Chapter 12 Manufacturing

Key Points

- Manufacturing currently represents a small proportion of Northern Territory output, averaging around 3.8 per cent of GSP over the past decade, compared to 11.3 per cent nationally.
- Manufacturing in the Territory is narrowly based and is dominated by the metal products subdivision (primarily alumina production at Gove), which is typically around 60 per cent of manufacturing value added.
- Construction of the Wickham Point LNG plant near Darwin is continuing, with production scheduled to start in 2006. LNG is defined as a manufactured product and will provide a significant boost to manufacturing output.
- The expansion of the Alcan Gove alumina refinery is also currently under way, with alumina production planned to nearly double from 2007. Combined with the commencement of LNG production, Territory manufacturing will be boosted significantly (but narrowly) over the next few years.
- In the medium to long term, natural gas extracted from the Timor Sea could be used as an input for gas-related manufacturing industries and as a cheaper energy source, with the potential to significantly broaden the Territory's economic base.
- In the longer term, the new Alice Springs to Darwin rail link has the potential to complement increased manufacturing activity in the Territory. Nonetheless, development of both local and export-oriented opportunities will depend on the cost effectiveness of manufacturing processes and transport links.

Manufacturing is the transformation of materials or components into new products through a value-adding process. The manufacturing industry in the Territory is a small contributor to economic activity, accounting for 3.4 per cent of Gross State Product (GSP) in 2003-04. The industry employed around 3000 people and generated more than $690 million of industry value added from turnover of around $1.5 billion in 2002-03.

The Territory's small local market and the specialised nature of many manufactured imports mean that opportunities for import substitution in the short to medium term are limited. Except for the export-focused metal products subdivision, the majority of Territory manufacturing is for local consumption.

Metal Products Manufacturing

Manufacturing in the Territory is dominated by metal products, which typically account for around 63 per cent of Territory value-added manufacturing compared to around 18 per cent nationally. Typically 38 per cent of Territory manufacturing employment is in metal products manufacturing.

Metal products manufacturing is dominated by the conversion of bauxite to alumina at Gove. The Alcan alumina refinery produced more than 2 million tonnes of alumina and directly employed around 1100 people in 2003-04. The metal products sub-division also includes sheet metal fabrication and the production of materials used in the construction industry.

Table 12.1: Manufacturing Components as a Percentage of GSP (2002-03)

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Aust
Food, beverage and tobacco	2.2	2.4	1.8	2.8	1.2	3.1	0.2	0.1	2.1
Textile, clothing, footwear and leather	0.3	0.7	0.2	0.2	0.2	0.4	0.0	0.0	0.4
Wood and paper products	0.7	0.8	0.7	1.1	0.4	3.4	0.0	0.2	0.7
Printing, publishing and recorded media	1.4	1.3	0.7	1.0	0.6	0.6	0.2	0.6	1.1
Petroleum, coal and chemical products	1.2	2.0	0.9	1.2	1.4	1.0	0.2	0.1	1.3
Non-metallic mineral products	0.5	0.6	0.5	0.6	0.6	0.8	0.2	0.1	0.5
Metal products	1.8	1.7	2.4	1.6	2.1	1.9	2.5	0.1	1.9
Machinery and equipment	1.8	2.8	1.3	3.7	1.3	1.2	0.2	0.2	2.0
Other manufacturing	0.5	0.6	0.4	0.4	0.4	0.2	0.1	0.1	0.5
Total Manufacturing	**10.5**	**12.8**	**8.8**	**12.6**	**8.2**	**12.7**	**3.6**	**1.5**	**10.5**

Source: NT Treasury, ABS Cat. No. 8221.0

Other Manufacturing Subdivisions

As a percentage of Northern Territory manufacturing value added in 2002-03, the machinery and equipment subdivision accounted for 6.1 per cent, compared to 18.8 per cent nationally. Machinery and equipment manufacturing includes motor vehicles and parts, electronic equipment, electrical components and industrial machinery and equipment.

Production of specialised plastics, rubber products, fertilisers and chemicals make up the petroleum, coal, chemical and associated products subdivision, representing 5.7 per cent of Territory manufacturing value added in 2002-03, compared to 12.7 per cent nationally.

Food, beverage and tobacco made up 4.4 per cent of manufacturing value added, compared to 19.8 per cent nationally. High transport costs associated with the Territory's relative isolation have assisted in the development of food processing in the Territory. Milk, fruit juice, bread and beef are the major food and beverage items processed. These commodities are largely produced for local markets, although beef products are also exported.

Non-metallic mineral products accounted for 5.8 per cent of Territory manufacturing value added in 2002-03, compared to 5.1 per cent nationally. Concrete sleeper manufacturing provided a significant boost to the non-metallic mineral product subdivision during the construction of the Alice Springs to Darwin railway from 2001 to 2003. Concrete sleeper manufacturing ceased in late 2003.

Turnover and Employment

Chart 12.1 shows the proportions of wages and salaries, and sales and service income turnover accruing to manufacturing activities in the Territory in 2002-03, as well as employment data for 2000-01. As previously stated, the Australian Bureau of Statistics (ABS) is yet to release employment numbers. While the ABS does report quarterly employment in the manufacturing sector, these data, which are sourced from a household sample survey, are deemed to be too volatile to be used here.

Sales and Service Income

Manufacturing sales and service income in the Territory is estimated at $1495 million in 2002-03. Metal products accounted for more than 60 per cent ($915 million) of sales and service income, followed by food, beverages and tobacco, non-metallic mineral products, and machinery and equipment manufacturing subdivisions, which each represented 9 per cent of total manufacturing income in the Territory.

Table 12.2: Territory Manufacturing Categories: Turnover Value Added and Employment

	93-94	94-95	95-96	96-97	97-98	98-99	99-00	00-01*	01-02*	02-03
Food, beverages and tobacco manufacturing										
Turnover ($m)	104	109	123	86	99	96	100	119	133	137
Value added ($m)	n.a.	n.a.	n.a.	n.a.	29	26	36	34	24	30
Number employed	489	558	693	517	485	494	435	384	n.a.	n.a.
Textile, clothing, footwear and leather manufacturing										
Turnover ($m)	7	3	4	9	6	4	5	6e	9e	9e
Value added ($m)	n.a.	n.a.	n.a.	n.a.	2	2	2	2e	5e	5e
Number employed	127	51	78	85	80	55	50	57	n.a.	n.a.
Wood and paper product manufacturing										
Turnover ($m)	19	22	24	27	30	33	38	17	11	16
Value added ($m)	n.a.	n.a.	n.a.	n.a.	11	14	15	5	3	4
Number employed	164	163	194	173	205	228	186	135	n.a.	n.a.
Printing, publishing and recorded media										
Turnover ($m)	34	37	36	40	35	40	52	55	69	70
Value added ($m)	n.a.	n.a.	n.a.	n.a.	23	25	31	31	34	34
Number employed	386	512	545	447	342	380	435	448	n.a.	n.a.
Petroleum, coal, chemical and associated product manufacturing										
Turnover ($m)	8	17	22	25	29	35	32	45	80	69
Value added ($m)	n.a.	n.a.	n.a.	n.a.	10	9	8	8	25	39
Number employed	60	66	85	104	100	111	82	131	n.a.	n.a.
Non-metallic mineral product manufacturing										
Turnover ($m)	60	51	62	74	80	72	78	94	125	129
Value added ($m)	n.a.	n.a.	n.a.	n.a.	24	20	26	27	33	40
Number employed	190	228	108	212	266	221	253	170	n.a.	n.a.
Metal product manufacturing										
Turnover ($m)	n.a.	457	578	591	567	577	634	598e	975e	915e
Value added ($m)	n.a.	n.a.	n.a.	n.a.	193	193	201	157e	442e	483e
Number employed	n.a.	1 156	1 379	1 238	1 375	1 377	1 201	1 238	n.a.	n.a.
Machinery and equipment manufacturing										
Turnover ($m)	n.a.	40	48	47	68	56	66	191	118	129
Value added ($m)	n.a.	n.a.	n.a.	n.a.	29	20	29	34	38	42
Number employed	n.a.	383	400	418	627	432	501	618	n.a.	n.a.
Other manufacturing										
Turnover ($m)	7	12	11	15	13	13	14	13e	22e	20e
Value added ($m)	n.a.	n.a.	n.a.	n.a.	4	5	5	4e	11e	12e
Number employed	110	157	173	141	149	140	134	114	n.a.	n.a.
Total manufacturing										
Turnover ($m)	752	747	909	913	927	927	1 020	1 138	1 543	1 495
Value added ($m)	n.a.	n.a.	n.a.	n.a.	325	314	352	301	613	688
Number employed	3 046	3 275	3 654	3 336	3 629	3 439	3 277	3 296	n.a.	n.a.

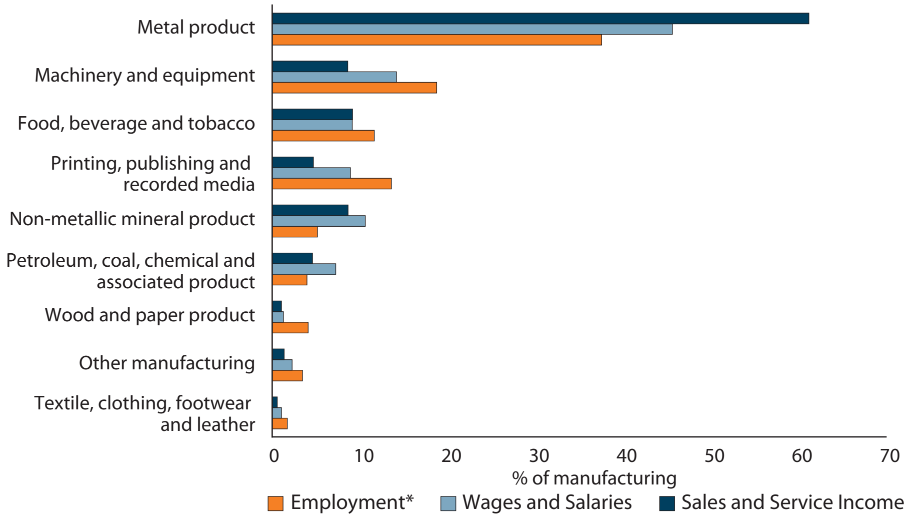
e: estimate. Recent 'Textile, clothing, footwear and leather', 'Metal product', and 'Other' manufacturing figures are unavailable due to ABS confidentiality restrictions.

* Series breaks exists between 1999-00 and 2000-01, and 2001-02 and 2002-03

Note: ABS data report a substantial increase in manufacturing turnover and value added in 2001-02. This appears to be an ABS classification issue as there has been no corresponding increase in manufacturing output as reported in other ABS datasets. As such, Northern Territory Treasury believes the increase in turnover from 2001-02 does not reflect any significant change in actual manufacturing activity in the Territory. Nonetheless, ABS cannot confirm this due to confidentiality restrictions.

Source: NT Treasury, ABS Cat. No. 8221.0

Chart 12.1: Territory Manufacturing Industry Selected Indicators (2002-03)



* Employment data is for 2000-01
Source: NT Treasury, ABS Cat. No. 8221.0

Wages and Salaries

Manufacturing wages and salaries are also dominated by the metal products subdivision in the Northern Territory, which accounted for almost 45 per cent of employment income in 2002-03. The dominance of the capital-intensive metal products subdivision and the remote location of the Alcan Gove refinery are the primary reasons for the Territory having the highest wages and salaries per manufacturing employee in Australia.

Wages and salaries per employee in capital-intensive sectors tend to be higher than in less capital-intensive activities, reflecting higher productivity. However, less capital-intensive manufacturing activities such as food, beverages and tobacco, printing, publishing and recorded media, and textile, clothing, footwear and leather, provide a higher ratio of employment relative to turnover.

Employment

The largest employing subdivision is also metal products manufacturing which accounts for around 38 per cent of manufacturing employment. Machinery and equipment is the next largest employer, followed by printing, publishing and recorded media, and food, beverages and tobacco.

Demand and Supply

Manufacturing Demand

Based on Department of Business, Industry and Resource Development (DBIRD) analysis, it is estimated that local manufacturers supply around 27 per cent of the demand for manufactured goods in the Territory. The remainder is largely supplied from interstate.

Increasing the depth and complexity of the manufacturing sector would enhance the Territory's competitiveness, attract more advanced technology and investment, support growth opportunities and help create higher value jobs in the Territory.

DBIRD analysis estimates that for every $1 million increase in the value of manufacturing final demand, another $463 000 worth of output is generated in the rest of the economy. Similarly, for every 100 jobs created in the manufacturing sector, another 136 new jobs are created in the rest of the economy. These estimates represent the average impact of the manufacturing industry as a whole. The effect of a particular manufacturing enterprise will depend on the nature and location of production.

Table 12.3: Estimated Territory Demand and Supply of Manufactured Goods (2002-03)

	$M
Demand	
Value of Australian-manufactured goods produced	309 283
Less Exports	30 552
Plus Imports	95 421
Total consumption of manufactured goods	374 152
Per capita consumption of manufactured goods*	0.019
Northern Territory demand for manufactured goods**	3 749
Supply	
Value of Territory-manufactured goods produced	1 495
Less overseas exports	498
Net local supply	997
Overseas imports	567
Shortfall supplied from interstate	2 186
Total imports	2 752
Total	**3 749**

* Based on average Australian population for 2002-03 (19 787 700)
** Based on imputed Australian per capita demand and average Territory population for 2003-03 (198 271)
Source: Department of Business, Industry and Resource Development, NT Treasury, ABS Cat. Nos. 8221.0, 5368.0, 3101.0

Manufacturing Industry Strategy 'Making it in the Territory'

In February 2004, the Territory Government released 'Making It in the Territory', the Northern Territory *Manufacturing Industry Strategy* for 2004 to 2009. The strategy aims to foster growth in the manufacturing sector by:

- growing manufacturing markets and opportunities;
- developing manufacturing skills;
- creating strategic partnerships for growth; and
- promoting and supporting manufacturing best practice.

The strategy builds on the current support for the manufacturing sector provided by Territory Government.

Development objectives to be achieved by 2009 include increasing the value of manufacturing turnover by 40 per cent, increasing manufacturing employment by 25 per cent and increasing the value of international manufacturing exports by 40 per cent.

The *Making it in the Territory* strategy is being implemented under the guidance of a Steering Committee consisting of representatives from industry, unions and government. The Steering Committee has identified the metal products and food and beverage subdivisions as priority sectors within the strategy.

Outlook

Alumina Production

In the short term, metal products manufacturing will continue to dominate manufacturing in the Territory, with alumina production in turn dominating the metal product subdivision.

Alumina production is set to increase from 2007 as the production capacity of the Alcan Gove refinery expands from 2 million to 3.8 million tonnes per annum. The increased capacity is expected to create an additional 120 on-site jobs, increase exports from $560 million to $980 million per annum and contribute an additional $200 million to Territory GSP each year.

LNG Production

Production of liquefied natural gas (LNG) at Wickham Point will begin in 2006, providing a substantial boost to the petroleum, coal, chemical and associated product manufacturing subdivision. The plant is expected to produce 3.2 million tonnes per annum to service export markets, predominantly in Japan. The plant will directly employ 80 to 100 permanent staff.

Other Gas-based Projects

The BOC Group recently submitted a notice of intent to build a helium plant at Wickham Point using waste product from the LNG plant. If the proposal is approved, the plant is scheduled to be operational in early 2007, producing almost 900 tonnes of liquid helium per year, valued at $20 million, for Australian and overseas markets.

The longer term outlook for manufacturing in the Territory is dominated by potential flow-on effects from Timor Sea gas coming onshore. At this stage, development of the Greater Sunrise field has stalled after Woodside declared it would pull out of the project for at least ten years. While negotiations are continuing between the Australian and East Timorese governments, the likelihood of bringing gas onshore is uncertain.

Should efforts to bring Timor gas onshore prove successful, it could be used as feedstock for new manufacturing industries. An area at Glyde Point (on the Gunn Point Peninsula) has been identified as a potential site for a major gas-based industrial estate and associated port facilities that could be developed if base volumes of Timor Gas can be brought onshore. Possible gas manufacturing projects include further production of LNG, or gas-based products such as methanol, ethane, ammonia/urea fertilisers and various petrochemicals. The possibility of more competitively-priced electricity being generated from gas developments could contribute to interest in local value-adding opportunities. Timor Sea gas has the potential to provide a cheap and efficient energy source for the value adding of bauxite to alumina, magnesite to magnesium and smelting of other ore concentrates.

In addition, the potential for gas-based manufacturing activity, economic development and growth in the Territory's population will lead to increased opportunities for import substitution in the medium to longer term. The pace of development will be influenced by the competitiveness of local industry.

Construction Activity

The Territory's manufacturing industry is also expected to continue to benefit from solid construction activity. According to a study conducted by DBIRD in 2002, 13 per cent of Territory manufacturing output feeds into the construction industry, including metal products, wood, non-metallic mineral products and, to a lesser extent, chemicals.

Major construction projects currently under way include construction of the ConocoPhillips LNG plant scheduled for completion in late 2005, construction of the 1st Aviation Regiment facilities at Robertson Barracks, and the expansion of the Alcan Gove refinery, scheduled for completion in 2007. Further, the Darwin City Waterfront Redevelopment project, with its convention and exhibition centre and other major building works are scheduled to begin in the first half of 2005, and work on various major residential and mixed-use developments is scheduled to begin this year.

Railway-related Effects

The medium to longer term impact of the railway on the Territory's manufacturing sector is still uncertain. Relatively high transportation costs have in the past acted to support the local manufacture of high-volume, low-value consumer goods such as foods and beverages. With the potential to lower transportation costs, the railway may impact on the competitiveness of some local manufacturing activities. Although it has only been operational for just over a year, the impact of the railway on the supply and demand of Territory-manufactured goods remains unclear. As the railway expands its customer base and volumes there is the likelihood that the cost effectiveness of rail transport will improve, putting pressure on manufacturers of high-volume, low-cost manufactures for the local market. However, any decreases in transportation costs may also open up new opportunities for manufacturing in the Territory by providing manufacturers with lower cost inputs and more competitive access to southern markets.

Asian Demand Potential

The Territory's proximity to South East Asian economies will continue to present long-term opportunities for local manufacturers. Darwin's well developed infrastructure and port facilities could complement export-oriented manufacturing, as more efficient trade links between Australia and Asia are established.

US and Thailand Free Trade Agreements

Free trade agreements (FTAs) with the United States and Thailand were introduced in early 2005. These agreements have the potential to expand trade links by providing Territory exporters with a competitive advantage. The Thailand FTA in particular has the potential to provide significant opportunities to local manufacturers in the medium term, with the immediate elimination of tariffs on many manufactured goods, and further reductions to follow.

Nonetheless, alumina (which the Territory currently exports to the United States) will not necessarily be better off under the United States FTA, given that it was already a freely traded commodity. This is also the case for LNG exports to the United States.