

MANUFACTURING

NATURAL RESOURCES AND LOCATION

Natural resources

Victoria's temperate climate and its rainfall, soil, and water resources have been used to develop the production of wool, grains, fruit, dairy products, and timber. On these the State's early secondary industries were based. There are extensive fuel resources of brown coal in the La Trobe valley, oil and natural gas fields in Bass Strait, and clay, limestone, stone and gravel, gold, gypsum, salt, and forests.

The La Trobe valley brown coal deposits are the most important mineral deposits in Victoria. The open cuts of the Yallourn-Morwell area produce about 22 million tonnes of brown coal annually for briquette making and electricity generation.

Clay deposits for brick, tile, and pottery industries are worked east of Melbourne and near Ballarat, Bendigo, Colac, Shepparton, and Wangaratta, and at other locations throughout the State. Sand, for the concrete and glass industries and for use in foundries, is obtained in the Port Phillip and west Gippsland areas. Stone and gravel quarries are worked in many parts of the State. The main market for quarry products is the metropolitan area and as these products are bulky and expensive to transport, most quarrying is located within an 80 kilometre radius of the capital. Local limestone deposits attracted the establishment of cement works at Geelong and Traralgon, while the Lilydale limestones are used in the manufacture of agricultural lime.

Other mineral resources of Victoria include gold mined in the Castlemaine, Gaffneys Creek, and Harrietville areas; salt produced from deposits of the Mallee and Wimmera lakes and from solar evaporating pans on the western shores of Port Phillip; and gypsum in the north-western Mallee. For more detailed information on mining activity in Victoria see pages 360-8.

The forests of Gippsland and the Central Highlands form the basis of important forestry activities, especially in Gippsland where paper is produced at Maryvale. Victorian forests provide approximately one quarter of Australia's timber.

Water, needed in large quantities for industry, is available throughout much of the State from the dams and storages in the catchment areas of the

main rivers (see map on page 478 of *Victorian Year Book* 1966). In most years Melbourne is well supplied with water from the storages to the north and north-east of the City in the Plenty, Upper Yarra, Maroondah, and O'Shannassy river catchments. However, severe water restrictions were imposed during the 1967-68 and 1972-73 summers due to State-wide drought conditions. To meet future requirements, construction works for extending the water supply are in progress.

Power supplies are essential for industrial development. The lack of black coal once necessitated significant imports from New South Wales. For a number of years the State Electricity Commission has generated practically all of Victoria's electricity available for public supply, mostly from steam plants fired by brown coal or briquettes in the La Trobe valley (see page 339); the balance is purchased interstate. Electricity is now transmitted throughout the State by the high voltage grid network shown on the map on page 345.

The discovery in February 1965 and subsequent development of large offshore reserves of oil and natural gas in the Gippsland basin has increased Victoria's power and chemical resources. In March 1969 natural gas for commercial use flowed from the Barracouta field and on 14 April 1969 natural gas was made available to the first domestic consumer in Victoria, at Carrum. This was supplemented in January 1970 with gas from the Marlin field. Natural gas is now brought by pipeline from Longford to Melbourne and thence to Geelong, Ballarat, and Bendigo. Oil in commercial quantities became available from the Barracouta field in October 1969, from the Halibut field in March 1970, and from the Kingfish field in April 1971. In addition, there are petroleum products from refineries at Altona, Geelong, and Crib Point, and the fractionation plant at Long Island Point.

Location

The early concentration of industry in Melbourne has continued, although power supplies now come largely from the La Trobe valley. At 30 June 1973, 83 per cent of Victoria's 11,734 manufacturing establishments were located in the Melbourne Statistical Division as were 85 per cent of the persons employed in such establishments. They contributed 85 per cent to the value added in manufacture. This concentration of manufacturing in the metropolitan area is partly due to the fact that Melbourne is Victoria's main port and the hub of the transport network. It is also the largest market in the State and the centre of commerce and finance; it has a large labour force; and it is the administrative and educational centre of Victoria.

Many types of secondary industry are well represented in Melbourne. There are particularly high concentrations of the State's chemical, metal processing, textile, paper, furniture, food, and building materials industries in the capital. In terms of numbers employed, the engineering and metal processing industry is the major industry of Melbourne. Initially, industries developed in the inner areas of Port Melbourne, South Melbourne, Richmond, Collingwood, Spotswood, Fitzroy, and Footscray. The more recently established industries such as the motor vehicle, chemical, rubber, and refining industries, have taken up land in the outer industrial areas of Altona, Broadmeadows, Moorabbin, Oakleigh, and Dandenong, where considerable areas of flat land are available for future expansion.

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, foodstuffs, 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 urban area, Bendigo urban area, La Trobe valley, Wangaratta City, Shepparton City, Warrnambool City, Portland Town, Maryborough City, Castlemaine City, and Wodonga 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, which sometimes 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 and Principal Materials Used* 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 by Industry Class*, *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 only). 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 series of fifty-two *Monthly Production Summaries*, each relating to the production of a particular commodity or group of commodities at the Australian level of aggregation.

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. A more detailed version of this article appears as Chapter 31 of the *Commonwealth Year Book* 1970.

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 timetables realised in respect of 1967-68 and previous years, and, as far as possible, 1972-73 data appears in this chapter. (See also pages 476-7 and Appendix E.)

Manufacturing developments during 1973

Victorian manufacturing industry expanded further during 1973, but with new emphasis on protection of the environment. During 1973, industry was required under the terms of the Environment Protection Act to apply for licences from the Environment Protection Authority to discharge waste or effluent whether to land, water, or air. Any discharge must meet pre-determined standards.

In the chemical industries, commercial production of polypropylene was commenced in mid-1973 following completion of a \$15m construction programme. A plant to manufacture specialised P.V.C. plasticisers was built and included additional plant for the treatment of sludge waste material at a cost of \$400,000. At Portland, increased storage and dispatch facilities for fertiliser were commenced and scheduled for completion early in 1974 at a cost of \$1.5m. A new plant for the production of tyres was commissioned and is capable of producing the largest tyres made in Australia. A water effluent treatment plant was commenced for a large firm in the petrochemical industry and atmospheric venting from the plant was upgraded at a total cost of \$700,000. Capacity of the Western Port refinery was increased at a cost of \$1.1m.

In the food industries, construction of a new soft drink plant began at Tullamarine. When finished it will be the largest and most modern soft drink plant in Australia with four bottling and two canning lines and will cost \$11m. A \$3m plant at Cobram commenced production of gouda cheese and whey powder. A very early start is expected on a large confectionery factory and warehouse at Scoresby for the manufacture of Easter eggs. A start was made on a new \$1.4m freezer-storage complex and a further \$1.9m expansion of capacity at a Brooklyn meatworks.

In the light engineering field, two large companies joined together to establish a plant for manufacture of colour television sets together with other radio and electrical products at Wodonga. Construction is under way on a \$1.25m factory at Ballarat for the manufacture of containers and caravans. A new plant was opened at Clayton employing 1,500 persons and manufacturing television and radio receivers and records.

In the automotive field, work commenced on a new engine and chassis component plant at Geelong to cost a total of \$25.2m. Plans were also announced for a \$7m centre for research on engines and emissions. Two other companies have announced plans for substantial expansion of vehicle manufacturing capacity. Both companies plan expenditure in excess of \$40m, but the projects are dependent upon Australian Government decisions on a report by the Industries Assistance Commission. A new plant for

manufacture of auto parts, accessories, and instrumentation is being erected at Gisborne.

In the heavy engineering industry, development of the Western Port steelworks continued with the completion of the galvanising line and the cold reduction mill. The mill has a capacity of some 1.5 million tonnes per annum of steel sheet and coil. Environment protection has been a major aspect of the project. Over \$7.1m has already been spent on pollution control equipment including a water purification plant, package sewerage plant, and an acid regeneration system. A start has been made on Australia's first plant to produce steel cord for car tyres. The plant at Geelong will include a \$300,000 acid waste treatment plant which is the second of its type in the world.

In July 1973 production of the Australian designed Nomad aircraft commenced at Fishermens Bend. There were 325 people employed in the initial production stage. The first of the initial batch of seventy aircraft is scheduled for completion in mid-1974 and the rate of production is expected to exceed six aircraft per month by 1975.

In the packaging industry, a plant for the manufacture of steel and aluminium cans has been constructed. Costing \$8m, the plant was completed in 1974. A major project has been announced for the La Trobe valley. To be built over a seven year period at a total cost of approximately \$100m the project includes a new paper machine together with a chemical recovery plant and pulp mill and will be used to manufacture heavy papers for corrugated fibre containers.

Developments in the textile and apparel industries during 1973 have tended to be in the form of expanding existing capacity rather than the construction of entirely new projects. There has been a remarkable growth in country areas. One company has doubled the size of its clothing factory at Wangaratta and established a new factory at Wodonga, while another company is doubling the size of its modern clothing factory at Eaglehawk. The Wool Textile Research Division of the C.S.I.R.O. has identified a number of biodegradable detergents suitable for use in the wool-scouring industry and as a result wool scourers are now phasing out hard detergents. The Leather Research Section of the C.S.I.R.O. has demonstrated a simple process for the re-cycling of chemical solutions used for unhairing of hides and the chrome tanning of leather. This process greatly reduces the volume of tannery effluents and is now being adopted by tanneries.

There were two large timber based developments. An area of more than 240 hectares at Yarrowonga has been developed over 15 years with timber suitable for the manufacture of matches. With the first of the trees reaching maturity a factory is being constructed at a cost of \$1m. At Myrtleford an integrated forest products complex has been completed. Costing \$6m, it will produce both timber products and pulp. The sawmilling complex will be the largest production centre of this type in Victoria. The plant is aimed at giving total tree usage to eliminate wastage.

Further reference, 1974

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 265-300. The Act debars employment in factories of children under the age of fifteen years, and the Victorian Education Act makes daily attendance at school compulsory between the ages of six and fifteen years. Some children under fifteen may work in a shop or office if they are exempted under the Education Act, but the general effect of the two statutes contributes to the very low incidence of child labour in Victoria.

*Division of Industrial Development of
Department of State Development
Decentralisation of manufacturing industries*

Two years after the formation of the Department of State Development in 1970, the Victorian Government introduced its new ten-point plan for decentralisation of manufacturing industries. At the same time it was felt that the promotion of decentralisation was as specialised as the Department's other Divisions of Tourism and Immigration, and this led to the creation of the Division of Industrial Development. The Division's role is to certify as Approved Decentralised Secondary Industries all those companies which are eligible and to add to that number wherever possible after due investigation. These A.D.S.I.'s then receive the benefits outlined in the ten-point plan in order to balance regional development against the metropolis.

Perhaps the most important of these benefits are the cash incentives offered in the form of pay-roll and land tax rebates, long-term, low interest finance, road and rail transport concessions, transfer of personnel and machinery subsidies, and an increase-in-employment grant. Other incentives cover gas and power, road construction, housing assistance, and Ministerial approval of loans raised for industrial purposes by local government.

Another point of the plan for decentralisation which has since become highly significant is the Victorian Government's intention to cross borders to co-operate with State or Federal authorities in joint development ventures. Originally selected by Victoria as one of five growth centres in 1967, Wodonga is now part of the first exercise in co-operative federalism. The Division has resident promotion officers in each of the remaining centres: Portland, Ballarat, Bendigo, and La Trobe valley, and studies will be conducted to gauge their potential for declaration as joint Federal-State projects.

To make industry aware of the incentives available, the Division has implemented an extensive publicity programme. This has emerged with a two-fold approach: to inform and remind existing country industries, and to inform and persuade those in the metropolitan area. During the year a series of supplements on each of the five regions of Victoria was published in the *Age* newspaper, supported by advertising from the Division and local industry. Radio, magazine, and press advertising have been complemented by news releases, a house journal, film, and displays. The latter medium was utilised at the Royal Melbourne Show, where all three divisions of the Department of State Development were publicised. Overseas advertising is

placed through the Agent-General's Office in London and the Department's representative in Toyko.

As a further inducement, the Victorian Decentralisation Awards are presented each year by the Victorian Government and private enterprise. These awards recognise outstanding contributions towards decentralisation in each of three categories: large companies, smaller companies, and municipalities.

Many related activities at a less intense level are carried out by the Division of Industrial Development. Foreign trade delegations are conducted to areas of interest and the Division acts as a clearing house for overseas licence and agency agreements.

Victorian Development Corporation

The Victorian Development Corporation is a statutory authority established in April 1973 under the general direction and control of the Minister for State Development and Decentralization, and in certain financial arrangements is subject to the direction of the Treasurer. Its charter is broadly to encourage and assist in the establishment, expansion, and development of country manufacturing and processing industries and the provision of tourist facilities throughout the State.

Constitution

In accordance with statutory requirements, the Corporation consists of a chairman and four members appointed by the Governor in Council. Of the members appointed, one is required to be a person with special knowledge of tourism and one to be a person with experience in banking finance or economics.

Powers

The Corporation is specifically authorised to encourage, promote, facilitate, and assist in the establishment, carrying on, and development of country industries and in the provision of tourist accommodation and facilities throughout Victoria. For the purposes outlined, country industry means a manufacturing or processing industry carried on at an establishment:

- (a) beyond a radius of 80 kilometres from the post office at the corner of Bourke Street and Elizabeth Street in the City of Melbourne;
- (b) within a radius of eight kilometres from the principal post offices at Bacchus Marsh, Broadford, Gisborne, Kilmore, Kyneton, or Woodend; or
- (c) which is a special establishment under the *Decentralized Industry Incentives (Pay-roll Tax Rebates) Act 1972*.

The Corporation's charter enables it to purchase land, to take land on lease, and to acquire land by compulsory acquisition, subject to Ministerial consent, and to subdivide and sell or lease land for the benefit of country industry or tourism. It may make loans or grants, acquire for sale or lease or otherwise make available to country industry, plant, machinery, and other equipment. It may provide assistance by giving guarantees for loans made by approved lenders. Specific provision has been made for the Corporation to make grants or loans to a municipal council for the acquisition of land and the erection of buildings and the provision of services required for the promotion of country industry.

Financial assistance

Financial assistance may be made in the form of direct loans, guarantees to approved lenders, or grants.

The terms of direct loans are generally of a medium to long-term nature at an interest rate related to the long-term semi-government rate, the general rate to be applied being determined from time to time by the Treasurer.

In relation to the provision of guarantees, the Corporation may execute a guarantee in favour of a person or business enterprise, other than a co-operative society under the *Co-operation Act* 1958, for the repayment of monies expended or to be expended on the acquisition of land or the construction, improvement, or alteration of buildings, the acquisition of plant or other equipment for use by a country industry, and for the repayment of loans entered into for the provision of tourist accommodation or other tourist facilities. The aggregate amount the Corporation may guarantee will be as determined from time to time by the Treasurer.

Grants may be provided in special circumstances to assist with, for example, research work, or to pay a subsidy in relation to rail freight.

Generally the Corporation sees its major role as providing finance to enable industries to purchase land, erect suitable buildings thereon, and to provide plant, machinery, and other equipment for manufacturing and processing purposes and, in relation to tourism, to provide additional facilities including accommodation.

Funds

The Corporation's funding is subject to the same borrowing restrictions imposed under the Australian Loan Council arrangements as they apply to other statutory authorities. The Corporation draws its funds from three basic sources. First, by allocations made from time to time from Treasury sources. Second, it may be authorised by the Treasurer to raise loans by the issue of debentures and inscribed stock and, third, by arrangements for overdraft facilities as determined from time to time by the Treasurer. In the financial year 1973-74 the total funds available to the Corporation from the above sources have been determined at \$7.5m. The Victorian Development Corporation Act currently enables the Corporation to borrow in aggregate up to \$200m subject to the foregoing authorisations and restrictions.

Australian Department of Overseas Trade

The functions of this Department relate chiefly to the formulation of international trade policy for the Australian Government and the development, maintenance, and diversification of export markets for primary and manufactured products through international trade agreements.

Australian Department of Manufacturing Industry

The functions of this Department are the formulation of policy proposals designed to encourage and promote the development and efficiency of Australian manufacturing industry and to promote research into the special problems of small industries, the location of industry, and the efficiency of industry. The Department also manufactures, in its own factories, munitions and aircraft for defence.

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 on the Authority's report 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 526.

Scientific research and standardisation

Commonwealth Scientific and Industrial Research Organization

The C.S.I.R.O. is a statutory body established by the *Science and Industry Research Act 1949*. 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 national standardising organisation of Australia and issues standard specifications for materials and codes of practice. Specifications and codes are prepared and revised periodically in accordance with the needs of the community; standards are evolved and accepted by general consent. It is the Australian member body of the International Organisation of Standardisation and of the International Electrotechnical Commission.

National Association of Testing Authorities

This is the Australian organisation for approval of testing laboratories. The Association registers laboratories of governmental and industrial testing authorities, thereby organising a national testing service. Registration of laboratories is voluntary. Owners of registered laboratories are members of the Association. They have the right to endorse their test documents in the name of the Association, to indicate their technical and managerial competence.

Industrial Design Council of Australia

The Industrial Design Council of Australia established the Australian Design Centre, 151 Flinders Street, Melbourne as its State Office for

Victoria in 1969. The Council is concerned with encouraging Australian design and improving design standards in manufactured goods. Its work is financed by Australian and State Governments with further support from manufacturing companies and organisations, and it is assisted by State Committees which provide direct local contacts.

Field advisers who are experienced in engineering, industrial design, and marketing visit manufacturers—particularly those of small to medium size—to suggest ways of improving design and production. This service is furthering decentralisation objectives by assisting country manufacturers as well as those in the metropolitan area.

The State director arranges an annual programme of lectures and discussion meetings for senior executives and design consultants who participate in the Council's Design Delegate service.

Products accepted for the Australian Design Index and the Good Design Label are displayed in the Australian Design Centre, which is open to the general public on weekdays. The education officer arranges talks for teacher and student groups as well as for other visitors. I.D.C.A. publications, including the Australian Design Index, the magazine *Design Australia*, and the monthly bulletin *Design Report* are available from the 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 478 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.

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 ten 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.

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 178,545 persons or 39.2 per cent of the total employment in manufacturing establishments in 1972–73, 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 63,847 or 14.0 per cent, followed by Clothing and footwear (sub-division 24) and Paper, paper products, and printing (sub-division 26) with 61,129 and 34,976, respectively, or 13.4 per cent and 7.7 per cent of the total.

The following table shows, at intervals between 1901 and 1967–68 and 1968–69, 1969–70, 1971–72, and 1972–73, the development of manufacturing activity in Victoria :

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
1940-41	9,121	237,636	105	241	178	419	184
1946-47	10,949	265,737	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
1966-67	18,054	445,557	1,168	2,814	2,236	5,051	2,617
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)11,734	455,763	2,045	(d)5,392	3,738	(e)9,078	(f)439

(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.

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, 1972-73

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	13,618	503,629	2,332	5,891	4,256	10,119	424
Victoria	11,734	455,763	2,045	5,392	3,738	9,078	439
Queensland	4,212	116,345	483	1,834	1,013	2,845	132
South Australia	2,914	121,396	523	1,286	897	2,172	96
Western Australia	2,814	64,077	275	894	501	1,376	94
Tasmania	912	30,684	131	395	283	679	25
Northern Territory	100	2,236	14	23	28	43	28
Australian Capital Territory	132	3,458	16	31	30	61	4
Total	36,436	1,297,588	5,819	15,746	10,746	26,373	1,242

For footnotes see previous table.

The total value added in 1972-73 was \$3,738m. Of this amount the metal products sub-divisions contributed \$1,406m which represented 37.6 per cent of the total. The Food sub-division followed with \$677m or 18.1 per cent, and the next in order were the Clothing and footwear sub-division with \$320m, 8.6 per cent, and the Paper, paper products, and printing sub-division with \$309m, 8.3 per cent.

The following table contains a summary of manufacturing establishments by sub-division of industry in Victoria during the year 1972-73:

VICTORIA—MANUFACTURING ESTABLISHMENTS BY SUB-DIVISIONS OF INDUSTRY, 1972-73

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	1,220	63,847	288	1,510	677	2,168	64
23	Textiles	398	28,410	113	311	200	505	13
24	Clothing and footwear	1,596	61,129	201	371	320	681	11
25	Wood, wood products, and furniture	1,488	20,340	80	175	144	318	12
26	Paper, paper products, and printing	1,205	34,976	163	308	309	617	38
27	Chemical, petroleum, and coal products	363	22,566	118	351	271	617	61
28	Non-metallic mineral products	445	14,595	76	152	153	307	18
29	Basic metal products	211	12,829	70	235	113	340	88
31	Fabricated metal products	1,518	38,204	173	324	303	620	21
32	Transport equipment	471	60,909	308	746	469	1,227	56
33	Other machinery and equipment	1,716	66,603	315	591	521	1,109	36
34	Miscellaneous manufacturing	1,103	31,355	139	316	258	569	21
	Total	11,734	455,763	2,045	5,392	3,738	9,078	439

For footnotes see page 478.

The following table shows the number of manufacturing establishments operating in Victoria at 30 June 1969, 1970, 1972, and 1973, classified according to sub-division of industry:

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

ASIC code	Industry sub-division	1969	1970	1972	1973
21-2	Food, beverages, and tobacco	1,351	1,290	1,197	1,220
23	Textiles	376	371	384	398
24	Clothing and footwear	1,691	1,634	1,606	1,596
25	Wood, wood products, and furniture	1,531	1,478	1,473	1,488
26	Paper, paper products, and printing	1,145	1,145	1,156	1,205
27	Chemical, petroleum, and coal products	363	362	357	363
28	Non-metallic mineral products	434	449	446	445
29	Basic metal products	218	210	203	211
31	Fabricated metal products	1,499	1,496	1,477	1,518
32	Transport equipment	444	438	451	471
33	Other machinery and equipment	1,524	1,538	1,651	1,716
34	Miscellaneous manufacturing	987	983	1,007	1,103
	Total	11,563	11,394	11,408	11,734

The size classification of manufacturing establishments is based on the number of persons employed at 30 June 1969 (including working proprietors). The following table shows the number of manufacturing establishments classified according to the number of persons employed :

VICTORIA—MANUFACTURING
ESTABLISHMENTS CLASSIFIED
ACCORDING TO NUMBER OF
PERSONS EMPLOYED (INCLUDING
WORKING PROPRIETORS) (a)
AT 30 JUNE 1969

Manufacturing establishments employing persons numbering	Number of establish- ments	Number of persons employed (a)
Less than 5	3,696	9,598
5 to 9	2,464	17,623
10 to 19	2,079	29,874
20 to 49	1,684	53,142
50 to 99	758	53,599
100 to 199	486	69,484
200 to 499	295	88,326
500 to 999	66	42,759
1,000 and over	35	61,925
Total	11,563	426,330

(a) Includes persons employed in separately located administrative offices or ancillary units serving the establishment.

The relative importance of large and small manufacturing establishments is illustrated in the preceding table. At 30 June 1969, 3,696 such establishments employing less than five employees had a total employment of 9,598 persons. 32.0 per cent of manufacturing establishments—those employing less than five persons—employed 2.3 per cent of the persons engaged. The most numerous of the establishments with less than five persons were printing, stationery and bookbinding, 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 as at 30 June 1973 is shown in the following table where they are classified according to statistical divisions :

VICTORIA—MANUFACTURING ESTABLISHMENTS
IN STATISTICAL DIVISIONS, 1972-73

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	9,753	388,980	1,755	4,409	3,175	7,551	359
West Central	331	20,907	101	251	179	426	37
North Central	162	4,561	17	33	28	60	2
Western	385	14,927	57	205	110	313	8
Wimmera	112	1,513	5	11	9	20	1
Mallee	98	1,022	3	14	8	21	1
Northern	297	11,190	46	227	93	312	10
North Eastern	202	5,284	21	71	48	119	9
Gippsland	303	5,757	34	131	74	203	10
East Central	91	1,622	6	40	14	53	2
Total	11,734	455,763	2,045	5,392	3,738	9,078	439

For footnotes see page 478.

Manufacturing establishments in the Melbourne Statistical Division constituted 83.1 per cent of the total number in Victoria at 30 June 1973, 85.4 per cent of the persons employed, and 84.9 per cent of the value added.

The number of manufacturing establishments and persons employed therein, classified according to statistical division, is shown in the table on page 482.

It should be noted that Geelong is located in the West Central Statistical Division, Castlemaine and Maryborough in the North Central Statistical Division, Ballarat and Warrnambool in the Western Statistical Division, Bendigo and Shepparton in the Northern Statistical Division, Wangaratta in the North Eastern Statistical Division, and Morwell and Yallourn in the 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 (i) working proprietors; (ii) administrative, office, sales, and distribution employees; and (iii) 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.

The following two tables show the average number of persons employed in each industrial sub-division in Victoria in the years 1968-69 to 1972-73, and for each statistical division during 1972-73:

VICTORIA—PERSONS EMPLOYED IN MANUFACTURING
ESTABLISHMENTS, 1968-69 TO 1972-73

ASIC code	Industry sub-division	1968-69	1969-70	1971-72	1972-73		
					Males	Females	Persons
21-2	Food, beverages, and tobacco	57,134	60,125	62,805	46,396	17,451	63,847
23	Textiles	28,559	28,999	28,587	16,415	11,995	28,410
24	Clothing and footwear	63,998	64,258	61,772	14,674	46,455	61,129
25	Wood, wood products, and furniture	19,801	19,612	20,315	17,632	2,708	20,340
26	Paper, paper products, and printing	33,582	34,361	34,866	25,815	9,161	34,976
27	Chemical, petroleum, and coal products	21,944	22,862	22,638	16,668	5,898	22,566
28	Non-metallic mineral products	13,868	14,022	13,799	12,675	1,920	14,595
29	Basic metal products	10,807	11,332	11,680	11,465	1,364	12,829
31	Fabricated metal products	36,745	38,969	38,233	30,590	7,614	38,204
32	Transport equipment	53,274	56,237	59,579	52,190	8,719	60,909
33	Other machinery and equipment	63,528	65,906	65,856	49,670	16,933	66,603
34	Miscellaneous manufacturing	28,411	28,980	29,896	20,569	10,786	31,355
Total		431,651	445,663	450,026	314,759	141,004	455,763

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 1973 were 30.9 per cent of the total. Females exceeded males

VICTORIA—NUMBER OF MANUFACTURING ESTABLISHMENTS AND PERSONS EMPLOYED (a) IN EACH STATISTICAL DIVISION, CLASSIFIED ACCORDING TO STATISTICAL DIVISION AND INDUSTRY SUB-DIVISION, 1972-73

ASIC code	Industry sub-division	Statistical division										Total
		Melbourne	West Central	North Central	Western	Wimmera	Mallee	Northern	North Eastern	Gipps-land	East Central	
NUMBER OF MANUFACTURING ESTABLISHMENTS (a)												
21-2	Food, beverages, and tobacco	684	53	41	95	33	49	103	55	84	23	1,220
23	Textiles	341	26	6	7	3	7	7	4	3	1	398
24	Clothing and footwear	1,528	10	11	13	2	2	10	13	3	4	1,596
25	Wood, wood products, and furniture	1,032	58	37	78	17	10	42	68	107	39	1,488
26	Paper, paper products, and printing	1,025	22	17	37	14	12	30	15	25	8	1,205
27	Chemical, petroleum, and coal products	338	14	2	3	14	10	3	1	1	1	363
28	Non-metallic mineral products	273	23	13	40	14	10	33	18	18	3	445
29	Basic metal products	190	7	3	7	1	2	1	..	211
31	Fabricated metal products	1,322	46	8	44	15	6	34	19	21	3	1,518
32	Transport equipment	403	21	5	17	1	5	12	2	5	..	471
33	Other machinery and equipment	1,553	39	12	35	10	7	29	7	15	9	1,716
34	Miscellaneous manufacturing	1,069	13	3	5	2	..	2	2	6	1	1,103
Total		9,758	332	158	381	111	101	306	196	299	92	11,734
NUMBER OF PERSONS EMPLOYED (a)												
21-2	Food, beverages, and tobacco	45,703	1,815	522	4,394	502	572	5,697	1,488	2,217	937	63,847
23	Textiles	20,938	3,000	497	1,032	274	782	1,536	308	308	43	28,410
24	Clothing and footwear	55,646	1,137	762	1,755	137	26	756	126	622	162	61,129
25	Wood, wood products, and furniture	15,013	665	456	899	72	53	264	998	1,652	268	20,340
26	Paper, paper products, and printing	31,389	292	324	711	101	139	304	227	1,345	144	34,976
27	Chemical, petroleum, and coal products	20,979	1,223	31	259	..	96	7	14	50	3	22,566
28	Non-metallic mineral products	11,875	1,093	84	742	84	..	231	152	223	15	14,595
29	Basic metal products	9,620	2,118	51	848	63	53	21	165	6	12,829	
31	Fabricated metal products	34,611	787	111	880	63	53	1,077	132	331	159	38,204
32	Transport equipment	52,992	5,452	70	1,598	3	10	656	6	28	94	60,909
33	Other machinery and equipment	60,437	2,248	1,161	948	165	61	718	189	657	19	66,603
34	Miscellaneous manufacturing	30,727	288	21	25	52	..	80	23	137	1	31,355
Total		389,930	20,118	4,090	14,091	1,453	1,010	10,593	5,056	7,576	1,845	455,763

(a) See footnotes on page 478

in the Clothing and footwear sub-division (24) where they accounted for 76.0 per cent of the sub-division total. Of the total females employed 33.0 per cent were in sub-division 24; 12.0 per cent were in sub-division 33; and 12.4 per cent were in sub-division 21-2.

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 1969, 1970, 1972, and 1973:

VICTORIA—MANUFACTURING ESTABLISHMENTS:
TYPE OF EMPLOYMENT

At 30 June-	Working proprietors	Administrative, office, sales, and distribution employees	Production and all other employees	Total
1969	7,005	100,545	332,686	440,236
1970	6,904	102,053	341,395	450,352
1972	6,734	104,024	341,998	452,756
1973	7,101	108,364	348,299	463,764

The following table shows the nature of employment in manufacturing establishments in 1972-73 classified according to industry sub-division:

VICTORIA—MANUFACTURING ESTABLISHMENTS: TYPE OF EMPLOYMENT
BY INDUSTRY SUB-DIVISION AT 30 JUNE 1973

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	842	16,268	44,483	61,593
23	Textiles	158	5,047	23,638	28,843
24	Clothing and footwear	1,044	7,081	53,620	61,745
25	Wood, wood products, and furniture	1,213	3,466	16,473	21,152
26	Paper, paper products, and printing	736	10,370	24,165	35,271
27	Chemical, petroleum, and coal products	104	9,248	13,384	22,736
28	Non-metallic mineral products	186	3,769	10,969	14,924
29	Basic metal products	87	4,274	9,130	13,491
31	Fabricated metal products	916	8,994	29,517	39,427
32	Transport equipment	273	13,688	48,444	62,405
33	Other machinery and equipment	765	18,534	50,489	69,788
34	Miscellaneous manufacturing	777	7,625	23,987	32,389
	Total	7,101	108,364	348,299	463,764

Although "production and all other employees" constitute 75.1 per cent of the total number employed in manufacturing establishments, the percentage varies from 86.8 per cent in sub-division 24 to 58.9 per cent in sub-division 27. Sub-division 27 also has the highest percentage of "administrative, office, sales, and distribution employees", 40.7 per cent, compared with the Victorian average of 23.4 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 5.7 per cent of the total number employed.

VICTORIA—MANUFACTURING ESTABLISHMENTS :
FEMALE EMPLOYMENT AT 30 JUNE

ASIC code	Industry sub-division	Number			
		1969	1970	1972	1973
21-2	Food, beverages, and tobacco—				
211	Meat products	2,634	2,743	3,675	3,279
213	Fruit and vegetable products	1,993	2,141	1,814	2,193
216	Bread, cakes, and biscuits	3,349	3,613	3,373	3,758
217-8	Sugar and other food products	3,081	2,938	3,352	3,314
	Other	4,339	4,496	4,358	4,755
	Total	15,396	15,931	16,572	17,299
23	Textiles—				
231-2	Textiles, yarns, and woven fabrics	9,484	9,512	9,008	8,977
	Other	2,766	2,775	3,088	3,151
	Total	12,250	12,287	12,096	12,128
24	Clothing and footwear—				
241	Knitting mills	9,823	10,522	10,028	9,987
242	Clothing	31,781	31,103	30,207	29,932
243	Footwear	7,634	7,685	6,902	6,745
	Total	49,238	49,310	47,137	46,664
25	Wood, wood products, and furniture	2,483	2,622	2,833	2,994
26	Paper, paper products, and printing	9,281	9,545	9,484	9,580
27	Chemical, petroleum, and coal products	5,948	6,295	5,892	5,951
28	Non-metallic mineral products	1,830	1,832	1,821	2,026
29	Basic metal products	1,285	1,162	1,257	1,466
31	Fabricated metal products	6,903	7,498	7,362	8,168
32	Transport equipment	7,310	8,154	8,583	9,527
33	Other machinery and equipment—				
332	Appliances and electrical equipment	10,039	10,656	10,665	12,364
333	Industrial machinery and equipment	3,839	3,944	3,725	4,129
	Other	1,547	1,532	1,761	1,781
	Total	15,425	16,132	16,151	18,274
34	Miscellaneous manufacturing	9,602	9,692	10,390	11,250
	Total	136,951	140,460	139,578	145,327

VICTORIA—MANUFACTURING ESTABLISHMENTS:
EMPLOYMENT (a) OF MALES AND FEMALES

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	848
1920-21	96,379	1,283	44,364	574	140,743	923
1932-33	91,899	1,020	52,529	575	144,428	796
1940-41	161,880	1,708	75,756	782	237,636	1,240
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	1,759	139,276	787	450,026	1,273
1972-73	314,759	1,761	141,004	787	455,763	1,273

(a) Yearly average, including working proprietors.

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 75.6 per cent of the total number of persons employed; within this sub-division in the Clothing group, 242, 48.5 per cent of the total employed are females.

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 1972-73 and earlier years are shown in the previous table.

Wages and salaries

The next table gives details of wages paid in the various classes of industry in Victoria in 1972-73. 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:
WAGES AND SALARIES PAID, 1972-73
(\$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	87,950	200,116	288,066
23	Textiles	25,922	86,777	112,699
24	Clothing and footwear	34,859	166,076	200,935
25	Wood, wood products, and furniture	17,367	62,407	79,774
26	Paper, paper products, and printing	55,213	107,329	162,543
27	Chemical, petroleum, and coal products	55,564	62,506	118,071
28	Non-metallic mineral products	22,046	54,241	76,287
29	Basic metal products	27,012	43,445	70,457
31	Fabricated metal products	48,338	124,760	173,098
32	Transport equipment	90,534	217,788	308,323
33	Other machinery and equipment	105,070	210,212	315,282
34	Miscellaneous manufacturing	42,367	96,858	139,225
	Total	612,248	1,432,514	2,044,762

Of the total amount of wage and salaries paid in Victoria in 1972-73—\$2,045m—the metal fabricating sub-divisions (29-33) (including transport equipment, machinery, and other equipment), were responsible for \$866m or 42.4 per cent ; Food, beverages, and tobacco \$288m or 14.1 per cent ; Clothing and footwear, \$201m or 9.8 per cent ; and Paper, paper products, and printing, \$163m or 8.0 per cent.

Turnover

The following table shows the value of turnover of manufacturing establishments. The figures include sales of goods whether produced by this 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 (other than hire purchase), royalties, and receipts from the sale of fixed tangible assets are excluded.

VICTORIA—MANUFACTURING ESTABLISHMENTS : TURNOVER BY INDUSTRY SUB-DIVISION

ASIC code	Industry sub-division	1968-69	1969-70	1971-72	1972-73	
					Value	Percentage of total turnover
		\$m	\$m	\$m	\$m	
21-2	Food, beverages, and tobacco	1,406	1,598	1,869	2,168	23.7
23	Textiles	380	392	432	505	5.6
24	Clothing and footwear	529	565	637	681	7.5
25	Wood, wood products, and furniture	227	242	273	318	3.5
26	Paper, paper products, and printing	434	472	548	617	6.8
27	Chemical, petroleum, and coal products	454	469	564	617	6.8
28	Non-metallic mineral products	209	222	256	307	3.4
29	Basic metal products	227	274	280	340	3.8
31	Fabricated metal products	462	505	572	620	6.8
32	Transport equipment	833	945	1,147	1,227	13.6
33	Other machinery and equipment	795	887	981	1,109	12.2
34	Miscellaneous manufacturing	382	423	492	569	6.3
	Total	6,336	6,995	8,051	9,078	100.0

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

ASIC code	Industry sub-division	1968-69	1969-70	1971-72	1972-73	
					Value	Percentage of total purchases
		\$m	\$m	\$m	\$m	
21-2	Food, beverages, and tobacco	1,018	1,166	1,302	1,511	27.9
23	Textiles	224	236	266	311	5.8
24	Clothing and footwear	308	322	350	371	6.9
25	Wood, wood products, and furniture	127	137	155	175	3.3
26	Paper, paper products, and printing	230	249	280	308	5.7
27	Chemical, petroleum, and coal products	260	265	321	351	6.5
28	Non-metallic mineral products	110	119	133	152	2.8
29	Basic metal products	157	195	184	235	4.4
31	Fabricated metal products	255	287	311	324	6.0
32	Transport equipment	503	573	702	746	13.8
33	Other machinery and equipment	443	506	525	591	11.0
34	Miscellaneous manufacturing	222	253	282	316	5.9
	Total	3,860	4,307	4,810	5,392	100.0

Stocks

The figures in these tables include all stocks of materials, fuels, etc., finished goods and work-in-progress whether located at the establishment or elsewhere :

VICTORIA—MANUFACTURING ESTABLISHMENTS :
STOCKS BY INDUSTRY SUB-DIVISION

ASIC code	Industry sub-division	1968-69	1969-70	1971-72	1972-73	
					Value	Percentage of total opening stocks
		\$m	\$m	\$m	\$m	
	OPENING					
21-2	Food, beverages, and tobacco	194	209	237	252	16.8
23	Textiles	75	76	89	94	6.3
24	Clothing and footwear	82	89	99	105	7.0
25	Wood, wood products, and furniture	32	32	37	41	2.7
26	Paper, paper products, and printing	61	63	79	79	5.3
27	Chemical, petroleum, and coal products	90	92	106	113	7.5
28	Non-metallic mineral products	26	26	32	36	2.4
29	Basic metal products	36	40	51	59	3.9
31	Fabricated metal products	84	90	106	113	7.5
32	Transport equipment	167	171	200	229	15.3
33	Other machinery and equipment	212	233	287	291	19.4
34	Miscellaneous manufacturing	66	72	80	89	5.9
	Total	1,126	1,193	1,403	1,502	100.0

VICTORIA—MANUFACTURING ESTABLISHMENTS:
STOCKS BY INDUSTRY SUB-DIVISION—*continued*

ASIC code	Industry sub-division	1968-69	1969-70	1971-72	1972-73	
					Value	Percentage of total closing stocks
		\$m	\$m	\$m	\$m	
	CLOSING					
21-2	Food, beverages, and tobacco	205	225	253	271	17.5
23	Textiles	75	80	95	100	6.4
24	Clothing and footwear	89	96	102	115	7.4
25	Wood, wood products, and furniture	33	33	40	42	2.7
26	Paper, paper products, and printing	64	73	81	78	5.0
27	Chemical, petroleum, and coal products	89	99	107	118	7.6
28	Non-metallic mineral products	26	28	36	34	2.2
29	Basic metal products	40	42	55	68	4.4
31	Fabricated metal products	89	99	116	120	7.7
32	Transport equipment	175	188	232	217	14.0
33	Other machinery and equipment	233	261	286	294	19.0
34	Miscellaneous manufacturing	73	78	86	94	6.1
	Total	1,192	1,301	1,489	1,553	100.0

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

ASIC code	Industry sub-division	1968-69	1969-70	1971-72	1972-73	
					Value added	Percentage of total value added
		\$m	\$m	\$m	\$m	
21-2	Food, beverages, and tobacco	398	447	583	677	18.1
23	Textiles	157	161	173	200	5.4
24	Clothing and footwear	227	250	289	320	8.6
25	Wood, wood products, and furniture	101	106	121	144	3.9
26	Paper, paper products, and printing	207	232	269	309	8.3
27	Chemical, petroleum, and coal products	193	211	244	271	7.2
28	Non-metallic mineral products	99	105	127	153	4.1
29	Basic metal products	73	81	100	113	3.0
31	Fabricated metal products	211	226	271	303	8.1
32	Transport equipment	337	389	478	469	12.5
33	Other machinery and equipment	372	409	456	521	13.9
34	Miscellaneous manufacturing	167	177	216	258	6.9
	Total	2,541	2,796	3,328	3,738	100.0

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 1972-73 are given in the following tables :

**VICTORIA—MANUFACTURING ESTABLISHMENTS :
COSTS AND TURNOVER, 1972-73
(\$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	1,510	288	+ 19	389	2,168
23	Textiles	311	113	+ 6	87	505
24	Clothing and footwear	371	201	+ 10	119	681
25	Wood, wood products, and furniture	175	80	+ 1	64	318
26	Paper, paper products, and printing	308	163	— 1	145	617
27	Chemical, petroleum, and coal products	351	118	+ 5	153	617
28	Non-metallic mineral products	152	76	— 2	77	307
29	Basic metal products	235	70	+ 9	44	340
31	Fabricated metal products	324	173	+ 7	130	620
32	Transport equipment	746	308	— 12	161	1,227
33	Other machinery and equipment	591	315	+ 3	206	1,109
34	Miscellaneous manufacturing	316	139	+ 5	119	569
	Total	5,392	2,045	+ 51	1,692	9,078

(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.

**VICTORIA—MANUFACTURING ESTABLISHMENTS: PERCENTAGE OF
SPECIFIED COSTS TO TURNOVER, 1972-73
(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	69.7	13.3	+ 0.9	17.9	100.0
23	Textiles	61.6	22.4	+ 1.2	17.2	100.0
24	Clothing and footwear	54.5	29.5	+ 1.5	17.5	100.0
25	Wood, wood products, and furniture	55.0	25.2	+ 0.3	20.1	100.0
26	Paper, paper products, and printing	49.9	26.4	— 0.2	23.5	100.0
27	Chemical, petroleum, and coal products	56.9	19.1	+ 0.8	24.8	100.0
28	Non-metallic mineral products	49.5	24.8	— 0.7	25.1	100.0
29	Basic metal products	69.1	20.6	+ 2.7	12.9	100.0
31	Fabricated metal products	52.3	27.9	+ 1.1	21.0	100.0
32	Transport equipment	60.8	25.1	— 1.0	13.1	100.0
33	Other machinery and equipment	53.3	28.4	+ 0.3	18.6	100.0
34	Miscellaneous manufacturing	55.5	24.4	+ 0.9	20.9	100.0
	Total	59.4	22.5	+ 0.6	18.7	100.0

(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.

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 29.5 per cent and the purchases and selected items of expense 54.5 per cent of the values of the finished articles, while in sub-division 21-2 the expenditure on wages amounts to 13.3 per cent and that on purchases, etc., to 69.7 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 1968-69, 1969-70, 1971-72, and 1972-73:

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			
1968-69	3,860	1,342	+66	1,199	6,336
1969-70	4,307	1,497	+108	1,299	6,995
1971-72	4,810	1,802	+86	1,526	8,051
1972-73	5,392	2,045	+51	1,692	9,078

(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.

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			
1968-69	60.9	21.2	+1.0	18.9	100.0
1969-70	61.6	21.4	+1.5	18.6	100.0
1971-72	59.7	22.4	+1.1	19.0	100.0
1972-73	59.4	22.5	+0.6	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.

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. The following table shows fixed capital expenditure and rent and leasing expenses for 1972-73 by industry sub-division:

VICTORIA—MANUFACTURING ESTABLISHMENTS: FIXED CAPITAL
EXPENDITURE AND RENT AND LEASING EXPENSES, 1972-73
(\$'000)

ASIC code	Industry sub-division	Fixed capital expenditure				Rent and leasing expenses
		Land, buildings, and other structures	Motor vehicles	Other plant, machinery, and equipment	Total	
21-2	Food, beverages, and tobacco	16,227	4,634	43,190	64,052	12,068
23	Textiles	1,209	537	11,233	12,979	4,228
24	Clothing and footwear	1,094	1,309	8,406	10,809	8,589
25	Wood, wood products, and furniture	2,775	1,422	8,135	12,333	4,401
26	Paper, paper products, and printing	3,769	876	33,517	38,163	6,319
27	Chemical, petroleum, and coal products	11,656	850	48,826	61,332	3,306
28	Non-metallic mineral products	5,189	822	11,552	17,564	1,462
29	Basic metal products	21,308	189	66,647	88,143	2,442
31	Fabricated metal products	2,347	1,447	17,382	21,176	6,697
32	Transport equipment	17,387	-711	39,421	56,097	6,605
33	Other machinery and equipment	4,522	1,819	29,273	35,612	11,207
34	Miscellaneous manufacturing	901	839	19,104	20,844	7,114
	Total	88,384	14,033	336,686	439,104	74,439

In the next table fixed capital expenditure by industry sub-division is shown for 1968-69, 1969-70, 1971-72, and 1972-73:

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

ASIC code	Industry sub-division	1968-69	1969-70	1971-72	1972-73
21-2	Food, beverages, and tobacco	41,137	42,337	53,132	64,052
23	Textiles	15,339	22,928	14,268	12,979
24	Clothing and footwear	12,238	12,320	11,896	10,809
25	Wood, wood products, and furniture	5,027	5,107	4,328	12,333
26	Paper, paper products, and printing	23,391	17,839	41,770	38,163
27	Chemical, petroleum, and coal products	30,004	44,351	39,465	61,332
28	Non-metallic mineral products	14,048	16,064	10,072	17,564
29	Basic metal products	25,957	22,584	54,053	88,143
31	Fabricated metal products	17,942	20,528	26,034	21,176
32	Transport equipment	40,764	46,566	58,591	56,097
33	Other machinery and equipment	28,872	32,782	36,573	35,612
34	Miscellaneous manufacturing	22,967	16,128	23,653	20,844
	Total	277,686	299,535	373,835	439,104

Electricity and fuels used

The following tables show electricity and fuels used during the years 1968-69, 1969-70, 1971-72, and 1972-73:

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

ASIC code	Industry sub-division	1968-69	1969-70	1971-72	1972-73
21-2	Food, beverages, and tobacco	17,807	18,816	20,648	21,856
23	Textiles	6,414	6,661	7,098	7,767
24	Clothing and footwear	3,737	3,595	4,113	4,277
25	Wood, wood products, and furniture	2,391	2,535	2,769	2,927
26	Paper, paper products, and printing	8,160	8,713	10,010	10,819
27	Chemical, petroleum, and coal products	12,262	12,458	12,804	12,908
28	Non-metallic mineral products	11,941	12,170	12,489	13,284
29	Basic metal products	8,943	13,851	12,317	13,254
31	Fabricated metal products	6,144	6,477	6,763	7,083
32	Transport equipment	8,425	8,751	10,244	10,897
33	Other machinery and equipment	8,199	8,738	8,742	9,087
34	Miscellaneous manufacturing	6,592	7,206	7,929	8,623
	Total	101,014	109,970	115,927	122,782

VICTORIA—MANUFACTURING ESTABLISHMENTS : VALUE OF
ELECTRICITY AND FUELS USED

Commodity	1968-69	1969-70	1971-72	1972-73	
				Cost	Percentage of total
	\$'000	\$'000	\$'000	\$'000	
Electricity	63,989	71,891	71,173	76,006	61.9
Coal and coke—					
Black coal	2,092	2,130	646	503	0.4
Brown coal	1,531	1,515	1,647	1,208	1.0
Brown coal briquettes	3,328	3,466	3,354	3,493	2.9
Coke (including coke breeze)	1,176	1,329	2,011	2,316	1.9
Petroleum fuels (non-gaseous)—					
Light oils, etc.	1,054	1,523	1,912	2,281	1.9
Industrial diesel fuel	2,712	3,236	5,158	3,161	2.6
Furnace oil and other fuel oil	15,930	15,524	17,579	17,180	14.0
Town gas	4,326	4,510	7,158	11,189	9.1
Other fuels	4,874	4,846	5,288	5,445	4.4
Total	101,014	109,970	115,927	122,782	100.0

VICTORIA—MANUFACTURING ESTABLISHMENTS :
QUANTITIES OF FUELS USED

Commodity	Unit	1968-69	1969-70	1971-72	1972-73
Coal and coke—					
Black coal	tonnes	231,854	230,785	56,419	37,635
Brown coal	"	713,261	696,750	591,609	458,882
Brown coal briquettes	"	415,564	462,525	428,943	449,185
Coke (including coke breeze)	"	48,110	49,178	52,136	60,267
Petroleum fuels (non-gaseous)—					
Light oils, etc.	'000 litres	28,709	35,214	38,583	44,655
Industrial diesel fuel	tonnes	91,156	120,609	252,727	104,071
Furnace oil and other fuel oil	"	946,743	909,789	910,058	846,455

Some principal factory products of Victoria and Australia

Annual quantity and value

The next table shows quantities of some of the principal articles manufactured in Victoria, and corresponding figures for Australia during 1972-73 and 1973-74. 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 in the following table :

VICTORIA AND AUSTRALIA—PRINCIPAL ARTICLES MANUFACTURED

Commodity Code No.	Article	Unit	Victoria		Australia	
			1972-73	1973-74	1972-73	1973-74
023.18, 20	Bacon and ham—bone-in	tonnes	3,176	3,190	24,779	23,035
19, 21	—bone-out	"	11,598	12,383	34,492	36,397
027.02-29, 72-77 ; 023.17	Meat—canned (excluding baby food)	mill kg	32	37	49	56
051.21-27 ; 052.42	Milk—condensed, concentrated, and evaporated : full cream	"	50	36	72	47
051.31	Butter	"	128	128	185	175
051.36-46	Cheese	"	48	48	93	96
051.61	Ice cream	mill litres	61	68	209	212
051.72-73	Milk—powdered : full cream	mill kg	26	27	36	37
062.01, 32	Flour, plain—wheaten (including sharps)	'000 tonne	287	289	1,120	1,163
063.11, 21, 31	Malt	mill kg	196	197	339	361
064.21	Biscuits	"	43	45	116	119
076.08, 15, 22	Canned or bottled apricots, peaches and pears	"	116	73	170	113
076.60	Jams, fruit spreads, fruit butters, etc.	"	18	17	33	33
094.02-47	Vegetables canned or bottled (including pickled)	"	23	24	104	120
	Confectionery—					
104.06-18	Chocolate base	"	22	24	50	58
104.21-29	Other without chocolate	"	27	27	60	62
123.18	Sauce—tomato	mill litres	11	12	19	18
152.06	Pollard	'000 tonne	62	63	240	250
171.03, 04, 07, 08	Aerated and carbonated waters, canned or bottled (g)	mill litres	223	235	877	865
242.07-11	Wool—scoured or carbonised	mill kg	24	22	60	43
242.33, 35, 70-76	Wool tops—pure and mixed	"	11	10	30	17
246.46-49	Briquettes—brown coal	'000 tonne	1,221	1,164	1,221	1,164
261.41	Cloth piece goods woven—woollen or predominantly woollen	'000 sq m	7,580	7,111	15,353	15,010
372.22-50	Blankets, bed (b)	'000	976	912	1,686	1,725
372.52-66 ; 374.51-57	Plastics and synthetic resins	mill kg	128	164	341	405
403.02, 18, 20, 52-92, 96 ; 404.01-98	Bricks—clay	mill	443	524	2,039	2,239
472.01, 03	Tiles, roofing	"	61	69	218	233
472.12, 475.30	Ready mixed concrete	'000 cub m	2,380	2,553	9,726	10,225
475.90	Electric motors	'000	885	1,063	3,796	4,589
503.13-32	Finished motor vehicles (c)—					
581.02-08, 10-16	Cars	'000	188	196	370	399
582.04-28	Other	'000	29	31	69	73
773.02-35	Shirts (men's and boys') Underwear—	'000 doz	1,123	1,229	2,549	2,692
773.90, 94 ; 774.01-17, 36-39, 96, 97	Men's and boys'	'000 doz	1,199	1,362	2,636	2,968
774.44, 46, 48, 49, 61, 63, 68-73	Women's and girls'	'000 doz	2,536	3,166	3,909	4,683
775.01-19	Stockings—women's (d)	'000 doz pair	6,982	6,251	8,503	7,653
775.51-82, 91-98 ; 776.01-42	Socks and stockings—men's, children's, and infants' Footwear—boots, shoes, and sandals (e)—	'000 "	2,977	3,225	3,222	3,415
793.05, 08, 21, 22, 31, 32, 41, 46, 51, 65, 66	Men's and youths'	'000 pair	6,656	6,837	10,944	12,011

For footnotes, see next page.

VICTORIA AND AUSTRALIA—PRINCIPAL ARTICLES MANUFACTURED—*continued*

Commodity Code No.	Article	Unit	Victoria		Australia		
			1972-73	1973-74	1972-73	1973-74	
Footwear— <i>continued</i> —							
793.06, 09, 24, 33, 34, 42, 47, 52, 68	Women's and maids'	'000 pair	13,571	12,117	16,576	17,317	
793.04, 07, 10, 25, 35, 43, 48, 53, 69							
	Children's (including infants')	..	6,012	6,336	6,784	8,077	
Soaps and soap based products for other than personal use—							
805.22-60	Powder and granule	tonnes	7,772	6,890	13,840	12,823	
	Abrasive cleaners and scourers	..	790	798	2,209	2,173	
	Other	..	6,184	6,460	27,831	24,893	
844.22-67	Mattresses—all types	'000	383	459	1,231	1,335	

(a) From October 1969 includes bulk aerated and carbonated waters.

(b) Double, three quarter, single cot, bassinet, pram, etc.; wool, wool mixture, and other fibre.

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

(d) Includes panty hose.

(e) Excluding wholly of rubber.

Monthly production statistics

The Bureau 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 summaries is given below.

In addition, statistical publications for the meat, gold mining, 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 summaries than are published in the *Monthly Bulletin of Production Statistics*. Victorian figures are published in the Victorian monthly publication *Secondary production*.

AUSTRALIA—PRODUCTION SUMMARIES

Ref. No.	Subject	Ref. No.	Subject
1	Automotive Spark Plugs and Shock Absorbers	16	Wool Top Making and Yarn Produced
2	Chemicals, etc.	17	Wool Woven Fabric, etc.
3	Plastics and Synthetic Resins and Plasticisers	18	Hosiery
4	Paints and Other Surface Coatings	19	Women's, Maids' and Girls' Clothing, and Infants' and Babywear
5	Electricity and Gas	20	Cellulosic and Synthetic Fibre Tops, Yarns and Woven Fabrics
6	Soap, Detergents, Glycerine and Fatty Acids	21	Paper, Wood Pulp and Adhesive Tapes
7	Internal Combustion Engines	22	Floor Coverings and Felts
8	Lawnmowers	23	Electric Motors
9	Electrical Appliances	24	Men's, Youths' and Boys' Clothing
10	Motor Bodies, Trailed Vehicles, Lift-on Freight Containers, etc.	25	Foundation Garments
11	Pedal Cycles	27	Gloves and Slide Fasteners
12	Meters	28	Footwear
13	Building Fittings	29	Biscuits, Cocoa, Confectionery, Ice Cream
14	Cotton Goods	30	Storage Batteries—Wet Cell
15	Fellmongering, Woolscouring and Carbonising	32	Perambulators, Pushers and Strollers

AUSTRALIA—PRODUCTION SUMMARIES—*continued*

Ref. No.	Subject	Ref. No.	Subject
33	Motor Vehicles	47	Aerated and Carbonated Waters; Cordials and Syrups
34	Television, Radios, Other Sound Equipment; Transistors	48	Sports Goods
35	Bed Bases and Mattresses	49	Building Materials
36	Processed Milk Products	50	Electrodes for Manual Welding
38	Fish Preserving	51	Hides and Skins Used in Tanneries
39	Jam, Preserved Fruit and Vegetables	52	Electrical Power Frequencies Transformers, Chokes and Ballasts
40	Cereal Products	53	Plastics Film, Sheeting and Coated Materials
41	Vegetable Oils; Margarine and Other Edible Processed Fats	55	Butter and Cheese
42	Malt and Beer	56	Canned Meat
43	Stock and Poultry Foods and Canned Pet Food	58	Steel Wire and Wire Products
45	Gramophone Records	59	Non-ferrous Rolled, Extruded and Drawn Products

INDIVIDUAL INDUSTRIES

Introduction

Particulars on pages 495–9 show the principal statistics of the fifteen major groups of industry in Victoria indicated in the Manufacturing Division of the Australian Standard Industrial Classification. These industry groups have been selected on the basis of employment. While it is not possible, within the limits of the *Year Book*, to give a detailed account of each individual industry, particular industries will be dealt with annually commencing with this edition. Where there are only one or two establishments in a particular industry, details of activities are not published but are combined with some other industry so that operations of individual establishments will not be disclosed. As well as detailing the major groups, the first mentioned group, i.e., 211, has been expanded to the four digit or class level and is shown on pages 499–500. It is proposed to publish the following groups at the class level in a five yearly cycle: *Victorian Year Book* 1975 (Groups 211, 212), 1976 (231, 232, 241, 242), 1977 (261, 262), 1978 (272, 343), and 1979 (312, 313, 321, 322, 332, 333). For a description of each of the classes in the Australian Standard Industrial Classification, see Appendix E.

Details of industries

Major groups

The following table details particulars of establishments classified to the manufacture of meats and associated by-products:

VICTORIA—ASIC GROUP 211: MEAT PRODUCTS

Particulars	1968–69	1969–70	1971–72	1972–73
Number of establishments at 30 June	356	327	303	288
Average number of persons employed	13,504	16,271	18,839	18,975
Salaries and wages paid \$'000	42,715	54,203	79,830	89,123
Turnover \$'000	295,681	401,435	487,877	647,594
Purchases, transfers in \$'000	237,285	313,505	367,637	496,145
Value added \$'000	67,417	88,292	128,187	161,581
Rent and leasing expenses \$'000	1,988	1,924	2,589	3,378
Net fixed capital expenditure \$'000	4,249	6,697	10,676	17,203

The following table details particulars of establishments classified to the manufacture of milk products:

VICTORIA—ASIC GROUP 212: MILK PRODUCTS

Particulars	1968-69	1969-70	1971-72	1972-73
Number of establishments at 30 June	159	152	142	135
Average number of persons employed	9,000	8,875	8,724	8,673
Salaries and wages paid \$'000	28,936	30,989	36,048	40,657
Turnover \$'000	394,845	425,377	462,488	496,978
Purchases, transfers in \$'000	318,444	346,805	383,251	411,849
Value added \$'000	75,627	79,745	83,317	97,618
Rent and leasing expenses \$'000	994	1,056	1,519	1,809
Net fixed capital expenditure \$'000	8,534	8,166	9,506	11,195

Information in the following table relates to establishments manufacturing textile fibres, yarns, and woven fabrics, and household textiles :

VICTORIA—ASIC GROUP 231-232 : TEXTILE FIBRES, YARNS,
AND WOVEN FABRICS, AND HOUSEHOLD TEXTILES

Particulars	1968-69	1969-70	1971-72	1972-73
Number of establishments at 30 June	239	234	234	234
Average number of persons employed	22,156	22,322	21,681	21,471
Salaries and wages paid \$'000	62,870	65,623	75,622	85,035
Turnover \$'000	293,634	299,416	309,286	352,236
Purchases, transfers in \$'000	171,587	180,096	184,959	212,241
Value added \$'000	121,568	122,565	124,950	147,270
Rent and leasing expenses \$'000	1,459	1,350	2,015	2,467
Net fixed capital expenditure \$'000	12,874	19,373	12,978	7,970

Particulars of establishments classified as knitting mills are shown in the following table:

VICTORIA—ASIC GROUP 241: KNITTING MILLS

Particulars	1968-69	1969-70	1971-72	1972-73
Number of establishments at 30 June	315	313	315	303
Average number of persons employed	13,653	14,417	14,286	14,666
Salaries and wages paid \$'000	34,253	39,328	44,794	52,938
Turnover \$'000	151,870	172,199	193,833	210,100
Purchases, transfers in \$'000	94,768	103,212	110,442	123,160
Value added \$'000	60,152	70,601	83,355	93,440
Rent and leasing expenses \$'000	1,381	1,545	1,873	2,164
Net fixed capital expenditure \$'000	6,166	4,393	5,799	4,822

Information in the following table deals with establishments manufacturing clothing:

VICTORIA—ASIC GROUP 242: CLOTHING

Particulars	1968-69	1969-70	1971-72	1972-73
Number of establishments at 30 June	1,165	1,123	1,112	1,116
Average number of persons employed	37,476	37,197	35,881	35,750
Salaries and wages paid \$'000	80,977	85,195	98,202	110,410
Turnover \$'000	274,317	280,097	316,883	343,788
Purchases, transfers in \$'000	155,076	153,381	164,454	180,580
Value added \$'000	121,865	130,207	152,291	166,835
Rent and leasing expenses \$'000	3,341	3,678	4,088	4,745
Net fixed capital expenditure \$'000	3,530	4,045	4,107	3,815

Information in the following table deals with establishments manufacturing paper and paper products:

VICTORIA—ASIC GROUP 261: PAPER AND PAPER PRODUCTS

Particulars	1968-69	1969-70	1971-72	1972-73
Number of establishments at 30 June	118	106	109	112
Average number of persons employed	10,287	10,153	11,139	10,799
Salaries and wages paid \$'000	36,449	38,650	50,019	54,956
Turnover \$'000	190,904	199,959	250,261	275,683
Purchases, transfers in \$'000	120,836	122,152	149,887	160,505
Value added \$'000	71,460	83,081	101,530	114,199
Rent and leasing expenses \$'000	1,856	1,813	1,346	1,370
Net fixed capital expenditure \$'000	10,019	10,298	26,988	28,859

Particulars of establishments classified to printing and publishing industries are shown in the following table:

VICTORIA—ASIC GROUP 262: PRINTING AND PUBLISHING

Particulars	1968-69	1969-70	1971-72	1972-73
Number of establishments at 30 June	1,027	1,039	1,047	1,093
Average number of persons employed	23,295	24,208	23,727	24,177
Salaries and wages paid \$'000	75,982	84,597	96,434	107,588
Turnover \$'000	242,768	272,006	297,801	340,921
Purchases, transfers in \$'000	109,625	127,005	130,226	147,280
Value added \$'000	135,560	149,386	167,815	194,361
Rent and leasing expenses \$'000	2,749	3,220	4,133	4,950
Net fixed capital expenditure \$'000	13,372	7,541	14,782	9,304

The following table shows particulars of establishments manufacturing chemical and related products:

VICTORIA—ASIC GROUP 272: CHEMICAL AND RELATED PRODUCTS (EXCEPT BASIC CHEMICALS)

Particulars	1968-69	1969-70	1971-72	1972-73
Number of establishments at 30 June	274	273	268	272
Average number of persons employed	13,833	14,371	14,567	14,402
Salaries and wages paid \$'000	45,257	50,987	60,835	67,867
Turnover \$'000	195,837	221,469	248,312	270,984
Purchases, transfers in \$'000	107,128	122,948	128,349	144,226
Value added \$'000	92,166	106,685	119,184	131,032
Rent and leasing expenses \$'000	1,472	1,516	1,962	2,362
Net fixed capital expenditure \$'000	8,595	10,173	10,989	11,691

Particulars of establishments classified to the sheet metal products industry are given in the following table:

VICTORIA—ASIC GROUP 312: SHEET METAL PRODUCTS

Particulars	1968-69	1969-70	1971-72	1972-73
Number of establishments at 30 June	360	360	352	367
Average number of persons employed	11,122	11,671	11,086	10,909
Salaries and wages paid \$'000	35,403	40,975	42,948	49,583
Turnover \$'000	153,770	166,127	179,840	187,355
Purchases, transfers in \$'000	90,998	101,220	108,920	100,140
Value added \$'000	63,701	67,579	78,811	87,133
Rent and leasing expenses \$'000	1,221	1,344	1,649	1,974
Net fixed capital expenditure \$'000	7,222	6,955	12,528	8,545

Particulars of establishments classified to the other fabricated metal products industries are shown in the following table:

VICTORIA—ASIC GROUP 313: OTHER FABRICATED METAL PRODUCTS (EXCEPT MACHINERY AND EQUIPMENT)

Particulars	1968-69	1969-70	1971-72	1972-73
Number of establishments at 30 June	776	775	758	775
Average number of persons employed	17,790	18,611	19,703	19,993
Salaries and wages paid \$'000	55,639	63,782	78,722	88,949
Turnover \$'000	198,735	221,537	259,621	292,441
Purchases, transfers in \$'000	99,309	114,324	126,477	140,455
Value added \$'000	102,094	110,671	137,794	156,476
Rent and leasing expenses \$'000	2,028	2,232	2,536	2,966
Net fixed capital expenditure \$'000	7,881	10,175	10,366	9,604

The following table gives details of establishments classified to the manufacture of motor vehicles and parts :

VICTORIA—ASIC GROUP 321: MOTOR VEHICLES AND PARTS (EXCEPT OTHER TRANSPORT EQUIPMENT)

Particulars	1968-69	1969-70	1971-72	1972-73
Number of establishments at 30 June	326	323	324	334
Average number of persons employed	35,521	38,700	42,340	43,507
Salaries and wages paid \$'000	119,762	145,056	195,810	224,198
Turnover \$'000	701,443	813,731	994,392	1,064,935
Purchases, transfers in \$'000	456,319	520,412	641,703	692,362
Value added \$'000	249,889	312,917	384,773	358,998
Rent and leasing expenses \$'000	3,569	2,625	3,857	4,916
Net fixed capital expenditure \$'000	19,782	27,333	38,929	32,226

Information in the following table relates to establishments manufacturing other transport equipment:

VICTORIA—ASIC GROUP 322: OTHER TRANSPORT EQUIPMENT

Particulars	1968-69	1969-70	1971-72	1972-73
Number of establishments at 30 June	118	115	127	137
Average number of persons employed	17,753	17,537	17,239	17,402
Salaries and wages paid \$'000	61,824	65,998	74,785	84,124
Turnover \$'000	131,128	134,455	156,453	161,923
Purchases, transfers in \$'000	47,040	52,195	60,010	53,521
Value added \$'000	87,358	79,312	97,093	109,688
Rent and leasing expenses \$'000	774	730	2,144	1,690
Net fixed capital expenditure \$'000	20,982	19,233	19,662	23,871

Particulars of establishments classified to the household appliances and electrical equipment industries are shown in the following table:

VICTORIA—ASIC GROUP 332: HOUSEHOLD APPLIANCES AND ELECTRICAL EQUIPMENT

Particulars	1968-69	1969-70	1971-72	1972-73
Number of establishments at 30 June	420	417	445	477
Average number of persons employed	26,524	28,460	29,250	29,810
Salaries and wages paid \$'000	81,499	94,201	116,340	131,658
Turnover \$'000	342,031	402,818	428,861	500,879
Purchases, transfers in \$'000	210,243	247,983	250,838	284,224
Value added \$'000	145,242	166,414	184,347	219,042
Rent and leasing expenses \$'000	1,863	2,316	3,392	4,513
Net fixed capital expenditure \$'000	14,141	13,774	20,387	18,876

The following table gives particulars of establishments manufacturing other machinery and equipment:

VICTORIA—ASIC GROUP 333 : OTHER MACHINERY AND EQUIPMENT

Particulars	1968-69	1969-70	1971-72	1972-73
Number of establishments at 30 June	1,007	1,028	1,101	1,133
Average number of persons employed	32,433	32,984	31,448	31,673
Salaries and wages paid \$'000	115,126	125,595	142,779	158,314
Turnover \$'000	406,115	429,328	480,862	522,875
Purchases, transfers in \$'000	207,925	227,479	238,596	265,434
Value added \$'000	204,837	216,577	234,683	256,614
Rent and leasing expenses \$'000	2,804	3,378	4,795	5,744
Net fixed capital expenditure \$'000	12,270	16,076	13,472	13,505

Particulars of establishments classified to the plastic and related products industries are shown in the following table:

VICTORIA—ASIC GROUP 343: PLASTIC AND RELATED PRODUCTS

Particulars	1968-69	1969-70	1971-72	1972-73
Number of establishments at 30 June	271	282	316	349
Average number of persons employed	12,071	12,696	13,915	15,067
Salaries and wages paid \$'000	38,287	43,838	57,679	69,283
Turnover \$'000	182,754	206,516	257,556	310,255
Purchases, transfers in \$'000	109,883	127,345	153,323	175,626
Value added \$'000	77,093	84,871	108,790	137,527
Rent and leasing expenses \$'000	2,189	2,515	3,991	4,272
Net fixed capital expenditure \$'000	11,502	9,461	14,839	13,909

Group 211 expanded

The following tables show the principal statistics of the classes of industry combined in Group 211 on page 495. For reasons of confidentiality, Group 212 shown on page 496 cannot be expanded to the class level.

VICTORIA—ASIC 2111 : FRESH, PRESERVED, AND CANNED MEAT (INCLUDING TALLOW, MEALS, AND FERTILISERS OF ANIMAL ORIGIN)

Particulars	1968-69	1969-70	1971-72	1972-73
Number of establishments at 30 June	229	202	185	178
Average number of persons employed	10,151	12,543	14,470	14,625
Salaries and wages paid \$'000	33,034	42,719	64,065	71,296
Turnover \$'000	224,508	321,033	390,855	531,866
Purchases, transfers in \$'000	187,155	256,324	296,587	415,965
Value added \$'000	46,285	65,820	101,127	127,653
Rent and leasing expenses \$'000	1,461	1,522	2,086	2,475
Net fixed capital expenditure \$'000	2,225	3,850	7,899	15,670

VICTORIA—ASIC 2112: FRESH AND FROZEN POULTRY

Particulars	1968-69	1969-70	1971-72	1972-73
Number of establishments at 30 June	62	61	55	48
Average number of persons employed	818	1,008	1,287	1,340
Salaries and wages paid \$'000	1,904	2,526	3,900	4,262
Turnover \$'000	18,892	22,587	29,822	36,112
Purchases, transfers in \$'000	13,114	16,396	23,315	25,212
Value added \$'000	5,615	5,783	7,029	9,143
Rent and leasing expenses \$'000	275	141	162	463
Net fixed capital expenditure \$'000	492	899	525	637

VICTORIA—ASIC 2113: BACON, HAM, AND SMALLGOODS

Particulars	1968-69	1969-70	1971-72	1972-73
Number of establishments at 30 June	49	48	46	46
Average number of persons employed	2,130	2,224	2,414	2,503
Salaries and wages paid \$'000	6,675	7,469	9,585	11,483
Turnover \$'000	47,459	51,097	59,845	72,168
Purchases, transfers in \$'000	34,531	37,051	43,238	50,844
Value added \$'000	13,184	13,799	17,101	21,722
Rent and leasing expenses \$'000	210	217	288	391
Net fixed capital expenditure \$'000	1,507	1,873	1,799	861

VICTORIA—ASIC 2114 : CASINGS OF ANIMAL ORIGIN

Particulars	1968-69	1969-70	1971-72	1972-73
Number of establishments at 30 June	16	16	17	16
Average number of persons employed	405	496	668	507
Salaries and wages paid \$'000	1,102	1,489	2,279	2,082
Turnover \$'000	4,822	6,718	7,354	7,448
Purchases, transfers in \$'000	2,484	3,735	4,497	4,124
Value added \$'000	2,333	2,890	2,930	3,061
Rent and leasing expenses \$'000	42	44	53	49
Net fixed capital expenditure \$'000	25	76	453	34

Concrete pipe industry

Victoria is the home of methods of concrete pipe manufacture which have been adopted in many countries. The methods are devised for the production of high quality, thin-walled reinforced concrete pipes to meet the standard specifications of major sewerage, drainage, and water supply authorities throughout the world.

Two companies, Humes Ltd and Rocla Industries Ltd, developed similar techniques for making concrete pipes over the period 1910 to 1945. Both companies now have factories throughout Victoria and Australia, and operate through licensees, partnerships, or directly in other countries.

The impact of the Australian industry derives from the early shortages of pipes made of steel, cast iron, and wrought iron. In the early 1900s Australia was far from the sources of steel and iron. Engineers first devised simple methods of casting reinforced concrete pipes in moulds without mechanical compaction. A series of later developments led to the two manufacturing systems currently used: the centrifugal spinning machine of Humes and the roller suspension machine of Rocla.

The "modern" industry really began between 1910 and 1920 when the W. R. Hume process of centrifugal compaction was developed in Adelaide. This process involves feeding concrete into a spinning mould, and was subsequently adopted in other Hume factories in Australia. It was also used by Rocla and employed widely overseas.

In the 1940s a modification of the centrifugal spinning process was developed by Rocla in Melbourne. Called the roller suspension process, it involves a combination of spinning, kneading, and vibration to compact the concrete. It has also been widely adopted.

In the Hume centrifugal process, concrete is fed by an advancing endless belt into a rotating horizontal pipe mould. The moulds are supported and rotated by discs. During rotation, the filled mould is screeded and may be rolled by a sleeved internal shaft. The rate of spinning is increased gradually so as to compact the concrete finally under a centrifugal force equal to fifty times that of gravity. Steam curing and demoulding follows.

In the Rocla roller suspension process, a pipe mould is hung horizontally on a rotating steel roller with two end bearings. The mould rotates by friction and concrete is fed evenly to the mould by an advancing endless belt. The concrete is stiff and cohesive, with a water/cement ratio of about 0.3 by weight. When the mould is full, the roller bears against the concrete with a high pressure accompanied by some vibration of the roller. The pressure is determined by weight of the filled mould, and the narrow width of contact between roller and concrete. Steam curing and demoulding follows.

Attendant upon the development of the pipemaking systems has been the invention of automatic electric reinforcing cage welding machines, which spiral the wire to various pitches, diameters, and lengths, and other ancillary equipment. Other innovations of wide significance from the Victorian industry include the rubber ring joint, which enables pipelines to be constructed with a greater degree of flexibility and watertightness, the non-cylinder prestressed concrete pipe, and the incorporation of a protective P.V.C. lining on the internal surface of concrete pipes.

Concrete pipes are produced in many different sizes, from 100 mm to 3,600 mm diameter and up to six metres long. Nearly all production has to conform to the Australian Standard Specifications for precast concrete drainage pipes and pressure pipes. The Australian standards, drawn up by consumers, specifiers, and manufacturers, are generally more stringent than those overseas and were among the first in the world to specify performance of the product, rather than a prescription of manufacture. Australian concrete pipes have to undergo tests for resistance to external loads and internal hydraulic pressures, and for absorption. Emphasis is placed on the quality of aggregates, cement, and steel, as well as on workmanship, finish, and dimension tolerances.

Concrete pipes and allied products are used by the public and the private sectors of the economy. The public group comprises government and semi-governmental authorities, municipalities, and their contractors. It is this sector which buys nearly all of the production of the major concrete pipe manufacturers in Australia. The private group comprises farmers and irrigators, and merchants supplying them, private land developers, and contractors acting for them.

Concrete Industries (Monier) Ltd, the other major Victorian manufacturer, began in Sydney as the N.S.W. State Monier Pipe Works in 1910. This was taken over by employees in 1936. The company mainly uses the centrifugal spinning process of manufacture, operating in the eastern States.

The Australian processes are used widely overseas under licence or by affiliated companies. Humes Ltd has subsidiaries making concrete pipes in New Zealand, Singapore, Malaysia, Sabah, and Fiji, while Rocla Industries Ltd operates directly in Great Britain and Canada and in partnership in South Africa. Concrete Industries (Monier) Ltd also has factories in Papua New Guinea. The two Melbourne-based companies, with Monier, together account for about 96 per cent of concrete pipe production in Australia. They employ a total of about 5,000 persons in Australia in seventy separate plants located in all States, the Australian Capital Territory, and the Northern Territory.