

MANUFACTURING

NATURAL RESOURCES AND LOCATION

Natural resources

Victoria's natural resources—a temperate climate, adequate rainfall and water supply, and productive soils—have been used to provide both raw materials and power for industry. For example, clay deposits for brick, tile, and pottery making are worked near Melbourne, Ballarat, Bendigo, Colac, Shepparton, Wangaratta, and in other areas of Victoria. Sand, used in foundries, and concrete and glass works, is obtained in the Port Phillip and west Gippsland districts. Stone and gravel are quarried in many parts of Victoria, but, since large loads are expensive to transport, sites are concentrated within 80 kilometres of the principal market, metropolitan Melbourne. Inside a similar radius, the availability of limestone has attracted the establishment of cement works at Geelong and Traralgon, while the Lilydale deposits are extracted to produce agricultural lime.

Although Victoria's historic gold rush has long since passed, gold is still mined in the Castlemaine, Gaffneys Creek, and Harriettville areas. Victoria's other mineral resources include salt collected from solar evaporation on the western shores of Port Phillip and from the Wimmera and Mallee lakes; gypsum is also found in the north-western Mallee. More detailed information on mining activity can be found on pages 310–14.

Victorian forests provide approximately one quarter of Australia's timber output. The fine vegetation of the Central Highlands forms the basis of important felling activities. The industry is also significant in Gippsland, where paper is manufactured at Maryvale. Other paper mills are situated in Melbourne, which is a major market for all wood and timber products.

Water, needed in large quantities for industry, is available throughout much of Victoria from dams in the catchment areas of the chief rivers (see map on page 478 of the *Victorian Year Book* 1966). In most years Melbourne is well supplied from the storages to its north and north-east in the Plenty, Upper Yarra, Maroondah, and O'Shannassy watersheds. However, severe restrictions were imposed during the 1967–68 and 1972–73 summers because of widespread drought conditions. To meet future demands, construction works are being extended. (See pages 318–21.)

Power supplies and the fuels from which they are derived are basic for industrial development. Victoria's range of carboniferous fuels is not great and, in the past, it was necessary to import significant amounts of black coal from New South Wales. Subsequently, the State Electricity Commission developed the brown coal resources of the La Trobe valley. The open-cut mines of the Yallourn–Morwell region presently produce about 29.2 million tonnes per year for use in the steam-generation of electricity and briquette making. The Commission now delivers the bulk of Victoria's public electricity requirements; the balance is purchased interstate.

The discovery in February 1965 and subsequent development of sizeable offshore reserves of oil and natural gas in the Gippsland basin have augmented Victoria's power and chemical resources. In March 1969 natural gas for commercial use flowed from the Barracouta field and, a month later, the first domestic customers were connected. The Marlin field began to operate in January 1970. Natural gas is now piped from Longford to Melbourne and then to Geelong, Ballarat, and Bendigo. Oil in commercial quantities has been produced from the Barracouta field since October 1969, from Halibut since March 1970, and from Kingfish since April 1971. Petroleum refining is carried out at Altona, Geelong, and Crib Point, and petrochemical manufacturing at Altona, Geelong, Dandenong, and Footscray.

Location

Victoria's earliest industries were located in Melbourne, the entry port for most of the people and their supplies. As Victoria developed, Melbourne became its most populous centre, major port, the hub of the railway and road network, and major manufacturing centre. At 30 June 1976, 82.5 per cent of Victoria's 8,874 manufacturing establishments owned by multi-establishment enterprises and all single establishment manufacturing enterprises employing four or more persons, (see page 417 for further details), and 84.0 per cent of its work force engaged in manufacturing were located in the Melbourne Statistical Division. There are basic reasons for this: Melbourne's function as port and transport focus makes the collection of raw materials and the distribution of manufactured goods relatively easy; the concentration of Victoria's population in the city means a concentration of potential purchasers and potential workers; and by locating their operations in Melbourne, manufacturers can enjoy easy interchange of materials, parts, and services with other manufacturers.

Melbourne's early industrial suburbs grew on the fringes of the city centre in Port Melbourne, South Melbourne, Richmond, Collingwood, Spotswood, Fitzroy, and Footscray. In these suburbs a wide range of manufacturing industry is to be found. The more recent new industrial municipalities are Altona, Broadmeadows, Moorabbin, Oakleigh, and Dandenong, where extensive areas are available for the establishment of new industries.

Apart from smelting and large-scale steel making, most types of secondary industry are to be found in Melbourne. In terms of employment, engineering and metal processing constitute Melbourne's major industries, but a high proportion of Victoria's chemical, textile, paper, furniture, food, and building materials industries are also concentrated there.

Outside the metropolitan area, Geelong is the most important industrial centre, with port facilities, close proximity to the Melbourne market, and rich surrounding rural areas. Industries established in the area include petroleum refining, and the manufacture of agricultural machinery, motor vehicles, aluminium ingots and extruded products, textiles, chemical fertilisers, glass, clothing, carpets, food-stuffs, cement, fertilisers, and sporting ammunition.

The other country urban areas in which more than 1,000 persons are employed in manufacturing establishments (ranked in order of the number of persons employed in factories) are the Ballarat Statistical District, Bendigo Statistical District, Shepparton-Mooroopna Statistical District, Wodonga Rural City, Morwell Statistical District, Warrnambool City, Wangaratta City, Castlemaine City, and Maryborough City. The factory population in country areas is engaged in the production of food and textiles from locally produced raw materials, in clothing, and in engineering plants, some of which had their origin in the gold mining era of the nineteenth century, and more recently in decentralised plants with defence significance. In addition, approximately 4,200 persons are engaged by the State Electricity Commission in power generation and ancillary activities. These are not taken into account in the foregoing ranking.

MANUFACTURING ACTIVITY

Sources of information

At the Australian level of aggregation, information on the subjects dealt with in this section of the *Year Book* is contained in the annual *Manufacturing Establishments* and *Manufacturing Commodities—Principal Articles Produced* issued by the Central Office of the Bureau. At the Victorian level of aggregation, the annual publications issued by the Deputy Commonwealth Statistician, Melbourne, are *Manufacturing establishments: summary of operations by industry class*; *Manufacturing establishments: details of operations*; *Manufacturing establishments: small area statistics*; *Manufacturing establishments: usage of electricity and fuels*; and *Manufacturing establishments: selected items of data classified by industry and employment size* (available for 1968–69 and 1974–75). Current information on factory products is available in the *Victorian monthly statistical review* and the monthly Victorian publication *Secondary production*.

In addition to the above mentioned publications there is also a monthly series of eight *Production Bulletins*, each relating to the production of a particular group of commodities for Australia.

In respect of the year 1968–69, the Australian Bureau of Statistics conducted the annual census of manufacturing industry as part of a programme of fully integrated economic censuses covering manufacturing, mining, retail, wholesale, and electricity and gas establishments. For a detailed description of the purposes served by this project, and of the new concepts and methods adopted, the reader is referred to the special article on these censuses on pages 368–89 of the *Victorian Year Book* 1971.

The integrated economic censuses have been a major undertaking involving the development of new concepts, definitions, and procedures, and, inevitably, there were considerable delays in finalising the results of the 1968–69 and 1969–70 censuses, so much so in fact that the 1970–71 census of manufacturing establishments was abandoned. However, the later censuses of manufacturing establishments were completed close to time tables realised in respect of 1967–68 and previous years, and, as far as possible, 1975–76 data appears in this chapter. (See also pages 416–17.)

Manufacturing developments during 1976

During 1976 Victorian manufacturing industry was generally characterised by underutilisation of productive capacity resulting from sluggish demand, increased costs, and import competition. Nevertheless, aggregate activity was marginally higher than the depressed levels of 1975.

At Yarrawonga there were two developments of note in the food and allied products industry. A stock feed mill for the manufacture of bulk food for poultry, pigs, sheep, and dairy cattle was completed and commenced production in June and a new large broiler rearing operation was established.

A smallgoods factory, costing approximately \$1m, commenced operation at Breakwater (near Geelong) with initial employment opportunities for 40 people.

In building materials manufacture, a \$12m particle board factory development was constructed at Portland, while in the La Trobe valley the emission control devices of a new chemical recovery boiler at the Maryvale mill of a paper manufacturer have resulted in improved environmental conditions.

The Prime Minister opened the new Geelong Rod Mill plant of a large Australian company in September of this year. Built at a cost of \$18m, the mill is designed to supply feed material for a nearby wire manufacturing plant and is one of the most modern of its kind in the world with a productive capacity of 220,000 tonnes per annum. It will provide employment for 100 people.

Construction of the 2,050 mm hot strip mill at Western Port has passed the half-way mark. Commissioned in 1974 at a cost of \$120m, it is expected that

total cost will have increased to approximately \$170m on completion in 1978. Output from the mill will provide feed stock for the 2,000 mm cold reduction plant already in operation at Western Port.

In the chemical manufacturing industry, construction of a styrene monomer plant at West Footscray was completed in 1977. The capacity of the plant, which cost more than \$70m, is stated at 100,000 tonnes per annum. Output from this plant will provide raw material for a new polyester resin plant being built adjacent to it. This complex duplicates the company's existing facilities and will double capacity. A manufacturer of polyvinyl chloride has commenced expansion work at its Altona plant designed to increase capacity by 37,000 tonnes per annum (bringing total annual capacity to 62,000 tonnes). The project will cost more than \$8m and it is expected to be operating in early 1978. Capital expenditure of approximately \$8m is being undertaken by a leading tyre manufacturer for the purpose of concentrating its operations in one State. Production at its tyre factory at Drummoyne, N.S.W., will be gradually shut down.

Developments in light engineering have mainly involved capital investment to increase existing capacity, although several leading motor vehicle manufacturers have announced plans for the development and production of four-cylinder engines involving substantial investment over several years. In whitegoods manufacture, the first stage of a new \$5m refrigerator plant at Clayton was opened in August, whilst the total project was expected to be completed at the end of 1977.

Although the demand for textile and apparel products was still depressed, the continuation of import restraint measures during 1976 has led to an improved outlook for the industries when compared with 12 months ago. Retrenchments continued but at lower levels than last year, while investment was basically confined to replacement items and some labour-saving equipment.

In April 1976, the Mackerel oil drilling platform was positioned in Bass Strait. Another platform for the Tuna field was under construction at Barry Beach in 1976. On the completion of the Mackerel-Tuna development which is expected to come into commercial production in late 1978 or early 1979, it is estimated that more than \$650m will have been invested by the partners involved in the exploration and development of the Bass Strait petroleum fields.

Government activities

Industrial legislation

The *Labour and Industry Act* 1958 represents the development and consolidation of industrial legislation which had its beginnings in 1873. Among other matters, the Act deals with the registration and inspection of factories, guarding of machinery, and conditions of employment. The Act also provides for the appointment of Wages Boards and the Industrial Appeals Court. Further information on these matters may be found on pages 239-41.

Department of State Development

The Department of State Development was established in 1971 to promote and co-ordinate the development of primary, secondary, and tertiary industries, including tourism, and to implement the State's decentralisation programme.

Although, in the period since the Department was set up, the National Parks and Environment Protection Authorities have been transferred to the Ministry for Conservation and the Division of Immigration has come under the aegis of the Ministry of Information and Ethnic Affairs, several new bodies have been established to complement the Department's role in assisting industry and tourism. Some of these operate within the Department and others as separate entities. The most significant of these are the Victorian Development Corporation, the Small

Business Development Corporation, and the Decentralized Industries Housing Authority.

In addition, many regional bodies have been established to carry out the Governments' decentralisation policies through both industrial development and tourism.

The Department is comprised of three Divisions: the Division of Industrial Development, the Division of Tourism, and the Ministry of Immigration and Ethnic Affairs.

A change in the distribution of secondary industry as between metropolitan and country locations has been brought about by the Government's policy of encouraging secondary industry to establish in country locations.

Division of Industrial Development

This Division is responsible for liaison with industry and promotion of industrial development throughout Victoria.

While encouraging and assisting development in country areas, the Division also has responsibilities within Melbourne. The Division promotes industry throughout the State and, if a new business undertaking is unable to operate satisfactorily outside Melbourne, the Division will assist its location in the metropolitan area.

Under a ten-point plan for decentralisation introduced in 1972, the Division offers approved industries in country areas of Victoria a range of financial incentives through payroll tax and land tax rebates, road and rail transport concessions, transport of plant and machinery subsidies, and employment incentives. Other incentives cover electric power connection costs, road construction, housing assistance, a Government tender preference scheme, attractive long-term interest finance, and local government loans for development of industry.

The Development Branch of the Division provides expert advice on broad problems of State development, with an emphasis on industry planning; assists the Division to determine priorities for the dispersion of funds for industrial development; and provides a basis for advising both the Victorian and Commonwealth Governments on policy.

The Branch operates an industry data bank for the collection and analysis of information on the development of industry by categories, in order to obtain reliable information on industry status in Victoria. It also conducts employment and industrial surveys, investigates categories of industry suitable for country location, services overseas inquiries which include licensing requests, provides details of opportunities throughout the State such as employment, available land and factories; and assistance to industry groups, and offers advice on town planning and engineering.

The Branch also undertakes major research studies on the role of regions within the State in order to assess the comparative importance, resources, and facilities available for future industrial development.

The Industry Branch with industrial consultants and promotion officers assists companies to investigate the establishment of operations in provincial centres. Industrial consultants negotiate with councils and industry, monitor country industry conditions, and promote the benefits of decentralisation to metropolitan and overseas industries. The consultants also liaise with other Government departments and organisations, and undertake feasibility studies of individual industry's prospects. In addition, they provide a co-ordinating link between industry and the industry data bank.

Promotion officers promote specific country locations and act as resident executive officers of development committees at Ballarat, Bendigo, the La Trobe valley, Portland, Wodonga, Shepparton, and Mildura; these areas were selected for accelerated development in 1967. Consultants and promotion officers

co-operate with country councils which receive assistance through grants under a community assistance programme designed to help attract industrial development. The widening of relevant Acts has increased industrial development, as well as municipal council borrowing capabilities with Treasury guarantees for development of industrial estates and similar activities.

The Division is also involved in the provision and servicing of industrial estates, and building factories in advance of demand on suitable Crown land or municipal industrial estates.

To date, it has concentrated on assisting secondary industry, but the increasing employment generating capability of the tertiary sector is being studied to assess the benefits of possible future forms of encouragement.

Growth centres

Albury-Wodonga. In addition to the five centres for accelerated development mentioned above, the Victorian Government, in 1973, joined with the Governments of the Commonwealth and New South Wales in a joint plan for the development of Albury-Wodonga. (See also pages 158-9.) Despite some initial problems, there is now evident development in this new centre with houses, home sites, and industrial sites, developed by the Albury-Wodonga Development Corporation, progressively becoming available. Plans are also under way for building a new city at Baranduda some 7 kilometres south-west of Wodonga, and, during 1976, necessary major headworks for this development were begun.

Geelong. The Victorian Government is also encouraging development in Geelong, Victoria's second largest city, to ensure its balanced growth and the provision of a diverse range of employment opportunities. At present these tend to rely very heavily on a few key industries.

Export Marketing Section

Because of a need to provide assistance to primary producers and manufacturers who wish to export their production, the Department of State Development has established an Export Marketing Section. The aim of the new Section is not only to promote the export of Victorian manufactured goods and primary produce, but also to facilitate opportunities for the tertiary sector overseas and interstate.

This Section has close association with Victorian industry and complements the activities of the Commonwealth Department of Overseas Trade's regional and overseas offices.

The Section also maintains close links and co-operates with the Chamber of Manufactures, Chamber of Commerce, Victorian Farmers Union, employer organisations, various representative groups, and Commonwealth and State Government departments and agencies involved in export matters.

An Advisory Committee has been formed to indicate what areas of the world's markets should be examined for export potential. As a result of the Committee's advice the Export Marketing Section will be arranging interstate and overseas selling missions.

*Commonwealth Department of Overseas Trade**

The Department is responsible for the formulation of policy proposals relating to Australia's international trade policy and trading objectives. It is also responsible for developing and maintaining Australia's trading relationships with other countries. It carries out this task within its broad responsibility for international trade, commodity commitments, and agreements, negotiations and discussions in international organisations, and the development of export markets.

* The name of this department was changed to Department of Trade and Resources on 31 December 1977.

Commonwealth Department of Industry and Commerce

The Department makes policy directed towards the economic development of secondary and tertiary industry (including small business and tourism). It advises the Government on industry and commerce, including the monitoring of trends and the analysis of economic information.

Temporary Assistance Authority

The *Industries Assistance Commission Act* 1973 provides for the creation of a Temporary Assistance Authority comprising not more than three persons. This authority replaces the previous Special Advisory Authority. The function of the Temporary Assistance Authority is to inquire into and report on the need for urgent action to protect particular industries against import competition. This action can take the form of temporary duties or restrictions on imports. The Temporary Assistance Authority is required to report to the Minister within thirty days of being asked to undertake an inquiry. However, before taking action to implement the Authority's finding that temporary assistance is necessary, the Minister is required first to refer the question of any permanent change in protection against imports to the Industries Assistance Commission for inquiry and report. Temporary protection recommended by the Authority may operate for a period of up to three months after the date of receipt of the final report by the Industries Assistance Commission on the goods concerned.

For further information on the Industries Assistance Commission see page 453.

Prices Justification Tribunal

The Prices Justification Tribunal was established in August 1973 pursuant to the *Prices Justification Act* 1973 as amended by the *Prices Justification Act* 1974 and the *Prices Justification Amendment Act* 1976. The functions of the Tribunal are outlined in Section 16 of the Act and, briefly stated, provide that the Tribunal will consider the justification of proposed price increases put to it by companies which are subject to the notification provisions of the Act, i.e., companies or relevant groups of companies which receive more than \$30m annually as payments for the supply of goods or services or both. Following an amendment to the Act in August 1974, the prices charged by companies which receive less than \$30m annually as payments for goods or services or both, may also be examined by the Tribunal. Under the amending Act of 1976 it was provided that in exercising its functions under Section 16 the Tribunal should have due regard to the need for the company or companies concerned to achieve a level of profitability that is sufficient to enable the company or companies to maintain an adequate level of investment and employment.

The Tribunal consists of a chairman and such number of other members as are from time to time appointed by the Governor-General in accordance with the Act. The staff required to assist the Tribunal in the performance of its functions consists of persons appointed or employed under the *Public Service Act* 1922. Further information concerning the Tribunal is contained in its annual reports to the Commonwealth Parliament.

Small Business Development Corporation

This body, established in 1976, brings to small business the expert knowledge which is available to large companies, but which is usually beyond the resources of small businessmen.

Its aim is "to do all things necessary to be done for or in connection with encouraging, promoting, facilitating, and assisting in the establishment, carrying on, expansion and development of small business". The Corporation, which is financed by the Victorian Government, is an independent body which relies

greatly on the expertise of specialist advisers both in other Government departments and trade organisations. Since its establishment, the Corporation has been providing a service to small businesses, particularly those adversely affected by the changing economic climate.

Scientific research and standardisation

Commonwealth Scientific and Industrial Research Organisation

The CSIRO is a statutory body established by the *Science and Industry Research Act* 1949. Under the Act, CSIRO replaced the former Council for Scientific and Industrial Research which was established in 1926. Its principal functions under the Act are the carrying out of scientific research in connection with Australian primary and secondary industries or any other matter referred to it by the Minister for Science; the training of scientific research workers and the awarding of studentships; the making of grants in aid of scientific research; the recognition and support of research associations; the maintenance of the national standards of measurement; the dissemination of scientific and technical information; the publication of scientific and technical reports; and acting as a means of liaison between Australia and other countries in matters of scientific research.

Standards Association of Australia

This Association is the officially endorsed national organisation for the promotion of standardisation in Australia. It is an independent body incorporated by Royal Charter, having the full recognition and support of the Commonwealth and State Governments, and industry. Formed as the Australian Commonwealth Engineering Standards Association in 1922 it was reconstituted as the Standards Association of Australia in 1929. Approximately 45 per cent of its funds are provided by Commonwealth Government grant, the remainder coming from membership subscriptions and the sale of publications.

A Council composed of representatives of Commonwealth and State Government departments, associations of manufacturing and commercial interests, and professional institutions controls the Association's activities. The technical work of the Association is carried out on a voluntary basis by committees composed of experts in the particular subjects for which standards have been requested.

Australian standards are developed by co-operative effort and negotiation on the part of those most concerned, whether as producers or as users. They are based on what is best in present practice. They do not attempt to attain an ideal which might be too costly to adopt under industrial and commercial conditions. They are constantly revised to take account of new developments and to eliminate outmoded practices.

Industrial associations, firms, or government departments may request standards relating to such things as terminology, test methods, dimensions, specifications of performance and quality of products, and safety or design codes. In general, standards derive authority from voluntary adoption based on intrinsic merit. It is only in special cases where safety of life and property is involved, that they may have compulsory application. The Association owns a registered certification trade mark which manufacturers may obtain a licence to use.

The Association has international affiliations and maintains close links with overseas standards organisations. It acts as Australian agent for the procurement of overseas publications and the standards of other countries. The headquarters office of the Association is in Sydney, and there is a major office in Melbourne. Branch offices are located in other capital cities and at Newcastle, New South Wales.

National Association of Testing Authorities

This is the Australian organisation for accreditation of testing and measuring facilities. It registers testing and measuring laboratories which can demonstrate

their technical and managerial competence. Registration of laboratories is voluntary. Registered laboratories are operated by industrial, governmental, educational, and commercial testing authorities. The Association is recognised by all State Governments, the Commonwealth Government, and industry associations. Registered laboratories have the right to endorse their test documents in the name of the Association.

Industrial Design Council of Australia

The Industrial Design Council of Australia has established its new Victorian headquarters at the Australian Design Centre, 37 Little Collins Street, Melbourne. At the Australian Design Centre there is a small changing exhibition of products which have received the Australian Design Award. The Australian Design Award has been created to bring the attention of consumers to the many Australian products which show very high standards and thus can compete with comparable imported products.

At the Victorian headquarters of the Council, Field Officers are available to assist manufacturers with new product development. In co-operation with the Victorian Government, the Council may, in certain circumstances, provide financial assistance for new product development. The Council's Education Officers work with teachers in schools and State Colleges, assisting them to develop programmes which will create an awareness and appreciation of design in primary and secondary students. School groups are welcome to visit the Design Centre.

MANUFACTURING INDUSTRY STATISTICS

Basis of collection

A series of substantially uniform statistics exists from 1901 to 1967-68 when the framework within which manufacturing statistics were collected was changed. The table on page 418 contains a summary of statistics on manufacturing activities in Victoria over that period. More detailed manufacturing statistics in respect of this period have been included in previous editions of the *Victorian Year Book*.

As from the year ended June 1969 the Censuses of Manufacturing, Electricity and Gas have been conducted within the framework of the integrated economic censuses, which include the Censuses of Mining, Retail Trade and Selected Services, and Wholesale Trade. As a result, manufacturing industry statistics for 1968-69 and subsequent years are not directly comparable with previous years. The electricity and gas industries, which were previously included in the annual Factory Census, were the subject of separate censuses. The integration of these economic censuses was designed to increase substantially the usefulness and comparability of economic statistics collected and published by the Bureau and to form a basis for the sample surveys which supply current economic statistics from quarter to quarter, particularly those which provide data for the quarterly national income and expenditure estimates.

The economic censuses of Manufacturing, Mining and Retail Trade previously conducted in Australia were originally designed and subsequently developed primarily to provide statistics for particular industries on a basis which would best suit the requirements of users interested in statistics of those industries. More recently there has been a growth of interest in statistics describing activity in the economy as a whole—reflected, for example, in the development of employment and earnings statistics, surveys of capital expenditure and stocks, and the whole field of national accounts statistics. For such purposes statistics derived from economic censuses in the past have had serious limitations despite the fact that they covered a broad area of the whole economy. Because of the special requirements of each of the censuses, there were no common definitions of data, there was no common system of reporting units, and, as a standard

industrial classification was not used for these censuses, industry boundaries were not defined in ways which would avoid overlapping or gaps occurring between the industrial sectors covered. For these reasons, direct aggregation and comparison of statistics from different censuses were not possible.

The integration of these economic censuses meant that for the first time they were being collected on the basis of a common framework of reporting units and data concepts and in accordance with a standard industrial classification. As a result, the statistics for the industries covered by the censuses are now provided with no overlapping or gaps in coverage, and in such a way that aggregates for certain important economic data such as value added, employment, wages and salaries, fixed capital expenditure, and stocks can be obtained on a consistent basis for all sectors of the economy covered by the censuses. From the 1975-76 Census of Manufacturing Establishments onwards only a limited range of data—employment and wages and salaries—is collected from single establishment manufacturing enterprises with less than four persons employed. This procedure has significantly reduced the statistical reporting obligations of small businesses while at the same time only marginally affecting statistical aggregates other than the number of establishments. Data in respect of establishments from which the full range of data is collected under the new collection criteria (i.e., all manufacturing establishments owned by multi-establishment enterprises and single establishment manufacturing enterprises with four or more persons employed) is considered to provide reliable information for the evaluation of trends in the manufacturing sector of the economy. All tables in this and subsequent *Victorian Year Books* will show details collected from all manufacturing establishments owned by multi-establishment enterprises and single establishment manufacturing enterprises employing four or more persons, while for 1974-75 some tables also show data collected from single establishment manufacturing enterprises employing less than four persons.

For a more detailed description of the integrated economic censuses, reference should be made to pages 368-89 of the *Victorian Year Book* 1971.

Summary of factory statistics

Factory statistics compiled for 1967-68 were the last of the old series, and definitions used in the 1967-68 and previous factory censuses were published in the *Victorian Year Book* 1971, pages 394-7. The first publication of statistics from the 1968-69 economic censuses, *Manufacturing establishments and electricity and gas establishments: preliminary statement*, was issued in January 1971 and contained information in respect of twelve industry sub-divisions permitting comparisons to be made between States, but did not permit comparisons to be made between 1968-69 and previous years because of the changes in the definition of the establishment, bases of classification, and forms.

In respect of 1975-76, the four metal products sub-divisions, namely, Basic metal products (sub-division 29), Fabricated metal products (sub-division 31), Transport equipment (sub-division 32), and Other machinery and equipment (sub-division 33), with 171,473 persons or 41.1 per cent of the total employment in manufacturing establishments in 1975-76, employed considerably more persons than any other part of manufacturing industry. Next in order of employment was Food, beverages, and tobacco (sub-division 21-22), with 59,172 or 14.2 per cent, followed by Clothing and footwear (sub-division 24) and Paper, paper products, and printing (sub-division 26) with 49,441 and 32,527, respectively, or 11.6 per cent and 7.8 per cent of the total.

VICTORIA—DEVELOPMENT OF MANUFACTURING ACTIVITY

Year	Manufacturing establishments	Employment (a)	Wages and salaries paid (b)	Value of—			
				Materials and fuel used	Value added	Output	Land, buildings, plant, and machinery
	number	number	\$m	\$m	\$m	\$m	\$m
1901	3,249	66,529	n.a.	n.a.	n.a.	n.a.	25
1911	5,126	111,948	18	51	32	84	28
1920-21	6,532	140,743	43	135	77	212	71
1932-33	8,612	144,428	42	122	82	204	136
1946-47	10,949	265,757	156	368	263	631	244
1953-54	15,533	331,277	472	1,154	817	1,971	679
1960-61	17,173	388,050	776	1,914	1,418	3,332	1,642
1965-66	17,980	439,149	1,077	2,597	2,028	4,625	2,386
1967-68	18,030	449,945	1,244	2,957	2,395	5,351	2,685
1968-69	(c)11,563	431,651	1,342	(d)3,861	2,542	(e)6,336	(f)278
1969-70	(c)11,393	445,663	1,497	(d)4,307	2,799	(e)6,998	(f)300
1971-72	(c)11,408	450,026	1,800	(d)4,812	3,328	(e)8,055	(f)374
1972-73	(c)11,735	455,029	2,045	(d)5,392	3,738	(e)9,078	(f)438
1973-74	(c)12,070	469,838	2,524	(d)6,486	4,546	(e)10,669	(f)418
1974-75	(g) (c)8,924	432,851	2,961	(d)7,024	5,131	(e)11,730	(f)455
	(h) (c)2,834	5,727	17	(d)53	48	(e)100	(f)2
1975-76	(g) (c)8,874	417,131	3,287	(d)7,565	5,765	(e)13,222	(f)462

(a) Average over whole year, including working proprietors.

(b) Excludes drawings of working proprietors.

(c) Number of establishments operating at 30 June.

(d) Purchases, transfers in, and selected expenses.

(e) Turnover.

(f) Fixed capital expenditure.

(g) All manufacturing establishments owned by multi-establishment enterprises and single establishment manufacturing enterprises with four or more persons employed.

(h) Single establishment manufacturing enterprises with less than four persons employed.

NOTE. A line drawn across a column between the figures indicates a break in continuity in the series.
No census of manufacturing establishments was conducted for the year ending 30 June 1971.

A comparison between manufacturing activity in Victoria and the other States is shown in the following table:

AUSTRALIA—MANUFACTURING ESTABLISHMENTS (g), 1975-76

State or Territory	Establishments (c)	Employment (a)	Wages and salaries paid (b)	Purchases, transfers in, and selected expenses	Value added	Turnover	Fixed capital expenditure
	number	number	\$m	\$m	\$m	\$m	\$m
New South Wales	10,329	453,727	3,670	8,331	6,371	14,555	416
Victoria	8,874	417,131	3,287	7,565	5,765	13,222	462
Queensland	3,122	114,225	874	2,851	1,800	4,564	216
South Australia	2,287	116,105	872	2,012	1,486	3,461	141
Western Australia	2,053	65,929	509	1,543	944	2,431	158
Tasmania	667	27,753	211	577	456	1,030	44
Northern Territory	69	2,036	21	83	46	127	7
Australian Capital Territory	106	3,534	29	44	53	96	8
Total	27,507	1,200,440	9,472	23,007	16,921	39,485	1,452

For footnotes see previous table.

The total value added in 1975-76 was \$5,765m. Of this amount the Metal products sub-divisions contributed \$2,293m which represented 39.8 per cent of the total. The Food sub-division followed with \$973m or 16.9 per cent, and the

next in order were the Clothing and footwear with \$471m, 8.2 per cent, and the Paper, paper products, and printing sub-division with \$467m, 8.1 per cent.

The following table contains a summary of manufacturing establishments by sub-division of industry in Victoria during the year 1975-76 :

VICTORIA—MANUFACTURING ESTABLISHMENTS (g) BY SUB-DIVISION OF INDUSTRY, 1975-76

ASIC code	Industry sub-division	Establishments (c)	Employment (a)	Wages and salaries paid (b)	Purchases, transfers in, and selected expenses	Value added	Turnover	Fixed capital expenditure
		number	number	\$m	\$m	\$m	\$m	\$m
21-2	Food, beverages, and tobacco	992	59,172	472	1,808	973	2,767	51
23	Textiles	332	23,811	177	391	296	674	15
24	Clothing and footwear	1,219	49,441	309	495	471	942	8
25	Wood, wood products, and furniture	1,083	19,301	131	286	244	521	16
26	Paper, paper products, and printing	875	32,527	273	467	468	939	37
27	Chemical, petroleum, and coal products	280	20,239	193	514	377	904	61
28	Non-metallic mineral products	367	13,524	124	239	254	487	42
29	Basic metal products	176	12,709	120	378	225	577	59
31	Fabricated metal products	1,087	35,989	277	497	479	959	32
32	Transport equipment	427	60,391	494	1,093	814	1,909	62
33	Other machinery and equipment	1,299	62,384	495	938	775	1,696	45
34	Miscellaneous manufacturing	737	27,643	221	460	390	845	34
	Total	8,874	417,131	3,287	7,565	5,765	13,222	462

For footnotes see page 418.

The following table shows the number of manufacturing establishments operating in Victoria at 30 June 1972, 1973, 1974, 1975, and 1976, classified according to sub-division of industry:

VICTORIA—NUMBER OF MANUFACTURING ESTABLISHMENTS BY SUB-DIVISION OF INDUSTRY AT 30 JUNE

ASIC code	Industry sub-division	1972	1973	1974	1975		1976 (g)
					(g)	(h)	
21-2	Food, beverages, and tobacco	1,197	1,220	1,205	1,014	165	992
23	Textiles	384	398	420	322	58	332
24	Clothing and footwear	1,606	1,596	1,613	1,283	189	1,219
25	Wood, wood products, and furniture	1,473	1,488	1,569	1,044	516	1,083
26	Paper, paper products, and printing	1,156	1,205	1,238	880	324	
27	Chemical, petroleum, and coal products	357	363	373	275	73	280
28	Non-metallic mineral products	446	445	472	353	100	367
29	Basic metal products	203	211	219	181	30	176
31	Fabricated metal products	1,477	1,518	1,553	1,124	420	1,087
32	Transport equipment	451	471	507	402	122	427
33	Other machinery and equipment	1,651	1,717	1,740	1,299	442	1,299
34	Miscellaneous manufacturing	1,007	1,103	1,161	747	395	737
	Total	11,408	11,735	12,070	8,924	2,834	8,874

For footnotes see page 418.

The size classification of manufacturing establishments is based on the number of persons employed at 30 June 1975 (including working proprietors). The following table shows the number of manufacturing establishments classified according to the number of persons employed:

VICTORIA—MANUFACTURING
ESTABLISHMENTS (a) CLASSIFIED
ACCORDING TO NUMBER OF
PERSONS EMPLOYED (INCLUDING
WORKING PROPRIETORS)
AT 30 JUNE 1975

Manufacturing establishments employing persons numbering	Number of establish- ments	Number of persons employed (b)
Less than 10	3,722	23,371
10 to 19	2,034	28,269
20 to 49	1,590	48,866
50 to 99	687	47,511
100 to 199	469	62,427
200 to 499	314	87,471
500 to 999	73	46,985
1,000 and over	35	63,044
Total	8,924	407,944

- (a) All manufacturing establishments owned by multi-establishment enterprises and single establishment manufacturing enterprises with four or more persons employed. In addition, there were 2,834 single establishment enterprises employing 5,727 persons in the one to three persons employed group.
- (b) Excludes persons employed in separately located administrative offices and ancillary units serving more than one establishment, plus those serving only one establishment and which have ten or more employees and are located in a different Local Government Area to the establishment they serve. There were 13,707 persons employed in such separately located administrative offices and ancillary units at 30 June 1975.

The relative importance of large and small manufacturing establishments is illustrated in the preceding table. At 30 June 1975, 3,722 such establishments employing less than ten employees had a total employment of 23,371 persons. 41.7 per cent of manufacturing establishments—those employing less than ten persons—employed 5.7 per cent of the persons engaged. The most numerous of the establishments with less than ten persons were printing, stationery and book-binding, furniture (excluding sheet metal), joinery and wooden structured fittings, and industrial machinery and equipment, not elsewhere classified.

A general indication of the geographical distribution of manufacturing establishments in Victoria at 30 June 1976 is shown in the following table where they are classified according to statistical divisions :

VICTORIA—MANUFACTURING ESTABLISHMENTS (g)
IN STATISTICAL DIVISIONS, 1975-76

Statistical division	Establish- ments (c)	Employ- ment (a)	Wages and salaries paid (b)	Purchases, transfers in, and selected expenses	Value added	Turnover	Fixed capital expendi- ture
	number	number	\$m	\$m	\$m	\$m	\$m
Melbourne	7,322	350,262	2,787	6,222	4,851	10,956	356
Barwon	270	20,829	170	394	280	680	48
South Western	115	5,059	35	120	62	185	3
Central Highlands	198	8,978	63	121	108	231	9
Wimmera	72	1,366	9	16	15	30	1
Northern Mallee	84	973	6	23	13	36	1
Loddon-Campaspe	186	9,179	61	165	103	266	5
Goulburn	183	5,975	46	157	97	257	4
North Eastern	115	5,062	38	123	92	208	6
East Gippsland	105	2,224	15	51	33	84	4
Central Gippsland	173	5,928	47	143	95	243	24
East Central	51	1,296	9	30	17	45	1
Total	8,874	417,131	3,287	7,565	5,765	13,222	462

For footnotes see page 418.

Manufacturing establishments in the Melbourne Statistical Division constituted 82.5 per cent of the total number in Victoria at 30 June 1976, 84.0 per cent of the persons employed, and 84.2 per cent of the value added.

The number of manufacturing establishments and persons employed therein, classified according to statistical division, is shown in the tables on pages 422-3.

It should be noted that Geelong is located in the Barwon Statistical Division, Bendigo, Castlemaine, and Maryborough in the Loddon-Campaspe Statistical Division, Ballarat in the Central Highlands Statistical Division, Warrnambool in the South Western Statistical Division, Shepparton in the Goulburn Statistical Division, Wangaratta in the North Eastern Statistical Division, and Morwell and Yallourn in the Central Gippsland Statistical Division.

Employment, wages, and salaries

Employment

From 1968-69 all persons employed in a manufacturing establishment and separately located administrative offices and ancillary units serving the establishment (including proprietors working in their own businesses) are included as persons employed. The grouping of occupations comprises (1) working proprietors; (2) administrative, office, sales, and distribution employees; and (3) production and all other employees.

The figures showing employment in manufacturing establishments represent either the average number of persons employed, including working proprietors, over a full year, or the number of persons employed at June each year.

VICTORIA—PERSONS EMPLOYED IN MANUFACTURING ESTABLISHMENTS, 1971-72 TO 1975-76

ASIC code	Industry sub-division	1971-72	1972-73	1973-74	1974-75		1975-76 (g)
					(g)	(h)	
21-2	Food, beverages, and tobacco	62,805	63,847	63,668	60,848	362	59,172
23	Textiles	28,587	28,410	29,337	22,933	127	23,811
24	Clothing and footwear	61,772	60,896	60,096	49,195	403	49,441
25	Wood, wood products, and furniture	20,315	20,340	20,921	19,231	999	19,301
26	Paper, paper products, and printing	34,866	34,476	35,470	34,187	670	32,527
27	Chemical, petroleum, and coal products	22,638	22,566	23,175	21,749	151	20,239
28	Non-metallic mineral products	13,799	14,595	15,659	14,027	202	13,524
29	Basic metal products	11,680	12,829	13,181	12,983	71	12,709
31	Fabricated metal products	38,233	38,205	39,061	37,796	860	35,989
32	Transport equipment	59,579	60,909	64,982	61,663	239	60,391
33	Other machinery and equipment	65,856	66,601	71,297	68,851	876	62,384
34	Miscellaneous manufacturing	29,896	31,355	32,991	29,388	767	27,643
Total		450,026	455,029	469,838	432,851	5,727	417,131

For footnotes see page 418.

The dominance of the metal fabricating sub-divisions (29-33) (including transport equipment, machinery, and other equipment), Food, beverages, and tobacco sub-division (21-2), and Clothing and footwear sub-division (24) should be noted. Female workers in manufacturing establishments at 30 June 1976 were 30.0 per cent of the total. Females exceeded males in the Clothing and footwear sub-division (24) where they accounted for 75.9 per cent of the sub-division total. Of the total females employed 29.6 per cent were in sub-division 24; 12.4 per cent were in sub-division 33; and 12.6 per cent were in sub-division 21-2.

VICTORIA—NUMBER OF MANUFACTURING ESTABLISHMENTS (g) AND PERSONS EMPLOYED (a) IN EACH STATISTICAL DIVISION, CLASSIFIED ACCORDING TO STATISTICAL DIVISION AND INDUSTRY SUB-DIVISION, 1975-76

ASIC code	Industry sub-division	Statistical division										Total		
		Mel- bourne	Barwon Western	South Western	Central High- lands	Wimmera	North- ern Mallee	Loddon-Goul- burn Campaspe	North Eastern	East Gipps- land	Central Gipps- land			
		NUMBER OF MANUFACTURING ESTABLISHMENTS (g)												
21-2	Food, beverages, and tobacco	579	45	37	36	28	42	51	57	35	20	50	12	992
23	Textiles	284	18	1	7	2	..	3	6	3	1	5	2	332
24	Clothing and footwear	1,132	12	7	13	2	1	16	12	3	1	17	3	1,219
25	Wood, wood products, and furniture	748	47	19	40	11	6	24	39	27	58	42	22	1,083
26	Paper, paper products, and printing	733	22	18	17	8	9	15	17	10	7	14	5	875
27	Chemical, petroleum, and coal products	259	9	3	2	..	..	2	1	1	..	3	..	280
28	Non-metallic mineral products	214	21	14	18	7	12	27	17	14	7	14	2	367
29	Basic metal products	154	7	..	8	..	..	5	..	1	..	..	1	176
31	Fabricated metal products	970	29	5	18	5	6	19	10	6	4	14	1	1,087
32	Transport equipment	369	13	2	17	..	2	9	6	4	2	3	..	427
33	Other machinery and equipment	1,173	36	9	16	7	6	14	13	11	4	8	2	1,299
34	Miscellaneous manufacturing	707	11	..	6	2	..	1	5	..	1	3	1	737
Total		7,322	270	115	198	72	84	186	183	115	105	173	51	8,874

For footnotes see page 418.

VICTORIA—NUMBER OF MANUFACTURING ESTABLISHMENTS (e) AND PERSONS EMPLOYED (a) IN EACH STATISTICAL DIVISION, CLASSIFIED
ACCORDING TO STATISTICAL DIVISION AND INDUSTRY SUB-DIVISION, 1975-76—continued

ASIC code	Industry sub-division	Statistical division												Total
		Mel- bourne	Barwon	South Western	Central High- lands	Wimmera	North- ern Mallee	Loddon- Campaspe	Goul- burn	North Eastern	East Gipps- land	Central Gipps- land		
		NUMBER OF PERSONS EMPLOYED (a)												
21-2	Food, beverages, and tobacco	41,990	2,102	2,639	1,171	554	547	2,289	3,688	1,654	583	1,513	442	59,172
23	Textiles	18,690	1,796	266	471	194	..	650	281	1,076	9	351	27	23,811
24	Clothing and footwear	42,205	1,720	1,044	892	128	30	1,605	337	394	69	885	132	49,441
25	Wood, wood products and furniture	13,783	706	331	737	127	48	413	630	587	1,143	568	228	19,301
26	Paper, paper products, and printing	28,910	320	210	502	82	123	297	313	254	96	1,288	132	32,527
27	Chemical, petroleum, and coal products	18,691	1,159	192	34	..	..	33	4	30	..	96	..	20,239
28	Non-metallic mineral products	10,678	1,237	64	563	69	77	243	177	158	22	213	23	13,524
29	Basic metal products	9,021	2,481	..	910	..	..	144	..	148	..	..	5	12,709
31	Fabricated metal products	32,806	711	35	645	28	40	850	212	142	31	319	170	35,989
32	Transport equipment	51,509	5,419	17	2,121	..	8	936	71	142	28	19	121	60,391
33	Other machinery and equipment	54,992	2,966	261	806	141	100	1,705	200	477	99	623	14	62,384
34	Miscellaneous manufacturing	26,987	212	..	126	43	..	14	62	..	144	53	2	27,643
Total		350,262	20,829	5,059	8,978	1,366	973	9,179	5,975	5,062	2,224	5,928	1,296	417,131

For footnotes see page 418.

In the following table the number of persons employed in manufacturing establishments in Victoria is classified according to the nature of their employment at the end of June for 1972, 1973, 1974, 1975, and 1976 :

VICTORIA—MANUFACTURING ESTABLISHMENTS :
TYPE OF EMPLOYMENT

At 30 June—	Working proprietors	Administrative, office, sales, and distribution employees	Production and all other employees	Total
1972	6,734	103,784	341,904	452,422
1973	7,101	108,364	348,066	463,531
1974	7,459	109,870	359,479	476,808
1975 (g)	4,358	103,382	313,911	421,651
(h)	3,130	922	2,260	6,312
1976 (g)	4,287	102,638	311,746	418,671

For footnotes see page 418.

The following table shows the nature of employment in manufacturing establishments at 30 June 1976 classified according to industry sub-division :

VICTORIA—MANUFACTURING ESTABLISHMENTS (g) : TYPE OF
EMPLOYMENT BY INDUSTRY SUB-DIVISION AT 30 JUNE 1976

ASIC code	Industry sub-division	Working proprietors	Administrative, office, sales, and distribution employees	Production and all other employees	Total
21-2	Food, beverages, and tobacco	661	14,917	42,504	58,082
23	Textiles	88	4,523	18,659	23,270
24	Clothing and footwear	741	6,351	41,864	48,956
25	Wood, wood products, and furniture	773	3,591	15,188	19,552
26	Paper, paper products, and printing	388	10,038	22,428	32,854
27	Chemical, petroleum, and coal products	50	8,914	11,384	20,348
28	Non-metallic mineral products	114	3,316	10,429	13,859
29	Basic metal products	50	4,339	8,644	13,033
31	Fabricated metal products	506	9,124	26,862	36,492
32	Transport equipment	177	13,511	48,351	62,039
33	Other machinery and equipment	418	17,071	44,527	62,016
34	Miscellaneous manufacturing	321	6,943	20,906	28,170
Total		4,287	102,638	311,746	418,671

For footnotes see page 418.

Although "production and all other employees" constitute 74.5 per cent of the total number employed in manufacturing establishments, the percentage varies from 85.5 per cent in sub-division 24 to 55.9 per cent in sub-division 27. Sub-division 27 also has the highest percentage of "administrative, office, sales, and distribution employees", 43.8 per cent, compared with the Victorian average of 24.5 per cent.

Where small establishments predominate there is usually a higher proportion of working proprietors than on the average and a smaller than average managerial and clerical staff. This is particularly evident in sub-division 25 where working proprietors comprise 4.0 per cent of the total number employed.

In sub-division 29, Basic metal products, the proportion of females to total persons employed is at its lowest, 10.9 per cent. In sub-division 24, Clothing and footwear, females predominate and comprise 75.9 per cent of the total number of persons employed; within this sub-division in the Clothing group, 242, 82.4 per cent of the total employed are females.

**VICTORIA—MANUFACTURING ESTABLISHMENTS:
FEMALE EMPLOYMENT AT 30 JUNE**

ASIC code	Industry sub-division	Number					
		1972	1973	1974	1975		1976 (g)
					(g)	(h)	
21-2	Food, beverages, and tobacco—						
211	Meat products	3,675	3,279	3,315	3,101	16	3,093
213	Fruit and vegetable products	1,814	2,193	2,132	1,587	1	1,532
216	Bread, cakes, and biscuits	3,373	3,758	3,979	3,428	64	3,274
217-8	Sugar and other food products	3,352	3,314	4,144	3,482	10	3,424
	Other	4,358	4,755	5,127	4,922	34	4,503
	Total	16,572	17,299	18,697	16,520	125	15,826
23	Textiles—						
231-2	Textiles, yarns, and woven fabrics	9,008	8,977	8,586	6,721	20	6,936
	Other	3,088	3,151	3,384	3,048	34	2,997
	Total	12,096	12,128	11,970	9,769	54	9,933
24	Clothing and footwear—						
241	Knitting mills	10,028	9,987	10,098	8,184	37	8,521
242	Clothing	30,207	29,699	28,748	23,220	175	24,035
243	Footwear	6,902	6,745	5,866	4,944	19	4,600
	Total	47,137	46,431	44,712	36,348	231	37,156
25	Wood, wood products, and furniture	2,833	2,994	3,337	3,015	216	3,049
26	Paper, paper products, and printing	9,484	9,580	10,004	8,899	254	8,714
27	Chemical, petroleum, and coal products	5,892	5,951	6,256	5,617	49	5,188
28	Non-metallic mineral products	1,821	2,026	2,273	1,812	43	1,800
29	Basic metal products	1,257	1,466	1,585	1,400	16	1,417
31	Fabricated metal products	7,362	8,168	8,812	7,353	149	7,639
32	Transport equipment	8,583	9,527	11,788	8,852	45	10,124
33	Other machinery and equipment—						
332	Appliances and electrical equipment	10,665	12,364	13,805	10,894	69	10,061
333	Industrial machinery and equipment	3,725	4,129	4,514	3,868	112	3,620
	Other	1,761	1,781	1,884	1,857	16	1,893
	Total	16,151	18,274	20,203	16,619	197	15,574
34	Miscellaneous manufacturing	10,390	11,250	12,139	9,485	250	9,103
	Total	139,578	145,094	151,776	125,689	1,629	125,523

For footnotes see page 418.

The numbers of males and females employed in manufacturing establishments, and the proportions of the average male and female population working in these establishments in 1975-76 and earlier years are shown in the following table.

**VICTORIA—MANUFACTURING ESTABLISHMENTS:
EMPLOYMENT (a) OF MALES AND FEMALES, 1901-1976**

Year	Males		Females		Total	
	Number	Average per 10,000 of male population	Number	Average per 10,000 of female population	Number	Average per 10,000 of total population
1901	47,059	778	19,470	325	66,529	553
1911	73,573	1,118	38,375	579	111,948	847
1920-21	96,379	1,283	44,364	574	140,743	923
1932-33	91,899	1,020	52,529	575	144,428	796
1946-47	188,758	1,876	76,999	745	265,757	1,303
1953-54	240,698	1,979	90,579	751	331,277	1,367
1960-61	280,207	1,925	107,843	750	388,050	1,341
1965-66	310,303	1,937	128,846	809	439,149	1,375
1967-68	316,108	1,912	133,837	812	449,945	1,362
1968-69	297,411	1,771	134,240	800	431,651	1,286
1969-70	306,917	1,794	138,746	812	445,663	1,303
1971-72	310,750	r1,751	139,276	r785	450,026	r1,268
1972-73	314,259	r1,744	140,770	r782	455,029	r1,263
1973-74	320,921	r1,758	148,917	r816	469,838	r1,287
1974-75 { (g)	302,234	r1,634	130,617	r706	432,851	r1,170
(h)	4,275	r23	1,452	8	5,727	r15
1975-76 (g)	291,757	1,565	125,374	671	417,131	1,118

For footnotes see page 418.

NOTE. Figures for rates have been adjusted following a revision of population estimates for the period 1971 to 1975 after the 1976 Census of Population and Housing.

Wages and salaries

The next table gives details of wages paid in the various classes of industry in Victoria in 1975-76. Amounts paid to "administrative, office, sales, and distribution employees" are shown separately from those paid to "production and all other workers". It should be noted that in all tables of salaries and wages paid the amounts drawn by working proprietors are excluded.

**VICTORIA—MANUFACTURING ESTABLISHMENTS (g) :
WAGES AND SALARIES PAID, 1975-76
(\$m)**

ASIC code	Industry sub-division	Paid to—		
		Administrative, office, sales, and distribution employees	Production and all other workers	All employees
21-2	Food, beverages, and tobacco	142	330	472
23	Textiles	42	135	177
24	Clothing and footwear	55	254	309
25	Wood, wood products, and furniture	30	102	132
26	Paper, paper products, and printing	89	184	273
27	Chemical, petroleum, and coal products	97	96	193
28	Non-metallic mineral products	34	90	124
29	Basic metal products	46	74	120
31	Fabricated metal products	83	194	277
32	Transport equipment	140	354	494
33	Other machinery and equipment	161	334	495
34	Miscellaneous manufacturing	66	155	221
Total		986	2,301	3,287

For footnotes see page 418.

Of the total amount of wages and salaries paid in Victoria in 1975-76—\$3,287m—the metal fabricating sub-divisions (29-33) (including transport equipment, machinery, and other equipment), were responsible for \$1,386m or 42.2 per cent; Food, beverages, and tobacco \$472m or 14.4 per cent; Clothing and footwear, \$309m or 9.4 per cent; and Paper, paper products, and printing, \$273m or 9.4 per cent.

Turnover

The following table shows the value of turnover of manufacturing establishments. The figures include sales of goods whether produced by an establishment or not, transfers out of goods to other establishments of the same enterprise, bounties and subsidies on production, plus all other operating revenue from outside the enterprise, such as commission, repair and service revenue, and the value of capital work done on own account. Rents, leasing revenue, interest, royalties, and receipts from the sale of fixed tangible assets are excluded.

VICTORIA—MANUFACTURING ESTABLISHMENTS: TURNOVER BY INDUSTRY SUB-DIVISION (\$m)

ASIC code	Industry sub-division	1971-72	1972-73	1973-74	1974-75		1975-76 (g)
					(g)	(h)	
21-2	Food, beverages, and tobacco	1,869	2,168	2,391	2,548	8	2,767
23	Textiles	432	505	621	534	2	674
24	Clothing and footwear	637	681	800	799	7	942
25	Wood, wood products, and furniture	273	318	393	438	14	521
26	Paper, paper products, and printing	548	617	725	833	11	939
27	Chemical, petroleum, and coal products	564	617	751	803	3	904
28	Non-metallic mineral products	256	307	369	403	6	487
29	Basic metal products	280	340	467	548	2	577
31	Fabricated metal products	572	620	758	845	15	959
32	Transport equipment	1,151	1,227	1,387	1,648	5	1,909
33	Other machinery and equipment	981	1,109	1,315	1,566	16	1,696
34	Miscellaneous manufacturing	492	569	693	766	12	845
Total		8,055	9,078	10,669	11,730	100	13,222

For footnotes see page 418.

Purchases, transfers in, and selected items of expense

In the following table the figures include purchases of materials, fuel, power, containers, etc., plus transfers in of goods from other establishments of the enterprise, plus charges for commission and sub-contract work, repair and maintenance expenses, outward freight and cartage, motor vehicle running expenses, and sales commission payments:

VICTORIA—MANUFACTURING ESTABLISHMENTS: PURCHASES AND SELECTED ITEMS OF EXPENSE BY INDUSTRY SUB-DIVISION (\$m)

ASIC code	Industry sub-division	1971-72	1972-73	1973-74	1974-75		1975-76 (g)
					(g)	(h)	
21-2	Food, beverages, and tobacco	1,302	1,510	1,695	1,763	5	1,808
23	Textiles	266	311	402	300	1	391
24	Clothing and footwear	350	371	451	405	3	495
25	Wood, wood products, and furniture	155	175	221	238	7	286
26	Paper, paper products, and printing	280	308	371	438	5	467
27	Chemical, petroleum, and coal products	321	351	422	486	2	514
28	Non-metallic mineral products	133	152	188	197	3	239
29	Basic metal products	184	235	332	389	1	378
31	Fabricated metal products	311	324	423	448	7	497
32	Transport equipment	702	746	848	1,038	2	1,093
33	Other machinery and equipment	525	591	737	891	8	938
34	Miscellaneous manufacturing	282	316	395	430	7	460
Total		4,812	5,392	6,486	7,024	53	7,565

For footnotes see page 418.

Stocks

The figures in the following tables include all stocks of materials, fuels, etc., finished goods and work-in-progress whether located at the establishment or elsewhere. It should be noted that due to reporting differences on individual returns and variations in the number of establishments from year to year, the closing stocks in one year may differ from the opening stocks in the following year.

VICTORIA—MANUFACTURING ESTABLISHMENTS:

STOCKS BY INDUSTRY SUB-DIVISION

(\$m)

ASIC code	Industry sub-division	1971-72	1972-73	1973-74	1974-75		1975-76(g)
					(g)	(h)	
OPENING							
21-2	Food, beverages, and tobacco	237	252	266	295	1	382
23	Textiles	89	94	105	149	..	126
24	Clothing and footwear	99	105	113	144	1	130
25	Wood, wood products, and furniture	37	41	41	54	1	64
26	Paper, paper products, and printing	79	79	81	104	1	138
27	Chemical, petroleum, and coal products	106	113	119	131	..	189
28	Non-metallic mineral products	32	36	35	41	..	52
29	Basic metal products	51	59	64	79	..	105
31	Fabricated metal products	106	113	118	149	1	180
32	Transport equipment	200	229	220	282	..	379
33	Other machinery and equipment	287	291	295	370	1	475
34	Miscellaneous manufacturing	80	89	95	121	1	144
Total		1,403	1,502	1,553	1,919	8	2,364
CLOSING							
21-2	Food, beverages, and tobacco	253	271	296	376	..	396
23	Textiles	95	100	149	124	..	139
24	Clothing and footwear	102	115	141	129	1	154
25	Wood, wood products, and furniture	40	42	55	62	1	72
26	Paper, paper products, and printing	81	78	100	138	1	134
27	Chemical, petroleum, and coal products	107	119	135	181	..	176
28	Non-metallic mineral products	36	34	44	52	..	57
29	Basic metal products	55	68	81	104	..	130
31	Fabricated metal products	116	120	148	173	1	197
32	Transport equipment	232	217	277	380	..	377
33	Other machinery and equipment	286	294	368	475	1	491
34	Miscellaneous manufacturing	86	94	122	150	1	149
Total		1,489	1,553	1,915	2,344	8	2,473

For footnotes see page 418.

Value added

Statistics on value added in the following table have been calculated by adding to turnover the increase (or deducting the decrease) in value of stocks and deducting the value of purchases and selected items of expense:

VICTORIA—MANUFACTURING ESTABLISHMENTS:

VALUE ADDED BY INDUSTRY SUB-DIVISION

(\$m)

ASIC code	Industry sub-division	1971-72	1972-73	1973-74	1974-75		1975-76(g)
					(g)	(h)	
21-2	Food, beverages, and tobacco	583	677	727	866	3	973
23	Textiles	173	200	263	209	1	296
24	Clothing and footwear	289	320	377	379	3	471
25	Wood, wood products, and furniture	121	144	186	208	7	244
26	Paper, paper products, and printing	269	309	372	428	6	468
27	Chemical, petroleum, and coal products	244	271	345	368	1	377
28	Non-metallic mineral products	127	153	189	216	2	254
29	Basic metal products	100	113	155	183	1	225
31	Fabricated metal products	271	303	361	421	8	479
32	Transport equipment	478	469	596	709	2	814
33	Other machinery and equipment	456	521	651	780	8	775
34	Miscellaneous manufacturing	216	258	325	365	6	390
Total		3,328	3,738	4,546	5,131	48	5,765

For footnotes see page 418.

Relation of costs to turnover and value added

Certain costs of production, the value of turnover, movement in stocks, and the balance available for profit, interest, rent, taxation, depreciation, etc., in each sub-division of manufacturing industry during 1975-76 are given in the following tables :

VICTORIA—MANUFACTURING ESTABLISHMENTS (g) :
COSTS AND TURNOVER, 1975-76
(\$m)

ASIC code	Industry sub-division	Cost of—		Movement in stocks	Balance between turnover, stocks, and costs (a)	Turnover
		Purchases and selected items of expense	Wages and salaries			
21-2	Food, beverages, and tobacco	1,808	472	+ 14	501	2,767
23	Textiles	391	177	+ 13	119	674
24	Clothing and footwear	495	309	+ 24	162	942
25	Wood, wood products, and furniture	286	131	+ 8	112	521
26	Paper, paper products, and printing	467	273	— 4	195	939
27	Chemical, petroleum, and coal products	514	193	— 13	184	904
28	Non-metallic mineral products	239	124	+ 5	129	487
29	Basic metal products	378	120	+ 25	104	577
31	Fabricated metal products	497	277	+ 17	202	959
32	Transport equipment	1,093	494	— 2	320	1,909
33	Other machinery and equipment	938	495	+ 16	279	1,696
34	Miscellaneous manufacturing	460	221	+ 5	169	845
Total		7,565	3,287	+ 108	2,476	13,222

(a) Balance available to provide for all other costs and overhead expenses such as rent, interest, insurance, pay-roll tax, income tax, depreciation, etc., as well as drawings by working proprietors and profit.

For footnote (g) see page 418.

VICTORIA—MANUFACTURING ESTABLISHMENTS (g) : PERCENTAGE OF
SPECIFIED COSTS TO TURNOVER, 1975-76
(per cent)

ASIC code	Industry sub-division	Cost of—		Movement in stocks	Balance between turnover, stocks, and costs (a)	Turnover
		Purchases and selected items of expense	Wages and salaries			
21-2	Food, beverages, and tobacco	65.34	17.06	+ 0.51	18.11	100.00
23	Textiles	58.01	26.26	+ 1.93	17.66	100.00
24	Clothing and footwear	52.55	32.80	+ 2.55	17.20	100.00
25	Wood, wood products, and furniture	54.89	25.14	+ 1.54	21.50	100.00
26	Paper, paper products, and printing	49.73	29.07	— 0.43	20.77	100.00
27	Chemical, petroleum, and coal products	56.86	21.35	— 1.44	20.35	100.00
28	Non-metallic mineral products	49.08	25.46	+ 1.03	26.49	100.00
29	Basic metal products	65.51	20.80	+ 4.33	18.02	100.00
31	Fabricated metal products	51.82	28.88	+ 1.77	21.06	100.00
32	Transport equipment	57.26	25.88	— 0.10	16.76	100.00
33	Other machinery and equipment	55.31	29.19	+ 0.94	16.45	100.00
34	Miscellaneous manufacturing	54.44	26.15	+ 0.59	20.00	100.00
Total		57.23	24.86	+ 0.82	18.73	100.00

(a) Balance available to provide for all other costs and overhead expenses such as rent, interest, insurance, pay-roll tax, income tax, depreciation, etc., as well as drawings by working proprietors and profit.

For footnote (g) see page 418.

There are considerable variations in the proportions which purchases and selected items of expenditure, and wages and salaries, bear to the turnover in the different sub-divisions. These are, of course, due to the difference in the treatment required to convert materials to their final form. Thus in sub-division 24 the sum paid in wages represents 32.8 per cent and the purchases and selected items of expense 52.5 per cent of the values of the finished articles, while in sub-division 21.22 the expenditure on wages amounts to 17.1 per cent and that on purchases, etc., to 65.3 per cent of the value of turnover.

In the following table specified costs of production, the value of turnover of manufacturing establishments, and the balance available for profit and miscellaneous expenses are compared for each of the years 1971-72, 1972-73, 1973-74, 1974-75, and 1975-76:

VICTORIA—MANUFACTURING ESTABLISHMENTS: SPECIFIED COSTS OF PRODUCTION, ETC., AND TURNOVER
(\$m)

Year	Cost of—		Movement in stocks	Balance between turnover, stocks, and costs (a)	Turnover
	Purchases and selected items of expense	Wages and salaries			
1971-72	4,812	1,800	+ 86	1,529	8,055
1972-73	5,392	2,045	+ 51	1,692	9,078
1973-74	6,486	2,524	+362	2,021	10,669
1974-75 { ^(g) ^(h)	7,024 53	2,961 17	+425 ..	2,170 30	11,730 100
1975-76(g)	7,565	3,287	+108	2,476	13,222

(a) Balance available to provide for all other costs, such as rent, interest, insurance, pay-roll tax, income tax, depreciation, etc., as well as drawings by working proprietors and profit.

For footnotes (g) and (h) see page 418.

In the following table the components of cost are converted to their respective percentages of the value of turnover:

VICTORIA—MANUFACTURING ESTABLISHMENTS: PERCENTAGE OF SPECIFIED COSTS OF PRODUCTION, ETC., TO TURNOVER
(per cent)

Year	Cost of—		Movement in stocks	Balance between turnover, stocks, and costs (a)	Turnover
	Purchases and selected items of expense	Wages and salaries			
1971-72	59.7	22.4	+1.1	19.0	100.0
1972-73	59.4	22.5	+0.6	18.7	100.0
1973-74	60.8	23.7	+3.4	18.9	100.0
1974-75 { ^(g) ^(h)	60.0 53.0	25.2 17.0	+3.7 ..	18.5 30.0	100.0 100.0
1975-76(g)	57.2	24.7	+0.8	18.7	100.0

(a) Balance available to provide for all other costs, such as rent, interest, insurance, pay-roll tax, income tax, depreciation, etc., as well as drawings by working proprietors and profit.

For footnotes (g) and (h) see page 418.

Fixed capital expenditure and rent and leasing

Fixed capital expenditure is the outlay on new and second-hand fixed tangible assets less disposals. Rent and leasing expense is the amount paid for renting and leasing of premises, vehicles, and equipment.

VICTORIA—MANUFACTURING ESTABLISHMENTS (g) : FIXED CAPITAL EXPENDITURE AND RENT AND LEASING EXPENSES, 1975-76
(\\$'000)

ASIC code	Industry sub-division	Fixed capital expenditure			Rent and leasing expenses
		Land, buildings, and other structures	Vehicles, plant, machinery, and equipment	Total	
21-2	Food, beverages, and tobacco	12,967	37,727	50,694	20,162
23	Textiles	—424	14,947	14,522	6,551
24	Clothing and footwear	264	7,887	8,152	10,451
25	Wood, wood products, and furniture	3,381	12,692	16,072	8,259
26	Paper, paper products, and printing	2,960	34,133	37,093	11,417
27	Chemical, petroleum, and coal products	14,306	47,037	61,343	6,134
28	Non-metallic mineral products	8,876	33,474	42,350	2,600
29	Basic metal products	7,460	51,910	59,370	3,005
31	Fabricated metal products	4,140	27,643	31,782	11,464
32	Transport equipment	7,967	53,935	61,902	10,157
33	Other machinery and equipment	5,589	39,514	45,102	17,669
34	Miscellaneous manufacturing	7,632	26,133	33,765	11,836
Total		75,117	387,031	462,149	119,706

For footnotes see page 418.

**VICTORIA—MANUFACTURING ESTABLISHMENTS:
FIXED CAPITAL EXPENDITURE**
(\\$'000)

ASIC code	Industry sub-division	1971-72	1972-73	1973-74	1974-75		1975-76(g)
					(g)	(h)	
21-2	Food, beverages, and tobacco	53,132	64,052	76,211	70,690	165	50,694
23	Textiles	14,268	12,248	29,981	19,088	19	14,522
24	Clothing and footwear	11,896	10,815	11,333	7,727	121	8,152
25	Wood, wood products, and furniture	4,328	12,333	15,431	11,860	313	16,072
26	Paper, paper products, and printing	41,770	38,163	33,284	49,453	243	37,093
27	Chemical, petroleum, and coal products	39,465	61,332	32,606	34,598	20	61,343
28	Non-metallic mineral products	10,072	17,564	42,488	30,030	56	42,350
29	Basic metal products	54,053	88,140	21,442	27,750	21	59,370
31	Fabricated metal products	26,034	21,159	20,642	36,387	267	31,782
32	Transport equipment	58,591	56,097	61,758	91,590	89	61,902
33	Other machinery and equipment	36,573	35,613	42,900	45,456	321	45,102
34	Miscellaneous manufacturing	23,653	20,838	30,024	30,163	474	33,765
Total		373,835	438,354	418,099	454,794	2,108	462,149

For footnotes see page 418.

Electricity and fuels used

VICTORIA—MANUFACTURING ESTABLISHMENTS: VALUE OF ELECTRICITY AND FUELS USED BY INDUSTRY SUB-DIVISION
(\\$'000)

ASIC code	Industry sub-division	1971-72	1972-73	1973-74	1974-75		1975-76(g)
					(g)	(h)	
21-2	Food, beverages, and tobacco	20,648	21,814	24,517	30,930	180	35,682
23	Textiles	7,098	7,694	8,544	8,740	32	10,226
24	Clothing and footwear	4,113	4,277	4,593	4,857	66	5,595
25	Wood, wood products, and furniture	2,769	2,927	3,508	3,868	120	4,618
26	Paper, paper products, and printing	10,010	10,819	11,827	13,237	104	14,393
27	Chemical, petroleum, and coal products	12,804	12,908	14,863	23,817	30	21,049
28	Non-metallic mineral products	12,489	13,284	15,117	17,066	74	18,232
29	Basic metal products	12,317	13,254	15,715	19,207	28	21,385
31	Fabricated metal products	6,763	7,083	7,842	9,328	200	10,220
32	Transport equipment	10,244	10,897	11,915	14,685	46	14,223
33	Other machinery and equipment	8,742	9,087	10,662	12,707	143	13,500
34	Miscellaneous manufacturing	7,929	8,623	9,584	10,978	132	12,269
Total		115,927	122,667	138,686	169,420	1,154	181,393

For footnotes see page 418.

**VICTORIA—MANUFACTURING ESTABLISHMENTS:
VALUE OF ELECTRICITY AND FUELS USED
(\$'000)**

Commodity	1971-72	1972-73	1973-74	1974-75		1975-76(g)
				(g)	(h)	
Electricity	71,173	76,026	85,853	97,813	931	107,344
Coal and coke—						
Black coal	646	471	67	33	..	53
Brown coal	1,647	1,207	1,610	1,318	..	1,568
Brown coal briquettes	3,354	3,500	3,289	3,522	10	3,626
Coke (including coke breeze)	2,011	2,316	2,685	2,904	9	2,573
Petroleum fuels (non-gaseous)—						
Light oils, etc.	1,926	2,156	2,518	3,031	74	3,391
Industrial diesel fuel	3,561	3,097	3,204	4,280	22	4,835
Furnace oil and other fuel oil	19,162	17,336	18,175	28,850	29	23,762
Reticulated gas	7,158	11,189	15,841	20,791	40	25,431
Other fuels	5,288	5,369	5,444	6,862	38	8,811
Total	115,927	122,667	138,686	169,404	1,154	181,393

For footnotes see page 418.

**VICTORIA—MANUFACTURING ESTABLISHMENTS:
QUANTITIES OF FUELS USED**

Commodity	Unit	1971-72	1972-73	1973-74	1974-75		1975-76(g)
					(g)	(h)	
Coal and coke—							
Black coal	tonne	56,416	36,364	4,068	1,488	8	1,700
Brown coal	"	591,609	458,882	576,498	428,822	19	386,547
Brown coal briquettes	"	428,942	449,614	410,401	409,127	673	345,222
Coke (including coke breeze)	"	52,133	60,266	59,158	53,907	225	38,376
Petroleum fuels (non-gaseous)—							
Light oils, etc.	'000 litres	38,582	42,421	43,639	32,276	683	29,652
Industrial diesel fuel	tonne	123,496	101,686	94,363	86,865	398	63,760
Furnace oil and other fuel oil	"	1,027,569	852,450	746,136	687,691	577	442,996

For footnotes see page 418.

Some principal factory products of Victoria and Australia

Annual quantity and value

The following table shows quantities of some of the principal articles manufactured in Victoria, and corresponding figures for Australia during 1975-76 and 1976-77. Owing to the limited number of producers, it is not permissible under statute to publish particulars regarding some articles of manufacture which would otherwise appear.

From February 1976, production statistics have no longer been collected from single establishment manufacturing enterprises employing less than four persons or from establishments predominantly engaged in non-manufacturing activities but which may carry on in a minor way some manufacturing activity. However, except for a few commodities, the effect of this modification on production levels and movements is marginal.

VICTORIA AND AUSTRALIA—PRINCIPAL ARTICLES MANUFACTURED (a)

Commodity Code No.	Article	Unit	Victoria		Australia	
			1975-76	1976-77	1975-76	1976-77
023.18,20	Bacon and ham—bone-in	'000 tonnes	3	3	16	16
19,21	bone-out	"	12	16	38	41
027.02-29	Meat—canned (excluding baby food)	"	27	32	45	52
72-77; 023.17						
051.30	Butter	"	108	89	148	118
051.36-47	Cheese	"	54	55	113	104
051.61	Ice cream	mill litres	74	72	212	211
051.72-73	Milk—powdered; full cream	'000 tonnes	28	42	41	58
062.01,32	Flour, plain—wheaten (including sharps)	"	290	253	1,192	1,132
063.11, 21, 31	Malt	"	198	205	389	386
064.21	Biscuits	"	48	53	124	126
074.61, 65	Natural fruit juices	mill litres	41	32	139	109
076.08, 15, 22	Canned or bottled apricots, peaches and pears	"	66	71	103	102
076.60	Jam, etc.	"	23	21	31	27
094.02-47	Vegetables canned or bottled (including pickled)	"	28	33	120	124
	Confectionery—					
104.06-18	Chocolate or containing chocolate	"	26	25	55	56
104.21-29	Other	"	28	30	61	60
123.18	Sauce—tomato	mill litres	13	16	16	22
152.06	Pollard	'000 tonnes	58	54	251	237
152.01	Canned cat and dog food	"	142	158	151	170
171.03, 04, 07, 08	Aerated and carbonated waters, canned or bottled (b)	mill litres	243	223	912	965
242.07-11	Wool—scoured or carbonised	'000 tonnes	25	24	70	72
261.41	Briquettes—brown coal	"	946	1,035	946	1,035
372.22-50	Cloth piece goods woven—woollen or predominantly woollen	'000 sq m	5,206	3,565	9,754	10,341
372.52-66; 374.51-57	Blankets, bed (c)	'000	1,808	1,228	2,030	1,581
403.02, 18, 20, 52-96; 404.01-98	Plastics and synthetic resins	'000 tonnes	215	274	407	469
472.01, 03	Bricks—clay	mill	493	538	1,834	2,042
472.12, 475.30	Tiles, roofing	"	69	67	219	229
475.90	Ready mixed concrete	'000 cu m	2,852	2,870	10,324	10,305
503.13-32	Electric motors	'000	983	762	4,082	3,237
	Finished motor vehicles (d)—					
581.02-08, 10-16	Cars	'000	204	210	369	367
582.04-28	Other	'000	36	29	64	62
773.02-35	Shirts (men's and boys')	'000 doz	1,482	1,262	2,873	2,507
	Underwear—					
773.90, 94, 96, 97; 774.01-03, 06, 08, 11, 13, 15, 17, 36-39	Men's and boys'	'000 doz	1,054	1,010	2,121	2,382
774.44, 46, 48, 49, 61, 63, 68-73	Women's and girls'	'000 doz	2,507	2,551	3,647	3,930
775.01-19	Stockings—women's (e)	'000 doz pairs	5,119	4,808	6,316	5,984
775.51-82, 91-98; 776.01-42	Socks and stockings—men's, children's, and infants'	"	2,811	2,688	3,127	2,960
	Footwear—boots, shoes, and sandals (f)—					
793.05, 08, 21, 22, 31, 32, 41, 46, 51, 65, 66	Men's and youths'	'000 pairs	6,013	5,799	10,335	9,570
793.06, 09, 24, 33, 34, 42, 47, 52, 68	Women's and maids'	'000 pairs	8,341	7,925	13,424	11,252
793.04, 07, 10, 25, 35, 43, 48, 53, 69	Children's (including infants')	"	4,552	4,162	6,313	5,606
832.41	Footballs—Australian rules	'000	105	141	132	159
844.22-67	Mattresses—all types	'000	415	429	1,248	1,252

(a) By all manufacturing establishments owned by multi-establishment enterprises and single establishment manufacturing enterprises with four or more persons employed.

(b) Includes bulk aerated and carbonated waters.

(c) Double, three quarter, single cot, bassinet, pram, etc.; wool mixture, and other fibre. From 1 July 1975 includes tufted blankets.

(d) Excludes vehicles finished by specialist body building works outside the motor vehicle manufacturers organisation.

(e) Includes panty hose.

(f) Excluding wholly of rubber.

Monthly production statistics

The Australian Bureau of Statistics collects monthly production returns and makes available printed tables of Australian production statistics within a few weeks of the month to which they relate. A list of the subjects included in these production bulletins is given in the following table.

AUSTRALIA—PRODUCTION BULLETINS

No.	Subject	No.	Subject
1	Electricity, Gas, and Electrical Appliances	5	Building Materials and Fittings
2	Clothing and Footwear	6	Chemicals and By-Products
3	Food, Drink, and Tobacco	7	Motor Vehicles, Parts, and Accessories
4	Textiles, Bedding, and Floor Coverings	8	Miscellaneous Products

In addition, statistical publications for the meat and dairying industries and minerals and mineral products are issued each month. Australian totals for a greater range of commodities are published in these publications and production bulletins than are published in the *Monthly bulletin of production statistics*. Victorian figures are published in the Victorian monthly publication *Secondary production*.

TIMBER INDUSTRY IN VICTORIA

Main features*Beginnings*

The timber industry in Victoria had its beginning in the very earliest days of colonisation. The pioneers needed fuel, furniture, and housing. They brought with them the practice of woodworking crafts from Europe, and their knowledge of timbers available from other parts of the world. This set the stage for the beginning of the industry.

As far back as the 1830s, there are records of timber playing a prominent part in the early settlement. Homes were built from split and hewn framework, split palings for weatherboards and split slabs 1 foot (30.5 cm) or more wide and 2 inches (5 cm) thick and adzed smooth for floors. Bark taken from trees provided the roofs. Even the chimneys were built of wood and lined inside to the height of 4 or 5 feet (122 to 152 cm) with stone or clay. As a matter of urgency, many of the settlers built log cabins to live in while they cut and burnt scrub so that they could sow grass to feed stock as soon as possible.

In the 1860s, the more enterprising pioneer farmers saw an opportunity of selling the timber they were clearing from their land to the rapidly expanding timber markets in Melbourne and the goldfields.

Their problem was to get the sawn timber to the State's growing rail system. In winter, roads were impassable and road metal was impossibly expensive. The pioneers' ability to improvise led to the construction of timber tramways on closely packed sleepers, with wooden rails laid on top. Horse-drawn trolleys then carried the logs and sawn timber to the nearest railway station or jetty. During the winter, many tramways provided the only means of getting produce to the market and essential supplies to the farmers and the sawmills. As the timber industry developed, the tramway network grew. Steam locomotives and steel rails began to be used on some lines. Isolated sawmilling settlements in the depths of the forest were totally dependent on the tramways for their every need.

In parallel with the production of local timber within a 50 to 65 kilometre radius of Melbourne and from forested lands adjacent to the goldfields, the early beginnings of the timber importing and merchandising sector of the industry began.

As the need for construction materials grew rapidly, enterprising settlers began to import larger quantities of sawn timber. They used their knowledge of the timbers available from the northern hemisphere and a developing and regular shipping service. A number of present-day family timber companies were founded in these times.

The timber merchants also sold a wide range of produce, including hardware and pots and pans for domestic use. Some companies were both producers and merchants but most established themselves either as sawmillers or merchants/importers.

Sawmilling industry

The sawmilling industry is now very different from its beginnings when boards were either split with a broad axe or pit sawn, with one man above and one man below the log, sawing by hand. A modern sawmill complex is highly automated and capital intensive. The cost of building a sawmill in 1977, with an input of approximately 18,000 cubic metres of log volume, is about half a million dollars (including bulldozers, logging trucks, forklift trucks and other handling equipment).

However, in view of an optimistic assessment of the future, many sawmilling companies are modernising their plants and spending substantial capital sums in doing so. Modern articulated motor vehicles travelling on well made roads have replaced tramlines and horses. Many roads are built by the Victorian Government and municipalities, but hundreds of kilometres of roads are made by the industry for the purposes of log and timber extraction. These are then left for the use of the Victorian public for access to the forests of the State.

The Victorian Sawmillers Association estimates that the forest products industry, that is, sawn timber, pulp, paper, reconstituted boards, and other products of the forest, have an annual turnover of about \$250m, with a capital investment at current replacement cost of about \$450m.

The forest products industry employs directly some 18,000 persons and provides indirect employment, that is, those dependent on the forest products industry, for about 12,000 persons. Sawmilling alone is estimated to have an annual sales volume of about \$110m, with a capital replacement in 1976 approaching \$120m.

The Victorian Government receives royalties of about \$13m and rail freights of \$3m; power consumed is about \$1m. However, the benefits to the State of the forest products industry are not only measurable in terms of money, but also include the maintenance, by proper harvesting methods and utilisation procedures, of adequate regeneration and a healthy and increasing forest resource. This resource has great value to the Victorian community in terms of recreation, water catchment, homes for flora and fauna, and reservations of areas of scientific interest.

Products

The products of the forest in the 1970s are very different to those described earlier. They comprise sawn unseasoned timber for house framing, sawn with due regard to the strength and dimensions required by the market. Appropriate species are then processed by modern seasoning techniques; this material is often further processed with high speed machines to dressed boards and profiled dimensions for lining, flooring, weatherboards, and other uses.

Pine plantations established in the 1920s and 1930s have recently been harvested and this has prompted development of multi-million dollar complexes in areas like Myrtleford and Morwell for the use of softwood.

This material provides sawn timber, dressed and seasoned products, and is treated with preservatives to give the timber a long working life for specific uses.

Waste products

The sawmilling industry in the past has tended to be wasteful as only some 50 per cent of the log that goes over the saws reaches the market as a saleable product. Now, utilisation procedures are better and the industry is seeking to utilise the bark and the sawdust so that an increasing volume of the wood fibre resource is being channelled into useful markets.

The woodchip industry in Victoria absorbs about 15 per cent of the log volume, from the conversion of sawmill waste into woodchip for pulp and paper manufacture. This material was previously burnt. At the end of 1976 the first commercial use of sawdust in brick manufacture was developed and this is now being assessed by the sawmilling industry.

Present state of industry

The number of sawmills operating within the State at 31 March 1976 was 298, 221 receiving a quota of logs from Crown lands and 77 receiving logs from private property. The merchandising side of the Victorian industry is represented by many yards in the metropolitan area and in most major country towns and cities.

The Timber Merchants Association has estimated that there are some 200 significant outlets in the State employing capital of about \$100m and providing employment for over 5,000 people. The size and range of products handled varies from small outlets to large resawing, moulding, and further processing plants.

Timber merchants now mainly confine themselves to reselling sawn or dressed and moulded timber and timber products. Most of them handle timbers from the major producing areas of the world, in addition to Victorian products, radiata pine from South Australia, and hardwood from Tasmania. The principal timbers imported from overseas are oregon from the United States of America, Canada, and New Zealand; meranti, merbau, and other specialist timber from South East Asia; and a limited volume of timber from the Scandinavian countries. This latter source of supply was one of the mainstays of the early days of trading, supplying the need for processed weatherboards, flooring, and lining, which could not be satisfied from local mills because of their lack of technical knowledge in drying eucalypts. There were no softwoods, as radiata pine plantations were only just then being considered.

In addition to sawn timber, nearly all merchants carry extensive stocks of particleboard, hardboard, plywood, fibro-cement, and other building products such as cement, aluminium, paint, hardware (both domestic and builders), and plumbing supplies.

The joinery trade which engages in the manufacture of windows, window frames, and door frames as well as in kitchen cupboards (these used to be manufactured in joinery shops associated with large timber merchants), is now more in the hands of specialist joinery companies who have established modern factories and implemented modern production methods.

Practically all timber businesses, whether producers or merchants, are privately owned and operated enterprises. However, there is a trend towards amalgamation in the sawmilling industry and integration in the merchandising industry. Larger groups are tending to build up chains of retail outlets and sawmillers are combining their log resource allocations to increase their throughput and to modernise their sawmilling operation.

Conclusion

The timber industry in 1976 consisted of a large number of independently owned and operated timber industry enterprises distributed in the metropolitan and country areas. The patterns that were established in the early days of

the colony differentiating between timber production and timber merchandising out of retail/wholesale yards, are still evident.

The present availability of log supplies must limit the expansion of hardwood sawmilling activities and the market to some extent controls the number of retail outlets which can be profitably operated within the State. However, production of softwood from Victorian forests—mostly *pinus radiata*—is increasing and generally replacing the declining availability of hardwoods.

History of manufacturing, 1961; Motor vehicle industry, 1962; Chemical industry, 1963; Petrochemical industry, 1964; Glass industry, 1965; Agricultural machinery industry, 1966; Aluminium industry, 1967; Automation and technical development in industry, 1967; Textile industry, 1968; Canning of foodstuffs, 1969; Butter, cheese, and processed milk products, 1970; Heavy engineering, 1971; Light engineering, 1972; Secondary industry and the environment, 1974; Concrete pipe industry, 1975; Paper industry, 1976; Wine industry in Victoria, 1977

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