	69	18	5,434	14
United Kingdom	4,397	17	77	16	18,520	6
South Korea	4,338	18	117	9	53,434	1
Peru	3,856	19	202	7	3,714	17
Spain	3,798	20	112	11	8,764	10
Iran	3,647	21	46	23	1,917	21
Ukraine	3,460	22	61	20	5,229	15
Kazakhstan	3,315	23	205	6	1,287	23
France	3,262	24	54	22	5,712	13
North Korea	3,065	25	103	13	20,388	5

Sources: Natural Resources Canada.

1: Production values for China and Russia exclude most construction materials because those data could not be obtained. Actual production values per capita are higher than indicated here.

Table 5D-2 shows that Australia was the fifth ranked producer of non-petroleum minerals in 1998. On a per capita basis, in 1996, Australia was by far the largest non-petroleum mineral producer, with total production nearly 40% ahead of second ranked Chile and nearly double third ranked Canada. In terms of production per unit land area, Australia's rank falls to 20 among the 25 leading mining countries listed here.

Among OECD countries, Australia ranks first on a per capita basis and second only to the United States in terms of overall production, among the 25 countries in Table 5D-1 above.

Agricultural Exports and Related Factors

Agricultural Exports

Table 5D-3 below shows that Australia's agricultural exports as a percentage of total exports is the third highest of the 37 countries selected for comparison.

Agricultural Output

Table 5D-4 shows that Australia's agricultural output as a percentage of GDP is ranked just 20th among the 37 selected countries.

Arable Land Comparisons – Australia High Per Capita

Tables 5D-5 and 5D-6 below compare the 37 selected countries in terms of arable land as a percentage of total land area, where arable land is defined as land subject to crop farming or at least capable of being used for crop farming (Malcolm et al. 1996: 26). The median percentage among the 37 selected countries is 19.1%, the OECD median is 21.4%, and among all countries in the world the median level is 10.4% (GeographyIQ 2005, as at www.geographyiq.com/ranking/ranking_Land_Use_Arable_land_aall.htm, accessed October 2005). Table 5D-6 shows that while Australia's arable land percentage is relatively low (ranking 30 out of 37 here), Australia's rank is relatively high in terms of gross arable land area, (6 of 37), and Australia easily ranks highest of all selected countries in terms of arable land per capita.

Table 5D-3: Agricultural Exports as a Percentage of total Exports for 37 Selected Countries in 2002

Country	OECD?	Agricultural Exports as a Percentage of Total Exports	Relative to AUS = 100	Rank
Australia	YES	25	100	3
Austria	YES	5	20	22
Belgium	YES	9	36	11
Brazil	no	28	112	2
Canada	YES	7	28	16
China	no	3	12	27
Czech Republic	YES	4	16	24
Denmark	YES	17	68	5
Finland	YES	3	12	27
France	YES	10	40	9
Germany	YES	4	16	24
Greece	YES	24	96	4
Hungary	YES	8	32	13
Iceland	YES	2	8	32
India	no	11	44	8
Ireland	YES	7	28	16
Italy	YES	7	28	16
Japan	YES	0	0	37
Luxembourg	YES	6	24	21
Malaysia	no	8	32	13
Mexico	YES	9	36	11
Netherlands	YES	13	52	7
New Zealand	YES	45	180	1
Nigeria	no	3	12	27
Norway	YES	1	4	35
Poland	YES	7	28	16
Portugal	YES	7	28	16
Russian Federation	no	2	8	32
Singapore	no	2	8	32
Slovak Republic	YES	4	16	24
South Korea	YES	1	4	35
Spain	YES	14	56	6
Sweden	YES	3	12	27
Switzerland	YES	3	12	27
Turkey	YES	10	40	9
United Kingdom	YES	5	20	22
United States	YES	8	32	13
median of 37		7	28	16
OECD median		7	28	16
World Median		7		

Sources: Food and Agriculture Organization (of the United Nations), 'Summary of World Food and Agricultural Statistics 2004'; World Bank 2004, World Development Indicators. Similar statistics are provided in the World Trade Organisation's 'International Trade Statistics 2004', Table IV.9, page 108.

Table 5D-4: Agriculture Output (= Value Added) as a Percentage of GDP for 37 Selected Countries – Average from 1999-2003

Country	OECD?	Agricultural Output as a Percentage of GDP	Relative to AUS = 100	Rank
Nigeria	no	30.70	870	1
India	no	24.14	684	2
China	no	15.96	452	3
Turkey	YES	14.11	400	4
Iceland	YES	9.52	270	5
Malaysia	no	9.36	265	6
New Zealand	YES	8.14	231	7
Greece	YES	7.44	211	8
Brazil	no	6.46	183	9
Russian Federation	no	6.23	177	10
Hungary	YES	4.43	125	11
Mexico	YES	4.22	119	12
Slovak Republic	YES	4.11	116	13
Czech Republic	YES	4.11	116	14
Korea, Rep.	YES	3.96	112	15
Portugal	YES	3.76	107	16
Finland	YES	3.65	104	17
Ireland	YES	3.63	103	18
Spain	YES	3.56	101	19
Australia	YES	3.53	100	20
Poland	YES	3.52	100	21
Italy	YES	2.83	80	22
France	YES	2.79	79	23
Netherlands	YES	2.78	79	24
Denmark	YES	2.61	74	25
Austria	YES	2.44	69	26
Canada	YES	2.42	68	27
Sweden	YES	1.93	55	28
Norway	YES	1.93	55	29
United States	YES	1.61	46	30
Switzerland	YES	1.50	42	31
Japan	YES	1.39	39	32
Belgium	YES	1.37	39	33
Germany	YES	1.21	34	34
United Kingdom	YES	1.03	29	35
Luxembourg	YES	0.73	21	36
Singapore	no	0.13	4	37
MEDIAN of all 37		3.56		
OECD MEDIAN		3.17		

Sources: World Bank World Development Indicators Database for all countries except Switzerland, and the CIA World Factbook for Switzerland

Table 5D-5: Comparison of 37 Selected Countries in Terms of Arable Land

Country	OECD?	Arable Land Percentage (%)	Population	Total Land Area (sq km)	Total Arable Land Area (sq km)	Arable Land per person (Hectares per person)
Australia	YES	6.55	20,090,437	7,686,850	503,489	2.506
Austria	YES	16.91	8,184,691	83,870	14,182	0.173
Belgium	YES	23.28	10,364,388	30,528	7,107	0.069
Brazil	no	6.96	186,112,794	8,511,965	592,433	0.318
Canada	YES	4.96	32,805,041	9,984,670	495,240	1.510
China	no	15.40	1,306,313,812	9,596,960	1,477,932	0.113
Czech Republic	YES	39.80	10,241,138	78,866	31,389	0.306
Denmark	YES	54.02	5,432,335	43,094	23,279	0.429
Finland	YES	7.19	5,223,442	338,145	24,313	0.465
France	YES	33.53	60,656,178	547,030	183,419	0.302
Germany	YES	33.85	82,431,390	357,021	120,852	0.147
Greece	YES	21.10	10,668,354	131,940	27,839	0.261
Hungary	YES	50.09	10,006,835	93,030	46,599	0.466
Iceland	YES	0.07	296,737	103,000	72	0.024
India	no	54.40	1,080,264,388	3,287,590	1,788,449	0.166
Ireland	YES	15.20	4,015,676	70,280	10,683	0.266
Italy	YES	27.79	58,103,033	301,230	83,712	0.144
Japan	YES	12.19	127,417,244	377,835	46,058	0.036
Luxembourg	YES	23.28	468,571	2,586	602	0.128
Malaysia	no	5.48	23,953,136	329,750	18,070	0.075
Mexico	YES	12.99	106,202,903	1,972,550	256,234	0.241
Netherlands	YES	26.71	16,407,491	41,526	11,092	0.068
New Zealand	YES	5.60	4,035,461	268,680	15,046	0.373
Nigeria	no	31.29	128,771,988	923,768	289,047	0.224
Norway	YES	2.87	4,593,041	324,220	9,305	0.203
Poland	YES	45.91	38,635,144	312,685	143,554	0.372
Portugal	YES	21.75	10,566,212	92,391	20,095	0.190
Russia	no	7.33	143,420,309	17,075,200	1,251,612	0.873
Singapore	no	1.64	4,425,720	692.7	11	0.00026
Slovakia	YES	30.16	5,431,363	48,845	14,732	0.271
South Korea	YES	17.18	48,422,644	98,480	16,919	0.035
Spain	YES	26.07	43,209,511	504,782	131,597	0.305
Sweden	YES	6.54	9,001,774	449,964	29,428	0.327
Switzerland	YES	10.42	7,489,370	41,290	4,302	0.057
Turkey	YES	30.93	69,660,559	780,580	241,433	0.347
United Kingdom	YES	23.46	59,553,800	244,820	57,435	0.096
United States	YES	19.13	295,734,134	9,631,418	1,842,490	0.623
Highest		54.40	1,306,313,812	17,075,200	1,842,490	2.506
Lowest		0.07	296,737	693	11	0.00026
Median		19.13	20,090,437	312,685	31,389	0.241

Source: GeographyIQ ranking of countries according to arable land as a percentage of total land area, as at www.geographyiq.com/ranking/ranking_Land_Use_Arable_land_aall.htm, accessed October 2005, employing data in turn from the CIA World Factbook.

Table 5D-6: Comparison of 37 Selected Countries in Terms of Arable Land – Ranks

Country	OECD?	Arable Land Percentage (%)	Population	Total Land Area (sq km)	Total Arable Land Area (sq km)	Arable Land per person (Hectares per person)
Australia	YES	30	19	6	6	1
Austria	YES	21	27	28	29	23
Belgium	YES	15	23	35	33	31
Brazil	no	29	4	5	5	12
Canada	YES	34	17	2	7	2
China	no	22	1	4	3	28
Czech Republic	YES	5	24	29	19	13
Denmark	YES	2	29	32	23	7
Finland	YES	28	31	16	22	6
France	YES	7	11	11	11	15
Germany	YES	6	9	15	14	25
Greece	YES	18	21	23	21	18
Hungary	YES	3	25	26	17	5
Iceland	YES	37	37	24	36	36
India	no	1	2	7	2	24
Ireland	YES	23	35	30	31	17
Italy	YES	11	13	20	15	26
Japan	YES	25	7	14	18	34
Luxembourg	YES	15	36	36	35	27
Malaysia	no	33	18	17	25	30
Mexico	YES	24	8	8	9	19
Netherlands	YES	12	20	33	30	32
New Zealand	YES	32	34	21	27	8
Nigeria	no	8	6	9	8	20
Norway	YES	35	32	18	32	21
Poland	YES	4	16	19	12	9
Portugal	YES	17	22	27	24	22
Russia	no	27	5	1	4	3
Singapore	no	36	33	37	37	37
Slovakia	YES	10	30	31	28	16
South Korea	YES	20	14	25	26	35
Spain	YES	13	15	12	13	14
Sweden	YES	31	26	13	20	11
Switzerland	YES	26	28	34	34	33
Turkey	YES	9	10	10	10	10
United Kingdom	YES	14	12	22	16	29
United States	YES	19	3	3	1	4

Economically Active Populations in Agriculture

Table 5D-7 below shows that 4.5% of Australia's economically active population is engaged in agriculture, which ranks Australia 23rd among the 37 selected countries.

Table 5D-7: Comparison of Selected Countries in Terms of Economically Active Populations in Agriculture in 2001

Country	OECD?	Economically active population (Thousands)	Economically Active Population in Agriculture [EAPA] (Thousands)	Rank EAPA	Economically Active Population in Agriculture [EAPA%] (%)	Rank EAPA%
Australia	YES	9,872	444	22	4.5	23
Austria	YES	3,728	183	26	4.9	22
Belgium	YES	4,223	74	34	1.8	36
Brazil	no	80,302	12,949	5	16.1	9
Canada	YES	16,690	380	23	2.3	32
China	no	759,651	510,092	1	67.1	1
Czech Republic	YES	5,749	457	21	7.9	18
Denmark	YES	2,926	106	32	3.6	27
Finland	YES	2,592	137	31	5.3	20
France	YES	26,893	857	16	3.2	29
Germany	YES	40,288	967	15	2.4	31
Greece	YES	4,643	752	17	16.2	8
Hungary	YES	4,744	490	20	10.3	11
Iceland	YES	159	13	35	8.2	17
India	no	451,384	267,125	2	59.2	2
Ireland	YES	1,629	160	28	9.8	13
Italy	YES	25,383	1,285	13	5.1	21
Japan	YES	68,318	2,607	10	3.8	26
Luxembourg	YES	186	4	36	2.2	33
Malaysia	no	9,673	1,736	12	17.9	7
Mexico	YES	41,692	8,714	6	20.9	6
Netherlands	YES	7,370	241	25	3.3	28
New Zealand	YES	1,901	169	27	8.9	15
Nigeria	no	46,450	15,048	3	32.4	4
Norway	YES	2,323	103	33	4.4	24
Poland	YES	20,048	4,243	8	21.2	5
Portugal	YES	5,109	630	18	12.3	10
Russian Federation	no	78,069	7,975	7	10.2	12
Singapore	no	2,053	3	37	0.15	37
Slovak Republic	YES	2,977	262	24	8.8	16
South Korea	YES	24,258	2,268	11	9.3	14
Spain	YES	17,611	1,234	14	7.0	19
Sweden	YES	4,792	146	30	3.0	30
Switzerland	YES	3,806	156	29	4.1	25
Turkey	YES	31,851	14,485	4	45.5	3
United Kingdom	YES	29,964	529	19	1.8	35
United States	YES	146,635	2,968	9	2.0	34
median of 37		9,673	529	19	7	19
OECD median		5,429	451	22	5	22
WORLD		2,992,057	1,326,504		44.3	
Developed Countries		640,157	44,911		7.0	

Source: 'The State of Food and Agriculture', FAO of the UN, Rome, 2004, Table A4

Agricultural Land Areas

Tables 5D-8 and 5D-9 show that Australia has the second largest agricultural area, and by far the largest agricultural area per capita, among the 37 selected countries.

Table 5D-8: Comparison of Selected Countries in Terms of Agricultural Areas in 2001

Country	OECD?	Population 2001 (1000s)	Land Area (Thousand ha)	Agricultural Area 2001 (Thousand ha)	Agricultural Area as a Percentage of Total Land Area (%)	Agricultural Area per capita (ha/person)
Australia	YES	19,338	768,230	455,500	59.3	23.55
Austria	YES	8,075	8,273	3,390	41.0	0.42
Belgium-Luxembourg	YES	10,706	3,282	1,544	47.0	0.14
Brazil	no	172,559	845,651	263,465	31.2	1.53
Canada	YES	31,015	922,097	74,880	8.1	2.41
China	no	1,262,609	929,100	554,420	59.7	0.44
Czech Republic	YES	10,260	7,728	4,278	55.4	0.42
Denmark	YES	5,333	4,243	2,676	63.1	0.50
Finland	YES	5,178	30,459	2,219	7.3	0.43
France	YES	59,453	55,010	29,631	53.9	0.50
Germany	YES	82,007	34,895	17,033	48.8	0.21
Greece	YES	10,623	12,890	8,502	66.0	0.80
Hungary	YES	9,917	9,211	5,865	63.7	0.59
Iceland	YES	281	10,025	2,281	22.8	8.12
India	no	1,025,096	297,319	180,810	60.8	0.18
Ireland	YES	3,841	6,889	4,399	63.9	1.15
Italy	YES	57,503	29,411	15,355	52.2	0.27
Japan	YES	127,335	36,450	5,199	14.3	0.04
Malaysia	no	22,633	32,855	7,870	24.0	0.35
Mexico	YES	100,368	190,869	107,300	56.2	1.07
Netherlands	YES	15,930	3,388	1,931	57.0	0.12
New Zealand	YES	3,808	26,799	17,235	64.3	4.53
Nigeria	no	116,929	91,077	70,400	77.3	0.60
Norway	YES	4,488	30,683	1,042	3.4	0.23
Poland	YES	38,577	30,435	18,392	60.4	0.48
Portugal	YES	10,033	9,150	4,142	45.3	0.41
Russian Federation	no	144,664	1,688,850	216,861	12.8	1.50
Singapore	no	4,108	61	1	1.6	0.0002
Slovak Republic	YES	5,403	4,808	2,450	51.0	0.45
South Korea	YES	47,069	9,873	1,943	19.7	0.04
Spain	YES	39,921	49,944	29,398	58.9	0.74
Sweden	YES	8,833	41,162	3,144	7.6	0.36
Switzerland	YES	7,170	3,955	1,580	39.9	0.22
Turkey	YES	67,632	76,793	38,733	50.4	0.57
United Kingdom	YES	59,762	24,088	16,954	70.4	0.28
United States	YES	285,926	915,896	411,259	44.9	1.44
median of 37		20,986	30,447	8,186	50.7	0.45
OECD median		19,338	30,435	8,502	53.9	0.44
WORLD		6,130,564	13,041,038	5,016,729	38.5	0.82
Developed Countries		1,274,401	5,382,812	1,743,778	32.4	1.37
Developing Countries		4,856,163	7,658,226	3,272,951	42.7	0.67

Source: 'The State of Food and Agriculture', FAO of the UN, Rome, 2004, Tables A4 and A5, pp. 169-181.

Note: Agricultural area is defined as the land area sum of arable land, permanent crops and permanent pasture.

Australia's total agricultural area of 23.55 ha per person comprises arable land (11.0%), permanent crops (0.1%) and permanent pasture (88.9%) (FAO 2004: 179).

Table 5D-9: Comparison of Selected Countries in Terms of Agricultural Areas in 2001 – Ranks

Country	OECD?	Population 2001 (1000s)	Land Area (Thousand ha)	Agricultural Area 2001 (Thousand ha)	Agricultural Area as a Percentage of Total Land Area (%)	Agricultural Area per capita (ha/person)
Australia	YES	19	6	2	11	1
Austria	YES	27	28	25	24	21
Belgium-Luxembourg	YES	21	35	34	21	32
Brazil	no	4	5	4	26	5
Canada	YES	17	3	8	32	4
China	no	1	2	1	10	19
Czech Republic	YES	23	29	23	15	22
Denmark	YES	30	32	27	7	15
Finland	YES	31	18	30	34	20
France	YES	12	11	11	16	16
Germany	YES	9	15	15	20	30
Greece	YES	22	23	18	3	10
Hungary	YES	25	26	20	6	13
Iceland	YES	36	24	29	28	2
India	no	2	7	6	8	31
Ireland	YES	34	30	22	5	8
Italy	YES	13	20	17	17	27
Japan	YES	6	14	21	30	35
Malaysia	no	18	16	19	27	25
Mexico	YES	8	8	7	14	9
Netherlands	YES	20	34	32	13	33
New Zealand	YES	35	21	14	4	3
Nigeria	no	7	9	9	1	12
Norway	YES	32	17	35	35	28
Poland	YES	16	19	13	9	17
Portugal	YES	24	27	24	22	23
Russian Federation	no	5	1	5	31	6
Singapore	no	33	36	36	36	36
Slovak Republic	YES	29	31	28	18	18
South Korea	YES	14	25	31	29	34
Spain	YES	15	12	12	12	11
Sweden	YES	26	13	26	33	24
Switzerland	YES	28	33	33	25	29
Turkey	YES	10	10	10	19	14
United Kingdom	YES	11	22	16	2	26
United States	YES	3	4	3	23	7

Forest and Wood Areas

Tables 5D-10 and 5D-11 show that Australia has the sixth largest forest and wood areas, and the largest forest and wood area per capita, among the 37 selected countries.

Table 5D-10: Comparison of Selected Countries in Terms of Forest and Wood Areas in 2001

Country	OECD?	Population 2001 (1000s)	Land Area (Thousand ha)	Forest and Wood Area 2001 (Thousand ha)	Forest and Wood Area as a Percentage of Total Land Area (%)	Forest and Wood Area per capita (ha/person)
Australia	YES	19,338	768,230	154,539	20.1	7.99
Austria	YES	8,075	8,273	3,886	47.0	0.48
Belgium-Luxembourg	YES	10,706	3,282	728	22.2	0.07
Brazil	no	172,559	845,651	543,905	64.3	3.15
Canada	YES	31,015	922,097	244,571	26.5	7.89
China	no	1,262,609	929,100	163,480	17.6	0.13
Czech Republic	YES	10,260	7,728	2,632	34.1	0.26
Denmark	YES	5,333	4,243	455	10.7	0.09
Finland	YES	5,178	30,459	21,935	72.0	4.24
France	YES	59,453	55,010	15,341	27.9	0.26
Germany	YES	82,007	34,895	10,740	30.8	0.13
Greece	YES	10,623	12,890	3,599	27.9	0.34
Hungary	YES	9,917	9,211	1,840	20.0	0.19
Iceland	YES	281	10,025	31	0.3	0.11
India	no	1,025,096	297,319	64,113	21.6	0.06
Ireland	YES	3,841	6,889	659	9.6	0.17
Italy	YES	57,503	29,411	10,003	34.0	0.17
Japan	YES	127,335	36,450	24,081	66.1	0.19
Malaysia	no	22,633	32,855	19,292	58.7	0.85
Mexico	YES	100,368	190,869	55,205	28.9	0.55
Netherlands	YES	15,930	3,388	375	11.1	0.02
New Zealand	YES	3,808	26,799	7,946	29.7	2.09
Nigeria	no	116,929	91,077	13,517	14.8	0.12
Norway	YES	4,488	30,683	8,868	28.9	1.98
Poland	YES	38,577	30,435	9,047	29.7	0.23
Portugal	YES	10,033	9,150	3,666	40.1	0.37
Russian Federation	no	144,664	1,688,850	851,392	50.4	5.89
Singapore	no	4,108	61	2	3.3	0.0005
Slovak Republic	YES	5,403	4,808	2,177	45.3	0.40
South Korea	YES	47,069	9,873	6,248	63.3	0.13
Spain	YES	39,921	49,944	14,370	28.8	0.36
Sweden	YES	8,833	41,162	27,134	65.9	3.07
Switzerland	YES	7,170	3,955	1,199	30.3	0.17
Turkey	YES	67,632	76,793	10,225	13.3	0.15
United Kingdom	YES	59,762	24,088	2,794	11.6	0.05
United States	YES	285,926	915,896	225,993	24.7	0.79
median of 37		20,986	30,447	9,525	28.8	0.25
OECD median		19,338	30,435	9,047	28.9	0.26
WORLD		6,130,564	13,041,038	3,868,796	29.7	0.63
Developed Countries		1,274,401	5,382,812	1,720,221	32.0	1.35
Developing Countries		4,856,163	7,658,226	2,148,575	28.1	0.44

Source: 'The State of Food and Agriculture', FAO of the UN, Rome, 2004, Tables A4 and A5

Table 5D-11: Comparison of Selected Countries in Terms of Forest and Wood Areas in 2001 – Ranks

Country	OECD?	Population 2001 (1000s)	Land Area (Thousand ha)	Forest and Wood Area 2001 (Thousand ha)	Forest and Wood Area as a Percentage of Total Land Area (%)	Forest and Wood Area per capita (ha/person)
Australia	YES	19	6	6	26	1
Austria	YES	27	28	23	8	12
Belgium-Luxembourg	YES	21	35	31	24	32
Brazil	no	4	5	2	4	5
Canada	YES	17	3	3	22	2
China	no	1	2	5	28	28
Czech Republic	YES	23	29	27	11	18
Denmark	YES	30	32	33	33	31
Finland	YES	31	18	11	1	4
France	YES	12	11	13	21	17
Germany	YES	9	15	16	13	27
Greece	YES	22	23	25	20	16
Hungary	YES	25	26	29	27	21
Iceland	YES	36	24	35	36	30
India	no	2	7	7	25	33
Ireland	YES	34	30	32	34	23
Italy	YES	13	20	18	12	22
Japan	YES	6	14	10	2	20
Malaysia	no	18	16	12	6	9
Mexico	YES	8	8	8	17	11
Netherlands	YES	20	34	34	32	35
New Zealand	YES	35	21	21	16	7
Nigeria	no	7	9	15	29	29
Norway	YES	32	17	20	18	8
Poland	YES	16	19	19	15	19
Portugal	YES	24	27	24	10	14
Russian Federation	no	5	1	1	7	3
Singapore	no	33	36	36	35	36
Slovak Republic	YES	29	31	28	9	13
South Korea	YES	14	25	22	5	26
Spain	YES	15	12	14	19	15
Sweden	YES	26	13	9	3	6
Switzerland	YES	28	33	30	14	24
Turkey	YES	10	10	17	30	25
United Kingdom	YES	11	22	26	31	34
United States	YES	3	4	4	23	10

Total Agricultural, Forest and Wood Areas

Tables 5D-12 and 5D-13 show that Australia has the fifth largest total of agricultural, forest and wood areas among the 37 selected countries, and again by far the largest of such areas on a per capita basis.

Table 5D-12: Comparison of Selected Countries in Terms of Total Agricultural, Forest and Wood Areas in 2001

Country	OECD?	Population 2001 (1000s)	Land Area (Thousand ha)	Total of Agricultural, Forest and Wood Area 2001 (Thousand ha)	Total of Agricultural, Forest and Wood Area as a Percentage of Total Land Area (%)	Total of Agricultural, Forest and Wood Area per capita (ha/person)
Australia	YES	19,338	768,230	610,039	79.4	31.55
Austria	YES	8,075	8,273	7,276	87.9	0.90
Belgium-Luxembourg	YES	10,706	3,282	2,272	69.2	0.21
Brazil	no	172,559	845,651	807,370	95.5	4.68
Canada	YES	31,015	922,097	319,451	34.6	10.30
China	no	1,262,609	929,100	717,900	77.3	0.57
Czech Republic	YES	10,260	7,728	6,910	89.4	0.67
Denmark	YES	5,333	4,243	3,131	73.8	0.59
Finland	YES	5,178	30,459	24,154	79.3	4.66
France	YES	59,453	55,010	44,972	81.8	0.76
Germany	YES	82,007	34,895	27,773	79.6	0.34
Greece	YES	10,623	12,890	12,101	93.9	1.14
Hungary	YES	9,917	9,211	7,705	83.6	0.78
Iceland	YES	281	10,025	2,312	23.1	8.23
India	no	1,025,096	297,319	244,923	82.4	0.24
Ireland	YES	3,841	6,889	5,058	73.4	1.32
Italy	YES	57,503	29,411	25,358	86.2	0.44
Japan	YES	127,335	36,450	29,280	80.3	0.23
Malaysia	no	22,633	32,855	27,162	82.7	1.20
Mexico	YES	100,368	190,869	162,505	85.1	1.62
Netherlands	YES	15,930	3,388	2,306	68.1	0.14
New Zealand	YES	3,808	26,799	25,181	94.0	6.61
Nigeria	no	116,929	91,077	83,917	92.1	0.72
Norway	YES	4,488	30,683	9,910	32.3	2.21
Poland	YES	38,577	30,435	27,439	90.2	0.71
Portugal	YES	10,033	9,150	7,808	85.3	0.78
Russian Federation	no	144,664	1,688,850	1,068,253	63.3	7.38
Singapore	no	4,108	61	3	4.9	0.0007
Slovak Republic	YES	5,403	4,808	4,627	96.2	0.86
South Korea	YES	47,069	9,873	8,191	83.0	0.17
Spain	YES	39,921	49,944	43,768	87.6	1.10
Sweden	YES	8,833	41,162	30,278	73.6	3.43
Switzerland	YES	7,170	3,955	2,779	70.3	0.39
Turkey	YES	67,632	76,793	48,958	63.8	0.72
United Kingdom	YES	59,762	24,088	19,748	82.0	0.33
United States	YES	285,926	915,896	637,252	69.6	2.23
median of 37		20,986	30,447	17,711	58.2	0.84
OECD median		19,338	30,435	17,549	57.7	0.91
WORLD		6,130,564	13,041,038	8,885,525	68.1	1.45
Developed Countries		1,274,401	5,382,812	3,463,999	64.4	2.72
Developing Countries		4,856,163	7,658,226	5,421,526	70.8	1.12

Source: 'The State of Food and Agriculture', FAO of the UN, Rome, 2004, Tables A4 and A5

Table 5D-13: Comparison of Selected Countries in Terms of Total Agricultural, Forest and Wood Areas in 2001 – Ranks

Country	OECD?	Population 2001 (1000s)	Land Area (Thousand ha)	Total of Agricultural, Forest and Wood Area 2001 (Thousand ha)	Total of Agricultural, Forest and Wood Area as a Percentage of Total Land Area (%)	Total of Agricultural, Forest and Wood Area per capita (ha/person)
Australia	YES	19	6	5	21	1
Austria	YES	27	28	27	8	16
Belgium-Luxembourg	YES	21	35	35	29	33
Brazil	no	4	5	2	2	6
Canada	YES	17	3	6	33	2
China	no	1	2	3	23	26
Czech Republic	YES	23	29	28	7	24
Denmark	YES	30	32	31	24	25
Finland	YES	31	18	20	22	7
France	YES	12	11	11	18	20
Germany	YES	9	15	15	20	29
Greece	YES	22	23	22	4	14
Hungary	YES	25	26	26	13	19
Iceland	YES	36	24	33	35	3
India	no	2	7	7	16	31
Ireland	YES	34	30	29	26	12
Italy	YES	13	20	18	10	27
Japan	YES	6	14	14	19	32
Malaysia	no	18	16	17	15	13
Mexico	YES	8	8	8	12	11
Netherlands	YES	20	34	34	30	35
New Zealand	YES	35	21	19	3	5
Nigeria	no	7	9	9	5	22
Norway	YES	32	17	23	34	10
Poland	YES	16	19	16	6	23
Portugal	YES	24	27	25	11	18
Russian Federation	no	5	1	1	32	4
Singapore	no	33	36	36	36	36
Slovak Republic	YES	29	31	30	1	17
South Korea	YES	14	25	24	14	34
Spain	YES	15	12	12	9	15
Sweden	YES	26	13	13	25	8
Switzerland	YES	28	33	32	27	28
Turkey	YES	10	10	10	31	21
United Kingdom	YES	11	22	21	17	30
United States	YES	3	4	4	28	9

Selected Literature Extracts on Australia's Primary Industry and the Link Between Primary Industry Dependence and Economic Growth

Table 5D-14 below contains 23 extracts providing documentary evidence of Australia's primary industries and the link between primary industry dependence and economic growth. These extracts do not prove that Australia's significant primary industry will automatically impede Australia's economic growth, but they do provide valuable lessons nevertheless. Specifically,

Australia's government structures and regulatory environments should be designed so as to avoid distortions which effectively encourage or favour primary industry at the expense of manufacturing industry.

Table 5D-14: Extracts on Australia's Primary Industry and the Link Between Primary Industry Dependence and Economic Growth

Literature Source	Selected Extracts
Page, E. C. G. (1922), 'The Need for Re-organisation and a New Outlook', The Land Newspaper, Sydney	<p>Page (1922: 1): Ninety per cent. of our support has hitherto come from the primary producers of Australia, who in 1920 produced £223,000,000 of the total of our wealth production of £298,000,000 [75%], and who again in 1921 produced a further £250,000,000 out of the £348,000,000 [72%] of our total production.</p>
Sachs, J. D. and Warner, A. M. (1995), <i>Natural Resource Abundance and Economic Growth</i> , Harvard Institute for International Development, Discussion Paper No. 517a, October 1995	<p>Sachs and Warner (1995: 1): One of the surprising features of modern economic growth is that economies with abundant natural resources have tended to grow less rapidly than natural-resource-scarce economies. In this paper we show that economies with a high ratio of natural resource exports to GDP in 1971 (the base year) tended have low growth rates during the subsequent period 1971-89. This negative relationship holds true even after controlling for variables found to be important for economic growth, such as initial per capita income, trade policy, government efficiency, investment rates, and other variables. We explore the possible pathways for this negative relationship by studying the cross-country effects of resource endowments on trade policy, bureaucratic efficiency, and other determinants of growth. We also provide a simple theoretical model of endogenous growth that might help to explain the observed negative relationship.</p> <p>Sachs and Warner (1995: 21): ... this paper has documented a statistically significant, inverse, and robust association between natural resource intensity and growth over the past twenty years. It is robust in the sense that it remains significant in cross-country growth regressions after controlling for a large number of additional variables that other studies have claimed to be important in explaining cross-country growth. The list of additional variables includes initial GDP, trade policy, investment rates, terms of trade volatility, inequality, and the effectiveness of the bureaucracy. We also find that the effect remains when we add regional dummy variables and introduce alternative measures of natural resource abundance. A striking "non-parametric" confirmation of the findings is the very few cases of resource-abundant developing countries that sustained even 2 percent per annum growth during 1971-92; only Malaysia and Mauritius, out of 18 countries.</p>
Radelet, Sachs and Lee (1997) Harvard Institute for International Development HARVARD UNIVERSITY Development Discussion Papers Economic Growth in Asia Steven Radelet, Jeffrey Sachs, and Jong-Wha Lee Development Discussion Paper No. 609 November 1997	<p>Radelet, Sachs and Lee (1997: 7): Sachs and Warner (1995b) observe that natural resource-abundant economies have tended to grow <i>more slowly</i> than resource-rich economies during the past twenty years. For example, countries with primary product exports valued at between 0 and 5 percent of GDP recorded growth per person of over 3.2 percent between 1965 and 1990, whereas countries with primary product exports equivalent to over 20 percent of GDP grew just 0.8 percent per person per year (see Figure 3 [should be Figure 4?]).</p>

Table 5D-14 (Continued)

Source	Selected Extracts					
Cranstone, D. (2000), 'Canada's Rank in World Mining', in Canadian Minerals Yearbook, 2000	Cranstone (2000: 63.6):					
	TABLE 1. VALUE OF NON-PETROLEUM MINERAL PRODUCTION OF THE WORLD'S TOP 25 PRODUCERS OF NON-PETROLEUM MINERALS IN 1996 AND 1998					
	1996			1998		
	Rank	Country	Value	Rank	Country	Value
	(US\$ millions)			(US\$ millions)		
	1	China ¹	78 749	1	China ¹	80 208
	2	United States	58 626	2	United States	56 715
	3	South Africa	17 991	3	South Africa	17 192
	4	Australia	16 809	4	Russia ¹	17 039
	5	Russia ¹	16 510	5	Australia	16 311
6	Canada	14 617	6	India	15 728	
7	India	14 491	7	Canada	12 843	
8	Brazil	9 910	8	Germany	10 226	
9	Germany	9 390	9	Brazil	10 080	
10	Japan	9 212	10	Japan	8 808	
11	Chile	9 157	11	Chile	8 189	
12	Mexico	6 977	12	Poland	7 280	
13	Poland	6 704	13	Indonesia	6 722	
14	Indonesia	6 050	14	Mexico	6 586	
15	South Korea	5 290	15	Italy	6 416	
16	Italy	5 233	16	Turkey	6 066	
17	Peru	4 773	17	United Kingdom	4 397	
18	United Kingdom	4 506	18	South Korea	4 338	
19	Spain	4 426	19	Peru	3 856	
20	Turkey	4 233	20	Spain	3 798	
21	Kazakhstan	3 497	21	Iran	3 647	
22	Iran	3 159	22	Ukraine	3 480	
23	Ukraine	3 157	23	Kazakhstan	3 315	
24	France	3 153	24	France	3 282	
25	North Korea	2 467	25	North Korea	3 065	
	Sources: Natural Resources Canada.					
	¹ Totals for China and Russia exclude most construction materials because those data could not be obtained. The correct rank of Russia was almost certainly third in both 1996 and 1998, ahead of South Africa and Australia.					
	Cranstone (2000: 63.7):					
	TABLE 2. VALUE OF NON-PETROLEUM MINERAL PRODUCTION PER CAPITA OF THE 25 COUNTRIES WITH THE HIGHEST VALUE OF NON-PETROLEUM MINERAL PRODUCTION IN 1996			TABLE 3. VALUE OF NON-PETROLEUM MINERAL PRODUCTION PER SQUARE KILOMETRE OF THE 25 COUNTRIES WITH THE HIGHEST VALUE OF NON-PETROLEUM MINERAL PRODUCTION IN 1996		
Rank	Country	Production Value Per Capita	Rank	Country	Production Value Per Square Kilometre	
(US\$)			(US\$)			
1	Australia	928	1	South Korea	53 434	
2	Chile	642	2	Germany	26 303	
3	Canada	488	3	Japan	24 370	
4	South Africa	409	4	Poland	21 419	
5	United States	222	5	North Korea	20 388	
6	Kazakhstan	205	6	United Kingdom	18 520	
7	Peru	202	7	Italy	17 352	
8	Poland	174	8	South Africa	14 747	
9	South Korea	117	9	Chile	12 096	
10	Germany	115	10	Spain	8 764	
11	Spain	112	11	China ¹	8 283	
12	Russia ¹	111	12	United States	6 255	
13	North Korea	103	13	France	5 712	
14	Mexico	98	14	Turkey	5 434	
15	Italy	91	15	Ukraine	5 229	
16	United Kingdom	77	16	India	4 707	
17	Japan	74	17	Peru	3 714	
18	Turkey	69	18	Mexico	3 563	
19	China ¹	64	19	Indonesia	3 176	
20	Brazil	61	20	Australia	2 187	
21	Ukraine	61	21	Iran	1 917	
22	France	54	22	Canada	1 465	
23	Iran	46	23	Kazakhstan	1 267	
24	Indonesia	30	24	Brazil	1 164	
25	India	16	25	Russia ¹	997	
	Sources: Natural Resources Canada.					
	¹ Production values for China and Russia exclude most construction materials because those data could not be obtained. Actual production values per capita are higher than indicated here.					
	¹ Production values for China and Russia exclude most construction materials because those data could not be obtained. Actual production values per square kilometre are higher than indicated here.					

Table 5D-14 (Continued)

Source	Selected Extracts
<p>Larrain, F. B., Sachs, J. D. and Warner, A. M. (2000), <i>A Structural Analysis of Chile's Long-Term Growth: History, Prospects and Policy Implications</i>, Paper prepared for the Government of Chile, January 2000</p>	<p>Larrain, Sachs and Warner (2000: 6): The combination of a great distance from world markets plus large natural resource endowments has long meant that the Chilean economy is heavily dependent on a narrow range of natural-resource exports, especially saltpeter (nitrates) in the period 1870-1930, and copper since then. Mining economies have their pluses (a significant stream of export earnings) but also their profound limitations, mainly a vulnerability to international shocks and a tendency towards stagnation or crisis when a traditional export sector suffers a long-term decline.</p>
	<p>Larrain, Sachs and Warner (2000: 9-10): Among Chile's fundamental structural characteristics we would include the following four broad categories: (1) its diverse climatic zones and physical topography, with population centered in the temperate zone; (2) the limited scope of the market, due to: (a) significant geographical barriers to neighboring markets, (b) the very long distance to the major Northern Hemisphere markets, and (c) the modest domestic population; (3) significant natural resource endowments; and (4) cultural and socioeconomic conditions, including: (a) demographic patterns, (b) long-standing inequalities in wealth and assets, (c) ethnic and cultural homogeneity. This combination of conditions is of course distinctive. While they offer certain advantages to development, they also pose special barriers as well, and many of these have not been properly addressed in Chile's economic strategies. These structural conditions also suggest some useful comparison cases, including Australia, New Zealand, and Iceland among other countries. These three countries all exhibit the key conditions of natural resource dependence, a small local market, and great geographical distance from the main markets in North America, Europe, and East Asia.</p>
	<p>Larrain, Sachs and Warner (2000: 13): Chile has always relied heavily on the major world markets in Europe, the United States, and more recently, Pacific Asia. Yet these markets are very far away. The shipping distance from Valparaíso to New York is 8,454.5 km (19 days 1 h at 10 knots speed), and to Los Angeles is 9,037.3 km (20 days 8h). The approximate shipping distance to Rotterdam is 13,897.2 km (31 days 7h). The only countries facing comparable distances in trade are other Southern Hemisphere countries, including South Africa (Cape Town to Rotterdam 11,558.8 km (26 days 1h)), New Zealand (Wellington to Rotterdam 24,114.7 km (54 days 8h); Wellington to Tokyo 9,338.8 km (21 days 1 h)), and Australia (Melbourne to Rotterdam 25,668.7 km (57 days 20h); Melbourne to Tokyo 8,284.3 km (18 days 16h)) [mistake here, Melb only about 200 nm closer than Wellington]. Some countries successfully export a wide range of products to markets very far away, but in most cases, such countries are on major sea lanes (e.g. Singapore) or are close to their major suppliers. Thus, Taiwan and Korea were successful in establishing export-led growth to the U.S. market, relying heavily on nearby Japanese suppliers.</p>
	<p>Larrain, Sachs and Warner (2000: 24): Canada is another possible comparison case, as a far Northern resource-based economy, but its overwhelming characteristic is proximity to the U.S., with 90 percent of the Canadian population living within 100 km of the U.S. border.</p>
	<p>Larrain, Sachs and Warner (2000: 26-27): It is hard to argue that Argentina, Australia, and New Zealand dramatically outperformed Chile in the 20th century, at least in the sense of the average growth rate between 1900 and 1994. The percentage income gap between Chile and these other countries remained roughly constant (in the case of Oceania) or narrowed (in the case of Argentina). None of the four countries made a decisive breakthrough towards diversified exports until the past 20 years, when Australia and New Zealand began to succeed in technology-intensive exports. Australia and New Zealand did succeed in sustaining positive economic growth, unlike Argentina, but these countries also lagged the growth rates in Europe and the United States for long periods, so that the income gap with the highest income countries actually widened during the 20th century. Note that on Maddison's estimates, both Australia and New Zealand actually began the century with per capita incomes higher than the U.S. (not because of their inherent superiority or increased efficiency, but because of their extraordinarily favorable land-labor ratios)! By 1994, Australia was just 70 percent of the U.S. per capita income, and New Zealand was just 58 percent of the U.S. level. In essence, Chile probably did as well as Oceania, but started and ended the period with a lower land-labor ratio and a lower per capita GDP. We return to the cases of Australia and New Zealand later in the essay.</p>
	<p>Larrain, Sachs and Warner (2000: 31-32): As we have discussed, the successful economies that started from a rich natural resource base (Australia, Canada, Finland, New Zealand, Sweden, and the U.S.) diversified into manufacturing and services as income per capita increased, and the natural resource sector lost relative importance.</p>
<p>Larrain, Sachs and Warner (2000: 33-34): We have already discussed the other three exceptions: Australia, New Zealand, and Norway. Australia and New Zealand are among the poorest of the high-income group (after having been perhaps the second and</p>	

third highest income countries in the world in 1900, just behind the U.K.). Nonetheless, even in these two cases with still a high concentration in natural resources, there has been substantial diversification over the last three decades. Between 1965 and 1996, the share of manufacturing exports in total exports increased from 12 percent to 30 percent in Australia, and from 5 percent to 29 percent in New Zealand.

Larrain, Sachs and Warner (2000: 35):

If import compression is not possible -- and that is the lesson of the import-substitution era -- then *export growth* becomes vital. Indeed, a mountain of evidence suggests that export growth and overall economic growth have been highly correlated in the developing world in the past 25 years. Table 8 measures economic performance in two ways. First, it looks at manufacturing export growth, measured as the real growth in constant \$ of manufacturing exports for the period 1970-90. Second, it measures annual growth in per capita GDP in PPP terms (from the Summers-Heston data set) during the same time interval. Countries are divided into manufacturing exporter successes and failures, depending on whether the annual average growth in manufactured exports is greater or less than 5 percent.

Larrain, Sachs and Warner (2000: 36):

Thus, New Zealand has the fertile land and climate of the United Kingdom, but only one-eighteenth the population. New Zealand, in essence, is rich and agricultural because there are so few New Zealanders.

Larrain, Sachs and Warner (2000: 62-63):

In the same vein, it is worth pointing out that the high-income countries tend to specialize in manufacturing exports rather than in natural resources. Such countries also tend to have high shares of their value added in manufacturing. In Figure 8 we show the positive, but weak, relation between income levels and the share of manufactures exports in total exports. Two notable exceptions to this tendency are Australia and New Zealand, whose exports are not highly concentrated in manufactures, but who nevertheless have high incomes. In Figure 9 we show the relation between the share of value added in manufacturing and income levels. Both figures show a slight positive relation between income levels and manufacturing.

Larrain, Sachs and Warner (2000: 97):

Why did the Nordic countries outstrip Chile's economic growth after 1930, and why did Chile fail to narrow the gap significantly with Australia and New Zealand in the course of the entire century? We believe that the fundamental difference in long-term performance among these countries is the extent to which their respective economies succeeded in diversifying their economic base, especially their export sectors, beyond natural-resource-based development.

Australia and New Zealand reached a "dead end" based on natural resources in the 1970s and 1980s. Like Chile, their distance to Europe, small markets, and natural resource dependence had resulted in a small manufacturing base as of the beginning of this century. At least since the Great Depression until the mid-1970s, these countries adopted protectionist policies to try to promote inward-looking industrialization. Like in Chile, they did not get very many "infant industries" growing up to be internationally competitive. Thus, beginning in the 1980s, they scrapped the protectionism, and began to search for new export-oriented opportunities. Both countries went into the IT sector in a big way, for example, as we have documented in this paper, and both expanded their exports markedly to the rest of Asia. This has proved to be moderately successful, achieving substantial export diversification over the last 30 years: between 1965 and 1996, the share of manufacturing in total exports increased in New Zealand and Australia from 5 percent and 12 percent respectively, to almost 30 percent in both.

Table 5D-14 (Continued)

Source	Selected Extracts
Rourke, J. T. (2002), 'International Politics on the World Stage', McGraw-Hill/Dushkin, Guilford, Connecticut	<p>Rourke (2002: 450):</p> <p>... LDC [less developed countries] trade weakness stems from the heavy dependence of these countries on the export of primary products, including fibers, foodstuffs, fuels, and other minerals and raw materials. A general rule of thumb is that the more dependent a country is on the export of primary products other than petroleum, the poorer that country is likely to be. This is illustrated by the fact that 48 percent of the LLDC [least developed countries] merchandise exports are primary products, compared to 32 percent of the middle income LDC exports and 18 percent of the high-income EDC export.</p> <p>Rourke (2002: 451):</p> <p>The less developed countries of the South are disadvantaged compared to the economically developed countries of the North. One reason is that the LDCs are much more reliant on primary products for export earnings. The dependency is a disadvantage because the demand for and price of primary products is unstable. Also, over the longer term the value of primary products rises more slowly than manufactured products. Therefore most LDCs have increasing difficulty earning the foreign capital needed for economic development. This map shows the distribution of countries according to the percentage of their exports accounted for by primary products. [The map shows that in Australia and New Zealand, primary products make up 50-74% of exports. Most other countries in which primary products make up 50-100% of exports are developing countries in Africa, the Middle East, Russia, Eastern Europe, South-East Asia, and much of South America; primary products make up less than 50% of exports in all countries of North America and Western and Northern Europe, except for oil rich Norway. In the United States and most western European countries, primary produce makes up less than 25% of total exports.]</p>
World Bank and International Finance Corporation (2002), <i>Treasure or Trouble? Mining in Developing Countries</i> , International Finance Corporation, Washington [Note: the International Finance Corporation is a member of the World Bank Group]	<p>World Bank and International Finance Corporation (2002: 1):</p> <p>In more than 100 countries around the world, mining companies and individual miners dig minerals and metals out of the ground, satisfying a slowly but continuously increasing demand from industrial production, agriculture, high-tech sectors, and merchandise producers. Among those countries are more than 50 that can be considered "mining countries," well known for the sector's contribution to export earnings, including Australia, Botswana, Chile, Canada, Guinea, Kazakhstan, Papua New Guinea, Peru, and South Africa. Mining countries also include those where the sector is highly relevant domestically, either because it primarily serves large domestic markets, as in the United States, or because it employs millions of workers, such as in China or India (see appendixes B, C). Not included in this list are a number of countries that have had significant mining activities in the past, such as Malaysia and Thailand, or that own natural resources with potential to move onto the "mining country" list in the future, such as Argentina and Mozambique.</p> <p>About 3.9 billion people live in today's 56 "mining countries," 90 percent of them in the 51 developing and transition countries on this list. [For purposes of this study, the relevance of a country's mining sector for the country's economy was estimated based on <i>exports of mining products</i> such as metals, diamonds, and minerals, including industrial and chemical minerals (see appendix D). Countries where mining contributes more than 6 percent to exports are considered "mining countries," as well as countries with large domestic mining sectors.] Among the 3.5 billion people in these countries, about 1.5 billion live on less than \$2 a day, making up nearly two thirds of the world's poorest population. Their countries have potential wealth – mineral wealth – and thus one of the key questions for them is how they can turn this endowment into an economic asset that will help them find ways out of persistent poverty. [This was a central question in the 18th, 19th, and 20th centuries for several countries that are now among the most wealthy in the world, including Australia, Canada, Sweden, and the United States]</p> <p>Our definition of "mining" encompasses metals and minerals but does not include oil or gas (see appendix A). Mining operations include open-pit and underground mining, and large-scale operations as well as activities of small-scale and artisanal miners.</p> <p>World Bank and International Finance Corporation (2002: 3):</p> <p>Mining has been, and in many cases remains, important to the economic development of a number of industrialized countries such as Australia, Canada, Sweden, and the United States, which in many ways based their development on their natural resources.</p> <p>World Bank and International Finance Corporation (2002: 7):</p> <p>To get more of an overview, we have grouped countries into clusters in which mining can be considered a "dominant" sector, contributing more than 50 percent of exports, a "critical" sector, contributing between 15 and 50 percent of exports, or a "relevant" sector, contributing between 6 and 15 percent of exports (table 1). We have also included some of the countries where mining is not a major contributor to export earnings but sustains an important part of the local economy by providing minerals and metals for local processing and production. [So in terms of these classifications, is a "critical" sector in Australia]</p>

Table 5D-14 (Continued)

Source	Selected Extracts
<p>Ross, M. L. (2002), <i>'Comments on "Treasure or Trouble? Mining in Developing Countries"',</i> UCLA Department of Political Science, 28 July 2002</p>	<p>Ross (2002: 2): Mining appears to harm economic growth. This has been proven by careful econometric analysis time and again (see below).</p> <p>Ross (2002: 4): Those countries with a "dominant" mining sector (over 50 percent of exports) saw their GDP per capita fall at an annual rate of 2.3 percent. Those where mining was a "critical" sector (between 15 and 50 percent of exports) also saw their GDP per capita fall, this time at a rate of 1.1 percent a year. [If Liberia were included in this group, the figures would no doubt be even worse] Even states where mining was "relevant" (constituting between 6 and 15 percent of exports) had a bad decade, with a GDP per capita growth rate of minus 0.7 percent (p. 7). Collectively these actual mining states saw their GDP per capita fall at 1.15 percent a year – a drop over the course of the decade of almost 11 percent. [The report doesn't give this figure, so I (Ross) calculated it from the data in the report, weighting the countries equally.] Moreover, a glance at the data suggests a disturbing pattern: the greater the dependence on mineral exports, the worse the overall economic performance. By any measure, this is a catastrophic record.</p>
<p>Strategic Leaders Group for the Mineral Exploration Action Agenda (2003a), <i>Access to Human and Intellectual Capital – Background paper,</i> Report by the Secretariat to the Access to Human and Intellectual Capital Working Group, March 2003</p>	<p>Strategic Leaders Group for the Mineral Exploration Action Agenda (2003a: 4-5):</p> <p>3.2 Why is a healthy mineral exploration industry important to national sustainability?</p> <p>No industry is deserving of government support simply because it has undergone a major period of contraction and mineral exploration is no exception. Rather, it is important to establish a strong case as to why such a downturn has implications for the national interest.</p> <p>The significance of the mineral exploration industry to Australia depends on its contribution to its parent minerals industry. The national importance of this industry was recently emphasised by the fact that:</p> <ul style="list-style-type: none"> • Around 8.5 per cent of national gross domestic product in 2001-02 is directly attributable to mining. • Australia has the third largest minerals sector by value of any country in the world, which has contributed some \$500 billion directly to Australia's wealth over the past 20 years. • The value creation of minerals and metals processing in Australia, excluding mining and manufacturing, of around \$10 billion annually, and of around \$250 billion globally. • Australia is the world's leading producer of bauxite and alumina, diamonds (by volume), ilmenite, rutile and zircon. Australia is the second largest producer of zinc ore, the third largest producer of aluminium, iron ore, nickel and gold, and the fifth largest coal producer. • Mining accounted for approximately 37 per cent of total merchandise exports in 2001-02 and 28 per cent of Australia's total exports of goods and services. Australia is the largest exporter of gold, iron ore and black coal in the world. • The industry also accounted for around 16 per cent of private new capital expenditure in Australia in 2001-02. During the decade of the 1990s – given its cyclical nature – new investment in the sector averaged closer to 25% of total private investment.
<p>Strategic Leaders Group for the Mineral Exploration Action Agenda (2003b), <i>Mineral Exploration in Australia: Recommendations prepared by the Strategic Leaders Group for the Mineral Exploration Action Agenda,</i> Commonwealth of Australia, Canberra, 7 July 2003</p>	<p>Strategic Leaders Group for the Mineral Exploration Action Agenda (2003b: 7):</p> <p>It is widely acknowledged that both the Australian and global mineral exploration industries have been through a period of very significant decline in the level of mineral exploration expenditure. Australia alone has seen expenditure plummet from a high of \$1,148.6 million in 1996-97 to \$640.8 million in 2001-02.</p> <p>... Econometric modelling conducted for the Ministerial Inquiry into Greenfields Exploration in Western Australia (the Bowler Inquiry) showed that a decrease in exploration of \$80 million per annum over 5 years would have significant impact on the Western Australian economy of 2021: investment was projected to be 2.2 per cent lower, exports 2.3 per cent lower and Gross State Product 1.6 per cent lower.</p> <p>At risk is the competitiveness and sustainability of Australia's resources industry. In 2001-02, Australian mining and mineral processing (including petroleum) accounted for 9 per cent of gross domestic production, 4.3 per cent of total employment and 24.7 per cent of new capital expenditure. Excluding petroleum, the minerals and metals sector accounted for \$43.7 billion in exports (29 per cent of Australia's total exports) and \$4.3 billion in total tax payments. The industry's ability to find tomorrow's mines is vital to sustain the nation's economic prospects.</p> <p>Another important consideration is the benefit of mineral exploration to regional communities. These benefits include additional turnover in local businesses, direct employment, financial and in-kind support for indigenous communities and local non-government organisations and a significant contribution to the cost of running local government, particularly in Western Australia. It was estimated that for every \$1 million of exploration investment, four jobs are created in remote areas and six in Perth (Bowler Report). If these ratios were applied Australia-wide, the \$510 million decline in mineral expenditure in the four years to 2001-02 equates to a loss of about 2,000 jobs in remote areas and 3,000 jobs in urban areas.</p>

Table 5D-14 (Continued)

Source	Selected Extracts																																								
<p>Ross, M. L. (2003), <i>Nigeria's Oil Sector and the Poor</i>, Prepared for the UK Department for International Development "Nigeria: Drivers of Change" program, 23 May 2003</p>	<p>Ross (2003: 19):</p> <p>Table 1: Twenty Most Oil Dependent Countries, 2000 (Fuel Exports as a Percentage of Total Exports)</p> <table border="1"> <tr><td>1 Nigeria</td><td>99.6</td></tr> <tr><td>2 Algeria</td><td>97.2</td></tr> <tr><td>3 Saudi Arabia</td><td>92.1</td></tr> <tr><td>4 Iran, Islamic Rep.</td><td>88.5</td></tr> <tr><td>5 Venezuela, RB</td><td>86.1</td></tr> <tr><td>6 Azerbaijan</td><td>85.1</td></tr> <tr><td>7 Oman</td><td>82.5</td></tr> <tr><td>8 Turkmenistan</td><td>81.0</td></tr> <tr><td>9 Syrian Arab Republic</td><td>76.3</td></tr> <tr><td>10 Bahrain</td><td>71.0</td></tr> <tr><td>11 Trinidad and Tobago</td><td>65.3</td></tr> <tr><td>12 Norway</td><td>63.9</td></tr> <tr><td>13 Kazakhstan</td><td>53.9</td></tr> <tr><td>14 Russian Federation</td><td>51.3</td></tr> <tr><td>15 Ecuador</td><td>49.4</td></tr> <tr><td>16 Colombia</td><td>41.4</td></tr> <tr><td>17 Papua New Guinea</td><td>28.8</td></tr> <tr><td>18 Indonesia</td><td>25.4</td></tr> <tr><td>19 Australia</td><td>21.9</td></tr> <tr><td>20 Lithuania</td><td>20.9</td></tr> </table> <p>[Note that Norway and Australia are the only two OECD countries in the above list]</p>	1 Nigeria	99.6	2 Algeria	97.2	3 Saudi Arabia	92.1	4 Iran, Islamic Rep.	88.5	5 Venezuela, RB	86.1	6 Azerbaijan	85.1	7 Oman	82.5	8 Turkmenistan	81.0	9 Syrian Arab Republic	76.3	10 Bahrain	71.0	11 Trinidad and Tobago	65.3	12 Norway	63.9	13 Kazakhstan	53.9	14 Russian Federation	51.3	15 Ecuador	49.4	16 Colombia	41.4	17 Papua New Guinea	28.8	18 Indonesia	25.4	19 Australia	21.9	20 Lithuania	20.9
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<p>Department of Foreign Affairs and Trade (2004a), <i>Exports: growth and diversity</i>, via www.dfat.gov.au, at www.dfat.gov.au/facts/pdfs_2004/growth_and_diversity.pdf, accessed November 2005</p>	<p>DFAT (2004a: 1):</p> <p>In 1996 Australia's exports were worth \$99 billion. In 2003 they were worth \$141 billion. Exports generate about 20 per cent of Australia's annual gross domestic product (GDP) and are a major factor in Australia achieving higher than OECD-average economic growth in seven out of the eight years. Foreign investment, meanwhile, enables Australian businesses to access the capital required to fulfil their economic potential.</p> <p>...</p> <p>The mix of goods and services Australia exports - and who buys them - has changed markedly over the past decade. Primary products continue to make up the bulk of merchandise exports, accounting for 57 per cent of the total in 2002-03. But a new emphasis on high-tech manufactured goods, new technologies and sophisticated services is rapidly replacing the old image of an Australia living off the sheep's back and underground riches.</p> <p>DFAT (2004a: 3):</p> <p>Exports of international education services generated \$4.2 billion in 2002-03, more than wool, wheat and beef in terms of value.</p> <p>DFAT (2004a: 4):</p> <p>Australia's traditional export strengths - primary products in agriculture, minerals and energy - continue to make a strong contribution to national prosperity.</p>																																								

Table 5D-14 (Continued)

Source	Selected Extracts
<p>Department of Foreign Affairs and Trade (2004b), <i>Exports of Primary and Manufactured Products, Australia, 2003-04</i>, Market Information and Analysis Section, Department of Foreign Affairs and Trade, Canberra, December 2004</p>	<p>DFAT (2004b: 1):</p> <div style="border: 1px solid black; padding: 5px; text-align: center; margin: 10px 0;"> <p>Main features of 2003-04</p> </div> <ul style="list-style-type: none"> • In 2003-04, total exports of Australian merchandise produce¹ fell 5 per cent to \$101.6 billion. • Over the ten years since 1993-94, however, total exports have grown at an annual average of 6 per cent. • Manufactures comprised 27 per cent (\$27.7 billion) of Australian merchandise produce exports. • Exports of Manufactures² decreased 8 per cent in 2003-04. Exports of Simply Transformed Manufactures (STM) fell 14 per cent to \$9.5 billion, and exports of Elaborately Transformed Manufactures (ETM) fell 4 per cent to \$18.2 billion. • ETM exports to China increased in 2003-04, up 9 per cent to \$971 million; to the Republic of Korea, up 4 per cent to \$830 million; and to Germany, up 8 per cent to \$588 million. However, ETM exports to Saudi Arabia decreased by 18 per cent to \$1.0 billion in 2003-04. • Primary products continued to dominate Australia's export base, accounting for 61 per cent of merchandise exports. • Exports of Primary products fell 6 per cent to \$62.0 billion. Exports of Unprocessed Primary Products (UPP) decreased 7 per cent to \$39.9 billion while exports of Processed Primary Products (PPP) fell 5 per cent to \$22.1 billion. • APEC's share of Australia's merchandise exports was 71 per cent (\$72.5 billion). Exports to NAFTA members accounted for 11 per cent (\$10.8 billion), exports to the OECD accounted for 56 per cent (\$56.6 billion) and exports to the European Union accounted for 12 per cent (\$11.6 billion). • Japan remained Australia's largest single merchandise export market, taking 19 per cent of Australian produce exports. Exports to Japan decreased 9 per cent to \$19.7 billion in 2003-04. • China was the second largest market, accounting for 10 per cent of exports. Exports to China increased 13 per cent to \$9.8 billion. • The United States was Australia's third largest merchandise export market, taking 9 per cent of exports valued at \$8.7 billion. Exports to the United States fell 7 per cent in 2003-04. • <i>Non-monetary gold</i> was the largest single export commodity in 2003-04, with exports valued at \$5.6 billion, up 1 per cent from 2002-03. This was followed by <i>Iron ore & concentrates</i>, with exports of \$5.2 billion, down 2 per cent in 2003-04 and <i>Crude petroleum</i> with exports of \$4.6 billion, down 21 per cent in 2003-04. • Other major export commodities that increased strongly during the year included: <i>Medicaments (including veterinary)</i> (up 19 per cent); <i>Wheat</i> (up 12 per cent); <i>Barley</i> (up 45 per cent); and <i>Copper ores and concentrates</i> (up 18 per cent). <p>¹ "Australian produce" exports exclude re-exports. Unless otherwise stated, subsequent references to exports in current price terms relate to exports of Australian produce (see Box A on page 2).</p> <p>² Refer to Box B (page 4) for further information regarding the fall in exports of Manufactured exports for 2003-04.</p> <p>DFAT (2004b: 7): [see next page]</p>

Principal Export Items in 2003-04

Non-monetary gold (Miscellaneous products)

Non-monetary gold exports were valued at \$5.6 billion in 2003-04, and made up 6 per cent of total Australian produce exports.

Exports of *Non-monetary gold* increased by 1 per cent in 2003-04, and since 1993-94, exports have only increased at an average annual rate of 1 per cent.

Iron ore and concentrates (UPP)

Exports of *Iron ore and concentrates* were valued at \$5.2 billion in 2003-04, and accounted for 5 per cent of total Australian produce exports.

Australia's *Iron ore and concentrates* exports fell 2 per cent in 2003-04, a result of a slight decrease in the price for iron ore. Since 1993-94, exports have increased at an average annual rate of 8 per cent.

Crude Petroleum (UPP)

Australia's exports of *Crude petroleum* were valued at \$4.6 billion in 2003-04, accounting for 5 per cent of Australian produce exports.

Australia's *Crude petroleum* exports fell 21 per cent in 2003-04 due to declining production rates. Though exports have been in decline since 2000-01, the ten year trend growth rate has averaged 19 per cent.

Non-coking coal (UPP)

Non-coking coal exports were valued at \$4.4 billion in 2003-04, representing 4 per cent of total Australian produce exports.

Exports of *Non-coking coal* fell 2 per cent in 2003-04. Falling world prices and the appreciation of the Australian dollar were the main reasons for this decline in export value. Exports have increased at an average annual rate of 6 per cent since 1993-94.

Coking coal, high quality (UPP)

Exports of *Coking coal, high quality* were valued at \$4.3 billion in 2003-04, and contributed 4 per cent to total Australian produce exports.

Exports of *Coking coal, high quality* fell 16 per cent in 2003-04. As with *Non-coking coal*, the fall was mainly due to falling world prices and the appreciation of the Australian dollar against the US dollar. Since 1993-94 exports have increased at an average annual rate of 5 per cent.

Beef and veal, chilled or frozen (PPP)

Exports of *Beef and veal, chilled or frozen* were valued at \$3.9 billion in 2003-04, representing 4 per cent of total Australian produce exports.

Australia's *Beef and veal, chilled or frozen* exports rose marginally in 2003-04 (by 0.3 per cent). Lower export volumes were offset by higher world prices. Since 1993-94, exports have increased by an average of 5 per cent per annum.

Alumina (aluminium oxide) (PPP)

Exports of *Alumina (aluminium oxide)* were valued at \$3.7 billion in 2003-04, and accounted for 4 per cent of total Australian produce exports.

The value of Australia's exports of *Alumina (aluminium oxide)* rose 3 per cent in 2003-04. Since 1993-94, exports have increased by an average of 7 per cent per annum.

Aluminium (including alloys), unworked (STM)

Exports of *Aluminium (including alloys), unworked* were valued at \$3.4 billion in 2003-04, representing 3 per cent of total Australian exports.

Australia's exports of *Aluminium (including alloys), unworked* decreased 7 per cent in 2003-04, after also falling 7 per cent in 2002-03. Despite falling in recent years, exports of *Aluminium (including alloys)* have risen 8 per cent per annum on average since 1993-94.

Wheat (UPP)

Exports of *Wheat* were valued at \$3.4 billion in 2003-04, contributing 3 per cent of total Australian exports. *Wheat* exports increased by 12 per cent in 2003-04, following a fall of 33 per cent in 2002-03. Exports have increased by 5 per cent per annum on average since 1993-94.

Passenger motor vehicles (ETM)

Exports of *Passenger motor vehicles* were valued at \$2.9 billion in 2003-04, representing 3 per cent of total Australian exports. Exports of *Passenger motor vehicles* fell 5 per cent in 2003-04. Since 1993-94 exports have increased by 23 per cent per annum on average.

DFAT (2004b: 8):

**TABLE A : AUSTRALIA'S PRINCIPAL MARKETS FOR ITS
TOP 10 EXPORT ITEMS IN 2003-04 (Australian Produce)**

\$A million and percentage share			
1. Non-monetary gold			
India	2,671	47%	
United Kingdom	1,238	22%	
Republic of Korea	749	13%	
Total	5,651		
2. Iron ore and concentrates			
Japan	2,037	39%	
China	1,894	38%	
Republic of Korea	735	14%	
Total	5,216		
3. Crude petroleum			
Republic of Korea	1,042	22%	
Singapore	981	21%	
China	670	14%	
Total	4,643		
4. Non coking coal			
Japan	2,484	56%	
Republic of Korea	689	16%	
Taiwan	363	8%	
Total	4,411		
5. Coking coal, high quality			
Japan	1,095	25%	
India	661	15%	
Republic of Korea	451	10%	
Total	4,322		
6. Beef and veal, chilled or frozen			
Japan	1,751	45%	
United States	1,333	34%	
Republic of Korea	351	9%	
Total	3,917		
7. Alumina (Aluminium oxide)			
No country details			
Total	3,691		
8. Aluminium (including alloys)			
Japan	1,196	35%	
Republic of Korea	456	13%	
Taiwan	444	13%	
Total	3,435		
9. Wheat			
No country details			
Total	3,398		
10. Passenger motor vehicles			
Saudi Arabia	1,036	30%	
United States	499	15%	
New Zealand	468	14%	
Total	2,903		

Table 5D-14 (Continued)

Source	Selected Extracts
<p>Department of Foreign Affairs and Trade (2004c), <i>Fast facts about trade</i>, via www.dfat.gov.au, at www.dfat.gov.au/facts/pdfs_2004/fast_facts.pdf, accessed November 2005</p>	<p>DFAT (2004c: 1):</p> <ul style="list-style-type: none"> • In 2003, Australia's trade in goods and services totalled \$306 billion. • Australia's trade now accounts for about one per cent of world trade. • Overall Australia's largest trading partners are the United States, Japan, China, and the United Kingdom. <p>Exports</p> <ul style="list-style-type: none"> • In 2003 Australian goods and services exports were valued at \$141 billion. • In 2003 Australia's top 10 merchandise export markets were: <ol style="list-style-type: none"> 1. Japan (\$19.7 billion) 2. United States (\$9.5 billion) 3. China (\$9.1 billion) 4. New Zealand (\$8.1 billion) 5. Republic of Korea (\$8.1 billion) 6. United Kingdom (\$7.4 billion) 7. Taiwan (\$3.7 billion) 8. Singapore (\$3.5 billion) 9. India (\$3.3 billion) 10. Hong Kong (\$2.9 billion) • In 2003 merchandise exports to China increased by 8.4 per cent and to India by 34 per cent. • In 2003 major merchandise and service exports were: tourism, coal, crude petroleum, non-monetary gold, iron ore, aluminium, education, wheat, bovine meat, aluminium ores, passenger motor vehicles, wool and alcoholic beverages. • In 2003 merchandise exports to the APEC region were valued at \$76 billion; East Asia \$56 billion; European Union \$15 billion and North America \$11 billion. • In 2003 coal (\$11 billion), non-monetary gold (\$6 billion) and iron ore (\$5 billion) were Australia's largest individual merchandise export items. • Service exports reached \$33 billion in 2003 - 23 per cent of total exports. • Australia is the world's fourth-largest exporter of wine (after France, Italy and Spain) - exports topped \$2.4 billion in 2003. • The value of exports of passenger motor vehicles has more than doubled since 1998 to a total of \$3.1 billion in 2002 - one-third of all vehicles manufactured in Australia are now exported. <p>Imports</p> <ul style="list-style-type: none"> • In 2003 imports of primary products were valued at \$18 billion, imports of manufactures \$108 billion, other merchandise imports \$3 billion and imports of services \$33 billion. • In 2003 the United States was Australia's largest source of imports with \$20.5 billion, or 15.8 per cent of the total, followed by Japan (\$16.27 billion) and China (\$14.3 billion). • Passenger motor vehicles (\$10.7 billion), crude computers (\$4.8 billion) and aircraft parts (\$4.5 billion) were Australia's largest import items.

Table 5D-14 (Continued)

Source	Selected Extracts																																																																																																			
Department of Foreign Affairs and Trade (2004d), <i>Trade in resources, energy and agribusiness</i> , via www.dfat.gov.au, at dfat.gov.au/facts/pdfs_2004/trade_in_resources.pdf, accessed November 2005	<p>DFAT (2004d: 1):</p> <p>Exports of Australian agricultural, mineral resources and energy primary products have grown an average five per cent a year since 1999. They made up 60 per cent of total merchandise exports in 2004.</p> <p>The minerals and energy resources sector is Australia's largest export industry, accounting for about 26 per cent of total exports in 2004, with a total value of \$39.7 billion.</p> <p>Australia is a leading global supplier of quality food and agricultural products. Its agribusiness sector has long had a strong export focus, with a value of \$26.9 billion in 2004.</p> <p>DFAT (2004d: 2):</p> <p><i>Table 1: Australia's share of world minerals production 2002</i></p> <table border="1"> <thead> <tr> <th></th> <th colspan="3">Production</th> </tr> <tr> <th></th> <th>Unit</th> <th>World</th> <th>Australia</th> <th>Share (%)</th> </tr> </thead> <tbody> <tr> <td>Titanium – rutile</td> <td>kt</td> <td>443</td> <td>219</td> <td>49.4</td> </tr> <tr> <td>Bauxite</td> <td>kt</td> <td>142 036</td> <td>54 135</td> <td>38.0</td> </tr> <tr> <td>Zircon</td> <td>kt</td> <td>1 123</td> <td>412</td> <td>36.7</td> </tr> <tr> <td>Uranium</td> <td>kt</td> <td>26.5</td> <td>7.5</td> <td>28.3</td> </tr> <tr> <td>Alumina</td> <td>kt</td> <td>55 906</td> <td>16 429</td> <td>29.4</td> </tr> <tr> <td>Lead – mine production</td> <td>kt</td> <td>2 759</td> <td>694</td> <td>25.2</td> </tr> <tr> <td>Titanium – ilmenite</td> <td>kt</td> <td>9 721</td> <td>2 092</td> <td>21.5</td> </tr> <tr> <td>Zinc – mine production</td> <td>kt</td> <td>8 770</td> <td>1 529</td> <td>17.4</td> </tr> <tr> <td>Nickel – mine production</td> <td>kt</td> <td>1 249</td> <td>207.8</td> <td>16.6</td> </tr> <tr> <td>Iron ore</td> <td>Mt</td> <td>1 130</td> <td>188.7</td> <td>16.7</td> </tr> <tr> <td>Nickel – refined</td> <td>kt</td> <td>1 174</td> <td>132.2</td> <td>11.3</td> </tr> <tr> <td>Gold – mine production</td> <td>t</td> <td>2 587</td> <td>266</td> <td>10.3</td> </tr> <tr> <td>Lead – refined</td> <td>kt</td> <td>3 570</td> <td>303</td> <td>8.5</td> </tr> <tr> <td>Aluminium (ingot metal)</td> <td>kt</td> <td>26 099</td> <td>1 817</td> <td>7.0</td> </tr> <tr> <td>Black coal</td> <td>Mt</td> <td>3 837</td> <td>2 741.1</td> <td>7.1</td> </tr> <tr> <td>Copper – mine production</td> <td>kt</td> <td>13 517</td> <td>883</td> <td>6.5</td> </tr> <tr> <td>Zinc – refined</td> <td>kt</td> <td>9 725</td> <td>576</td> <td>5.9</td> </tr> <tr> <td>Copper – refined</td> <td>kt</td> <td>15 336</td> <td>545</td> <td>3.6</td> </tr> </tbody> </table> <p><i>Source: ABARE</i></p> <p>Responding to the future</p> <p>In response to globalisation and competitive and fluctuating world markets, Australia's minerals and energy industries are placing their highest priorities on achieving greater efficiency, diversification and sustainability.</p> <p>In a world more conscious of community and environmental sustainability, Australian companies have developed processes for community consultation and environmental protection to ensure the highest standards of responsible operation. Some environmental technologies - in minesite rehabilitation, for example - have themselves become export successes.</p>		Production				Unit	World	Australia	Share (%)	Titanium – rutile	kt	443	219	49.4	Bauxite	kt	142 036	54 135	38.0	Zircon	kt	1 123	412	36.7	Uranium	kt	26.5	7.5	28.3	Alumina	kt	55 906	16 429	29.4	Lead – mine production	kt	2 759	694	25.2	Titanium – ilmenite	kt	9 721	2 092	21.5	Zinc – mine production	kt	8 770	1 529	17.4	Nickel – mine production	kt	1 249	207.8	16.6	Iron ore	Mt	1 130	188.7	16.7	Nickel – refined	kt	1 174	132.2	11.3	Gold – mine production	t	2 587	266	10.3	Lead – refined	kt	3 570	303	8.5	Aluminium (ingot metal)	kt	26 099	1 817	7.0	Black coal	Mt	3 837	2 741.1	7.1	Copper – mine production	kt	13 517	883	6.5	Zinc – refined	kt	9 725	576	5.9	Copper – refined	kt	15 336	545	3.6
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Geoscience Australia (2004), Australia's Identified Mineral Resources 2004, Australian Government, Canberra	<p>Geoscience Australia (2004: 6):</p> <p>World ranking: Australia's EDR [Economic Demonstrated Resources] of zinc, lead, nickel, mineral sands (ilmenite, rutile, zircon), tantalum and uranium remain the world's largest, while bauxite [ranked 2nd in the world], black coal [6th], brown coal [2nd], copper [2nd], gold [3rd], iron ore [4th], lithium [4th], manganese ore [3rd], niobium [2nd], silver [2nd] and industrial diamond [3rd] rank in the top six worldwide.</p>																																																																																																			

Table 5D-14 (Continued)

Source	Selected Extracts
McLean, I. W. (2004), 'Australian Economic Growth in Historical Perspective', <i>The Economic Record</i> , Vol. 80, No. 250, September 2004, pp. 330-345	<p>McLean (2004: 337): A related consideration is the initial fragmentation of the domestic economy. Blainey (1966) among others, has stressed the importance to growth of the gradual integration of regional markets separated by considerable distances and high transport costs. Heavy investment in social infrastructure, beginning in the second half of the nineteenth century, lowered communication and transport costs between these regional economies. Colonial labour and capital markets seem to have become remarkably well integrated; federation assisted in removing barriers to interregional trade. Support for these generalisations can be found in the evidence of regional income convergence reported by Cashin (1995b). Nonetheless, the dispersion of the population around thousands of kilometres of coastline remains a striking characteristic of this economy.</p>
	<p>Offsetting this however, and evident from the nineteenth century, is the tendency for this scattered population to concentrate in a few large urban areas. If economic density and agglomeration economies matter to the efficiency of firms or industries (as stressed in some endogenous growth models), growth would be enhanced as the Australian economy shifted to a more urban orientation – both in manufacturing and services. The earlier urbanisation than in many other countries might thus have made an indirect contribution to Australia's high productivity and incomes.</p>
	<p>McLean (2004: 338-339): <i>Avoiding the Resource Curse</i> One widely recognised influence on Australian growth has been the abundance of its resource base (Helliwell 1984). However, many natural resource-rich economies have failed to sustain growth, whereas some resource-poor economies have succeeded. Resource abundance is thus neither necessary nor sufficient for long run growth. [The prevailing view among empirical growth economists is that resource abundance is negatively related to growth – the seminal study being Sachs and Warner (1995). Australian experience (and that of some other economies) does not support this view. See Helliwell (1984), and McLean and Taylor (2003)] Thus, a key question is what enabled Australia to convert its natural resource windfall into a basis for sustained growth? The answer to this question must lie in influences not traditionally incorporated in growth models – institutional arrangements, social values, and political decisions. For example, the terms and conditions of access to pastoral land (from the squatting era on) were crucial to the security of property rights and hence profitability of wool production. ... Similarly, the reform of goldfields regulations and taxation arrangements that followed the Eureka Stockade are an illustration of the growth-promoting redesign of institutional arrangements in the mining industry at a critical stage in its development (La Croix 1992).</p>
	<p>McLean (2004: 339-340): <i>Geography</i> To the foreign observer some of the most striking aspects of the context within which the Australian economy operates are geographical. Australia is the same size as the continental USA but has a population equal only to that of Texas or New York. It is one of the few advanced economies having a significant proportion of its territory within the tropics, and though it lies at the south-east edge of Asia its economic links, until recently, were overwhelmingly with north-western Europe.</p> <p>Most Australian economists and many economic historians have taken these features for granted as not requiring explicit incorporation into structured stories of how the economy evolved and flourished. There have been exceptions. One of the reasons for the enduring interest in Geoffrey Blainey (1966) is surely its thesis that aspects of geography are fundamental to Australian economic development. Also, recent interest in the environmental sustainability of economic activity stems in part from the growing appreciation of the importance of certain features of the Australian physical environment to our economic prosperity. Precisely because the motivation in some cases is to oppose further economic growth, even to advocate lower population levels (e.g. Flannery 1994), these authors use history to argue that the environmental limits to growth in this country were exceeded long ago. They thereby challenge (at least implicitly) the success story of growth as conveyed in mainstream accounts.</p> <p>Some writers in the empirical growth literature have elevated the importance assigned to geographical influences. Climatic conditions, access to the sea or navigable rivers, and distance from the centres of world trade and finance, have all been found to be significant determinants of growth in cross-country regressions [See, for example, Gallup <i>et al.</i> (1999). The role of geographical determinants in growth has, however, been contested by Rodrik <i>et al.</i> (2002)]. The relevance of such geographical considerations to an account of the sources of Australia's successful growth experience could draw on the traditional themes of its historians and historical geographers as well as insights from development economics [McLean and Taylor (2003) raise these issues in the context of an historical comparison of growth in Australia and California]. In particular, it is likely that geography plays a prominent role in accounting for Australia's extremely low population density.</p> <p><i>Institutions and Colonial Inheritance</i> A further influence on the long-run growth performance of the Australian economy that receives little direct attention is the contribution of the institutional arrangements within which growth has occurred. This neglect seems to be because of the combination of the ease with which growth-enhancing institutions were created (most were imported), and because of the limited challenges that arose in adapting them to local or changing conditions. The institutional framework is seldom offered as a reason for our economic success because it is taken for granted. Yet many growth economists now believe that, perhaps more than any other factor, appropriate institutions are the key to explaining why some countries are rich and others poor (Acemoglu <i>et al.</i> 2002). Thus, institutional arrangements in Australia seem to be a case of the dog that didn't bark. At a time when failing institutions seem central to the problems of growth in many developing countries, the contribution of its institutional arrangements to the Australian success deserves more attention.</p>

Table 5D-14 (Continued)

Source	Selected Extracts
<p>André Lemieux, A. (2005), 'Canada's Global Mining Presence', in Canadian Minerals Yearbook, 2003</p>	<p>Lemieux (2005: 7.4):</p> <p>LARGER-COMPANY EXPLORATION MARKET IN CANADA In 2003, the larger-company mineral exploration market in Canada was valued at \$439 million, up by almost \$95 million, or 28%, from roughly \$344 million in 2002 (Figure 4). Only in South Africa were the aggregate exploration programs of the larger companies expected to experience a year-over-year increase of the same magnitude. As in the previous year, Canada, in 2003, remained the country where the global mineral exploration industry is the most active. Australia held that position from 1992 through 2001.</p>
<p>Lyday, T. Q. (2005), 'The Mineral Industry of Australia', in the <i>U.S. Geological Survey Minerals Yearbook – 2003</i></p>	<p>Lyday (2005: 3.1) summarises the Australian mineral industry in 2003 as follows:</p> <p>Australia was one of the world's leading mineral-producing nations in 2003 owing to its large economic demonstrated resources (EDRs) of lead, nickel, mineral sands, tantalum, uranium, and zinc. ... Additionally, Australia's level of EDRs was within the top 6 worldwide for 11 additional mineral commodities—bauxite, black coal, brown coal, cobalt, copper, gem and near-gem diamond, gold, iron ore, lithium, manganese ore, and rare-earth oxides. ... The mineral industry represented about 8.5% of the Australian economy ... In 2003, Australia was the world's leading producer of alumina, bauxite, monazite, opal, rutile, sapphire, and zircon; the second leading producer of mined nickel and mined zinc; the third leading producer of cobalt, diamond (by volume), gold, ilmenite, and iron ore; the fourth leading producer of black coal and mined copper; and the fifth leading producer of aluminum metal. It was the premier exporter of alumina, coal, ilmenite, iron ore, refined lead, monazite, rutile, and zircon. ... The only significant mineral resource in which Australia was not self-sufficient was petroleum. Australia, nevertheless, produced an estimated 70% of its crude oil requirements domestically in 2003. Australia also was endowed with abundant resources of other mineral fuels, which included coal, natural gas, liquefied petroleum gas, and uranium, and the country continued to be one of the few market economy countries that was a net exporter of mineral fuels. ... Australia was one of the world's principal producers and suppliers of concentrates, ores, and refined metals. It was estimated to rank third in the world in the value of its nonfuel mineral production and fifth in the value of its minerals when fuels were included. ... The Australian mineral industry provided about 48,000 jobs directly and about 240,000 jobs were provided in total, which included many in remote and regional areas, ports, and towns that were built as a result of mineral exploration, discovery, and extraction.</p> <p>Lyday (2005: 3.2-3.4):</p> <p>Australia again was the unchallenged leader for the 33d consecutive year in the production of bauxite ...</p> <p>... In 2003, Australia's mined copper production ranked fourth in the world following Chile, Indonesia, and the United States (Edelstein, 2004).</p> <p>... Australia has about 8% of world economic gold resources and ranked third after the Republic of South Africa and the United States in gold production, which accounted for about 11% of world output (Amey, 2004).</p> <p>... In 2003, Australia, which ranked third following China and Brazil in iron ore mine production, produced about 17% of world production (Kirk, 2004).</p> <p>... Australia ranked first in the world in lead reserves, was tied with China in zinc reserves, and was third after Mexico and Peru in silver reserves owing to the development of the large zinc-lead-silver deposits at the Cannington, the Century, and the McArthur River Mines.</p> <p>... Groote Eylandt Mining Co. Pty. Ltd. (GEMCO) mined about 15% of the world's manganese at its 2.4-Mt/yr capacity, 84-square-kilometer (km²) Groote Eylandt open pit operations on the northwestern portion of Groote Eylandt, which is located in the west of the Gulf of Carpentaria, Northern Territory.</p> <p>... Mineral sands deposits are concentrations of ilmenite, rutile, and zircon that occur along the coast of eastern Australia from central New South Wales to Cape York, Queensland. Large relic beach deposits are found as far inland as Ouyen, Victoria; in southwestern New South Wales; and in more than 300,000 km² of the Murray Basin, South Australia. ... In 2003, Australia had a substantial portion of world mineral sands resources – about 32% for ilmenite, 45% for rutile, and up to 45% for zircon ...</p> <p>... Australia ranked first in economic resources of nickel and second in economic resources of cobalt, after the Democratic Republic of the Congo [Congo (Kinshasa)].</p> <p>... With about 17% of the world's nickel production in 2003, Australia moved into second place behind Russia ... Australia ranked third, following Zambia and Congo (Kinshasa), in mined cobalt in 2003 ...</p> <p>... Australia supplied about 3% of world tin production in 2003 ...</p> <p>... Australia, which was the leading producer of precious opal in 2003,</p> <p>... Argyle was the world's largest single producer of diamond. ... Australia also continued to be a leading</p>

producer of natural sapphire. ... Australia supplied as much as 30%, by volume, of the world's rough sapphire output. ... Australia produced most of the world's chrysoprase, which is known as Australian jade outside of Australia. Australia produced such other gemstones as agate, amethyst, chiastolite, emerald (aquamarine), garnet, rhodonite, topaz, tourmaline, turquoise, and zircon

...

2003, Australia was again the world's leading exporter of coal as it has been since 1984.

...

In 2003, Australia produced about 70% of its crude oil requirements. Australia's expanding oil deficit was primarily a result of demand steadily outpacing supply. The Australian Government has estimated that the country was using its crude petroleum about three times faster than exploration projects were discovering new production fields. By 2010, self-sufficiency was expected to slide to only 40% ...

...

Because Australia has no significant national demand for uranium, virtually all production was exported. Uranium oxide, or yellowcake, exports were made only under close supervision of the stringent international and bilateral safeguards regulations to ensure that it will be used only for peaceful purposes ...

Lyday (2005: 3.5):

Reserves

Australia ranked as one of the leading mineral-resource nations. It had the largest EDR of lead, mineral sands, nickel, tantalum, uranium, and zinc in the world. Its EDR also ranked in the top six worldwide for bauxite, black and brown coal, cobalt, copper, gem and near gem diamond, gold, iron ore, lithium, manganese ore, rare-earth oxides, and silver (table 3; Geoscience Australia, 2004).

...

Outlook

Australia continued its position as one of the world's leading mineral-producing nations in 2003. This position is expected to hold well into the future owing to its large EDRs, especially bauxite, gold and silver, lead, nickel, mineral sands, tantalum, uranium, and zinc.

Table 5D-14 (Continued)

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Statistics compiled by the South African Department of Trade and Industry, using data from the world Trade Organisation (as at www.dti.gov.za/econ/db/raportt/WorldTradeMiningproducts.html, accessed 24 Aug 05)	<p>The following Table is adapted from that compiled by the South African Department of Trade and Industry (2005):</p> <p>Exports in Mining Products including Oil and Gas (US\$ millions)</p> <table border="1"> <thead> <tr> <th>Country</th> <th>1980</th> <th>1985</th> <th>1990</th> <th>1995</th> <th>2000</th> <th>2001</th> <th>2002</th> <th>2003</th> </tr> </thead> <tbody> <tr> <td>World</td> <td>559,880</td> <td>426,810</td> <td>488,320</td> <td>545,264</td> <td>864,322</td> <td>795,355</td> <td>791,057</td> <td>960,034</td> </tr> <tr> <td>Russian Federation</td> <td></td> <td></td> <td></td> <td>41,426</td> <td>64,982</td> <td>64,336</td> <td>68,561</td> <td>86,625</td> </tr> <tr> <td>Saudi Arabia</td> <td>108,265</td> <td>25,973</td> <td>40,354</td> <td>42,816</td> <td>71,203</td> <td>65,150</td> <td>63,483</td> <td>78,089</td> </tr> <tr> <td>Canada</td> <td>18,066</td> <td>19,501</td> <td>23,414</td> <td>30,202</td> <td>48,323</td> <td>47,856</td> <td>43,053</td> <td>56,008</td> </tr> <tr> <td>Norway</td> <td>10,868</td> <td>12,448</td> <td>19,735</td> <td>23,376</td> <td>41,912</td> <td>39,849</td> <td>39,718</td> <td>45,524</td> </tr> <tr> <td>Netherlands</td> <td>19,115</td> <td>17,658</td> <td>16,466</td> <td>11,884</td> <td>27,898</td> <td>26,636</td> <td>27,828</td> <td>33,818</td> </tr> <tr> <td>United Kingdom</td> <td>20,678</td> <td>24,670</td> <td>19,805</td> <td>11,830</td> <td>30,849</td> <td>28,617</td> <td>28,689</td> <td>32,412</td> </tr> <tr> <td>Islamic Republic of Iran</td> <td>11,693</td> <td>13,012</td> <td>16,831</td> <td>14,973</td> <td>24,834</td> <td>20,003</td> <td>24,755</td> <td>29,279</td> </tr> <tr> <td>United States</td> <td>19,149</td> <td>15,878</td> <td>24,013</td> <td>25,139</td> <td>27,758</td> <td>26,534</td> <td>24,663</td> <td>28,157</td> </tr> <tr> <td>Australia</td> <td>7,268</td> <td>10,826</td> <td>16,750</td> <td>18,727</td> <td>25,839</td> <td>25,398</td> <td>25,298</td> <td>26,922</td> </tr> <tr> <td>Algeria</td> <td>13,721</td> <td>12,578</td> <td>12,530</td> <td>9,803</td> <td>21,666</td> <td></td> <td></td> <td>24,224</td> </tr> <tr> <td>Germany</td> <td>13,652</td> <td>10,047</td> <td>16,021</td> <td>10,862</td> <td>20,592</td> <td>19,859</td> <td>20,588</td> <td>23,822</td> </tr> <tr> <td>Mexico</td> <td>11,318</td> <td>14,138</td> <td>11,361</td> <td>10,443</td> <td>18,263</td> <td>14,616</td> <td>16,169</td> <td>20,516</td> </tr> </tbody> </table>	Country	1980	1985	1990	1995	2000	2001	2002	2003	World	559,880	426,810	488,320	545,264	864,322	795,355	791,057	960,034	Russian Federation				41,426	64,982	64,336	68,561	86,625	Saudi Arabia	108,265	25,973	40,354	42,816	71,203	65,150	63,483	78,089	Canada	18,066	19,501	23,414	30,202	48,323	47,856	43,053	56,008	Norway	10,868	12,448	19,735	23,376	41,912	39,849	39,718	45,524	Netherlands	19,115	17,658	16,466	11,884	27,898	26,636	27,828	33,818	United Kingdom	20,678	24,670	19,805	11,830	30,849	28,617	28,689	32,412	Islamic Republic of Iran	11,693	13,012	16,831	14,973	24,834	20,003	24,755	29,279	United States	19,149	15,878	24,013	25,139	27,758	26,534	24,663	28,157	Australia	7,268	10,826	16,750	18,727	25,839	25,398	25,298	26,922	Algeria	13,721	12,578	12,530	9,803	21,666			24,224	Germany	13,652	10,047	16,021	10,862	20,592	19,859	20,588	23,822	Mexico	11,318	14,138	11,361	10,443	18,263	14,616	16,169	20,516
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Mexico	11,318	14,138	11,361	10,443	18,263	14,616	16,169	20,516																																																																																																																							
Department of Foreign Affairs and Trade (2005), <i>Australia: Fact Sheet</i> , Compiled by the Market Information and Analysis Section, DFAT, using the latest data from the ABS, the IMF and various international sources, online at www.dfat.gov.au/geo/fs/aust.pdf, as updated in September 2005	<p>DFAT (2005):</p> <p><u><i>Australia's trade and investment relationships:</i></u></p> <table border="0"> <tr> <td colspan="2">Major Australian exports, 2004-05 (A\$m):</td> <td colspan="2">Major Australian imports, 2004-05 (A\$m):</td> </tr> <tr> <td>Coal</td> <td>17,116</td> <td>Passenger motor vehicles</td> <td>11,597</td> </tr> <tr> <td>Iron ore</td> <td>8,079</td> <td>Crude petroleum</td> <td>9,704</td> </tr> <tr> <td>Crude petroleum</td> <td>5,696</td> <td>Computers</td> <td>5,791</td> </tr> <tr> <td>Non-monetary gold</td> <td>5,642</td> <td>Medicaments (incl. veterinary)</td> <td>5,719</td> </tr> <tr> <td>Bovine meat</td> <td>4,880</td> <td>Telecommunications equipment</td> <td>5,031</td> </tr> </table> <p>Australian merchandise trade, 2004-05:</p> <table border="0"> <tr> <td>Exports (A\$m):</td> <td>126,703</td> </tr> <tr> <td>Imports (A\$m):</td> <td>149,519</td> </tr> <tr> <td>Total trade (exports + imports) (A\$m):</td> <td>276,222</td> </tr> <tr> <td>Merchandise trade deficit (A\$m):</td> <td>22,816</td> </tr> </table> <table border="0"> <tr> <td>Australia's main merchandise export destinations, 2004-05:</td> <td>Australia's main merchandise import sources, 2004-05:</td> </tr> <tr> <td>1 Japan 19.7%</td> <td>1 United States 14.2%</td> </tr> <tr> <td>2 China 10.2%</td> <td>2 China 13.3%</td> </tr> <tr> <td>3 Republic of Korea 7.7%</td> <td>3 Japan 11.5%</td> </tr> <tr> <td>4 United States 7.4%</td> <td>4 Germany 5.8%</td> </tr> <tr> <td>5 New Zealand 7.2%</td> <td>5 Singapore 4.9%</td> </tr> </table> <p>Australia's trade in services, 2004:</p> <table border="0"> <tr> <td>Exports of services (A\$m):</td> <td>34,457</td> </tr> <tr> <td>Imports of services (A\$m):</td> <td>35,578</td> </tr> <tr> <td>Services trade deficit (A\$m):</td> <td>1,121</td> </tr> </table> <p>Australia's investment links, as at 30 June 2005:</p> <table border="0"> <tr> <td>Level of Australian investment abroad (A\$m):</td> <td>590,365</td> </tr> <tr> <td>Level of foreign investment in Australia (A\$m):</td> <td>1,107,192</td> </tr> </table> <p><small>Compiled by the Market Information and Analysis Section, DFAT, using the latest data from the ABS, the IMF and various international sources. (a) all recent data subject to revision; (b) IMF/EIU forecast.</small></p> <p>[See also ABS Cat. 5368.0, International Trade in Goods and Services, Table 8, monthly – has percentages of total exports; see also ABS Cat. 5422.0, International Merchandise Trade, until its final issue for the March Quarter, 2003, especially Tables 9 and 11]</p>	Major Australian exports, 2004-05 (A\$m):		Major Australian imports, 2004-05 (A\$m):		Coal	17,116	Passenger motor vehicles	11,597	Iron ore	8,079	Crude petroleum	9,704	Crude petroleum	5,696	Computers	5,791	Non-monetary gold	5,642	Medicaments (incl. veterinary)	5,719	Bovine meat	4,880	Telecommunications equipment	5,031	Exports (A\$m):	126,703	Imports (A\$m):	149,519	Total trade (exports + imports) (A\$m):	276,222	Merchandise trade deficit (A\$m):	22,816	Australia's main merchandise export destinations, 2004-05:	Australia's main merchandise import sources, 2004-05:	1 Japan 19.7%	1 United States 14.2%	2 China 10.2%	2 China 13.3%	3 Republic of Korea 7.7%	3 Japan 11.5%	4 United States 7.4%	4 Germany 5.8%	5 New Zealand 7.2%	5 Singapore 4.9%	Exports of services (A\$m):	34,457	Imports of services (A\$m):	35,578	Services trade deficit (A\$m):	1,121	Level of Australian investment abroad (A\$m):	590,365	Level of foreign investment in Australia (A\$m):	1,107,192																																																																								
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Table 5D-14 (Continued)

Source	Selected Extracts
<p data-bbox="209 815 419 994">'Howard and Costello received the Mandate of Heaven', by Terry McRann <i>The Australian</i> 4 Mar 2006 p. 34</p>	<p data-bbox="419 271 1398 302">China's explosive growth, with its extraordinary demand for resources, sealed our leaders' success</p> <p data-bbox="419 315 1398 501">OVER the 10 years of John Howard's prime ministership interest rates have been generally stable and relatively low - but, importantly, not too low. This arguably best captures the success of his prime ministership. It also highlights his great good fortune. For just as the wisest thing an individual can do is to carefully choose his or her parents, so a PM is best advised to "choose" the timing of their arrival in the job. And whom they follow. Both - timing and succession - have worked brilliantly for Howard. And for Treasurer Peter Costello. The critical question, for them, but also the rest of us, is what about the next 10 years. Even if they are not necessarily Howard's next 10 years.</p> <p data-bbox="419 510 1398 913">... The official rate has been changed 22 times in the Howard period. All but eight of those were quarters. The rest were all halves - and five of the eight came in the first year or so, "adjusting" down from Keating. In contrast, just in the years Keating was PM, the official rate was changed 18 times and none of them were quarters. Four were full one percenters and the others were halves or three-quarters. Preceded by eight or so full one percenters when Keating was either still treasurer or watching from the backbench the wreckage he had bequeathed to his (temporary) successors. Now the immediate response might be that the "smartest" thing Costello did as treasurer was to choose not his parents but his central banker, Ian Macfarlane, who brings up his decade at the RBA helm in September and, unlike the PM, will promptly retire. Plus, perhaps more importantly, give him and the RBA board real independence for the first time in setting the official rate. Clearly, to the extent the Government has been master of its own economic management destiny, this was one of the two big things it got "right". The other was to aggressively attack the budget, halving the deficit in its first year and taking it into surplus in 1997. The GST, in contrast, was in all senses peripheral at best and an irritation at worst. But all this pales beside the good luck of timing. Nobody knew it at the time, but to become PM and Treasurer in 1996 was to receive the Mandate of Heaven.</p> <p data-bbox="419 943 1398 1227">Mostly, but not entirely, the extraordinarily beneficial impact of the explosive growth in China that was just gathering pace back in 1996 - just seven years on from Tiananmen Square. Delivering, on the one hand, extraordinary demand for our resources -- exports to China have more than quadrupled, from \$4 billion in 1996 to an \$18 billion annual rate today. And a secular shift down in global inflation, as China became the world's - low-cost - factory. Imports from China have grown even faster, rising sixfold to \$24 billion. With due respect to the Big Mac, it's a helluva lot easier to run a benign strong-growth low-inflation monetary policy when you have low inflation almost mandated from China. Further, the good luck didn't only speak Mandarin. The other critical elements were the dynamics and sophistication of financial flows around the globe. And the specific dynamics of the post-9/11 rate gap with the US. All this enabled us to have our huge current account deficit and fund it on our ear. And so have strong growth and surging property and share values.</p> <p data-bbox="419 1236 1398 1538">... So, the critical question, what now? To me, the broader opportunities are almost as unlimited as they were in 1996, even though at the time we didn't appreciate them. But the challenges are greater - we and the world, especially the US, have "used up" the "free lunch" from China in, to put it bluntly, an orgy of over-consumption. Apart from the obvious. First, we've had 15 years of broadly sustained growth - even if the "new world order" imbalances develop, you can't go on a straight line up forever. And we - and Howard and Costello - have "used up" the easy yards bequeathed by Keating. And all that before we try to factor in what might happen in China and the US. Both short-term and more fundamentally. This is not to forecast doom and gloom. Simply, we now know, with the benefit of 20-20 hindsight, that 1996 was a glorious time to take power. And how different matters would have looked if Howard had lost a few more votes, and government, in 1998. Without that 20-20 advantage, the future from 2006 looks at the very least "more interesting".</p>

Table 5D-14 (Continued)

Source	Selected Extracts
Minerals Council of Australia website, at http://www.minerals.org.au/corporate , last updated 24 March 2006 (accessed 27 April 2006)	<p>Minerals Council of Australia (2006):</p> <p>The economic significance of the Australian minerals industry ...</p> <p>The Australian minerals industry is an industry of considerable size and economic and social significance, benefiting all Australians both directly and indirectly.</p> <p>The mining and minerals processing sector:</p> <ul style="list-style-type: none"> > accounted directly for around 8 per cent of Gross Domestic Product (GDP) in 2004-05; > underpins vitally important supply and demand relationships with the Australian manufacturing, construction, banking and financial, process engineering, property and transport sectors; > has contributed over \$500 billion directly to Australia's wealth over the past 20 years; > is in the top five producers of most of the world's key minerals commodities, including: <ul style="list-style-type: none"> – the world's leading producer of lead, bauxite and alumina, diamonds (by volume), ilmenite, rutile and zircon (and synthetic rutile) and tantalum; – the second largest producer of uranium, zinc and nickel; – the third largest producer of iron ore, lignite, silver, manganese and gold; – the fourth largest producer of black coal and copper; and – the fifth largest producer of aluminium. > generated exports of around \$56 billion in 2004-05, representing approximately 44 per cent of Australia's total merchandise exports and 34 per cent of total exports of goods and services; <ul style="list-style-type: none"> – exports are forecast to be around \$68 billion in 2005-06; and – Australia is the largest exporter of gold, iron ore and black coal in the world; > directly and indirectly employs some 320,000 Australians, many of whom are in sparsely populated, remote and regional Australia; > is responsible for significant infrastructure development – since 1967, the industry has built 26 towns, 12 ports and additional port bulk handling infrastructure at many existing ports, 25 airfields and over 2,000 kilometres of railway line.

Products for which Australia is the World's Leading Producer or Exporter

Table 5D-15 below provides a list of products for which Australia is the world's leading producer or exporter, as established through internet (Google) searches.

Table 5D-15: Extracts Documenting Products for which Australia is the World's Leading Producer or Exporter

Literature Source	Selected Extracts
From http://www.aolsvc.worldbook.aol.com/wb/Article?id=ar038420 (22 Oct 05)	Australia is the world's leading producer and exporter of wool and bauxite (the ore from which aluminum is made). Australia also produces and exports large amounts of other minerals and farm goods. Income from these exports makes it possible for most Australians to have a high standard of living. Australia's chief trading partners are Japan and the United States.
From http://www.rirdc.gov.au/pub/handbook/goatmeat.html (22 Oct 05)	Australia is the world's leading goat-meat exporter, with the majority of meat originating from captured feral goats. Orders for goat meat usually exceed our capacity to supply. Unfortunately these markets depend on the low cost and erratic sources of feral goats from semi-arid rangelands. Expanding potential markets in south-east Asia cannot be supplied as production of farm-reared goats is low. Unsupplied markets exist in all capital cities in Australia. The goat-meat industry needs greater supply of quality, market-specific goat meat, which means more goats on well managed farms in reliable grazing districts.
From http://www.agr.gc.ca/mad-dam/e/bulletine/v18e/v18n04_e.htm : Bi-weekly Bulletin February 18, 2005 Volume	<p>MAJOR EXPORTERS</p> <p>Lower Exports from Australia on a Smaller and Lower Quality Crop</p> <p>Australia is the world's leading exporter of malting barley, accounting for about one third of world trade over the last five years, at an average of 1.7 Mt. The selection rate for malting barley in Australia averaged 36% of the crop and ranged between 30% and 49% over the last five years, the highest among major exporters.</p> <p>As the major competitor for Canada, Australia plays a dominant role in China, Japan, South Korea</p>

18 Number 4 ISSN 1207-621X AAFC No. 2081/E MALTING BARLEY: SITUATION AND OUTLOOK	and other Asian markets. Australian barley is generally of lower protein content than Canadian barley, and enjoys low transportation costs, both inland and overseas. As a result it is generally very competitive in terms of price and quality. Canada and Australia also compete in the South African market.
From http://www.dpi.qld.gov.au/extra/qldwool/sec3.html (22 Oct 05)	Australia is the world's leading wool-producing country, famous for the quality and style of its Merino wool. Queensland runs 9 million sheep, of which 99% are Merino, and Queensland wool producers will supply about 36 million kilograms to the national clip in the 2001/2002 selling season.
From http://www.antiessays.com/essay.php?eid=2264 (22 Oct 05)	Australia is the world's leading producer and exporter of wool and bauxite (the ore from which aluminum is made). It also produces and exports large amounts of other minerals and farm goods. The income from these exports has made it possible for most of the people of Australia to have a high standard of living. In the past, Britain was Australia's most important trading partner. Today, Australia trades most with Japan and the United States.
From http://www.tomago.com.au/alum/almaterials.html (22 Oct 05)	Australia is the world's leading producer of bauxite and alumina. Its deposits are among the largest in the world (estimated at more than 3 billion tonnes of commercial grade ore).
From http://members.ozemail.com.au/~stewil/AusHist.htm (22 Oct 05)	Australia is the only country in the world that occupies a whole continent. It is the most highly industrialised nation south of the equator, and it plays a leading role in the South Pacific and Southeast Asia. Australia is the world's leading wool producer, is one of the world's leading meat-exporting countries, and has a booming iron-ore mining industry.
From http://www.vegsoc.org/info/sheep.html (22 Oct 05)	Australia is the world's leading sheep producer and exporter with a national flock of an estimated 135 million sheep.
From http://www.greenhouse.gov.au/international/third-comm/chapter2.html (22 Oct 05)	Australia is the world's leading exporter of coal and has a large and relatively inexpensive supply of fossil fuels upon which energy intensive industries such as aluminium smelting and steel production have been built. These industries make a significant positive contribution to economic growth, employment and regional development in Australia.
From http://www.yourlearningzone.com/Geography/Australia.html (22 Oct 05)	Australia is the world's leading producer and exporter of wool and bauxite (the ore from which aluminum is made). It also produces and exports large amounts of other minerals and farm goods. The income from these exports has made it possible for most of the people of Australia to have a high standard of living. In the past, Britain was Australia's most important trading partner. Today, Australia trades most with Japan and the United States. ...
From http://www.ee.usyd.edu.au/~iain/www/australia.html (22 Oct 05)	General information about Australia ... Geography. Australia is the flattest and driest of the continents, as well as the oldest and most isolated. Elevations range from 39 ft (12 m) below sea level at Lake EYRE, the lowest point, to a high point of 7,316 ft (2,230 m) at Mt. KOSCIUSKO, in the AUSTRALIAN ALPS near the New South Wales-Victoria border; much of the ancient western plateau is under 2,000 ft (610 m). Two thirds of the continent is either desert or semiarid. Humid climates are restricted to eastern coastal areas and to Tasmania. Alternating wet winters (June-August) and dry summers (November-March) occur in small areas of South Australia and Western Australia, and dry winters and wet summers alternate along the tropical northeastern coast. The MURRAY R. and its major tributaries, the DARLING and MURRUMBIDGEE, form the principal river system. Plant and animal life is distinctive, including many species, such as the giant EUCALYPTUS, KOALA, KANGAROO, and PLATYPUS, found only in Australia. Economy and People. Australia is the world's leading producer of wool and bauxite, and a significant supplier of iron ore, wheat, meat, dairy products, sugar, and fruit. Manufacturing is highly developed and concentrated mainly in the coastal regions of Victoria and New South Wales. Iron, steel, automobiles, aircraft, electrical equipment and appliances, chemicals, and textiles are leading manufactures. SYDNEY, MELBOURNE, BRISBANE, ADELAIDE, and NEWCASTLE, all located along the southeastern coast, are the largest commercial and industrial centers. New South Wales and Victoria are the most populous states. Most Australians are of British ancestry. The indigenous population, the Australian aborigines and Torres Strait Islanders, totaled 159,897 in 1981. Immigration contributes significantly to population growth; in 1984 slightly more than 20% of the population had been born in Australia. Racially discriminatory immigration policies were officially ended in 1973, and recent years have seen increased Asian immigration.