

AUSTRALIA - WORKING IT OUT!



Core material for Australian studies

AUSTRALIAN BUREAU OF STATISTICS



AUSTRALIA - WORKING IT OUT!

CORE MATERIAL FOR AUSTRALIAN STUDIES

© Commonwealth of Australia 1990

ISBN 0 642 15757 X

Printed in Australia by Better Printing Service, 1 Foster Street, Queanbeyan N.S.W. 2620

Introduction

The Australian Bureau of Statistics (ABS) aims to assist and encourage informed decision making, research and discussion within governments and the community generally. ***Australia: Working It Out!*** has been developed to try and help an important ABS client group - our decision makers of the future. The book has been designed in consultation with teachers and curriculum advisors of the Victorian Certificate of Education Australian Studies course, primarily as a resource for students doing year 11 Australian Studies. Others, seeking a guide on how to use ABS data will also find it useful.

The book takes both an historical and modern day perspective on the issues raised in the VCAB Australian Studies course guide. The information is presented in a way which will encourage students to take a leading role in their learning and to think critically about the matters raised in the course material.

The major ABS contributors to the book were; Bill Wain, John Moody, Evan Jones, Neil McLean, Cecilia Jagan, Alan Page, and Alex Bamber. Their contribution, that of many other ABS people involved and the help of the various teachers and curriculum advisors is gratefully acknowledged.

Australia: Working It Out! is one of a number of materials which the ABS is producing for use in schools. Other products include *CData for Schools*, developed in conjunction with Space-Time Research Pty. Ltd. which contains summary information of Population Census data on compact disc; and *Statspack*, which is a kit containing key ABS statistical publications.

R. A. CROCKETT
Deputy Commonwealth Statistician

December 1990

TABLE OF CONTENTS

	Page		Page
Introduction			
● Chapter 1			
Statistics, and how to use them			
Introduction	3	The measuring of work	57
What is statistics?	4	The national accounts	58
Collecting Data	5	Gross domestic product	59
Censuses	6	State national accounts	62
Surveys	12	Unpaid household work	64
Administrative By-product	14	Work and welfare	66
Other methods	15		
Organising Data	17	▲ Chapter 3	
Classifying the data	17	Australia's people and patterns of work	
Tables	20		
Standardising the data	22	Work and Physical location	73
Graphs	24	The Australian population	74
Graphical distortion	29	Components of population growth	75
Interpreting Data	34	Patterns of settlement	77
How you might analyse data	35	Geographical classification	82
Statistics which mislead	36	The Profile of the Workforce	86
■ Chapter 2		Occupation	87
Work: a Window on Australian society		Industry	88
The meaning of work	43	Occupational structure	91
The labour force	45	Industrial structure	97
Participation rates	45	Part-time employment	98
Labour force status	49	Transition from education to work	100
Employment status	51	Unemployment	103
People not in the labour force	53	Work - Different People, Different Patterns	107
Unpaid work	54	Age and work	108
		Gender and work	111
		Ethnicity and work	118
		Race or ancestry	119
		Aborigines and work	120
		Birthplace	124
		Social class	127
		Social class and type of work	128

TABLE OF CONTENTS

	Page		Page
Social class and income	130	The effects on industries	191
Social class and location	131	Changes in industry	192
		Trade unions	195
* Chapter 4		Productivity	196
Australia; a 'Fair and Reasonable' community		The effects of trade	200
The Generation of Wealth	137	Pros and cons of technological change	205
Investment	138	Innovation and the future	206
Productivity	142	Research and development	207
Employment	145	Leisure	210
Work conditions	147		
Foreign ownership	149	☆ Appendices:	
The Distribution of Wealth	151	Australian Standard Classification of Occupations	212
Wages and salaries	152	Australian Standard Industrial Classification	215
Profit levels	157	Questionnaire Design	217
Income distribution	159		
Trade unions	162	Directory of tables, diagrams and charts	
Social welfare	164		
Government Intervention	166		
Government expenditure	167		
Taxation levels	169		
Award wages	173		
		Symbols	
❖ Chapter 5		The following symbols, where shown in this publication, mean:	
Australia: a technological society		n.a. not available	
The implications of change for different groups	179	n.e.c. not elsewhere classified	
Implications for governments	180	* subject to sampling variability too high for most practical purposes	
The implications for employers	183		
Changes in employment categories	184		
Education and training	188	Other	
		In tables, totals may differ from the sum of the items due to rounding.	

CHAPTER 1

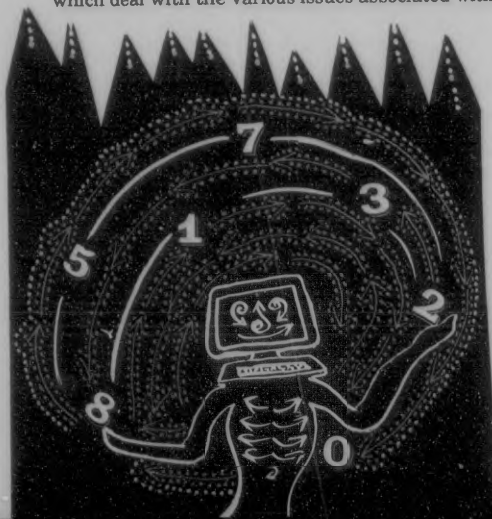
Statistics, and how to use them

INTRODUCTION

More than ever before, information is vital for the making of decisions that affect our lives. This has meant the proficiency at critically selecting and interpreting information is now an important skill within our society. With this skill, it is possible to get an idea of what we consider to be good or bad about our country and to identify what should be changed, and how it should be changed.

To do this task properly, we need to collect a lot of information, including statistics, about the land, the people and the society we have built.

In this chapter you will be shown some ways of gathering, summarising, presenting and drawing conclusions from information. In doing so will examine the use of statistical tables, graphs and other statistical tools which give meaning to data, as well as a means by which we are able to make comparisons between different sets of data. This should assist you when you use the statistical material in later chapters which deal with the various issues associated with work in our society.



What are statistics?

Statistics is the collection, organisation and interpretation of numerical data relating either to human affairs or to natural occurrences. Data are observations we make to help answer questions about the world around us; *how many times Collingwood has won a VFL/AFL premiership, how much has the price of petrol increased in the past year, how often is there a rainy day in Melbourne, where are the largest industries concentrated in Australia or what kinds of work do most Australians perform.*

Statistics can be used to tell us the size and character of our population, or details of the financial circumstances of countries, or community attitudes and opinions, or the nature of the country's crops, livestock and industrial output. Statistics are widely used in government, business, education, journalism, medicine, engineering, farming - in almost every field.

Knowing something about the principles of compiling and interpreting statistics is a valuable skill that will help you present clear arguments on particular issues and topics. An understanding of statistics also assists us as citizens to be street-wise in evaluating the vast amount of information with which we are daily bombarded.

Of course, more than statistics is required in studying Australian society. You will need to deepen your understanding by other means; perhaps by talking to people who are directly involved in your topic of interest, by reading books and documents, going on excursions, by watching videos or listening to music, by engaging in discussion with your fellow students and teachers, and other activities. You will find statistics most useful when you are dealing with features of the world that are relatively easy to quantify, such as the daily temperature, times run by triathletes and so forth.

To be able to use statistical information, we need to do three things:

- Collect the data
- Organise the data in a way that we can understand
- Interpret the data

Now let us look at each of these three points in turn.

COLLECTING DATA

In undertaking your studies, you will probably draw on statistics that have been published by various organisations: the Australian Bureau of Statistics (ABS), other Commonwealth, State and local government organisations and private organisations. You may also do some localised statistical collection yourself. There are three main types of statistical collections:

- **Censuses** - where data are collected about everyone or everything in a group with some identifiable *characteristic* (such as students or manufacturing establishments), or in a particular *location* (such as Australia or your local school). So, if the topic is the Australian people, information is collected about each one of them. This is precisely what the ABS does each five years in the Census of Population and Housing. If you were conducting a census of students in your area, you would go and try to get information about each one of them.
- **Surveys** - where data are collected from only a part or *sample* of those people or things we wish to include in a study. By doing a survey of a selection of people, we hope to get a reasonably reliable picture of all people in the group or locality we wish to study. You could find out that by asking, say a random sample of 10 per cent, of students in your area, questions about their age, sex, qualifications and years of work, you would get a reasonably reliable picture of all the students in your area.
- **Administrative By-product Data** - which means the collecting of statistics from data that has been compiled for other reasons. For example, someone may wish to do a study of people who have bought insurance. To get this information, they could do a census or survey, but more than likely they would find that an enormous amount of data already exists about people with insurance, from the forms people fill in when they buy coverage. Likewise, school records may hold most of the information on students we were looking at in our discussion on surveys.

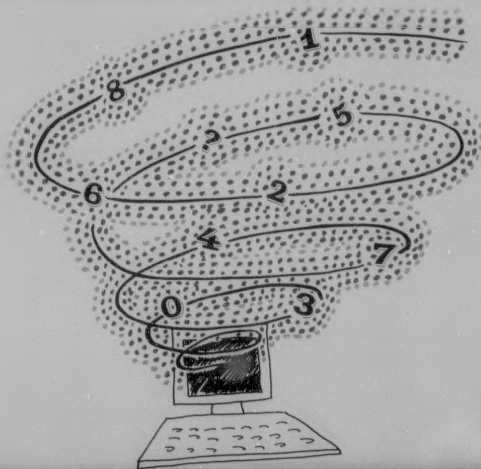
Now some more detail about these three main types of statistical collections.

Censuses

The study of statistics in history had its beginnings in the need for leaders to collect data on the population, especially its taxable capacity and potential for military conscription. The ancient Egyptians prepared lists of the heads of all families; in ancient Judea censuses of the population were held on a number of occasions. The Romans held 70 censuses, including the one mentioned in the New Testament. The Domesday Book of William the Conqueror in England (carried out around 1086 A.D.) was another attempt at enumerating (numbering or counting), or quantifying, the people and assets of his new territory so that his administrators could calculate the distribution and accounts of feudal duties and rights.

Population counts have been conducted from a very early period in Australia's history. Initially, these counts were solely head counts called "musters", which were important as a means of matching food and other supplies to the number of people needing them. The first regular census was taken in New South Wales in 1828.

☛ *Did you know;* foreign embassies and missions and the attached diplomatic and military staff are the only people not counted in the Population Census, because, according to the Vienna Convention, they are not subject to the laws of Australia?



Each State or Colony held its own population census until 1911, when the then Commonwealth Bureau of Census and Statistics conducted the first national census. Prior to 1911 the definitions and the classifications used in the various State Censuses may vary, making it difficult to amalgamate State figures into an Australian total before this date.

A census aims to collect data from everyone or everything under study. Those covered by the area of study are often called a **population**, a statistical term that can apply to both people and things. The Census of Population and Housing collects data on every person and dwelling in Australia. The ABS also runs an agricultural census which collects data on every farm, a retail census which collects data on every shop and other censuses as well. You might wish to do a census of sporting facilities in your area which means you will be compiling information on every sports field, gym, swimming pool and so on.

The Census of Population and Housing is conducted by sending a census collector to each household in Australia where he or she delivers a questionnaire booklet to a responsible person, who fills in the data about everyone in that particular household. The completed questionnaire, or schedule, is then picked up in person by the collector. ABS Censuses of business organisations are done by questionnaire booklets sent and returned through the post.

There are two main advantages of a census:

- it provides accurate detailed information right down to the local area level because everyone is covered. For example, if a Census was done for the whole of your local school, a researcher could then look at the data for just one form at the school if he/she desired.
- it provides accurate detailed information on minority groups of people (or things) in the population such as various ethnic communities, aged people and so forth. For many groups, a Census is often the only way of getting this information.

With ABS Censuses, the depth of the data allows detailed planning of community services in localities (such as schools, child care centres, migrant services and hospitals)

The main disadvantages of a census is that it can be very costly in time and money. For example, the ABS Census of Population and Housing, costs about \$100 million to conduct, and takes a great deal of time before results become available due to the large volume of data involved. Of course, if the population of a census is small, like a Census of a particular form at a school, the cost problem may not arise.

The tables on the following pages are examples of the type of information produced from the ABS Census of Population and Housing.

Warrnambool City has been chosen as an example for the following groups of tables, but data about any local area on these and many other topics can be obtained from the ABS.

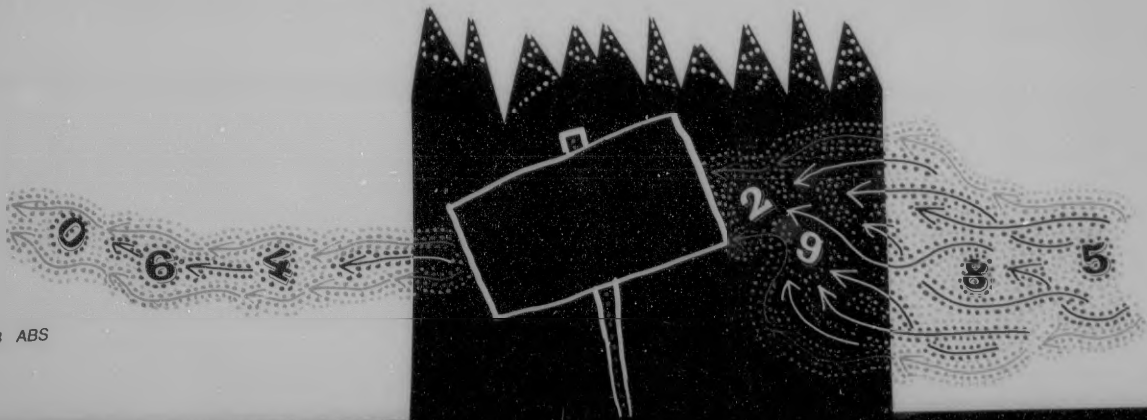


TABLE 1.1 A SELECTION OF POPULATION CENSUS DATA FOR WARRNAMBOOL CITY, 30 JUNE 1986 (a)

BIRTHPLACE		
<i>Country</i>	<i>Number</i>	<i>Per cent</i>
Australia	20,924	94.5
England	502	2.3
Scotland	140	0.6
New Zealand	85	0.4
Germany	47	0.2
Italy	34	0.2
Greece	18	0.1
Yugoslavia	17	0.1
Poland	8	0.0
Malta	4	0.0
Vietnam	2	0.0
Others	354	1.6
Total (b)	22,706	100.0

AGE IN 10 YEAR GROUPS		
<i>Age</i>	<i>Number</i>	<i>Per cent</i>
0-9	3,450	15.2
10-19	4,087	18.0
20-29	3,812	16.8
30-39	3,272	14.4
40-49	2,216	9.8
50-59	2,009	8.8
60-69	1,197	5.4
70-79	1,318	5.8
80+	625	2.8
Total (b)	22,706	100.0

OCCUPATIONS OF EMPLOYED PEOPLE		
<i>Occupation</i>	<i>Number</i>	<i>Per cent</i>
Sales	1,671	18.4
Tradespeople	1,496	16.5
Labourers	1,477	16.2
Clerks	1,161	12.8
Professionals	990	10.9
Machine operators	869	9.6
Managers	719	8.0
Semi-professionals	600	6.6
Others	99	1.1
Total (b)	9,210	100.0

Footnotes appear at the end of the selected census data.

MAIN LANGUAGES SPOKEN

<i>Language</i>	<i>Number</i>	<i>Per cent</i>
English only	20,615	90.8
Dutch	65	0.3
Greek	57	0.3
Italian	55	0.2
Chinese	48	0.2
German	26	0.1
Total (b)	22,706	100.0

Housing

WEEKLY RENTAL PAYMENTS

<i>Rent (\$)</i>	<i>Number</i>	<i>Per cent</i>
0-99	1,686	81.9
100-199	295	14.3
200+	13	0.6
Total (b)	2,058	100.0

MONTHLY MORTGAGE REPAYMENTS

<i>Repayments (\$)</i>	<i>Number</i>	<i>Per cent</i>
0-299	1,421	59.9
300-599	722	30.4
600	150	6.3
Total (b)	2,374	100.0

NATURE OF OCCUPANCY

<i>Type</i>	<i>Number</i>	<i>Per cent</i>
Owned	2,889	37.2
Buying	2,375	30.6
Renting	2,058	26.5
Other	329	4.2
Total (b)	7,764	100.0

Footnotes appear at the end of the selected census data.

Income

SOLE PARENTS		
<i>Income (\$)</i>	<i>Number</i>	<i>Per cent</i>
0-15,000	279	78.2
15-32,000	78	21.8
32,001+	0	0.0

COUPLES WITH CHILDREN	
<i>Number</i>	<i>Per cent</i>
254	14.3
1,084	61.1
436	24.6

FAMILIES WITH NO DEPENDENT CHILDREN		
<i>Income (\$)</i>	<i>Number</i>	<i>Per cent</i>
0-15,000	837	34.2
15-32,000	976	39.8
32,001+	637	26.0

TOTAL FAMILIES	
<i>Number</i>	<i>Per cent</i>
1,403	27.9
2,301	45.7
1,329	26.4

Transport

NUMBER OF CARS PER HOUSEHOLD		
<i>Cars</i>	<i>Number</i>	<i>Per cent</i>
0	846	10.9
1	3,337	43.0
2	2,589	33.5
3	756	9.7
Total (b)	7,764	100.0

METHOD OF TRAVEL TO WORK		
<i>Method</i>	<i>Number</i>	<i>Per cent</i>
Public transport	171	1.9
Motor vehicle	6,735	73.1
Other	959	10.4
Worked at home/ on holidays	1,093	11.9
Total (b)	9,210	100.0

- (a) Some figures may be slightly different from the sum of their components.
 (b) Totals also include people or households who/which did not give an answer to the question.

Surveys

By sticking to certain rules, a reasonably accurate picture of a whole population can be drawn from a selection, or **sample** of that population. The key lies in selecting a sample that is representative of the whole; a sample that has no serious bias.

The best known sample surveys are probably television ratings and opinion polls. In the past 30 to 40 years, sample surveys have become the main vehicle for producing statistics. Most ABS output is based on either household or business surveys. These surveys cover hundreds of topics: household expenditure, factory production, farm costs, victims of crime, alcohol and tobacco consumption, disabilities and handicaps, job search experience, and average weekly earnings to name just a few.

Relative to a census, surveys are much cheaper and easier to run. Because of this, they can be conducted more often and the results released more quickly. Surveys also impose a lighter reporting load on the whole population. Even assuming money was no problem, the public would never tolerate being asked to complete a census on every topic that is the subject of statistical interest.

Surveys have two main disadvantages

- they don't produce the same depth of data as censuses do. Most ABS surveys are nationwide and produce reliable data at a national, state and large regional level, but not at a local level, and only for major ethnic and other groups in the community. Of course, if you conduct a survey in your local school or neighbourhood, its results should be good for that particular school or neighbourhood provided the sample is large enough and representative enough.
- the quality of a survey's results is dependent on the quality of the sample. If we have not chosen our sample wisely by giving everyone in the selected group or locality an equal chance of being selected, the quality of the results will suffer.

There are several methods of conducting surveys.

- **Household surveys:** These are done by sending interviewers to selected people's (referred to as **respondents**) homes. The ABS collects its data on employment, unemployment, household expenditure, and many other other topics using this method.
- **Mail surveys:** These are done by sending questionnaires through the post to respondents. Many of the ABS surveys dealing with businesses use this method.
- **Telephone interviewing:** Interviewers telephone respondents and get information directly on the phone.
- **Electronic access to data:** Many businesses are now capable of transferring statistical data electronically from their computers to those of information collection agencies such as the ABS.

Selecting a sample for surveys has become quite a sophisticated field. Random selection is generally regarded as the best means of obtaining an unbiased sample from a population. The sample size is related to the complexity of the survey. When the population of a survey have only a few qualities that may vary (e.g. what percentage of Melbourne residents own a TV and a video machine) a representative sample of 75 to 100 would probably give a fairly reliable picture. When we are studying more complicated topics, such as public needs for child care or the economic state of Australian manufacturing, larger samples are needed to make the results reliable.

Administrative By-product

This is the method of producing statistics from data that has already been collected for some other, usually administrative, purposes. We gave the example earlier of using the insurance industry's customer records to find out what types of people buy insurance, instead of finding out this information in a survey. The ABS obtains a lot of data using this method of data collection. Some examples are:

- Exports and imports statistics are probably the best example of administrative by-product used by the ABS. When you send or receive goods at a port or airport you must complete documentation for Customs purposes. That documentation is then used to provide the basis from which Australia's overseas trade data is compiled.
- When you erect a building you require approval from the local government authority. These approved application forms are then provided to the ABS and used to construct one of the important indicators of economic activity; building approvals.
- The Registrar of Births, Deaths, and Marriages provides the ABS with valuable data on "vital statistics", as births, deaths and marriages are called. These data are used to get an idea of how quickly the population is growing, and the likely future demand for housing, child care centres, kindergartens and school in various localities.

By using this method of collecting statistics, the number of censuses and surveys can be kept to a minimum. This method adds no additional burden on the general public and is quite economical as well. For these reasons, the ABS often encourages government and private organisations to design their administrative data systems with an eye to statistical output as well.

Other methods

Censuses, sample surveys and the by-products of information collected for administration purposes are three major sources of data collection, but there are other methods as well. These include:

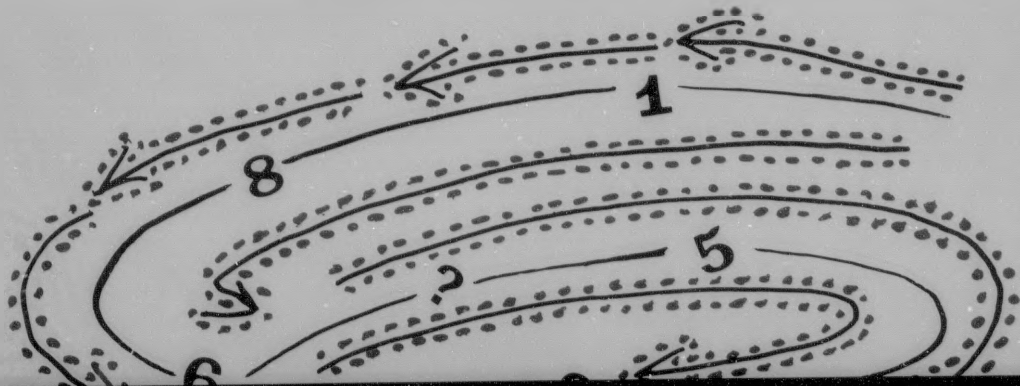
- **Controlled experiments:** These usually involve selecting two groups of subjects as similar to each other as possible; one group is designated the experimental group, the other, the control group. The experimental group is subjected to some form of change (experiment) while all factors affecting the control group are kept constant. Data are collected from each group before and after the experiment; any changes may then be measured.
- **Case studies:** The researcher seeks to collect and analyse as much data about the chosen subject as possible but from a relatively small number of cases.
- **Participation observation:** The researcher becomes a member of the group under study and records data from within the group.

These intensive methods are very effective in projects that involve local studies. They can provide richness of insight that will not be drawn from statistics alone. Their main drawback is that they are suitable only for small numbers and the results may not be representative of the whole population. Beware of making broad generalisations from small-scale investigations.

Doing the right thing by others . . .

There are three precautions you should take, as a matter of courtesy, when collecting data

- **First:** the community is heavily burdened with requests for information from many organisations. The ABS is trying to reduce the load it places on respondents. So, before doing a survey in the community, be aware of the need to maintain a good long-term relationship with your local community. Put some thought into the community relations side of any data collection you do. One combined survey by all students doing the course at your local school may be preferable to doing lots of separate ones. Perhaps look for research topics that can yield a tangible benefit to the community as well.
- **Second:** our society recognises the right to privacy. Data identifying individual people or organisations should not be published without permission from these people. Also be careful that privacy is not breached accidentally by leaving individual questionnaires lying around so that anyone can read them.
- **Third:** be careful the information you seek won't offend people. Some people regard being asked questions about their political preferences, religion or income (amongst others) to be a matter of their own business and no-one else's.



ORGANISING DATA

If our data collection efforts are to be worth the trouble, we must have a logical and standardised approach to the way we organise the gathered data. Otherwise our data will look like a confused jumble of figures rather than a basis for understanding something about our society. The ways we can organise statistical data include:

- **Classifying the data**
- **Preparing statistical tables**
- **Standardising the data**
- **Drawing graphs**

Classifying the data

The members of any population we study will have variable characteristics. If it is people, they will differ in sex, age, occupation, parental status, place of residence and so on. If we look at farms they will differ in the crops they grow and the livestock they run, in their land size and business turnover, in the quality of their soil and many other features. Likewise if we are studying retail shops they will differ in what they sell, how many people they employ, where they are located and more.

- **Deciding what to collect information on:** The objects of any study can have a vast number of characteristics. Which of these characteristics we collect and organise data about depends on our interest and judgment. This can be a point of some controversy as with the five yearly study of the Australian people, the *ABS Census of Population and Housing*. While there is often general agreement that we must collect basic information such as age, sex and occupation, within the community there will be varying views about what other variables should be given priority. Since the Census must be kept to a practical length, decisions have to be made between competing needs for the inclusion of various items. Anyone setting up a statistical collection will face these problems to some extent.

- **Using consistent definitions:** Once we have chosen the variables, we must then use standard statistical definitions, scales and classifications to keep our collection orderly. If we are asking people's employment status, we should not leave it to respondents to define whether they work full-time or part-time. Otherwise, each person will use their own definition of these terms and the results will not mean much. Instead, we should apply a consistent definition to all cases; say, above 30 hours represents full-time and 30 hours or less is part-time. Likewise we will classify occupations, industries, farms and shops according to a set system. If we were doing a community attitudes survey, little would come of simply collecting the replies of people. A better way would be to record their responses to propositions on say a six point scale ranging from "strongly disagree" to "strongly agree".
- **Using standard definitions:** While the designers of statistical collections are free to set their own classifications and definitions, there are national standards which the ABS encourages all statistical collectors to use. These have been developed and refined from the knowledge of many experienced data collectors. The more these standards are used, the more it becomes possible to make meaningful comparisons between all statistical collections in Australia.

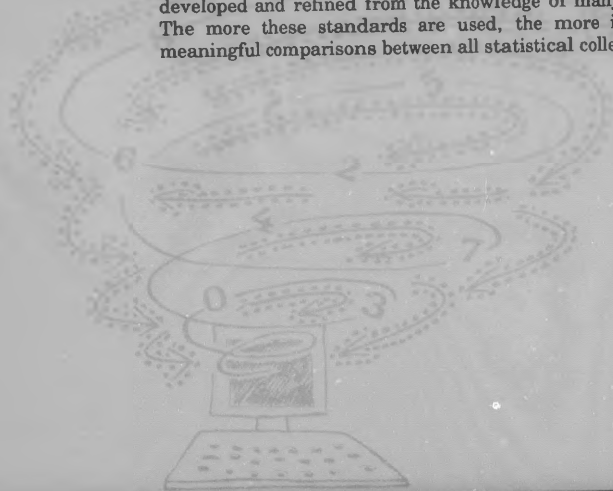


DIAGRAM 1.1 SOME OF THE FEATURES OF A TABLE OF STATISTICAL DATA

AGE DISTRIBUTION OF THE POPULATION, VICTORIA, 30 JUNE 1986

Age group (years)	Men		Women		People	
	Number	Per cent	Number	Per cent	Number	Per cent
0-9	301,366	15.13	287,414	14.17	588,781	14.60
10-19	351,112	17.63	335,192	16.53	686,304	17.07
20-29	333,257	16.73	332,611	16.40	665,868	16.57
30-39	315,932	15.86	319,274	15.74	635,206	15.80
40-49	236,471	11.87	228,225	11.25	464,696	11.57
50-59	193,072	9.69	186,220	9.18	379,292	9.44
60-69	149,647	7.51	165,479	8.16	315,126	7.84
70-79	84,185	4.23	115,900	5.71	200,085	4.98
80-89	24,158	1.21	49,628	2.45	73,786	1.84
90 and over	2,269	0.11	8,006	0.40	10,335	0.26
Total	1,991,469	100.00	2,028,009	100.00	4,019,469	100.00

Row →

Stubs

Column

Cell

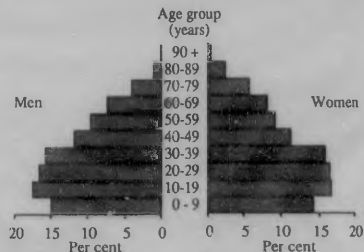
Column headings

Totals line →

Age group (years)	Men Per cent	Women Per cent
0-9	15.13	14.17
10-19	17.63	16.53
20-29	16.73	16.40
30-39	15.86	15.74
40-49	11.87	11.25
50-59	9.69	9.18
60-69	7.51	8.16
70-79	4.23	5.71
80-89	1.21	2.45
90 and over	0.11	0.40

Data selected from the Age Distribution Table which is used to compile the Age Distribution Pyramid Graph.

AGE DISTRIBUTION PYRAMID FOR THE POPULATION OF VICTORIA, 30 JUNE 1986



Tables

The other major part of organising data is how we summarise and display results. The most common way of doing this is through statistical tables. If you intend to do research, you will need to become comfortable with statistical tables. A good statistical table is one which is readily understood by the reader.

Diagram 1.1, on the previous page, shows the basic features of a table. The vertical stacks of data are called **columns**, the horizontal lines of data **rows**. The intersection of each column and row is called a **cell**. All tables should also have a heading, along with names for the columns and rows, and also use totals for each column and row.

Diagrams 1.2 and 1.3 show how we can add additional information to a table by introducing **wafers**. Each wafer contains a duplicated *layout* of the front table but provides data for a different *subset* of the population. This way we turn one table into a series of tables. It is a matter of judgment whether we make the age groups (Diagram 1.2) or gender (Diagram 1.3) or the States into the wafers.

Gender	NSW	Vic.	Qld.	SA	WA	Tas.	NT	ACT	Total
Males	412,483	301,366	205,377	97,684	114,711	35,336	14,857	21,413	1,203,227
Females	392,808	287,414	193,351	93,606	108,589	34,019	14,088	20,647	1,144,854
Total	805,291	588,780	398,728	191,290	223,300	69,355	28,945	42,060	2,348,081

DIAGRAM 1.2

Age-group (years)	NSW	Vic.	Qld.	SA	WA	Tas.	NT	ACT	Total
0-9	805,291	588,780	399,060	191,290	223,300	69,355	28,945	42,060	2,348,081
10-19	873,873	686,304	442,150	217,712	237,403	75,096	26,823	46,668	2,406,028
20-29	876,282	665,848	424,195	224,285	240,593	71,034	32,804	44,568	2,579,629
30-39	846,075	635,206	398,503	211,607	233,700	67,248	28,909	46,591	2,467,839
40-49	633,238	464,696	296,203	151,962	162,682	48,700	17,219	31,083	1,805,783
50-59	518,395	379,292	231,268	128,539	123,311	39,320	10,190	18,363	1,448,698
60-69	458,574	315,126	214,867	116,923	97,749	34,726	6,933	12,259	1,257,157
70 and over	390,154	284,209	181,069	103,627	88,171	30,874	3,025	7,813	1,088,941
Total	5,401,881	4,819,478	2,587,315	1,245,945	1,406,929	436,353	154,848	249,497	15,602,156

DIAGRAM 1.3

There are no hard and fast rules about which type of variable should go where in designing a statistical table. It is simply a framework or matrix we use to try to get a clear picture to the user.

For example, if we wanted to look at the people aged 10-19 years as a proportion of the whole population, and compare the proportions for each state, we could prepare a table like the following from the data in Diagram 1.2.

**TABLE 1.2 PEOPLE AGED 10-19 YEARS AS A PROPORTION OF THE
TOTAL POPULATION, STATES, TERRITORIES AND
AUSTRALIA, 30 JUNE 1986**

<i>State</i>	<i>Aged 10-19 years</i>	<i>Total population</i>	<i>Proportion (%)</i>
New South Wales	873,872	5,401,881	16.2
Victoria	686,304	4,019,469	17.1
Queensland	442,150	2,587,315	17.1
South Australia	217,712	1,345,945	16.2
Western Australia	237,403	1,406,929	16.9
Tasmania	75,096	436,353	17.2
Northern Territory	26,823	154,848	17.3
Australian Capital Territory	46,668	249,407	18.7
Total Australia	2,806,028	15,602,156	16.7

Source: 1986 Population Census reports.

The table now shows the States/Territories with the highest (Australian Capital Territory) and lowest (New South Wales and South Australia) proportions of people in the 10-19 year age group. This data could be useful in answering questions about determining the amount of Commonwealth education funding to the States. If we were planning a few years ahead, we would be very interested to see what the 0-9 year data tells us about future demand for secondary and tertiary education facilities.

Standardising the data

Just as a tradesperson has tools to make their work simpler, so does the statistician. **The main purpose of statistical tools is to present data in a standardised way which allows simple but meaningful comparisons to be made.** Consider the following three statements;

- 279 single parent families in Warrnambool City had an income of \$15,000 or less, compared to 254 two parent families.
- At a particular company, the female employees account for \$24,000 of the weekly wages bill, while the male employees account for \$20,000 of the weekly wages bill.
- The duration of unemployment for unemployed people aged 15 to 19 years ranged from less than a week for 25 per cent, one to two weeks for another 40 per cent, two to four weeks for another 25 per cent, four to 16 weeks for another 7 per cent, 16 weeks to a year for another 2.5 per cent, to more than two years for 0.5 per cent.

At first glance, the first statement seems to indicate the circumstances of single parent families is little different to that of couple families. The second statement seems to indicate women at the company earn more than the men. The third statement may leave us wondering about the experiences of a typical unemployed person aged 15 to 19 years. **To know for sure what these statements really mean, we need to standardise the data.** The main tools which we can use to do this task may be familiar to most of you. They involve the use of:

- Percentages
- Averages or means
- Medians

After we have standardised our data, we can make more meaningful comparisons. Let us consider the three statements at the top of the previous page as **expressed** in terms of percentages, averages or medians.

- 78.2 per cent of single parent families in Warrnambool City had an income of \$15,000 or less, compared with 14.3 per cent of two parent families.
- The sixty women employed at a particular company earned an average of \$400 a week compared with an average of \$500 a week earned by the 40 men employed at the same company.
- The *average* duration of unemployment for unemployed people aged 15 to 19 years was 2.6 weeks, but the *median* duration was 1.7 weeks.

In the discussion throughout this book, you will see much use being made of these statistical tools - and you'll come across a few others as well.

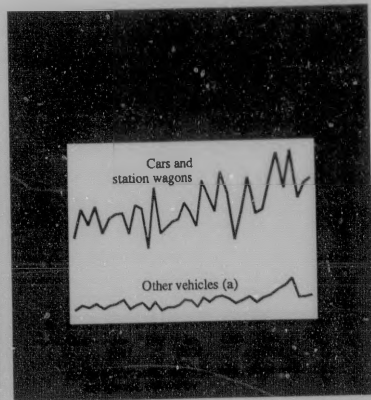
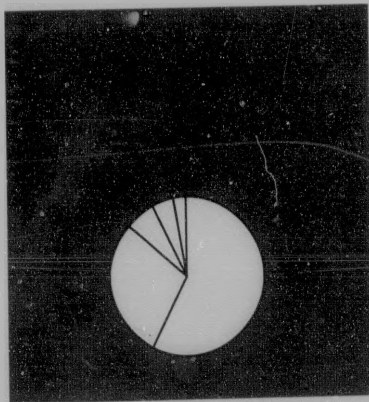


Graphs

Information that is presented visually is often the easiest to understand so the use of graphs is becoming increasingly common. A major reason for this is the development of good graphics packages for microcomputers, which has put sophisticated graphing within the reach of more and more people.

You will certainly come across many graphs in your studies or work, and you may wish to make use of them yourself in project work. It is valuable to know something about the principles of good graphing to avoid distorted or confusing presentation of data.

Before we begin to produce a graph it is worth thinking clearly about what we want to show. The answer may be that a statistical table would show the data better than a graph, that a few words of description will tell the story, or that some combination of graph, table and text would be best.



There are four main types of chart you will come across. In choosing the type of graph, you should be mindful of the message you wish to convey and the expected viewers.

- **Pie chart.** It is generally accepted that a pie chart (Chart 1.1) should contain a maximum of 5 slices. One major drawback in using a pie chart occurs when the relative size of the pie sectors are similar, making it difficult to estimate each sector visually.
- **Line chart.** In general, a line chart (Chart 1.2) is ideal for showing one or more series of data measurements over time. Another advantage is that it is capable of showing trends in the data relatively clearly. Ideally, a line chart should be limited to 3 lines, otherwise it can look quite cluttered.
- **Bar or column chart.** When we wish to show comparative values, particularly if there are a number of different values or categories to plot, it is better to use a horizontal or vertical bar or column chart (Chart 1.3).
- **Dot chart.** The dot chart (Chart 1.4), which is similar to a bar chart, is widely used by the Australian Bureau of Statistics. This type of graph shows comparative values very clearly and has another advantage in that it can display many data values without looking cluttered.

In general, use of a graph is preferable when there is some simple pattern, trend or shape in the data. Even if there is, you need to be sure apparent relationships in the data really exist. Edward Tufte in his book *The Visual Display of Quantitative Information* provides an example of how stock prices in London and New York exhibited a very similar pattern to that of solar radiation over the same period. Yet it would be very difficult to argue a relationship other than that of sheer coincidence!

A graph should be self explanatory, clearly labelled, yet have only a minimum of text. The amount of data should be restricted to an understandable quantity. Well designed graphs always convey information with a minimum of clutter. For example, if grids are used (as with Chart 1.3 below), they should be made up of thin lines in a pale colour.

Whatever form of chart we use, it is important when producing a set of graphs that we ensure consistency in presentation standards. This helps us achieve excellence in both the overall appearance of our graphs and in the success of conveying our messages.

CHART 1.3 LEVEL OF QUALIFICATION, AUSTRALIA, 30 JUNE 1986

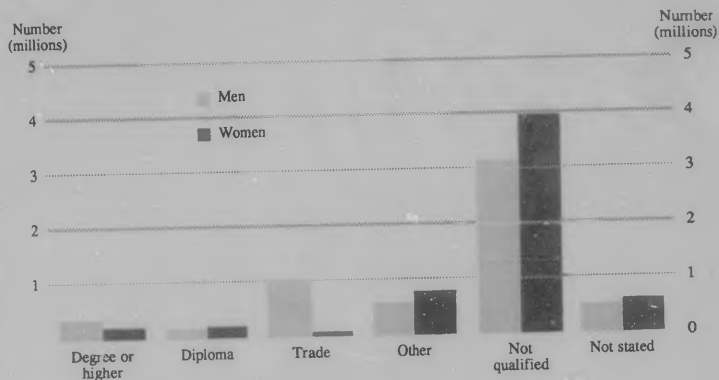
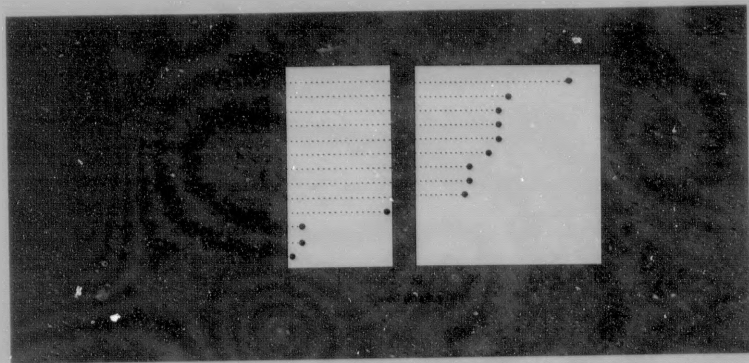


Chart 1.4 gives an example of a dot chart. Note how the chart shown below has been divided into two to enable the speed of a cheetah and the speed of a garden snail to appear on the same chart. For reasons discussed a little later, dividing a chart like this is not desirable. However, the alternative would be to draw a chart about one and a quarter metres long!

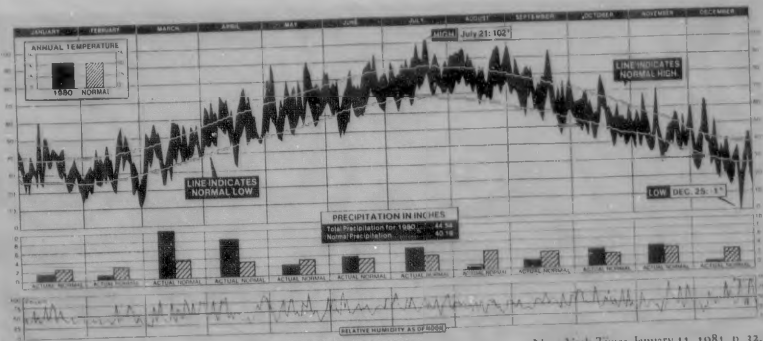
CHART 1.4 THE SPEED OF ANIMALS



Creative graphics such as the use of pictorial images has been the subject of some debate. Some graphical experts believe that any decoration or innovation is "chart junk" or clutter. However one can achieve clarity and creativity at the same time. One of the best examples of graphical excellence was the New York Times showing of the New York City weather summary for 1980 (Chart 1.5).

This highly attractive graphic successfully organises a large collection of numbers (2,220 measurements) and at the same time makes comparisons between different parts of the data. It has a richness of design which invites the viewer to investigate the data. Imagine how it would look as a large wall chart, instead of as a small diagram on a page.

CHART 1.5 NEW YORK CITY WEATHER SUMMARY, 1980



New York Times, January 11, 1981, p. 32.

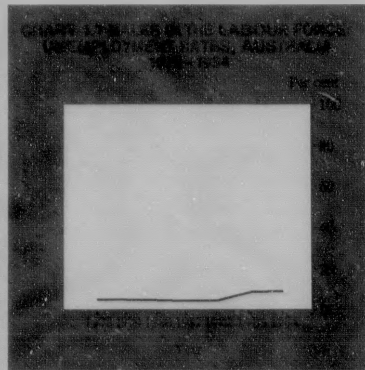
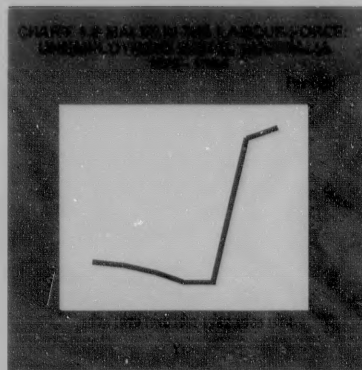
Regardless of the type of chart we choose, it should convey two types of information:

- It should present an **accurate visual image of the value of each data point**. If one value on the chart is 15 and another 30, then the second value should appear to be twice the size of the first.
- It should show **clearly the trend or differences between the data**.

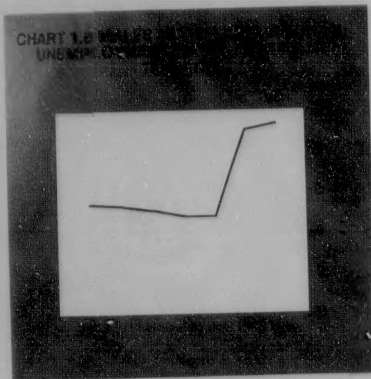
If the graph does not convey both these, then it is likely to lead to a distortion of the data. This is an important issue, and one which we should examine in more detail.

Graphical distortion

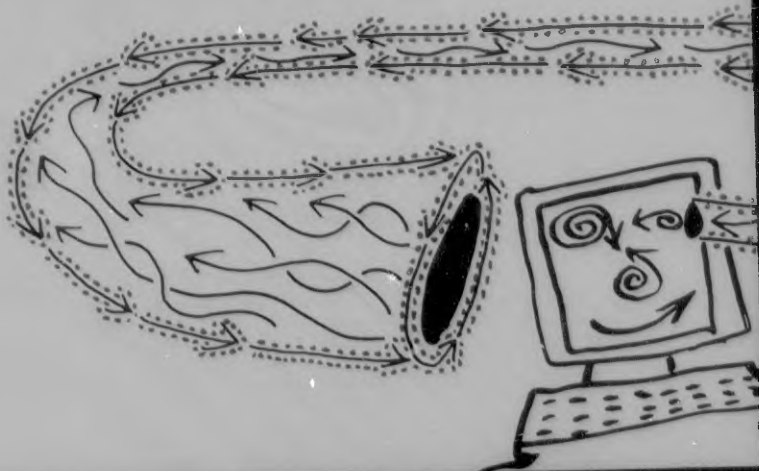
The most common trap with charts concerns visual misrepresentation of the numerical data. The example below (Chart 1.6) shows the capacity for visual distortion.



At first glance, the trend portrayed by Chart 1.6 looks horrendous. The unemployment rate appears to be over 20 per cent in 1978, drops to about 10 per cent in 1981-82, then climbs to an appalling 95 per cent in 1984. But this isn't the case at all. Notice that the scale showing the percentage values is missing. We have merely assumed that the scale represents the full range from 0 to 100 per cent. In fact it represents a range of only 6 percentage points beginning with 4 per cent (and not 0 per cent), and then going up by 0.5 per cent intervals to 10 per cent.



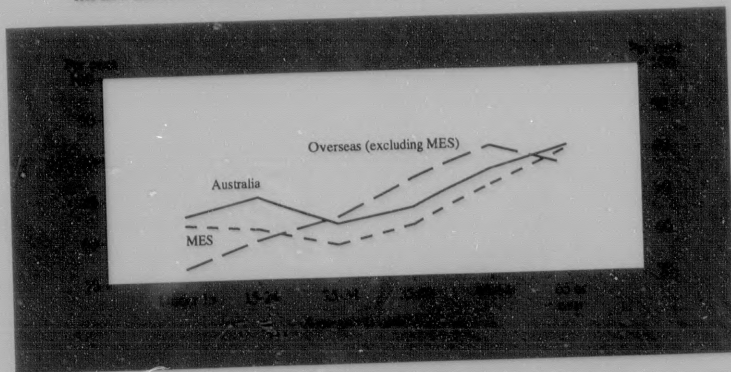
When redrawn to a full scale from 0 to 100 per cent (Chart 1.7), the message is not anywhere near as dramatic. This is **not** to say that the second chart is the 'correct' way to show the data, however. Indeed, even this chart, although done seemingly 'properly', can also be seen to distort the data. Many people would see the doubling of the unemployment rate within two years as a dramatic rise which deserves to be highlighted. But, by keeping strictly to the rules and including the full scale, the second chart reduces the impact of this trend.



The best way to represent the data is Chart 1.8. In this chart, we have discarded the unused part of the vertical scale; a perfectly acceptable solution as long as the chart is properly labelled to avoid confusion, as this one is. **This graph therefore gives the viewer an accurate visual image of the value of each data point and shows clearly the trend or differences between the data.**

A further trap concerns design variation within a graph. This is best exemplified by the use of an irregular scale which can easily show a decline or fall when in reality the opposite has occurred. Chart 1.9 demonstrates this effect. In this case, the horizontal axis has varying spans of years for the age groups (15, 10, 10, 10, 20, and infinity). By not presenting the data in a uniform fashion, comparisons become a somewhat risky exercise.

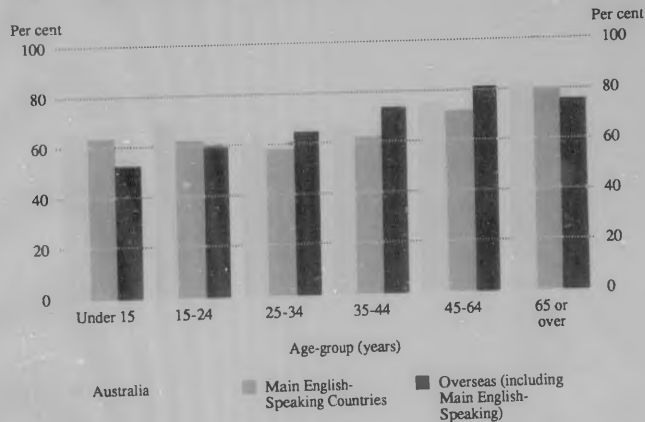
CHART 1.9 PROPORTION OF THE POPULATION WHO WERE CHRISTIAN, BY MAIN BIRTHPLACE GROUP AND AGE, VICTORIA, 30 JUNE 1986



Note that the categories using MES (main English-speaking countries) have not been spelt out on the chart as they should have been. Also, Chart 1.9 begins its scale at 50 per cent and therefore highlights the trends in the data at the expense of accurately representing the value of the data, as we have discussed earlier. The ABS discourages the use of this technique wherever possible.

Chart 1.10 below presents the same data shown in Chart 1.9 in a different manner. In this chart we have clearly shown the difference in value of each birthplace group

CHART 1.10 TOTAL POPULATION: PROPORTION WHO WERE CHRISTIAN, BY MAIN BIRTHPLACE GROUP AND AGE, VICTORIA, 30 JUNE 1986



at each designated age group on the horizontal axis. Notice the difference in the titles of each graph. Our bar chart conveys comparative values more accurately and this is reflected by the use of the word 'proportion' at the beginning of the heading. Finally note the lack of lined vertical axes, a move which reflects a desire to eliminate all unnecessary ink or chart junk.

Graphs which are displayed in a three dimensional form such as vertical column charts (which look like a line of office tower buildings) can also seriously mislead the viewer. Optically there can be confusion as to the precise value at the top of each bar when using this form of chart.

A good idea would be to take a look at some graphs in your daily newspapers or some economic magazine, and see how well they have been presented, and whether they contain some graphical distortion.

It should be clear from our consideration of graphs and their usage that artistic competence is not sufficient by itself to be able to present graphs well. We need also to have a measure of statistical understanding if we are to master one of the most important forms of quickly conveying information.

INTERPRETING DATA

In collecting, organising and displaying data ourselves we need to aim for maximum accuracy and integrity. In interpreting data published by others we need to develop our analytical and critical abilities as students and citizens.

We have already discussed some basic principles about how we could go about designing statistical tables ourselves. Our greatest involvement with statistical tables, however, is likely to be in trying to make sense of tables published by others. Even where good design principles have been followed, the amount of data presented can be overwhelming at first glance.

The important thing in interpreting data is to conduct your analysis one logical step at a time. Do not try to take in the whole thing at the same time, and do not get side-tracked with side issues as you do your analysis.



How you might analyse data

There are no hard and fast rules on how to go about analysing statistical data. The steps described below will give you an idea of how to go about this task; a task which requires a systematic approach, combined with a fair amount of skill, practice and some patience. The table in Diagram 1.1 is again used to provide examples.

- **First you need to formulate the questions to which you seek answers from the data.** In this case these questions could be about whether population is distributed evenly across age groups and genders.
- **Look at the layout of the table in order to understand how the data are arranged.** Check the row and column names to get a clear idea of the variables being displayed. In this case the rows contain data for ten year age groups and the columns contain data for the two genders plus a column for all people. The columns are further subdivided into numbers and percentages to provide additional information for comparison purposes.
- **Next, scan the totals to get an idea of the overall trends in the data.** The totals line at the bottom of the table tells us that there were more women than men in Victoria at the 1986 Census. A glance down the People/Number column tells us that the population is not evenly distributed between the age groups.
- **We now look at the body of the table, comparing the numbers of men with the numbers of women in each age group.** Notice that the conclusion we drew from the totals line of more women than men is not always true in each age group. There were more men than women in the 0-9, 10-19, 20-29 and 40-49 years age groups. However, in the older age groups, notice that the number of women is much greater than the number of men of the same age.

From this basis, we are now ready to write a brief report on our findings, perhaps incorporating text, summary tables and charts.

Statistics which mislead

There is no denying that statistics can be used, deliberately or unconsciously, to mislead.

The first concern is bias within the statistical collection itself. As we discussed earlier, the result of a sampling study is no better than the sample on which it is based. To save money, researchers sometimes cut the size of samples below what is required for reliable results. Some public opinion polls are based on samples that are small for the complexity of questions being asked. For this reason, survey results should display an indicator of reliability, such as a standard error measurement. Further information about this can be obtained from the ABS publication *Introduction to Sample Surveys*.

Sample selection may not be representative. For example, certain people respond well to a mail out questionnaire while others, such as people who do not speak English well, do not. A survey of company profitability is perhaps more likely to be returned by those companies which are prospering and have the staff to complete the form, than those which are overcome by financial worries and are understaffed. The survey "findings", which are based solely on those who responded, may therefore paint an overly optimistic view about the level of company profitability.

In a similar way, telephone surveys conducted by television channels which ask you to record a 'yes' or 'no' vote by ringing different numbers are open to a great deal of bias. Some people in the community are unable to respond because they are not on the phone. Many others will not feel motivated to telephone their preference at all. On the other hand, some will be so motivated that they will telephone on numerous occasions. The results therefore may not reflect the mood of the community at all.

Issues also arise about questionnaire design. Questions are sometimes asked in a form which biases the responses of those interviewed, as we shall examine further in the Appendix to this book.

The skill, ability and training of staff involved in statistics collections can also have a marked effect on the quality of the data. If poor quality work is being done, then the results will be of dubious value.



Statistical users should also be aware that official statistics can be influenced by the political environment. The influence can range from very blatant to very subtle. Some countries have a history of distorting statistics to make the government look good. In Australia, official statistics are predominantly the responsibility of a national statistical agency, the Australian Bureau of Statistics (ABS), whose independence is written into law. This is a more preferable arrangement to that in some other countries where statistics production in each area (e.g. health or employment) is the sole responsibility of the department administering that area.

Some of the above sources of bias may be difficult for the user to detect easily or put right. But the greater the public awareness about statistical standards, the less bad practice by statistical producers is likely to go unchallenged.

The statistical user also needs to be vigilant against the selective presentation of data. Even very reliable statistics can be distorted by the newspaper journalist who seizes on one figure out of hundreds in pursuit of a 'good story', or an interest group which gives a lot of publicity only to data favourable to its cause, while ignoring unfavourable data. For example, much publicity was given to a series of criminal cases involving Vietnamese Australians a while ago. Some people suggested that Vietnamese people "endangered the Australian community". However, statistics showed that Vietnamese Australians had one of the lowest crime rates of any ethnic community.

There is also danger in the way basic summary numbers, such as averages, are used. Somebody doing market research for an agricultural machinery company might advise his client that there is good market potential in a particular district because the average farm size is just over 3,500 hectares. In reality the district may be made up of 15 farms of 1000 hectares, four of 2,000 and 1 of 50,000 hectares. Apart from the very big property, the scope for new customers for the farm machinery may be more limited than the average suggests. Use of the median would be a far better guide in this case. We need to keep a close eye on the actual data before drawing conclusions from one summary measure.

When using proportions (or percentages) to draw conclusions, similar care is required. A suburban newspaper may report a 50 per cent increase in murders in the local area over last year. It may well be that last year the suburb had two murders and this year three. While the increase was 50 per cent as claimed, with such small numbers it is unwise to make any conclusions about any trends emerging in that community.

Some data are influenced by seasonal factors. Economic statistics in particular are often affected in this way. It is no big deal that sales of sun bloc are much lower in June than in January, or that much less wheat is harvested in April than December. Some examples are more subtle than this. Take an example where retail sales in April of one year were greater than the one before; supposedly pointing to an improvement in business returns. The reason for the difference may be that Easter had come in March in the earlier year and in April in the later year, therefore influencing sales. To get around this problem, the ABS uses a special statistical tool, referred to as **seasonal adjustment**, to standardise the data.

Further problems arise in drawing associations or links between two or more sets of data. In our discussion on graphs, we mentioned the example of an apparent link had been found between stock prices and solar radiation. The trends moved similarly but in reality were unconnected. An often quoted example is the claim by a pharmaceutical manufacturer that its tablet "was guaranteed to clear up most colds within three or four days". In fact most colds clear up in three or four days without medication. Therefore, there may be no link between taking the tablet and getting better. Some false associations are not so easy to see. Often many factors influence one another. There may well be a link between certain types of employment and heart disease. However, patterns of lifestyle, diet, family background and other factors may also have a significant influence.

Raising these cautionary points about interpreting data is in no way meant to discourage your use of statistics. The main point is to keep your wits about you. **In using data, be sceptical and critical.** Investigate carefully before being satisfied that you are getting a true picture.

In the following chapters we provide much core data and commentary to enable you to use the concepts discussed in this first chapter. Beyond that you will also find that at least some basic statistical skills will be of benefit in other studies and the work you do. As H.G. Wells said about a century ago: "Statistical thinking will one day be as necessary for efficient citizenship as the ability to read and write". It seems that day is drawing near.

FURTHER READING -

ABS sources:

1101.0 Catalogue of Publications and Products

A list of publications with descriptions, containing titles index and a detailed subject index.

1201.0 Australian Standard Industrial Classification, Volume 1 - The Classification

The Australian Standard Industrial Classification (ASIC) is designed primarily as a system for classifying establishments, e.g. individual mines, factories or shops by industry. It may also be used for classifying other statistical units such as enterprises. Volume 1 of ASIC presents the detailed classification and defines each industry class identified in it. The broader industry categories in the ASIC, i.e. the groups, subdivisions and divisions are defined in terms of the industry classes of which they are composed. This volume also describes in some detail the nature, purpose and principles of the classification, the concepts of the statistical units being classified and the methods and criteria for classifying them.

1202.2 An Introduction to Sample Surveys - A User's Guide

This book is intended to be a basic guide to the use of sample surveys for the purpose of conducting all types of research. Each chapter is self-contained to enable easy, practical use of the contents. The chapters correspond to the basic steps that need to be taken in order to conduct, successfully, a sample survey using a variety of methodologies.

1301.2 Victorian Year Book

The Year Book provides the most comprehensive collection of statistical information about Victoria. Its role has changed in recent years to become a compendium of statistics, with data in both tabular and graphic format, together with some analysis of the statistics. Topics covered include history, geography, government, demography, labour, education, health, agriculture, manufacturing, mining, commerce, finance, construction, transport and tourism. The book also contains colour illustrations and an appendix of historical statistics.

2174.0 The 1986 Census Dictionary

This provides users of census data with definitions of census terminology and concepts associated with all aspects of the 1986 Census of Population and Housing.

2175.0 Catalogue of 1986 Census Tables: Final Edition

This publication provides users with a detailed description of all tables produced for the 1986 Census on microfiche, magnetic tape, floppy disk and in statistical publications. It also contains details of all census output classifications used in tabulations

2176.0 Census 86 - How Australia Takes a Census

This provides basic information about the way the census was planned, designed, executed and processed. From this a better understanding of the nature of census statistics may be obtained.

CHAPTER 2

**Work:
a Window on Australian Society**

THE MEANING OF WORK

- While work is central to the lives of all individuals, there is a range of meanings given to work in the Australian community.

Work is central to our lives. It has major effects on us as individuals and as members of society. The work that Australians engage in takes different forms and affects the community in different ways. In this chapter we will consider two broad aspects of work; paid work and unpaid work.

With the advance of industry from the late 18th century onwards, work has come to be defined more and more in economic terms. Work, and the production of goods and services that flow from it, is vital to the economic well-being of a nation. For example, the work done by BHP employees in Port Kembla leads to large amounts of foreign exchange for Australia through the export of steel. We will explore this close link between work and the economy, particularly in terms of the Labour Force.

There are also many Australians engaged in work who are not part of the formal economy or Labour Force. These people perform domestic, voluntary or charitable work. An emerging issue in Australia is the value we ascribe to unpaid domestic work. In this first section we will examine a pilot study on unpaid work undertaken recently by the ABS.

Work remains today of primary importance to Australians. When you are asked at social gatherings "what do you do", inevitably the questioner wants to know what work we do! However, as we approach the end of the 20th century, traditional notions of work are changing. For example, women have dramatically increased their participation in the Labour Force since the end of the Second World War. And, as we look to the next century, the pace of technological change is beginning to affect Australians' attitudes to the work they do. Indeed, it is likely that people will find themselves changing jobs during their lives at a greater rate than ever before.

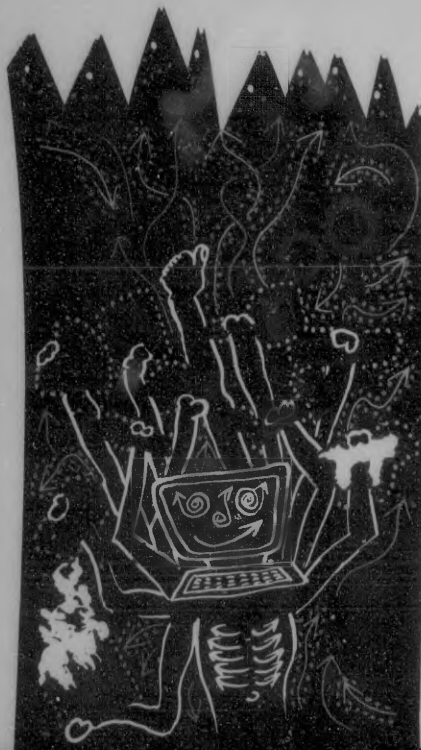
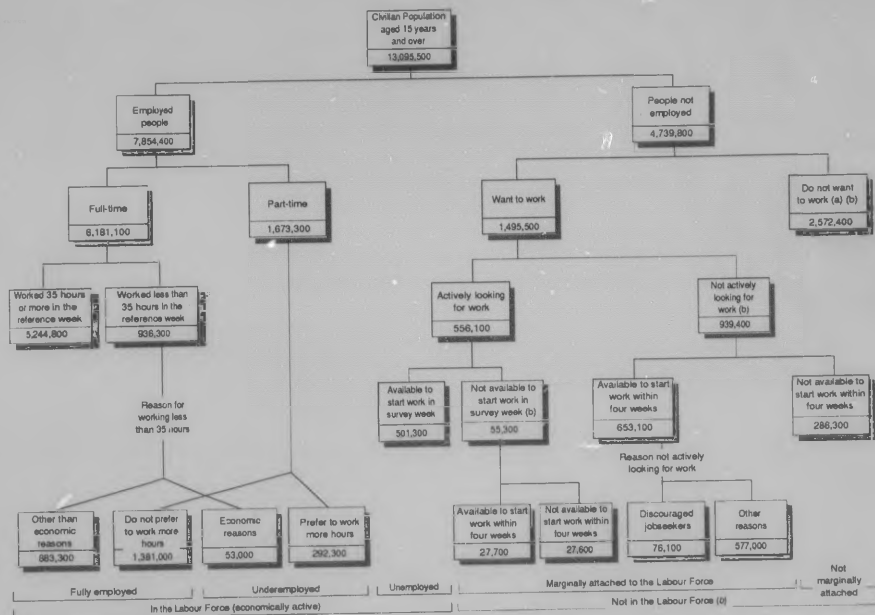


CHART 2.1 THE LABOUR FORCE FRAMEWORK,
AUSTRALIA, SEPTEMBER, 1989



(a) Includes the institutionalised, boarding school students, and people permanently unable to work.

(b) Excludes people aged 70 years and over.

Sources: *The Labour Force, Australia, September 1989*, ABS Cat. No. 6203.0 *Persons Not In The Labour Force, September 1989*, ABS Cat. No. 6220.0

The Labour Force

If we look at the meaning of work in economic terms, we must gain an understanding of the Labour Force. Chart 2.1 is a summary of the Labour Force Framework in Australia. It helps us to understand how different categories of employed and unemployed persons are classified. At the bottom of the chart we can read off those groups who are considered to be in the Labour Force and those who are not. From Chart 2.1 we can see the Labour Force consists of:

- Employed people (In September 1989 the figure was 7,854,400)
- Those actively looking for work and available to start work (In September 1989 the figure was 501,300)

We can see that the Labour Force is actually made up of both employed and unemployed persons. Indeed, the concept of the Labour Force is crucial to the measurement of employment and unemployment. A good summary definition following from this is that:

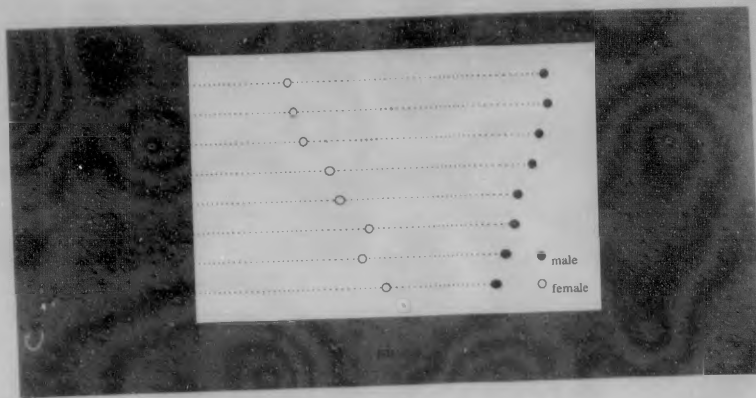
the Labour Force represents the total supply of labour available to the labour market.

Participation Rates

The most important Labour Force measure that you should familiarise yourself with is the **participation rate**. This represents the working age population (defined to be those aged 15 and over) in the Labour Force expressed as a percentage of the civilian population. Participation rates can be analysed in terms of age, sex, marital status, birthplace, educational attainment and family status. This allows us to understand how the character of the Labour Force changes over time.

Let us first examine Labour Force participation rates for men and women since the end of the Second World War. The most striking observation in Chart 2.2 is that the rate for women has nearly doubled since 1947.

**CHART 2.2 LABOUR FORCE PARTICIPATION RATES
BY SEX, CENSUS YEARS, AUSTRALIA**



Source: ABS Population Census Reports

The convergence of male and female participation rates is vividly portrayed in Chart 2.2. In general, the participation rate for men is decreasing and the rate for women is increasing. The major findings for the period 1947 to 1986 are:

- The Labour Force participation rate for men has dropped from 87.5 per cent to 75.1 per cent.
- The Labour Force participation rate for women has increased from 25.0 per cent to 47.8 per cent.

In Table 2.1 we look at Labour Force participation rates by age. Notice that the 10-14 age group has no rate at all from 1971. It is true that some children are still employed today in this age bracket (e.g. paper rounds and acting). However, the numbers are too small to be significant. At the other end of the scale, notice how the 65+ age group has also steadily declined. This is primarily the result of the introduction of both compulsory and early retirement schemes.

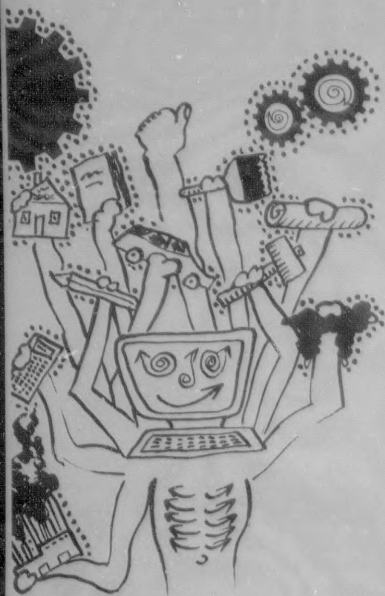
TABLE 2.1 LABOUR FORCE PARTICIPATION RATES BY AGE, AUSTRALIA

Age	1911		1933		1961		1971		1976		1986	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
	%	%	%	%	%	%	%	%	%	%	%	%
10-14	16	5	3	2	2	1	..	..	..	..	..	..
15-19	90	43	73	47	70	64	56	52	56	50	53	51
20-24	96	40	96	50	95	51	89	59	89	65	88	74
25-34	96	23	98	25	98	26	90	39	96	50	93	59
35-44	95	16	97	16	98	28	95	44	96	58	92	63
45-54	93	15	95	16	97	27	93	40	93	51	88	54
55-59	89	14	92	15	93	22	88	28	87	35	77	32
60-64	82	13	83	10	80	13	76	16	68	18	46	14
65+	52	7	34	5	26	4	22	4	17	5	9	3

Source: ABS Population Census Reports

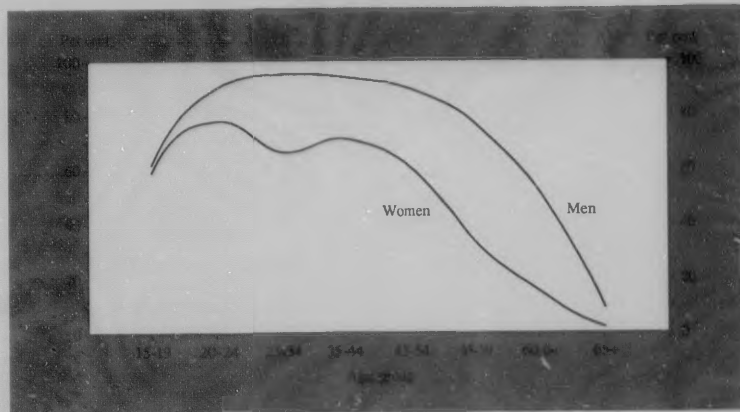
☛ Did you know that; in the 1911 census count there were 148 employed boys and 72 employed girls aged 5-9 years?

We can make a number of interesting observations about the above information. Looking at the 15-19 age group for males there is a noticeable decline in the participation rate. In 1911 it was 90 per cent and in 1986 it had fallen to 53 per cent. An important factor behind this is the gradual change to longer periods spent in education and training before entering the Labour Force. And yet, if we look at corresponding figures for the female 15-19 age bracket, we see that they have remained steady since 1911.



If we compare modern day Labour Force participation rates for men and women we see some interesting differences. For the vast majority of Australian males between the ages of 20 and 44 work is understood to mean paid employment. Thus Labour Force participation rates reach over 90 per cent in this bracket. After the age of 44 the rates for both men and women begin to drop more and more noticeably. Factors such as health and the inability to compete for jobs come into play. Study Chart 2.3 and notice the similarities and differences between male and female Labour Force participation rates.

CHART 2.3 LABOUR FORCE PARTICIPATION RATES BY AGE, AUSTRALIA, SEPTEMBER 1989



Source: *The Labour Force, Australia, September 1989*, ABS Cat. No. 6203.0

There is clearly a marked dip in the participation rate for women in the 25-34 age group. The dip is caused by women leaving the Labour Force to bear children. But notice how strongly the participation rate picks up again for women in the 35-44 age group. As more and more Australian companies provide maternity leave for women in their workforce we can expect this dip to perhaps increase. This move by employers may encourage more women to have children. (Women on maternity leave are regarded as outside the Labour Force).

Labour Force Status

This concept refers to whether a person in the Labour Force is employed or unemployed. In Chapter 4 we shall look at employment and unemployment levels in some detail. For now, we should appreciate that the vast majority of Australians in the Labour Force prefer to be under the status of employed as opposed to unemployed. Table 2.2 shows historical rates of employment and unemployment for Australian men and women.

TABLE 2.2 LABOUR FORCE STATUS, BY SEX, AUSTRALIA

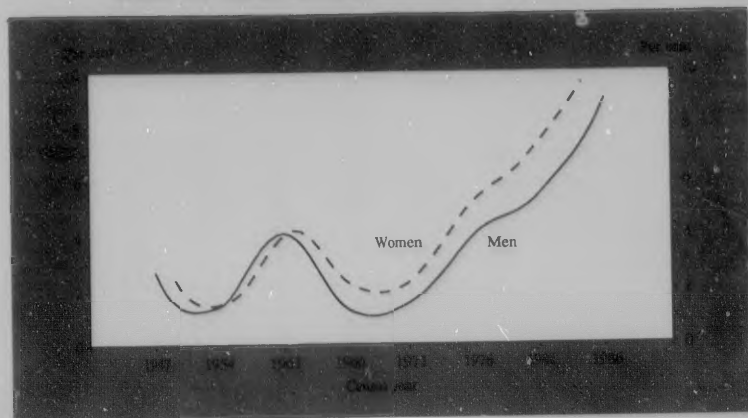
Census year	Employed		Unemployed	
	Men	Women	Men	Women
	%	%	%	%
1947	97.3	97.6	2.7	2.4
1954	98.6	98.3	1.4	1.7
1961	95.9	95.8	4.1	4.2
1966	98.7	97.8	1.3	2.2
1971	98.6	98.0	1.4	2.0
1976	95.9	95.0	4.1	5.0
1981	94.5	93.2	5.5	6.8
1986	91.0	90.4	9.0	9.6

Source: ABS Population Census Reports

- During each census, apart from 1947, the unemployment rate for women has been higher than for men.

If we graph the information shown in Table 2.2 we can clearly see the unemployment rate for women is above that for men consistently from 1961 onwards. Chart 2.4 also shows how unemployment levels for both men and women have risen dramatically since the 1960s. More and more Australians have come to experience unemployment. It would be interesting to know if this has altered their perceptions of the meaning of work.

CHART 2.4 UNEMPLOYMENT RATES, BY SEX, AUSTRALIA



Source: ABS Population Census Reports

Employment Status

All employed members of the Labour Force can be grouped according to their employment status. When we talk about a person's employment status we are referring to whether they are an employer, self-employed, a wage or salary earner or, finally, an unpaid helper. Table 2.3 shows a history of these groupings at each census since 1933.

TABLE 2.3 EMPLOYED PEOPLE BY EMPLOYMENT STATUS, AUSTRALIA

Census year	Employer		Self Employed		Wage/Salary Earner		Unpaid Helper	
	Men	Women	Men	Women	Men	Women	Men	Women
	%	%	%	%	%	%	%	%
1933	11	4	18	10	68	85	2	1
1947	8	4	14	6	76	89	1	1
1954	8	4	13	6	79	89	1	1
1966	7	4	9	5	83	89	-	2
1976	6	4	10	7	84	85	-	3
1986	7	5	11	8	81	86	-	2

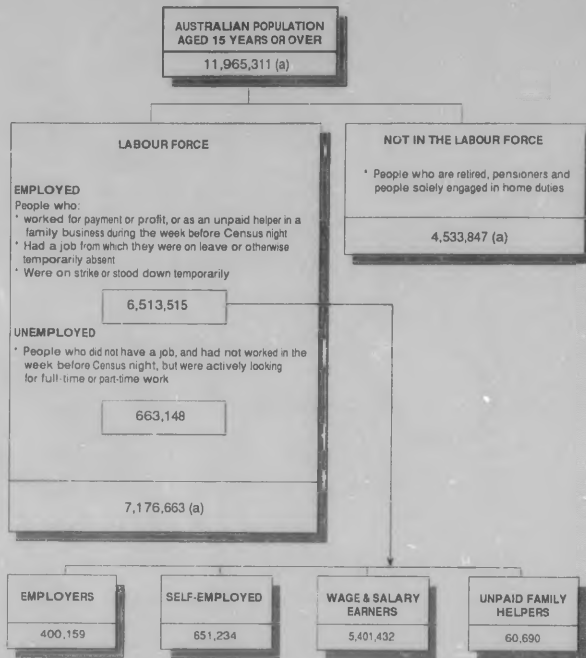
Source: ABS Population Census Reports.

1933 was a period of economic depression in Australia. This is born out by the relatively low figure for male wage and salary earners in that year. Notice the converse, a relatively high figure for self employed men. During the depression in the 1930s men often contracted for work such as building fences or trapping rabbits. Casual labouring, which enabled a person to describe themselves as self employed, was a big feature of the Australian Labour Force in the 1930s.

It is interesting to see how steady the various classifications have remained since the end of the Second World War. It would also be interesting to know if the self employed have a different perception of the meaning of work from the other classifications.

Chart 2.5 on the next page displays the findings of the last census (1986) with regards to employment status.

**CHART 2.5 LABOUR FORCE STATUS AND EMPLOYMENT STATUS,
AUSTRALIA, 1986 CENSUS**



(a) There were 254,801 people who did not state their labour force status.

People Not in the Labour Force

If you refer again to Chart 2.1 you will see that there are a variety of different groups under the category 'Not in the Labour Force'. The majority of people that make up this category were not actively looking for work. The reasons why people do not actively look for work are varied, as Table 2.4 shows.

TABLE 2.4 PEOPLE NOT IN THE LABOUR FORCE, MAIN REASON FOR NOT ACTIVELY LOOKING FOR WORK, SEPTEMBER 1989

Main reason for not actively looking for work	Total ('000)	Per cent
Had a job to go to (a)	20.1	3.1
<i>Personal reasons</i>	274.5	42.0
Own ill health, physical disability, pregnancy	79.2	12.1
Attending an educational institution	122.1	18.7
Had no need to work	34.9	5.3
Give others a chance	3.1	0.5
Welfare payments/pension may be affected	16.3	2.5
Moved house/holidays	19.0	2.9
<i>Family reasons</i>	227.6	34.9
Ill health of other than self	11.4	1.8
Unable to find suitable child-care	74.3	11.4
Children too young/preferred to look after children	102.8	15.7
Other family considerations	39.1	6.0
<i>Discouraged job-seekers</i>	76.1	11.7
Considered too young or too old by employers	30.8	4.7
Difficulties with language or ethnic background	3.8	0.6
Lacked necessary schooling, training, skills or experience	10.6	1.6
No jobs in locality or line of work	25.7	3.9
No jobs at all	5.2	0.8
No jobs at suitable hours	10.6	1.6
Other reasons	36.4	5.6
Did not know	7.7	1.2
Total	653.1	100.0

(a) This category includes people who had a job, but, up to the end of the reference week, had been away from work without pay for four weeks or longer, and had not actively been looking for work.

Source: *Persons Not in the Labour Force, September 1989*, ABS Cat. No. 6220.0.

Unpaid Work

The concept of unpaid work predominantly refers to productive activity which takes place within the home and which does not enter the more formal market economy where reward for work in the form of income occurs. Some typical examples of unpaid work are cleaning, cooking, bill paying, gardening, child care, and volunteer and community work. How do we put a value in economic terms on unpaid work? Well, if we want to measure the value of unpaid work in the home we firstly need a satisfactory definition of what actually constitutes household work.

There are two definitions which are useful in any discussion of unpaid household work. The first comes from a Canadian study in 1971 and the second from a more recent U.S. publication. The definitions are somewhat technical but are worth understanding if you wish to study unpaid household work.

Unpaid household work can be regarded as:

- The value of those economic services produced in the household and outside the market, but which could be produced by a third person hired on the market without changing their utility to the members of the household. (Oli Hawrylyshyn, *Estimating the Value of Household Work in Canada*, 1971)
- ...non-market uses of household time that result in the production of a good or service that could be purchased in the market. (Martin Murphy, *Comparative Estimates of the Value of Household Work in the United States for 1976, 1982*)

The first definition emphasises that economic services produced in the household have to be able to be performed by a third person hired in the market economy itself. Early this century more well off Australians had full time domestic servants to carry out household work. And even today people are hired from the formal labour force to carry out what otherwise would be unpaid household work. Once we have an understanding of the technical meaning of unpaid work we are ready to look at putting a value on it.

The major method used to value unpaid work in the house involves valuing the time spent on it by reference to the market economy. This means that time spent on cleaning would be valued using a rate of pay for commercial cleaning and child minding would be valued according to the rate of pay for child care workers etc. Measuring unpaid work, as opposed to valuing it, is best done by employing a **Time-Use Survey** which measures the time spent by respondents on designated activities within a set period.

The ABS conducted a Time-Use Pilot Survey of 1,000 private dwellings in the Sydney Statistical Division in mid 1987. The results of the survey are shown in Table 2.5.

**TABLE 2.5 TIME SPENT ON UNPAID HOUSEHOLD WORK,
SYDNEY STATISTICAL DIVISION, MAY/JUNE 1987**

Sex	Employment status	Marital status	Hours per fortnight
Female	Employed	Married	69.3
		Not married	29.1
	Not employed	Married	95.5
		Not married	55.9
Male	Employed	Married	31.2
		Not married	19.0
	Not employed	Married	51.7
		Not married	29.8
Average all persons			46.8

Source: *Measuring Unpaid Household Work: Issues and Experimental Estimates*, ABS Cat. No. 5236.0

It should be stressed that Table 2.5 comes from a survey that was experimental, and therefore it should not be regarded as authoritative. The results came from a pilot study in one city during one fortnight, and therefore did not take into account any seasonal or geographic factors.

Despite these reservations, the pilot survey showed that characteristics such as marital and employment status play an important part in the final results. Any survey on unpaid household work should also be mindful of factors such as age, sex and number of dependant children. While recognising the limitations of the survey we are still able to list the following major findings.

- Females spent more time than males on unpaid household work across all categories of marital and employment status.
- Males who spent the most time on unpaid household work were those who were married but not employed.

THE MEASURING OF WORK

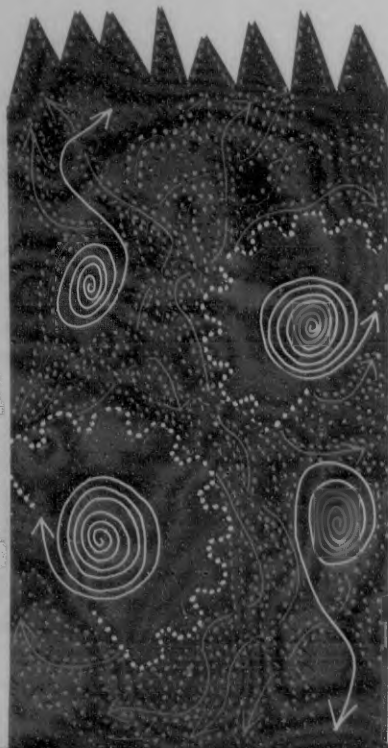
- Work is central to the economic performance of Australia, and to the welfare of Australians.

We have already mentioned how work has come to be thought of in terms of the economy. This section will examine the close link between work and the economy, principally by studying Australia's National Accounts. The National Accounts are very detailed and so before we look at them we will briefly outline some of the general concepts and practices involved in compiling them. We will also consider the issue of whether unpaid household work should be a consideration in looking at Australia's economic performance.

But just how does work underpin our economic performance? As far back as 1937 the *Report of the Royal Commission on the Money and Banking Systems* made the following statement: "The general objective of an economic system for Australia should be to achieve the best use of our productive resources, both present and future. This means the fullest possible employment of people and resources under conditions that will provide the highest standard of living". Australia's Labour Force is one of our most important productive resources. Through the work that our Labour Force engages in, goods and services are produced which enable Australia to try and meet its economic objectives.

In Chapter 4 we will consider economic concepts associated with work such as productivity and economic growth in some detail. For now, we need to be aware that work in Australian society underpins the economic performance of the nation. One important reason for this is because it determines levels of productivity. Productivity, in turn, plays a part in determining whether economic objectives such as full employment, economic growth and rising living standards are met.

This final part of Chapter 2 deals with the link between work and welfare for Australians. Again, we will examine this issue in more detail in Chapter 4. In the meantime, we need to appreciate that Australia's Labour Force provides our governments with taxation revenue. It is this revenue that allows governments to spend money on various forms of welfare, such as education and health, for all Australians.



The National Accounts

The National Accounts of a country are a series of statistical data which provide a detailed description of its overall economic position. National accounting began in England and France in the 17th century. Since then the process of national accounting has been developed and refined by many respected economists such as Adam Smith and John Maynard Keynes. In Australia, the first official estimates were published in 1938, although unofficial estimates had been published by several economists in the 1920s and 1930s.

The development of major international organisations such as the United Nations and the World Bank led to the creation of international standards for national accounting. To make policy decisions these organisations needed to be able to compare the economic performances of many different countries. Therefore international standards were developed and published by the United Nations in *A System of National Accounts* (SNA) in 1953. The modern era of national accounting is said to have begun in 1968 when a fully revised version of the SNA was issued.

Here in Australia the ABS compiles and publishes National Accounts every quarter, and in more detail once a year. Some reasons for the significance of the National Accounts are as follows:

- They summarise information on various aspects of our economic performance such as export income or expenditure on factory machinery.
- Australia's foreign aid program, which includes countries in our region such as Papua New Guinea and Vanuatu, is set as a percentage of our Gross Domestic Product (GDP), the major figure in our National Accounts.
- Government budgetary policy, which impacts directly on Australians in a variety of ways, e.g. taxation on wine, beer and cigarettes, is formulated with regard to current and projected National Accounts figures.

Gross Domestic Product

How do we begin to measure the value of all paid work in Australia? It seems a daunting task and yet the information we can gain is a valuable measure of Australia's economic performance. Before we examine some National Accounts tables it is important to have some understanding of what we mean by the value of paid work and how it is measured.

The process of work results in the generation of income for individuals, companies and governments. Valuing paid work, therefore, involves adding up all the incomes of individuals, companies and governments which flow from the production of goods and services. This figure or total of incomes generated from work in Australia is known as the **Gross Domestic Product (GDP)**. Thus we can say:

- GDP is the total of all incomes generated by the production of goods and services in Australia.
- GDP can be measured by adding wages and salaries, indirect taxes (the income received by government as a result of company production) and profits (a company's income).

GDP can also be measured by looking at levels of **production** or **expenditure**. We need to appreciate that Australia's National Accounts give us important statistics on levels of production and expenditure as well as income. Australia's economic performance is principally measured by reference to GDP figures. Table 2.6 shows recent figures relating to Australia's GDP as measured by adding all the incomes generated from paid work.

TABLE 2.6 GROSS DOMESTIC PRODUCT, INCOME APPROACH, AUSTRALIA
(\$ MILLION)

	1984-85	1985-86	1986-87	1987-88	1988-89
Wages and salaries	110,681	122,182	133,961	147,624	165,767
Profits (a)	77,986	88,752	96,926	112,258	130,158
Indirect taxes (b)	25,800	28,427	31,602	36,926	40,560
GDP	214,467	239,361	262,489	296,808	336,485

(a) In National Accounts tables this appears as the term Gross Operating Surplus.

(b) Government income from taxing companies. This figure excludes government subsidies.

Source: Australian National Accounts, National Income and Expenditure, 1988-89, ABS Cat. No. 5204.0

Although the above figures have not been adjusted for inflation (see opposite page), they do show us that GDP has been rising in Australia in recent years. The importance of paid work, as measured by GDP, to the national economy should not be underestimated. There is a particular economic convention which gives us an example of this. It has long been held in modern economic circles that if the **rate of growth** of GDP is negative for two consecutive quarters then the economy is in what is technically known as a '**recession**'. Modern economies aim to avoid this occurring because a recession means that broader economic objectives are not being met.

In November 1990 the ABS released preliminary National Account figures which showed that for two consecutive quarters Australia experienced negative rates of real GDP growth (June quarter 1990, -0.4 per cent and September quarter 1990, -1.6 per cent).

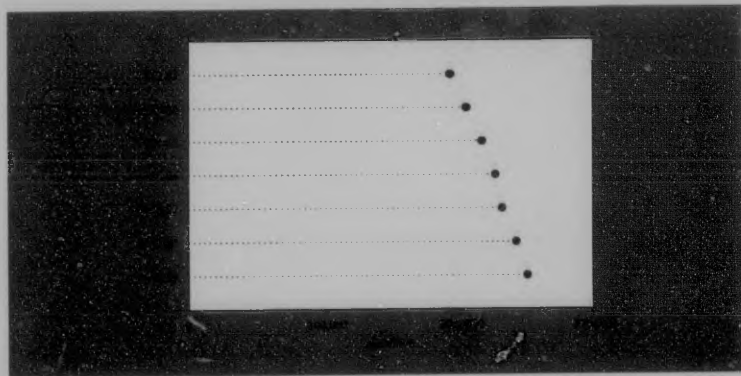
The above preliminary figures are important because they can affect broad economic policy decisions by a government. These involve decisions such as raising or lowering interest rates (the price of borrowing money). Such decisions impact on the daily

lives of most Australians and thus we should appreciate how important the National Accounts are as a measure of our economy.

Chart 2.6 shows us the value of Australia's GDP at constant prices using 1984-85 as a base year. This means that the figures have been adjusted for **inflation** and so real changes in GDP are depicted. (Whenever the word **real** is used in relation to economic statistics we know that the figures have been adjusted for inflation).

Note that the term inflation refers to general rises in price levels.

**CHART 2.6 GROSS DOMESTIC PRODUCT AT AVERAGE 1984-85 PRICES,
1982-83 TO 1988-89, AUSTRALIA**



Source: *Australian National Accounts, National Income and Expenditure, 1988-89*, ABS Cat. No. 5204.0

State National Accounts

There are a variety of National Accounts publications which the ABS releases annually. A particularly useful one is *Australian National Accounts, State Accounts*, Catalogue No. 5220.0. National Accounts tables are complex to those who do not have an economics background. Tables 2.7 to 2.9, however, are relatively simple. The tables show details of income earned by people in Victoria and how they spend this money.



TABLE 2.7 HOUSEHOLD INCOME, VICTORIA
(\$ MILLION)

	1984-85	1985-86	1986-87	1987-88	1988-89
Wages and salaries	29,766	32,819	36,445	40,716	45,025
Total household income	46,894	52,009	57,703	63,381	70,119
Household disposable income	37,652	41,615	45,529	50,041	54,710

Source: *Australian National Accounts, State Accounts, 1988-89*, ABS Cat. No. 5220.0.

TABLE 2.8 SPENDING BY INDIVIDUALS, VICTORIA
(\$ MILLION)

	1984-85	1985-86	1986-87	1987-88	1988-89
Food	5,173	5,766	6,263	6,718	7,339
Health	2,284	2,585	2,948	3,369	3,745
Alcoholic drinks	1,405	1,509	1,597	1,819	1,845
Cigarettes and tobacco	646	688	754	814	891
Gas, electricity and fuel	959	1,042	1,154	1,206	1,295
Travel and communication	4,563	5,009	5,386	5,866	6,566
Total spending (a)	33,412	37,450	41,411	45,809	49,971

(a) Total spending figures are made up of items not depicted in this table such as rent and clothing.

Source: *Australian National Accounts, State Accounts, 1988-89*, ABS Cat. No. 5220.0

TABLE 2.9 FARM INCOME, VICTORIA

(\$ MILLION)

Value of	1984-85	1985-86	1986-87	1987-88	1988-89
Wool production	502	543	726	1,145	1,205
Wheat production	458	377	410	285	330
Livestock slaughtering	921	932	1,068	1,135	1,144
Total farm production (a)	3,263	3,431	4,035	4,644	4,908

(a) Total farm production figures are made up of items not depicted in this table such as barley and hops.

Source: *Australian National Accounts, State Accounts, 1988-89*, ABS Cat. No. 5220.0

The final row of Table 2.7 shows household disposable income. This is the total amount Victorian households are able to spend after tax has been taken out of their earnings. If we examine the final row of Table 2.8 we see that the totals for spending do not match those totals for disposable income in Table 2.7. This tells us that Victorians are channelling some of their income into savings.

Table 2.8 reveals Victorian's spending patterns. We can see if Victorians are maintaining their spending on alcohol and tobacco despite increased government taxes on these items. The ability to predict spending patterns from figures in the National Accounts is very important to State and Federal Governments. For example, this information can influence their decisions on how much they tax alcohol consumption.

The figures showing rural or farm income in Table 2.9 tell us which agricultural commodities in Victoria are raising more income than others. Thus we can appreciate the importance of wool and livestock slaughtering to the Victorian rural economy. We can also track trends in income over time. Note, for example, the fall in income received from wheat production in 1987-88 compared with the previous year. This reflected a global glut of grain coupled with the effects of a price war.

Unpaid Household Work

Productive activity which takes place within the home has traditionally been excluded from GDP figures in most developed countries. In 1990 a major review has been taking place of the United Nation's *System of National Accounts* (SNA). Part of this review is considering the range of activities that is included within the current scope of GDP. The review has considered whether unpaid household work should be measured and included in a country's National Accounts.

The review considered that:

"household services should continue to be excluded from GDP because they are not capable of being marketed once produced." (Lahnstein, August 1989, *Major Changes Proposed for the SNA: An Overview*).

It is unlikely that unpaid household work will, in the near future, be measured as part of Australia's economic performance (GDP). Nevertheless it is interesting to compare measurements of unpaid household work. Table 2.10 shows international comparisons of unpaid household work as a percentage of a country's GDP. Be aware that although a lot of research has gone into the issue of measuring unpaid household work, currently, there are no international guidelines. This should be born in mind when looking at Table 2.10, as the estimates have been reached using different methods.

TABLE 2.10 INTERNATIONAL COMPARISONS OF ESTIMATES OF
UNPAID HOUSEHOLD WORK

Author	Study issued	Country	Year	% of GDP
Chadeau and Fouquet (a)	1981	France	1975	44
Murphy (a)	1982	USA	1976	51
Swinamer	1985	Canada	1981	35
ABS	1990	Australia	1986-87	57

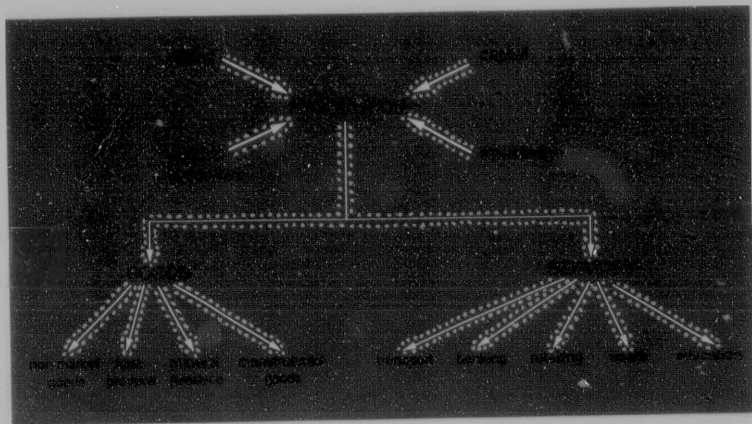
(a) These studies estimated unpaid household work as a percentage of Gross National Product (GNP). GNP includes incomes generated from overseas as opposed to GDP which does not.

Source: *Measuring Unpaid Household Work: Issues and Experimental Estimates*, ABS Cat. No. 5236.0



Work and Welfare

A term that is widely used to depict a country's economic welfare is **standard of living**. Australia's standard of living refers to the flow of goods and services that are available for use in the community. The volume of goods and services available for use by the Australian community is, in part, determined by the productivity of our Labour Force. Australians in work are responsible for this country's economic welfare, because levels of production are major factors determining our standard of living. To help understand the link between work and economic welfare the following diagram is very useful.



The social welfare of Australians is also very dependant on work in our society. By social welfare we are referring to areas such as health, education, pensions and the alleviation of poverty. Most modern economies function with the government assuming a large measure of responsibility for the social welfare of its citizens. In Australia this century, governments have developed a comprehensive social welfare scheme; including compulsory health insurance, unemployment benefits, income support for primary industry, free and compulsory education and old age pensions.

In order to fund Australia's social welfare programs, governments need a regular supply of money. The chief method for raising this money is taxation. It is in this area that the link between work and social welfare arises. All Australians in paid work are subject to a progressive income tax system. That is, a system in which the percentage of income tax paid increases with increases in income. We will look at this area in more detail in Chapter 4. Table 2.11 shows the social welfare programs that have been made possible by the taxes paid by Australia's Labour Force.

TABLE 2.11 AUSTRALIA'S SOCIAL WELFARE, A HISTORY

<i>Type of service</i>	<i>Year</i>	<i>Government</i>
Age pension	1909	Liberal
Invalid pension	1910	Labour
Maternity allowance	1912	Labour
Widow endowment	1942	Labour
Funeral benefit	1943	Labour
Sickness benefit	1945	Labour
Unemployment benefit	1945	Labour
Widows child allowance	1956	Liberal-CP
Supplementary assistance	1958	Liberal-CP
Student child endowment	1964	Liberal-CP
Wives allowances for aged pensioners	1965	Liberal-CP
Medibank	1975	Labour
Family allowances	1976	Liberal-CP
Medicare	1984	Labour

FURTHER READING

ABS sources:

6101.0 Labour Statistics, Australia

This publication contains a wide coverage of labour statistics; labour force (employment and underemployment, unemployment, persons not in the labour force), earnings and award rates of pay, income and labour costs, non-wage benefits, work patterns and hours of work, job satisfaction and work preferences, industrial disputes, trade unions, international comparisons of labour force participation rates and unemployment rates.

6102.0 A Guide to Labour Statistics

This publication traces the history of the development of labour statistics in Australia. It includes discussion of major international Labour Organisations (ILO) conventions. It also discusses the conceptual frameworks, definitions of concepts and lists of data items collected by the ABS in respect of labour statistics.

6104.0 Labour Statistics in Brief

This publication presents a range of summary statistics with the emphasis on simple tabular and graphical presentations. Most of the ABS labour collections are covered.

6203.0 The Labour Force, Australia

This publication contains data about the civilian population aged 15 and over by; sex, labour force status, age, marital status, States and Territories, capital cities, school and tertiary education, birthplace, period of arrival, industry, occupation, hours worked, average hours, full-time/part-time employed, employment/population ratios, looking for full-time or part-time work, duration of unemployment, gross flows and family status.

6204.0 The Labour Force, Australia, Historical Summary

This publication contains labour force data spanning the years 1966-1989. Characteristics shown include labour force status, age marital status, birthplace, period of arrival in Australia, States and Territories, capital cities, industry, occupation, status of worker, hours worked, employment/population ratios and duration of unemployment.

5235.0 A Guide to the Australian National Accounts

This publication contains a brief outline of the most important features of the National Accounts. Provides the reader with a basic understanding of the meaning and uses of the National Accounts without too much economic jargon.

5204.0 Australian National Accounts: Income and Expenditure

This publication presents detailed National Accounts. Includes estimates at current and average 1984-85 prices and definitions and descriptions of items.

5220.0 Australian National Accounts: State Accounts

Dissects National Accounts by State and Territory. Includes household income, private spending and farm income. Also State and local government income and outlay accounts.

5236.0 Measuring Unpaid Household Work: Information paper

Deals with issues pertaining to unpaid work. It contains statistics on experimental estimates of unpaid household work and results of an ABS survey of the Sydney Statistical Division in 1987.

CHAPTER 3

Australia's People and Patterns of Work

WORK AND PHYSICAL LOCATION

▲ The physiography of Australia influences where people live and the ways they experience work.

From the time of the first European settlement at Sydney Cove in 1788, Australia has undergone a rapid transformation as the country has grown and developed. Prior to settlement, the aboriginal inhabitants of Australia were nomads; their work consisted of gathering food from the country through which they ranged, and devising the tools they needed to kill or collect their food, together with making the implements for constructing temporary shelters and making clothes if necessary.

The purpose of the first colonial settlement was to serve as a penal colony. The settlement was built and planned according to the European understanding of the necessities for survival. Then followed the first attempts to cultivate the new land to provide the colony with food. To begin with, the new colony was very dependant on food supplies shipped from Britain, as it took a long time to adapt traditional farming methods to the new land.

As further colonies sprang up in Australia, there were new opportunities for the colonists to make a living. These new jobs originated a great deal around the lines of communication that were set up; by sea, where ports were vital for the importation of supplies and the export of commodities and goods; and by land, where the roads, tracks, railways and rivers made the hinterland accessible to the capital cities and other sea or river ports. This growth led to an increase in the number and variety of jobs in farming, mining, transport, and in wholesale and retail trade.

The types of work available were dependent upon the activities being undertaken at the different localities, and many districts today still reflect their origins. Some localities which experienced prosperity in the early days of Australia's development have continued to prosper. Others had a brief period of prosperity before experiencing decline due to lack of available work - the local mine or factory closed down, new transport routes by-passed towns, localities lost the markets for their produce, or for a number of other reasons.



The Australian Population

TABLE 3.1 AUSTRALIAN POPULATION GROWTH SINCE EUROPEAN SETTLEMENT, TIME ELAPSED BETWEEN SUCCESSIVE MILLIONS, 1788-1986

Population (a)	Year attained	Interval since previous million attained	Average annual rate of population growth
		Years	Per cent
1 million	1858	70	"
2 million	1877	19	3.7
3 million	1889	12	3.4
4 million	1905	16	1.8
5 million	1918	13	1.7
6 million	1925	7	2.6
7 million	1939	14	1.1
8 million	1949	10	1.3
9 million	1954	4	2.5
10 million	1959	4	2.3
11 million	1963	4	2.0
12 million	1968	4	1.9
13 million	1972	4	1.9
14 million	1976	5	1.5
15 million	1981	5	1.2
16 million	1986	4	1.3

(a) Estimates prior to 1961 exclude full blood Aborigines.

Source: Year Book Australia, 1989, ABS Cat. No. 1300.0

The most recent census of Australia's population (June 1986) revealed that the country had passed the 16 million mark. Since European settlement in 1788 there has been continuous growth in our population, however, the rate at which growth has occurred has varied considerably, as the table above demonstrates. The numbers of Australia's Aboriginal community were not collected prior to 1961. There are varied estimates of the Aboriginal population at the time of European settlement. Recent archaeological finds suggest that their population may have been as much as 750,000 people.

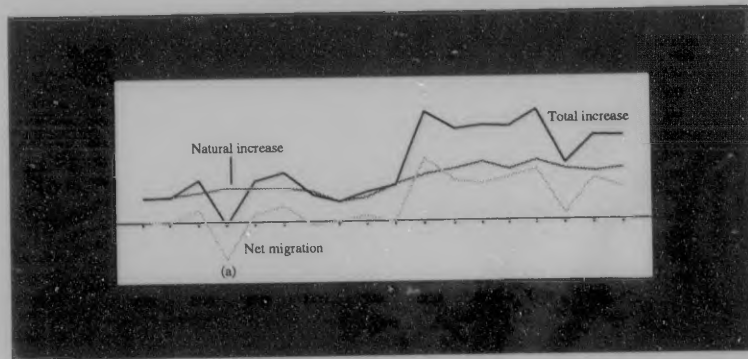
Components of population growth

Before examining how Australia's population grew during our history, we need to take into account the **components of population growth** which have influenced Australia's population growth since European settlement. These components are:

- ▲ **natural increase:** the increase from births minus the loss from deaths,
- ▲ **net migration:** the increase from immigration minus the loss from departures from Australia.

Net migration has played a major role during the times when the rate of Australia's population growth has been highest. For example, as the graph below shows, between 1901 and 1945 net migration contributed only 16.7 per cent to the total increase in population, whilst between 1946 and 1985 its contribution rose to 37.6 per cent.

CHART 3.1 POPULATION INCREASE AND COMPONENTS OF INCREASE, AUSTRALIA, 1901 - 1985



(a) The drop in net migration in 1915 was due to the counting of troops sent overseas as emigrants.
Sources: *Population and Vital Statistics, Australian Demographic Statistics, ABS Cat No. 3101.0* (various issues)

Since 1788 four periods stand out as times when Australia experienced a particularly high rate of growth:

- ▲ The first occurred during the gold rush of the 1850s, when the population doubled from 0.5 million in 1852 to 1 million in 1858.
- ▲ The growth in the population in the 1850s, and the prosperity it brought, sparked off economic diversification and pastoral expansion which was to bring about a second period of rapid population growth between 1877 and 1889.
- ▲ After the First World War, and
- ▲ After the Second World War, up until the mid 1960s, when there was an increase in the birthrate, combined with a large increase in the intake of migrants.

With these trends in mind, we can now examine how our physical geography affected where European settlement occurred and where particular industries developed.



Patterns of Settlement

The modern day Australian population is concentrated in State capital and other major cities, mainly on the Southern and Eastern coasts of the continent. There are a variety of factors to consider in explaining this distribution: Australia's climate, the physical characteristics of its continent, changing agricultural practices, exploitation of mineral resources and simple personal preference.

The first settlement was a very incomplete society. Apart from it being a penal colony, the settlement lacked people with trades and skills to fill the roles and do the jobs that European civilisation demanded. A further imbalance in the colony was the small numbers of women, children, and the elderly.

The spread of settlement came after the reports from returned explorers on the suitability of new areas to sustain an European way of life. The early Australian colonies relied on shipping to provide them with imported foodstuffs, goods and machinery, and also as a major form of transportation between themselves and also with Britain. This, as well as the physical difficulties of crossing the mountain ranges around Sydney, the arid nature of inland Australia and the erratic rainfall of the north and north-west, meant the development of cities occurred on or close to the coastal ports which were mostly in the east, particularly the south east of the continent.

TABLE 3.2 POPULATION OF AUSTRALIAN COLONIES, 1851 - 1901

Date	NSW	Vic. (a)	Qld	SA	WA	Tas. Australia (b)
1851	268,344	..	..	..	..	70,130
1861	350,860	538,628	30,059	126,830	..	89,977
1871	502,998	730,198	..	185,626	..	..
1881	749,825	861,566	213,525	276,414	29,708	115,705
1891	1,127,137	1,140,088	393,718	315,533	49,782	146,667
1901	1,354,846	1,201,070	498,129	358,346	184,124	172,475

(a) In March 1851 Victoria was the Port Phillip region of New South Wales (b) The Northern Territory was part of New South Wales until 1863, then part of South Australia until 1911.
Source: *Year Book Australia*, 1989, ABS Cat. No. 1300.0

The discovery of mineral resources in Australia not only encouraged immigration from cverseas throughout the second half of the 19th century but also affected the distribution of the population internally. In 1850, some 80 per cent of the population was estimated to be living in the older settlements of NSW and Tasmania, with most of the remainder living in South Australia. The discovery of gold in Victoria in the 1850s led to an explosion of that state's population. By 1861 Victoria was the most populous state in Australia, and remained so until the turn of the century.

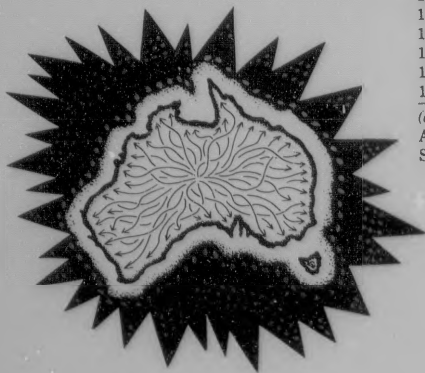
As Table 3.3 indicates, the distribution of Australia's population between the states has not altered much since 1901, despite the occurrence of mining booms and the growth of the tourism industry during this century, particularly in Queensland, and Western Australia.

TABLE 3.3 POPULATION OF AUSTRALIAN STATES, 1966 - 1987

Date	NSW	Vic.	Qld	SA	WA	Tas.	Australia (a)
1966	4,237,901	3,220,217	1,674,324	1,094,984	848,100	371,436	11,599,498
1971	4,775,503	3,601,352	1,851,485	1,200,114	1,053,834	398,073	13,067,265
1976	4,959,588	3,810,426	2,092,375	1,274,070	1,178,342	412,314	14,033,083
1981	5,234,889	3,946,917	2,345,208	1,318,769	1,300,056	427,224	14,923,260
1986	5,531,526	4,160,856	2,624,595	1,382,550	1,459,019	446,473	16,018,350
1987	5,612,244	4,208,946	2,676,765	1,394,154	1,500,507	447,941	16,263,319

(a) The populations of the Northern and Australian Capital Territories have been included in the Australian total.

Source: *Year Book Australia*, 1989, ABS Cat. No. 1300.0



Modern day Australia has since developed into one of the most highly **urbanised** countries in the world. By 1986, 85.4 per cent of its population lived in cities or towns. No other country in the world except perhaps the United Kingdom has so large a proportion of its population concentrated in cities and towns. Sydney and Melbourne alone account for approximately 40 per cent of the current Australian population, while the state capital cities in total house nearly 60 per cent of the population. The reason for the high level of **urbanisation** is mainly due to the preference of financial, manufacturing, and service industries, which achieved prominence during the 20th century, to establish themselves in places where the bulk of the population lived: in the larger cities of the south-eastern states.

Even as far back as the 1890s the declining impact of mining and introduction of more sophisticated farm machinery to replace human labour in the rural sector began to encourage a drift in population to the cities and metropolitan areas. Throughout most of the 20th century, there has been a continuing trend in Australia towards the development of industries based in major urban areas. Capital cities have been the consistent destination for many young people born in country towns or rural areas as well as the choice for settlement of the majority of migrants.

TABLE 3.4 POPULATION OF AUSTRALIAN CAPITAL CITIES, 1921 - 1986

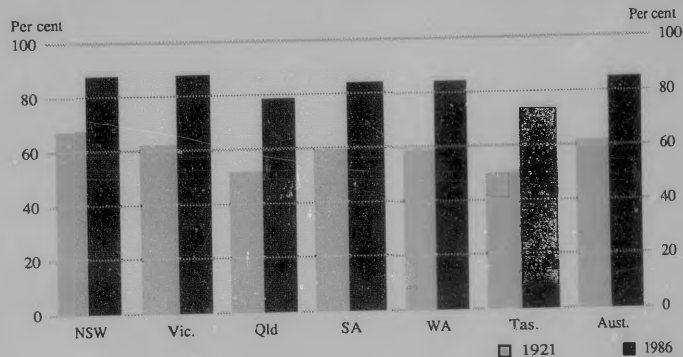
	1921	1947	1961	1971	1976	1981	1986
Sydney	899,059	1,484,004	2,183,704	2,935,937	3,143,750	3,279,500	3,472,700
Melbourne	766,465	1,226,409	1,914,011	2,503,022	2,723,700	2,806,300	2,931,900
Brisbane	209,946	402,030	621,770	869,579	1,000,850	1,096,200	1,196,000
Adelaide	255,375	382,454	588,093	842,693	924,060	954,300	1,003,800
Perth	154,873	272,528	420,283	703,199	832,760	922,040	1,050,400
Hobart	52,361	76,534	115,932	153,216	164,400	171,110	179,000
Darwin	1,399	2,538	12,326	38,885	44,232	56,478	74,800
Canberra	3,873	20,189	65,896	159,003	226,450	246,500	281,000

Source: *Year Book Australia*, 1989, ABS Cat. No. 4200.0

It is interesting to note that, in recent times, the proportion of the population living in rural areas has actually increased; from 13.9 per cent in 1976 to 14.5 per cent in 1986. This trend *away* from urbanisation is due in part to the growth of smaller coastal towns in Queensland, New South Wales and Victoria which have become the destination of large numbers of tourists and retired people.

Diagram 3.1 on the following page, shows all the towns in Victoria with a population of 100 people or more at the 1986 Population census.

CHART 3.2 THE URBAN POPULATION AS A PROPORTION OF THE TOTAL POPULATION, STATES AND AUSTRALIA, 1921 AND 1986 CENSUSES



Source: Year Book, Australia, ABS Cat. No. 1301.0

DIAGRAM 3.1 TOWNS AND CITIES IN VICTORIA WITH A POPULATION OF ONE HUNDRED OR MORE PEOPLE (a), 30 JUNE 1986



up to 100 people

• 2,820 people

(a) Values above 100 are represented by circles which are proportional to the size of the populations.

Geographical classification

The concept of geographical classification is an important one in the gathering and presentation of information, particularly statistical information. Whenever possible, all statistics should be identified by some sort of geographical boundaries such as Australia as a whole, for a particular state, or for smaller areas within each state.

The Australian Bureau of Statistics (ABS) has developed a system for classifying information by geographical areas known as the **Australian Standard Geographical Classification** (ASGC). Very often research work involves comparing statistical information between two or more areas, such as the contribution of a local industry (say, wheat production), or comparing the level of unemployment in your area as against another area.

There are four geographical levels, apart from the States, within the ASGC:

- ▲ The first and smallest geographical unit the ABS uses is called the **census Collection District (CD)**, which covers approximately 350 dwellings in urban areas but much less in remote rural areas where the distances are much greater.
- ▲ At the next level, there is the **Statistical Local Area (SLA)**, which consists of a group of Collection Districts. SLAs are the smallest geographical unit for the presentation of statistical data from ABS sources other than the population census. Statistical Local Areas in Victoria are nearly identical with local government areas.
- ▲ The third level is the **Labour Force Region (LFR)** which is formed from a group of Statistical Local Areas. Within the Melbourne Statistical Division there are eight Labour Force Regions and for the Rest of Victoria there are four.
- ▲ Finally we have the **Statistical Division (SD)**, which is the largest general purpose geographical statistical unit the ABS uses. Statistical Divisions are widely used in the presentation of information in most ABS publications.

Some maps have been reproduced on the following pages to show the Statistical Local Areas and Statistical Divisions in Victoria.

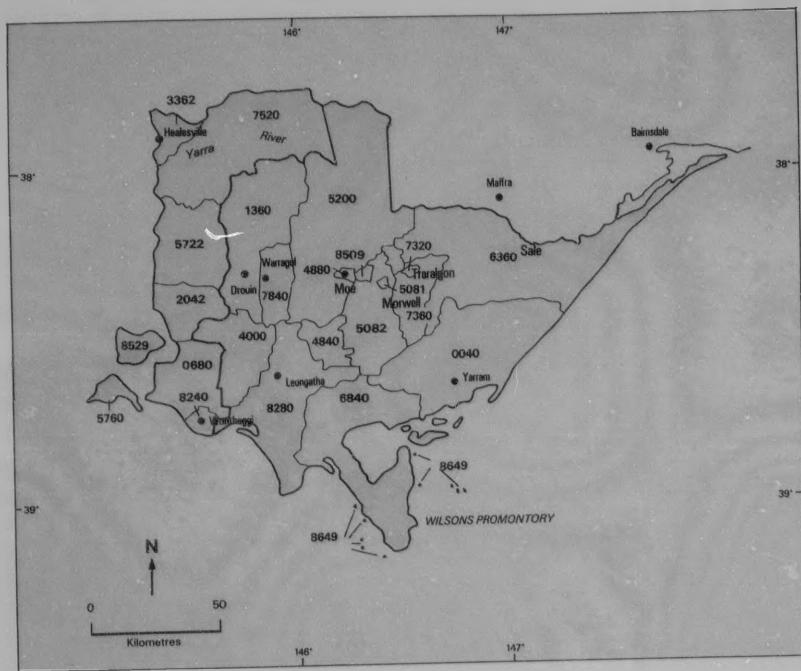
A detailed map of Victoria, Australia, showing its local government areas. Each area is labeled with its name and a status code in parentheses. A legend in the top right corner explains the codes: City (C), Town (T), Borough (B), Rural City (RC), and Shire (S). A scale bar indicates distances up to 100 km. A north arrow is also present.

City (C), Town (T), Borough (B), Rural City (RC), Shire (S)

Map of Victoria showing local areas and their status (City, Town, Borough, Rural City, Shire).

●

CENTRAL GIPPSLAND AND EAST CENTRAL STATISTICAL DIVISIONS



MELBOURNE STATISTICAL DIVISION BY STATISTICAL LOCAL AREAS



THE PROFILE OF THE WORKFORCE



▲ The structure of the Australian workforce is changing.

The composition of the labour force has undergone a large transformation during the history of Australia. The original settlers were the convicts and their guards; therefore if nobody was available with the necessary trade or craft to do a certain job, they had to improvise, or wait for the appropriate goods to arrive from overseas. From this beginning, a workforce with the variety of crafts of an European nation emerged, despite the constant shortage of skilled people.

There were limitations on the types and sizes of businesses which could be set up and expected to prosper with such a patchy workforce. People tended to stick with the jobs they knew and hoped that the goods they produced had a ready-made market. Many succeeded, as there was a strong international market for Australian primary produce. However, due to the success of Australia's primary industries, over a long period of time, local manufacturing industries, which were not regarded as vital to the economy, operated in an often inefficient manner and, as time went on, often did not update their machinery and techniques.

The legacy of these times has been a labour force structure and a skill base which is now in need of considerable adjustment to allow Australia to meet the demands of a highly competitive international market which requires sophisticated manufactured goods and expert services, rather than merely the exporting of raw materials. As a result, Australian industry and the labour force are now undertaking a close examination of their abilities, to make Australia more competitive and innovative within the world economy.

Occupation

An occupation is the paid job or set of tasks an individual does in the course of her or his employment. Job titles are usually self-explanatory e.g. dentist, ticket seller or jockey; but there are some that are not, such as assistant manager, systems analyst or labourer. The table below shows the numbers of people employed in each major occupational grouping.

TABLE 3.5 OCCUPATION BY MAJOR GROUPS, AUSTRALIA, 30 JUNE 1986

<i>Occupation</i>	<i>Males</i>	<i>Females</i>	<i>Persons</i>	<i>Percentage</i>
Managers and administrators	571,798	190,157	761,955	11.7
Professionals	462,223	307,476	769,699	11.8
Para-professionals	241,198	180,446	421,644	6.5
Tradespersons	900,470	96,340	996,810	15.3
Clerks	293,344	819,435	1,112,779	17.1
Sales and personal services	317,621	491,305	808,926	12.4
Plant and machine operators	449,502	85,517	535,019	8.2
Labourers and related workers	606,908	329,112	936,020	14.3
Total (a)	3,951,904	2,561,611	6,513,515	100.0

(a) Includes occupations inadequately described, not stated and not elsewhere included.

Source: ABS 1986 *Population Census report*.

In 1986, the largest occupational groups were the clerks which employed 17.1 per cent of the employed labour force, tradespersons which employed 15.3 per cent and labourers and related workers which employed 14.3 per cent.

A common practice is to divide the various occupations into two groups, "white collar" occupations and "blue collar" occupations. While the dividing line between the two groups is quite blurred, generally speaking "white collar" refers to the professional and technical, administrative, clerks, and sales and personal services workers. "Blue collar" is not so easy to define although, for simplicity, some refer to blue collar as the remainder of the occupations, except for the armed forces.

Industry

The easiest way to differentiate between the concepts of occupation and industry, is to remember that **occupation** is the work of the individual and **that industry** is the work of the company or organisation where he or she is employed. The occupation of an individual often also identifies the industry in which he or she works e.g. a soldier works in the defence industry. However, in many cases, linking the two is not that simple. A carpenter does not necessarily work in the construction industry; he or she could be employed in the defence industry or be a maker of crates for the transport or storage industries. A clerk could be working in the offices of a company or organisation within any industry, and so forth.

TABLE 3.6 EMPLOYED PERSONS: INDUSTRY SECTOR BY SEX,
AUSTRALIA, 30 JUNE 1986
(^{'000})

Industry	Males	Females	Persons
<i>Primary Industry -</i>	<i>334.5</i>	<i>121.6</i>	<i>456.1</i>
Agriculture, forestry, fishing and hunting	251.8	112.5	364.4
Mining	82.6	9.1	91.7
<i>Secondary Industry -</i>	<i>1,198.6</i>	<i>330.3</i>	<i>1,528.9</i>
Manufacturing	714.4	261.9	976.3
Construction	371.5	55.2	426.7
Electricity, gas and water	112.8	13.2	126.0
<i>Tertiary Industry -</i>	<i>2,270.2</i>	<i>2,016.1</i>	<i>4,286.3</i>
Wholesale and retail trade	689.9	535.2	1,225.1
Transport & storage	284.9	62.1	346.9
Communication	100.3	35.2	135.5
Finance, property and business services	345.4	316.8	662.2
Public administration and defence	265.2	126.9	392.1
Community services	404.7	725.7	1,130.3
Recreational, personal and other services	179.9	214.3	394.2
<i>Not classifiable</i>	<i>45.0</i>	<i>20.6</i>	<i>65.6</i>
Total (a)	3,951.9	2,561.6	6,513.5

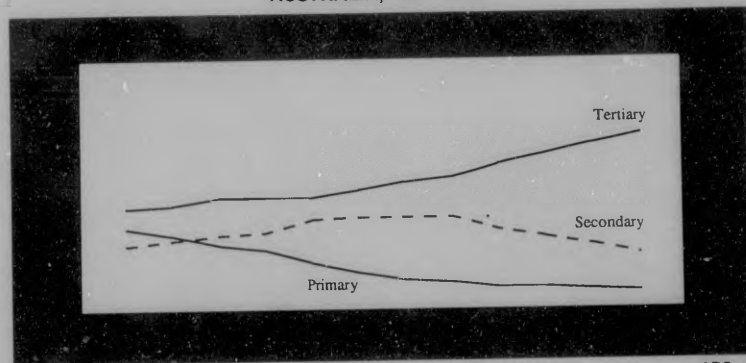
(a) Total includes persons who did not state their occupation.
Source: ABS 1986 Population Census report

Traditionally, industry is discussed in one of the two following ways. The first way is to divide all industries into three broad groupings:

- ▲ **The primary sector**, which involves the obtaining of raw materials from the land and sea, whether by pastoral or agricultural means, fishing, hunting, or by mining.
- ▲ **The secondary sector** is involved with the processing of raw materials into finished products either by manufacturing or construction, and
- ▲ **The tertiary sector** covers all other industries, although many refer to this grouping as the service sector.

As the chart below indicates, the tertiary (or service group) employs the bulk (about two thirds) of Australia's workforce. The primary group, although an important earner of export dollars, employs only 7.0 per cent of the workforce.

CHART 3.3 PROPORTION OF THE WORKFORCE IN EACH INDUSTRY SECTOR, AUSTRALIA, 1901 - 1986



The second way industry is often looked at is by the separating of the government component (Commonwealth, State and local government) from the private component.

As the table below indicates, both the public (or government) sector and the private sector has employed about the same proportion of Australia's workforce since the second world war.

TABLE 3.7 PROPORTION OF THE WORKFORCE IN THE GOVERNMENT AND PRIVATE SECTOR, AUSTRALIA, 1939 - 1986
(PER CENT)

Year	Government			Private		
	Males	Females	Persons	Males	Females	Persons
1939	27	13	23	73	87	77
1947	29	15	25	71	85	75
1954	30	16	26	70	84	74
1961	30	18	24	70	72	74
1966	29	18	25	71	82	75
1971	28	18	25	72	82	75
1976	25	23	25	75	77	75
1981	26	26	26	74	74	74
1986	26	27	26	74	73	74

Source: ABS Population Census reports

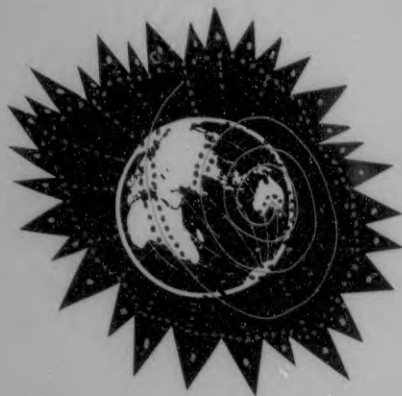
Occupational structure

The concept of **occupational structure** refers to the mixture of different types of jobs performed by the workforce. An office or a factory has its own occupational structure, a company with offices and factories in many locations has an occupational structure as well, and, at the broadest level, the whole of Australia has an occupational structure.

Different industries in Australia tend to have very different occupational mixes within them. Therefore we can see that any expansion or contraction of an existing industry or the emergence of a new one will alter the overall occupational structure of the workforce. Another way occupational structure can change is if particular industries are restructured in a way which require their employees to take on new skills. The introduction of computers into educational institutions, offices, factories and many other workplaces is an example of this later factor.

Australia's occupational structure is changing constantly, and the pace of change over the past twenty years has been particularly rapid. One main thrust for change at the present time is for many people working as tradespersons, clerks and factory workers to move away from specialisation of tasks and restrictive trade practices, towards a more flexible, multi-skilled workforce. For example; within the public service, the advent of user-friendly personal computers has seen the distinctions between the traditional occupations of clerk, computer operator and typist become quite blurred. It may be that, in the future, specialised typists may become as redundant as candlemakers, ostlers or dairy maids are now.

A look at Australia's occupational structure through history is quite illuminating. The period immediately after the gold rushes of the 1850s saw a major shift away from agriculture towards mining and manufacturing. From the 1860s to the end of the century, the predominant occupations were described as *'hands employed on farms and stations'* and *'hands employed in manufactories and works of all descriptions'*



Between the two world wars and immediately after, the process of industrialisation accelerated, particularly in the Eastern states, as a result of companies preferring the more populous areas to establish their operations. Sydney tended to specialise more in **capital intensive** industries (that is, industries dependant on machinery rather than labour) such as founding and metal-working due to the proximity of high grade coal, as well as the iron and steel industries at Newcastle and Port Kembla. By contrast, Melbourne developed more **labour intensive** industries such as textile, clothing and boot and shoe manufacturing.

During the 1970s, a major shift occurred in our occupation structure from 'blue-collar' to 'white-collar' occupations. The size of the professional, technical and clerical occupation groups increased rapidly throughout this period, whilst there was a substantial decline in the relative share of the tradespersons and labourers occupation groups.

**TABLE 3.8 EMPLOYED PERSONS: OCCUPATIONAL STRUCTURE CHANGE,
AUSTRALIA, 1971 - 1986**

<i>Major occupational groups</i>	<i>Total 1971</i>	<i>Change 1971-1976</i>	<i>Change 1976-1981</i>	<i>Change 1981-1986</i>
Professional, technical and related workers	536,508	147,103	174,286	156,026
Administrative, executive and managerial	348,874	32,454	46,654	128,516
Clerical	830,408	124,469	123,747	145,639
Sales	421,886	26,921	89,146	49,381
Farmers, fishers, timber-getters, etc.	403,906	26,930	-28,412	-25,277
Miners, quarryworkers and related workers	33,887	-2,214	4,596	n.a.
Transport and communication workers	290,790	7,525	3,372	1,691
Tradespersons, process workers and labourers	1,680,691	47,954	40,315	-20,071
Service, sport and recreation workers	387,562	65,190	74,610	91,279
Armed forces	65,196	-3,982	2,172	21,704
Total change (a)	5,240,414	547,732	504,485	433,609

(a) Includes persons who did not state their occupation or whose occupation was inadequately stated.

Source: ABS Population Census reports.

The reasons for the shift to 'white collar' occupations include:

- ▲ the advent of new technology and the restructuring of industry.
- ▲ the increased services required for the rapidly increasing number of persons in our community who need assistance, such as the unemployed, the elderly and single parent families (the later two groups are presently becoming more and more numerous).

Tables 3.8 and 3.9 illustrate the change to 'white collar' occupations from two different perspectives. You may wish to compare them both to see which approach gives more information. They deal with:

- ▲ The change in the **number** of jobs over time, and
- ▲ The change in the **proportion** of the workforce in different occupations.

**TABLE 3.9 PERCENTAGE DISTRIBUTION OF EMPLOYED PERSONS BY
OCCUPATION, AUSTRALIA, 1971 - 1986**
(PER CENT)

Major occupation groups	1971	1976	1981	1986
Professional, technical and related workers	10.2	11.8	13.6	15.6
Administrative, executive and managerial	6.6	6.6	5.3	7.1
Clerical	15.8	16.5	17.1	18.8
Sales	8.1	7.8	8.5	9.0
Farmers, fisherman, timber-getters etc.	7.7	7.4	6.4	5.8
Miners, quarrymen and related workers	0.6	0.5	0.6	0.5
Transport and communication	5.5	5.2	4.8	4.7
Tradespersons, process workers and labourers	32.1	29.9	28.1	26.9
Service, sport and recreation workers	7.4	7.8	8.4	9.5
Armed forces	1.2	1.1	1.0	1.3
Total (a)	100.0	100.0	100.0	100.0

(a) Includes persons who did not state their occupation or whose occupation was inadequately stated.

Source: ABS Population Census reports

The increase in size of the 'white collar' occupations saw the proportion of Australians with post-school qualifications rise dramatically during the 1970s. In 1968-69 only 27.8 per cent of males and 14.7 per cent of females who were full-time workers had post-school qualifications. By 1981-82 this had increased to 51.3 per cent of males and 40.5 per cent of females.

If we look at which occupations contributed to the shift to white collar occupations, as shown in Table 3.10, we can see that the largest increases were occupations within the professional and technical group. The increase in the proportion of architects and engineers between 1971 and 1976 is particularly striking.

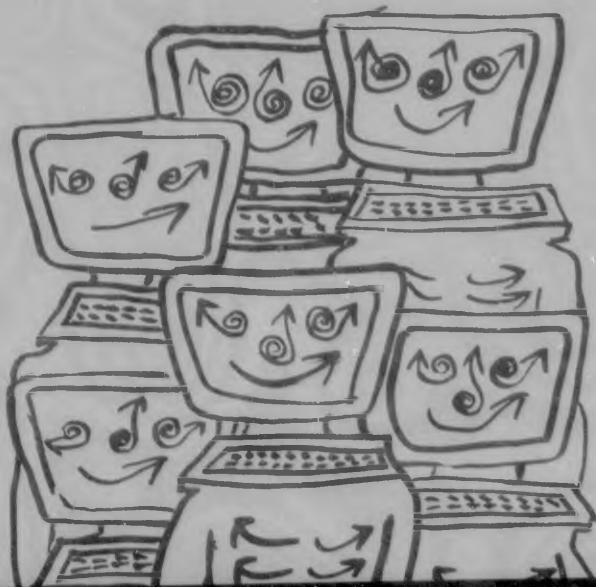


TABLE 3.10 CHANGE IN SELECTED 'WHITE-COLLAR' OCCUPATIONS,
AUSTRALIA, 1971 - 1981

Major and minor occupation groups	Number Employed in 1971	Per cent of 1971 workforce	Per cent change 1971-76	Per cent change 1976-81	Per cent of 1981 workforce
	number	%	%	%	%
<i>Professional and technical -</i>					
Architects and engineers	17,036	0.3	160.3	36.0	0.9
Chemists, Physicists, etc.	7,856	0.1	39.3	35.5	0.2
Medical Practitioners, dentists, etc	19,584	0.4	28.2	30.3	0.5
Nurses	89,520	1.7	31.3	18.6	2.1
Teachers	155,537	3.0	39.1	23.0	4.1
Artists and entertainers	30,563	0.6	11.3	36.8	0.7
Draftsmen and technicians	116,493	2.2	-15.1	10.4	1.7
<i>Administrative -</i>					
Administrative, government	11,912	0.2	28.6	39.6	0.3
<i>Clerical -</i>					
Book-keepers and cashiers	93,326	1.8	-6.5	15.3	1.6
Steno-secretaries, typists, etc.	171,752	3.3	0.9	-43.0	1.5
<i>Sales -</i>					
Insurance, real estate salespersons	33,632	0.6	6.8	16.1	0.6
Shopkeepers and sales assistants	338,927	6.5	8.1	21.6	6.8
<i>Service, sport and recreation -</i>					
Fire brigade, police, etc.	41,498	0.8	23.8	20.3	0.9
Waiters and bartenders	46,034	0.9	17.2	17.6	1.0
Caretakers and cleaners	74,038	1.4	23.7	9.4	1.5
Hairdressers and beauticians	28,232	0.5	-8.5	24.2	0.5
Sportspersons and athletes	4,326	0.1	28.2	45.6	0.1
Photographers	4,204	0.1	9.8	26.7	0.1
Total white-collar	2,525,238	48.2	15.7	14.2	51.2
Total workforce	5,240,414	100.0	10.5	8.7	100.0

Source: ABS Population Census reports



The 1980s saw the broad trends of the 1970s continue. The professional and technical occupation group has continued to increase its percentage share of the workforce, whilst the tradespersons and labourers groups have continued to employ a smaller share. The main differences between the two decades was the change of the *nature* of our working life in the 1980s, particularly with regard to:

- ▲ the accelerated introduction of computers and other new technology into the workplace,
- ▲ the creation of a more multi-skilled workforce, and
- ▲ the progressive steps taken to eliminate restrictive trade practices in the workplace.

While Australia's primary industries remain a vitally important export earner to the country, they are not a large employer of people these days. Since the pioneering days, the primary sector has become more **capital intensive**, or more and more reliant on machinery, and has employed a steadily decreasing proportion of the workforce.

Industrial structure

As one would expect, the changes in industrial structure in modern Australia mirror the changes in occupation structure. Throughout the 1980s, manufacturing industry has employed a declining share of the nation's workforce, while industries such as finance, property and business services, and community services have expanded their share. This trend reflects the move towards 'tertiary industries' as is indicated by Table 3.11 below.

**TABLE 3.11 PERCENTAGES OF EMPLOYED PERSONS IN INDUSTRY GROUPS,
AUSTRALIA, 1982 - 1988**
(PER CENT)

Industry	1982	1983	1984	1985	1986	1987	1988
Agriculture, forestry, fishing and hunting	6.4	6.6	6.2	6.2	6.0	5.7	5.8
Mining	1.4	1.5	1.4	1.5	1.4	1.4	1.3
Manufacturing	18.8	18.1	17.7	16.7	16.4	16.3	16.4
Electricity, gas and water	2.0	2.2	2.3	2.1	2.0	1.7	1.5
Construction	7.3	6.2	6.5	7.1	7.1	6.9	7.2
Wholesale and retail trade	19.6	19.5	19.7	19.8	20.1	19.9	20.4
Transport, storage and communication	7.9	8.1	7.5	7.9	7.9	7.3	7.0
Finance, property and business services	9.2	9.2	9.6	10.0	10.2	10.9	11.0
Public administration and defence	4.5	5.0	5.0	4.9	4.7	5.0	4.4
Community services	16.6	17.3	17.6	17.4	17.7	18.1	17.8
Recreation, personal and other services	6.3	6.3	6.5	6.5	6.6	7.0	7.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Estimates for and after August 1986 are based on a revised definition introduced in April 1986.

Source: *Labour Statistics, Australia* ABS Cat. No. 6101.0

Part-time employment

Part-time employment refers to people who normally work less than 35 hours a week. The rapid growth in the numbers of people working part-time has been a major feature of the changing nature of work during the past twenty five years. Over the period 1967 to 1989, the number of full-time workers increased by only 38 per cent compared with a 219 per cent increase in the number of part-time workers. This has meant the share of the whole workforce who were working part-time more than doubled during this time: from 10.3 per cent of the entire workforce in 1967 to 20.9 per cent in 1989.

Part-time work is more prevalent in some occupational groups compared to others: in 1989, almost 40 per cent of people employed in sales and personal services occupations worked part-time, as did a third of labourers or related workers and a quarter of clerks.

TABLE 3.12 PERSONS EMPLOYED PART-TIME AS A PROPORTION
OF TOTAL EMPLOYED PERSONS, AUSTRALIA, 1967 - 1989

	1967	1972	1977	1979	1981	1983	1985	1987	1989
Males	4.0	3.3	4.8	5.2	5.5	6.2	6.2	7.4	7.8
Females	24.5	26.8	33.7	35.2	35.7	36.4	37.3	39.2	40.1
Persons	10.3	11.1	15.0	15.9	16.5	17.5	18.1	20.0	20.9

Source: Labour Statistics Australia: ABS Cat. No. 6101.0

As Table 3.13 on the following page indicates, over 85 per cent of married women (who account for over half of part-time workers) who were working part-time do not wish to work more hours. It is likely they prefer the flexibility of lifestyle which this type of employment offers, by allowing them to combine home duties with their careers or with the earning of extra family income. About two thirds of people other than married women are happy working the part-time hours they do. Young people, another group well represented amongst part-time workers, may find they can combine this form of employment while pursuing their education. However, about one third of them would have preferred to work more hours, indicating that many do part-time work because it is the only type of work available.

TABLE 3.13 PART-TIME WORKERS: WHETHER PREFERRED TO WORK MORE HOURS, AUSTRALIA, AUGUST 1989

('000)

Whether preferred to work more hours or not	Age group (years)						All ages
	15 to 19	20 to 24	25 to 34	35 to 44	45 to 54	55 or over	
MALES							
Did not prefer more hours	92.3	38.4	31.4	23.9	18.2	67.0	271.2
Preferred more hours	25.0	15.5	15.8	10.2	8.5	8.2	83.2
Total	117.3	53.9	47.1	34.1	26.7	75.2	354.4
MARRIED FEMALES							
Did not prefer more hours	2.2	26.0	223.9	309.5	168.4	64.7	794.7
Preferred more hours	1.2	6.4	36.8	40.9	19.8	4.7	109.8
Total	3.4	32.4	260.7	350.4	188.3	69.3	904.5
ALL FEMALES							
Did not prefer more hours	126.0	72.0	259.4	334.3	188.7	86.9	1,067.4
Preferred more hours	34.0	30.7	49.8	49.9	26.2	6.2	196.8
Total	160.0	102.7	309.3	384.2	215.0	93.1	1,264.2
ALL PERSONS							
Did not prefer more hours	218.3	110.4	290.8	358.2	206.9	153.9	1,338.6
Preferred more hours	59.0	46.2	65.6	60.1	34.8	14.4	280.0
Total	277.3	156.6	356.4	418.3	241.7	168.3	1,618.6

Source: Labour Force Australia, August 1989, ABS Cat No. 6203.0.

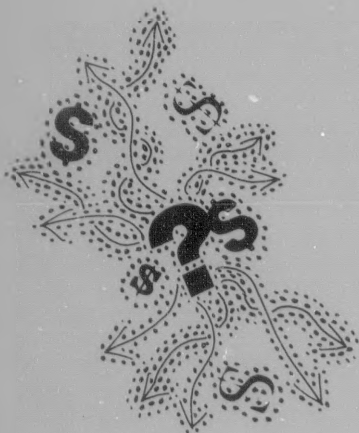
Transition from education to work

For most people, leaving the education system and entering the workforce represents a major step in their lives. While the common picture is of a young person finishing a long period of continuous full-time education to embark upon a full-time career, the separation between education and work is not so clear cut.

- ▲ Many people choose to begin their working lives while still studying to enable them to earn some income and gain valuable work experience.
- ▲ Apprentices and cadets have a formal combination of study and work which enables them to learn their job while combining theory and practice.
- ▲ Even after completing the first transition from education to work, many people re-enter the education system at a later stage to update or expand their range of skills, change career paths, or to assist them with their personal development.

With the move towards new technology and multi-skilling in the workplace, it is not surprising that more and more people are re-entering the education system each year. In fact, over 30 per cent of people aged 15 years or over who are attending an educational institution of some sort are aged from 25 to 64 years; an age group not usually associated with study.

The overall effect of these three features is that, of all the people aged 15 to 64 years who are attending an educational institution, over *half* are working as well.



**TABLE 3.14 PERSONS AGED 15 TO 64 YEARS: LABOUR FORCE STATUS
BY WHETHER ATTENDING AN EDUCATIONAL INSTITUTION, MAY 1989**

Whether attending an educational institution	In the labour force				Not in labour	
	Employed		Unemp- loyed	Total	force	Total
	Full-time	Part-time				
PERSONS AGED 15 TO 19 YEARS						
Attending school	1.5	155.4	36.8	193.7	422.5	616.2
Attending university	5.8	27.0	5.8	38.6	38.3	76.9
Attending CAE	3.9	19.7	4.8	28.4	26.7	55.1
Attending TAFE/technical college	104.9	24.3	5.0	134.1	23.8	158.0
Attending other educational institution	5.9	6.0	2.2	14.1	9.6	23.7
Total attending an educational institution -						
Full-time	8.7	216.6	51.4	276.7	518.1	794.8
Part-time	113.3	15.6	3.3	132.3	2.8	135.1
Total attending	122.0	232.3	54.7	409.0	520.8	929.8
Not attending an educational institution	331.9	39.8	67.7	439.4	34.9	474.4
Total	453.9	272.0	122.4	848.4	555.8	1,404.2
PERSONS AGED 20 TO 24 YEARS						
Attending school	1.8	1.3	0.3	3.4	0.8	4.1
Attending university	17.8	34.6	3.1	55.5	42.6	98.1
Attending CAE	13.6	21.6	2.6	37.9	25.4	63.3
Attending TAFE/technical college	75.4	8.8	5.1	89.3	15.7	105.0
Attending other educational institution	11.4	1.9	1.4	14.6	6.3	20.9
Total attending an educational institution -						
Full-time	9.2	55.6	6.0	70.8	84.7	155.5
Part-time	110.8	12.6	6.5	129.9	6.0	135.9
Total attending	120.0	68.2	12.5	200.7	90.7	291.4
Not attending an educational institution	747.9	78.8	82.3	909.0	112.2	1,021.2
Total	867.9	147.0	94.8	1,109.7	202.9	1,312.6

**TABLE 3.14 PERSONS AGED 15 TO 64 YEARS: LABOUR FORCE STATUS
BY WHETHER ATTENDING AN EDUCATIONAL INSTITUTION, MAY 1989 - continued**
(^{'000})

Whether attending an educational institution	In the labour force				Not in labour	
	Employed		Unemp- loyed	Total	force	Total
	Full-time	Part-time				
PERSONS AGED 25 TO 64 YEARS						
Attending school	4.9	1.2	0.7	6.8	2.9	9.7
Attending university	65.0	25.2	3.2	93.5	26.6	120.1
Attending CAE	49.0	13.2	2.8	65.0	14.4	79.4
Attending TAFE/technical college	143.4	39.7	11.6	194.7	49.4	244.1
Attending other educational institution	45.2	15.9	3.6	64.7	21.8	86.5
Total attending an educational institution -						
Full-time	10.1	22.3	5.8	38.1	44.0	82.1
Part-time	297.4	72.9	16.2	386.5	71.1	457.6
Total attending	307.5	95.2	21.9	424.6	115.1	539.8
Not attending an educational institution	4,438.6	1,051.2	277.9	5,767.8	2,068.8	7,836.6
Total	4,746.1	1,146.5	299.8	6,192.4	2,183.9	8,376.3

Source: Transition from Education to Work, Australia, May 1989: ABS Cat No. 6227.0

Unemployment

Unemployment affects some groups of people more than others: people from non-English speaking backgrounds, people from lower socio-economic backgrounds, people without educational qualifications, women and, more than any other groups, aboriginal people and the young. Aboriginal people have a high rate of unemployment because many come from disadvantaged backgrounds. Young people tend to be disadvantaged because of their lack of work experience and also because, at times when jobs are being cut back, there is little scope for employers to take on school leavers. We will come back to the characteristics of the unemployed later.

The first question we need to ask is 'what is unemployment?' Indeed, there are a number of definitions of unemployment. The Department of Social Security defines the unemployed as those persons in receipt of unemployment benefits, while the Commonwealth Employment Service (CES) defines the unemployed as all persons who are registered with the CES as seeking full-time work and who claim to be unemployed. The Australian Bureau of Statistics (ABS) has a different definition again. As the ABS definition is the one most widely used in the community, we will use this in the following discussion.

In summary form, the ABS defines unemployed persons as those aged 15 years or over who were not employed during the week of the survey, and who:

- ▲ had actively looked for full-time and part-time work at any time during the four weeks up to the end of survey week, and were available for work in the survey week or were waiting to start a new job within four weeks of survey week, or
- ▲ were waiting to be called back to a full-time or part-time job from which they had been stood down.

Many reports on the media refer to the **unemployment rate**. This figure is the number of unemployed as a percentage of the labour force (the labour force being made up of the number of people who are either employed or unemployed).

During the period 1945 to the early 1970s, Australia enjoyed a low rate of unemployment as the expanding economy of that period readily 'soaked up' leavers from educational institutions or new settlers to the country. Then, from 1972 to 1977, the unemployment rate more than doubled to 5.7 per cent and, since then, the

figures on unemployment have gained prominent attention in the nation's media as both an indicator of the strength of the economy and the level of hardship being experienced within the community.

Up until 1981, the unemployment rate remained at about the same level as 1977, but the economic recession of 1982-83 and an accompanying drought across much of Australia caused the unemployment rate to jump to 9.9 per cent of the labour force in 1983. Since 1983, the unemployment rate continued to fall, although indications are for further rises in unemployment in 1990-91.

TABLE 3.15 ABORIGINES AND TORRES STRAIT ISLANDERS AGED 15 YEARS OR OVER: UNEMPLOYMENT RATES, AUSTRALIA, 30 JUNE 1986

Ancestry	Unemp- loyed	In the labour force	Total popul- ation	Unemp- ment rate per cent
Aborigines and Torres Strait Islanders	23,409	66,287	137,133	35.3
Total population aged 15 years or over	663,148	7,176,663	11,965,311	9.2

Source: 1986 Population Census, microfiche table CA0052

Details of the unemployment rate of Aborigines and Torres Strait Islanders are only available from the Census of Population and Housing. The table above shows the level of aboriginal unemployment, which is the highest rate of any group in the country - four times that of the national average.

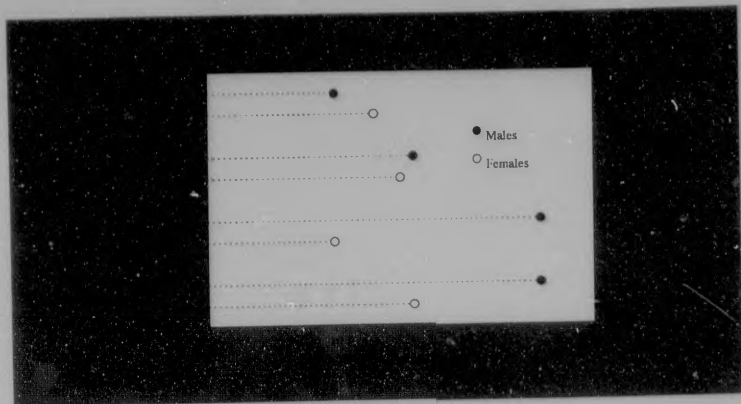
As Table 3.16 on the following page indicates, people aged 15 to 19 years also experience a high rate of unemployment; their rate often being more than twice that of the national average. However, as the accompanying graph shows, the young tend to have a shorter duration of unemployment on average, compared to other age groups.

**TABLE 3.16 UNEMPLOYMENT RATES BY AGE GROUP,
AUSTRALIA, 1967 TO 1989
(PER CENT)**

Age group (years)	1967	1972	1977	1979	1981	1983	1985	1987	1989
MALES									
15 to 19	3.1	5.6	15.8	14.6	11.2	23.0	19.3	18.1	12.9
20 to 24	1.7	2.6	7.2	8.4	8.3	17.3	12.5	12.6	8.0
25 to 34	0.8	1.5	3.2	3.7	4.1	9.1	7.1	7.0	5.1
35 to 44	0.9	1.3	2.9	2.4	2.4	6.0	4.4	4.8	3.5
45 to 54	1.0	1.4	2.5	2.4	2.8	5.9	4.9	5.7	3.0
55 or over	0.9	1.5	2.5	2.7	3.5	6.5	6.7	5.5	5.9
Total	1.2	2.0	4.7	4.8	4.7	9.9	7.8	7.5	5.4
Total ('000)	42.4	74.8	190.1	196.1	199.7	429.7	346.6	347.0	259.9
FEMALES									
15 to 19	3.6	5.9	20.3	20.4	17.0	22.2	17.1	19.4	14.6
20 to 24	3.0	3.8	8.0	8.0	8.7	11.5	10.5	10.6	7.9
25 to 34	3.4	4.1	5.3	6.5	6.3	9.5	7.5	7.5	5.8
35 to 44	2.7	3.1	4.5	4.2	4.4	6.8	5.3	6.1	3.9
45 to 54	2.3	2.1	3.2	3.8	3.1	4.8	4.4	3.1	4.1
55 or over	*	*	*	*	*	*	2.7	2.2	2.6
Total	2.8	3.6	7.4	7.7	7.2	9.9	8.0	8.3	6.2
Total ('000)	44.4	69.3	169.2	177.2	177.4	254.4	221.0	254.9	208.4
PERSONS									
15 to 19	3.3	5.8	18.0	17.3	13.9	22.6	18.2	18.7	13.7
20 to 24	2.3	3.1	7.6	8.2	8.5	14.7	11.6	11.7	8.0
25 to 34	1.5	2.3	3.9	4.6	4.9	9.2	7.3	7.2	5.4
35 to 44	1.4	1.9	3.5	3.1	3.1	6.3	4.7	5.3	3.6
45 to 54	1.4	1.6	2.7	2.9	2.9	5.5	4.7	5.0	3.4
55 or over	0.9	1.6	2.3	2.5	3.2	5.5	5.7	4.6	5.2
Total	1.7	2.5	5.7	5.8	5.6	9.9	7.9	7.8	5.7
Total ('000)	86.8	144.0	359.3	373.8	377.1	684.1	567.6	601.9	468.3

Source: Labour Statistics Australia: ABS Cat. No. 6101.0

CHART 3.4 UNEMPLOYED PERSONS: MEDIAN DURATION OF UNEMPLOYMENT,
BY AGE AND SEX, AUSTRALIA, JUNE 1989



WORK - DIFFERENT PEOPLE DIFFERENT PATTERNS



▲ Patterns of work and social differences are closely related in Australian society.

In the previous Section, we looked at the structural aspects of work: occupation, industry, part-time work, and so forth. But, what also needs to be taken into consideration is that work is essentially about people. People do the work, people apply for jobs and it is people, in the form of employers or personnel officers who fill vacancies within their organisation. This chapter looks at the relationship between people and work, with a special emphasis on examining whether the type of work we do is related to the social differences within our society.

How can social differences show themselves in the work we do? Like all human beings, the person who hires or promotes people is influenced by the many preconceptions or prejudice he or she might have about the applicant. Many of these preconceptions are likely to be subtle rather than obvious, and may involve factors such as the applicant's age, gender, ethnicity or social class, rather than ability alone.

There is another way to look at this issue as well: a way probably even more subtle than the preconceptions discussed in the previous paragraph. This deals with the preconceptions people have about *themselves*. Some people have high expectations of their present or future job, and their chances of promotion within that organisation. Other people consider that their present or future job will be dull and offer little or no chances for promotion. In many instances, the difference between the 'high achievers' and 'low achievers' is not necessarily ability, but *their own* preconceptions of age, gender, ethnicity and social class, which they apply to themselves, thereby downgrading or upgrading their abilities.

While it is difficult to measure the effect of social differences on the work we do, we can get an idea of their likely influence by looking at statistics about work, and asking questions as to why things are as they are. In doing so, we need to be careful that we have considered other factors which might be involved as well: factors such as location or the personal circumstances of people (whether they have other commitments such as family, study), which affect that person's ability to find a suitable job, or whether they become employed at all.

Age and work

The different ages of the people in the labour force have a great influence over the types of work they perform, or whether they work at all. Some of the points we have already established, such as:

- ▲ Table 2.1 shows how young people (those aged 15 to 19 years) have a fairly low participation rate, as many are full-time students. Older people (those aged 60 years or over) also have a low participation rate, as many retire at this age.
- ▲ Table 3.13 shows that a large number of younger people are doing part-time work, often in conjunction with study, but sometimes because it is the only type of job they can get.
- ▲ Table 3.16 indicates that younger and older people are more prone to experiencing unemployment than people in other age groups.

TABLE 3.17 OCCUPATION BY AGE GROUP, AUSTRALIA, 30 JUNE 1986
(PER CENT)

Occupation	Age group (years)				Total
	15-19	20-34	35-54	55 or over	
	%	%	%	%	%
Managers and administrators	1.9	7.4	15.8	21.0	11.7
Professionals	1.5	13.4	12.8	9.9	11.8
Para-professionals	2.6	7.6	6.6	4.6	6.5
Tradespersons	21.3	16.5	13.3	13.6	15.3
Clerks	18.9	19.5	15.3	12.8	17.1
Sales and personal services	27.7	12.4	10.3	8.5	12.4
Plant and machine operators	3.6	8.0	9.3	8.7	8.2
Labourers and related workers	19.8	13.1	13.9	16.9	14.4
Total (a)	100.0	100.0	100.0	100.0	100.0

(a) Total includes persons who either inadequately stated or did not state their labour force status.

Source: 1986 Population Census report

By looking at the occupations of young people shown in Table 3.17, we can see that most tend to be employed in four occupation groups; sales and personal services, tradespersons, clerks, and labourers and related workers. The mix of occupations for the other age groups are more evenly spread.

Apart from those in the trades, in many instances, this may occur because these occupations often involve part-time or casual employment which can be combined with study. However, in many instances, young people take part-time or casual employment in these occupations to get work experience or because there is no other alternative.

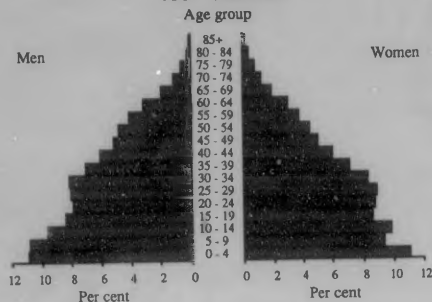
While it may be that the young are subject to preconceptions about them which affect the work they do (or whether they find work at all), there is another issue involved here as well. Young people often possess more educational qualifications than their elders, but they have a relative lack of work experience which restricts their employment opportunities.

How do you think prospective employers see the young? What about for older people? Also, how do you see your employment prospects compared to other people, even those of your own age group?

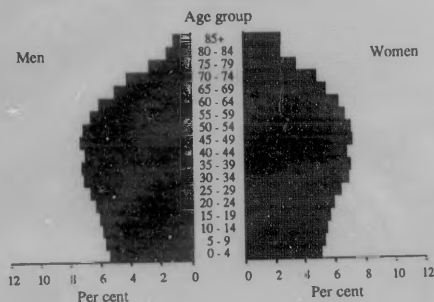
When looking at how age affects the work we do, we need to look more than just the age of the worker: we should also look at the age structure of the population. To get an idea of this, look at Chart 3.5, on the following page. This chart shows two age pyramids: one showing the age distribution of Australians at the 1921 Census, and the other showing the projected age distribution of Australia's population at 2021. In Diagram 1.1, we have the age pyramid for 1986 if you want to make further comparisons.

CHART 3.5 AUSTRALIA,

1921 CENSUS



2021 PROJECTION



There are three main reasons for the vastly different age distribution projected for the year 2021. These are:

- ▲ **The lowering of the birth rate.** Families are, on average, having fewer children these days.
- ▲ **The increased life expectancy of the population.** This is due to the higher standard of living within our society, and the continued advances made in combating illnesses and improving health care.
- ▲ **The ageing of the large numbers of the children born between 1945 and 1961.** During this period, known as the 'baby boom' era, there was a significant rise in the birth rate, which included many children born to the large numbers of migrants who arrived in Australia during this period. By 2021, these 'baby boom' children will be at retirement age.

The effect of this shift in the age distribution of the population will (and it is already) have a big impact on the demand for goods and services in our society. With an ageing population structure, more services, particularly community, health and aged housing services, are becoming required for the aged. In fact, the shift towards service occupations during the 1970s and 1980s as mentioned in Table 3.8, is due in part to the larger proportions of the aged as well as other people needing assistance within our society.

Gender and work

The 1970s and 1980s saw women's issues rise to prominence throughout the western world. A central theme of the women's movement was to obtain equal opportunity for women within the workforce, because the vast majority of employed women tended to be in lower paid occupations which had little opportunity for advancement or responsibility. But, after nearly two decades of debate, what has changed? If the data on Britain are any guide to the situation in Australia, some aspects *have* changed, but many aspects *have not*.

**TABLE 3.18 ATTITUDES TO JOB SUITABILITY BY SEX,
GREAT BRITAIN, 1987
(PER CENT)**

Selected occupation	Men think			Women think		
	Suitable for men only	Suitable for women only	Equally suitable	Suitable for men only	Suitable for women only	Equally suitable
Car mechanic	73	-	26	62	1	36
Bus driver	42	-	57	38	1	60
Police officer	41	-	58	33	1	66
Bank manager	31	-	68	26	1	72
Secretary	1	59	39	1	50	49
Nurse	-	41	59	1	23	75
Member of parliament	11	1	88	8	-	91
Local councillor	7	1	91	7	1	91
Family doctor/GP	7	1	92	5	1	94
Computer programmer	5	3	91	3	1	95
Social worker	1	15	83	1	15	83

Source: *British Social Attitudes Survey, 1987*, in *SOCIAL TRENDS 20*, Government Statistical Service, Great Britain

Table 3.18 reinforces the notion that 'traditional' views still exist on what is seen to be men's or women's work for many occupations. The table shows opinions about a selection of occupations which were expressed in a survey held in Britain in 1987. Jobs which may be regarded as physically demanding, dealing with heavy machinery or dangerous, or seen to require a level of authority, were seen as being more male oriented, whereas the caring jobs and secretarial jobs were more likely to be seen as belonging to women.

TABLE 3.19 SELECTED OCCUPATIONS IN VICTORIA, 1881 CENSUS

Occupation	Males	Females
Boarding or lodging house keeper	162	458
Butcher's wife assisting in business	"	679
Sewing machinist	1	1,363
Shirtmaker, seamstress	"	1,106
Commercial traveller, salesman, saleswoman	1,023	565
Domestic service -		
Cook, kitchenmaid	197	1,400
Domestic, general servant [so described]	1,670	16,383
Housekeeper	2	1,049
House, parlour maid	"	1,231
Nursemaid	"	1,266
Farm servant	5,394	2,160
Farmer, market gardener	35,214	1,152
Farmer's wife, living on farm	"	22,749
Farmer's son, daughter, or relative of, assisting	18,275	13,059
Grazier, squatter, wife of	"	1,084
Grazing farm or station, servant	1,857	965
Hotel, club-house, eating house, service -		
Cook, kitchen man, maid	151	407
Servant [so described]	338	1,694
Hotel keeper	3,102	848
Hotel keeper, wife of, assisting	"	1,843
Milliner, dressmaker and assistants	1	11,517
Music master, mistress	190	732
Nurse, monthly	"	981
School master, mistress, teacher	2,341	3,279
Shoe, boot maker, dealer and assistants	6,469	447
Shoe, boot maker's wife	"	770
Shop keeper, man, woman, storekeeper [branch undefined]	3,065	1,016
Tailor, tailoress	1,824	3,200
Tutor, governess	67	831
Washerwoman, mangler, laundry keeper, worker	15	1,440
Wives, widow [no specific occupation]	"	101,035
All occupations	452,083	410,263

Source: *Victorian Year Book 1881-82*

☛ *Did you know:* The 1881 Victorian census included the following occupations:
 Capitalists - 378 males, 103 females
 Members of the Criminal Classes - 1,977
 1 Jack-of-all-trades
 2 Loafers
 1 Mesmerist
 1 Mudlarker
 59 male and 1 female Opium sellers/dealers
 7 Phrenologists
 1 Scarecrow-on-a-farm
 1 male and 1 female Ventriloquist
 and 1 Statistician.

The table on the previous page shows the occupations with 400 or more females working in them in 1881. From the table we can see that few female occupations needed organised training or education, apart from training which could be done within the home. Girls were trained for domestic service by their mothers and their employers, to serve as an apprenticeship for the future running of their own households. Another large area of employment for women was in the clothing trade, either in factories or working from home. Notice that the Census of 1881 included people such as wives and widows in the occupation table; something which isn't done now.

Women have been entering the Australian workforce in ever increasing numbers since the 1960s. However, until the 1970s their involvement in the workforce was seen as being more of a waiting period between leaving school and getting married. After marriage, the expectation was that they would resign their jobs to look after family and home. In fact, until the 1960s, women in the public service were compelled by regulation to resign as soon as they married. With this sort of expectation and discrimination against women, it is not surprising that most women during this era were involved in low skilled, lowly paid jobs. It was not until the 1970s that women achieved legislation giving them equal pay for equal work and also equal opportunity in the workforce.

More recent data on the occupations of women are presented in Table 3.20 to highlight the type of work women are more likely to be doing these days. You will see that the two genders are not distributed across the occupation groups according to the same pattern. Men outnumber women in all major occupation groups but two; clerks and salespersons and personal service workers. Compared to men, much fewer women are employed as plant and machine operators, tradespersons or managers and administrators.

By looking at the breakdown of the individual occupations which employ large numbers of women within the major occupation groups, we can see that, apart from teachers, nurses and perhaps some types of clerical work, a large proportion of women still appear to work in jobs which offer few opportunities for advancement and require little post-secondary education or formal training.

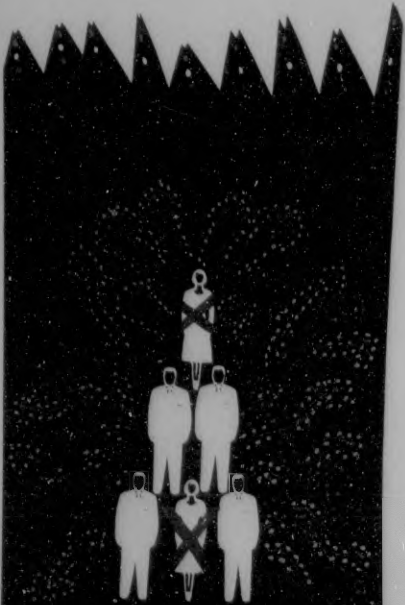
**TABLE 3.20 EMPLOYED PERSONS: MAJOR OCCUPATION GROUPS, AND
SELECTED MINOR GROUPS, AUSTRALIA, FEBRUARY 1990**
(^{'000})

<i>Occupation group</i>	<i>Males</i>	<i>Females</i>	<i>Persons</i>
<i>Managers and administrators</i>	667.0	201.3	868.3
<i>Professionals -</i>	587.0	385.5	972.5
School teachers	77.6	156.8	234.5
<i>Para-professionals -</i>	247.9	206.2	454.1
Registered nurses	10.9	138.6	149.5
<i>Tradespersons</i>	1,102.9	117.3	1,220.2
<i>Clerks -</i>	310.6	1,047.4	1,358.0
Stenographers and typists	3.7	291.5	295.2
Data processing and business machine operators	29.6	79.7	109.3
Numerical clerks	114.4	335.1	449.6
Filing, sorting and copying clerks	19.2	38.6	57.9
Receptionists, telephonists and messengers	24.6	150.4	175.0
<i>Salespersons and personal service workers -</i>	423.1	712.9	1,136.1
Sales assistants	159.3	327.9	487.2
Tellers, cashiers and ticket salespersons	23.9	108.0	131.9
Personal service workers	12.8	122.3	135.1
<i>Plant and machine operators, and drivers</i>	488.7	93.8	582.6
<i>Labourers and related workers -</i>	782.4	435.1	1,217.5
Cleaners	66.0	131.3	197.3
Total	4,609.6	3,199.5	7,809.1

Source: *The Labour Force, Australia, February 1990*, ABS Cat No. 6203.0

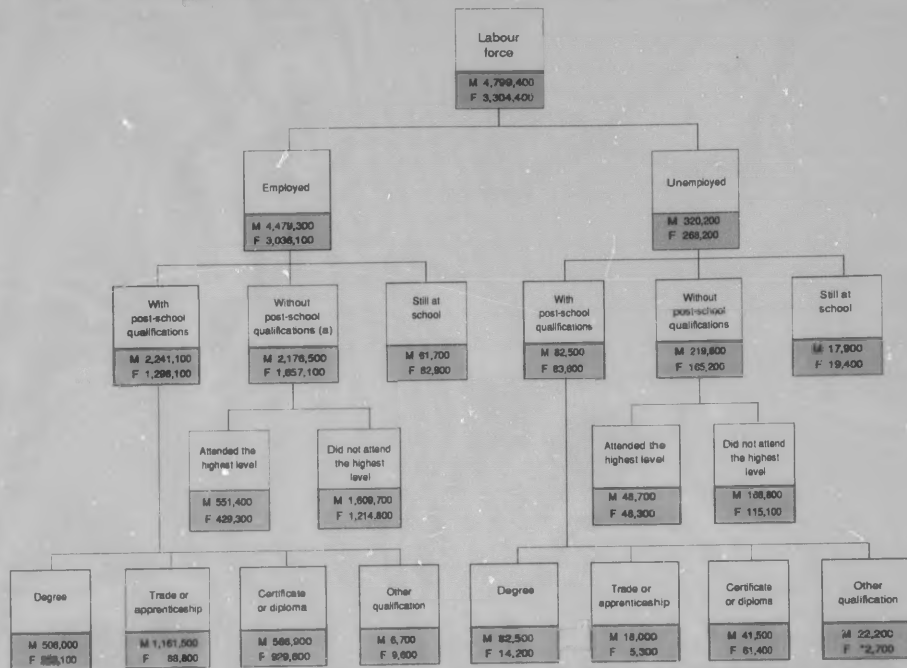
Other major differences between men and women with regards to their employment patterns include:

- ▲ Table 3.20 shows there are 1.4 million fewer women than men employed in Australia.
- ▲ Table 2.1 shows women drop out of the labour force in their middle twenties to look after their children. Also, because they retire at 60, their participation rate declines at an earlier age compared to men.

- 
- ▲ Tables 2.2 and 3.16 show that women tend to have a higher unemployment rate compared to men.
 - ▲ Table 2.3 indicates a far smaller proportion of women than men are employers or self employed.
 - ▲ Table 3.13 shows that women make up over 80 per cent of people employed part-time (and three quarters of *these* women are married).

The distribution of men and women in the labour force with different levels of qualifications are shown in Chart 3.6 and Table 3.21 on the following two pages.

CHART 3.6 LABOUR FORCE: EDUCATIONAL ATTAINMENT AND EMPLOYMENT STATUS BY SEX, AUSTRALIA, FEBRUARY 1989



Source: Labour Force Status and Educational Attainment, Australia, February 1989. ABS Cat. No. 6235.0

**TABLE 3.21 EMPLOYED PERSONS: OCCUPATION BY EDUCATIONAL ATTAINMENT,
AUSTRALIA, FEBRUARY 1989**
(^{'000})

Occupation group	With post-school qualifications				Without post-school qualifications		
	Degree or higher	Trade qualification	Certificate or diploma	Total (a)	Attended highest level of secondary school	Did not attend highest level of secondary school	Total (b)
MALES							
Managers and administrators	69.4	120.0	109.8	300.3	89.2	235.1	326.5
Professionals	341.6	30.8	127.2	500.1	36.7	20.6	58.3
Para-professionals	17.1	70.9	93.9	181.9	31.3	46.2	78.4
Tradespersons	11.5	637.4	49.5	699.3	62.4	331.8	395.8
Clerks	25.1	30.7	41.5	98.3	98.0	108.8	209.3
Salespersons and personal service workers	20.8	46.7	60.1	128.9	98.8	130.0	229.4
Plant and machine operators	6.7	101.3	40.4	149.0	38.7	287.1	327.8
Labourers and related workers	13.8	123.7	44.5	183.3	96.3	450.0	551.1
Total (c)	506.0	1,165.5	568.9	2,241.1	551.4	1,609.7	2,176.5
FEMALES							
Managers and administrators	15.9	7.2	59.5	82.9	19.3	95.6	115.6
Professionals	172.1	1.8	135.7	309.9	19.7	18.4	38.7
Para-professionals	12.3	1.7	144.6	158.6	17.7	16.3	34.3
Tradespersons	3.8	30.7	16.3	50.9	9.6	48.9	59.2
Clerks	37.7	10.4	343.3	395.7	179.0	406.4	588.7
Salespersons and personal service workers	19.1	18.0	163.5	203.4	127.7	295.3	425.8
Plant and machine operators	*1.9	3.9	14.2	20.1	9.2	69.4	79.6
Labourers and related workers	5.2	15.2	52.6	74.7	47.3	264.5	315.2
Total (c)	268.1	88.8	929.6	1,296.1	429.3	1,214.8	1,657.1

(a) Includes people with other post-school qualifications. (b) Includes people who never attended school or who did not state their educational qualifications. (c) Includes persons who did not state their occupation.

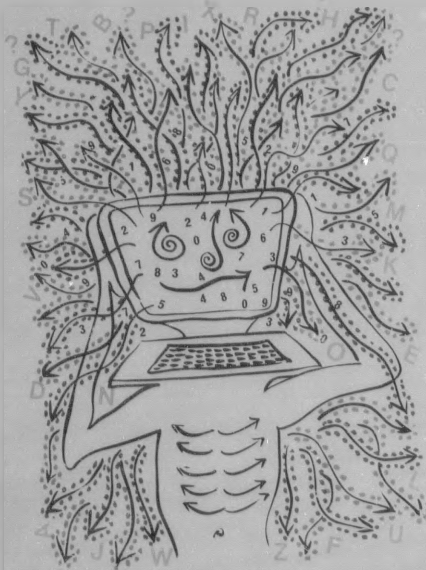
Source: *Labour Force Status and Educational Attainment, Australia, February 1989*, ABS Cat No. 6235.0

Ethnicity and work

Another characteristic which needs to be considered when discussing social differences and work is a person's **ethnic background**. But first we must determine what this term means, and how should we understand it? Ethnicity is a term which can be looked at in terms of a person's:

- ▲ Race\Ancestry
- ▲ Birthplace
- ▲ Citizenship
- ▲ Language
- ▲ Culture

Providing statistical data on ethnicity is difficult because it is hard to take all these characteristics into consideration. Besides, there are some problems involved with using some of these characteristics. Citizenship gives a very limited idea of ethnicity because many migrants take up Australian citizenship after they have been in the country for the qualifying period. By doing so, their citizenship says nothing about their ethnic background. Language as an indicator of ethnicity is a problem for two reasons: the huge number of languages, and the fact that statistics presented solely by language spoken, may mean little to people reading the data. For instance, do you know what people speak Urdu? How about Tetum or Bengali? The use of culture has the same problems as with language. For simplicity, we will just concentrate on race\ancestry and birthplace as indicators of ethnicity in this publication.



Race or ancestry

Race is an expression used to describe a group of people of common stock or descent. It can refer to a tribe or a nation. The use of this term tends to be linked with a person's continental origin or colour of skin, as in "Black", "White", "Asian", or "European". Because this usage can lump together people of very different cultural backgrounds, it is of very limited practical value and is rarely used these days. The table below shows how race was used to classify people at the 1911 Census: a time when the so named "White Australia" policy existed to try to stop people of non-European descent from migrating to Australia. The term **ancestry** deals with the same definition as covered by race, but is linked with a common culture, rather than being based on skin colour. The problem with ancestry is when we have people from mixed ethnic backgrounds, for how should we classify these people?

TABLE 3.22 NUMBER OF PERSONS OF COLOURED RACES (a)
IN VICTORIA AT THE CENSUS OF 1911

Race	Males		Females		Total	
	Full-blood	Half-caste	Full-blood	Half-caste	Full-blood	Half-caste
Asiatic -						
Chinese	4,491	465	216	429	4,707	894
Hindus	720	73	9	32	729	105
Japanese	39	13	8	7	47	20
Syrians	244	11	197	5	441	16
Cingalese	14	1	1	3	15	4
Other	31	8	2	9	33	17
African -						
Negroes	44	27	11	36	55	63
Other	3	"	"	"	3	"
American -						
American Indians	3	1	"	1	3	2
Other	3	3	"	4	3	7
Polynesians -						
Maoris	5	2	2	2	7	4
Other	2	"	3	1	5	1
Total (b)	5,600	606	449	529	6,049	1,135

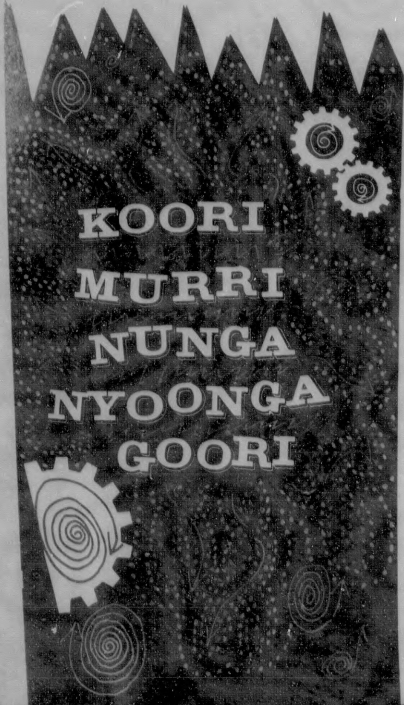
(a) Excluding aborigines. (b) Total includes two people of indefinite origin.

Source: *Victorian Year Book, 1917-18*, ABS Cat No. 1301.2

Aborigines and work

An important ancestry group in Australia are the **indigenous** or original inhabitants of the country, the aborigines. The Aborigines have their **own regional** names for their people, which vary from place to place. The people of the Northern Territory do not have a collective name for themselves and are instead known by the names of their tribes. The regional names in use include the following:

- ▲ **Koori:** Victoria and southern New South Wales
- ▲ **Murri:** Queensland and northern New South Wales
- ▲ **Nunga:** South Australia
- ▲ **Nyoonga:** Western Australia
- ▲ **Goori:** Tasmania



**KOORI
MURRI
NUNGA
NYOONGA
GOORI**

When the European settlers came to Australia in the late 18th century, the country was treated as being *terra nullis* or devoid of people. The Aborigines gradually fell victim to violent confrontations with the settlers and to imported diseases to which the Aboriginal people had no immunological resistance. Because of this, the Aboriginal population dwindled to about 60,000 after the first 100 years of European settlement and many tribal groups, languages and dialects died out, and the traditional social and ecological balance of Aboriginal life was seriously disrupted.

On the assumption that the European way of life was the more desirable, a policy of **assimilation** into the 'white man's culture' was adopted in the 1920s, particularly for those of mixed descent, who became a major group in the Aboriginal community. Because of this policy of 'assimilation', Aboriginal children were taken away from their parents to be raised in a 'white' household. This practice was still prevalent in the 1960s and still occurs from time to time at present.

With the Aboriginal affairs Act of 1967 giving Aborigines the right to self determination, the early 1970s saw many Aboriginal people make the decision to adopt a more independent and traditional way of life. They have secured some of their claims to their native land by means of the **Land Rights Act** (which recognises the unique relationship Aborigines have with their land), and many have moved to remote areas where they have established small outstation communities, mostly in remote areas of Western Australia, the Northern Territory and Queensland.

Despite attempts to improve the lot of the Aboriginal people in the 1970s and 1980s, they remain a disadvantaged group in our country. Aborigines have a much lower life expectancy than the rest of the population, and Aboriginal babies have a very high death rate. Many Aborigines continue to live in poor quality housing, with inadequate community, health and educational services.

The pattern of work of the Aborigines reflect their disadvantaged background. However, the extent to which Aborigines follow their traditional way of life, and the remote locations in which many dwell, also have some bearing on their level of qualifications and labour force status. Please note that the data shown on the following page also include Torres Strait Islanders, although their numbers are relatively small.

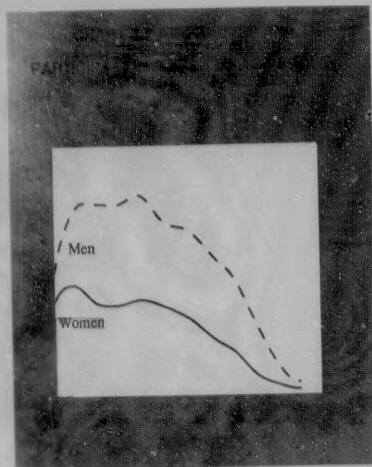


Table 3.23 below shows that Aboriginal men have a participation rate of 63.1 per cent and Aboriginal women a rate of 34.5 per cent compared with a national average of 75.1 per cent for men and 47.8 per cent for women (as shown in Table 2.1). The tendency for a lower participation rate occurred for each age group.

The unemployment rates for Aborigines are much higher than for the total population: 35.3 per cent as compared to 9.2 per cent for all Australians. Over half of Aborigines aged 15-19 years were unemployed.

TABLE 3.23 ABORIGINES AND TORRES STRAIT ISLANDERS AGED 15 YEARS AND OVER: AGE BY LABOUR FORCE STATUS AND SEX, AUSTRALIA, 30 JUNE 1986

Age group (years)	Labour force status							
	Employed		Unemployed		Not in the labour force		Total (a)	
	Males	Females	Males	Females	Males	Females	Males	Females
15 - 19	3,472	2,675	3,662	2,861	6,455	8,222	14,475	14,631
20 - 24	5,169	3,328	3,672	2,084	2,482	6,117	11,847	12,197
25 - 29	4,744	2,582	2,463	1,166	1,847	5,837	9,405	10,075
30 - 34	3,839	2,194	1,822	693	1,479	4,644	7,410	7,942
35 - 39	3,134	1,933	1,237	571	1,294	3,631	5,912	6,496
40 - 44	2,342	1,364	802	365	1,183	2,834	4,553	4,845
45 - 49	1,731	935	572	270	1,021	2,435	3,500	3,907
50 - 54	1,153	561	410	145	1,106	2,153	2,813	3,071
55 - 59	760	339	245	75	1,031	1,808	2,168	2,362
60 - 64	316	111	118	43	1,053	1,691	1,578	1,901
65 - 69	89	31	54	25	1,021	1,185	1,213	1,284
70 or over	54	22	27	27	1,423	1,900	1,545	2,003
Total	26,803	16,075	15,084	8,325	21,395	42,457	66,419	70,714

(a) Includes people whose labour force status was not stated.

Source: 1986 Population Census, microfiche table CA0052

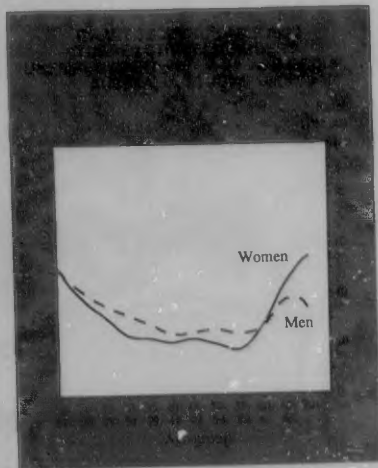


Table 3.24 shows the occupations, in major groups, of employed Aborigines and Torres Strait Islanders, and the level of the qualifications they hold. By far the largest number of Aborigines were labourers and related workers: a number which was over twice the number of the next largest occupation group.

Aboriginal people have far fewer educational qualifications as compared to the Australian population as a whole. Almost 70 per cent of Aborigines have no post-school qualifications, compared to just over a half of all Australians (as shown in Table 3.21).

**TABLE 3.24 EMPLOYED ABORIGINES AND TORRES STRAIT ISLANDERS:
OCCUPATION BY LEVEL OF QUALIFICATION, AUSTRALIA, 30 June 1986**

Occupation	Tertiary qualifi- cation	Trade certificate	Other certificate	No qualifi- cation	Inadequately described or not stated	Total
Managers and administrators	78	126	78	941	204	1,427
Professionals	574	71	136	1,017	339	2,137
Para-professionals	85	121	420	1,423	493	2,542
Tradespersons	12	1,755	117	2,868	1,154	5,906
Clerks	120	99	624	4,667	1,118	6,628
Personal service and sales workers	32	90	336	2,473	517	3,448
Plant and machine operators	12	294	40	3,424	632	4,402
Labourers and related workers	23	401	133	11,220	2,023	13,800
Inadequately described or not stated	30	77	65	1,699	717	2,588
Total employed	968	3,094	1,949	29,732	7,197	42,878

Source: 1986 Population Census microfiche table CA0064

How do you think a young Aborigine feels about his or her education when half of his people of the same age are unemployed? How do you think aborigines feels about their job prospects?

Birthplace

A person's place of birth is the classification which is used most often by the ABS and others to gauge a person's ethnic background because it is the simplest and most readily understood concept.

The table below shows that the overseas-born people generally possess a slightly higher level of qualifications than the Australian-born: 32.7 per cent having post-school qualifications as compared to 29.3 per cent of Australians. However, Australia's overseas born population come from diverse backgrounds; those born in North America, Britain, Northern Europe, India and Malaysia are relatively well qualified, while those born in Southern Europe, Lebanon and Vietnam who have relatively low levels of post-school qualifications.

TABLE 3.25 PEOPLE AGED 15 YEARS AND OVER: LEVEL OF QUALIFICATION BY WHETHER AUSTRALIAN-BORN AND BY SEX, AUSTRALIA, 30 JUNE 1986

Qualification	Australian-born		Overseas-born		Total	
	Males	Females	Males	Females	Males	Females
<i>With post-school qualifications -</i>						
Higher degree	29,385	9,211	21,937	7,912	51,322	17,123
Graduate diploma	28,496	33,414	11,044	8,798	39,540	42,212
Bachelor degree	203,067	126,607	75,880	47,643	278,947	174,250
Diploma	139,350	182,854	50,145	47,304	189,495	230,158
Trade certificate	757,284	85,516	297,241	32,750	1,054,525	118,266
Other certificate	233,752	452,053	99,638	139,838	333,390	591,891
Total with post-school qualifications (a)	1,574,273	1,043,902	632,292	359,628	2,206,665	1,403,530
No qualifications	2,370,490	3,050,356	800,534	979,406	3,171,024	4,029,762
Not stated	406,533	489,510	120,066	138,280	526,599	627,790
Total	4,351,296	4,583,768	1,552,992	1,477,314	5,904,288	6,061,082

(a) Includes people whose qualifications were unclassifiable or inadequately described.

Source: 1986 Population Census microfiche, table CX0024

The data on educational qualifications are reflected to a large extent in Table 3.26, which shows the numbers of people from selected birthplaces by the major occupation groups. For example, while over a third of the USA-born workforce in Australia were professionals, less than five per cent of Italians, Greeks, Yugoslavs, Maltese, Lebanese and Vietnamese were employed as professionals. The data reflects the large number of migrants from the later named countries who came to work in Australia during the 1950s and 1960s when the manufacturing industry was expanding rapidly.

There is another issue to consider with regards to the employment prospects of migrants. Many migrants have come to this country with little or no knowledge of English, which is likely to have hindered their chances of getting employment or training. It is a matter of debate how much this factor should be taken into account when assessing the suitability of a person to do a particular job.



TABLE 3.26 EMPLOYED PEOPLE BORN OVERSEAS: MAJOR OCCUPATION GROUP BY SELECTED BIRTHPLACE,
AUSTRALIA, 30 JUNE 1986

<i>Birthplace</i>	<i>Managers & admin- istrators</i>	<i>Profess- ionals</i>	<i>Para profess- ionals</i>	<i>Trades- persons</i>	<i>Clerks</i>	<i>Personal service & sales</i>	<i>Plant/ machine operators</i>	<i>Labourers & related workers</i>	<i>Total</i>
UK & Ireland	60,537	75,522	48,679	96,623	105,040	71,494	41,856	81,018	594,954
Czechoslovakia	1,036	1,532	734	1,820	994	750	803	1,318	9,317
Germany	7,646	7,594	4,313	14,455	9,341	6,288	4,790	7,810	64,192
Greece	7,109	2,825	948	12,327	4,103	8,052	14,299	23,036	75,112
Hungary	1,746	2,023	657	2,863	1,469	1,240	1,285	1,773	13,589
Italy	16,877	5,886	2,858	32,267	10,633	12,012	19,806	33,926	138,798
Malta	2,312	1,122	831	5,083	3,301	1,923	5,666	9,137	30,468
Netherlands	7,840	5,554	3,911	10,579	6,184	5,526	4,159	6,612	51,732
Poland	2,002	3,281	1,621	4,751	2,105	1,948	3,716	5,638	26,035
USSR	1,350	2,359	1,081	2,471	1,669	1,125	1,493	2,385	14,478
Yugoslavia	3969	2,703	2,066	19,501	5,775	4,446	15,681	26,031	83,231
<i>Total Europe</i>	<i>118,597</i>	<i>116,931</i>	<i>71,045</i>	<i>218,667</i>	<i>157,631</i>	<i>120,752</i>	<i>119,297</i>	<i>210,394</i>	<i>1,166,292</i>
China	1,995	2,396	686	4,226	1,494	1,628	1,157	2,981	17,084
Cyprus	1,094	764	269	2,260	1,182	1,437	1,949	2,515	11,837
India	2,359	5,747	1,941	2,471	7,128	2,586	1,542	3,135	27,594
Lebanon	2,179	762	347	3,229	1,752	2,784	3,110	4,412	19,326
Malaysia	1,680	6,623	2,764	1,474	3,417	2,729	641	1,980	21,733
Sri Lanka	872	2,475	850	821	4,155	1,071	640	1,471	12,641
Turkey	435	470	196	1,446	691	591	2,205	2,316	8,703
Vietnam	780	1,452	644	4,238	2,711	1,565	6,904	10,363	29,821
<i>Total Asia</i>	<i>17,969</i>	<i>33,659</i>	<i>12,577</i>	<i>29,450</i>	<i>36,044</i>	<i>23,539</i>	<i>25,919</i>	<i>44,442</i>	<i>230,497</i>
Egypt	1,668	2,619	824	2,208	3,529	1,719	1,242	2,135	16,431
<i>Total Africa</i>	<i>5,833</i>	<i>10,738</i>	<i>3,622</i>	<i>7,565</i>	<i>12,547</i>	<i>6,283</i>	<i>3,344</i>	<i>6,763</i>	<i>58,096</i>
Canada	1,219	2,492	833	900	1,624	1,331	402	830	9,829
United States of America	2,974	7,116	1,386	1,439	2,563	2,142	628	1,354	20,283
<i>Total Americas</i>	<i>5,241</i>	<i>11,625</i>	<i>3,438</i>	<i>7,418</i>	<i>7,529</i>	<i>5,571</i>	<i>4,012</i>	<i>8,474</i>	<i>54,927</i>
New Zealand	11,327	13,284	7,493	18,260	18,707	16,071	9,879	17,613	115,069
<i>Total Oceania</i>	<i>12,674</i>	<i>15,971</i>	<i>9,151</i>	<i>21,245</i>	<i>22,478</i>	<i>18,792</i>	<i>12,125</i>	<i>22,112</i>	<i>137,629</i>
Total overseas-born	160,314	188,924	99,833	284,345	236,229	174,937	164,697	292,185	1,647,441

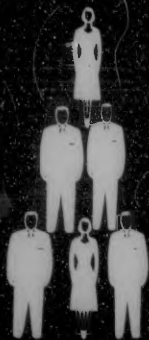
(a) Includes persons who either did not state or inadequately stated their occupation.
Source: 1986 Australian Population Census microfiche table CX0042

Social class

Social class refers to a **hierarchy** in our society which gives some people privileges, but not others. On this basis, many claim Australia is a classless society, but a large number of people claim social classes *do* exist in this country. Also, do they affect the type of work we are likely to do? Whatever you decide on this issue, social class is more difficult to measure than ethnicity for it involves a consideration of many variables, such as a person's:

- ▲ **Type of work**
- ▲ **Income**
- ▲ **Location**
- ▲ **Education, and**
- ▲ **Ethnicity**

We have already looked at education (see Table 3.21) and ethnicity (Tables 3.23 to 3.26), so we won't cover these topics again. However, we will look briefly at the other variables, and you can discuss the conclusions between yourselves. You can also discuss how you think all these variables are or are not **interconnected**, or linked together.



Social class and type of work

Table 3.27 on the following page, shows a nineteenth century attempt to classify the working population into a hierarchy based upon the perceived social order of the time. The classes were ordered around broad occupational groups as follows:

- I PROFESSIONAL
- II DOMESTIC
- III COMMERCIAL
- IV AGRICULTURAL AND PASTORAL
- V INDUSTRIAL
- VI INDEFINITE AND NON-PRODUCTIVE

As you can see from the table, the occupation classes range from "service to the state" which was seen as a position of status. The next is service in the home, and the commercial occupations are ranked downwards from there. The persons of *Property and Rank in Order 14* were classed as non-productive because they held no office and performed no job.

Some idea of the present day attitude to occupation as an indicator of social status is shown in Chart 4.3 in the following Chapter, which shows how Australians believe people in various occupations should be paid. The attitudes of Australians to the pay each occupation should have reflects the status people give to the jobs in question.

Some other tables you can refer to in this book to give you an idea of what relationship might exist between social class and the type of work we do include:

- ▲ Tables 2.2 and 3.16 which show the proportion who are unemployed in our society.
- ▲ Table 2.3 which distinguishes between whether a person is an employer, self employed or a wage or salary earner.

☛ *Did you know:* amongst the religious beliefs of the population listed in the 1881 Victorian Census were; 1 person who "believed in parts of the Bible",
1 "Silent Admirer",
2 Eclectics, 1 Fatalist,
24 Materialists,
1 Immaterialist, 1 Free Trader
and 3 believers in *£.s.d.*

TABLE 3.27 OCCUPATIONS OF MALES AND FEMALES AT THE CENSUSES OF 1871 AND 1881, ARRANGED IN FIFTEEN ORDERS, VICTORIA

Class	Order	Occupations	Males		Females	
			1871	1881	1871	1881
I	1	Persons engaged in the GENERAL or LOCAL GOVERNMENT or the DEFENCE OF THE COUNTRY	3,473	4,250	51	244
	2	Persons engaged in the LEARNED PROFESSIONS, or in LITERATURE, SCIENCE, or ART (with their immediate subordinates)	6,562	8,408	4,045	5,542
II	3	Persons engaged in the DOMESTIC OFFICES or DUTIES OF WIVES, MOTHERS, Mistresses of Families, CHILDREN, Relatives (not otherwise returned)	145,490	165,957	252,738	299,655
	4	Persons engaged in ENTERTAINING and performing PERSONAL OFFICES for Man	8,261	8,666	27,860	30,043
III	5	Persons who BUY or SELL, KEEP or LEND Money, Houses, or Goods of various kinds	12,559	15,385	1,203	2,231
	6	Persons engaged in the CONVEYANCE of Men, Animals, Goods, and Messages	13,249	17,201	68	367
IV	7	Persons working or cultivating LAND, and engaged in raising or dealing in ANIMALS, or following Pursuits subsidiary thereto	61,277	81,719	24,564	42,483
V	8	Persons engaged in working and dealing in ART and MECHANIC productions in which matters of various kinds are used in combination	22,755	27,347	419	718
	9	Persons engaged in working and dealing in TEXTILE FABRICS, DRESS and FIBROUS MATERIALS	9,965	13,571	12,186	20,977
	10	Persons working and dealing in FOOD and DRINKS	12,632	13,512	1,437	1,755
	11	Persons working and dealing in ANIMAL and VEGETABLE SUBSTANCES	9,263	8,059	91	213
	12	Persons working and dealing in MINERALS	67,219	48,455	45	50
VI	13	LABOURERS and OTHERS, or Branch of Labour undefined	17,665	25,593	32	143
	14	Persons of PROPERTY or RANK, not returned under any Office or Occupation	772	1,239	344	740
	15	Persons SUPPORTED BY THE COMMUNITY	7,199	6,281	3,643	3,620
		<i>No Occupation stated</i>	2,709	6,440	1,752	1,482
		Total with specified occupations	398,341	445,643	328,726	408,781
		Total Population	401,050	452,083	330,478	410,263

Source: Victorian Year Book 1882-83

Social class and income

The table following indicates a large divergence of incomes within our society. While just under 45 per cent of Australians aged 15 years or over earned \$9,000 or less in 1986, just under 2 per cent earned over \$40,000. A large number of persons earning \$9,000 or less would most likely be pensioners, housewives, or people working part-time.

TABLE 3.28 ANNUAL INCOME OF PERSONS AGED 15 YEARS OR OVER,
AUSTRALIA, 30 JUNE 1986

Income (\$)	Males	Females	Persons	Families	Households
Nil	349,032	977,820	1,326,852	29,506	42,644
1 - 2,000	88,326	435,046	523,372	13,962	18,243
2,001 - 4,000	159,324	313,602	472,926	9,008	29,047
4,001 - 6,000	756,534	1,136,771	1,893,305	65,123	358,016
6,001 - 9,000	433,005	733,146	1,166,151	139,509	243,557
9,001 - 12,000	457,136	533,197	990,333	422,734	477,626
12,001 - 15,000	528,943	439,756	968,699	299,819	368,278
15,001 - 18,000	718,446	406,246	1,124,692	256,801	343,244
18,001 - 22,000	720,912	293,670	1,014,582	385,528	475,528
22,001 - 26,000	447,646	150,574	598,220	294,182	356,935
26,001 - 32,000	444,149	110,498	554,647	485,293	553,249
32,001 - 40,000	251,277	38,451	289,728	489,655	546,079
40,001 - 50,000	109,893	12,203	122,096	356,706	402,860
50,001 and over	98,312	12,261	110,573	390,209	464,923
Not stated	341,357	467,778	809,135	417,952	483,069
Spouse temporarily absent	..	..	..	102,024	101,218
Total	5,904,292	6,061,019	11,965,311	4,158,011	5,264,516

Source: 1986 Population Census, microfiche Table C23

A proper analysis of income, however, must involve a consideration of people's needs. If we are to determine a minimum acceptable standard of living, we should be aware of the variety of other factors which must be included in our judgement; factors such as the rental or housing mortgages which need to be paid, whether the person is living alone or with others, whether the person has dependent children (or adults) or other items which involve having large bills to pay.

Social class and location

The table below gives some idea of what the likely relationship is between social class and the place where a person happens to live. The statistical local areas chosen are a group which exist within Victoria. You might care to find where each of these are on the geographical maps presented in Section 1 of this Chapter. The table shows, there is a difference between the unemployment rates of people in the listed local areas, with the lowest unemployment rates occurring in Bulla and Brighton, while the highest occurred in Brunswick.

**TABLE 3.29 UNEMPLOYMENT RATES OF PERSONS AGED 15 YEARS OR OVER,
SELECTED VICTORIAN STATISTICAL LOCAL AREAS, 30 JUNE 1986
(PER CENT)**

Statistical Local Area	Age group (years)				Total
	15-19	20-34	35-54	55 or over	
Brighton	15.2	5.9	2.5	2.8	4.4
Broadford	17.2	5.2	3.2	3.4	5.2
Broadmeadows	16.4	7.8	4.8	4.7	7.3
Brunswick	25.1	10.9	8.2	7.9	10.9
Bulla	14.3	3.5	2.6	2.7	3.9
Buln Buln	16.0	7.3	3.6	3.8	6.3

Source: ABS 1986 Population census reports

FURTHER READING -

ABS sources:

1103.2 Statistical Maps, Victoria

This is an essential reference for people involved with analysis of small area statistics. Information such as maps of the new revised labour force regions is included. Statistical local area and statistical district codes are also supplied.

1216.0 Australian Standard Geographical Classification (ASGC)

The ASGC is the main Australia-wide classification and coding scheme for use in classifying statistics by geographical areas. It is updated by the issue of replacement pages to build each current edition.

2501.0 Census 86 - Australia in Brief

Contains 46 tables bringing together information, at the Australian level, on the wide range of population and housing characteristics obtained from the census. Highlights some of the main trends and findings of the results.

3101.0 Australian Demographic Statistics

Summary data including rates of births, deaths, infant deaths, marriages, divorces, interstate and overseas movements and latest population estimates for Australia, States and Territories.

4107.7 Aboriginal People in the Northern Territory

The publication provides a contemporary description of the Aboriginal community, (who comprise about 22 per cent of the population of the Territory) in a style that is both informative and easy to follow. The primary source of data is the population census but administrative data from other sources are included where appropriate and available.

6203.0 The Labour Force, Australia

Civilian population aged 15 years and over by; sex, labour force status, age (single ages for persons aged 15 to 24 years), marital status, States and Territories, capital cities, school and tertiary education, birthplace, period of arrival, industry, occupation, hours worked, average hours, full-time/part-time employed, employment/population ratios, looking for full-time or part-time work, duration of unemployment, family status.

6204.0 The Labour Force, Australia, Historical Summary

Civilian population aged 15 years and over; civilian labour force, employed persons, unemployed persons and persons not in the labour force. Characteristics shown include labour force status, age, marital status, birthplace, period of arrival in Australia, States and territories, capital cities, industry, occupation, status of worker, hours worked, employment/population ratios and duration of unemployment.

6227.0 Transition From Education to Work, Australia

Persons aged 15 to 64 years by whether attended an educational institution, type of attendance and type of education institution attended in previous year, whether currently attending an educational institution, type of attendance and type of education institution currently attending, whether left full-time education, type of school last attended, age, labour force status and, for employed leavers, occupation and industry. Apprentices by field of trade and year of apprenticeship.

CHAPTER 4

**Australia:
a 'Fair and Reasonable' Community**

THE GENERATION OF WEALTH

- ◆ The manner in which wealth is generated in Australia reveals the extent to which it can be a fair and reasonable community.

The most common understanding of a nation's wealth refers to its broad economic position, as measured by such things as levels of investment, productivity and the standard of living of its people. As for an individual's wealth, we immediately think of such things as one's house or motor vehicle. It is understandable to think of wealth in an economic context. Certainly the overall well being of a nation and its citizens is enhanced by a certain level of material comfort. Modern economies such as Australia's strive for minimum levels of material well being for its people. This section will consider the generation of wealth as the processes which enable material goods and services to be produced.

We have developed sets of statistics which measure the overall economic well being of a country. Detailed statistics are available for such indicators of wealth as productivity, levels of investment and national income. By contrast, we have not developed a comparable set of statistics to measure other aspects of wealth. We should also view a nation's wealth in terms of its quality of life. However, currently we have no real statistical data on such things as whether our education sector is more effective or whether the arts are flourishing. It is important to at least be aware that wealth can also refer to a variety of these less measurable concepts.

To understand the manner in which wealth is generated we need to consider economic concepts such as investment, productivity, efficiency and full employment. There are a variety of current debates in Australia about the generation of wealth. Should Federal and State Governments increase investment in social infrastructure such as roads and schools? Does the business community make fair and reasonable investment decisions? Do Australia's investment policies ensure a fair and reasonable level of employment for the community? These are not easy questions to answer. The statistics provided in this section are aimed at helping you in reaching your conclusions.

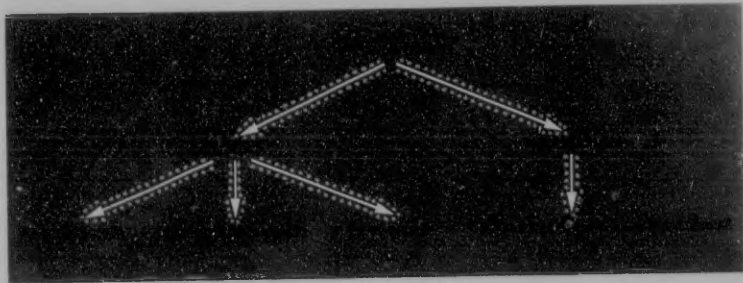


Investment

The economist's definition of investment is different to that which is used in the wider Australian community. Many Australians see investment as money placed in the share market or property market. Economists regard these placements of money as savings and not investment.

To the economist, investment is expenditure by governments or businesses on either machinery or on stocks of finished goods, semi-finished goods or raw materials.

Investment should be understood as current spending for the purpose of future production of goods and services. So, for example, a company may build up reserves of raw materials in order to ensure that, should their regular supply cease, production can continue smoothly. The following diagram outlines the concept of investment which should be understood when studying the generation of wealth.



The rate of investment or capital accumulation in Australia has a great deal of bearing on the output of material goods and services. If we understand wealth to refer to material comforts such as housing, clothing and motor vehicles, then it is the rate of investment which affects the volume at which these items are produced in the future.

In an age of population growth it is desirable to have certain minimum levels of investment in an economy. This is to ensure that an individual's standard of living, as measured in material terms, remains at least constant. Modern economies have become pursuers of the objective of **economic growth**. That is, the pursuit of sustained increases in real income per head of the population. It is investment, and in particular the rate of investment, which furnishes the workforce with new and better equipment allowing productivity per head to rise. Before we examine statistics on investment in Australia it is important to have an understanding of the major factors which determine the rate of investment in an economy.

- ◆ **Expected Rate of Return or Profit:** This is often the most crucial factor when company decision makers consider investment. They have to weigh up elements such as the expected life of the item of machinery against its price and the amount of money they may have to borrow to purchase it.
- ◆ **Availability of Finance:** A company is more likely to invest if it has retained a high proportion of its income or profits. If it needs to borrow money to invest, its decision will depend on the cost of taking out loans, that is, the interest rate.
- ◆ **Government Policy:** Investment is affected by various aspects of government policy. For example, allowances to industry in the form of taxation concessions may encourage new investment in plant and machinery.
- ◆ **Innovation:** The introduction of new products or technology may present an opportunity for profitable investment.

The ABS issues a quarterly publication concerning private sector investment by state. Table 4.1 illustrates recent private sector investment trends in Australian states. Note that private sector capital expenditure refers to money spent by the business sector on items such as buildings, structures, equipment, plant and machinery.

TABLE 4.1 PRIVATE SECTOR CAPITAL EXPENDITURE, BY STATE
(\$ MILLION)

State	1986-87	1987-88	1988-89	1989-90
New South Wales	6,985	7,662	10,175	10,573
Victoria	5,804	6,367	7,566	7,636
Queensland	2,635	3,418	3,555	3,870
South Australia	1,402	1,748	1,721	1,758
Western Australia	3,585	3,908	4,094	4,198
Tasmania	405	469	774	575
Australia	21,270	24,096	28,595	29,142

Source: *State Estimates of Private New Capital Expenditure*, ABS Cat. No. 5646.0 (various issues)

Governments and public enterprises also make investment decisions. We recognised earlier that a major criterion for investing is the rate of return and profit which may follow from the decision.

Public sector investment however, at times, can be motivated by social considerations which may well outweigh the desire to generate a profit.

Australian Federal and State Governments are responsible for spending on schools, hospitals, sewerage systems, roads and public transport. The wealth of a community is clearly in part measured by an individual's access to community services. The level of services themselves are also a pointer to the degree of wealth of a society. It is therefore relevant to consider levels of public sector investment when examining the generation of wealth in Australia. Table 4.2 is from Australia's National Accounts and details public sector investment in the 1980s.

TABLE 4.2 PUBLIC SECTOR CAPITAL EXPENDITURE

(\$MILLION)

	1985-86	1986-87	1987-88	1988-89
Public enterprises (e.g. Qantas)	10,719	11,167	9,966	11,087
General government	7,227	7,898	7,569	7,510
Total public	17,946	19,065	17,535	18,597

Source: *Australian National Accounts, National Income and Expenditure, 1988-89*, ABS Cat. No. 5204.0

If we take into account inflation, the above figures indicate that public sector investment has remained flat throughout the 1980s. Whether a government should spend more or less on investment in roads, hospitals, schools etc. is a constant source of debate. In your own local area there is probably just such a debate occurring now.

Let us conclude our look at investment by examining Australian industry sectors. We can see in Table 4.3 that, since the early 1980s, investment has declined as compared to the previous two decades. The mining sector, though, has been a particularly strong investor, especially in the period 1966-67 to 1971-72.

TABLE 4.3 AVERAGE RATES OF CHANGE OF INVESTMENT
BY INDUSTRY SECTOR
(PER CENT PER ANNUM)

	Manufacturing	Mining	Agriculture	All
1966-67 to 1971-72	4.8	23.7	0.6	5.5
1971-72 to 1982-83	1.4	4.2	2.6	3.3
1982-83 to 1987-88	0.5	3.4	-0.5	2.8
1966-67 to 1987-88	1.9	7.3	1.7	3.6

Source: *Estimates of the Capital Stock*, ABS Cat. No. 5221.0 (various issues)

Productivity

We have already examined the concept of productivity in Chapter 2 when considering the National Accounts.

Productivity can be measured as the value of goods and services produced by Australian workers.

Considering wealth in terms of living standards or material benefits, there is a close relationship between productivity and the generation of such wealth. An increase in productivity means that higher incomes accrue to the community in general through increases in company profits, wages and salaries.

There are two factors other than investment which may generate increases in productivity in an economy and therefore wealth as measured by incomes.

- ♦ **Population growth:** In general, the greater the population the greater is the market demand for goods and services. The advantage of this for productivity has to do with business confidence. Expectations of businessmen about a growing market may lead to positive investment decisions.
- ♦ **Efficiency:** This term has several meanings. The simplest way to understand efficiency is to regard it as referring to maximising levels of production with a given level of resources. By greater efficiency, for example, we mean that a fixed number of employees have increased their monthly production of steel whilst working a constant number of hours. Greater efficiency can be achieved by simply working harder or smarter.

The ABS publishes a number of different tables which refer to production levels in the Australian economy. We have reproduced some of the most important ones on the following pages. Among other things the tables allow us to see which Australian industries have become more efficient in the last decade.

TABLE 4.4 PERSONS EMPLOYED BY INDUSTRY
('000)

Industry	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89
Agriculture, forestry, fishing and hunting	415	407	403	426	420	417	432
Mining	86	84	90	92	88	89	86
Manufacturing	1,082	1,038	1,048	1,048	1,042	1,081	1,084
Electricity, gas and water	145	141	141	139	136	130	125
Construction	454	401	443	446	459	474	523
Wholesale and retail trade	1,277	1,241	1,265	1,342	1,381	1,461	1,541
Transport, storage and communication	430	430	437	457	467	458	465
Recreation, personal and other services	432	429	453	484	509	541	570

Source: *Australian National Accounts, Gross Product, Employment and Hours Worked 1988-89*, ABS Cat. No. 5211.0

**TABLE 4.5 GROWTH RATE OF PRODUCTION BY INDUSTRY,
PER PERSON EMPLOYED**
(PERCENTAGE CHANGE FROM PRECEDING YEAR)

Industry	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89
Agriculture, forestry, fishing and hunting	-23.9	47.8	1.4	-8.9	5.0	-4.4	-1.3
Mining	7.6	11.4	5.6	12.8	0.4	8.4	10.0
Manufacturing	0.4	5.7	4.2	2.5	2.0	2.2	5.2
Electricity, gas and water	-5.2	6.8	6.4	5.5	4.9	10.7	8.2
Construction	-3.1	12.5	-1.5	5.3	-4.5	4.0	-2.6
Wholesale and retail trade	-2.1	6.8	3.2	-4.6	-4.6	0.1	1.0
Transport, storage and communication	-2.7	5.6	6.0	1.6	2.3	9.2	4.2
Recreation, personal and other services	-1.0	4.2	-2.6	-2.6	-4.3	-1.9	-2.4

Source: *Australian National Accounts, Gross Product, Employment and Hours Worked 1988-89*, ABS Cat. No. 5211.0

Tables 4.4 and 4.5 provide us with information that shows which Australian industries are producing more per worker than others. They do not show the reasons for these higher production rates, however. We can clearly see that the mining industry has shown impressive production rate increases in the last two years.

**TABLE 4.6 VALUE OF PRODUCTION OF GOODS AND SERVICES,
BY INDUSTRY
(\$ BILLION)**

Industry	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89
Agriculture, forestry, fishing and hunting	6.3	9.2	9.2	8.9	9.2	8.7	8.9
Mining	11.5	12.6	14.2	16.4	15.6	17.1	18.3
Manufacturing	35.1	35.7	37.5	38.4	39.0	41.3	43.6
Construction	13.6	13.5	14.7	15.6	15.3	16.4	17.7
Wholesale and retail trade	31.2	32.4	34.0	34.4	33.8	35.8	38.2
Transport, storage and communication	13.6	14.3	15.4	16.4	17.1	18.4	19.4
Finance, property and business services	18.5	18.9	20.4	22.2	24.0	26.0	27.7
Community services	23.1	24.5	25.4	26.6	27.3	28.4	29.7
Recreation, personal and other services	7.9	8.2	8.4	8.7	8.8	9.1	9.4
Total all industries	190.1	199.3	211.2	221.0	223.9	235.1	247.3

Source: Australian National Accounts, Gross Product, Employment and Hours Worked 1988-89, ABS Cat. No. 5211.0

Note that the figures in Tables 4.5 and 4.6 have been adjusted for inflation. From Table 4.6 we can work out each industry's percentage share of the nation's output of goods and services. We are thus able to identify those industry sectors which, in the 1980s, have increased or decreased their levels of production in terms of a percentage of Australia's total production.

Employment



One important aspect of determining whether a society's generation of wealth is fair and reasonable is to look at its levels of employment. In this regard the concept of **full employment** is crucial to understand. Full employment has been a central principle of Commonwealth Government economic policy since 1945. In 1965 the *Report of the Committee of Economic Enquiry* (Vernon Report) restated that the maintenance of full employment should be a major objective of economic policy. Before we examine statistics on levels of employment we must be clear in our mind about what full employment really means.

The technical definition of full employment is a situation where the demand for labour equals the supply of labour. Full employment therefore exists when the number of vacancies for jobs is equal to the number of people who are looking for work.

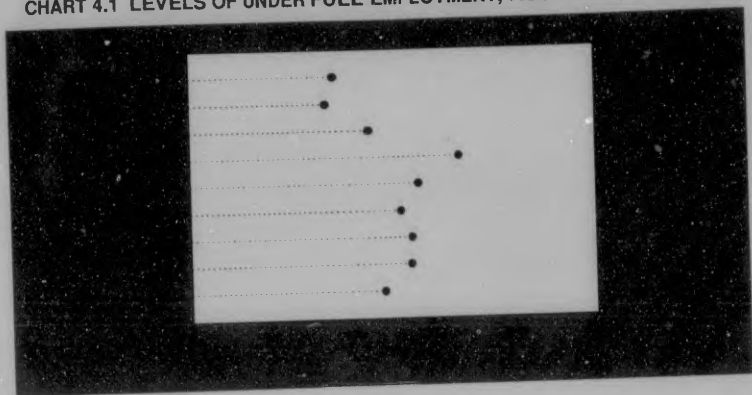
It does not mean a situation where everybody who wants to be employed actually is. The notion of full employment accepts that there will always be some degree of unemployment in an economy such as Australia's. This unemployment results from people in the process of leaving one job to search for another, from seasonal factors such as the end of the fruit picking season and from changes in demand for particular goods and services.

If we examine statistics on levels of employment since the Second World War ended in 1945, we will note that they have varied in line with the **business cycle**. That is, unemployment tends to rise and fall over specific time periods. In the last ten or so years however, Australia has come to experience higher levels of unemployment than anything experienced since the great depression of the 1930s.

In considering the generation of wealth and employment one can examine a number of issues. Chart 4.1 tends to suggest that full employment is harder than ever before for a government to attain. There would also be some industry sectors where employment levels have noticeably declined in the 1980s. The question arises, should investment be aimed at these or other selected industries in order to generate employment?

Let us now examine some statistics which show that full employment has not been achieved. Chart 4.1 shows the levels of **under full employment** for the 1980s. Note that **under full employment** refers to the fact that the number of job vacancies is less than the number of those reported as unemployed.

CHART 4.1 LEVELS OF UNDER FULL EMPLOYMENT, AUSTRALIA, 1980-1988



Sources: *Job Vacancies, Australia*, ABS Cat. No. 6231.0 (various issues)
Labour Statistics, Australia, ABS Cat. No. 6101.0 (various issues)

It should be noted that there are certain categories of job vacancy excluded from the above chart. Further, many businesses have more potential for employment than they officially report. Nevertheless, Chart 4.1 demonstrates that full employment has not occurred in the last decade.

Work Conditions

Whenever a skilled or semi-skilled worker leaves a company there is usually a productivity lag. A new recruit has to be found and perhaps even trained. Clearly, this can be costly to a business as it can take some time to train a new recruit to the same skill level as the former employee. Productivity and the generation of wealth can be affected.

Most businesses, therefore, seek to reduce labour turnover as much as possible.

Tables 4.7, 4.8 and 4.9 relate to labour turnover, Table 4.7 highlighting work conditions and labour turnover.

**TABLE 4.7 JOB LEAVERS DUE TO UNSATISFACTORY WORK CONDITIONS,
BY INDUSTRY, AUSTRALIA, YEAR ENDING FEBRUARY**
(^{'000})

Industry	1983	1984	1985	1986	1987	1988	1989
Agriculture, forestry, fishing and hunting	*	4.6	*	5.1	5.0	2.8	4.5
Manufacturing	19.1	16.9	27.2	34.1	41.5	27.7	39.4
Construction	6.2	*	6.4	7.6	13.2	10.4	11.5
Wholesale and retail trade	32.6	29.7	34.7	50.4	51.5	44.1	48.3
Transport and storage	*	*	4.6	6.9	8.5	6.1	9.6
Finance, property and business services	10.4	12.7	11.4	20.5	18.3	21.7	19.8
Public administration and defence	*	*	*	6.4	*	2.0	5.0
Community services	14.3	9.3	15.6	16.6	17.1	14.6	21.0
Recreation, personal and other services	19.8	19.4	20.0	17.2	17.9	22.0	26.1

Source: *Labour Mobility, Australia, During the Year Ending February*, ABS Cat. No. 6209.0 (various issues)

■ Did you know that, by the age of 25 the average Australian worker has changed jobs as often as a Japanese worker does in a lifetime?

**TABLE 4.8 PERSONS WHO CEASED A JOB, BY INDUSTRY, AUSTRALIA,
YEAR ENDING FEBRUARY**
(^{'000})

Industry	1983	1984	1985	1986	1987	1988	1989
Agriculture, forestry, fishing and hunting	77.9	79.8	89.4	83.9	85.9	76.2	74.8
Manufacturing	344.8	266.1	265.3	299.7	304.0	307.8	331.2
Construction	158.3	117.5	137.3	144.4	149.7	143.6	176.7
Wholesale and retail trade	436.1	398.1	402.7	468.9	452.8	476.7	501.3
Transport and storage	73.1	67.5	69.7	72.2	81.0	101.6	96.0
Finance, property and business services	164.5	162.6	168.5	190.2	198.3	235.3	267.0
Community services	248.5	247.1	269.3	287.9	309.3	336.3	339.0
Recreation, personal and other services	170.3	166.0	174.9	188.7	182.3	203.8	216.7

Source: *Labour Mobility, Australia, During the Year Ending February*, ABS Cat. No. 6209.0 (various issues)

**TABLE 4.9 PERSONS WHO CHANGED JOBS, AUSTRALIA,
YEAR ENDING FEBRUARY**
(PER CENT OF THOSE WHO WORKED)

	1982	1983	1984	1985	1986	1987	1988
Job mobile (a)	17.1	14.9	13.8	15.3	16.8	17.1	18.2
Changed employer	14.1	11.4	10.6	11.9	13.4	13.1	13.3
Changed locality but not employer	3.0	3.4	3.2	3.4	3.5	4.1	4.9
Did not change job	82.9	85.1	86.2	84.7	83.2	82.7	81.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) For a person to be job mobile they must have either changed employer during the year, or changed locality but not employer, during the year.

Source: *Labour Mobility, Australia, During the Year Ending February 1983, Summary*, ABS Cat. No. 6208.0

Foreign Ownership

We saw in Chapter 2 that not all the income generated by the production of goods and services in Australia remains in this country. Foreign companies in Australia will very often return some of their income or profit to their own country. The level of foreign ownership of companies in Australia is thus an important issue.

Because Australia's savings are not sufficient to generate required levels of investment it has to borrow capital and finance from abroad. Australia also encourages foreign companies to invest in it. This leads to foreign companies owning and controlling sections of Australian industry. *Do not forget that there can be a difference between owning a company and controlling it.* We can analyse foreign investment in terms of either ownership or control or both. Tables relating to this are shown on the following page.

Before we look at tables relating to foreign ownership and control, we have listed below the main effects on a country of allowing a degree of foreign investment.

- ♦ It makes possible a higher standard of living than otherwise would have been enjoyed.
- ♦ It introduces technological expertise from overseas. This knowledge may spread to other Australian companies and thus raise levels of production.
- ♦ It may increase the diversification of a nation's industry.
- ♦ Foreign investment creates more employment opportunities than otherwise would have been the case.
- ♦ Foreign investment may lead to foreign control of parts of various industries. Certain company policies may not be in the national interest.
- ♦ Foreign investment may lead to an increase in the concentration of ownership of capital in a country.

**TABLE 4.10 FOREIGN OWNERSHIP OF SELECTED INDUSTRY SECTORS,
AUSTRALIA, JUNE 1986**
(PER CENT)

<i>Industry/Reference period</i>	<i>Foreign</i>	<i>Australian</i>
Manufacturing industry 1982-83	32.9	67.1
Transport industry 1983-84	5.1	94.9
Mining industry 1984-85	44.7	55.3
Private construction industry 1984-85	9.4	90.6
Banking industry June 1986	21.0	79.0

Source: *Foreign ownership and control of registered financial corporations, Australia, June 1986*, ABS Cat. No. 5334.0

**TABLE 4.11 FOREIGN CONTROL OF SELECTED INDUSTRY SECTORS,
AUSTRALIA, JUNE 1986 (a)**
(PER CENT)

<i>Industry/reference period</i>	<i>Foreign</i>	<i>Australian</i>	<i>Joint</i>
Manufacturing industry 1982-83	32.1	65.4	1.2
Transport industry 1983-84	3.4	96.5	0.1
Mining industry 1984-85	15.2	48.5	24.8
Private construction industry 1984-85	10.0	89.6	0.4
Banking industry June 1986	5.1	93.6	1.3

(a) Figures may not add to 100 per cent because the concept of naturalised control has not been included in the table.

Source: *Foreign ownership and control of registered financial corporations, Australia, June 1986*, ABS Cat. No. 5334.0

THE DISTRIBUTION OF WEALTH

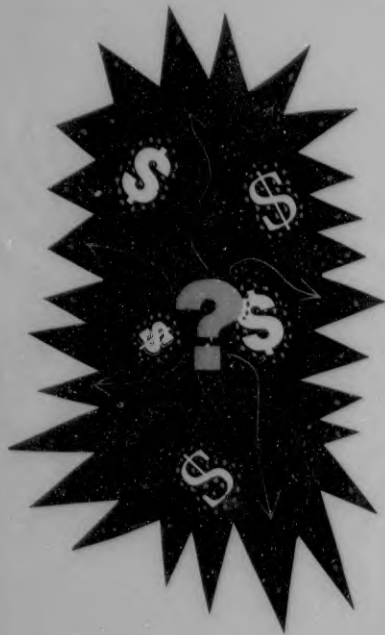
- ◆ The arrangements a community uses to distribute its wealth are critical in making a fair and reasonable community.

The distribution of wealth or the question "who gets what" is crucial in revealing the social, environmental and political characteristics of a society. Distributing wealth in Australia involves decisions concerning company profits, levels of company savings and the setting of personal income levels (wages and salaries).

In considering the above proposition we will need to examine statistics relating to company profit levels, average weekly earnings of Australian employees and the salary levels of those in senior positions. The share of Gross Domestic Product (GDP) that is enjoyed by wages and salaries as compared to profits and dividends will also be looked at.

For most Australians the primary source of income is their wage or salary. Through their representative organisations (trade unions) workers periodically engage in negotiations with employers for improved levels of wages and salaries. We will therefore need to be aware of some statistics concerning trade unions and their role as lobbyists for a greater share of the national income for their members. We will need to be aware that employers also have their representatives, such as the Confederation of Australian Industry (CAI).

In 1975 the *Henderson Report* examined the extent of poverty in Australian society. It highlighted the fact that the distribution of wealth in Australia did not ensure an adequate standard of living for all. Indeed, the report brought out the notion of a poverty line, below which, many Australian families existed. We will examine statistics relating to social welfare, which is designed to alleviate this poverty. This will lead us into consideration of the last proposition in this chapter, the question of when and to what extent governments should intervene in order to redistribute wealth.



Wages and Salaries

If we wish to analyse the distribution of wealth in Australian society it is necessary for us to consider the personal distribution of income. For most Australians in the workforce, their primary source of income is contained in their wage or salary. The arrangements that are adopted to set that wage or salary should be understood if you wish to consider the fairness of Australia's personal income distribution. Broadly speaking there are two processes which a community may use in whole or in part to set wages and salaries.

- ◆ **The Free Market Approach:** This allows economic conditions of supply and demand to determine wage levels. Some supporters of this approach argue that wage rises should only be granted if productivity per head in the industry in question has risen. Also some proponents of this approach advocate employers being allowed to vary minimum wage levels.
- ◆ **The Centralised Interventionist Approach:** A body such as Australia's Industrial Relations Commission arbitrates on wage disputes and sets Australia-wide wage rises across all industries. Productivity per head increases are not necessarily a condition for wage rises to be granted. Wage increases can be granted on condition that efficiency is improved through such processes as award restructuring. Rises in the level of inflation may also lead to wage and salary increases.

The ABS publishes a great deal of material on personal income distribution. We shall begin by showing in Table 4.12 statistics on average weekly earnings of males and females across Australian industries. Clearly the issue of wage and salary discrimination against women can be judged on consideration of these figures. You may like to consider whether equal pay legislation has succeeded in eliminating discriminatory wage rates against women. If not, what are the factors that maintain personal income differences between the sexes?

**TABLE 4.12 AVERAGE WEEKLY TOTAL EARNINGS AND HOURS PAID FOR,
FULL-TIME NON MANAGERIAL EMPLOYEES, INDUSTRIES, AUSTRALIA MAY 1989**

Industry	Males		Females	
	Earnings (\$)	Hours	Earnings (\$)	Hours
Mining	798.2	44.6	537.3	41.0
Manufacturing	537.8	42.8	397.8	39.3
Construction	576.0	42.3	415.6	39.4
Wholesale trade	507.1	40.8	426.5	38.8
Retail trade	435.1	40.3	363.5	39.0
Transport, storage and communication	571.3	42.9	450.7	39.9
Finance, property and business services	542.8	39.6	452.0	38.1
Public administration and defence	519.1	38.7	461.4	36.9
Community services	563.0	38.7	503.7	37.7
Total all industries	543.9	41.1	449.7	38.3

Source: *Distribution and Composition of Employee Earnings and Hours, Australia, Preliminary, May 1989*,
ABS Cat. No. 6305.0

In 1977 the average weekly earnings of all female full-time employees were 68.7 per cent of the corresponding male average. Looking at the above table, we can see from the final row that this has increased to 82.7 per cent in 1989.

A further possible source of inequity concerns the issue of public sector versus private sector wage and salary levels. There are those who argue that public sector wages and salaries should be less than the private sector because of the greater job security in the former. Conversely, some would argue that public and private sector incomes, particularly at the higher levels, should be roughly equal. This is to discourage skilled personnel from leaving the public sector for better paid jobs in the private sector. Tables 4.13 and 4.14 examine the latest statistics concerning average weekly earnings for the public and private sectors.

**TABLE 4.13 AVERAGE WEEKLY TOTAL EARNINGS AND HOURS PAID FOR,
FULL-TIME NON MANAGERIAL EMPLOYEES, AUSTRALIA, MAY 1989**

	<i>Public</i>		<i>Private</i>	
	<i>Earnings (\$)</i>	<i>Hours</i>	<i>Earnings (\$)</i>	<i>Hours</i>
<i>Adult</i>				
Males	560.2	39.5	535.1	41.9
Females	496.0	37.6	419.5	38.8
Persons	536.0	38.8	496.3	40.9
<i>Junior</i>				
Males	282.3	38.4	263.7	39.9
Females	274.2	38.0	251.0	38.7
Persons	277.9	38.2	257.6	39.3

Source: *Distribution and Composition of Employee Earnings and Hours, Australia, Preliminary, May 1989*,
ABS Cat. No. 6305.0

The statistics in the above table show that average weekly earnings for public sector employees are higher across the board for non managerial employees. If we highlight some statistics concerning managerial employees the same is true.

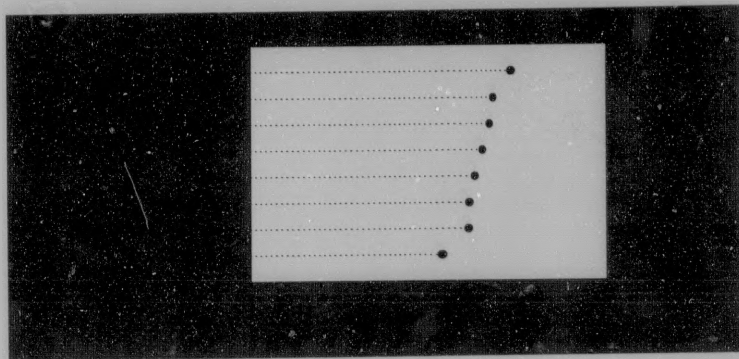
**TABLE 4.14 AVERAGE WEEKLY TOTAL EARNINGS OF
FULL-TIME MANAGERIAL EMPLOYEES, AUSTRALIA, MAY 1989**

	<i>Earnings (\$)</i>	
	<i>Public</i>	<i>Private</i>
Males	880.0	711.1
Females	774.3	510.9
Persons	861.6	670.2

Source: *Distribution and Composition of Employee Earnings and Hours, Australia, Preliminary, May 1989*,
ABS Cat. No. 6305.0

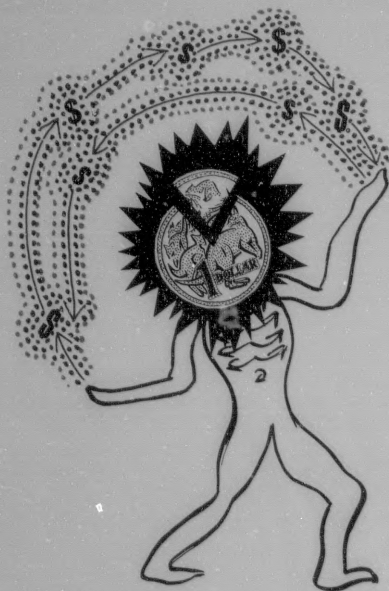
A further issue you may like to consider is the wage and salary level for the same occupation in different industry sectors. Study Chart 4.2 which comes from recent surveys by the *Association of Professional Engineers, Australia (APEA)* and also consider two major findings highlighted below the chart.

CHART 4.2 ENGINEERING GRADUATES, AVERAGE STARTING SALARY BY MAJOR INDUSTRY SECTOR, 12 MONTHS TO OCTOBER 1990



Source: APEA six-monthly remuneration surveys.

- ♦ Salaries for public sector engineers rose 5.8 per cent over the year 1989-90 compared with 10.9 per cent in the private sector.
- ♦ Professional engineers in management roles, throughout 1989-90, were being paid an average 30 per cent more than engineers in technical specialist roles.

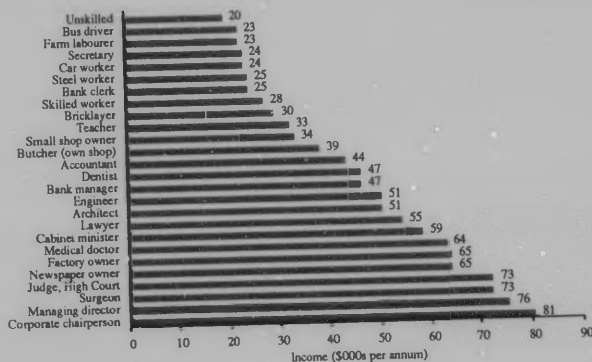


Senior salary levels can also be a source of debate when considering the distribution of wealth. Remuneration consultants, *Cullen Egan Dell*, regularly conduct surveys on senior executive salary packages. A major recent finding of theirs was:

- ♦ On average, executive salaries are 30 per cent higher in 1990 than in 1987, a real rise of 10 per cent over the inflation rate.

Chart 4.3 shows that in 1987-88 Australians thought a corporate chairperson should earn \$81,000 a year. In fact, in that period, salary packages for top company executives ranged from \$270,000 to \$500,000.

CHART 4.3 HOW MUCH SHOULD THEY EARN? WHAT AUSTRALIANS THINK



Source: *National Social Science Survey on attitudes to inequality*, Aust. National University 1987-88.

Profit Levels

Profits play a vital part in the economic system of all nations. Indeed, they are the driving force of most of the world's economies. We saw in Chapter 2 that companies receive their incomes in the form of profits. We can give a more precise definition by saying:

- ◆ Profit is the difference between a company's total receipts of revenue and its total costs.
- ◆ Remember that healthy profit levels are important for a company because they can allow it to invest without resorting to borrowing money.

In general, all businesses seek to maximise their profit levels subject to various issues of constraint, such as the environment. They also do not produce goods and services at levels which add more to costs than to revenue. Let us examine recent figures on profit levels for key Australian industry sectors.

TABLE 4.15 COMPANY PROFITS BEFORE TAX, BY INDUSTRY
(\$ MILLION)

Period	Manufacturing	Mining	Wholesale Trade	Retail Trade	Other
1986-87	4,650	3,480	1,639	612	1,232
1987-88	6,615	3,816	1,827	886	1,511
1988-89	8,617	3,540	1,993	1,349	1,696
1989-90	7,810	4,992	1,579	1,373	397

Source: *Company Profits, Australia, June Quarter 1990*. ABS Cat No. 5651.0.

The distribution of wealth between wages and salaries on the one hand and profits on the other is an interesting area to examine. The table below, from the National Accounts, shows that wages and salaries have declined slightly in recent times as a percentage of the nation's GDP.

**TABLE 4.16 WAGE AND SALARY COMPONENT OF GDP
SEASONALLY ADJUSTED**
(\$ MILLION)

<i>Period</i>	<i>Wages and salaries</i>	<i>GDP</i>	<i>Per cent share</i>
1974-75	37,233	58,569	63.6
1977-78	53,004	85,332	62.1
1980-81	74,115	125,017	59.3
1983-84	100,169	170,364	58.8
1986-87	134,032	230,769	56.5
1989-90	184,496	325,988	56.6

Source: *Australian National Accounts, National Income and Expenditure, June Quarter 1990*, ABS Cat. No. 5206.0

In general we can attribute the remaining percentage share of GDP in the above table to profit levels of both the public and private sectors.

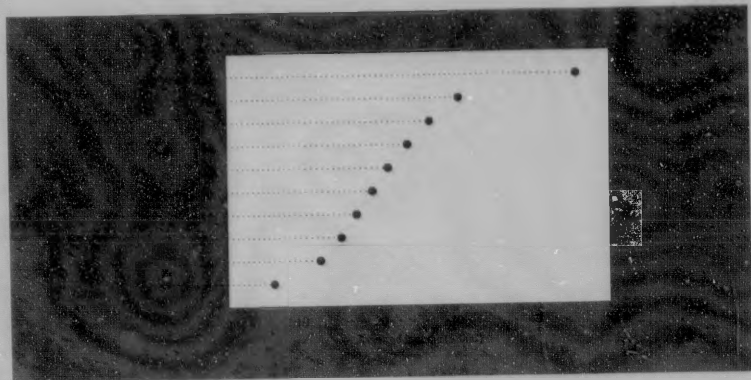
However do note that the ABS's National Accounts are detailed and they use a definition of profit (gross operating surplus) that is more complex than the one on the previous page.

Income Distribution

When we talk about income distribution we are referring to the way in which income is spread among Australians. In 1986 the ABS released a publication which looked at the earnings of full-time workers. If we wish to examine income distribution one way is to examine it in terms of deciles.

Note: A decile is a 10 per cent grouping of a population. Thus, the income decile marked 'lowest' in the chart below refers to the bottom 10 per cent of full-time workers in Australia in terms of average earned income.

**CHART 4.4 FULL-TIME WORKERS: AVERAGE EARNINGS
BY INCOME DECILE, 1985-86**



Source: 1986 Income Distribution Survey, Persons With Earned Income, Australia, ABS Cat. No. 6546.0

The major findings as depicted in Chart 4.4 are as follows:

- ◆ The bottom ten per cent of full-time workers received 3 per cent of total earnings.
- ◆ The top 10 per cent of full-time workers received 21.1 per cent of total earnings.
- ◆ The average income of the bottom 10 per cent of full-time workers was \$6,330.
- ◆ The average income of the top 10 per cent of full-time workers was \$45,310.

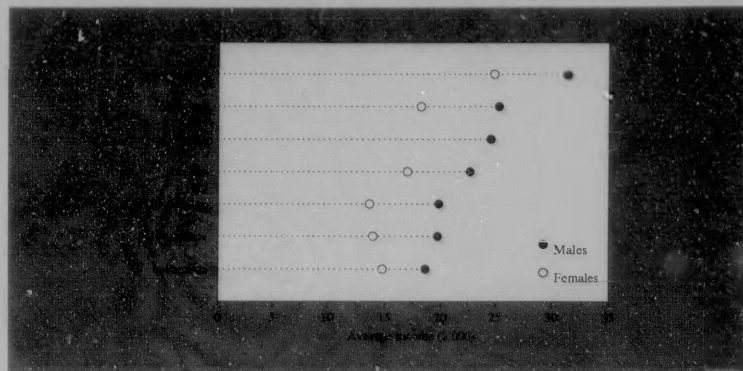
If you wish to examine the findings further you will see that age and educational qualifications play a significant part in influencing Australia's income distribution. For example, in 1985-86, 33.8 per cent of persons in the bottom 10 per cent of full-time workers had post school qualifications compared to 75.5 per cent of those in the top 10 per cent.

Before we look at occupation and average income we list other major findings of the *ABS Income Distribution Survey, 1985-86*:

- ◆ In 1985-86 a total of 7,014,300 full-time workers received average earnings of \$17,370.
- ◆ The average income was \$20,540 for males and \$12,410 for females.
- ◆ In the bottom 10 per cent of full-time workers 29.2 per cent were aged between 15-24 years compared to 1.8 per cent in the top 10 per cent.

Finally, the survey also showed that the level of average income varied considerably for full-time workers in different occupations. Some of the major findings are depicted in Chart 4.5.

**CHART 4.5 FULL-TIME WORKERS, AVERAGE INCOME
BY BROAD OCCUPATION GROUPS, 1985-86**



Source: 1986 Income Distribution Survey, Persons With Earned Income, Australia, ABS Cat. No. 6546.0

The major finding of the above chart is that in 1985-86, males received higher average incomes than females in all broad occupation groups.

Trade Unions

Through a formal agreement with the Prime Minister and the Federal Government called the **Accord** (1983), trade unions have negotiated throughout the 1980s over levels of taxes and wage rises for most of Australia's working men and women. Traditionally, trade unions have concentrated their energy on ensuring a fair and reasonable distribution of wealth for their members. Nowadays they also work in many other areas such as occupational health and safety and the provision of financial services.

Of course, not every employee in Australia is a member of a trade union. Nevertheless, the trade union movement has a large degree of influence over the distribution of wealth to Australian employees in all occupational groups. It is interesting to examine the degree of membership of trade unions in Australia.

The Trade Union Census of 30 June 1989 identified 299 trade unions with a combined membership of 3,410,300 persons.

TABLE 4.17 TRADE UNION MEMBERS: PROPORTION OF TOTAL EMPLOYEES
(PER CENT)

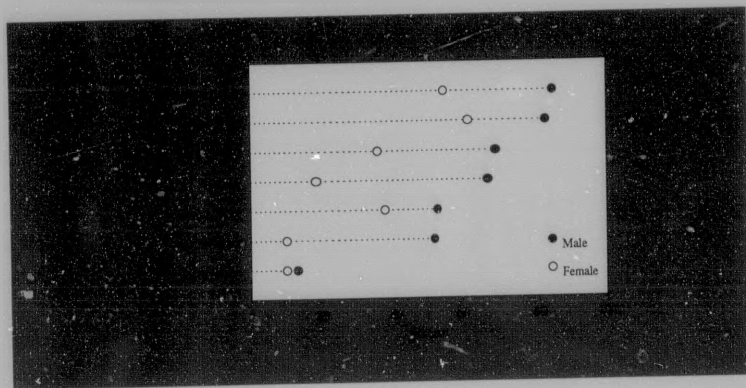
30 June	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
1985	60	57	55	57	49	64	57
1986	58	55	53	55	48	61	55
1987	59	54	54	55	46	61	55
1988	57	54	51	55	49	60	54
1989	58	54	47	57	50	62	54

Source: *Trade Union Statistics, Australia, 30 June 1989*, ABS Cat. No. 6323.0

Of the 299 unions identified at 30 June 1989, 190 had less than 3,000 members, accounting for 3.9 per cent of total union membership. The eleven largest unions accounted for 41.3 per cent of total union membership.

If we examine trade union membership across different industry divisions we will notice large variations. In August 1988 the lowest rates of union membership were recorded in the agricultural industry sector (includes forestry, fishing and hunting) where 13 per cent of employees belonged to a union. Notice in Chart 4.6, by comparison, the large union membership in the electricity, gas and water industry.

CHART 4.6 PROPORTION OF ALL EMPLOYEES WHO WERE MEMBERS OF A TRADE UNION, BY SELECTED INDUSTRIES, AUGUST 1988



Source: *Trade Union Members, Australia, August 1988*, ABS Cat. No. 6325.0

In terms of occupation, the highest level of union membership recorded was for plant and machine operators and drivers with 64 per cent. The lowest level was recorded for managers and administrators with 19 per cent.

Social Welfare

One of the principal forms by which Commonwealth and State Governments redistribute wealth to particular sections of Australian society is through the provision of social welfare services. We saw in Chapter 2 a table detailing a brief history of Australian social welfare legislation. The degree of income provided by government for each particular service resulting from legislation is dependant on several factors such as:

- ♦ The numbers of people who are eligible for the particular welfare service.
- ♦ The financial position of the Commonwealth or State Government, i.e. whether it has a budget surplus or deficit.

The ABS provides statistics on virtually all of the most important of Australia's social welfare services. Let us examine the numbers of Australians who are dependant on them, starting with the Age Pension.

TABLE 4.18 AGE PENSION BENEFIT NUMBERS, YEAR ENDED 30 JUNE

Age	1986	1987	1988	1989
60-64	163,841	161,553	163,525	166,007
65-69	298,270	297,272	301,362	308,684
70-74	336,506	325,977	312,339	295,879
75 and over	525,983	537,372	551,558	563,740
Total	1,324,600	1,322,174	1,328,814	1,334,310
(\$'000)				
Total payments	5,897,156	6,257,148	6,972,771	7,516,110

Source: *Year Book, Australia, 1990*, ABS Cat. No. 1301.0

TABLE 4.19 UNEMPLOYMENT BENEFIT NUMBERS, YEAR ENDED 30 JUNE

	1986	1987	1988	1989
Number of benefits	811,799	829,560	728,438	689,981
Number on benefits	569,761	550,850	475,070	390,001
	(\$'000)			
Total payments (a)	3,122,120	3,453,802	3,374,879	3,135,640

(a) Includes Job Search Allowance which began on 1 January 1988.

Source: *Year Book, Australia, 1990*, ABS Cat. No. 1301.0

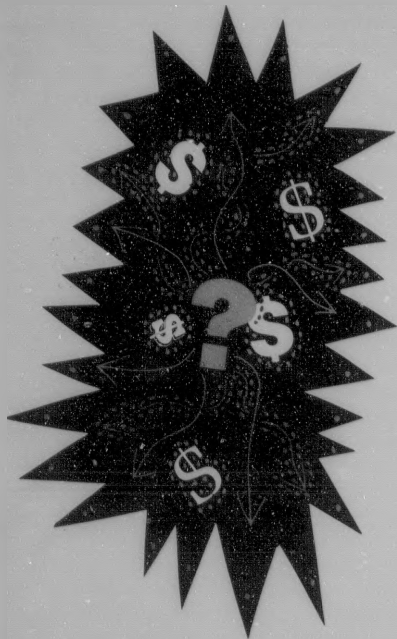
TABLE 4.20 SOLE PARENT BENEFIT NUMBERS, YEAR ENDED 30 JUNE

Age	1986	1987	1988	1989
Under 20	9,968	9,756	9,508	9,564
20-29	79,164	85,703	86,247	86,347
30-39	62,311	98,893	94,751	96,234
40-49	21,000	47,159	40,910	40,652
50-59	4,043	11,976	6,996	6,427
Over 60	244	420	244	245
Total	176,730	253,907	238,656	239,469
	(\$'000)			
Total payments	1,237,959	1,886,405	2,004,545	2,131,986

Source: *Year Book, Australia, 1990*, ABS Cat. No. 1301.0

There are a number of other social welfare benefits such as family allowances, invalid pensions and sickness benefits. If you would like to investigate any of these or other benefits refer to the bibliography at the end of this chapter.

GOVERNMENT INTERVENTION



- ★ Government needs to intervene in order to promote equality of opportunity and an equitable distribution of wealth for all Australians.

Government intervention in the Australian economy takes place at three levels. Firstly, the Commonwealth Government is directly responsible for expenditure on defence, tertiary education and social welfare. Secondly, State Governments take responsibility for such areas as health, road transport and the provision of electric, gas and water utilities. Thirdly, local authorities provide services such as child care, libraries and community recreation areas or parks. All of the above services are provided by Australia's public sector in order to satisfy community demand.

One reason why government takes responsibility for the provision of the above collective goods and services is that they cannot all be produced profitably by the private sector. For example, the railway system may run at a loss, particularly outside of the rush hour, and yet the community still demands the service. Government also intervenes in the economy to ensure that the minimum goals of social policy are met. That is, to ensure that excessive inequality or deprivation in the community is at least reduced. The extent to which inequalities are tolerable is a matter on which different societies reach their own consensus. Indeed, in Australia, the debate over the extent of government intervention has been pursued unabated for most of our recent history.

We should recognise that only governments command sufficient resources to make an impact on income distribution. Inevitably there will always be a pool of people for whom the only source of income is some form of government cash benefit. The extent of government spending on this and other aspects of social welfare is dependant in part on levels of taxation revenue received. Therefore, in this section, we will examine statistics on taxation and levels of social welfare spending. Finally, you should also be aware of some aspects of government legislation for redistributing wealth. Example of these are Equal Employment Opportunity and Workcare legislation.

Government Expenditure

Public expenditure for social purposes is the most important single instrument of Australian social policy. It remains the principal source of income for people outside the Labour Force, and for the unemployed within it. Thus, the statistics reproduced in Table 4.21 are important social indicators. However, it should be stressed that spending levels by themselves do not indicate the success or otherwise of social welfare programs.

**TABLE 4.21 GOVERNMENT SOCIAL WELFARE SPENDING
BY LEVEL OF GOVERNMENT AND PURPOSE (a)**
(\$ BILLION)

	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89
Commonwealth							
Education	0.4	0.4	0.4	0.5	0.5	0.5	0.5
Health	0.7	0.9	1.0	1.0	1.1	1.2	1.3
Social security & welfare	0.5	0.6	0.7	0.9	1.0	1.1	1.2
Total	1.6	1.9	2.1	2.4	2.6	2.8	3.0
State & Local							
Education	7.7	8.4	9.1	10.0	10.7	11.3	12.3
Health	4.5	5.2	6.1	6.8	7.7	8.4	9.2
Social security & welfare	0.5	0.6	0.7	0.8	0.9	1.0	1.2
Total	12.7	14.2	15.9	17.6	19.3	20.7	22.7
Total Government							
Education	8.1	8.9	9.5	10.5	11.2	11.8	12.8
Health	5.2	6.0	7.1	7.7	8.7	9.5	10.5
Social security & welfare	1.0	1.2	1.4	1.6	1.9	2.2	2.5
Total	14.3	16.1	18.0	19.8	21.8	23.5	25.8

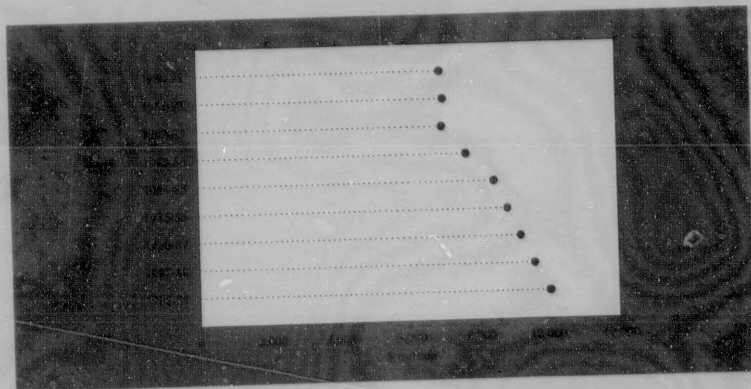
(a) Figures in this table have been shown in billions rounded to 1 decimal place. The source publication is more accurate because it shows the figures in \$millions.

Source: *Australian National Accounts, National Income and Expenditure, 1988-89*, ABS Cat. No. 5204.0

If we wish to analyse government social welfare spending in real terms, we need to examine figures that have been adjusted for inflation. The following chart shows spending by government at 1984-85 prices. Thus, any increase shown over the level of 1984-85 expenditure is a real increase, as the figure has been adjusted to take into account **rising price levels** or the **rate of inflation**.

We can see from the Chart 4.7 that, apart from the year 1982-83, government spending on health, social security and welfare has increased in real terms every year in the past decade.

CHART 4.7 GOVERNMENT SPENDING ON HEALTH, SOCIAL SECURITY AND WELFARE AT AVERAGE 1984-85 PRICES



Source: Australian National Accounts, National Income and Expenditure, 1988-89, ABS Cat. No. 5204.0

Taxation Levels

Taxation is the principal tool which allows governments to finance their activities. Indeed, in Australia, over 80 per cent of the revenue raised by the Commonwealth Government comes from taxation. Before we examine statistics on levels of taxation it is useful to have an understanding of the different types of taxation in Australia.

- ♦ **Direct taxes:** These are levied on the incomes of individuals and companies.
- ♦ **Indirect taxes:** These are levied on consumers or the purchasers of goods rather than the producers.
- ♦ **Personal taxes:** Direct taxes levied on individuals, e.g. income tax.

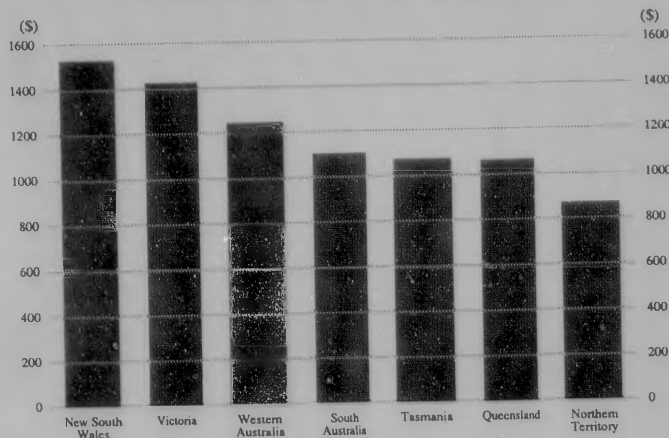
It is important to be aware that the taxation system itself can be used to reduce inequalities in society. We saw in Chapter 2 the concept of progressive taxation, where those earning higher levels of income are required to pay higher percentages of tax. This principle, together with the targeting of taxation revenue to those disadvantaged in a community, allows a Government to redistribute wealth.

The ABS releases an annual publication about Australian taxation revenue which shows detailed statistics involving all three levels of government (Commonwealth State, and local). Before we examine some of these statistics, here are the major findings of the taxation revenue publication for the period 1988-89.

- ♦ Total taxation in Australia increased by 12.5 per cent to \$105,607 million.
- ♦ Of the total taxation collected in Australia, income taxes on individuals accounted for 45 per cent.
- ♦ Taxes collected by the Commonwealth Government increased by 11.3 per cent to \$83,340 million and comprised 78.9 per cent of total taxation.

The total taxation collected by the Commonwealth Government during 1988-89 amounted to \$4,998 per head of population. This was an increase of 9.4 per cent from the previous financial year. By contrast, State and local governments collected an average of \$1,358 per head of population, an increase of 15.4 per cent. Chart 4.8 details State and local government taxation per head of population.

**CHART 4.8 STATE AND LOCAL GOVERNMENT TAXATION
PER HEAD OF POPULATION, BY STATE, 1988-89**



Source: *Taxation Revenue, Australia, 1988-89*, ABS Cat. No. 5506.0

It is interesting to examine State and local government taxation in terms of its recent rate of increase. Earlier in this section we saw figures on social welfare spending by State and local government. The capacity to intervene by these two levels of government is in part dependant on their ability to raise taxation revenue (they also rely on Commonwealth Government funding). Look at the rates of increase in Table 4.22. Do they match similar rates of increase in social welfare spending in Table 4.21? Remember that Table 4.21 has figures in billions rounded to one decimal place. Refer to the source publication for figures in millions.

**TABLE 4.22 STATE AND LOCAL GOVERNMENT, TOTAL TAXATION,
PERCENTAGE CHANGE FROM PREVIOUS YEAR
(\$ MILLION)**

	1986-87	% change	1987-88	% change	1988-89	% change
New South Wales	6,327.5	13.2	7,495.0	18.5	8,860.4	18.2
Victoria	4,794.3	12.3	5,440.6	13.5	6,184.6	13.7
Queensland	2,003.9	10.3	2,450.0	22.3	3,038.8	24.0
South Australia	1,156.5	9.8	1,342.7	16.1	1,574.6	17.3
West Australia	1,406.5	22.8	1,698.0	20.7	1,983.9	16.8
Tasmania	367.1	15.7	429.1	16.9	488.1	13.7
Northern Territory	107.6	16.3	123.2	14.5	136.8	11.0
Total	16,163.4	13.2	18,978.6	17.4	22,267.2	17.3

Source: *Taxation Revenue, Australia, 1988-89*, ABS Cat. No. 5506.0

Table 4.22 only refers to State and local government taxation for the years 1986-87 to 1988-89. Let us finish taxation levels by examining Table 4.23 which shows recent historical trends in taxation levels for all levels of government.

TABLE 4.23 TOTAL TAXATION BY LEVEL OF GOVERNMENT
(\$ MILLION)

	1983-84	1984-85	1985-86	1986-86	1987-88	1988-89
<i>Commonwealth</i>	44,934.7	53,069.6	58,916.4	66,334.8	74,910.8	83,340.0
<i>State</i>						
New South Wales	3,711.7	4,080.0	4,600.9	5,260.6	6,339.3	7,603.2
Victoria	2,783.2	3,140.7	3,431.7	3,872.9	4,419.3	5,044.3
Queensland	1,160.4	1,297.9	1,373.7	1,523.9	1,922.9	2,456.6
South Australia	659.4	788.1	834.9	916.2	1,076.6	1,279.4
West Australia	752.3	869.8	932.0	1,170.1	1,431.8	1,684.0
Tasmania	186.9	225.8	253.5	297.2	351.7	405.9
Northern Territory	46.2	59.8	77.7	90.6	104.6	116.3
<i>Total State Government</i>	9,300.2	10,462.2	11,504.4	13,131.5	15,646.2	18,589.8
<i>Local</i>						
New South Wales	833.5	907.5	988.7	1,066.9	1,155.7	1,257.2
Victoria	692.3	762.4	837.7	921.4	1,021.3	1,140.3
Queensland	369.2	403.3	442.8	480.0	527.1	582.2
South Australia	176.4	198.0	218.0	240.3	266.1	295.2
West Australia	171.2	192.1	213.0	236.4	266.2	299.9
Tasmania	54.9	60.7	63.8	69.9	77.4	82.2
Northern Territory	11.7	12.5	14.8	17.0	18.6	20.5
<i>Total Local Government</i>	2,309.2	2,536.5	2,778.7	3,032.1	3,332.2	3,677.5
<i>Total taxation</i>	56,544.1	66,068.2	73,199.6	82,498.4	93,889.3	105,607.2
<i>Percentage of total tax</i>						
Commonwealth	79	80	80	80	80	79
State	16	16	16	16	17	18
Local	4	4	4	4	4	3

Source: *Taxation Revenue, Australia, 1988-89*, ABS Cat. No. 5506.0

Award Wages

In Australia, Commonwealth and State parliaments have the constitutional power to legislate on industrial matters such as award wage rates. The power to do so of the Commonwealth parliament is limited by section 51 of the constitution.

An award wage rate is a minimum wage rate established by wage-determining bodies such as the Industrial Relations Commission.

In practice, Commonwealth and State Governments have passed legislation setting up wage determining bodies at both Commonwealth and State level. These bodies are independent, but governments do place submissions before them at regular intervals concerning the varying of award rates of pay.

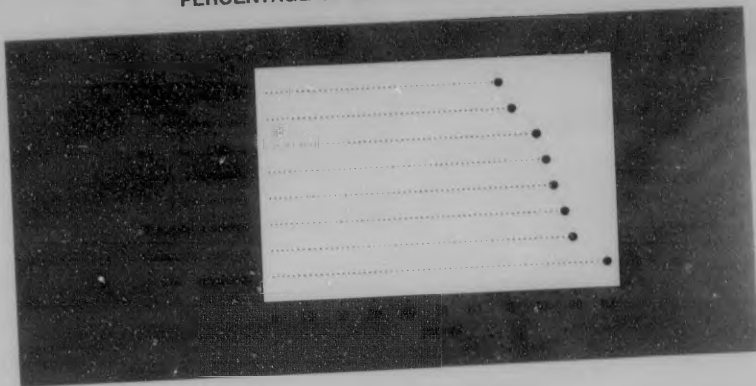
In 1988 the ABS released the publication *Incidence of Awards, Australia*, May 1985. Some of the major findings identified were:

In May 1985 a survey of 8,900 employers found that:

- ◆ The employee category with the greatest percentage of employees covered by awards was full-time juniors with 96.9 per cent.
- ◆ The occupations with the highest percentage of employees covered by awards were Nurses and Teachers with 99.1 per cent and 94.2 per cent coverage respectively.
- ◆ 85 per cent of employees were covered by awards, determinations or collective agreements. Coverage was greater for females than males, with 87.4 per cent of female employees covered, compared to 83.4 per cent of male employees.
- ◆ 97.9 per cent of employees in the public sector were covered by awards, determinations or collective agreements, compared to 78.7 per cent in the private sector.

Chart 4.9 gives the incidence of awards in Australia's major industries. Note the 99.9 per cent coverage for those in the communications industry!

**CHART 4.9 INCIDENCE OF AWARDS, ALL EMPLOYEES BY INDUSTRY,
PERCENTAGE OF EMPLOYEES COVERED**



Source: *Incidence of Awards, Australia, May 1985*, ABS Cat. No. 6315.0

FURTHER READING -

ABS sources:

5221.0 Australian National Accounts: Capital Stock

Contains estimates of spending on machinery at both current and 1984-85 prices. Statistics are cross-classified by industry, asset type and institutional sector.

5646.0 State Estimates of Private New Capital Expenditure

Contains detailed statistics of capital expenditure by State. Statistics are presented in current and constant prices and in original and seasonally adjusted terms.

5334.0 Foreign Ownership and Control of Registered Financial Corporations, Australia

Contains statistics on the assets of corporations registered under the Financial Corporations Act 1974. Ownership by country of ownership, and type of corporation; allocated to control by country of control, and size and type of corporation.

5651.0 Company Profits, Australia

Contains preliminary estimates derived from a sample survey of incorporated business enterprises of company profits. Statistics are provided by industry and are expressed in original and seasonally adjusted terms.

6209.0 Labour Mobility, Australia

Contains estimates of persons who worked at some time during the year ending February. Classifications are: number of employers or businesses in the period, sex, age, industry, occupation, educational attainment, marital status, status of worker, labour mobility, change in occupation and industry, duration of job left.

5506.0 Taxation Revenue, Australia

Contains details of the revenue from taxation of Commonwealth, State and local authorities in Australia compiled in accordance with national accounting concepts. Taxation by level of government is classified by type of tax and method of taxation, and figures are also given per head of mean population.

6305.0 Distribution and Composition of Employee Earnings and Hours, Australia, Preliminary

Contains statistics on earnings and hours classified by sex and age, adult/junior, State and Territory, and industry groups.

6315.0 Incidence of Awards, Australia

Contains statistics on the percentage of male and female employees affected by awards. Figures are classified by industry, State or Territory and type of award.

6323.0 Trade Union Statistics, Australia

Contains statistics on the number of separate trade unions; financial and total members classified by State, Territory and sex; proportion of employed wage and salary earners who were members of unions.

6325.0 Trade Union Members, Australia

Contains statistics on the social and demographic characteristics of union members and non-members. Characteristics of Labour Force participation are also provided.

6546.0 Income Distribution Survey, Persons with Earned Income

Contains data on persons with earned income and examines the relationship between levels of earned income and demographic and social characteristics of the recipients, e.g. age, sex, Labour Force attachment, educational qualifications and occupations.

--- **CHAPTER 5**

**Australia:
a Technological Society**

THE IMPLICATIONS OF CHANGE FOR DIFFERENT GROUPS

- ❖ Technological change has many significant implications for governments, employers and individuals.

Technology has had a continuing impact upon societies and their patterns of work, from the stone-age right up to the present. The industrial revolution was the result of technology impacting upon society and was largely responsible for the creation of separate tasks or the **division of labour** that has formed the range of occupations we have today.

The industrial revolution in its initial phase, used technology in the form of steam engines to replace natural sources of power (human or animal muscle power, wind and water power). This change allowed a factory to produce more goods without increasing its workforce. In Chapter 3 we saw that this process is continuing, with a decreasing proportion of Australian jobs occurring in the manufacturing industries.

The introduction of new technology often means changing work practices. Computers, for instance, have affected the nature of the work done by many people such as clerks and sales staff, who previously did their work by using pen and paper, adding machines, and tally sheets.

Technological change in Australia involves planning for the future; and this has seen government, industry and unions come together to sort out policies to deal with the rapidly changing economic world we live in. For many years, unions attempted to slow the introduction of new technology as they feared the loss of jobs. Now there is a greater awareness in the union movement that opposing technological change may result in the erosion of Australia's competitiveness in world markets. Important policy aspects include investment incentives for industry to modernise their operations, the minimising of job losses and the retraining of displaced workers.



Implications for governments

One of the critical issues that delayed Federation of the Australian Colonies was whether local manufacturing would be protected by tariffs, or whether the new country would follow free trade and force Australian manufacturers to compete with imported goods for Australian markets.

- ❖ **Protection:** Imports can be restricted by quotas on the volume of goods brought into the country, or by making the imported goods dearer through duties and tariffs. Supporters of this policy believe domestic suppliers will be given a competitive edge to survive against cheap imported goods. A disadvantage of protection is that without competition there will be no incentive for local industry to become more efficient.
- ❖ **Free Trade:** This policy involves allowing goods to compete in the marketplace without any tariffs to hinder goods from another source. Supporters of this policy argue its advantages include being able to gain access to cheap imported goods, and forcing local industry to operate more efficiently. A disadvantage of this policy is that, if local industry *cannot* compete, the nation's manufacturing sector will be lost. With this happening, money will be continually sent out of the country to pay for the imports.

Victoria, as Australia's chief manufacturing colony, was in favour of tariff protection while New South Wales, which was principally a primary producer, was in favour of free trade. At Federation, Australia followed the path of protection. Australia remained protectionist through the early part of the twentieth century, with its major trading partners being other nations and colonies of the Commonwealth.

After the entry of the Japanese into the Second World War, Australia was cut off from traditional supplies of high quality manufactured articles and underwent a rapid expansion of manufacturing capacity in order to provide war materials. Items which could not be constructed locally were provided at great risk from North America and Britain.

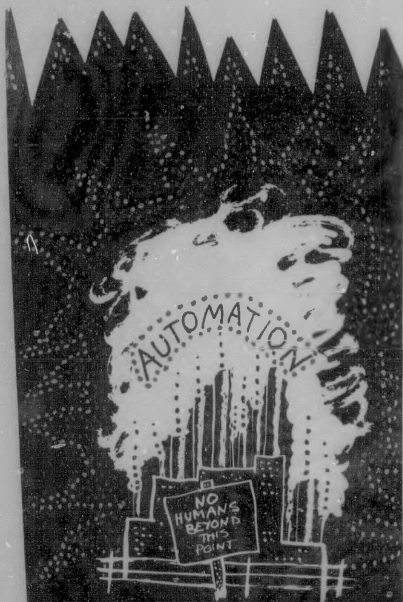
During the war, Australian manufacturing expanded, drawing many women from domestic duties. Output was high during this period and the workforce acquired skills never before considered necessary in this country.

After the war the female manufacturing workforce was replaced by returning soldiers and a flood of new migrants. This became a time of growth in the manufacturing industry and new technology was introduced to the country. The early 1950s, for instance, saw the creation of an Australian vehicle industry. However, there was little drive to export Australian manufactured goods.

The 1970s saw considerable change to traditional Australian trading patterns. The changes which caused this included:

- ❖ The entry of Britain into the European Economic Community (EEC) in 1971, and the resulting loss of Britain as Australia's major market
- ❖ The increasing level of industrialisation in Asia, particularly by Japan
- ❖ Falling transport costs throughout the world

As a response to this, Australia had an 'across the board' tariff cut of 25 per cent during that decade. By the early 1980s, the Federal Government again reduced reliance on industry protection and sought to co-ordinate policies across industries. A government body, Austcare, was set up in 1985 to initiate major programmes such as incentives to promote exports and to support companies which established new overseas markets. Other government policies to assist Australian industry included a 'buy Australian' campaign, a 150 per cent tax deduction for research and development grants for small firms, and tax relief for the purchase of new equipment. Major industries which have had to adjust to lower tariffs, but have received government support, include: motor vehicle manufacture, textiles, clothing and footwear, steel, shipbuilding, heavy engineering and communications equipment.



Major policies on overseas trade are the province of the Federal Government, but State and local governments also have a role to play. Federal and State Governments can select certain industries for development aid, help set up factories or develop overseas offices to promote goods and services. Local governments can attempt to attract industries to their area by setting attractive land rates and other advantageous conditions. All these activities are intended to create employment as well as a balance of trade favourable to Australia.

Finally, the main policy areas where governments can influence technological change include:

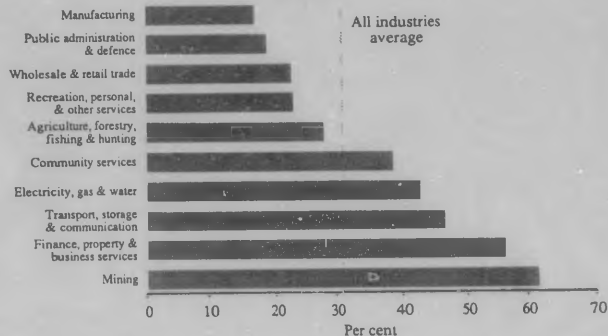
- ❖ Tariff protection and other import restrictions
- ❖ Taxation relief, export subsidies and other financial incentives
- ❖ Assistance with research, development and training
- ❖ Assisting with the changing of industrial conditions (such as work practices, award payments, etc)

The implications for employers

The challenge for Australian employers in a world of rapid technological change is to be innovative. They also need to make decisions about what portion of their profits to re-invest into further developing their companies. A further consideration is the need to come to arrangements with their employees about new work and training.

The challenge is a difficult one as large scale investment for an uncertain future is a difficult operation which may involve companies risking collapse if they make decisions which backfire on them.

CHART 5.1 GDP GROWTH RATE BY INDUSTRY, 1980-81 TO 1988-89
(PER CENT)



Source: Australian National Accounts: Gross Product, Employment, and Hours Worked, 1988-89, ADS Cat. No. 5211.0

Changes in Employment Categories

As the chart on the previous page shows, during the 1980s, Australian industries with the highest GDP growth rates were mining, finance, property and business services; and transport, storage and communication. Although technology is important within many of these sectors it is not always the driving force in their growth.

If we look at the growth in occupations within these industries, as shown in Tables 3.8 and 3.9, we can see that the fastest growing occupations between 1971 and 1986 were professional, technical and related workers (which includes architects, engineers, scientists, doctors, dentists, nurses, teachers and lawyers); clerical (book-keepers, cashiers, clerks, stenographers and typists); and service, sport and recreation (fire brigade, police, cooks, waiters, cleaners, beauticians and athletes). Many of these occupations involve the use of, if not the devising of new applications for, new technology.

TABLE 5.1 COMPUTING SERVICES INDUSTRY: SUMMARY OF OPERATIONS BY STATE, 1987-1988

	NSW	Vic.	Qld.	S.A.	W.A.	A.C.T.	Total (a)
	- Number -						
Companies	1,545	1,367	287	221	241	188	3,691
Employment -							
Proprietors	219	124	101	115	68	43	680
Male employees	6,273	4,435	906	499	639	377	13,187
Female employees	4,948	3,214	715	344	556	390	10,200
Total employment	11,440	7,773	1,722	958	1,263	810	24,067
	- \$ Million -						
Turnover	802.3	536.4	93.9	56.9	76.0	55.4	1628.2
Gross product	370.5	264.7	42.0	28.5	38.4	27.3	774.6
Net operating surplus	21.5	39.4	5.1	5.1	4.1	2.5	78.3

(a) Includes Tasmania and Northern Territory.

Source: *Computing Services Industry, Australia, 1987-88*, ABS Cat. No. 8669.0

The rapid introduction of computers into the workplace has had a big impact on service and retail industries. As shown in Table 5.2, the computer services industry in Australia during 1987-88 included 3,691 companies and employed 24,067 people (of whom 42.4 per cent were female), with a turnover of \$1,628.2 million. The largest sector of the industry was in consultancy, systems analysis, design and programming (52.8 per cent of turnover), followed by data processing or preparation services (25.2 per cent), with hardware sales worth 13.5 per cent. As you can see from the table, about 75 per cent of computer turnover was in computer services, rather than in the sales of computer products.

TABLE 5.2 COMPUTING SERVICES INDUSTRY: COMPONENTS OF TURNOVER, AND NON-OPERATING INCOME, AUSTRALIA, 1987-88

	AND NON-OPERATING INCOME, AUSTRALIA, 1997-98		Items	
	Number of Companies	\$ Million		Per cent
<i>Components of turnover -</i>				
Hardware/software consultancy and systems analysis, design and programming	3,328	859.3		52.8
Computer education and training	271	27.9		1.7
Data processing/preparation services	714	411.4		25.3
Software sales -				
on commission	88	4.7		0.3
other	324	59.9		3.7
Hardware sales -				
on commission	157	23.6		1.4
other	506	196.3		12.1
Microfiching and microfilming services	45	21.1		1.3
Other gross income	674	23.9		1.5
Turnover	3,795	1,628.2		100.0
<i>Non-operating income</i>				
Interest	1,208	12.6		n.a.
Royalties and license fees	125	88.8		n.a.

Source: *Computing Services Industry, Australia, 1987-88*, ABS Cat. No. 8669.0

Computers are now used in all industries. They can now be seen in places where they hardly existed a couple of decades ago; places such as:

- ❖ **Banks:** with their automatic telling machines.
- ❖ **Supermarkets:** where they are used to price goods at the cash register through the use of bar codes.
- ❖ **Retailers:** to keep track on how much stock of each item or part that is sold in the store.
- ❖ **Printing organisations:** where they are used to set out the layout of newspapers and magazines, and to design computer graphics.
- ❖ **Manufacturing companies:** to design and experiment with new materials, products, and machinery including the creation of more new technology.
- ❖ **Hospitals:** where the use of equipment such as CAT scans (computer aided tomography) and 'ultra-sound' allows doctors to look into our bodies to examine what may be wrong with us.
- ❖ **Scientific organisations:** to analyse and disseminate scientific data.

But new technology is more than just computers. There are other effects on the changes to the occupations we do as well. The development of the North-West Shelf Gas Project in Western Australia boosted work for engineers, fabricators, and surveyors through the use of technology not utilised in Australia before. Industrial Chemistry sees continual change in the types of metals and plastics with which we build and manufacture. Medical advances have seen new technology used to treat diseases or injuries and perform complex surgery such as transplants.

Some occupations will expand at the expense of others. The computer's introduction into the printing industry cost many jobs for typesetters and in composition work, but saw demand increase for computer operators and repair technicians. Labourers are and have been replaced by machinery and process workers by robots, but this machinery requires people to make, sell and service it.

A question raised by the advent of new technology is whether new technology means there will be a greater number of unskilled or semi-skilled people in our community, or whether there will actually be more skilled people. Labourers, process workers and some groups of tradespersons are declining as a proportion of the workforce as the work they do is replaced by **mechanisation**. However, the skills of an electrician, engineer, or plumber are still required and command good rates of pay. Many tradespeople were reported to be in short supply in 1988, as indicated in the table below.

TABLE 5.3 SKILLED OCCUPATIONS IN SHORTAGE, AUSTRALIA, 1988

<i>Trades</i>	<i>Trades (cont'd)</i>
Metal machinist	Printing machinist
Machine tool setter	Binder and finisher
Tool and die maker	Wood machinist
Boilermaker	Furniture polisher
Plumber	Upholsterer
Welder	Compositor
Sheetmetal worker	Graphic reproducer
Electrical mechanic	Machinery fitter
Electrical fitter	
Refrigeration mechanic	<i>Professionals and Para-professionals</i>
Computer technician	Securities and finance dealer
Carpenter/joiner	Radiographer (diagnostic)
Bricklayer	Engineers: Industrial, Electronic
Tiler (wall and floor)	Quantity surveyor
Vehicle mechanic	Computing professional
Panelbeater	Accountant
Vehicle painter	Securities and finance dealer
Automotive electrician	Nurse: General and Psychiatric
Chef/cook	Nurse administrator
Skilled waiter	Physiotherapist
Pastrycook	Occupational therapist
Cabinetmaker	Speech therapist

Source: *Industry Training in Australia: The Need for Change*, Department of Employment, Education and Training, 1988, Canberra

While the skills of some occupational groups may be declining, other new skills are becoming available within our society. Fast growing occupations include engineers, computer service technicians, computer systems analysts, computer programmers, computer operators, and electronics technicians. The answer to the question we looked at earlier seems to be that skill levels in our society are not declining, perhaps not even increasing, but they are certainly *changing*.

Another way the workforce is changing, is by the increased use of **multi-skilling** in the workplace. Multi-skilling involves training people to do a variety of different tasks, thereby providing the company with a more skilled, more flexible workforce, while increasing job satisfaction for the worker and reducing the risk of workers getting repetition injuries.

Education and training

A basic education covering reading, writing, and arithmetic is accepted as an essential preparation for entry into the labour force. Employers have stressed the importance of basic intellectual skills: the ability to draw inferences from written or mathematical information, understanding oral instructions, developing alternatives and reaching conclusions, expressing ideas intelligently and effectively, and an ability to learn in the workplace.

After this, how far does one go, and in what direction? After secondary school, an individual can go on to further education in an apprenticeship or by attending TAFE and CAE institutions, university or a teachers college. Educators often debate the degree to which institutions should direct their teaching and training to specialised areas directly related to certain occupations. If technological progress requires greater acquisition of scientific and technical skills in our community, should our education be designed around this? Certainly many employers would prefer job specific training at this level of education. However future employees are likely to change jobs and the jobs that they do are also likely to change. Therefore it is preferable to teach students how to think independently and to become adaptable to the world around them.

Training can also be undertaken within the workplace. As shown in table below, industries with the greatest training expenditure include: communication; chemical, petroleum and coal products; and mining. Training can be formal (involving study) or informal (on the job), although both forms have an initial cost to the employer. The anticipation with training is that skill levels within the company increase, thereby increasing the company's productivity, and perhaps bringing a higher level of innovation into it.

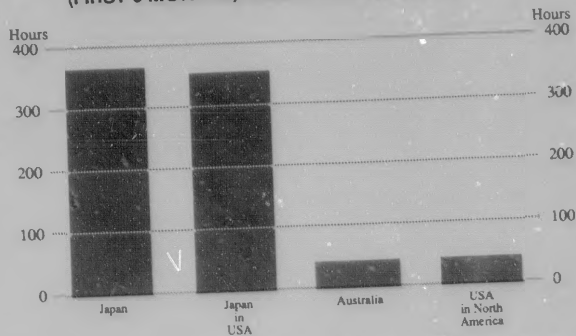
**TABLE 5.4 EXPENDITURE ON FORMAL TRAINING BY INDUSTRY,
AS A PERCENTAGE OF WAGES AND SALARIES, 1987-1988**

	Percentage of Wages and Salaries	Average Formal Training Per Employee (\$)
Agriculture	1.4	364
Mining	3.5	1,242
Manufacturing-	2.0	543
Food, beverages, and tobacco	1.5	480
Textiles, clothing and footwear	1.0	198
Paper, printing, etc.	2.2	629
Chemical, petroleum and coal products	3.4	1,012
Metal products, machinery, and equipment	1.6	363
Basic metal products	2.3	818
Fabricated metal products, other machinery, etc	1.5	271
Other	1.9	576
Electricity, gas and water	1.4	367
Construction	1.4	429
Wholesale trade	1.1	231
Retail trade	1.3	259
Transport and storage	3.0	839
Finance, property, services to business	2.4	599
Communication	4.9	1,439
Community services	0.6	106
Recreation, personal, and other services	1.7	352

Source: *Skill Formation and Structural Change*, Confederation of Australian Industry, December 1988

The Australian Council of Trade Unions (ACTU) has claimed that workers in Japan or at Japanese plants in the USA appear to get about eight times as much training time as Australian production workers, during the first six months of employment, as indicated in Chart 5.2. Their assertion is that this situation is one which needs to be examined by governments, industry and unions alike and try to improve the skills base of our country through the introduction of new policies.

**CHART 5.2 TRAINING HOURS FOR NEWLY HIRED PRODUCTION WORKERS
(FIRST 6 MONTHS): AUSTRALIA/JAPAN/USA**



Source: Australian Manufacturing and Industry Development: Policies and Prospects for the 1990s and into the 21st Century, ACTU, September 1990

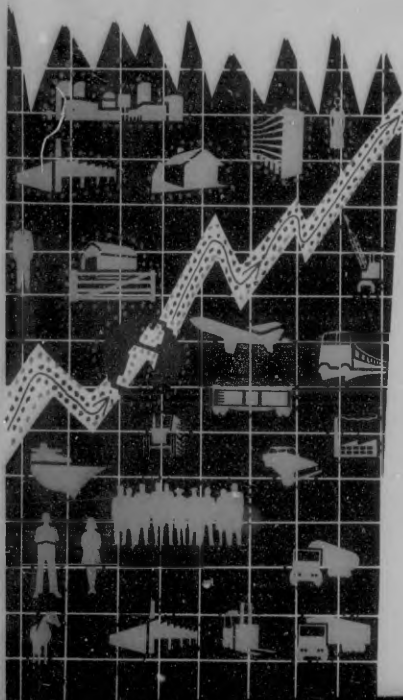
THE EFFECTS ON INDUSTRIES

❖ Technological change has major effects on the structure of Australian industry.

We have seen how technological change affects job types and the education and training of Australians, and that two ways of dealing with it include the training of workers and introducing more multi-skilling into the workplace. Government policy can affect the direction of Australian industry development by giving companies taxation assistance, financial incentives or by restricting imports. Manufacturers have the option of seeking to mechanise their methods of production, perhaps using fewer workers until new markets are set up which will allow workers to be taken on again. Trade unions recognise that, in the long term, their members will benefit by increasing industry productivity; otherwise Australian industry runs the risk of becoming uncompetitive on the world market.

Australian industry is constantly changing. Some established industries are in decline, or need to rethink and revamp their strategies for the future. In the past, the rural sector was able to develop markets for forest, meat, fish, grain, wool and other commodities because technology developed to allow the growth, harvest, and processing of large volumes of goods at competitive prices. Currently, some industries including the rural sector, face the challenge of selling their goods and produce in an increasingly competitive market. But, as we shall see later, this task is not an impossible one. By contrast, other new industries such as those dealing with computer goods and services are emerging on the wave of new technology in the 1990s.

If we look at Australia's National Accounts over the past decade, we can see that our gross domestic product (the value of goods and services produced in Australia) increased by 30.9 per cent (allowing for inflation) from 1980-81 to 1988-89. This is shown in Chart 5.1. Industries which grew faster than this rate included: mining, finance, property and business services, transport, storage and communication, electricity, gas and water, and community services. These industries can be regarded as **growth industries** (in terms of economic growth, as distinct from employment growth), because their share of Australian production is increasing.



Changes in Industry

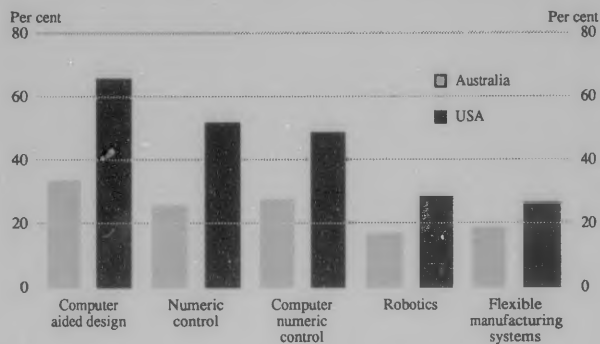
Growth is not just related to new technology. The growth in finance, property and business services, for instance, was probably linked more to the move towards a global market economy, or perhaps the deregulation of the financial sector. Access to capital from overseas meant more money was available for loans with which to buy property and companies. Similarly, community services may have grown either because of government willingness to spend more on social and community services, hospitals or schools; or it may reflect the growing numbers of aged persons, single parent families and/or unemployed.

The importance of technology to the mining, transportation or communication industries is more easily seen, and some examples are presented below.

- ❖ Off-shore gas drilling in the North-West Shelf gas project was a new technology to Australia, as was the bulk transport of gas to overseas markets. Other forms of mining in Australia overcame similar problems, developing heavy equipment and bulk transport facilities (such as trains, trucks, ships, rail lines, and ports).
- ❖ The communications industry is also rapidly changing. The satellites which replaced underwater telephone cables to carry telephone, fax or television messages may soon be displaced by optical fibre submarine cables. The fax machine allows transmission of written material over the telephone, to other countries if need be. Mobile phones and paging systems have meant that doctors, lawyers, technicians, tradespeople, salespersons and others are no longer tied to an office to receive calls. Multi-national companies would have considerable difficulties if some of these technologies were unavailable.
- ❖ The car industry developed in Australia as a response to increasing consumer acceptance of this form of transport technology.
- ❖ Rapid air transport has been a key factor in the emergence of an Australian tourist industry, and has assisted business to keep in touch with interstate and overseas developments. This affects not only hotel staff and tour operators, but leads to development of resorts and other facilities. Tourism also affects construction, leisure and other transport industries.

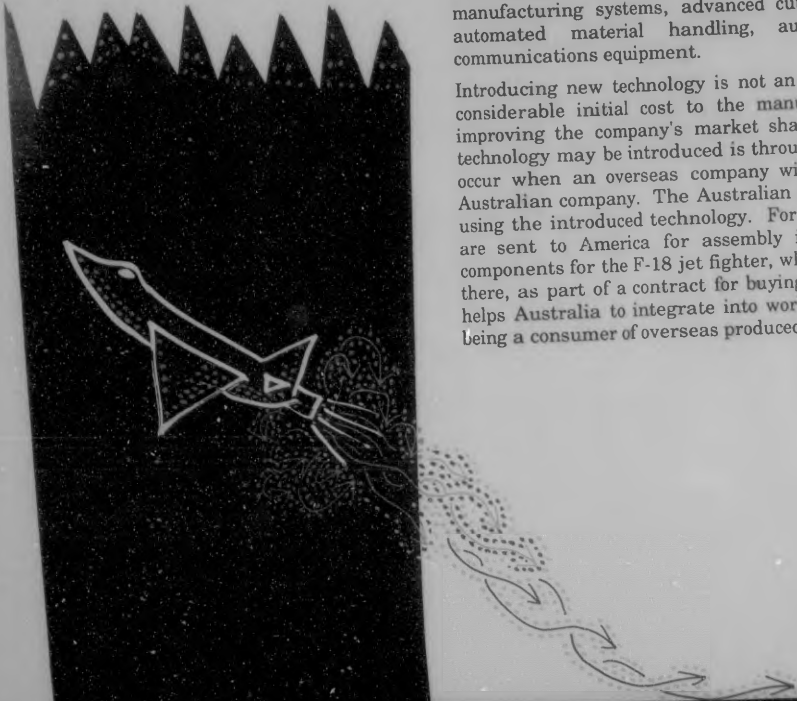
❖ Within the leisure industry, technological change in construction materials has meant that pleasure boats can be mass produced in fibreglass to standard designs, whereas previously boats were often individually built. We have also seen considerable growth in the use of gymnasiums, exercise equipment and electronic entertainment (such as compact discs, videos, computer games and so forth).

**CHART 5.3 ADOPTION OF NEW PRODUCTION TECHNOLOGIES (a),
AUSTRALIA AND USA**



(a) Percentage of surveyed firms with partial or full implementation of technologies.

Source: Touch Ross 1989 Manufacturing Surveys. Cited in *Australian Manufacturing and Industry Development: Policies and Prospects for the 1990s and Into the 21st Century*, ACTU, September 1990



Critics suggest that, while many industries have taken up new technology, Australian manufacturing industry has lagged behind our major competitors in this regard. Chart 5.3 on the previous page shows the extent to which **advanced manufacturing technology** has been taken up in **this country** as compared to the USA. Advanced manufacturing technology includes computer aided design and manufacture, numeric control/computer **numeric** control machines, flexible manufacturing systems, advanced cutting **technologies** (including lasers), robots, automated material handling, automated sensor based inspection, and communications equipment.

Introducing new technology is not an easy process, however, as this step involves considerable initial cost to the **manufacturer** yet often carries **no** guarantee of improving the company's market share with the goods produced. One way new technology may be introduced is through the use of **technology exchanges**, which occur when an overseas company with developed technology cooperates with an Australian company. The Australian company then makes some or all of a product, using the introduced technology. For example, Australia makes car engines which are sent to America for assembly into cars there. We have **also** made some components for the F-18 jet fighter, which are then exported to America for assembly there, as part of a contract for buying 80 of these aircraft. Technological exchange helps **Australia** to integrate into world markets as a producer, rather than simply being a consumer of overseas produced goods and a supplier of primary produce.

Trade unions

Trade unions also face a challenging future. They face the difficult task of sorting out the potentially difficult line between meeting the needs of their members and taking a positive role in the transformation of government and industry policy with regards to the introduction of new technology.

It is often the case that jobs are lost, sometimes for the short term, when a company re-structures and/or re-equips. However, unions are currently aware of the need to reduce the costs to industry and to make Australia more competitive in world markets. Otherwise, unions face the likelihood of jobs ending permanently when companies shut down or move their operations to another country.

Other areas of concern which unions are placing a great deal of attention on include the orderly introduction of change, and the re-training and multi-skilling of the workforce.

Productivity

One of the main benefits new technology can bring to industries is greater productivity, which involves producing goods and services at a lower cost. But how do we bring this about? Before we look into this issue more closely, we need to be aware that productivity is also related to many other issues, including;

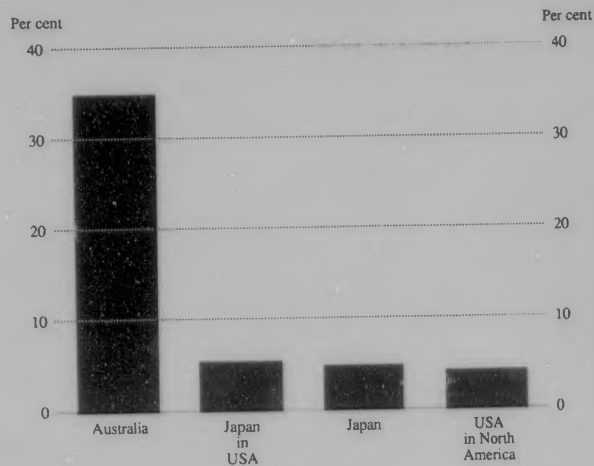
- ❖ **Costs of labour:** This relates essentially to the wages bill the company has to pay, but also includes the effect of restrictive work practices and inefficient management policy or techniques. While lowering the wages of workers may be a solution to this, it may result in many workers leaving the company for one with better rates of pay.
- ❖ **Turnover of staff:** Australian industry appears to have a much higher staff turnover rate than either Japan or the United States, as is shown in Chart 5.4. High staff turnover means constantly training new people to do the work, and having them leave, taking their skills with them.
- ❖ **Better trained or multi-skilled staff:** As stated in the previous section of this chapter, the training and multi-skilling of a company's workers can, lead to a more flexible and skilled workforce.
- ❖ **Non-labour costs:** This involves the cost of land rates, rental, taxation, energy usage and other factors which contribute to the cost of industry.

An ABS survey of manufacturers in 1988 found that the major reasons manufacturers introduced advanced technology were to increase product quality, increase output, lower labour costs, and to shorten delivery times. Other reasons included flexibility in the development of new products, improved working conditions, lower non-labour costs, and the need to replace existing equipment. This information is included in Chart 5.5.

Advanced technology can also improve efficiency in the design, manufacture, assembly and distribution stages of production, as shown in Table 5.5. Computer assisted machines are able to cut or shape metal or clothing to very precise specifications. Advanced technology can be used in fabrication, machining and assembly work on the shop floor. Lasers can be used for welding, cutting, marking and measuring. Robots can be used for simple "pick and place" action, or more

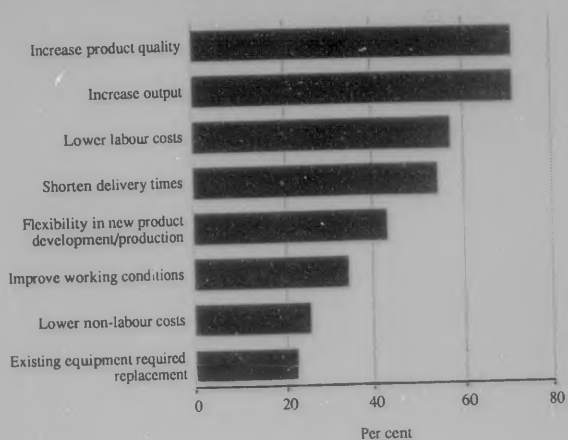
complex welding, assembly or painting. After production, goods may be stored in warehouses which use automated storage and retrieval systems.

CHART 5.4 LABOUR TURNOVER RATES: AUSTRALIA, JAPAN AND USA, 1987



Source: *Australian Manufacturing and Industry Development: Policies and Prospects for the 1990s and Into the 21st Century*, ACTU, September 1990

CHART 5.5 REASONS FOR INTRODUCING ADVANCED MANUFACTURING TECHNOLOGIES, AUSTRALIA, JUNE 1988



Source: *Manufacturing Technology Statistics, Australia, 1988, Summary, ABS Cat. No 8123.0*

**TABLE 5.5 ADVANCED MANUFACTURING TECHNOLOGIES HELD BY
AUSTRALIAN MANUFACTURING ESTABLISHMENTS (a), AT 30 JUNE, 1988**

<i>Detailed technology type</i>	<i>Number of establishments with each technology</i>	<i>Per cent of total with each technology(a)</i>
Design and engineering -		
Computer aided design and/or engineering	1,598	10.0
Computer aided design to control manufacturing machines	671	4.2
Digital representation of CAD output used in procurement activities	575	3.6
Fabrication, machining and assembly -		
Stand alone numerically controlled/computer numerically controlled machines	2109	13.3
Flexible manufacturing cells	176	1.1
Materials working laser	176	1.1
Advanced cutting technologies apart from lasers	719	4.5
Simple pick and place robots	351	2.2
Complex robots: used for spot welding, assembly, finishing, etc.	352	2.2
Automatic material handling -		
Automatic storage and retrieval system	304	1.9
Automated guided vehicle system	96	0.6
Automated sensor-based inspection/testing equipment -		
Performed on incoming materials or in process	447	2.8
Performed on final product	559	3.5
Communications and control -		
Local area computer network for technical data	479	3.0
Local area computer network for factory use	799	5.0
Programmable logic controller	2,157	13.5
Inter-company computer network linking plant to subcontractors/customers	463	2.9
Computer used for control on factory floor	1,182	7.4
Proportion of establishments having one or more technologies	5,272	33.0

(a) Includes establishments with 10 or more employees; out of a total of 15,976 establishments.

Source: *Manufacturing Technology Statistics, Australia, 30 June, 1988, Summary*, ABS Cat. No. 8123.0

The effects of trade

The move towards for technological change in Australia has largely arisen from the need for Australia to compete in the international trade arena. At present, we are moving into a new era of world trade relationships, with a considerable amount of competition for markets between countries. The **General Agreement on Tariffs and Trade** (GATT) is an international attempt to reduce the level of tariffs, which are seen as barriers to international trade. Tariffs may hinder countries which are efficient producers of goods and services, have workers on low wages, or those which have access to cheap transport. But how will this affect Australia?

A tariff is a trade barrier, usually a duty on imported goods at a rate high enough to make a similar locally produced article competitive in price.

Trade has two main components

- ❖ **Imports:** goods coming into Australia, and
- ❖ **Exports:** Australian goods sold overseas.

Some countries like Japan export far more than they import, which results in a strong economy. In 1988-89 Australia exported \$43.5 billion worth of products and services and imported \$47.0 billion worth, leaving a deficit in our balance of payments of \$3.6 billion, as Table 5.6 on the following page shows.

**TABLE 5.6 IMPORTS AND EXPORTS BY INDUSTRY OF ORIGIN,
AUSTRALIA, FINANCIAL YEAR 1988-89**

<i>Industry</i>	<i>Exports \$m</i>	<i>Imports \$m</i>	<i>Exports Per cent</i>	<i>Imports Per cent</i>
<i>Agriculture, forestry, fishing and hunting-</i>	<i>8,006.1</i>	<i>668.2</i>	<i>18.6</i>	<i>1.4</i>
Agriculture	7,942.1	645.4	18.3	1.4
Forestry and logging	5.4	3.0	-	-
Fishing and hunting	118.7	19.8	0.3	-
<i>Mining-</i>	<i>9,749.9</i>	<i>1,334.8</i>	<i>22.4</i>	<i>2.8</i>
Metallic minerals	4,243.9	47.3	9.8	0.1
Coal	4,647.4	8.1	10.7	-
Oil and gas	724.8	998.3	1.7	2.1
Construction materials	4.3	21.6	-	-
Other non-metallic minerals	129.3	259.6	0.3	0.6
<i>Manufacturing-</i>	<i>23,855.2</i>	<i>43,704.2</i>	<i>54.9</i>	<i>92.9</i>
Food, beverages and tobacco	6,089.3	1,861.8	14.0	4.0
Textiles	1,344.4	2,301.1	3.1	4.9
Clothing and footwear	85.6	1,046.8	0.2	2.2
Wood, wood products and furniture	475.3	1,022.4	1.1	2.2
Paper, paper products, printing and publishing	260.1	2,169.8	0.6	4.6
Chemical, petroleum and coal products	1,967.9	5,610.4	4.5	11.9
Non-metallic mineral products	130.4	874.8	0.3	1.9
Basic metal products	9,109.1	1,682.8	21.0	3.6
Fabricated metal products	535.1	1,323.3	1.2	2.8
Transport equipment	1,041.1	7,201.7	2.4	15.3
Other machinery and equipment	2,218.0	15,561.5	5.1	33.1
Miscellaneous manufacturing	599.0	3,047.9	1.4	6.5
<i>Other industries-</i>	<i>1,791.0</i>	<i>1,332.2</i>	<i>4.1</i>	<i>2.8</i>
Wholesale, retail and service industries	60.7	369.1	0.1	0.8
Confidential items; Waste and scrap nes; Second hand goods nes; Special goods	1,703.3	963.0	4.0	2.0
Total	43,462.2	47,039.4	100.0	100.0

Source: Foreign Trade, Australian Comparative and Summary Tables, ABS Cat. No. 5410.0; 1989-90 Imports, Australia: Annual Summary Tables, ABS Cat. No. 5426.0

TABLE 5.7 SELECTED AUSTRALIAN IMPORTS AND EXPORTS, AUSTRALIA
1983 AND 1990
 (\$ MILLION)

Trade Classification	Imports (12 months to June)		Exports (12 months to June)	
	1983	1990	1983	1990
Wood in chips or particles and wood waste	0.0	0.4	166.8	381.3
Wood in the rough or roughly squared	0.4	2.8	2.9	2.7
Wood simply worked, and railway sleepers of wood	163.5	513.1	13.5	13.9
Petroleum oils and oils obtained from bituminous minerals, crude	1,892.0	1,073.5	0.0	955.9
Liquefied propane and butane	-	9.8	-	160.1
Natural gas	-	0.5	-	312.5
Veneers, plywood, particle board and other wood, worked, n.e.s.	48.7	101.4	5.3	13.4
Wood manufactures, n.e.s.	35.9	95.5	1.7	6.7
Paper and paperboard	417.5	1,090.2	35.3	101.8
Paper and paperboard, cut to shape, and articles of paper	66.6	207.1	11.5	56.6
Internal combustion piston engines and parts, n.e.s.	247.7	720.9	109.3	273.3
Office machines	173.8	342.8	9.9	12.5
Automatic data processing machines & units; magnetic, optical readers; data transcribers and processors	486.5	2,016.9	20.0	163.2
Parts and accessories for use with office and automatic data processing machines	158.6	1,197.3	58.7	371.8
Televisions (including video monitors and projectors) whether or not combined with radios, video recorders	63.9	210.3	1.1	7.9
Sound recorders or reproducers; television image and sound recorders; prepared unrecorded media	268.4	360.1	1.7	16.1
Aircraft and associated equipment; spacecraft (incl. satellites, launch vehicles, and parts)	397.8	2,299.3	98.7	365.6
Ships, boats (incl hovercraft) and floating structures	203.3	477.9	25.6	218.9
Furniture and parts thereof; bedding, mattresses, supports cushions and stuffed furnishings	112.4	337.3	13.1	36.7

Source: *Overseas Trade Statistics*, ABS microfiche MMO3D and MX03D

In the financial year 1988-89, three quarters of our exports were commodities such as agriculture, forestry, and fishing; mining; food, beverages and tobacco; and basic metal products. By comparison, 92.9 per cent of our imports were manufactured goods; machinery and equipment; transport and equipment; and chemical, petroleum and coal products.

The success of countries like Japan, Taiwan, Korea, Hong Kong and Singapore in developing industries such as motor vehicle, clothing, footwear, and shipping has been based, in part, on the relatively low cost of labour in these countries. Because many Asian countries can produce goods cheaply, the goods appeal to a wide market which includes Australia. However, importing cheaper goods also means:

- ❖ A large proportion of the purchase price goes overseas to pay for the goods, and
- ❖ Little or no work is created for Australians.

In order to be able to afford overseas goods, Australia has to earn income from exports. If we can manufacture competitively priced goods from available resources, we create jobs and add value for the labour we have invested. Producing manufactured goods for the highly competitive world market is a difficult, but not impossible task. Table 5.8 shows how Australian motor vehicle exports (which include the manufacture of engines and components) have increased to bring in revenue to the country of \$649 million in 1989.

TABLE 5.8 TOTAL AUTOMOTIVE EXPORTS, AUSTRALIA, 1984-89
(\$ MILLION)

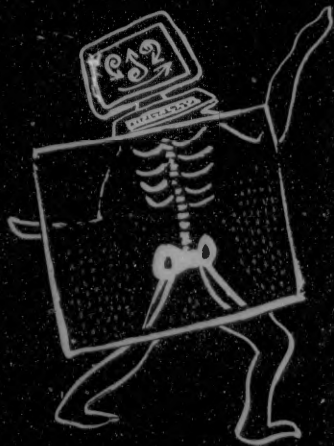
	1984	1985	1986	1987	1988	1989
Total produced motor vehicles	134	119	118	228	134	200
Engines	155	161	155	214	221	167
Components	120	144	170	228	280	282

Source: *Australian Manufacturing and Industry Development: Policies and Prospects For The 1990s and Into the 21st Century*, Australian Council of Trade Unions, March 1990

Commodities which Australia imported in large quantities during 1990 included: automatic data processing machines and units, magnetic readers, etc (\$2,017.0 million); parts and accessories for office and automatic data processing machines (\$1,197.3 million), paper and paperboard (\$1,090.2 million), and aircraft and associated equipment, etc (\$2,299.3 million) Table 5.7 also shows the development of some Australian manufactured products for export from 1983 to 1990. The imbalance between the trade in manufactured commodities (%s opposed to basic or primary products) is quite evident, and has largely contributed to an overall \$ 3.6 billion deficit for Australia in 1990.

In addition to manufactured goods, exports can take the form of services provided to others. These can include tourism, computer services, health and education. In order for Australia to be able to promote and provide these services in other countries, it will be necessary for Australians to have foreign language and marketing skills.

Pros and cons of technological change



An important consideration when looking at the effects of technological change are the likely environmental costs to the country. These environmental costs include such effects as: depleted fish reserves from large, well equipped fishing boat factories, effects of mineral mining, forest degradation, pollution from bleached paper mills, depleted wilderness, and the effects of agricultural fertilisers and pesticides on rivers and coastal ecosystems. Technology will constantly develop, and change the ways we do things, but its negative impact can be minimised if government, industry, and society work together to ensure that effective environmental policies are developed. Individuals can have a big impact if they make decisions about what they buy, and how they dispose of waste, with environmental welfare in mind.

When technological change creates large new areas of knowledge, as in medicine, specialisation of occupations may occur. In hospitals we now have chemists, radiologists, dieticians, nurses, anaesthetists, surgeons, and so on. While specialisation may lead to medical breakthroughs, it can sometimes lead to over-servicing which increases costs to the consumer.

Another disadvantage of new technology is the advances being made in the production of military weapons which have an increasingly destructive power.

New technology can also have beneficial effects to the community. Clean environmental technology, such as waste treatment plants or clean-up of polluted sites, is now a multi-billion dollar industry in countries like Germany and the United States. New solar and wind technologies are effective and lessen the use of fossil fuels. Recycling technology can also lessen wasteful consumption and help maintain our environment by re-using paper, glass, metal and industrial waste products.

The effects of technological change will continue to be complex and numerous for the foreseeable future, due to the rapid climb of technology during the 20th century. A key issue is to ensure that technology develops in harmony with nature, so that life's basic needs of clean air, water and food are maintained. Future government environmental policy will affect industry development and the directions of technological change.

INNOVATION AND THE FUTURE

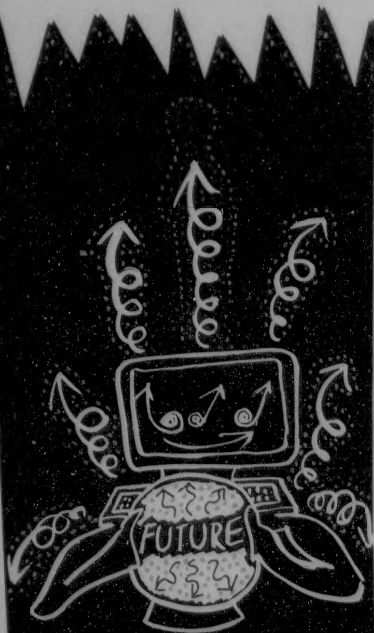
- ❖ The ways in which individuals, industry and government consider and implement technological innovation will significantly shape Australia's future.

Technological innovation is the use of established or new technology to create new products or services. **New** technology tends to be introduced more rapidly when companies see the likelihood of getting financial returns for their investment, or when governments see the benefits to the country from this new technology. At present, the development of solar and other alternative energy sources are being hindered by the perceived lack of profits to be made from their development, as compared to products which use 'traditional energy sources'. The American space effort is an example of governments taking an active part in promoting new programmes which use new technology.

The financing of innovative programmes using new technology can have beneficial 'spin offs'. Using our earlier example of the American space effort, for instance; this involvement led to advances being made in packaged foods, air conditioning, glues, metallurgy, propulsion, electronic control, navigation and communication systems (including satellite communications).

An important point to consider is that, in the long run, people determine which technologies should be developed and which are acceptable, and to what uses they will be put.

If Australia remains reliant on exports of primary products for most of its national income, the country's character will be different in 20 years time than if we develop manufactured commodities. For example, wood chip sales give us considerable income at present, but what effects will unplanned deforestation have on recreation, water quality, the diversity of animal life or climate? Intensive farming practices can cause soil degradation, which can lead to previously fertile land becoming barren. Can we put a cost on these factors and compare it to the income gained?



Research and Development

Education and training equip people for jobs and strengthen a company's competitive advantage in production. Similarly, research and development are necessary to make a company's products relevant and competitive in the marketplace. Research and development of new products can actually create new demand for products, and so change the pattern of what we buy. Similarly research and development can lead to more efficient production and better quality goods.

Innovation in the workplace can come from :

- ❖ Academic institutions
- ❖ Research organisations
- ❖ Industry
- ❖ Workers

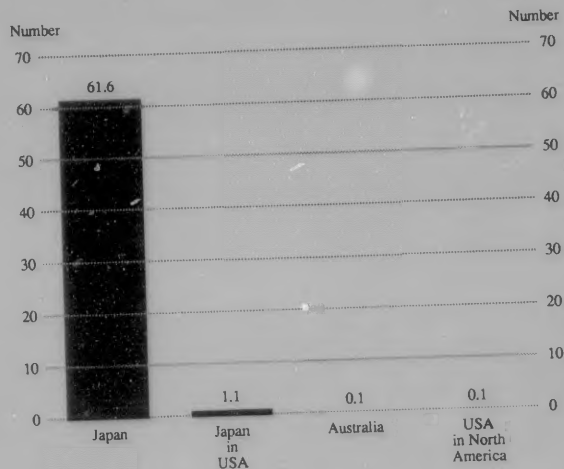
Academic institutions have been criticised by some circles for being too oriented in "pure science" such as astronomy, and not being relevant to the demands of local production. Research organisations such as Australia's Commonwealth Scientific and Industrial Research Organisation have often discovered new techniques, but for various reasons, many innovations have not been taken up by Australian companies. Industry is probably best placed to be more in tune in this regard, but any costs of research have to be born by the company, which acts as a disincentive to engage in research.

Workers in Australia have little input into innovation in the workplace. In Japan, the Japanese worker appears more likely to make suggestions about products or manufacturing processes, as shown in Chart 5.6 on the following page.

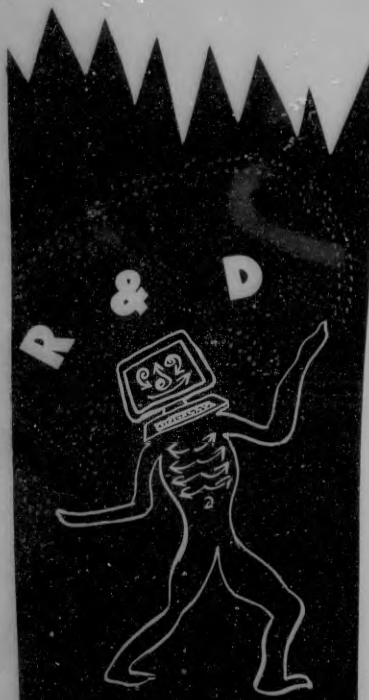
Leading industrial nations such as Japan, Sweden, Germany and the USA spend between 2.7 and 2.9 per cent of their countries' gross domestic product (GDP) on research and development, compared with Australia's 1.2 per cent of GDP, as shown in Table 5.9. In addition, whereas two thirds of Japan's research and development is privately funded, only a third of Australia's research is similarly funded. However, we must consider the size of Japanese companies as against Australian companies when making conclusions about these figures.

It may be that ideas created through the private sector are more successfully developed than when research is publicly funded, because the private sector may be closer to the sources of production. Australian industry may need to consider whether a greater commitment to research and development would improve its domestic and international ability to compete.

CHART 5.6 NUMBER OF SUGGESTIONS PER EMPLOYEE BY SELECTED COUNTRIES



Source: *Australian Manufacturing and Industry Development: Policies and Prospects for the 1990s and Into the 21st Century*, ACTU, September 1990



**TABLE 5.9 GROSS EXPENDITURE ON RESEARCH AND DEVELOPMENT (GERD)
IN OECD COUNTRIES, (LATEST YEAR AVAILABLE)**

Country	Ratio of GERD to GDP			Total
	Business	Government	University	
	Per cent			
Switzerland (1986)	2.24	0.18	0.37	2.88
Japan (1987)	1.89	0.28	0.57	2.87
Sweden (1987)	2.03	0.13	0.66	2.82
Germany (1988)	2.06	0.36	0.35	2.78
USA (1988)	1.87	0.31	0.41	2.66
Netherlands (1988)	1.37	0.38	0.49	2.40
UK (1986)	0.55	0.37	0.33	2.36
France (1988)	1.34	0.57	0.34	2.29
Norway (1987)	1.17	0.27	0.40	1.83
Finland (1988)	1.02	0.30	0.31	1.64
Belgium (1987)	1.14	0.07	0.31	1.59
Denmark (1987)	0.80	0.24	0.30	1.37
Canada (1988)	0.75	0.26	0.32	1.35
Austria (1988)	0.70	0.11	0.44	1.33
Australia (1987-88)	0.45	0.40	0.35	1.20
Italy (1988)	0.75	0.30	0.26	1.03
Ireland (1988)	0.63	0.19	0.16	0.99
New Zealand (1987)	0.21	0.57	0.18	0.97
Yugoslavia (1986)	0.42	0.29	0.18	0.88
Iceland (1986 estimate)	0.12	0.36	0.22	0.73
Spain (1988)	0.43	0.18	0.11	0.71
Turkey (1987)	0.42	0.07	0.06	0.55
Portugal (1986)	0.11	0.16	0.14	0.45
Greece (1986)	0.09	0.16	0.07	0.33

Source: *The 150% Taxation Concession for Research and Development Expenditure - Interim Report*, Bureau of Industrial Economics (1989), Canberra

TABLE 5.10 SOURCE OF RESEARCH AND DEVELOPMENT FUNDS FOR
SELECTED OECD COUNTRIES (LATEST YEAR AVAILABLE)

Country	Private Sector	Public Sector	Other
Japan (1984)	66.8	22.3	10.9
Sweden (1983)	60.6	36.6	2.8
W. Germany (1983)	59.1	39.4	1.5
United States (1985)	49.0	49.3	1.7
United Kingdom (1983)	42.1	50.4	7.5
France (1984)	40.6	53.6	5.8
Canada (1984)	38.6	52.9	8.5
Australia (1983-86)	32.2	65.2	2.8

Source: *Trading on Achievement*, Victorian Government, 1987

Leisure

Technological change and social change are linked. At the turn of the century, most societies were rural and work usually meant manual labour. At that time, it was common for people to work 60-80 hours a week, compared with today's 36-40 hours a week. Because the nature of work today is different, we now spend roughly as much time in leisure as we do working.

Because we have more time for leisure activities, the term "leisure industry" has come into being. Considerable money is spent on the pursuit of sport, fitness and recreation. A large proportion of the bus, train and plane passengers carried each year are pursuing recreation, not work.

Technology plays a large part in how we use our leisure time. Television has only been around since the 1950s but now is a part of our everyday existence. Compact disc players, walkmans, videos and computer games are more recent innovations. Hang gliding and wind surfing are other pursuits which we can now take on.

People also retire earlier now than 20 years ago, often at 55 years of age, and live longer. We therefore have leisure after our working lives, and this may differ from the leisure pursuits of younger persons. Leisure, like work, changes with the times.

FURTHER READING -

ABS sources:

1300.0 Year Book Australia

The principal general reference work of the ABS Central Office. Covers a wide range of social and economic data. Illustrated.

1301.2 Victorian Year Book

A comprehensive coverage of life in Victoria. Features articles, maps and photographs.

5211.0 Australian National Accounts: Gross Product, Employment, and Hours Worked, 1988-89

Indexes of employment, hours worked and gross product, by industry, at 1984-85 prices.

5410.0 Foreign Trade, Australian Comparative and Summary Tables 1989

Explains and compares various foreign trade measures published by the ABS. Summary statistics on Australia's major exports and imports, and their markets.

5426.0 1989-90 Imports, Australia: Annual Summary Tables

Contains three year time series on imports; with industry, broad economic category, and country information.

8123.0 Manufacturing Technology Statistics, Australia, 30 June 1988, Summary

Preliminary information on micro-electronic based technologies in Australian manufacturing establishments.

APPENDIX A

AUSTRALIAN STANDARD CLASSIFICATION of OCCUPATIONS

AUSTRALIAN STANDARD INDUSTRIAL CLASSIFICATION

Two of the main classifications used by the ABS were referred to in chapter three. They are the **Australian Standard Classification of Occupations (ASCO)** and the **Australian Standard Industrial Classification (ASIC)**. Although their main use is for classification work they also act as very comprehensive lists of jobs and industrial activities. At the broadest level, ASCO contains 1,079 distinct occupations covering all jobs in the Australian labour force.

The ASCO classification also provides information on the nature of the job, the skill level required for each unit group and an analysis of typical tasks. The following is an example taken from the unit groups shown on the next page:

4403-11 Bricklayers (Blocklayer) "lay bricks, precut stone, concrete blocks and other types of building blocks in mortar to construct and repair veneer and solid walls, foundations, partitions, arches and other structures." The skill level required to become a blocklayer is a trade certification honours degree. Tasks include, amongst others; examining plans and specifications, erecting scaffolding, sealing foundations with damp resistant materials, spreading layers of mortar to serve as base and binder for blocks, using trowels, and laying bricks in rows, designing or shaping and spreading mortar between the joints.

The following is an example of the ASCO classification from the **tradespersons** major group, to show how occupations are progressively classified under ASCO; it begins with the broad major groups and progresses down to increasingly detailed groupings, and finally, individual occupations (units). Note how the numerical code develops as this process takes place. Similar detail is available for the other occupational groups.

AN EXAMPLE OF THE AUSTRALIAN STANDARD CLASSIFICATION OF
OCCUPATIONS (ASCO)

Major Group 4 - Tradespersons

Minor Groups - Tradespersons in:

- | | |
|---------------------------------------|-----------------------------------|
| 41 - Metal Fitting & Machining Trades | 46 - Vehicle Trades |
| 42 - Other Metal Trades | 47 - Food Trades |
| 43 - Electrical & Electronics Trades | 48 - Amenity Horticultural Trades |
| 44 - Building Trades | 49 - Miscellaneous Trades |
| 45 - Printing Trades | |

Minor Group 44 - Building Tradespersons

Unit groups

- 4401 Carpenters & Joiners
- 4403 Bricklayers
- 4405 Painters, Decorators & Signwriters
- 4407 Plasterers
- 4409 Plumbers
- 4411 Roof Slaters & Tilers
- 4413 Wall & Floor Tilers

Unit group 4403 - Bricklayers

- | | |
|---------|------------------------------|
| 4403-01 | Supervisor, Bricklayers |
| 4403-11 | Bricklayer |
| | Blocklayer |
| | Chimney Builder |
| | Refractory Bricklayer |
| | Retort Settler (Bricklaying) |
| | Tuckpointer |
| 4403-91 | Apprentice Bricklayer |

Most ABS statistical tables on occupation, do not normally contain statistics for occupations coded to the maximum level of detail shown (six digit code level), as even at the unit group (four digit code) level the tables can be unwieldy in size, so for most tables the occupations are at the major or minor group levels.

MAJOR AND MINOR OCCUPATIONAL GROUPS FROM THE AUSTRALIAN STANDARD CLASSIFICATION OF OCCUPATIONS (ASCO)

Managers and administrators
Legislators & government appointed officials
General managers
Specialist managers
Farmers & farm managers
Managing supervisors (sales & service)
Managing supervisors (other business)

Professionals
Natural scientists
Building professionals & engineers
Health diagnosis & treatment practitioners
School teachers
Other teachers & instructors
Social professionals
Business professionals
Artists & related professionals
Miscellaneous professionals

Para-professionals
Medical & science technical officers & technicians
Engineering & building associates & technicians
Air & sea transport technical workers
Registered nurses
Police
Miscellaneous para-professionals

Tradespersons
Metal fitting & machining tradespersons
Other metal tradespersons
Electric & electronic tradespersons
Building tradespersons
Printing tradespersons
Vehicle tradespersons
Food tradespersons
Amenity horticulture tradespersons
Miscellaneous tradespersons

Clerks
Stenographers & typists
Data processing & business machine operators
numerical clerks
Filing, sorting & copying clerks
Material recording & despatching clerks
Receptionists, telephonists & messengers
Miscellaneous clerks
Salespersons & personal service workers
Investment, insurance & real estate salespersons
Sales representatives
Sales assistants
Tellers, cashiers & ticket salespersons
Miscellaneous salespersons
Personal service workers
Plant & machine operators, and drivers
Road & rail transport drivers
Mobile plant operators (except transport)
Stationary plant operators
Machine operators
Labourers & related workers
Trades assistants & factory hands
Agricultural labourers & related workers
Cleaners
Construction & mining labourers
Miscellaneous labourers & related workers

Classifying industry is much more difficult than classifying occupation. **Industry** deals with the work of the **enterprise** and not the individual worker, therefore problems arise when we try and code an enterprise such as a fishing co-operative which may catch the fish, then can or freeze them, and afterwards transport them to supermarkets, thus engaging in activities which cover each of the primary, secondary and tertiary sectors of industry. How should we then code the enterprise? The solution is to treat the enterprise as a series of industrial Subdivisions and thus assign an industry code to each workplace establishment within the enterprise; beginning with the fishing operation, then another to the processing operation, and other industry codes for the transport and wholesaling operations.

ASIC Divisions -

- A Agriculture, Forestry, Fishing and Hunting
- B Mining
- C Manufacturing
- D Electricity, Gas and Water
- E Construction
- F Wholesale and Retail Trade
- G Transport and Storage
- H Communication
- I Finance, Property and Business Services
- J Public Administration and Defence
- K Community Services
- L Recreation, Personal and Other Services
- M Non-Classifiable Economic Units

AN EXAMPLE OF AN INDUSTRIAL CLASS FROM ASIC

Division E: Construction

Subdivision 41: General Construction

Group 411: Building Construction

Class 4111: House Construction

Primary Activities

Alteration or addition to houses

House building

House construction, alteration,
renovation or general repair

Houses, prefabricated assembly,
erection or installation (on site)

Project management,
(house construction)

Repair or renovation of houses (general
service)

The next classes are -

Class 4112: Residential Building Construction Not Elsewhere Classified

Class 4113: Non-Residential Building Construction

APPENDIX B

QUESTIONNAIRE DESIGN

The first step

The first step in designing a questionnaire is to find out:

- ☆ Who wants the information
- ☆ Why they want the information
- ☆ What information they want
- ☆ Who will supply the information

Without answers to these four questions you cannot design an effective questionnaire.

Until you know who wants the information you cannot ask them what information they want and why they want it.

Until you know what information they want and why, it is impossible to formulate questions which will give the information required. Furthermore, every question you ask must be justified in terms of a clear need for the information. The reason for this is that the shorter you can make the questionnaire, the easier it will be to design, the more likely it is to be completed and the more likely the information supplied will be correct. Nobody likes filling in forms or answering questions, particularly if they do not seem relevant. Avoid the temptation to include questions for the sake of it, or because the information "may" become useful, or "somebody might" be interested in this data.

If you do not know who is going to supply the information you are not going to get it regardless of how necessary it may be. The person who supplies you with information is called a **respondent**. If you know who your respondents are you can plan your questions and layout to suit them, thus making it easier to get the information you seek.

Question types

There are 2 basic types of question:

☆ Open Questions

☆ Closed Questions

Open questions are like essay questions, they give the respondent an opportunity to comment and explore the options. An example of an open question is *What is the weather like at the moment?* It is largely up to the respondent to decide how they will answer the question. They could respond with "It's raining" or give you a detailed description including; air pressure, wind speed and direction, humidity, temperature, precipitation in the last 24 hours, cloud cover and a forecast for the next three days. The response to an open question is can be quite complex and unstructured, because of this the information received is often difficult to analyse.

Closed questions only require a yes/no answer, or they present a limited number of choices, like multiple choice questions. A question such as *Is it raining?* is a closed question, the respondent's only options for answering are "yes" or "no". Closed questions do not give you much information, but the data they give are easily handled.

Multiple choice questions must be carefully worded because:

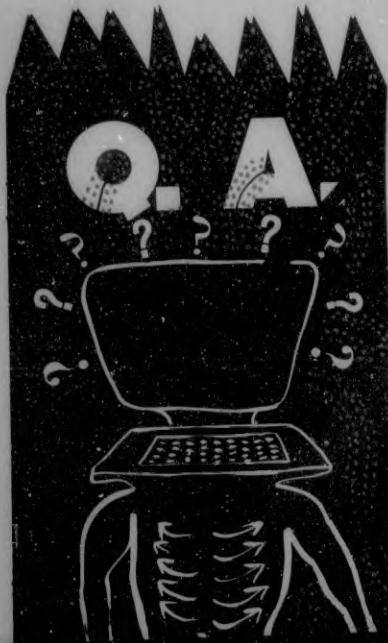
- ☆ The respondent may not understand your alternatives
- ☆ The respondent may not think your alternatives are appropriate

-
- ☆ The respondent may have an answer that does not fall into one of the alternatives you have presented

Make sure you use clearly explained logical alternatives which include all the possible responses. Sometimes it may not be possible to provide an **exhaustive** list of all possible responses, in that case you should use an *Other (please specify)* category.

You can find out the appropriate alternatives by first trying the question as an open question, using the responses as a guide to what alternatives you could use in a closed question on the final questionnaire.

When asking multiple choice questions in an interview you can use prompt cards. These are simply lists of the alternatives, which you can show your respondent and allow them to select the appropriate one. They can be a great time saver and easier on both the interviewer and the respondent.



Question layout

Questions must be logically laid out and this logic must be evident to the respondent. Question layout should be designed:

- ☆ **Initially to provide and then maintain the respondents' motivation to complete the questionnaire.** The questionnaire must be attractively laid out and begin with simple straightforward questions relevant to the respondents' expectations of the information required of them.
- ☆ **Aid respondent recall.** If you want the respondent to remember information or answer questions from memory, ensure that all questions relating to the piece of information are together. For example if you ask a respondent what the names of his or her children are, ask their ages directly after, not three or four pages later.
- ☆ **Direct respondents to information sources.** If you want the respondent to get information from documents like tax returns, motor vehicle licences or a birth certificates etc. tell them in the questionnaire to go to these sources.
- ☆ **Be relevant to respondents' own records:** Try to use the same layout as the records the respondent is using. Use the same wording, question order and definitions of terms.
- ☆ **Appear sensible to the respondent:** the layout must appear sensible to the respondent - clear, logical and easy to follow.

The sequence of questions

There are four principals which govern the way people fill in a questionnaire. They are more relevant to self-administered questionnaires, but they are also useful when considering the layout of interviewer questionnaires. These principles are:

- ☆ **The principle of linear progression:** Respondents work through questions as they appear on the questionnaire until clearly told to do otherwise. It is important that the sequence of the questions is the order in which you want the questions answered and it is obvious to the respondent. Avoid having the respondent jump around the questionnaire.

- ☆ **The principle of least reading effort:** People will only read enough to keep on completing a questionnaire. Few people actually bother to read instructions. Instructions should appear in or near the question rather than on a separate page.
- ☆ **The principle of question routing:** The respondent will move directly to a next question once instructed to do so, or if they believe they have completed the previous question. It is too late to give the respondent instructions or explanations once they have gone to the next question.
- ☆ **The principle of question omission:** Respondents will omit questions which do not seem to apply to them, or they will answer what they thought you should have asked. You must make it clear which questions you want answered.

It is also worth keeping in mind that when respondents are confused they will read the next question to see if it clarifies the problem, review the questions and answer provided to the previous questions or review the local topic content. Therefore try to keep questions on related topics together.

Filter questions

A useful device in questionnaire layout is the filter question. Filter questions direct the respondent/interviewer to the relevant parts of the questionnaire. They are normally closed questions and contain instructions like *Go to Question 5* which depend on the response given. By using filter questions it is possible to guide an interviewer or a respondent through very long and complex questionnaires by directing them only to the questions relevant to them. This saves a lot of work for the respondent and avoids them writing "not applicable" on questions not relevant to them.

Language

- ☆ **Use short sentences:** Short sentences are easier to understand. If you feel the need for a semi-colon or a string of commas you can probably break the sentence down to two or more shorter sentences.
- ☆ **Use simple words:** Words such as *certification*, *registration* and *application* can often be replaced by their equivalent verbs: *certify*, *register* and *apply* by restructuring the sentence. Sentences using the verb rather than the noun are often shorter and easier to understand.
- ☆ **Keep the clauses in chronological order** Put the clauses of a sentence in the same order in which the actions occur in real life. For example the sentence *Please fill in the questionnaire after reading the instructions* would be better written *Please read the instructions before you fill in the questionnaire*. This is because in real life you want the respondent to read the instructions first.
- ☆ **Use positive questions:** Most people become confused when presented with negative questions. It is often impossible to decide whether the respondent means *Yes I did* or *No I did* to a negative question. Ask respondents to tick the appropriate response rather than cross out what is not appropriate.
- ☆ **Use a conversational style:** Try to adopt a friendly conversational style. Do not omit words for the sake of brevity when they assist understanding or would normally be included in the equivalent verbal statement. This is the only reason for breaking the rule of using short sentences. For example, *Please comment* sounds cold and bureaucratic and may confuse the respondent if they are unsure what they are supposed to be commenting about. Giving examples also helps. *Would you please comment on any aspects of this questionnaire, for example did you have difficulty understanding any of the questions or instructions* is much more informative and friendly. Using examples help.
- ☆ **Use plain straightforward language** Use the most widely understood word, for example *help* rather than *assist*, *now* rather than *currently*. Explain all technical terms when they cannot be avoided.

Problem questions

Certain types of questions always cause trouble. These should be avoided wherever possible. The following are some examples:

- ☆ **Ambiguous questions:** If a question can be read in two ways, different people will read it differently and give different answers. For example the question *How much money did you earn in the last year* although apparently straightforward is quite ambiguous, do you mean the last 12 months, the last calendar year or the last financial year?

Avoid words that have no general meaning, for example; "fairly", "kind of", "generally", "occasionally", "often" and "many". These words will often be misinterpreted, because, for example, what is "often" for one person is "seldom" for another.

- ☆ **Leading Questions:** Leading questions imply by their content or structure you want a certain answer. You can get somebody to agree or disagree to any question if you ask it in the right way. For example, to answer "no" to the question *Do you believe a healthy team sport should be available to all young Australians in primary school?* implies you either hate children, are unpatriotic, a slob or all three.

Leading questions are often used in advertisements.

Prompt cards can also be leading. For example, if you are asking a respondent to list sporting activities in the last month it is sensible to present him or her with a prompt card listing the common sports. It is impossible to list all the sports in which they may have taken part and keep the list to a manageable length. But presenting only a limited number of options may lead your respondent to ignore sports not included on the prompt card.

-
- ☆ **Presuming Questions:** Do not assume anything about the respondent. For example, do not question people about their children unless you know they have children. Filter questions are particularly useful in determining if a particular question applies to a respondent or not.
 - ☆ **Opinion Questions:** Asking a respondent their opinion on an issue is fraught with difficulties. The respondent may not have given the issue much thought. If they have not considered the question they may not have formed an opinion, or their opinion may be superficial. A person's opinion may be many sided. A person who agrees with abortion could have a wide range of views from "on demand" to "only when the mother's life is threatened". People's opinions, also vary in intensity. A person may hold a view strongly or indifferently. Some rarely change their opinions, others may often change them. If the issue is controversial the respondent may answer as he or she thinks they should, rather than what they actually think. For these reasons opinion questions can be particularly sensitive to wording, question sequence and emphasis.
 - ☆ **Embarrassing Questions:** Unless sensitively treated, people will either refuse to answer or give socially acceptable answers to embarrassing questions. You must be aware of differences between cultures and even individuals. Guaranteeing confidentiality or anonymous questionnaires can help.
 - ☆ **Questions Involving Memory:** Two factors affect a respondent's memory: how long ago the event took place and how significant the event was to the respondent. For example if you asked the question *How many times have you been to the cinema in the last twelve months?* the respondent may either forget or include cinema visits which occurred outside the twelve month period. It is difficult to predict which is the most likely. Generally, short periods of recall hold the danger of over reporting and long periods of recall under reporting.

Testing

When you are designing a questionnaire it is important to test it before inflicting it on your hapless respondents. This is because what may be clear, sensible and obvious to you may not make any sense at all to the person who must fill out the questionnaire. If you completely ignore the advice given in the rest of this appendix, but test the questionnaire, you will quickly find the problems. The need for testing cannot be overstated.

There are four ways to test a questionnaire. Try to carry out all four, because each gives a different perspective on its performance.

- ☆ **Observational Studies:** Observational studies are intended to reveal how the respondent actually goes about completing the form and what is going through his or her head at the time. They involve watching respondent fill out a questionnaire and asking for their comments immediately afterwards. It requires two people, as well as the respondent, one to take notes and observe and the other to do the talking.

In the first part of the study the respondent is allowed to fill the questionnaire in front of the two observers without being interrupted. If the respondent asks any questions one of the observers reflects the questions back to them. For example, if they ask *What does question six mean?* the observer not taking notes should respond *What do you think it means?* The second observer should note all the questions asked and what the respondent does; which instructions they read, where do they stop and think, where do they retrace their steps, when do they have to refer to their own records etc.

In the second part of the observational study the respondent should be encouraged to comment freely on the questionnaire. One observer should ask questions and get the respondent's thoughts and ideas. The other observer should continue to take notes.

Do not try to defend the questionnaire, its designer or the organisation carrying out the survey, regardless of how unfair the criticism may appear. If you do you will either end up in an argument or the comments from your respondent will abruptly dry up.

- ☆ **Analysis of errors:** An analysis of errors can only be done if you have access to completed questionnaires from the past, similar to the one you are designing. The analysis helps to find out what has gone wrong in the past and what the effects of the problems were on the completed questionnaire. By examining a sample of completed forms from the past you can analyse the mistakes made by respondents and see how often they occurred. This will help you avoid past errors and give you an insight into the kinds of problems you can expect.
- ☆ **Group discussions:** Group discussions are intended to get the thoughts and ideas of the people directly involved in designing, processing and using the information from your questionnaire. You simply assemble them in a room and go through the questions with them one by one. It takes a surprising amount of skill to do this properly. You have to keep the conversation lively and interesting and yet at the same time allow everybody a full opportunity to express their ideas. It can be difficult to get the comments out of some people who may be shy or feel intimidated by other members of the group. This is more effective than merely asking for comments, because it forces people to think about the questionnaire, bounce ideas off one and other and gives you the opportunity to ask questions and get clarifications.
- ☆ **Pilot testing:** Pilot testing is intended to find out whether your survey is likely to be practical in the real world. It is simply dress rehearsal of the survey on a small sample of your respondents. It will **not** tell you what your respondents think of your questionnaire, unless it is so bad they all refuse to cooperate, but it will tell you if your system for distributing, collecting, processing and analysing the information will work, before you go to the trouble of launching your working questionnaire.

A final word

There is no such thing as a perfect questionnaire. Every questionnaire is a compromise between the needs of the people who want the data, the people who supply the data and anyone else involved.

The most important people are the respondents. They have the information you want and you have to persuade them that you are a responsible person who can be trusted with it, yet in most questionnaire design exercises they are the last people considered, if at all. Language or layout which will work with one set of respondents, say, a group of doctors, will not work with another group, for example, migrant workers in a car factory. Questions which may be ambiguous to one group in the community will be quite straightforward to another. What is seen as intrusive to one group will be answered without a second thought by others. If you have respondents from a wide variety of backgrounds, you must make compromises.

Don't bother too much about theoretical questions of questionnaire design. Go out and ask your respondents. Test your Questionnaires!

DIRECTORY OF TABLES, DIAGRAMS AND CHARTS

Tables	Page
Chapter 1	9
1.1 A selection of population census data for Warrnambool City	21
1.2 People aged 10-19 years as a proportion of the total population, States, Territories and Australia, 30 June 1986	
Chapter 2	47
2.1 Labour force participation rates, by age, Australia, at selected censuses	49
2.2 Labour force status, by sex, Australia, censuses 1947 - 1986	51
2.3 Employed people by employment status, Australia, selected censuses	53
2.4 People not in the labour force, main reason for not actively looking for work, September 1989	55
2.5 Time spent on unpaid household work, Sydney statistical division, May/June 1987	60
2.6 Gross domestic product, income approach, Australia	62
2.7 Household income, Victoria	62
2.8 Spending by individuals, Victoria	63
2.9 Farm income, Victoria	65
2.10 International comparisons of estimates of unpaid household work	67
2.11 Australia's social welfare, a history	
Chapter 3	74
3.1 Australian population growth since European settlement, time elapsed between successive millions, 1788-1986	77
3.2 Population of Australian Colonies, 1851 - 1901	78
3.3 Population of Australian States 1966 - 1987	79
3.4 Population of Australian capital cities, 1921 - 1986	87
3.5 Occupation, major groups, Australia, 30 June 1986	88
3.6 Persons employed by industry sector, by sex, Australia, 30 June 1986	90
3.7 Proportion of the workforce in the government and private sector, Australia, 1939-1986	92
3.8 Employed persons: occupational structure change, Australia 1971 - 1986	93
3.9 Percentage distribution of employed persons by occupation, Australia, 1971-86	95
3.10 Change in selected 'white-collar' occupations, Australia, 1971 - 1981	97
3.11 Percentages of employed persons in industry groups, Australia, 1982 - 1988	98
3.12 Persons employed part-time as a proportion of total employed persons, Australia, 1967 - 1989	99
3.13 Part-time workers: whether preferred to work more hours, Australia, August 1989	101
3.14 Persons aged 15 to 64 years: labour force status by whether attending an educational institution, May 1989	104
3.15 Aborigines and Torres Strait Islanders aged 15 years or over: unemployment rates, Australia, 30 June 1986	

DIRECTORY OF TABLES, DIAGRAMS AND CHARTS

Tables	Page
Chapter 3 (continued)	105
3.16 Unemployment rates by age group, Australia, 1967 to 1989	108
3.17 Occupation by age group, Australia, 30 June 1986	111
3.18 Attitudes to job suitability by sex, Great Britain, 1987	112
3.19 Selected occupations in Victoria, 1881 census	114
3.20 Employed persons: major occupation groups and selected minor groups, Australia, February 1990	117
3.21 Employed persons: occupation by educational attainment, Australia, February 1989	119
3.22 Number of persons of coloured races in Victoria at the census of 1911	122
3.23 Aborigines and Torres Strait Islanders aged 15 years and over: age by labour force status and sex, Australia, 30 June 1986	123
3.24 Employed Aborigines and Torres Strait Islanders: occupation by level of qualification, Australia, 30 June 1986	124
3.25 People aged 15 years and over: level of qualification by whether Australian-born and by sex, Australia, 30 June 1986	126
3.26 Employed people born overseas: major occupation group by selected birthplace, Australia, 30 June 1986	129
3.27 Occupations of males and females at the censuses of 1871 and 1881, arranged in fifteen orders, Victoria	130
3.28 Annual income of persons aged 15 years or over, Australia, 30 June 1986	131
3.29 Unemployment rates of persons aged 15 years or over, selected Victorian statistical local areas, 30 June 1986	
Chapter 4	140
4.1 Private sector capital expenditure, by state	141
4.2 Public sector capital expenditure	141
4.3 Average rates of change of investment, by industry sector	143
4.4 Persons employed, by industry	143
4.5 Growth rate of production, by industry, per person employed	144
4.6 Value of production of goods and services, by industry	147
4.7 Job leavers due to unsatisfactory work conditions, by industry, Australia, year ending February	148
4.8 Persons who ceased a job, by industry, Australia, year ending February	148
4.9 Persons who changed jobs, Australia, year ended February	150
4.10 Foreign ownership of selected industry sectors, Australia, June 1986	150
4.11 Foreign control of selected industry sectors, Australia, June 1986	153
4.12 Average weekly total earnings and hours paid for: full-time non-managerial employees, industries, Australia, May 1989	154
4.13 Average weekly total earnings and hours paid for: full-time non-managerial employees, Australia, May 1989	154
4.14 Average weekly total earnings of full-time adult managerial employees, by sector, Australia, May 1989	157
4.15 Company profits before income tax, by industry	158
4.16 Wage and salary component of GDP	162
4.17 Trade union members: proportion of total employees	

DIRECTORY OF TABLES, DIAGRAMS AND CHARTS

	Page
Tables	
Chapter 4 (continued)	164
4.18 Age pension benefit numbers, 1986-89	165
4.19 Unemployment benefit numbers, 1986-89	165
4.20 Sole parent benefit numbers, 1986-89	167
4.21 Government social welfare spending by level of government and purpose, 1982-83 - 1988-89	171
4.22 State and Local Government, total taxation, percentage change from previous year	172
4.23 Total taxation by level of government	
Chapter 5	184
5.1 Computing services industry: summary of operations by State, 1987-88	185
5.2 Computing services industry: components of turnover and non-operating income, Australia, 1987-88	187
5.3 Skilled occupations in shortage, Australia, 1988	189
5.4 Expenditure on formal training by industry, as a percentage of wages and salaries, 1987-88	199
5.5 Advanced manufacturing technologies held by Australian manufacturing establishments, 30 June 1988	201
5.6 Imports and exports by industry of origin, Australia, 1988-89	202
5.7 Selected Australian imports and exports, 1983 and 1990	203
5.8 Total automotive exports, Australia, 1984-89	209
5.9 Gross expenditure on research and development in OECD countries, latest year available	210
5.10 Source of research and development funds for selected OECD countries, latest year available	
Diagrams	
Chapter 1	19
1.1 Some of the features of a table of statistical data	20
1.2 Age distribution of the Australian population; wafered by age-groups	20
1.3 Age distribution of the Australian population; wafered by gender	
Chapter 3	81
3.1 Towns and cities in Victoria with a population of one hundred or more people, 30 June 1986	
Charts	
Chapter 1	24
1.1 Marital status, Australia, 30 June 1986	24
1.2 New motor vehicles registered, Victoria, 1986 to 1989	

DIRECTORY OF TABLES, DIAGRAMS AND CHARTS

Charts	Page
Chapter 1 (continued)	26
1.3 Level of qualification, Australia, 30 June 1986	27
1.4 The speed of animals	28
1.5 New York City weather summary, 1980	29
1.6 Males in the labour force: unemployment rates, Australia, 1978 to 1984 (version one)	29
1.7 Males in the labour force: unemployment rates, Australia, 1978 to 1984 (version two)	30
1.8 Males in the labour force: unemployment rates, Australia, 1978 to 1984 (version three)	31
1.9 Proportion of the population who were Christian, by main birthplace group and age, Victoria, 30 June 1986	32
1.10 Total population: proportion who were Christian, by main birthplace group and age, Victoria, 30 June 1986	
Chapter 2	44
2.1 The labour force framework, Australia, September 1989	46
2.2 Labour force participation rates by sex, Australia, census years	48
2.3 Labour force participation rates, by age, Australia, September 1989	50
2.4 Unemployment rates, by sex, Australia, census years	52
2.5 Labour force status and employment status, Australia, 1986 census	61
2.6 Gross domestic product at average 1984-85 prices, Australia, 1982-83 to 1988-89	
Chapter 3	75
3.1 Population increase and components of increase, Australia, 1901 - 1985	80
3.2 The urban population as a proportion of the total population, States and Australia, 1921 and 1986 censuses	89
3.3 Proportion of the workforce in each industry sector, Australia, 1901 - 1986	106
3.4 Unemployed persons: median duration of unemployment, by age and sex, Australia, June 1989	110
3.5 Age distribution pyramids, Australia, 1921 census and 2021 projection	116
3.6 Labour force: educational attainment and employment status by sex, Australia, February 1989	122
3.7 Aborigines and Torres Strait Islanders: participation rates by age group, Australia, 30 June 1986	123
3.8 Aborigines and Torres Strait Islanders: unemployment rates by age group, Australia, 30 June 1986	
Chapter 4	146
4.1 Levels of under-full employment, Australia, 1980 - 1988	155
4.2 Engineering graduates, average starting salary by major industry sector, 12 months to October 1990	156
4.3 How much should they earn? What Australians think	159
4.4 Full-time workers: average earnings by income decile, 1985-86	161
4.5 Full-time workers: average income by broad occupation groups, 1985-86	

DIRECTORY OF TABLES, DIAGRAMS AND CHARTS

		Page
Charts		
Chapter 4 (continued)		163
4.6	Proportion of all employees who were members of a trade union, by selected industries, August 1988	168
4.7	Government spending on health, social security and welfare	170
4.8	State and local government taxation per head of population, by State, 1988-89	174
4.9	Incidence of awards, all employees by industry, percentage of employees covered	
Chapter 5		183
5.1	GPD growth rate by industry, 1980-81 - 1988-89	190
5.2	Training hours for newly hired production workers, (first six months): Australia, Japan, USA	193
5.3	Adoption of new production technologies, Australia and USA	197
5.4	Labour turnover rates: Australia, Japan and USA, 1987	198
5.5	Reasons for introducing advanced manufacturing technologies, Australia, June 1988	208
5.6	Number of suggestions per employee, by selected countries	

ILLUSTRATIONS - DAVID JEFFRIES DESIGN - (03) 670 4394



2013322012901

ISBN 0 642 15757 X