

MANUFACTURING

NATURAL RESOURCES AND LOCATION

Natural resources

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

Although Victoria's historic gold rush has long since passed, gold is still mined in the Castlemaine, Gaffneys Creek, and Harrietteville areas. Victoria's other mineral resources include salt collected from solar evaporation on the western shores of Port Phillip and from the Wimmera and Mallee lakes; gypsum is also found in the north-western Mallee. More detailed information on mining activity can be found on pages 335–44.

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

Water, needed in large quantities for industry, is available throughout much of Victoria from dams in the catchment areas of the chief rivers (see map on page 478 of the *Victorian Year Book* 1966). In most years Melbourne is well supplied from the storages to its north and north-east in the Plenty, Upper Yarra, Maroondah, and O'Shannassy watersheds. However, severe restrictions were imposed during the 1967–68 and 1972–73 summers because of widespread drought conditions. To meet future demands, construction works are being extended. (See pages 193–4.)

Power supplies and the fuels from which they are derived are basic for industrial development. Victoria's range of carboniferous fuels is not great and, in the past, it was necessary to import significant amounts of black coal from New South Wales. Subsequently, the State Electricity Commission developed the brown coal resources of the La Trobe valley. The open-cut mines of the Yallourn-Morwell region presently produce about 25 million tonnes per year for briquette making and use in the steam-generation of electricity. With the

high voltage grid network mapped on page 327, the Commission now delivers the bulk of Victoria's public electricity requirements; the balance is purchased interstate.

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

Location

Victoria's earliest industries were located in Melbourne, the entry port for most of the people and their supplies. As Victoria developed, Melbourne became its most populous centre, major port, the hub of the railway and road network, and major manufacturing centre. At 30 June 1974, 83 per cent of Victoria's 12,103 manufacturing establishments and 85 per cent of its work force engaged in manufacturing were located in the Melbourne Statistical Division. There are basic reasons for this: Melbourne's function as port and transport focus makes the collection of raw materials and the distribution of manufactured goods relatively easy; the concentration of Victoria's population in the city means a concentration of potential purchasers and potential workers; and by locating their operations in Melbourne, manufacturers can enjoy easy interchange of materials, parts, and services with other manufacturers.

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

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

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

The other country urban areas in which more than 1,000 persons are employed in manufacturing establishments (ranked in order of the number of persons employed in factories) are the Ballarat urban area, Bendigo urban area, La Trobe valley, Shepparton City, Wangaratta City, Wodonga Rural City, Warrnambool City, Maryborough City, and Castlemaine 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.

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, 1973–74 data appears in this chapter. (See also pages 445–6.)

Manufacturing developments during 1974

Victorian manufacturing industry generally continued to expand during 1974, although setbacks were experienced in some sectors of industry following a downturn in the national economy.

During the first half of 1974 the textile, apparel, and footwear manufacturers continued to expand in Victorian country centres, encouraged by Victorian Government incentives and greater availability of female labour relative to the metropolitan area. This growth slowed and in some instances was reversed in the second half of the year. A number of manufacturers were obliged to reduce their employment or to close country factories and consolidate operations in Melbourne. The textile, apparel, and footwear industries all suffered severe import competition. The Australian Government subsequently introduced restraints on imports of many items produced by these industries and also implemented a programme of special assistance to non-metropolitan manufacturing firms.

There was little significant development in the light engineering sector during 1974. A \$1m plant to produce colour television and other electronics products was opened at Wodonga. At Sunbury an automated plant costing \$2.5m was commissioned to produce domestic freezers and is capable of producing 1,000 freezers per day. In the automotive field, a large motor vehicle manufacturer

commenced an \$18m expansion programme which includes \$3m expenditure on new warehousing facilities at Fishermens Bend. An automotive lamp manufacturer commenced a \$300,000 factory at Seymour, and a component manufacturer purchased 11 hectares of land at Gisborne to accommodate, initially, approximately 850 square metres of factory and office facilities.

In heavy engineering a \$2m plant for reclaiming steel and other metal from old cars was installed at Brooklyn. The plant is capable of fragmenting 300 car bodies per day with engines and transmissions still installed. An integral part of the plant are vibratory feeders, magnetic separators, conveyors, a powerful hammer mill, and extensive pollution control equipment. At Geelong a steel rod mill is planned at an approximate cost of \$15m to provide feedstock for a large steel cord and steel hose plant. Contracts for the early stage of construction have been let and completion is expected by the middle of 1976.

Two Melbourne engineering firms decided to decentralise to the Bendigo area. One firm which produces iron and steel castings will transfer its entire foundry operations to its new Bendigo factory which has almost been completed. The other firm will decentralise part of its activities and has purchased 5 hectares at Kangaroo Flat for the erection of a new factory. The first stage of the building has commenced and when completed it is planned to produce air compressors, ball mills, gas and oil furnaces, and tunnel and rotary kilns.

In the chemical industries an additional "cracking" furnace for the existing ethane "cracking" plant of a petrochemical company at Altona was completed in late 1974. The additional furnace cost approximately \$1m and will increase the capacity of the plant by 30-40 per cent. At Huntingdale a firm manufacturing soft gelatin capsules commenced expansion of its plant which is expected to be completed in mid-1975. The cost of the project is \$1.7m and when completed capacity will be doubled from its present level.

In the food industries, construction was well under way at Tullamarine on an \$11m soft drink factory which is scheduled for completion in mid-1975 and will be the largest and most modern soft drink plant in Australia. At Ballarat construction has commenced on the first stage of a food processing plant which will mainly produce frozen french fried potatoes and is expected to be completed by June 1975 at a cost of approximately \$3.7m. The second and third stages of construction of the new plant are planned for the late 1970s and will bring the total estimated cost of the project to almost \$10m. An additional hydrostatic cooker, costing approximately \$1m was being installed late in 1974 at the Wodonga factory of a pet food manufacturer and is capable of processing 103,000 cans of pet food every 130 minutes. Construction commenced on a \$2.5m confectionery plant at Scoresby, and production is expected to commence in November 1975. Eighty people will be employed early in 1976, rising to 200 when full production capacity is utilised.

In the building materials field, a new plant to manufacture float glass commenced production in mid-1974 at Dandenong. Built at a cost of \$26m the plant incorporates the latest techniques, developed in England, for producing sheet glass. At Campbellfield, two new gas-fired brick tunnel kilns and associated equipment were completed and began production. The total cost of the project was \$7m.

In the packaging industry, a new \$14m can manufacturing plant commenced production at St Albans. The plant will produce 480 million seamless beer and soft drink cans per year from either tinplate or aluminium. The project is a major venture between an Australian and Japanese company and incorporates special pollution and noise control equipment.

The saw mill at the Myrtleford integrated forest products complex has been completed. Construction work commenced at Maryvale, in the Latrobe valley, of foundations and steelwork for the building to house a new paper machine and is well advanced. Erection of the chemical recovery plant is on schedule and will

be completed during 1976. Works to increase the capacity of the pulp mills have been completed and the semi-chemical mill is now operating near the planned rate of 85,000 tonnes per annum.

Further reference, 1975

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 262-93. The Act debar 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. Recent legislative changes enable school pupils to obtain work experience as part of their education. This applies for a maximum of 12 days per school term and pupils participating must be in the second year of secondary school or over the age of thirteen years. The system in relation to work experience is under the strict control of school principals. Apart from these exceptions, the general effect of the two statutes is to restrict the incidence of child labour in Victoria to a very low level.

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 Tokyo.

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 Decentralisation, 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 Victoria.

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:

- (1) beyond a radius of 80 kilometres from the post office at the corner of Bourke Street and Elizabeth Street in the City of Melbourne;
- (2) within a radius of eight kilometres from the principal post offices at Bacchus Marsh, Broadford, Gisborne, Kilmore, Kyneton, or Woodend; or
- (3) 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. The Victorian Development Corporation Act currently enables the Corporation to borrow in aggregate up to \$200m subject to the foregoing authorisations and restrictions. The aggregate of funds available to the Corporation for the financial years 1973-74 and 1974-75 amounted to \$11.3m and the interest rate determined by the Treasurer for loans approved by the Corporation was set at 7.5 per cent per annum for both financial years.

Australian Department of Overseas Trade

The Department is responsible for developing and maintaining Australia's position as a major world trading nation through international trade and commodity commitments and agreements, development of export markets, and formulation of policy proposals for the Australian Government on Australia's international trade policy and trade objectives.

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 a

report by the Authority recommending temporary assistance 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 485.

Prices Justification Tribunal

The Prices Justification Tribunal was established in August 1973 under the provisions of the *Prices Justification Act 1973*. The Tribunal is a fully discretionary body appointed under the Act to consider the justification for proposed price increases put to it by companies subject to the Act. It is not a price regulating authority.

The Prices Justification Tribunal consists of a chairman, a deputy chairman, and five members appointed by the Governor-General. The Office of the Prices Justification Tribunal comprises the staff required to assist the Tribunal in the performance of its functions and consists of persons appointed or employed under the *Public Service Act 1922-1973*. Further information on the Prices Justification Tribunal is contained in its second annual report to the Australian Parliament. **Further reference, 1975**

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

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

Industrial associations, firms, or government departments may request standards relating to such things as terminology, test methods, dimensions, specifications of performance and quality of products, and safety or design codes. Standards derive authority from voluntary adoption except in special cases where safety is involved, when they may have compulsory application. The Association

owns a registered certification trade mark which manufacturers may obtain a licence to use.

The Association has international affiliations and maintains close links with overseas standards organisations. It acts as Australian agent for the procurement of overseas publications and the standards of other countries.

The headquarters office of the Association is in Sydney, and there is a major office in Melbourne. Branch offices are located in other capital cities and at Newcastle, New South Wales.

National Association of Testing Authorities

This is the Australian organisation for accreditation of testing and measuring facilities. It registers testing and measuring laboratories which can demonstrate their technical and managerial competence. Registration of laboratories is voluntary. Registered laboratories are operated by industrial, educational, and commercial testing authorities. The Association is recognised by all State Governments, the Australian Government, and industry associations. Registered laboratories have the right to endorse their test documents in the name of the Association.

Industrial Design Council of Australia

The Industrial Design Council of Australia established the Australian Design Centre, 151 Flinders Street, Melbourne, as its State Office for Victoria in 1969. The Council's purpose is to work for improved design in Australian manufactured products. It is financed by Australian and State Governments with further support from manufacturing companies and organisations.

The Council is advised by committees representing industry, commerce and government, designers and educationists. The main emphasis in the Council's programme is its design counselling service to all sections of manufacturing industry, particularly smaller companies. 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 entitled to use the Good Design Label are displayed in the Australian Design Centre, which is open to the general public on weekdays. Talks are arranged for teacher and student groups as well as for other visitors. I.D.C.A. publications, including the Australian Design Index—a record of Good Design Label Products, the magazine *Design Australia* (last issued in November 1975), 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 447 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.

In respect of 1973-74, 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 188,412 persons or 40.1 per cent of the total employment in manufacturing establishments in 1973-74, 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 63,733 or 13.6 per cent, followed by Clothing and footwear (sub-division 24) and Paper, paper products, and printing (sub-division 26) with 60,253 and 35,433, respectively, or 12.8 per cent and 7.5 per cent of the total.

The following table shows, at intervals between 1901 and 1967-68 and 1968-69, 1969-70, 1971-72, 1972-73, and 1973-74, 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
1946-47	10,949	265,757	156	368	263	631	244
1953-54	15,533	331,277	472	1,154	817	1,971	679
1960-61	17,173	388,050	776	1,914	1,418	3,332	1,642
1965-66	17,980	439,149	1,077	2,597	2,028	4,625	2,386
1967-68	18,030	449,945	1,244	2,957	2,395	5,351	2,685
1968-69	(c)11,563	431,651	1,342	(d)3,861	2,542	(e)6,336	(f)278
1969-70	(c)11,393	445,663	1,497	(d)4,307	2,799	(e)6,998	(f)300
1971-72	(c)11,408	450,026	1,800	(d)4,812	3,328	(e)8,055	(f)374
1972-73	(c)11,735	455,029	2,045	(d)5,392	3,738	(e)9,078	(f)438
1973-74	(c)12,103	470,098	2,522	(d)6,481	4,556	(e)10,675	(f)414

(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, 1973-74

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	13,828	516,413	2,833	7,145	5,181	11,933	430
Victoria	12,103	470,098	2,522	6,481	4,556	10,675	414
Queensland	4,279	118,895	597	2,099	1,220	3,260	118
South Australia	2,968	128,142	666	1,650	1,105	2,657	109
Western Australia	2,819	67,639	344	1,112	648	1,727	87
Tasmania	935	31,686	162	495	340	818	25
Northern Territory	102	2,333	18	44	49	84	18
Australian Capital Territory	139	3,704	22	37	42	76	3
Total	37,173	1,338,910	7,165	19,063	13,141	31,229	1,204

For footnotes see previous table.

The total value added in 1973-74 was \$4,556m. Of this amount the Metal products sub-divisions contributed \$1,774m which represented 38.9 per cent of the total. The Food sub-division followed with \$728m or 16.0 per cent, and the next in order were the Clothing and footwear sub-division with \$378m, 8.3 per cent, and the Paper, paper products, and printing sub-division with \$371m, 8.1 per cent.

The following table contains a summary of manufacturing establishments by sub-division of industry in Victoria during the year 1973-74:

VICTORIA—MANUFACTURING ESTABLISHMENTS BY SUB-DIVISION OF INDUSTRY, 1973-74

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	1,207	63,733	342	1,694	728	2,391	75
23	Textiles	424	29,368	143	407	261	625	29
24	Clothing and footwear	1,614	60,253	240	455	378	805	11
25	Wood, wood products, and furniture	1,573	20,934	98	222	185	393	16
26	Paper, paper products, and printing	1,237	35,433	200	370	371	722	33
27	Chemical, petroleum, and coal products	374	23,279	145	420	344	748	31
28	Non-metallic mineral products	477	15,628	95	188	189	369	43
29	Basic metal products	222	13,178	88	332	150	465	21
31	Fabricated metal products	1,557	38,931	206	421	366	757	21
32	Transport equipment	510	64,965	396	848	593	1,385	62
33	Other machinery and equipment	1,745	71,338	394	726	665	1,320	42
34	Miscellaneous manufacturing	1,163	33,058	175	397	326	696	30
	Total	12,103	470,098	2,522	6,481	4,556	10,675	414

For footnotes see page 447.

The following table shows the number of manufacturing establishments operating in Victoria at 30 June 1969, 1970, 1972, 1973, and 1974, classified according to sub-division of industry:

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

ASIC code	Industry sub-division	1969	1970	1972	1973	1974
21-2	Food, beverages, and tobacco	1,351	1,290	1,197	1,222	1,207
23	Textiles	376	371	384	398	424
24	Clothing and footwear	1,691	1,634	1,606	1,596	1,614
25	Wood, wood products, and furniture	1,531	1,478	1,473	1,488	1,573
26	Paper, paper products, and printing	1,145	1,145	1,156	1,205	1,237
27	Chemical, petroleum, and coal products	363	362	357	363	374
28	Non-metallic mineral products	434	449	446	445	477
29	Basic metal products	218	210	203	211	222
31	Fabricated metal products	1,499	1,496	1,477	1,517	1,557
32	Transport equipment	444	438	451	471	510
33	Other machinery and equipment	1,524	1,538	1,651	1,716	1,745
34	Miscellaneous manufacturing	987	983	1,007	1,103	1,163
	Total	11,563	11,394	11,408	11,735	12,103

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 employed 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 book-binding, furniture (excluding sheet metal), joinery and wooden structured fittings, and industrial machinery and equipment, not elsewhere classified.

A general indication of the geographical distribution of manufacturing establishments in Victoria as at 30 June 1974 is shown in the following table where they are classified according to statistical divisions:

VICTORIA—MANUFACTURING ESTABLISHMENTS
IN STATISTICAL DIVISIONS, 1973-74

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	10,020	398,143	2,158	5,313	3,868	8,857	312
Barwon	382	23,276	131	323	223	530	37
South Western	166	5,008	23	119	44	163	5
Central Highlands	231	9,881	47	101	84	178	10
Wimmera	107	1,800	7	20	12	31	1
Northern Mallee	111	1,133	5	19	10	28	5
Loddon-Campaspe	282	9,424	44	128	70	192	6
Goulburn	232	6,588	32	156	83	242	7
North Eastern	147	4,691	23	87	60	140	7
East Gippsland	123	2,333	11	42	23	65	5
Central Gippsland	222	6,433	35	151	68	216	17
East Central	80	1,388	6	22	11	33	2
Total	12,103	470,098	2,522	6,481	4,556	10,675	414

For footnotes see page 447.

Manufacturing establishments in the Melbourne Statistical Division constituted 82.7 per cent of the total number in Victoria at 30 June 1974, 84.7 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 451.

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

Employment, wages, and salaries

Employment

From 1968-69 all persons employed in a manufacturing establishment and separately located administrative offices and ancillary units serving the establishment (including proprietors working in their own businesses) are included as persons employed. The grouping of occupations comprises (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 1973-74, and for each statistical division during 1973-74:

VICTORIA—PERSONS EMPLOYED IN MANUFACTURING ESTABLISHMENTS, 1968-69 TO 1973-74

ASIC code	Industry sub-division	1968-69	1969-70	1971-72	1972-73	1973-74
21-2	Food, beverages, and tobacco	57,134	60,125	62,805	63,847	63,733
23	Textiles	28,559	28,999	28,587	28,410	29,368
24	Clothing and footwear	63,998	64,258	61,772	60,896	60,253
25	Wood, wood products, and furniture	19,801	19,612	20,315	20,340	20,934
26	Paper, paper products, and printing	33,582	34,361	34,866	34,476	35,433
27	Chemical, petroleum, and coal products	21,944	22,862	22,638	22,566	23,279
28	Non-metallic mineral products	13,868	14,022	13,799	14,595	15,628
29	Basic metal products	10,807	11,332	11,680	12,829	13,178
31	Fabricated metal products	36,745	38,969	38,233	38,205	38,931
32	Transport equipment	53,274	56,237	59,579	60,909	64,965
33	Other machinery and equipment	63,528	65,906	65,856	66,601	71,338
34	Miscellaneous manufacturing	28,411	28,980	29,896	31,355	33,058
	Total	431,651	445,663	450,026	455,029	470,098

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 1974 were 31.7 per cent of the total. Females exceeded males in the Clothing and footwear sub-division (24) where they accounted for 75.9 per cent of the sub-division total. Of the total females employed 30.7 per cent were in sub-division 24; 12.9 per cent were in sub-division 33; and 12.4 per cent were in sub-division 21-2.

VICTORIA—NUMBER OF MANUFACTURING ESTABLISHMENTS AND PERSONS EMPLOYED (a) IN EACH STATISTICAL DIVISION, CLASSIFIED ACCORDING TO STATISTICAL DIVISION AND INDUSTRY SUB-DIVISION, 1973-74

ASIC code	Industry sub-division	Statistical division										Total		
		Mel-bourne	Barwon	South Western	Central High-lands	Wimmera	North-ern Mallee	Loddon-Campaspe	Goul-burn	North Eastern	East Gipps-land		Central Gipps-land	East Central
NUMBER OF MANUFACTURING ESTABLISHMENTS (a)														
21-2	Food, beverages, and tobacco	689	59	51	39	36	47	73	64	40	30	67	12	1,207
23	Textiles	365	25	2	10	2	2	4	6	4	..	5	1	424
24	Clothing and footwear	1,511	18	6	16	2	..	21	10	2	..	20	4	1,614
25	Wood, wood products, and furniture	1,117	69	25	48	14	11	44	57	39	62	52	35	1,573
26	Paper, paper products, and printing	1,047	31	21	20	14	11	26	21	13	7	17	9	1,237
27	Chemical, petroleum, and coal products	347	10	2	3	..	..	8	..	1	..	2	1	374
28	Non-metallic mineral products	289	27	18	26	..	15	33	23	14	..	11	3	477
29	Basic metal products	195	7	..	9	..	..	4	3	2	1	1	..	222
31	Fabricated metal products	1,354	48	26	19	13	7	28	18	17	5	19	3	1,557
32	Transport equipment	434	20	6	13	2	6	9	8	3	2	6	1	510
33	Other machinery and equipment	1,569	46	7	22	11	11	27	16	10	2	14	10	1,745
34	Miscellaneous manufacturing	1,103	22	2	6	4	1	5	6	2	3	8	1	1,163
Total		10,020	382	166	231	107	111	282	232	147	123	222	80	12,103
NUMBER OF PERSONS EMPLOYED (a)														
21-2	Food, beverages, and tobacco	45,636	2,208	2,457	1,350	847	598	2,056	4,143	1,585	593	1,803	457	63,733
23	Textiles	21,582	3,107	324	849	258	..	927	432	1,485	114	389	15	29,368
24	Clothing and footwear	52,872	1,623	1,013	1,190	112	34	1,695	332	214	114	884	170	60,253
25	Wood, wood products, and furniture	15,207	751	273	801	83	64	487	581	560	1,202	655	270	20,934
26	Paper, paper products, and printing	31,579	356	186	582	94	138	320	310	264	95	1,372	137	35,453
27	Chemical, petroleum, and coal products	21,397	1,439	282	19	..	..	42	..	17	..	80	5	23,279
28	Non-metallic mineral products	12,747	1,245	88	531	77	115	276	144	141	25	212	27	15,628
29	Basic metal products	9,417	2,628	88	848	..	..	88	34	154	2	77	..	13,178
31	Fabricated metal products	35,325	766	116	751	42	36	996	221	169	42	300	164	38,931
32	Transport equipment	55,992	6,084	34	1,892	219	18	694	50	29	28	20	118	64,965
33	Other machinery and equipment	64,236	2,677	231	918	219	129	1,799	284	71	82	668	24	71,338
34	Miscellaneous manufacturing	32,153	392	4	150	62	1	44	57	2	147	43	3	33,058
Total		398,143	23,276	5,008	9,881	1,800	1,133	9,424	6,588	4,691	2,333	6,433	1,388	470,098

(a) See footnotes on page 447.

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, 1973, and 1974 :

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	103,784	341,904	452,422
1973	7,101	108,364	348,066	463,531
1974	7,459	109,769	359,479	476,707

The following table shows the nature of employment in manufacturing establishments in 1973-74 classified according to industry sub-division :

VICTORIA—MANUFACTURING ESTABLISHMENTS: TYPE OF EMPLOYMENT
BY INDUSTRY SUB-DIVISION AT 30 JUNE 1974

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	846	16,750	44,383	61,979
23	Textiles	150	4,915	22,779	27,844
24	Clothing and footwear	1,050	7,062	51,037	59,149
25	Wood, wood products, and furniture	1,309	3,365	16,822	21,496
26	Paper, paper products, and printing	777	10,580	25,127	36,484
27	Chemical, petroleum, and coal products	115	9,998	13,416	23,529
28	Non-metallic mineral products	199	3,839	12,116	16,154
29	Basic metal products	80	4,304	9,573	13,957
31	Fabricated metal products	984	8,716	30,853	40,553
32	Transport equipment	309	14,042	52,842	67,193
33	Other machinery and equipment	834	18,462	54,893	74,189
34	Miscellaneous manufacturing	806	7,736	25,638	34,180
	Total	7,459	109,769	359,479	476,707

Although "production and all other employees" constitute 75.4 per cent of the total number employed in manufacturing establishments, the percentage varies from 86.3 per cent in sub-division 24 to 57.0 per cent in sub-division 27. Sub-division 27 also has the highest percentage of "administrative, office, sales, and distribution employees", 42.5 per cent, compared with the Victorian average of 23.0 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 6.1 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	1974
21-2	Food, beverages, and tobacco—					
211	Meat products	2,634	2,743	3,675	3,279	3,315
213	Fruit and vegetable products	1,993	2,141	1,814	2,193	2,132
216	Bread, cakes, and biscuits	3,349	3,613	3,373	3,758	3,979
217-8	Sugar and other food products	3,081	2,938	3,352	3,314	4,144
	Other	4,339	4,496	4,358	4,755	5,127
	Total	15,396	15,931	16,572	17,299	18,697
23	Textiles—					
231-2	Textiles, yarns, and woven fabrics	9,484	9,512	9,008	8,977	8,586
	Other	2,766	2,775	3,088	3,151	3,384
	Total	12,250	12,287	12,096	12,128	11,970
24	Clothing and footwear—					
241	Knitting mills	9,823	10,522	10,028	9,987	10,098
242	Clothing	31,781	31,103	30,207	29,699	28,748
243	Footwear	7,634	7,685	6,902	6,745	5,866
	Total	49,238	49,310	47,137	46,431	44,712
25	Wood, wood products, and furniture	2,483	2,622	2,833	2,994	3,337
26	Paper, paper products, and printing	9,281	9,545	9,484	9,580	10,004
27	Chemical, petroleum, and coal products	5,948	6,295	5,892	5,951	6,256
28	Non-metallic mineral products	1,830	1,832	1,821	2,026	2,273
29	Basic metal products	1,285	1,162	1,257	1,466	1,585
31	Fabricated metal products	6,903	7,498	7,362	8,168	8,812
32	Transport equipment	7,310	8,154	8,583	9,527	11,788
33	Other machinery and equipment—					
332	Appliances and electrical equipment	10,039	10,656	10,665	12,364	13,805
333	Industrial machinery and equipment	3,839	3,944	3,725	4,129	4,514
	Other	1,547	1,532	1,761	1,781	1,884
	Total	15,425	16,132	16,151	18,274	20,203
34	Miscellaneous manufacturing	9,602	9,692	10,390	11,250	12,139
	Total	136,951	140,460	139,578	145,094	151,776

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
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	314,259	1,753	140,770	784	455,029	1,271
1973-74	320,949	1,769	149,149	821	470,098	1,299

(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, 11.3 per cent. In sub-division 24, Clothing and footwear, females predominate and comprise 75.9 per cent of the total number of persons employed; within this sub-division in the Clothing group, 242, 83.3 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 1973-74 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 1973-74. 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, 1973-74
(\$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	107	235	342
23	Textiles	31	112	143
24	Clothing and footwear	42	197	240
25	Wood, wood products, and furniture	20	77	98
26	Paper, paper products, and printing	68	133	200
27	Chemical, petroleum, and coal products	69	76	145
28	Non-metallic mineral products	26	70	95
29	Basic metal products	33	54	87
31	Fabricated metal products	55	151	206
32	Transport equipment	109	287	396
33	Other machinery and equipment	122	273	394
34	Miscellaneous manufacturing	50	126	176
	Total	732	1,791	2,522

Of the total amount of wages and salaries paid in Victoria in 1973-74—\$2,522m—the metal fabricating sub-divisions (29-33) (including transport equipment, machinery, and other equipment), were responsible for \$1,083m or 42.9 per cent; Food, beverages, and tobacco \$342m or 13.6 per cent; Clothing and footwear, \$240m or 9.6 per cent; and Paper, paper products, and printing, \$200m or 7.9 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
(\$m)**

ASIC code	Industry sub-division	1968-69	1969-70	1971-72	1972-73	1973-74
21-2	Food, beverages, and tobacco	1,406	1,598	1,869	2,168	2,391
23	Textiles	380	392	432	505	625
24	Clothing and footwear	529	565	637	681	805
25	Wood, wood products, and furniture	227	242	273	318	393
26	Paper, paper products, and printing	434	472	548	617	722
27	Chemical, petroleum, and coal products	454	469	564	617	748
28	Non-metallic mineral products	209	222	256	307	369
29	Basic metal products	227	274	280	340	465
31	Fabricated metal products	462	505	572	620	757
32	Transport equipment	833	945	1,147	1,227	1,385
33	Other machinery and equipment	795	887	981	1,109	1,320
34	Miscellaneous manufacturing	382	423	492	569	696
	Total	6,336	6,995	8,051	9,078	10,675

Purchases, transfers in, and selected items of expense

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

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

ASIC code	Industry sub-division	1968-69	1969-70	1971-72	1972-73	1973-74
21-2	Food, beverages, and tobacco	1,018	1,166	1,302	1,510	1,694
23	Textiles	224	236	266	311	407
24	Clothing and footwear	308	322	350	371	455
25	Wood, wood products, and furniture	127	137	155	175	222
26	Paper, paper products, and printing	230	249	280	308	370
27	Chemical, petroleum, and coal products	260	265	321	351	420
28	Non-metallic mineral products	110	119	133	152	188
29	Basic metal products	157	195	184	235	332
31	Fabricated metal products	255	287	311	324	421
32	Transport equipment	503	573	702	746	848
33	Other machinery and equipment	443	506	525	591	726
34	Miscellaneous manufacturing	222	253	282	316	397
	Total	3,860	4,307	4,810	5,392	6,481

Stocks

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

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

ASIC code	Industry sub-division	1968-69	1969-70	1971-72	1972-73	1973-74
OPENING						
21-2	Food, beverages, and tobacco	194	209	237	252	265
23	Textiles	75	76	89	94	106
24	Clothing and footwear	82	89	99	105	113
25	Wood, wood products, and furniture	32	32	37	41	41
26	Paper, paper products, and printing	61	63	79	79	80
27	Chemical, petroleum, and coal products	90	92	106	113	119
28	Non-metallic mineral products	26	26	32	36	35
29	Basic metal products	36	40	51	59	64
31	Fabricated metal products	84	90	106	113	118
32	Transport equipment	167	171	200	229	221
33	Other machinery and equipment	212	233	287	291	294
34	Miscellaneous manufacturing	66	72	80	89	95
	Total	1,126	1,193	1,403	1,502	1,553
CLOSING						
21-2	Food, beverages, and tobacco	205	225	253	271	296
23	Textiles	75	80	95	100	150
24	Clothing and footwear	89	96	102	115	142
25	Wood, wood products, and furniture	33	33	40	42	55
26	Paper, paper products, and printing	64	73	81	78	99
27	Chemical, petroleum, and coal products	89	99	107	119	135
28	Non-metallic mineral products	26	28	36	34	46
29	Basic metal products	40	42	55	68	81
31	Fabricated metal products	89	99	116	120	148
32	Transport equipment	175	188	232	217	277
33	Other machinery and equipment	233	261	286	294	366
34	Miscellaneous manufacturing	73	78	86	94	122
	Total	1,192	1,301	1,489	1,553	1,914

Value added

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

**VICTORIA—MANUFACTURING ESTABLISHMENTS:
VALUE ADDED BY INDUSTRY SUB-DIVISION
(\$m)**

ASIC code	Industry sub-division	1968-69	1969-70	1971-72	1972-73	1973-74
21-2	Food, beverages, and tobacco	398	447	583	677	728
23	Textiles	157	161	173	200	261
24	Clothing and footwear	227	250	289	320	378
25	Wood, wood products, and furniture	101	106	121	144	185
26	Paper, paper products, and printing	207	232	269	309	371
27	Chemical, petroleum, and coal products	193	211	244	271	344
28	Non-metallic mineral products	99	105	127	153	189
29	Basic metal products	73	81	100	113	150
31	Fabricated metal products	211	226	271	303	366
32	Transport equipment	337	389	478	469	593
33	Other machinery and equipment	372	409	456	521	665
34	Miscellaneous manufacturing	167	177	216	258	326
	Total	2,541	2,796	3,328	3,738	4,556

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 1973-74 are given in the following tables :

VICTORIA—MANUFACTURING ESTABLISHMENTS :
COSTS AND TURNOVER, 1973-74
(\$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	1,694	342	+ 31	386	2,391
23	Textiles	407	143	+ 44	119	625
24	Clothing and footwear	455	240	+ 29	139	805
25	Wood, wood products, and furniture	222	98	+ 13	86	393
26	Paper, paper products, and printing	370	200	+ 19	171	722
27	Chemical, petroleum, and coal products	420	145	+ 16	199	748
28	Non-metallic mineral products	188	95	+ 8	94	369
29	Basic metal products	332	88	+ 17	62	465
31	Fabricated metal products	421	206	+ 30	160	757
32	Transport equipment	848	396	+ 56	197	1,385
33	Other machinery and equipment	726	394	+ 71	271	1,320
34	Miscellaneous manufacturing	397	175	+ 27	151	696
	Total	6,481	2,522	+ 361	2,033	10,675

(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, 1973-74
(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	70.8	14.3	+ 1.2	16.1	100.0
23	Textiles	65.1	22.9	+ 7.0	19.0	100.0
24	Clothing and footwear	56.5	29.8	+ 3.6	17.3	100.0
25	Wood, wood products, and furniture	56.5	24.9	+ 3.3	21.9	100.0
26	Paper, paper products, and printing	51.2	27.7	+ 2.6	23.7	100.0
27	Chemical, petroleum, and coal products	56.1	19.4	+ 2.1	26.6	100.0
28	Non-metallic mineral products	51.0	25.7	+ 2.2	25.5	100.0
29	Basic metal products	71.4	18.9	+ 3.6	13.3	100.0
31	Fabricated metal products	55.6	27.2	+ 3.9	21.1	100.0
32	Transport equipment	61.2	28.6	+ 4.0	14.2	100.0
33	Other machinery and equipment	55.0	29.9	+ 5.4	20.5	100.0
34	Miscellaneous manufacturing	57.0	25.2	+ 3.9	21.7	100.0
	Total	60.7	23.6	+ 3.4	19.1	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 29.8 per cent and the purchases and selected items of expense 56.6 per cent of the values of the finished articles, while in sub-division 21-2 the expenditure on wages amounts to 14.3 per cent and that on purchases, etc., to 70.8 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, 1972-73, and 1973-74 :

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
1973-74	6,481	2,522	+361	2,033	10,675

(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
1973-74	60.7	23.6	+3.4	19.1	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 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 1973-74 by industry sub-division :

VICTORIA—MANUFACTURING ESTABLISHMENTS: FIXED CAPITAL
EXPENDITURE AND RENT AND LEASING EXPENSES, 1973-74
(\$'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	20,104	402	51,353	71,859	13,435
23	Textiles	5,268	98	24,615	29,981	6,336
24	Clothing and footwear	2,073	381	8,879	11,333	9,965
25	Wood, wood products, and furniture	4,322	773	10,337	15,431	5,820
26	Paper, paper products, and printing	4,352	247	28,684	33,284	7,509
27	Chemical, petroleum, and coal products	6,766	9	25,831	32,606	4,373
28	Non-metallic mineral products	10,379	154	31,956	42,488	2,190
29	Basic metal products	3,677	178	17,586	21,442	2,408
31	Fabricated metal products	3,856	657	16,129	20,642	7,501
32	Transport equipment	16,617	473	44,669	61,758	6,614
33	Other machinery and equipment	5,535	664	36,701	42,900	12,925
34	Miscellaneous manufacturing	8,089	415	21,520	30,024	8,979
	Total	91,038	4,451	318,260	413,748	88,055

In the next table fixed capital expenditure by industry sub-division is shown for 1968-69, 1969-70, 1971-72, 1972-73, and 1973-74:

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

ASIC code	Industry sub-division	1968-69	1969-70	1971-72	1972-73	1973-74
21-2	Food, beverages, and tobacco	41,137	42,337	53,132	64,052	74,827
23	Textiles	15,339	22,928	14,268	12,248	29,208
24	Clothing and footwear	12,238	12,320	11,896	10,815	10,920
25	Wood, wood products, and furniture	5,027	5,107	4,328	12,333	16,092
26	Paper, paper products, and printing	23,391	17,839	41,770	38,163	33,254
27	Chemical, petroleum, and coal products	30,004	44,351	39,465	61,332	30,947
28	Non-metallic mineral products	14,048	16,064	10,072	17,564	42,803
29	Basic metal products	25,957	22,584	54,053	88,143	21,194
31	Fabricated metal products	17,942	20,528	26,034	21,159	20,791
32	Transport equipment	40,764	46,566	58,591	56,097	61,763
33	Other machinery and equipment	28,872	32,782	36,573	35,613	42,363
34	Miscellaneous manufacturing	22,967	16,128	23,653	20,838	29,586
	Total	277,686	299,535	373,835	438,354	413,748

Electricity and fuels used

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	1973-74
21-2	Food, beverages, and tobacco	17,807	18,816	20,648	21,814	24,610
23	Textiles	6,414	6,661	7,098	7,694	8,544
24	Clothing and footwear	3,737	3,595	4,113	4,277	4,596
25	Wood, wood products, and furniture	2,391	2,535	2,769	2,927	3,508
26	Paper, paper products, and printing	8,299	8,713	10,010	10,819	11,827
27	Chemical, petroleum, and coal products	12,332	12,458	12,804	12,908	15,372
28	Non-metallic mineral products	11,941	12,170	12,489	13,284	15,052
29	Basic metal products	8,943	13,851	12,317	13,254	15,715
31	Fabricated metal products	6,179	6,477	6,763	7,083	7,842
32	Transport equipment	8,425	8,751	10,244	10,897	11,660
33	Other machinery and equipment	8,254	8,738	8,742	9,087	10,692
34	Miscellaneous manufacturing	6,592	7,206	7,929	8,623	9,584
	Total	101,318	109,970	115,927	122,667	139,002

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

Commodity	1968-69	1969-70	1971-72	1972-73	1973-74
Electricity	64,270	71,891	71,173	76,026	85,871
Coal and coke—					
Black coal	2,092	2,130	646	471	67
Brown coal	1,531	1,515	1,647	1,207	1,634
Brown coal briquettes	3,328	3,466	3,354	3,500	3,265
Coke (including coke breeze)	1,176	1,329	2,011	2,316	2,685
Petroleum fuels (non-gaseous)—					
Light oils, etc.	1,054	1,523	1,926	2,156	2,575
Industrial diesel fuel	2,712	3,236	3,561	3,097	3,732
Furnace oil and other fuel oil	15,949	15,524	19,162	17,336	17,887
Town gas	4,326	4,510	7,158	11,189	15,841
Other fuels	4,874	4,846	5,288	5,369	5,444
Total	101,318	109,970	115,927	122,667	139,001

VICTORIA—MANUFACTURING ESTABLISHMENTS:
QUANTITIES OF FUELS USED

Commodity	Unit	1968-69	1969-70	1971-72	1972-73	1973-74
Coal and coke—						
Black coal	tonnes	231,843	230,773	56,419	36,364	4,068
Brown coal	"	713,261	696,750	591,609	458,882	579,080
Brown coal briquettes	"	415,564	462,525	428,943	449,614	407,861
Coke (including coke breeze)	"	48,110	49,178	52,136	60,266	59,158
Petroleum fuels (non-gaseous)—						
Light oils, etc.	'000 litres	28,731	35,214	38,637	42,421	44,346
Industrial diesel fuel	tonnes	91,156	120,609	123,496	101,686	111,497
Furnace oil and other fuel oil	"	924,367	909,789	1,027,569	852,450	743,024

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 1973-74 and 1974-75. 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	
			1973-74	1974-75	1973-74	1974-75
023.18, 20	Bacon and ham—bone-in	tonnes	3,190	2,880	23,035	20,076
19, 21	—bone-out	"	12,383	13,139	36,397	34,075
027.02-29, 72-77; 023.17	Meat—canned (excluding baby food)	'000 tonnes	39	28	56	43
051.31	Butter	"	128	119	175	161
051.36-46	Cheese	"	48	45	96	99
051.61	Ice cream	mill litres	68	66	212	207
051.72-73	Milk—powdered: full cream	'000 tonnes	27	33	37	44
062.01, 32	Flour, plain—wheaten (including sharps)	"	285	296	1,163	1,231
063.11, 21, 31	Malt	"	199	230	365	430
064.21	Biscuits	"	45	43	119	119
076.08, 15, 22	Canned or bottled apricots, peaches and pears	"	73	87	112	135
076.60	Jams, fruit spreads, fruit butters, etc.	"	17	20	33	30
094.02-47	Vegetables canned or bottled (including pickled)	"	24	29	121	132
	Confectionery—					
104.06-18	Chocolate or containing chocolate	"	24	29	56	62
104.21-29	Other	"	27	29	62	62
123.18	Sauce—tomato	mill litres	12	19	18	26

VICTORIA AND AUSTRALIA—PRINCIPAL ARTICLES MANUFACTURED—*continued*

Commodity Code No.	Article	Unit	Victoria		Australia	
			1973-74	1974-75	1973-74	1974-75
152.06	Pollard	'000 tonnes	63	67	250	276
171.03, 04, 07, 08	Aerated and carbonated waters, canned or bottled (a)	mill litres	235	239	865	834
242.07-11	Wool—scoured or carbonised	'000 tonnes	22	20	52	51
242.33, 35, 70-76	Wool tops—pure and mixed	„	10	4	18	14
246.46-49	Briquettes—brown coal	„	1,164	1,092	1,164	1,092
261.41	Cloth piece goods woven—woollen or predominantly woollen	'000 sq m	7,147	4,974	15,010	9,741
372.22-50	Blankets, bed (b)	'000	905	867	1,680	1,475
372.52-66; 374.51-57	Plastics and synthetic resins	'000 tonnes	164	154	403	369
403.02, 18, 20, 52-92, 96;	Bricks—clay	mill	522	452	2,053	1,713
404.01-98	Tiles, roofing	„	68	61	233	200
472.01, 03	Ready mixed concrete	'000 cub m	2,553	2,555	10,225	10,042
472.12, 475.30	Electric motors	'000	1,063	1,127	4,589	4,516
475.90	Finished motor vehicles (c)—					
503.13-32	Cars	'000	196	194	399	361
581.02-08, 10-16	Other	'000	30	35	66	69
582.04-28	Shirts (men's and boys')	'000 doz	1,239	1,026	2,692	2,275
773.02-35	Underwear—					
773.90, 94; 774.01-17, 36-39, 96, 97	Men's and boys'	'000 doz	1,358	1,068	2,621	2,163
774.44, 46, 48, 49, 61, 63, 68-73	Women's and girls'	'000 doz	3,166	2,223	4,730	3,429
775.01-19	Stockings—women's (d)	'000 doz pair	6,308	5,553	7,653	6,803
775.51-82, 91-98; 776.01-42	Socks and stockings—men's, children's, and infants'	„	3,232	2,364	3,415	2,602
793.05, 08, 21, 22, 31, 32, 41, 46, 51, 65, 66	Footwear—boots, shoes, and sandals (e)—					
793.06, 09, 24, 33, 34, 42, 47, 52, 68	Men's and youths'	'000 pair	6,915	5,867	12,025	9,979
793.04, 07, 10, 25, 35, 43, 48, 53, 69	Women's and maids'	'000 pair	12,193	7,607	17,334	11,430
805.22-60	Children's (including infants')	„	6,232	4,477	8,107	5,773
844.22-67	Soaps and soap based products for other than personal use—					
	Abrasive cleaners and scourers	tonnes	842	912	2,246	1,910
	Other	'000	13,434	11,941	37,533	34,120
	Mattresses—all types	'000	462	422	1,368	1,203

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

(b) Double, three quarter, single cot, bassinet, pram, etc.; 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 Australian Bureau of Statistics collects monthly production returns and makes available printed tables of Australian production statistics within a few weeks of the month to which they relate. A list of the subjects included in these production summaries is given in the following table.

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	28	Footwear
2	Chemicals, etc.	29	Biscuits, Cocoa, Confectionery, Ice Cream
3	Plastics and Synthetic Resins and Plasticisers	30	Storage Batteries—Wet Cell
4	Paints and Other Surface Coatings	32	Perambulators, Pushers and Strollers
5	Electricity and Gas	33	Motor Vehicles
6	Soap, Detergents, Glycerine and Fatty Acids	34	Television, Radios, Other Sound Equipment; Transistors
7	Internal Combustion Engines	35	Bed Bases and Mattresses
8	Lawnmowers	36	Processed Milk Products
9	Electrical Appliances	38	Fish Preserving
10	Motor Bodies, Trailed Vehicles, Lift-on Freight Containers, etc.	39	Jam, Preserved Fruit and Vegetables
11	Pedal Cycles	40	Cereal Products
12	Meters	41	Vegetable Oils; Margarine and Other Edible Processed Fats
13	Building Fittings	42	Malt and Beer
14	Cotton Goods	43	Stock and Poultry Foods and Canned Pet Food
15	Fellmongering, Woolscouring and Carbonising	45	Gramophone Records
16	Wool Top Making and Yarn Produced	47	Aerated and Carbonated Waters; Cordials and Syrups
17	Wool Woven Fabric, etc.	48	Sports Goods
18	Hosiery	49	Building Materials
19	Women's, Maids' and Girls' Clothing and Infants' and Babywear	50	Electrodes for Manual Welding
20	Cellulosic and Synthetic Fibre Tops, Yarns and Woven Fabric	51	Hides and Skins Used in Tanneries
21	Paper, Wood Pulp and Adhesive Tapes	52	Electrical Power Frequencies Transformers, Chokes and Ballasts
22	Floor Coverings and Felts	53	Plastics Film, Sheeting and Coated Materials
23	Electric Motors	55	Butter and Non-Processed Cheese
24	Men's, Youths' and Boys' Clothing	56	Canned Meat
25	Foundation Garments	58	Steel Wire and Wire Products
27	Gloves and Slide Fasteners	59	Non-ferrous Rolled, Extruded and Drawn Products

INDIVIDUAL INDUSTRIES

Introduction

Particulars on pages 462-6 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. For a description of each of the groups in the Australian Standard Industrial Classification, see Appendix E of the *Victorian Year Book 1975*.

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	1973-74
Number of establishments at 30 June	356	327	303	288	290
Average number of persons employed	13,504	16,271	18,839	18,975	17,062
Salaries and wages paid \$'000	42,715	54,203	79,830	89,123	94,755
Turnover \$'000	295,681	401,435	487,877	647,593	672,642
Purchases, transfers in \$'000	237,285	313,505	367,637	496,145	503,613
Value added \$'000	67,417	88,292	128,187	161,581	156,589
Rent and leasing expenses \$'000	1,988	1,924	2,589	3,378	3,018
Net fixed capital expenditure \$'000	4,249	6,697	10,676	17,203	13,613

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	1973-74
Number of establishments at 30 June	159	152	142	135	123
Average number of persons employed	9,000	8,875	8,724	8,673	9,128
Salaries and wages paid \$'000	28,936	30,989	36,048	40,657	51,936
Turnover \$'000	394,845	425,377	462,488	496,978	572,633
Purchases, transfers in \$'000	318,444	346,805	383,251	411,848	470,808
Value added \$'000	75,627	79,745	83,317	97,616	100,166
Rent and leasing expenses \$'000	994	1,056	1,519	1,769	2,471
Net fixed capital expenditure \$'000	8,534	8,166	9,506	11,195	19,072

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	1973-74
Number of establishments at 30 June	239	234	234	234	249
Average number of persons employed	22,156	22,322	21,681	21,471	21,891
Salaries and wages paid \$'000	62,870	65,623	75,622	85,035	106,615
Turnover \$'000	293,634	299,416	309,286	352,236	421,102
Purchases, transfers in \$'000	171,587	180,096	184,959	212,241	267,050
Value added \$'000	121,568	122,565	124,950	147,270	181,989
Rent and leasing expenses \$'000	1,459	1,350	2,015	2,467	3,474
Net fixed capital expenditure \$'000	12,874	19,373	12,978	7,970	21,975

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	1973-74
Number of establishments at 30 June	315	313	315	303	303
Average number of persons employed	13,653	14,417	14,286	14,666	14,882
Salaries and wages paid \$'000	34,253	39,328	44,794	52,938	64,272
Turnover \$'000	151,870	172,199	193,833	210,100	248,489
Purchases, transfers in \$'000	94,768	103,212	110,442	123,160	152,059
Value added \$'000	60,152	70,601	83,355	93,440	105,339
Rent and leasing expenses \$'000	1,381	1,545	1,873	2,164	2,362
Net fixed capital expenditure \$'000	6,166	4,393	5,799	4,822	4,076

Information in the following tables deals with establishments manufacturing clothing and footwear :

VICTORIA—ASIC GROUP 242: CLOTHING

Particulars	1968-69	1969-70	1971-72	1972-73	1973-74
Number of establishments at 30 June	1,165	1,123	1,112	1,116	1,141
Average number of persons employed	37,476	37,197	35,881	35,517	35,045
Salaries and wages paid \$'000	80,977	85,195	98,202	110,409	132,181
Turnover \$'000	274,317	280,097	316,883	343,786	408,926
Purchases, transfers in \$'000	155,076	153,381	164,454	180,580	222,059
Value added \$'000	121,865	130,207	152,291	166,836	203,387
Rent and leasing expenses \$'000	3,341	3,678	4,088	4,745	5,932
Net fixed capital expenditure \$'000	3,530	4,045	4,107	3,815	6,092

VICTORIA—ASIC GROUP 243: FOOTWEAR

Particulars	1968-69	1969-70	1971-72	1972-73	1973-74
Number of establishments at 30 June	211	198	179	177	170
Average number of persons employed	12,869	12,644	11,605	10,713	10,326
Salaries and wages paid \$'000	30,553	32,689	33,808	37,587	43,462
Turnover \$'000	102,985	112,423	125,856	127,557	147,464
Purchases, transfers in \$'000	58,492	65,047	74,988	67,606	81,079
Value added \$'000	45,384	49,541	53,782	59,867	69,674
Rent and leasing expenses \$'000	1,606	1,290	1,256	1,682	1,722
Net fixed capital expenditure \$'000	2,541	3,883	1,989	2,178	752

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	1973-74
Number of establishments at 30 June	118	106	109	112	117
Average number of persons employed	10,287	10,153	11,139	10,799	11,395
Salaries and wages paid \$'000	36,449	38,650	50,019	54,956	72,370
Turnover \$'000	190,904	199,959	250,261	275,683	326,623
Purchases, transfers in \$'000	120,836	122,152	149,887	160,505	191,885
Value added \$'000	71,460	83,081	101,530	114,199	143,385
Rent and leasing expenses \$'000	1,856	1,813	1,346	1,370	1,684
Net fixed capital expenditure \$'000	10,019	10,298	26,988	28,859	21,853

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	1973-74
Number of establishments at 30 June	1,027	1,039	1,047	1,093	1,120
Average number of persons employed	23,295	24,208	23,727	23,677	24,038
Salaries and wages paid \$'000	75,982	84,597	96,434	107,587	128,017
Turnover \$'000	242,768	272,006	297,801	340,921	394,984
Purchases, transfers in \$'000	109,625	127,005	130,226	147,280	177,914
Value added \$'000	135,560	149,386	167,815	194,361	227,172
Rent and leasing expenses \$'000	2,749	3,220	4,133	4,950	5,884
Net fixed capital expenditure \$'000	13,372	7,541	14,782	9,304	11,401

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	1973-74
Number of establishments at 30 June	274	273	268	272	280
Average number of persons employed	13,833	14,371	14,567	14,402	14,768
Salaries and wages paid \$'000	45,257	50,987	60,835	67,867	81,452
Turnover \$'000	195,837	221,469	248,312	270,984	325,057
Purchases, transfers in \$'000	107,128	122,948	128,349	144,226	173,634
Value added \$'000	92,166	106,685	119,184	131,032	163,205
Rent and leasing expenses \$'000	1,472	1,516	1,962	2,362	2,920
Net fixed capital expenditure \$'000	8,595	10,173	10,989	11,691	11,904

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	1973-74
Number of establishments at 30 June	360	360	352	366	362
Average number of persons employed	11,122	11,671	11,086	10,910	11,224
Salaries and wages paid \$'000	35,403	40,975	42,948	49,550	59,674
Turnover \$'000	153,770	166,127	179,840	187,355	228,589
Purchases, transfers in \$'000	90,998	101,220	108,920	100,074	128,618
Value added \$'000	63,701	67,579	78,811	87,197	110,311
Rent and leasing expenses \$'000	1,221	1,344	1,649	1,974	2,159
Net fixed capital expenditure \$'000	7,222	6,955	12,529	8,528	3,462

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	1973-74
Number of establishments at 30 June	776	775	758	775	791
Average number of persons employed	17,790	18,611	19,703	19,993	20,171
Salaries and wages paid \$'000	55,639	63,782	78,722	88,949	105,857
Turnover \$'000	198,735	221,537	259,621	292,441	348,992
Purchases, transfers in \$'000	99,309	114,324	126,477	140,455	176,306
Value added \$'000	102,094	110,671	137,794	156,476	183,985
Rent and leasing expenses \$'000	2,028	2,232	2,536	2,966	3,420
Net fixed capital expenditure \$'000	7,881	10,175	10,365	9,604	13,371

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	1973-74
Number of establishments at 30 June	326	323	324	334	367
Average number of persons employed	35,521	38,700	42,340	43,507	47,767
Salaries and wages paid \$'000	119,762	145,056	195,810	224,200	293,512
Turnover \$'000	701,443	813,731	994,392	1,064,935	1,185,179
Purchases, transfers in \$'000	456,319	520,412	641,703	692,362	783,013
Value added \$'000	249,889	312,917	384,773	358,998	452,691
Rent and leasing expenses \$'000	3,569	2,625	3,857	4,916	4,796
Net fixed capital expenditure \$'000	19,782	27,333	38,929	32,226	38,346

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	1973-74
Number of establishments at 30 June	118	115	127	137	143
Average number of persons employed	17,753	17,537	17,239	17,402	17,198
Salaries and wages paid \$'000	61,824	65,998	74,785	84,124	102,291
Turnover \$'000	131,128	131,709	156,453	161,923	199,615
Purchases, transfers in \$'000	47,040	52,195	60,010	53,521	64,866
Value added \$'000	87,358	76,566	97,093	109,688	140,526
Rent and leasing expenses \$'000	774	730	2,144	1,690	1,994
Net fixed capital expenditure \$'000	20,982	19,233	19,662	23,871	23,417

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	1973-74
Number of establishments at 30 June	420	417	445	477	491
Average number of persons employed	26,524	28,460	29,250	29,808	33,077
Salaries and wages paid \$'000	81,499	94,201	116,340	131,513	169,200
Turnover \$'000	342,031	402,818	428,861	500,879	605,300
Purchases, transfers in \$'000	210,243	247,983	250,838	284,225	351,004
Value added \$'000	145,242	166,414	184,347	219,042	293,426
Rent and leasing expenses \$'000	1,863	2,316	3,392	4,513	5,035
Net fixed capital expenditure \$'000	14,141	13,774	20,387	18,876	20,868

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

VICTORIA—ASIC GROUP 333: OTHER MACHINERY AND EQUIPMENT (a)

Particulars	1968-69	1969-70	1971-72	1972-73	1973-74
Number of establishments at 30 June	1,007	1,028	1,101	1,133	1,147
Average number of persons employed	32,433	32,984	31,448	31,673	33,055
Salaries and wages paid \$'000	115,126	125,595	142,779	158,393	194,135
Turnover \$'000	406,115	429,328	480,862	522,875	615,065
Purchases, transfers in \$'000	207,925	227,479	238,495	265,434	321,435
Value added \$'000	204,837	216,577	234,683	256,614	321,843
Rent and leasing expenses \$'000	2,804	3,378	4,795	5,744	6,795
Net fixed capital expenditure \$'000	12,270	16,076	13,472	13,505	16,434

(a) Other than Group 331: Photographic, Professional, and Scientific Equipment, and Group 332: Household Appliances and Electrical Equipment.

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	1973-74
Number of establishments at 30 June	271	282	316	349	395
Average number of persons employed	12,071	12,696	13,915	15,067	16,303
Salaries and wages paid \$'000	38,287	43,838	57,679	69,282	87,901
Turnover \$'000	182,754	206,516	257,556	310,256	383,096
Purchases, transfers in \$'000	109,883	127,345	153,323	175,626	224,025
Value added \$'000	77,093	84,871	108,790	137,527	177,036
Rent and leasing expenses \$'000	2,189	2,515	3,991	4,270	5,216
Net fixed capital expenditure \$'000	11,502	9,461	14,839	13,902	21,086

Paper industry in Victoria

History

The origin of the paper manufacturing industry dates back some 2000 years. About that time the Chinese developed the techniques of making a sheet of paper by hand from natural vegetable and grass fibres. Through the processes of war and trade the knowledge spread around the world. A hand making process to the early 1800s, the advent of steam power and mechanical design brought the forerunner of the present day paper machine. Australia's first mill was in Sydney using a water powered plant.

Victoria in the middle of the nineteenth century made rapid development in establishing several mills each of which was associated with a river water source or a raw material source.

In 1868 following an earlier attempt by Mr Kenny to establish a mill in the Dights Falls area of the Yarra River, a mill was built beside the Yarra River near the present Princes Bridge by Samuel Ramsden. It employed some 70 people, of whom 40 were women. The mill used natural fibrous materials, such as cotton, together with re-cycled paper collected in the city. The mill operated until 1968.

From this beginning the industry has moved through several significant technological levels. Following the development in Europe of chemical pulp production from wood, Australia for many years relied on pulp imports for its major raw material. However, in the 1920s, research was directed to the problem of producing pulp from native eucalypt trees. The combined efforts of government and industry established a pilot scale operation in 1937 and this was followed by commercial production in 1939.

The disastrous bush fires of 1939 greatly reduced the availability of mountain ash forests for pulpwood and further technical work was required before utilisation could be made of the slower growing foothill species of eucalypts. The industry is now based on pulpwood derived from the natural eucalypt forests, from privately owned forests, from waste wood derived from sawmills, and from softwood plantations. Re-cycled paper and paperboard also form a major raw material.

Processes

The main raw materials for papermaking in Victoria in order of volume used are :

- (1) Re-cycled paper and paperboard collected from factories, shops, and homes, cleaned and re-pulped by Australian Paper Manufacturers Ltd and General Paper Mills Pty Ltd to make paperboard and moulded pulp products;
- (2) eucalypt and pine woodpulp produced by the kraft, and neutral sulphite semi-chemical (N.S.S.C.) processes by Australian Paper Manufacturers Ltd at Maryvale; by the N.S.S.C. process by General Paper Mills Pty Ltd at Brooklyn; and by a thermo-mechanical process by Australian Forest Industries Pty Ltd at Myrtleford; and
- (3) straw pulp cooked with lime by Australian Paper Manufacturers Ltd at Broadford.

The process of making paper involves simply the preparation of a thoroughly clean, well dispersed suspension of pulp in water, known as stock, and running this on to a gauze strainer. The excess water drains away leaving a mat of cellulose fibre. This is pressed and dried to form the sheet of paper. To relate this simple description to the actual process on the machine, it is necessary to picture a moving gauze strainer, known as the wire on the machine, on to which is run a continuous flow of stock. The forming of the paper consequently becomes a continuous process.

Paperboard, as distinct from paper, consists of a number of layers or plies, each of which must be laid separately one on top of the other, either from gauze covered rollers revolving in vats of stock, or from additional wires suspended above the main wire.

The wet mat of fibre then passes through presses and round steam-heated drying cyinders where water is removed before it is given surface treatment and wound into large reels.

Forestry

The paper companies work in close co-operation with the Forests Commission of Victoria for their supplies of pulpwood, and the pulpwood harvesting operations in both eucalypt and pine State forests provide employment for many rural workers, use small-size timber and wood not suitable for sawmilling and sawmill wastes, and encourage vigorous growth and regeneration of Victoria's forest resources.

Australian Paper Manufacturers Ltd is the largest private forester in Australia, and in addition to its substantial areas of natural forest has already established in Victoria more than 40,000 hectares of pine and eucalypt plantations, mainly on abandoned or regressed or marginal farmland.

Locations

There are several factors which influence the location of the pulp and paper industry. The major raw inputs for the pulping operations are pulpwood, water, chemicals, and energy and for the paper and paperboard making processes pulp, water, and energy. The transport costs associated with these materials and the relation to the market for the products also influence the location of the industry which may be located in both metropolitan and country areas.

The main paper making companies in Victoria, their locations, activities and products are shown in the following table:

VICTORIA—PAPER INDUSTRY, 1975

Enterprise name and location	Activities	Products
Australian Forest Industries Pty Ltd— Myrtleford	Pulp mill	Wood pulp
Australian Paper Manufacturers Ltd— Melbourne Fairfield Broadford Preston Maryvale	Head Office Paper and paperboard mill Paperboard mill Pulp moulding Pulp and paper mill	Wood pulp, paper and paperboard, moulded pulp fruit packaging trays, and egg cartons
Associated Pulp and Paper Mills Ltd— Melbourne Ballarat	Head Office Papercoating and conversion mill	Coated art and adhesive papers made from base papers supplied from the company's mills interstate
Bowater Scott Australia Ltd— Box Hill	Head Office, paper mill, and converting plant	Sanitary and other tissues
General Paper Mills Pty Ltd— Brooklyn	Pulp, paper, and paperboard mill	Pulp, paper, and paperboard

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

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