DOCUMENT RESUME

ED 470 940 CE 084 126

AUTHOR	Maglen, Leo; Hopkins, Sonnie
TITLE	Australia in the Emerging Global Knowledge Economy: Changing Employment Patterns 1986-7 to 1999-00. Working Paper.
INSTITUTION	Monash Univ., Clayton, Victoria (Australia). Centre for the Economics of Education and Training.
SPONS AGENCY	Australian National Training Authority, Melbourne.
REPORT NO	CEET-32
PUB DATE	2000-10-00
NOTE	75p.
AVAILABLE FROM	For full text: http://www.education.monash.edu.au/centres/ceet/WP0321.rtf.
PUB TYPE	Reports - Research (143)
EDRS PRICE	EDRS Price MF01/PC04 Plus Postage.
DESCRIPTORS	Age Differences; *Classification; *Economic Change; *Employment Patterns; Foreign Countries; Global Approach; Job Skills; *Occupational Clusters; Part Time Employment; Sex Differences; Trend Analysis; Vocational Education; Young Adults
IDENTIFIERS	*Australia; Globalization; *Information Economy; Symbolic Analysis

ABSTRACT

Australian employment patterns for 1986-2000 are depicted in this report using a framework of nine occupational categories classified in terms of level/nature of skills and degree/nature of exposure to globalization. The categories are as follows: symbolic analytical services (conceptual, technical), in-person services (professional, intermediate, elementary), and routine production services (advanced skill, white collar, blue collar, low skill). By category, 31 tables and 43 figures depict the following: (1) current employment patterns; (2) overall occupational change, 1986-2000; (3) occupational change by hours worked; (4) change by gender; (5) change by age; (6) change for 15-19 year-olds; and (7) change for 20-24 year-olds. Major findings summarized in the report are as follows: (1) substantial growth in symbolic analytical services (conceptual), which are most in demand in the knowledge economy; (2) low participation of young people in this category; (3) other areas of greatest growth in occupations that are most vulnerable to the global economy; (4) youth employment increasing in part-time, casual, low skilled occupations; and (5) stagnating growth in routine production services (advanced skill), a major area served by vocational education. Appendices contain the four-digit occupational codes from the Australian Standard Classification of Occupations for occupations in the nine categories. (SK)

MONASH UNIVERSITY – ACER

CENTRE FOR THE ECONOMICS OF EDUCATION AND TRAINING

Australia in the Emerging Global Knowledge Economy: Changing Employment Patterns – 1986-7 to 1999-00

Leo Maglen and Sonnie Hopkins*

WORKING PAPER NO. 32
October 2000

* We wish to thank our colleague Chandra Shah for his invaluable assistance

The Centre for the Economics of Education and Training is funded by the Commonwealth Government through the Australian National Training Authority as a Key Vocational Education and Training Research Centre

CEET, Faculty of Education, Post Office Box 6,Monash University, Victoria 3800, Australia
Telephone 61 3 9905 9157 Facsimile 61 3 9905 9184 Email ceet@monash.edu.au
http://www.education.monash.edu.au/centres/CEET

MONASH UNIVERSITY - ACER

CENTRE FOR THE ECONOMICS OF EDUCATION AND TRAINING

The *Monash University-ACER Centre for the Economics of Education and Training (CEET)* is a joint venture of Monash University and the Australian Council for Educational Research (ACER). CEET also collaborates with staff of the Centre for Human Resource Development and Training at the University of Melbourne.

Directors

Gerald Burke (Professorial Fellow, Faculty of Education, Monash University, Executive Director); Phillip McKenzie (Principal Research Fellow, ACER); Leo Maglen (Professor of Vocational Education and Training, University of Melbourne); and Chris Selby Smith (Professor, Department of Management, Monash University).

Research Staff

CEET has six Senior/Research Fellows: Damon Anderson, Fran Ferrier, Sonnie Hopkins, Michael Long, Jeff Malley, and Chandra Shah. Julian Teicher (Executive Director, National Key Centre in Industrial Relations, Monash University) is an Associate of the Centre.

Funding

CEET receives its main funding from ANTA as a Key VET Research Centre and undertakes consultancies for a range of other authorities.

Focus of Work

CEET's research focuses on the contribution of education and training to economic and social development. CEET's recent work includes:

- the costs of vocational programs in schools, in TAFE and in industry;
- models for assessing demand for training;
- the impact of globalisation on the occupational structure;
- evaluation of 'user choice' for apprenticeship training;
- analysis of the efficiency and equity in the training market;
- policies to improve the transition of youth from education to work;
- the impact of VET research on policy and practice;
- equity and VET;
- models for analysing student flows in higher education and in vocational education; and
- returns to investment in enterprise training.

WP-Info 5/4/2000

Contents

Executive Summary

This paper is a preliminary report on CEET's investigations of changing employment patterns in Australia in the era of the emerging global knowledge economy.

It employs a classification of occupations based upon a categorisation first suggested by the American economist Robert Reich in the early 'nineties, and subsequently refined and extended to include other skill distinctions by previous studies undertaken by CEET. This current study applies the resulting nine-way classification of occupations to the revised ASCO listings for the period 1986-7 to the latest figures available for 1999-00.

The general patterns that emerge reveal trends that can be expected for a country at Australia's level of economic and industrial development, and level of exposure to global economic trends and technological change. They therefore support CEET's decision to develop this method of classifying occupations in its study of how the emerging global knowledge economy is impacting upon employment patterns in this country.

Over this period of unprecedented change in the global economy, in technological development, in Australia's position with respect to both, and in the public and corporate responses to them – part of the former being the redirection and restructuring of the post-secondary education sector – employment patterns in Australia have changed substantially. Some of these have been encouraging, others are more worrying. Both require further change in policy and practice in the education and training sectors.

The major findings of the project so far can be summarised as follows:

- There has been substantial and encouraging growth in the area of employment most able to take advantage of the opportunities presented by the emerging global knowledge economy. Growth in employment in symbolic analytic services (conceptual) has been greater than in most other areas of employment. It is now the largest single area of employment in Australia – the largest and fastest growing area of full time employment. Whilst it is still mainly a male domain of employment, female employment in the area is large and growing at a faster rate than that of males, and faster than any other area of employment for females. All of this bodes well for Australia.

- What is not so encouraging is the low level of participation of young people in these trends. The greatest growth in employment at this level of interface with the emerging global knowledge economy is for workers, both male and female, age 25 and over, but especially in the middle years of 35 to 55.

- What is also not so encouraging is that for many other Australians the greatest areas of employment and employment growth, are in occupations least engaged in, or most vulnerable to, the changes occurring in the global knowledge economy. They are also the areas requiring the lowest levels of skills. In person services (elementary) and routine production services (low skill) occupations, especially at the part time and very part time or casual level of employment, are amongst the largest and most rapidly growing areas of employment.

This is especially the case for the youngest workers – those age 15 to 19, and to a lesser extent 20 to 24.

- Pressures from both the demand and supply side of employment have brought about, over the period, what has amounted to what can be described as a 'dumbing down' of youth employment. Whilst employment participation rates of 15 to 19 and 20 to 24 year olds have remained reasonably constant, participation in full time and more skilled occupations by these groups has fallen away, whilst that in part time and casual employment in low skill occupations, in in person services (elementary) and routine production services (low skill), has risen dramatically. For those in these age groups still in full time education and training (and possibly some in part time education and training), this may be a preference – as this sort of work provides easily accessible, convenient and undemanding means of helping to finance their studies. For those not in that situation, this trend is far more gloomy, and worrying, since they are being shut out of the jobs that provide opportunities to interact most rewardingly with the emerging global knowledge economy. What these trends also mean is that the probationary period that young people must go through before they can fully participate in the world of work, and especially in those areas that provide the most opportunities to interact in the emerging global knowledge economy, has lengthened over the last fourteen years. The notion of 'transition' from education and training to work, therefore, needs to be broadened.

- Employment growth in one of the major areas that VET providers have traditionally served – through pre-service and initial employment programs such as apprenticeships and traineeships – that of routine production services (advanced skill), has not kept pace with other areas of employment. Indeed, and especially since the recession of the early 'nineties, employment in these occupations has tended to either stagnate or grow only sluggishly. Whereas it was the pre-eminent area of employment, it is now no longer so. Its decline as an employer of young people has been especially pronounced – almost all of the growth in the numbers employed in these occupations having come, over the period, from amongst older workers.

- The implications of these trends in employment for educators and trainers, and especially those in the VET sector, will take time to tease out, and will require further research in this program. Suffice to say, however, they are a cause for concern. VET needs to be able to make a greater contribution to those areas of employment interfacing most successfully with the emerging knowledge economy than perhaps it is at the moment. Not all of the occupations in the symbolic analytical services (conceptual) occupations require university qualifications, and VET providers need to see to what extent they can foster those that do not. VET also has to take heed of the other emerging trends – the lifelong learning implications of the employment patterns of older workers, and the employability requirements of young people going in increasing numbers into low skill, part time and casual employment, and being systematically locked out of those areas of employment opportunities being opened up by the emerging knowledge economy.

... Australia will remain part of an international economy in which change is continuous. A highly trained and flexible labour force makes possible sustained improvements in living standards through the capacity to adapt to major changes in the economic environment. This is not just a question of minimising the costs of immobility that arise from reacting to change as a threat, but of positively embracing change for the opportunities it brings.

The world's most successful economies have typically given high priority to basic education and to the skills which determine competence at work. They have shaped their skills development policies accordingly. Australia has not seen this relationship so clearly; the time has come to do so, and to act accordingly.

The Government is moving on a number of fronts to make our education and training systems more attuned to the new requirements for skills demanded by our changed economic circumstances. However, the changes involved are both varied and complex, and the Commonwealth is but one of many parties to the action required. Employers, unions and State and Territory governments, amongst others, will also need to play a major role.

Dawkins and Holding, *Skills for Australia* (1987) pp 3-5

1. Background

This paper is a preliminary report on a project that maps the changes that have been occurring in patterns of employment in Australia over the period 1986-87 to 1999-00.

The period since the above statement was made has been one of unprecedented change in both the Australian economy and its education and training systems. The Australian economy, like all other national economies, has had to come to terms with the new world economic order brought about by the forces of globalisation and rapid technological change. Over the same period, and partially in response to these forces, post compulsory education and training has been radically re-structured, on the one hand with the demise of the binary system of higher education and, on the other, by the rise of what has become known as the training reform agenda.

In 1986 the term globalisation had yet to be coined. What Thomas Friedman in his book *The Lexus and the Olive Tree* [2000] charting the rise of globalisation, describes as its three defining characteristics – the democratisation of technology, finance, and information – were yet to emerge. The world economy was still governed largely by the imperatives of the Cold War. The fall of the Berlin Wall was still three years away. World trade was still being conducted under the General Agreement on Tariffs and Trade. The last round of trade talks under this Agreement, the Uruguay round, which led ultimately to the establishment of the World Trade Organisation in 1994, was started in 1986. In the field of information technology, whilst computers had been around for decades, their impact upon blue and white collar work patterns, long predicted, had yet to be realised. The personal computer was still in its infancy, as were mobile phones. The internet had only just been released by the Pentagon for commercial development, and Australia was yet to be connected to what became the world wide web. The 'digital revolution', bringing with it the convergence of telecommunications, computation and broadcasting, had not really begun. Whilst the 'information age' was well and truly with us, no-one was yet talking about the emergence of the 'knowledge society', and 'continuing education' was yet to be replaced by 'lifelong learning'.

In Australia the doctrine of economic rationalism was only beginning to have its influence on government economic policy. The need for 'structured change' was the order of the day. Although the exchange rate had been floated a few years earlier, tariffs were being progressively lowered, Australian financial markets were being opened up to international competition and restrictions were being lifted on capital inflows, the era of de-regulation, commercialisation and privatisation of much of the public sector's production of goods and services was just beginning. Whilst the mid-1980's was the heyday of the corporate tycoons such as Bond, Skase, Holmes a Court, and Elliott, wholesale down-sizing and re-engineering of the corporate workplaces, and out-sourcing of services was only just beginning. Labour markets were still governed largely by the Accord, and subject to central wage fixing procedures. Moreover, in 1987, few Australians could be said to be competing for their jobs, either directly or indirectly, in global labour markets. Over the next fourteen years, however, increasing numbers have been – directly, by selling their services on to international markets, or indirectly, by having the decisions about whether they are employable made by corporations who are themselves hiring labour, of all levels and types of skills, in global labour markets.

Great changes were also about to unfold in the post-school sector in Australia. In 1986 Senator Susan Ryan was still the Federal Minister for Education. It was not until after the 1987 federal election that John Dawkins became the new Minister for Employment, Education and Training, that DEET was established, and the wholesale reforms to the post compulsory education and training system in Australia were commenced. The term vocational education and training was not yet in currency.

In Australia in mid nineteen eighties, the baby-boomers were still thirty-something.

What this project sets out to do is to see to what extent these fundamental changes between then and now, have had an impact on employment patterns in this country. Their implications for further change in education and training, especially in the VET sector, are examined.

2. The occupational framework and data employed in this Project

The occupational framework the Project uses to analyse changes in employment patterns over the period has been constructed to identify (a) the degree and nature of exposure to global labour market forces, and (b) the level and nature of the skills associated with occupations. It is the same nine-way classification of occupations as that used by Maglen and Shah (see, for example, 1999) in their previous analyses of employment trends in Australia. This in turn was a refinement and extension of the three-way classification originally applied by Maglen (1994, see also Maglen and Shah, 1995) that was based on criteria suggested by Reich (1992) as a means of gauging the impact of globalisation and rapid technological change on employment in advanced industrialised countries such as America.

Reich coined the term *'symbolic analysts'* to refer to those workers whose jobs, through the skilful manipulation of symbols – numerical, linguistic, scientific, financial, graphic, musical, etc – were primarily conceptual, analytical and creative in nature. These, he maintained, where the group of workers most able and likely to successfully trade their services in the ever-changing global environment of the emerging knowledge economy. He contrasted them with those he called *'routine production workers'*, in both white and blue collar areas of

employment, whose jobs were increasingly exposed to competition from lower labour costs workers in less-developed countries, to automation and to re-engineering of production processes. He also identified a third group, whom he called *'in-person service workers'*, who because of the necessity and/or client preference for face-to-face delivery of their services, were largely insulated from direct global competition for their jobs. Their livelihoods, nevertheless, depended on how successful the other two groups were in competing in increasingly globalised labour markets.

Maglen and Shah refined and extended this categorisation of employment by cross-classifying occupations by the level and nature of the skills required in each of Reich's groups. The result was the nine-way classification shown in the diagram below. This can be compared to the eight-way classification employed by the first edition of the Australian Standard Classification of Occupations (ASCO), and by the nine-way classification used in its second edition (see Maglen and Shah, 1999, ABS, Cat. No. 6203.0, 2000)

The following is a detailed description of each of the nine occupational categories.

1. Symbolic analytic services (conceptual)

This work primarily involves the manipulation of symbols in the form of data, words, audio and visual representations. It is mostly conceptual – involving creative and/or critical thought, and draws on tacit as well as already codified knowledge. It involves problem identifying and solving and strategic brokering. Persons employed to do this type of work are highly exposed to global competitive forces. It is generally the expertise and the product they offer, and the quality, speed, flexibility and adaptability they display, rather than their wages and other cost factors, that determine their competitiveness in the global market.

Examples of occupations associated with this work are: information technologists; scientists; engineers; economists; financial dealers and brokers; film, television and radio directors; actors, dancers and related professionals; musicians; chefs; academics.

2. Symbolic analytic services (technical)

Although closely related to the above category, there are differences between the two. Their work is essentially at the technician and paraprofessional level and many work in support of conceptual symbolic analysts. Work is more routine, though highly skilled and requiring a considerable level of judgment that depends on specialist knowledge.

Examples of occupations associated with this work are: air transport professionals; medical and science technical officers; engineering associate professionals; human resource professionals.

The occupational categorisation used in this analysis

Level and nature of skills	Degree and nature of exposure to global labour market forces		
	High, often direct, but largely positive exposure – competition mostly on the basis of quality of services	*Largely, or partially, insulated from direct global competition*	*High, but mostly indirect, exposure. Increasing vulnerability. Competition mostly on the basis of the cost of hiring*
High level / advanced skills	**1. Symbolic analytical services (conceptual)** e.g scientists, engineers, financiers, IT experts, artists	**3. In-person services (professional)** e.g. medical practitioners, barristers and solicitors, social workers	**6. Routine production services (advanced skills)** e.g.tradespersons
Intermediate level / supporting	**2. Symbolic analytical services (technical)** e.g. engineering associates, laboratory technicians, airline pilots	**4. In-person services (intermediate)** e.g. nurses, police, estate agents, salespersons	**7. Routine production services (white collar)** e.g. clerks, office workers **8. Routine production services (blue collar)** e.g. machinists, operatives, drivers
Low level / elementary skills		**5. In-person services (elementary)** e.g. waiters, bar-persons, sales assistants	**9. Routine production services (low skill)** e.g. labourers, kitchenhands, cleaners

3. In-person services (professional)

Professional in-person service work is also highly skilled, but its major characteristic is that it involves dealing face-to-face with the ultimate beneficiaries of the service or supervision of others who work this way. The beneficiaries include customers, clients, patients, pupils etc. Although this type of work is largely insulated from the forces of globalisation, the nature of some of the work is changing due to advances in communication and computing technologies and other technical areas. Some of the work of persons offering these services may involve symbolic analytic activities, but the main distinguishing feature is the primarily personal nature of the work.

Examples of occupations associated with this work are: dental and medical practitioners; school teachers; social workers; barristers and solicitors; pharmacists.

4. In-person services (intermediate)

The difference between the in-person services at the professional and intermediate level is the skill level. The skill requirements in this case are lower, and their nature more routine than that of the professional. In small organisations, persons doing this sort of work may be in charge, but in larger organisations or systems they probably work in a support role.

Examples of occupations associated with this work are: real estate agents; dental, medical and veterinary nurses; police officers; sales representatives; travel and tourism agents.

5. *In-person services (elementary)*

Elementary in-person service work, whilst it too primarily involves dealing face-to-face with customers, clients, etc, is typically routine and often manual. The level of skill required is generally low. The work is often part-time or casual. A large number of persons doing this type of work are employed in industries such as retail, and hospitality and tourism. These services are usually not traded on the global market and the demand for them is domestically driven. However, the strength of the demand depends upon the fortunes of those who do face global competition.

Examples of occupations associated with this work are: bar attendants, waiters; sales assistants; telemarketers; ushers, porters and related workers.

6. Routine production services (advanced-skill)

Routine production services at the advanced-skill level cover work that has been traditionally carried out by tradepersons and craftworkers. Automation has replaced a lot of their work. For many but not all occupations, the work demands frequent upgrading of skills to cope with technological change. Except for farming, these services are not commonly traded on the global market. Some workers who provide these services are likely to be affected by globalisation; for example, in the manufacturing sector, when a firm relocates its manufacturing offshore to exploit cheaper labour costs and less restrictive local laws, or in the farming sector, where the product is one that competes in global markets. Others though, such as those in the construction industries, are less likely to be affected.

Examples of occupations associated with this work are: qualified tradespersons across the board, such as plumbers; carpenters; electricians; fabrication engineering, structural steel and welding tradespersons; automotive and refrigeration mechanics; farmers.

7. Routine production services (white-collar)

These 'white collar' services are routine and are undergoing rapid change through automation and advances in telecommunication and computing, upon which they increasingly rely. Persons performing this work commonly must become multi-skilled to keep their jobs. In some instances this has involved providing some in-person services. For example, bank clerks have to be tellers as well as perform traditional clerical work.

Examples of occupations associated with this work are: clerks; bookkeepers; office managers; switchboard operators.

8. Routine production services (blue-collar)

These 'blue collar' services are routine and have traditionally been undertaken by people classified as operatives. The services are subject to a high degree of exposure to both globalisation and automation. Blue-collar routine production workers are increasingly required to multi-skill in order to do work that was traditionally done by tradespersons.

Examples of occupations associated with this work are: plant operators; machinists; truckdrivers; miners; shearers; forestry and logging workers.

9. Routine production services (low-skill)

The work of a low-skill routine production worker involves highly repetitive, labour intensive tasks. These require little skill. Both technological change and globalisation tend to affect the lot of workers providing these services.

Examples of occupations associated with this work are: labourers; storepersons; mailsorters; kitchenhands; cleaners and janitors.

* * * * * * * *

Maglen and Shah applied these categories to the 282 occupations identified at the four-digit level by ASCO (first edition). Unpublished data collected by the Australian Bureau of Statistics (ABS) in its quarterly labour force surveys over the period 1986-87 to 1995-96 were then allocated to the nine occupational groups on an annualised basis. Since that study ASCO has been extensively revised and up-dated, so that the first task for this project was to assign the 340 four-digit second edition ASCO occupations to the nine categories, and then to employ the ABS concordance between the second and first editions to ensure consistency. That done, the categories were re-applied to the annualised unpublished data from the ABS labour force surveys back to 1986-87, and forward to the latest available for 1999-00. The appendix to this paper shows how the 340 ASCO occupations were allocated to the nine occupational categories.

Whilst the general patterns and trends that emerge from this project are similar to those Maglen and Shah found for the earlier period, the changes brought about by the ASCO revision mean that more detailed comparisons cannot be drawn.

3. SUMMARY OF MAJOR FINDINGS

The following is a summary of the major findings that are revealed by the analyses contained in the tables and figures shown in Section 4 of this paper. These tables and figures are arranged in the following manner:

(a) *Current employment patterns (1999-00)*
Tables 1 to 3
Figures 1 to 3

(b) *Overall occupational change – 1986-7 to 1999-00*
Tables 4 and 5
Figures 4 and 5

(c) *Occupational change, by hours worked – 1986-7 to 1999-00*
Tables 6 to 17
Figures 6 to 17

(d) *Occupational change, by gender – 1986-7 to 1999-00*
Table 18 to 31
Figures 18 to 29

(e) *Occupational change, by age – 1986-7 to 1999-00*
Figures 30 and 31

(f) *Occupational change for 15 to 19 year olds – 1986-7 to 1999-00*
Figures 32 to 37

(g) *Occupational change for 20 to 24 year olds – 1986-7 to 1999-00*
Figures 38 to 43

* * * * * * * *

(a) Current employment patterns : 1999-00

- Australia is well-placed to take advantage of the opportunities presented by the globalised knowledge economy. Almost 1.5 million are employed in symbolic analytic services (conceptual) occupations, and these now comprise the largest single occupational group (symbolic analytic services (technical) on the other hand is the smallest). What is not so encouraging is that the next largest employer is amongst the least skilled and least engaged areas in this newly emerging economy. In-person services (elementary) occupations currently employ over 1.4 million Australians. Routine production services, from the highest to the least skilled – all of which are most vulnerable to globalisation and technological change – still account for nearly forty five percent of those employed.

- There are marked differences in current employment patterns between males and females. Males have traditionally dominated in the routine production services (advanced skill) and (blue collar) categories, and continue to do so. Females, on the other hand, have tended to concentrate in all three in-person service occupation categories and routine production services (white collar) category. Amongst symbolic analytic services (conceptual), however, whilst males make up seventy percent of those in these occupations, over 440 thousand females are currently employed in this area.

- Considerable differences appear between occupational categories with respect to the incidence of full-time employment (35 or more hours per week), part time work (below 35 hours per week) and very part-time, or casual, employment (15 hours per week or

less). Not unexpectedly, the highest incidence of part time and casual work is in the least skilled areas of employment – in-person services (elementary) and routine production services (low skill). On the other hand, the symbolic analytical services (conceptual) occupations, and the three technical (and male dominated) areas of symbolic analytical services (technical), routine production services (advanced skills) and routine production services (blue collar), offer the fewest opportunities for part time and casual employment.

- The figures also show marked differences in employment patterns between age groups. What is most revealing is that for both males and females the relative importance of employment amongst symbolic analytic services (conceptual) occupations – those most positively associated with the emerging global knowledge economy – increases with age. Young people – those below the age of twenty-five – are not great participants in this area of employment. On the contrary, the least skilled, most insulated and/or most vulnerable areas of employment are more closely associated with young people than they are with older age groups. Figure 3 also reveals the contrast between males and females. Whilst for both sexes the relative importance of the first four occupational groups increases with age, the patterns diverge across the rest of employment. Routine production services (advanced skills) remains relatively important for males across all age groups, but employment in the other routine production areas declines in importance with age. For females, on the other hand, whilst employment in in-person services (elementary), so dominant at lower ages, declines in importance with age, employment in routine production services, especially in the white collar area, increases in importance.

(b) Overall occupational change: 1986-7 to 1999-00

Whilst the patterns of employment at any one point of time are important indicators of how the Australian workforce is interacting with the emerging global knowledge economy, it is how those patterns are changing over time that provide an even better indicator. This and the preceding sections of this paper examine these changes.

- Over the previous fourteen years employment in Australia has grown at a fairly constant rate of 1.5 per cent per annum on average. Cyclical influences are, however, apparent – most notable being the boom periods of the late 'eighties and that which the country is currently enjoying, and the recession period of the first two or three yeas of the 'nineties, when employment fell to a local low around 1992. Cyclical movement in employment, however, is more evident in some full time employment than in part time and casual employment. In some areas of employment the movement of the latter has been, if anything, counter-cyclical – reflecting the shift away from full time employment in recession years.

- Whereas over the period full time and part time employment grew by roughly the same amount, the rate of growth in part time employment was almost twice as fast as that of full time work. Even faster growing was very part time or casual employment. Whilst full time employment continued to be the experience of the majority, both part time and casual work increased in relative importance between 1986-7 and 1999-00.

- All but employment amongst symbolic analytic services (technical) grew over the period. However, the strongest areas of growth were at the two ends of the spectrum. In both absolute and relative terms employment in symbolic analytical services (conceptual), on the one hand, and in-person services (elementary) on the other, led the way. Together

they accounted for just over fifty percent of employment growth over the period. Whilst the former is encouraging, reflecting Australia's successful engagement with the emerging global knowledge economy, the latter reflects a retreat from it. What is also sobering for the VET sector is the fact that both of these areas of employment overtook routine production services (advanced skills) as the leading area of employment for Australians.

- The recession of the early 'nineties appears to have been the watershed. Employment in routine production services (advanced skills) grew strongly prior to the economic downturn, but fell dramatically as a result of it and recovered only slowly afterwards. Taking the period as a whole, employment in this important area grew on average by only 0.4 percent per annum, and contributed to only six percent of the employment growth between 1986-7 and 1999-00. As this has been one of the major area of employment that the VET sector feeds its graduates into, this is a cause for concern. The other two dominant areas of employment, the symbolic analytic services (conceptual) and in-person services (elementary), whilst they too were affected by the recession of the early 'nineties, were much less so, and recovered much more quickly.

- Other areas of employment had different paths going into and coming out of the early 'nineties recession. Neither in-person services (professional) nor (elementary) appeared to have been influenced at all by the downturn, whereas the other areas of routine production services (white and blue collar and low skill) had similar experiences to routine production services (advanced skill). That is, they fell off in employment, and were only recovering pre-recession employment levels by the end of the decade. Symbolic analytic services (technical) however, failed to recover from the recession.

(c) Occupational change – by hours worked: 1986-7 to 1999-00

- The most marked feature of employment growth in most occupational groups over the period was that whilst full time employment was subject to cyclical variation, part time and casual employment exhibited more or less steady change.

- By far the two most important areas of full time employment over the period were symbolic analytic services (conceptual) and routine production services (advanced skills). But whereas the former grew strongly – at an average annual rate of 2.7 per cent (compared to the rate for all occupations of 1.2 percent per annum) – and contributed over 344 thousand new full time jobs, the latter contributed only 100 thousand, and grew at a sluggish rate of only 0.6 percent per annum on average.

- In stark contrast to the changes in full time employment over the period, the really big increase in part time and casual employment came about in in-person services (elementary) occupations. They grew at almost twice the rate of the average (4.3 percent c/f 2.2 percent) and contributed 42 percent of the net new jobs created between 1986-7 and 1999-00. Routine production services (low skill) and (white collar) areas also were major areas of part time and casual employment over the period, and contributed significantly to employment growth. What is also significant is the fact that part time and casual employment in symbolic analytic services (conceptual) also grew strongly, and contributed over 100 thousand net new employment positions.

- Changes also occurred in the average number of hours worked per week within occupational categories, as well as between them. What the evidence shows is that the trend towards greater part time and casual employment was generally across the board – part time and casual employment growing faster, on average, than full time employment in almost all occupational groups.

(d) Occupational change, by gender: 1986-7 to 1999-00

- One of the biggest overall changes in employment in Australia over this period was the strong growth in female employment compared to that of males. Female employment not only grew faster than male employment (2.3 percent per annum, for females compared to only 1.0 per annum for males) over 300 thousand more net new jobs were created for females than for males (1.758 million compared to 0.715 million). Whereas females made up less than forty percent of those employed in 1986-7, by 1999-00 they were almost 44 percent.

- The rate of female employment growth outstripped that of males in all but one occupational category, routine production services (blue collar). However, whereas the greatest number of new jobs for males were created in symbolic analytic services (conceptual), for females it was in in-person service (elementary). What is more, whilst most of the male increase in jobs providing symbolic analytical services (conceptual) were full time, most of that for females in in-person services (elementary) were part time.

- The trends, however, show signs of reversing – which is good news for females, more worrying for males. The most rapid rate of increase in employment for females over the period was in full time work in symbolic analytical services (conceptual) whereas for males it was in part time and casual employment in in-person services (elementary).

- Changes also occurred in the gender balance within occupational categories as well as between them over the period. As previously noted, in all but one area of employment female growth rates were higher than that of males. It was also apparent that, in absolute terms at least, male employment over the period was more subject to cyclical influences than that of females. Whilst this is due in part to greater male representation in full-time employment in most occupational categories, this does not fully explain the situation, suggesting other factors may have been at work.

(e) Occupational change, by age: 1986-7 to 1999-00

- What figures 30 and 31 show quite dramatically is the unevenness of employment change by age group, for both males and females, over the period. Figure 30 indicates quite clearly that for both sexes there were three different employment changes occurring. For those below the age of 25 employment remained more or less constant between 1986-7 and 1999-00; for those age 25 to 35 and above 55 there was only modest growth; but for those between 35 and 55, especially amongst females, there was substantial growth. The reasons are complex. They are partly, of course, demographic, but they also reflect changing social values and circumstances and, particularly for the younger age groups, changing participation in full time education and training.

- Figure 31 shows that these general patterns repeated themselves in most occupational categories. Certainly workers in their middle years – between 35 and 55 – made the

greatest gains in employment in all occupational categories, and those between 25 and 35, and over 55, also increased their employment in most categories.

- For young people (below the age of 25), however, the only areas of increase in employment, by and large, were in the two lowest skill categories – in-person services (elementary) and routine production services (low skill). On the other hand, the biggest areas of net job loss were in routine production services (advanced skill) and routine production services (white collar). Modest gains were made by 20 to 24 year olds, however, in symbolic analytic services (conceptual).

- There are some worrying trends in these figures – for at least three key occupational categories.

  (i) For symbolic analytical services (conceptual) they reveal that whilst Australia is interacting successfully in the emerging global knowledge economy, young people are not participating in the employment opportunities this is creating. Whilst there has been some increase for 20 to 24 year olds, most of the increase has occurred amongst older workers.

  (ii) The decline in participation of younger people in employment has been even more pronounced amongst in-person service (professional) occupations, where even those age 25 to 34 have lost ground.

  What both of these situations is suggesting is that greater participation in full-time education and training, and the lengthening of education and training programs, are combining to increase the probationary period young people have to go through, and to delay their participation in the sorts of occupational areas their education and training are preparing them for.

  (iii) The same may also be the explanation for the pattern of change exhibited by routine production services (advanced skills) over the period, although other factors may be at work here. What Figure 31 appears to indicate is that there has been not so much a trend of people leaving these occupations in their middle years, as young people not joining them in their earlier years. Whatever is the explanation, these trends have serious implications for the VET sector, as the major feeder of entrants into these occupations.

(f) Occupational change for 15 to 19 year olds: 1986-7 to 1999-00

This section looks more closely at the changing employment experiences of 15 to 19 year olds over the period.

- The population in this age group declined over the period, and it has also experienced a marked increase in full-time participation in education and training and in unemployment rates. Nevertheless, the employment participation rate, except for the period of recession in the early 'nineties, has remained reasonably constant at around the fifty per cent mark. What has been most notable, however, has been the declining participation in full-time employment and the commensurate increase in part-time and casual employment participation. Full-time employment of 15 to 19 year olds peaked just prior to the recession but declined substantially as a result of it, and flattened out thereafter. Part-time

and casual employment, on the other hand, was hardly affected by the recession and has grown steadily since.

- Only two occupational areas grew over the period – that of in-person services (elementary) and routine production services (low skill) – all others have either declined or remained somewhat stagnant.

- All areas of full-time employment, however, have declined, and the impact of the recession, in this respect, is most apparent. No area of full time employment picked up in the subsequent boom years.

- Routine production services (advanced skill), still the most important area of full time employment for this age group, shed large numbers of jobs in the three year period 1989-90 to 1992-93, and has remained around that lower level since then.

- What has grown at constant and undiminished rate over the period has been part time, and especially very part time or casual, employment in in-person services (elementary) and routine production services (low skill). These two areas are now the dominant areas of employment experience for both males and females age 15 to 19 in Australia.

(g) Occupational change for 20-24 year olds: 1986-7 to 1999-00

This section looks more closely at the changing employment experiences of 20 to 24 year olds over the period. This older group has experienced many of the trends, and has exhibited some of the same patterns, as the 15 to 19 year olds – but there are differences.

- Employment participation in this age group has been considerably higher than amongst the younger cohort, but it too, despite a decline during the recession years, has remained at a fairly steady rate against the population in this age group. However, unlike the younger cohort, full time employment has been more important than either part time or casual employment. Even so, the overall trend has been the same – that is, for the proportion in full time employment to decline, whilst that in part time and casual employment to increase.

- The occupational spread of workers in this age group is much broader and more evenly distributed than that experienced by workers age 15 to 19, but is generally similar in trends. The two greatest areas of employment growth for this age group are the same as those for younger workers – in-person services (elementary) and routine production services (low skill). Routine production services (advanced skill) which had been, at the beginning of the period, the most important employer of 20 to 24 year olds, was overtaken by in-person services (elementary). Routine production services (advanced skill), nevertheless, despite stagnation and decline, has remained the major full time employer for this age group.

- What can be viewed as encouraging is the growth, against the trends in most other areas of employment, at the full time level, of employment of 20 to 24 year olds in symbolic analytical services (conceptual). Whilst still not a dominant area of employment, its growth does perhaps represent an important harbinger for the future.

Table 1
Number employed in each occupational category: 1999/00

		Males	Females	Total
1	Symbolic analytic services (conceptual)	1,050,043	440,995	1,491,038
2	Symbolic analytic services (technical)	155,333	53,237	208,570
3	In-person services (professional)	252,641	524,830	777,471
4	In-person services (intermediate)	521,612	436,392	958,005
5	In-person services (elementary)	445,775	996,452	1,442,227
6	Routine production services (advanced skill)	1,196,437	131,796	1,328,232
7	Routine production services (white collar)	223,266	800,712	1,023,978
8	Routine production services (blue collar)	433,308	79,623	512,931
9	Routine production services (low-skill)	674,283	360,839	1,035,122
All occupational categories		**4,952,698**	**3,824,875**	**8,777,573**

Figure 1
Occupational composition of employment, by gender: Australia, 1999-00 (percent)

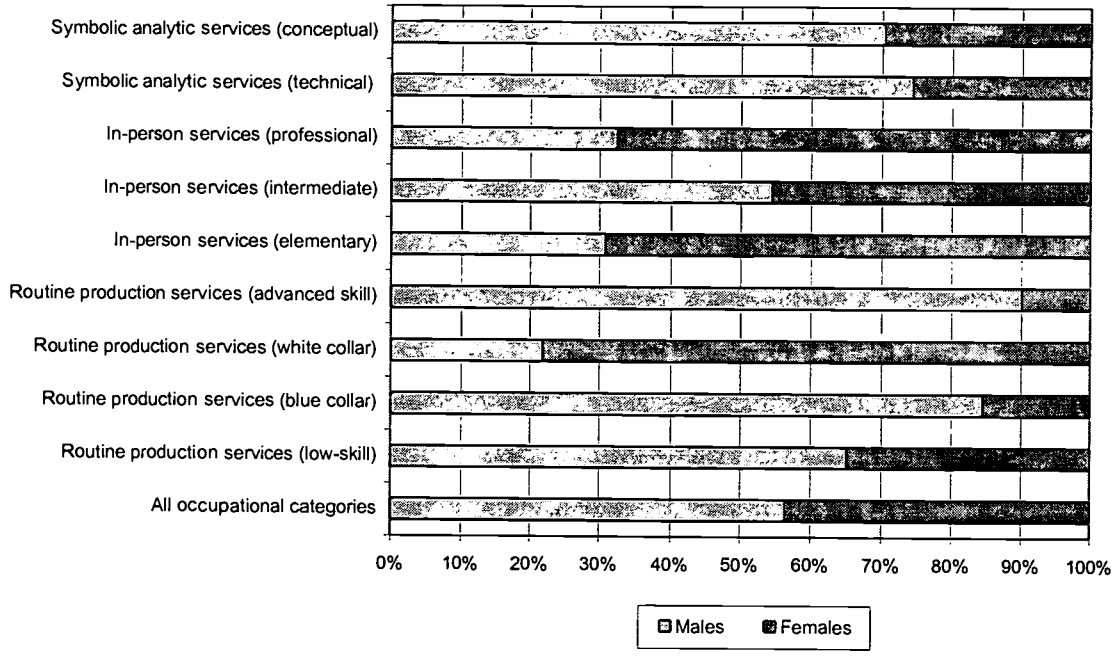


Table 2
Composition of employment, by occupational category and gender: Australia, 1999-00 (percent)

		Males	Females	Total
1	Symbolic analytic services (conceptual)	21.2	11.5	17.0
2	Symbolic analytic services (technical)	3.1	1.4	2.4
3	In-person services (professional)	5.1	13.7	8.9
4	In-person services (intermediate)	10.5	11.4	10.9
5	In-person services (elementary)	9.0	26.1	16.4
6	Routine production services (advanced skill)	24.2	3.4	15.1
7	Routine production services (white collar)	4.5	20.9	11.7
8	Routine production services (blue collar)	8.7	2.1	5.8
9	Routine production services (low-skill)	13.6	9.4	11.8
All occupational categories		**100.0**	**100.0**	**100.0**

Figure 2
Employment in occupational categories, by hours worked per week: Australia, 1999-00 (percent)

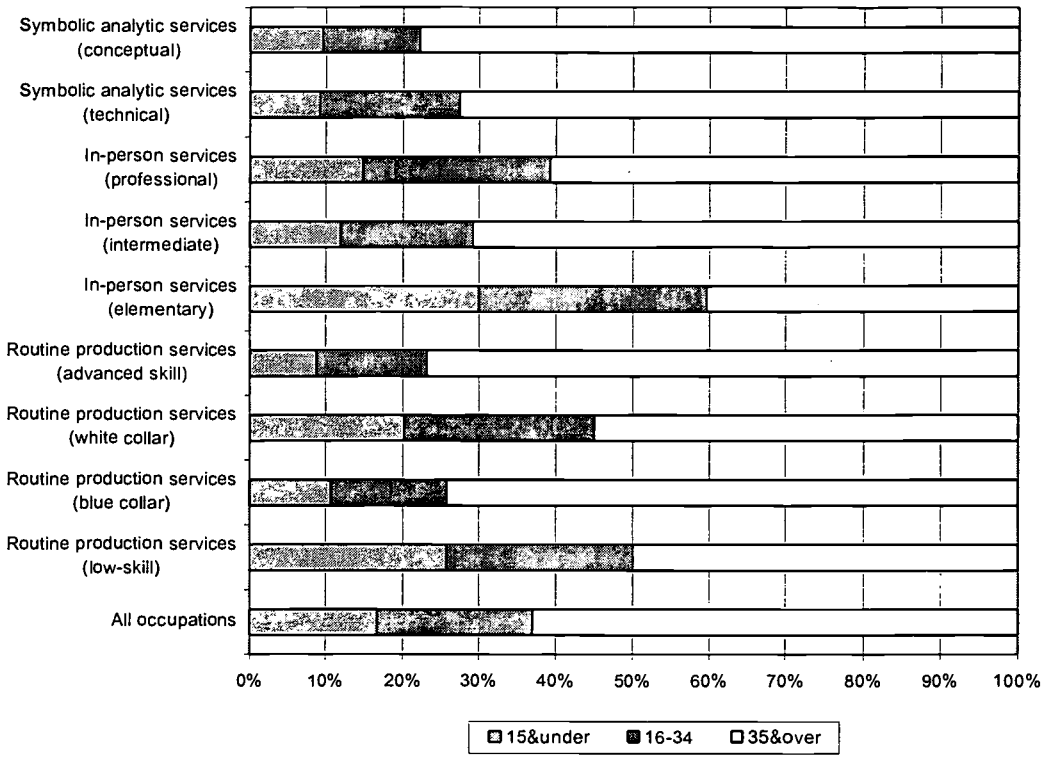


Table 3
Employment in occupational categories, by hours worked per week: Australia, 1999-00

	15&under	16-34	under35	35&over	Total
1 Symbolic analytic services (conceptual)	143,136	187,600	330,736	1,160,302	1,491,038
2 Symbolic analytic services (technical)	19,215	38,057	57,272	151,298	208,570
3 In-person services (professional)	115,658	190,117	305,776	471,695	777,471
4 In-person services (intermediate)	114,953	164,520	279,473	678,532	958,005
5 In-person services (elementary)	432,702	428,155	860,857	581,371	1,442,227
6 Routine production services (advanced skill)	116,945	190,286	307,231	1,021,001	1,328,232
7 Routine production services (white collar)	206,799	253,243	460,042	563,937	1,023,978
8 Routine production services (blue collar)	55,336	76,918	132,254	380,677	512,931
9 Routine production services (low-skill)	266,878	251,383	518,261	516,861	1,035,122
All occupations	**1,471,621**	**1,780,279**	**3,251,900**	**5,525,673**	**8,777,573**

Note: Row totals are for 'under 35' and '35 & over'

Figure 3
Occupational distribution of employment, by age group: Australia, 1999-00 (percent)

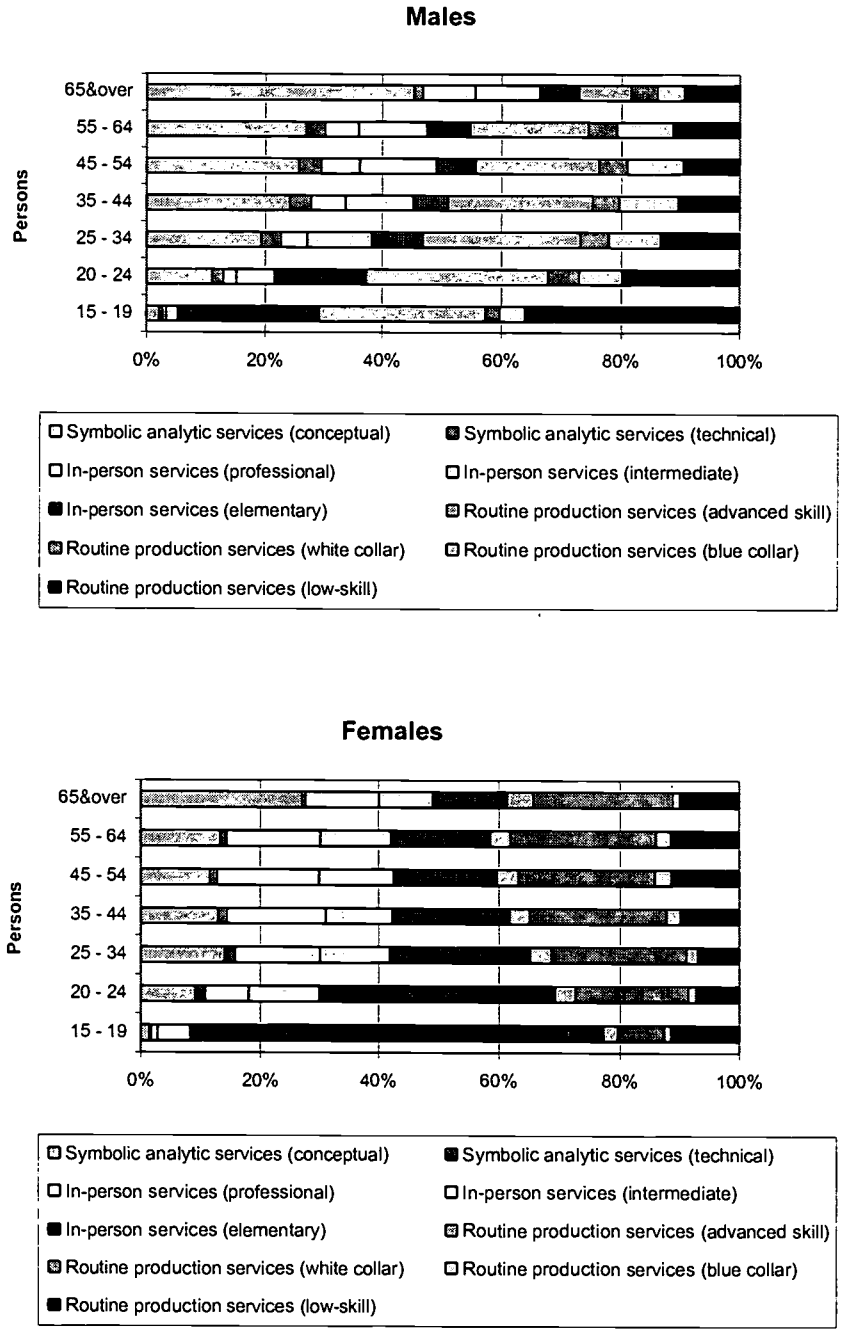


Figure 4
Employment in all occupational categories, by hours worked per week: Australia, 1986-87 to 1999-00

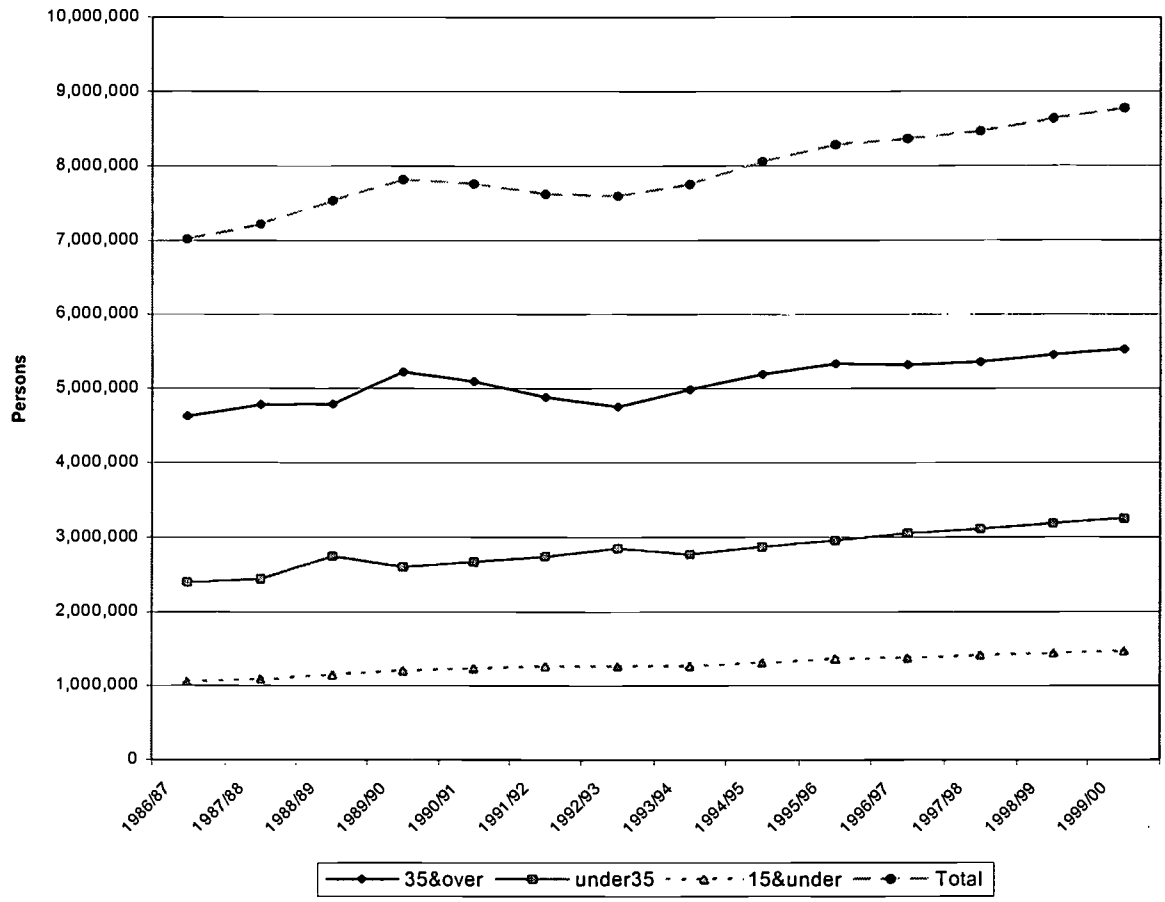


Table 4
Employment in all occupational categories, by hours worked per week: Australia, 1986-87 to 1999-00

	Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
	absolute	percent	av.annual percent	percent of change		
35 & over	899,972	19.5	1.2	51.2	65.9	63.0
Under 35	857,930	35.8	2.2	48.8	34.1	37.0
15 & under	415,656	39.4	2.4	23.6	15.0	16.8
Total	**1,757,902**	**25.0**	**1.5**	**100.0**	**100.0**	**100.0**

Note: Columns do not sum because 'Under 35' includes '15 & under'

Figure 5
Occupational change in Australia: 1986-7 to 1999-00

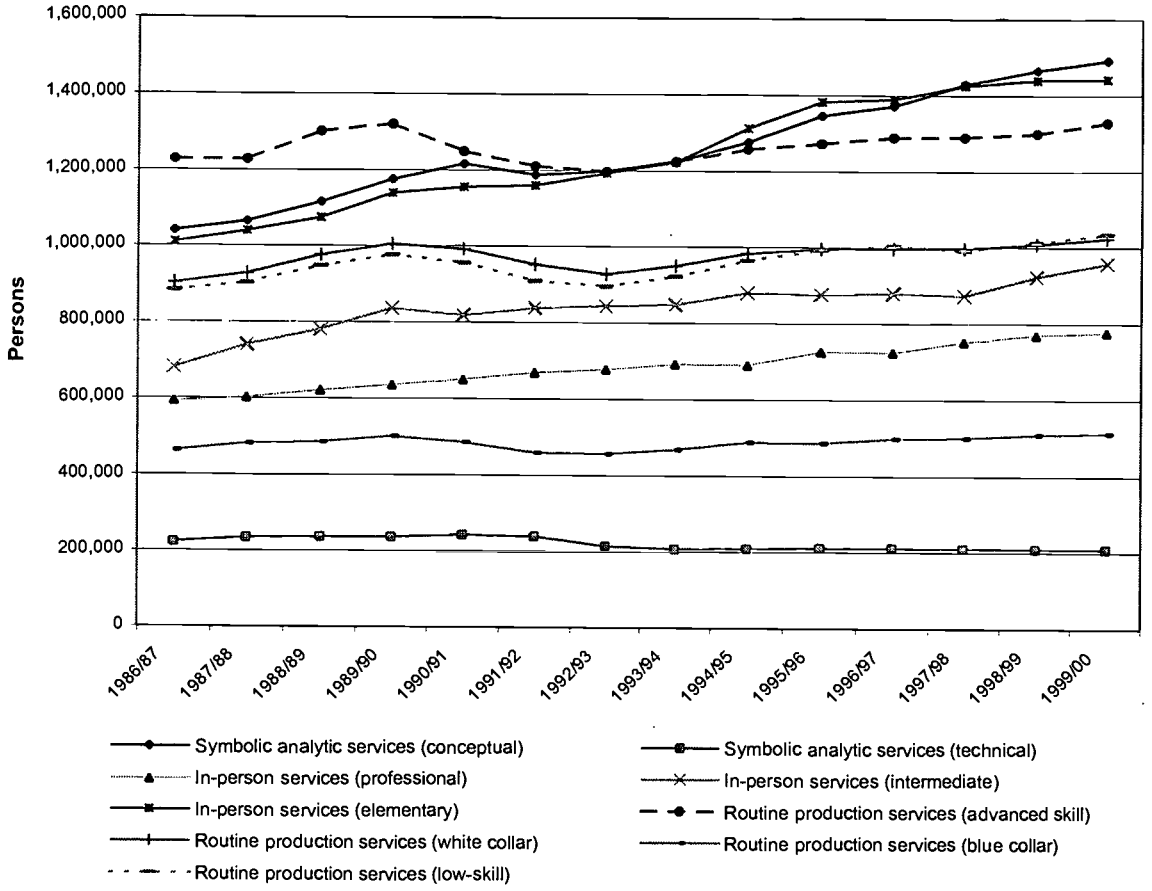


Table 5
Occupational change in Australia: 1986-7 to 1999-00

		Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
		absolute	percent	av.annual percent	percent of change		
1	Symbolic analytic services (conceptual)	450,872	43.3	2.7	25.6	14.8	17.0
2	Symbolic analytic services (technical)	(14,284)	(6.4)	(1.1)	(0.8)	3.2	2.4
3	In-person services (professional)	185,519	31.3	2.1	10.6	8.4	8.9
4	In-person services (intermediate)	277,856	40.9	1.9	15.8	9.7	10.9
5	In-person services (elementary)	433,143	42.9	3.0	24.6	14.4	16.4
6	Routine production services (advanced skill)	100,851	8.2	0.4	5.7	17.5	15.1
7	Routine production services (white collar)	121,816	13.5	0.6	6.9	12.9	11.7
8	Routine production services (blue collar)	50,048	10.8	0.5	2.8	6.6	5.8
9	Routine production services (low-skill)	152,081	17.2	1.0	8.7	12.6	11.8
	Total	**1,757,902**	**25.0**	**1.5**	**100.0**	**100.0**	**100.0**

Figure 6
Full-time employment (35 hours per week or more) by occupation group: Australia, 1986-7 to 1999-00

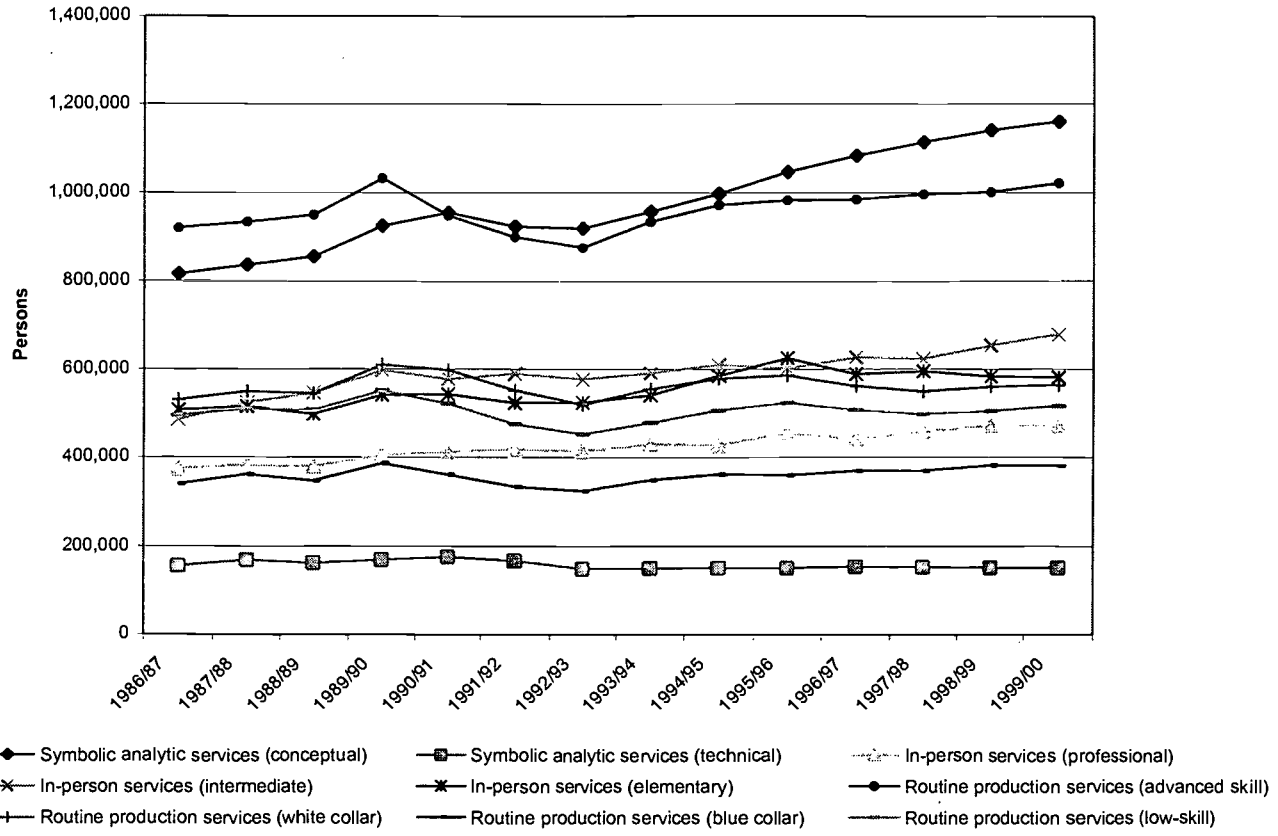


Table 6
Full-time employment (35 hours per week or more) by occupation group: Australia, 1986-7 to 1999-00

		Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
		absolute	percent	av.annual percent	percent of change		
1	Symbolic analytic services (conceptual)	344,272	42.2	2.7	38.3	17.6	21.0
2	Symbolic analytic services (technical)	(4,465)	(2.9)	(0.8)	(0.5)	3.4	2.7
3	In-person services (professional)	96,355	25.7	1.8	10.7	8.1	8.5
4	In-person services (intermediate)	193,207	39.8	1.9	21.5	10.5	12.3
5	In-person services (elementary)	74,262	14.6	1.4	8.3	11.0	10.5
6	Routine production services (advanced skill)	100,253	10.9	0.6	11.1	19.9	18.5
7	Routine production services (white collar)	33,707	6.4	0.1	3.7	11.5	10.2
8	Routine production services (blue collar)	40,917	12.0	0.6	4.5	7.3	6.9
9	Routine production services (low-skill)	21,463	4.3	(0.0)	2.4	10.7	9.4
	Total	**899,972**	**19.5**	**1.2**	**100.0**	**100.0**	**100.0**

Figure 7
Part-time employment (less than 35 hours per week) by occupational group: Australia, 1986-7 to 1999-00

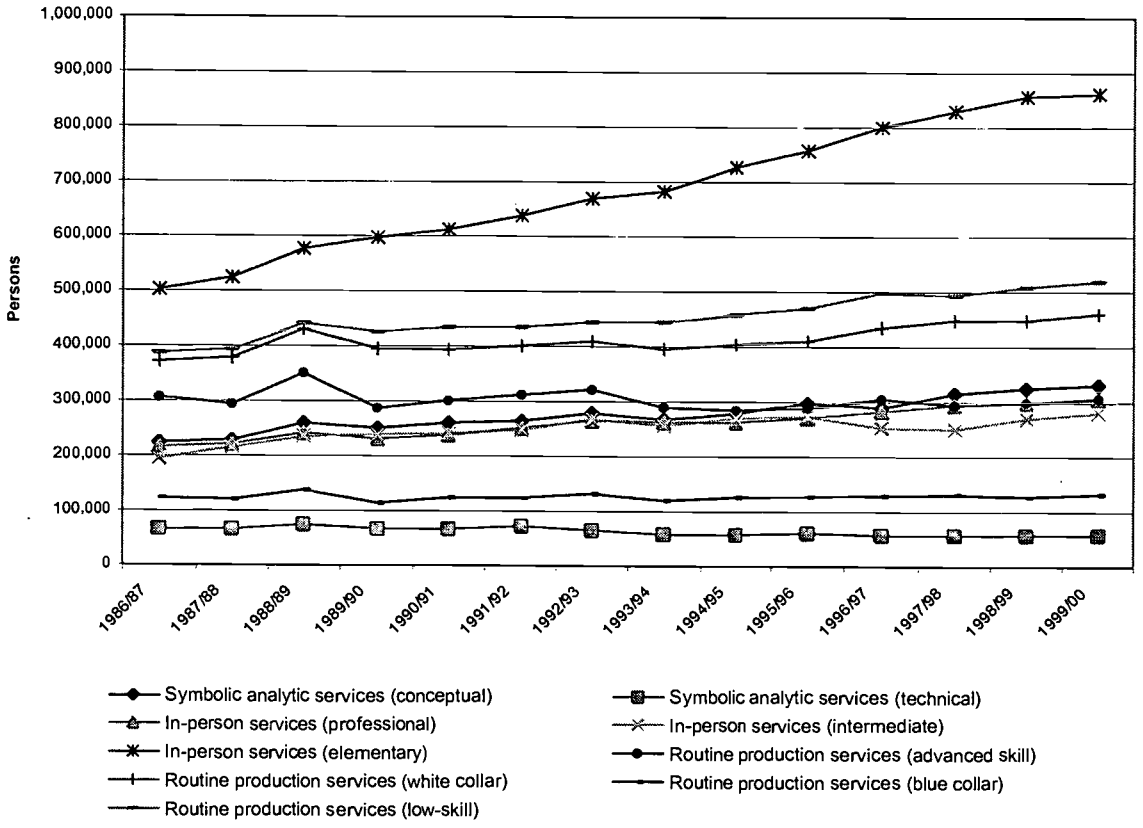


Table 7
Part-time employment (less than 35 hours per week) by occupational group: Australia, 1986-7 to 1999-00

		Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
		absolute	percent	av.annual percent	percent of change		
1	Symbolic analytic services (conceptual)	106,600	47.6	2.8	12.4	9.4	10.2
2	Symbolic analytic services (technical)	(9,820)	(14.6)	(1.9)	-1.1	2.8	1.8
3	In-person services (professional)	89,164	41.2	2.6	10.4	9.0	9.4
4	In-person services (intermediate)	84,649	43.4	2.0	9.9	8.1	8.6
5	In-person services (elementary)	358,882	71.5	4.3	41.8	21.0	26.5
6	Routine production services (advanced skill)	598	0.2	(0.3)	0.1	12.8	9.4
7	Routine production services (white collar)	88,109	23.7	1.3	10.3	15.5	14.1
8	Routine production services (blue collar)	9,131	7.4	0.4	1.1	5.1	4.1
9	Routine production services (low-skill)	130,618	33.7	2.0	15.2	16.2	15.9
	Total	**857,930**	**35.8**	**2.2**	**100.0**	**100.0**	**100.0**

Figure 8
Casual employment (15 hours or less per week) by occupational group: Australia, 1986-7 to 1999-00

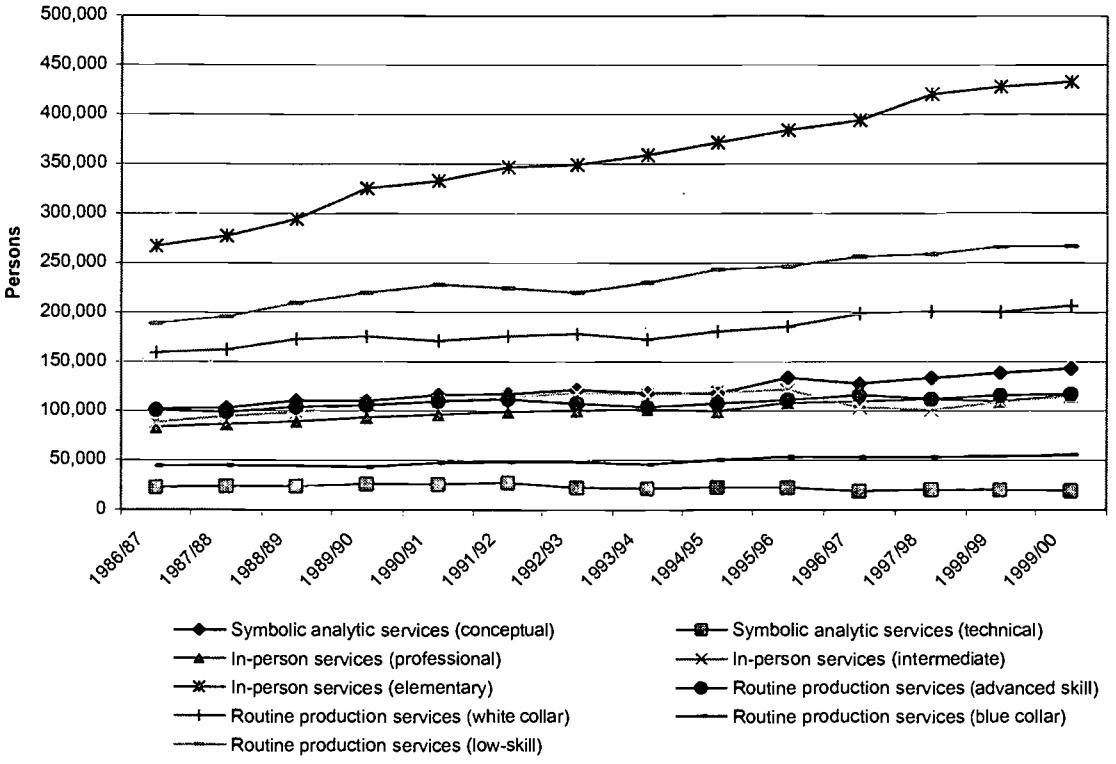


Table 8
Casual employment (15 hours or less per week) by occupational group: Australia, 1986-7 to 1999-00

		Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
		absolute	percent	av.annual percent	percent of change		
1	Symbolic analytic services (conceptual)	41,404	40.7	2.5	10.0	9.6	9.7
2	Symbolic analytic services (technical)	(3,676)	(16.1)	(1.9)	-0.9	2.2	1.3
3	In-person services (professional)	32,033	38.3	2.4	7.7	7.9	7.9
4	In-person services (intermediate)	26,904	30.6	1.2	6.5	8.3	7.8
5	In-person services (elementary)	165,739	62.1	3.7	39.9	25.3	29.4
6	Routine production services (advanced skill)	16,229	16.1	1.1	3.9	9.5	7.9
7	Routine production services (white collar)	47,891	30.1	1.9	11.5	15.0	14.1
8	Routine production services (blue collar)	11,216	25.4	1.9	2.7	4.2	3.8
9	Routine production services (low-skill)	77,916	41.2	2.6	18.7	17.9	18.1
	Total	**415,656**	**39.4**	**2.4**	**100.0**	**100.0**	**100.0**

Figure 9
Employment in symbolic analytical services (conceptual), by hours worked per week: Australia, 1986-87 to 1999-00

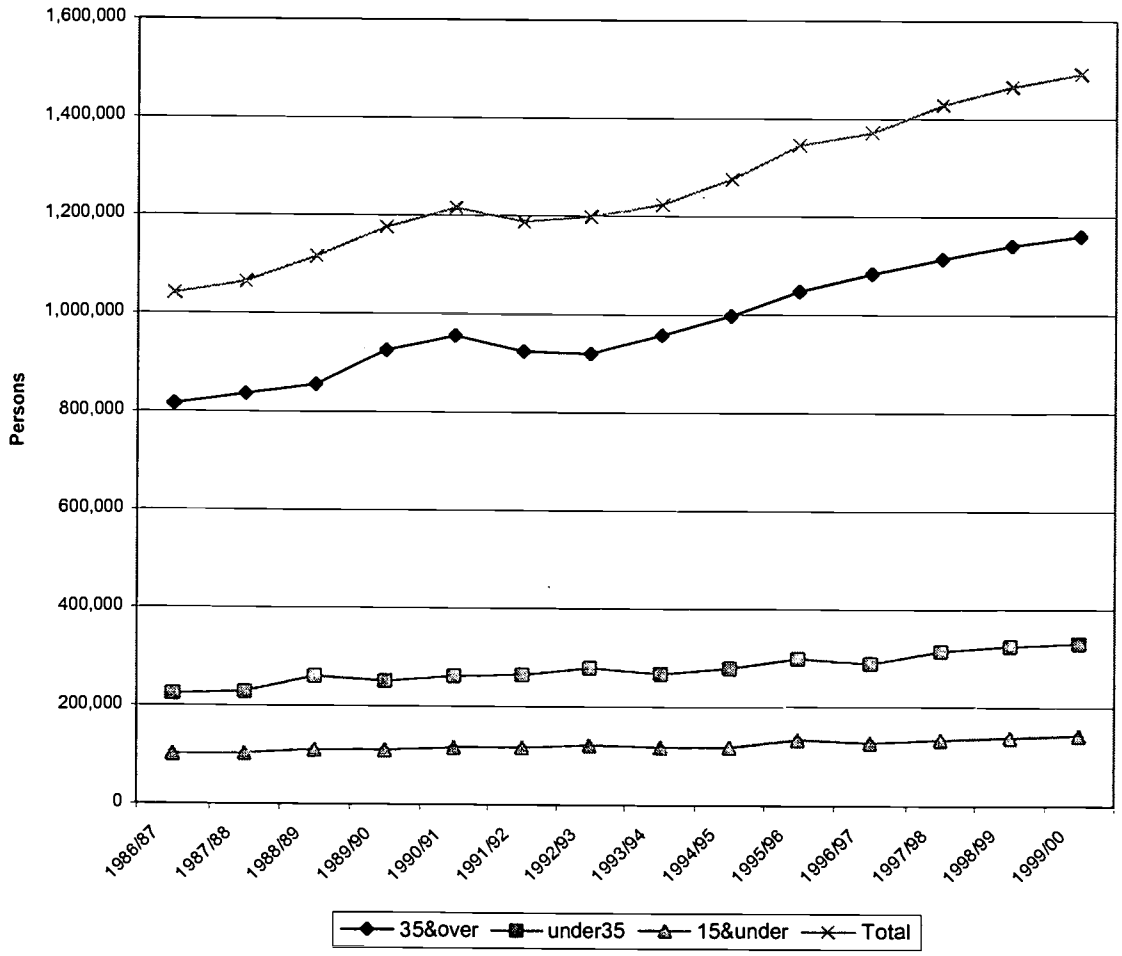


Table 9
Employment in symbolic analytical services (conceptual), by hours worked per week: Australia, 1986-87 to 1999-00

	Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
	absolute	percent	av.annual percent	percent of change		
35 & over	344,272	42.2	2.7	76.4	78.5	77.8
Under 35	106,600	47.6	2.8	23.6	21.5	22.2
15 & under	41,404	40.7	2.5	9.2	9.8	9.6
Total	**450,872**	**43.3**	**2.7**	**100.0**	**100.0**	**100.0**

Note: Columns do not sum because 'Under 35' includes '15 & under'

Figure 10
Employment in symbolic analytical services (technical), by hours worked per week: Australia, 1986-87 to 1999-00

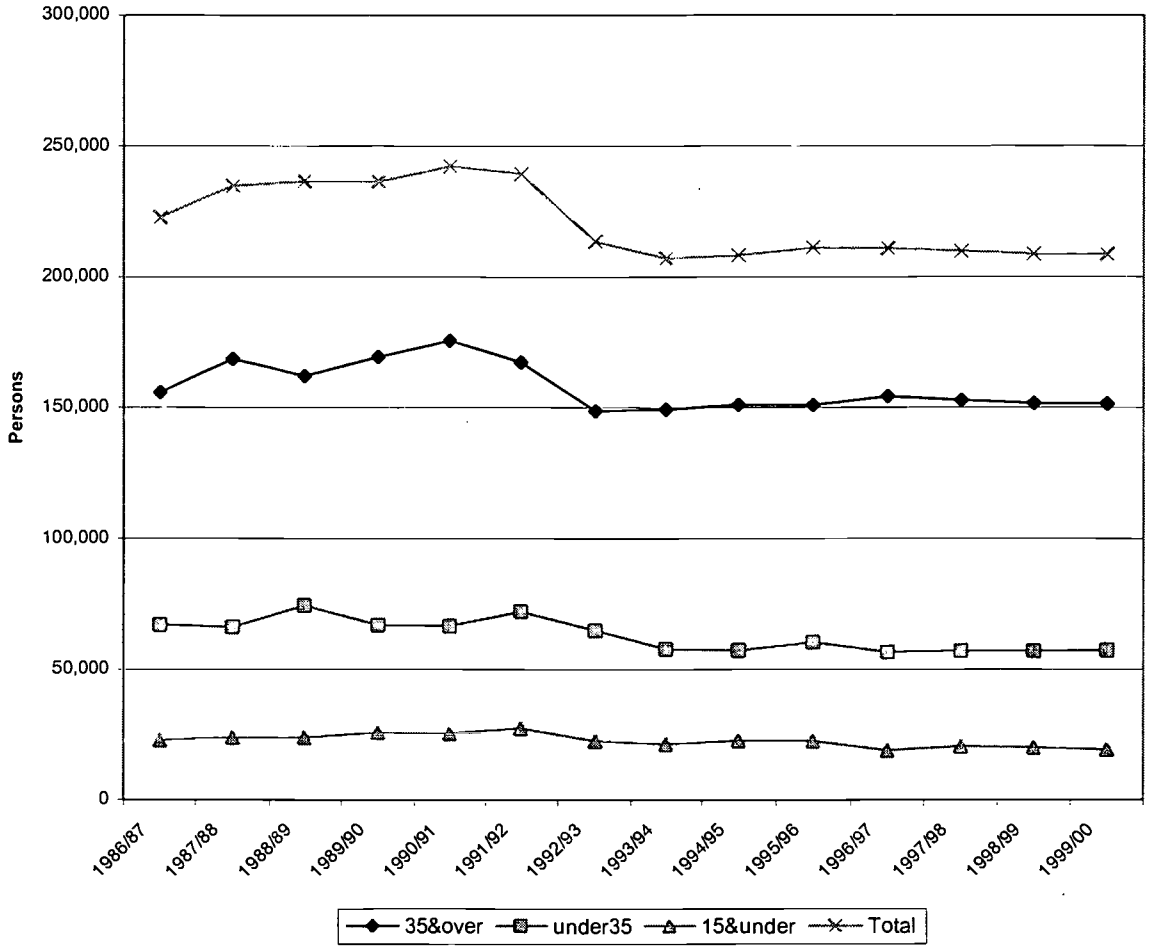


Table 10
Employment in symbolic analytical services (technical), by hours worked per week: Australia, 1986-87 to 1999-00

	Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
	absolute	percent	av.annual percent	percent of change		
35 & over	(4,465)	(2.9)	(0.8)	31.3	69.9	72.5
Under 35	(9,820)	(14.6)	(1.9)	68.7	30.1	27.5
15 & under	(3,676)	(16.1)	(1.9)	25.7	10.3	9.2
Total	**(14,284)**	**(6.4)**	**(1.1)**	**100.0**	**100.0**	**100.0**

Note: Columns do not sum because 'Under 35' includes '15 & under'

Figure 11
Employment in in-person services (professional), by hours worked per week: Australia, 1986-87 to 1999-00

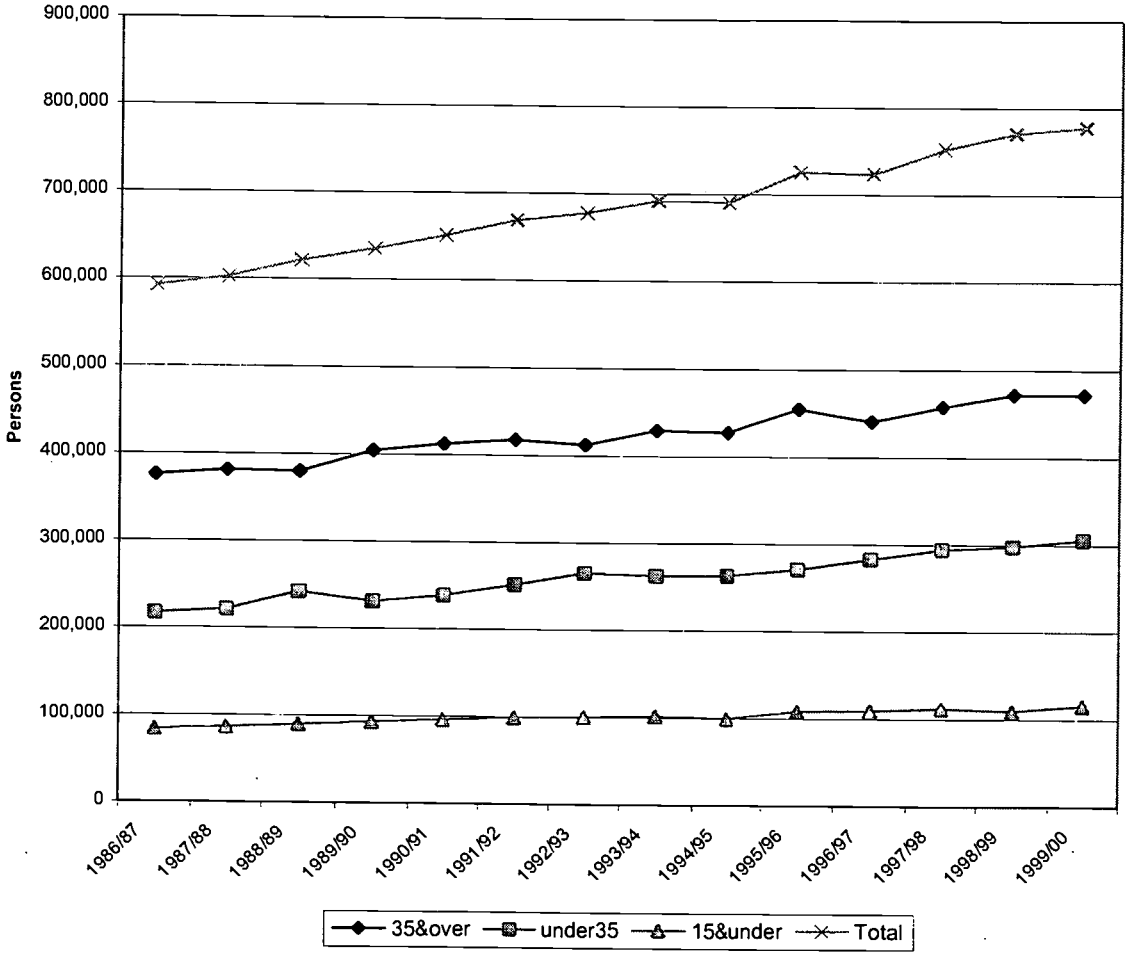


Table 11
Employment in in-person services (professional), by hours worked per week Australia: 1986-87 to 1999-00

	Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
	absolute	percent	av.annual percent	percent of change		
35 & over	96,355	25.7	1.8	51.9	63.4	60.7
Under 35	89,164	41.2	2.6	48.1	36.6	39.3
15 & under	32,033	38.3	2.4	17.3	14.1	14.9
Total	**185,519**	**31.3**	**2.1**	**100.0**	**100.0**	**100.0**

Note: Columns do not sum because 'Under 35' includes '15 & under'

Figure 12
Employment in in-person services (intermediate), by hours worked per week: Australia, 1986-87 to 1999-00

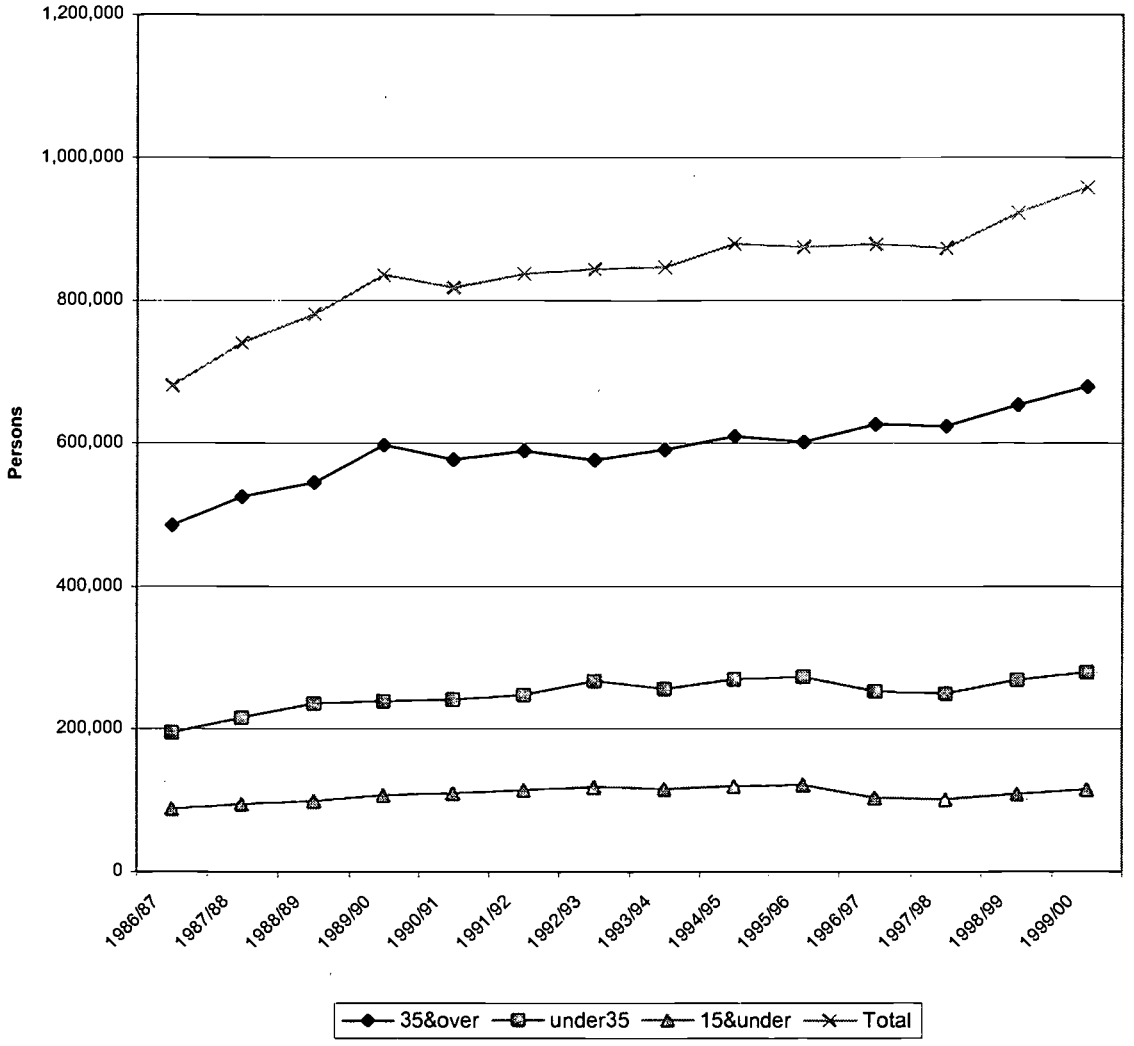


Table 12
Employment in in-person services (intermediate), by hours worked per week Australia: 1986-87 to 1999-00

	Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
	absolute	Percent	av.annual percent	percent of change		
35 & over	193,207	39.8	1.9	69.5	71.4	70.8
Under 35	84,649	43.4	2.0	30.5	28.6	29.2
15 & under	26,904	30.6	1.2	9.7	12.9	12.0
Total	**277,856**	**40.9**	**1.9**	**100.0**	**100.0**	**100.0**

Note: Columns do not sum because 'Under 35' includes '15 & under'

Figure 13
Employment in in-person services (elementary), by hours worked per week: Australia, 1986-87 to 1999-00

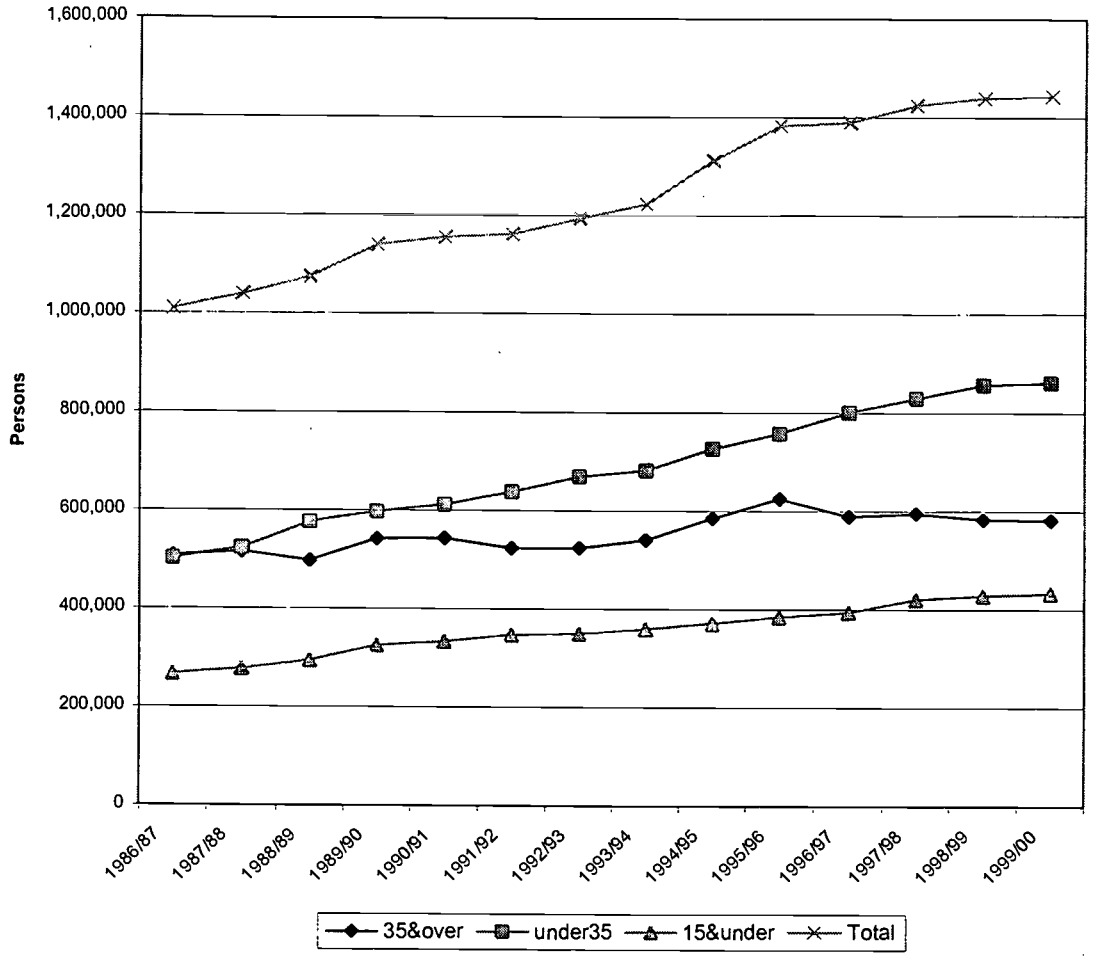


Table 13
Employment in in-person services (elementary), by hours worked per week: Australia, 1986-87 to 1999-00

	Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
	absolute	percent	av.annual percent	percent of change		
35 & over	74,262	14.6	1.4	17.1	50.3	40.3
Under 35	358,882	71.5	4.3	82.9	49.7	59.7
15 & under	165,739	62.1	3.7	38.3	26.5	30.0
Total	**433,143**	**42.9**	**3.0**	**100.0**	**100.0**	**100.0**

Note: Columns do not sum because 'Under 35' includes '15 & under'

Figure 14
Employment in routine production services (advanced skill), by hours worked per week: Australia, 1986-87 to 1999-00

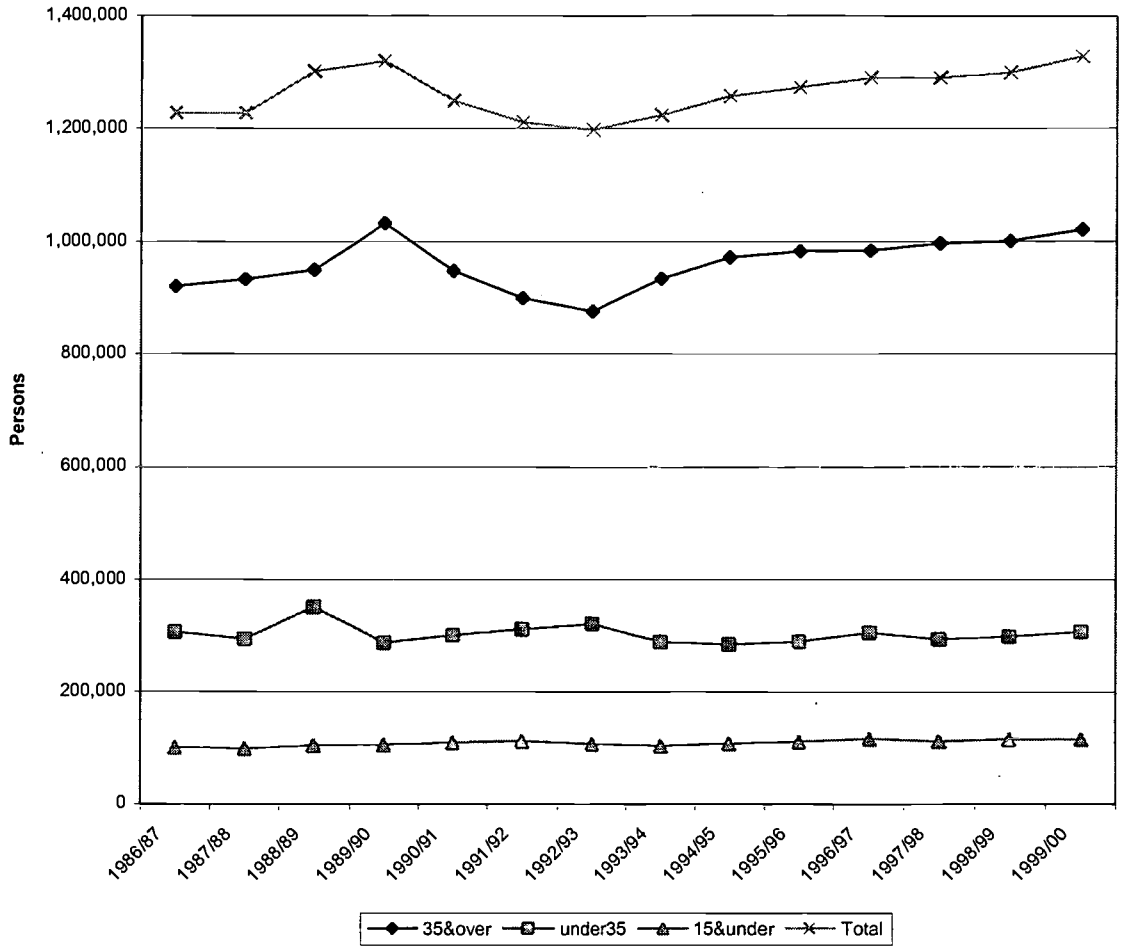


Table 14
Employment in routine production services (advanced skill), by hours worked per week: Australia, 1986-87 to 1999-00

	Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
	absolute	percent	av.annual percent	percent of change		
35 & over	100,253	10.9	0.6	99.4	75.0	76.9
Under 35	598	0.2	(0.3)	0.6	25.0	23.1
15 & under	16,229	16.1	1.1	16.1	8.2	8.8
Total	**100,851**	**8.2**	**0.4**	**100.0**	**100.0**	**100.0**

Note: Columns do not sum because 'Under 35' includes '15 & under'

Figure 15
Employment in routine production services (white collar), by hours worked per week: Australia, 1986-87 to 1999-00

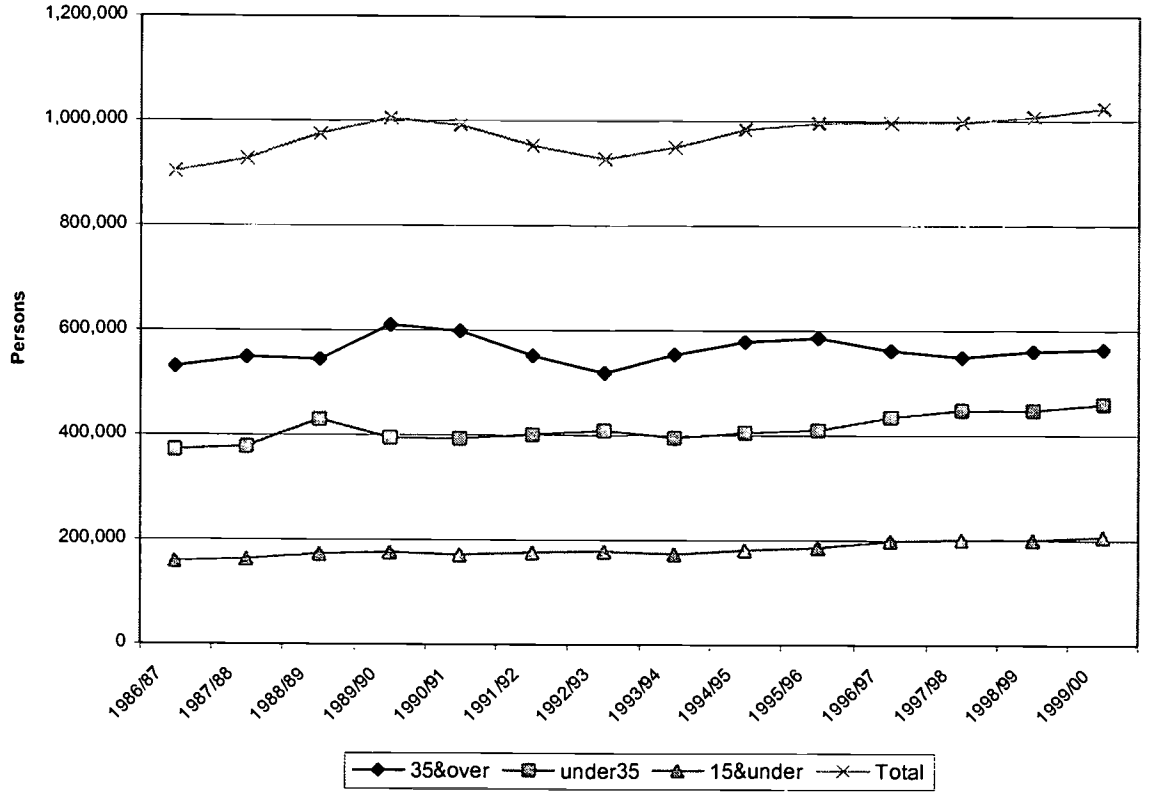


Table 15
Employment in routine production services (white collar), by hours worked per week: Australia, 1986-87 to 1999-00

	Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
	absolute	percent	av.annual percent	percent of change		
35 & over	33,707	6.4	0.1	27.7	58.8	55.1
Under 35	88,109	23.7	1.3	72.3	41.2	44.9
15 & under	47,891	30.1	1.9	39.3	17.6	20.2
Total	**121,816**	**13.5**	**0.6**	**100.0**	**100.0**	**100.0**

Note: Columns do not sum because 'Under 35' includes '15 & under'

Figure 16
Employment in routine production services (blue collar), by hours worked per week: Australia, 1986-87 to 1999-00

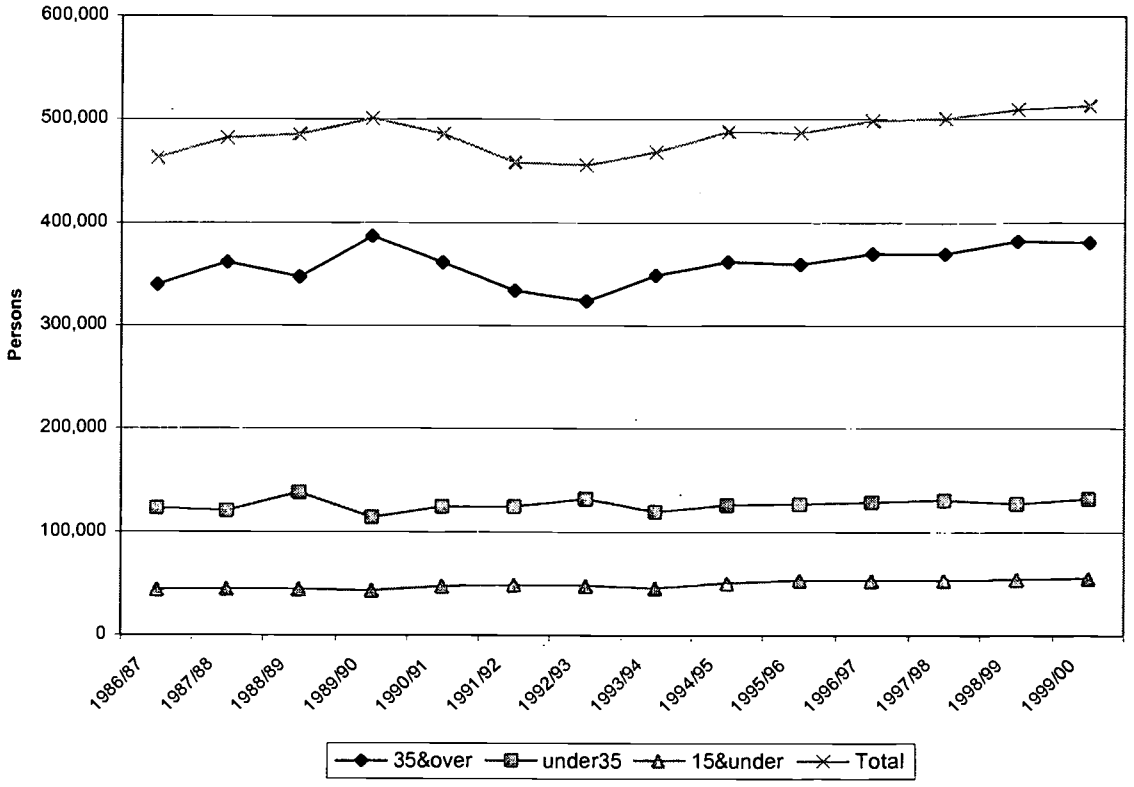


Table 16
Employment in routine production services (blue collar), by hours worked per week: Australia, 1986-87 to 1999-00

	Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
	absolute	percent	av.annual percent	percent of change		
35 & over	40,917	12.0	0.6	81.8	73.4	74.2
Under 35	9,131	7.4	0.4	18.2	26.6	25.8
15 & under	11,216	25.4	1.9	22.4	9.5	10.8
Total	**50,048**	**10.8**	**0.5**	**100.0**	**100.0**	**100.0**

Note: Columns do not sum because 'Under 35' includes '15 & under'

Figure 17
Employment in routine production services (low skill), by hours worked per week: Australia, 1986-87 to 1999-00

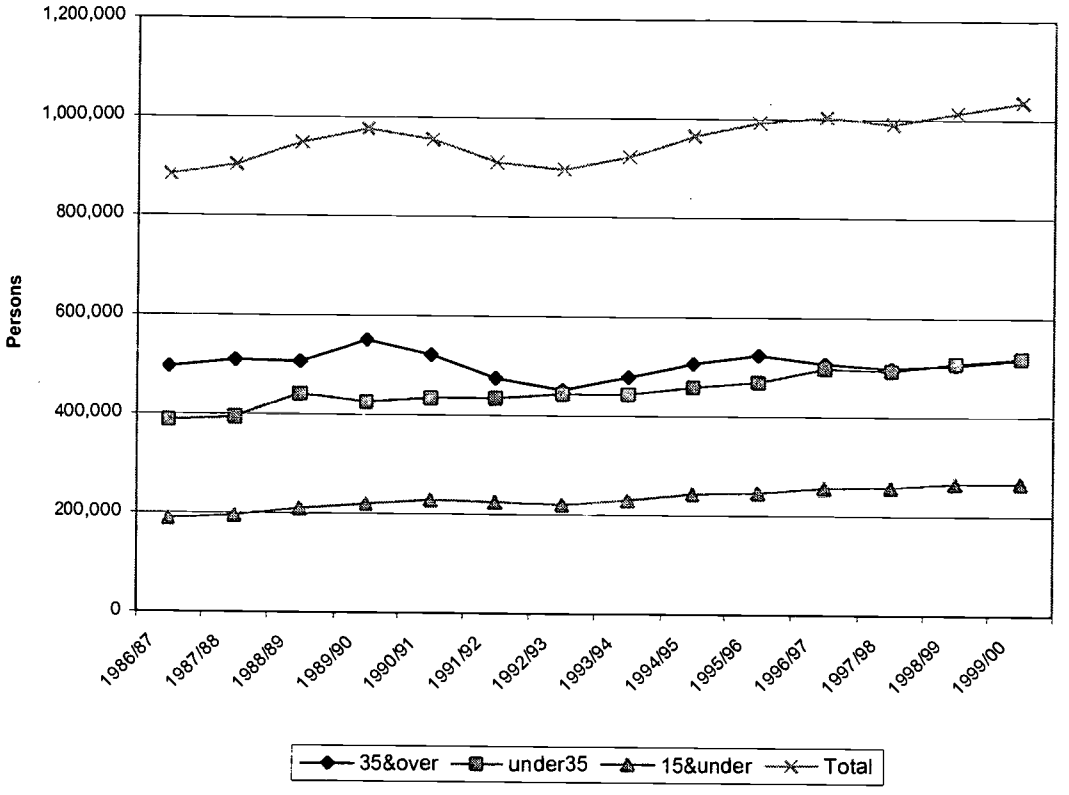


Table 17
Employment in routine production services (low skill), by hours worked per week: Australia, 1986-87 to 1999-00

	Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
	absolute	percent	av.annual percent	percent of change		
35 & over	21,463	4.3	(0.0)	14.1	56.1	49.9
Under 35	130,618	33.7	2.0	85.9	43.9	50.1
15 & under	77,916	41.2	2.6	51.2	21.4	25.8
Total	**152,081**	**17.2**	**1.0**	**100.0**	**100.0**	**100.0**

Note: Columns do not sum because 'Under 35' includes '15 & under'

Figure 18
Employment in all occupational groups, by gender: Australia, 1986-87 to 1999-00

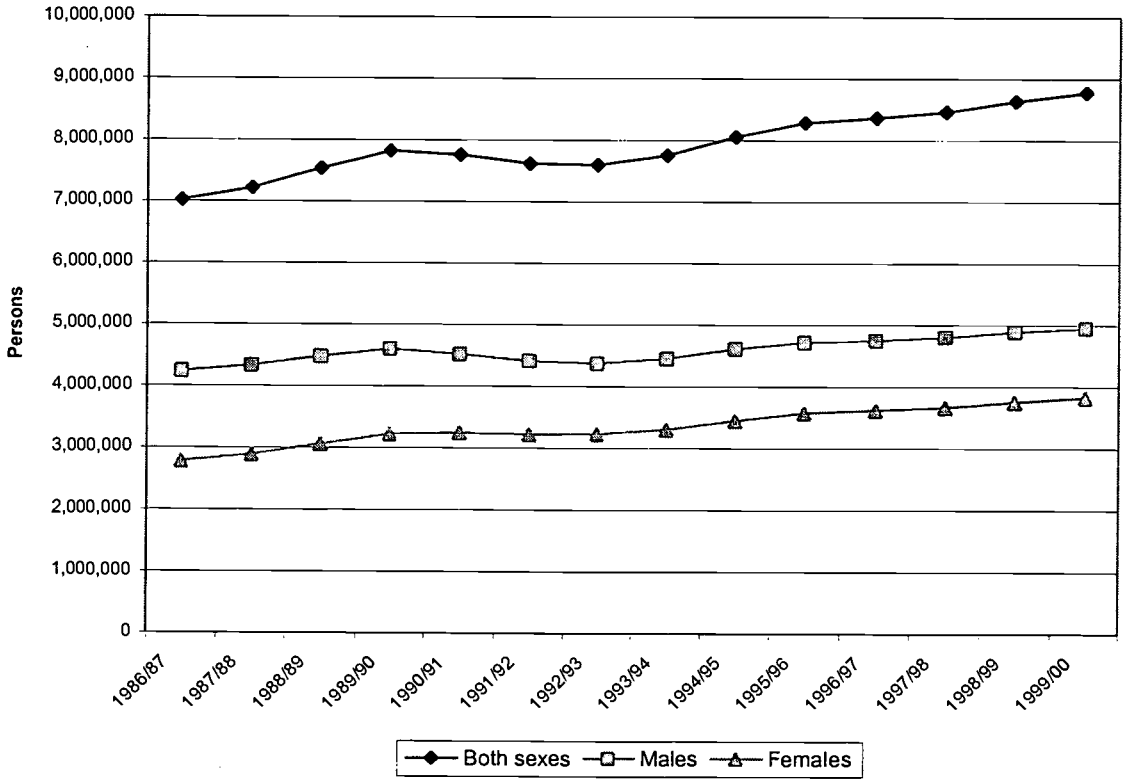


Table 18
Employment in all occupational groups, by gender: Australia, 1986-87 to 1999-00

	Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
	absolute	percent	av.annual percent	percent of change		
Males	715,406	16.9	1.0	40.7	60.4	56.4
Females	1,042,496	37.5	2.3	59.3	39.6	43.6
Both sexes	**1,757,902**	**25.0**	**1.5**	**100.0**	**100.0**	**100.0**

Table 19
Average annual rate of change* in employment - all age groups, all hours worked: 1986/87 to 1999/00 (percent per annum)

		Males	Females	Both sexes
1	Symbolic analytic services (conceptual)	2.1	4.4	2.7
2	Symbolic analytic services (technical)	(1.3)	(0.5)	(1.1)
3	In-person services (professional)	1.2	2.6	2.1
4	In-person services (intermediate)	1.3	2.8	1.9
5	In-person services (elementary)	2.4	3.3	3.0
6	Routine production services (advanced skill)	0.3	1.4	0.4
7	Routine production services (white collar)	(0.3)	0.9	0.6
8	Routine production services (blue collar)	1.0	(1.5)	0.5
9	Routine production services (low-skill)	0.8	1.3	1.0
All occupational categories		**1.0**	**2.3**	**1.5**

* OLS estimates

Table 20
Net job creation, between 1986/87 and 1999/00

		Males	Females	Both sexes
1	Symbolic analytic services (conceptual)	258,357	192,515	450,872
2	Symbolic analytic services (technical)	(16,991)	2,707	(14,284)
3	In-person services (professional)	35,315	150,204	185,519
4	In-person services (intermediate)	123,051	154,805	277,856
5	In-person services (elementary)	108,743	324,400	433,143
6	Routine production services (advanced skill)	80,327	20,525	100,852
7	Routine production services (white collar)	(10,929)	132,745	121,816
8	Routine production services (blue collar)	55,332	(5,284)	50,048
9	Routine production services (low-skill)	82,201	69,879	152,080
All occupational categories		**715,406**	**1,042,496**	**1,757,902**

Figure 19
Male employment by occupational category: Australia, 1986-87 to 1999-00

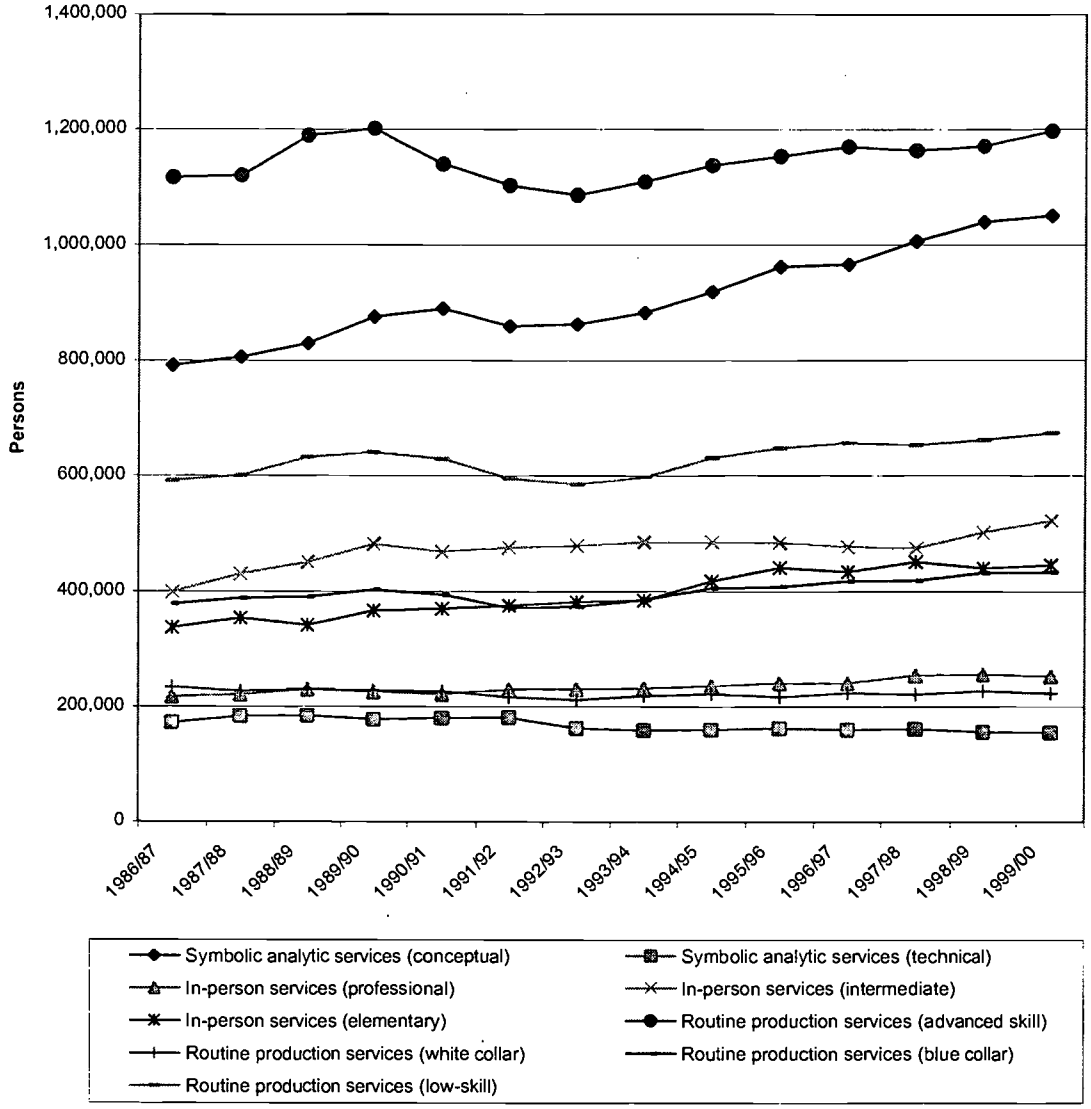


Figure 20
Female employment by occupational category: Australia, 1986-87 to 1999-00

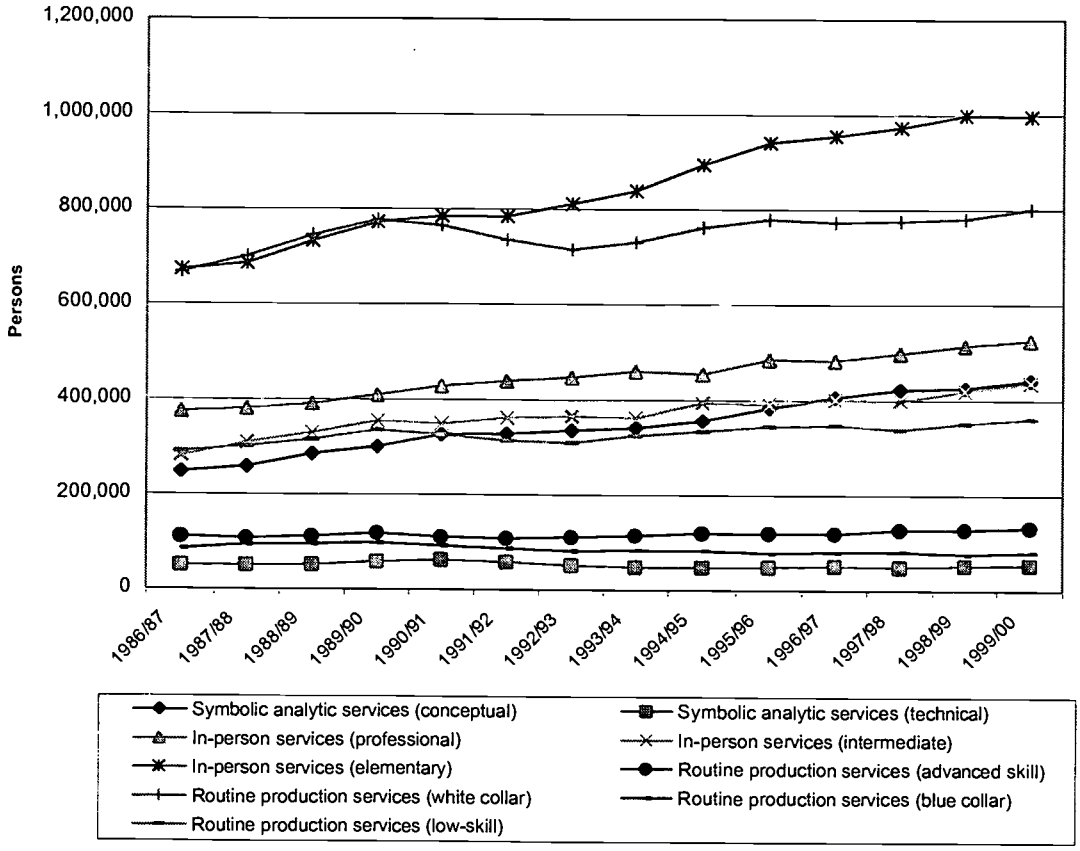


Table 21
Average annual rate of change* in employment - by hours worked per week: 1986/87 to 1999/00 (percent per annum)

		Males		Females	
		Less than 35 hours	35 hours or more	Less than 35 hours	35 hours or more
1	Symbolic analytic services (conceptual)	2.5	2.1	3.1	5.3
2	Symbolic analytic services (technical)	(3.6)	(0.9)	(0.5)	(0.5)
3	In-person services (professional)	1.7	1.1	2.9	2.4
4	In-person services (intermediate)	1.2	1.3	2.4	3.1
5	In-person services (elementary)	5.0	0.9	4.1	1.8
6	Routine production services (advanced skill)	(0.7)	0.5	1.5	1.2
7	Routine production services (white collar)	(0.3)	(0.3)	1.5	0.3
8	Routine production services (blue collar)	0.9	1.0	(0.8)	(2.0)
9	Routine production services (low-skill)	2.6	(0.2)	1.5	0.9
All occupations		**1.5**	**0.9**	**2.6**	**1.9**

* OLS estimates

Table 22
Net job creation, between 1986/87 and 1999/00 by hours worked per week

		Males		Females	
		Less than 35 hours	35 hours or more	Less than 35 hours	35 hours or more
1	Symbolic analytic services (conceptual)	50,206	208,151	56,394	136,122
2	Symbolic analytic services (technical)	(11,190)	(5,801)	1,370	1,337
3	In-person services (professional)	10,446	24,870	78,718	71,485
4	In-person services (intermediate)	20,226	102,825	64,423	90,382
5	In-person services (elementary)	92,072	16,671	266,809	57,591
6	Routine production services (advanced skill)	(8,300)	88,626	8,898	11,627
7	Routine production services (white collar)	(902)	(11,831)	87,207	45,538
8	Routine production services (blue collar)	8,587	46,744	543	(5,827)
9	Routine production services (low-skill)	77,804	4,398	52,815	17,065
All occupations		**240,753**	**474,653**	**617,177**	**425,319**

Figure 21
Employment in symbolic analytic services (conceptual), by gender: Australia, 1986-87 to 1999-00

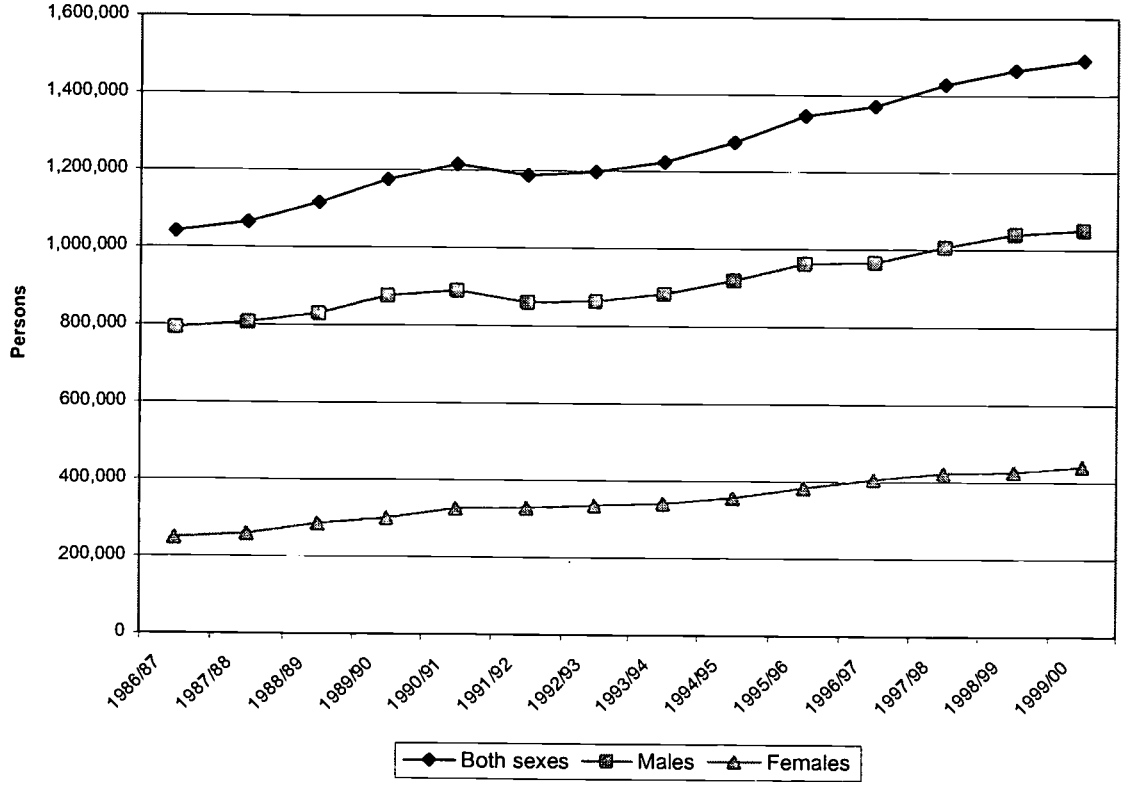


Table 23
Employment in symbolic analytic services (conceptual), by gender: Australia, 1986-87 to 1999-00

	Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
	absolute	percent	av.annual percent	percent of change		
Males	258,357	32.6	2.1	57.3	76.1	70.4
Females	192,515	77.5	4.4	42.7	23.9	29.6
Both sexes	**450,872**	**43.3**	**2.7**	**100.0**	**100.0**	**100.0**

Figure 22
Employment in symbolic analytic services (technical), by gender: Australia, 1986-87 to 1999-00

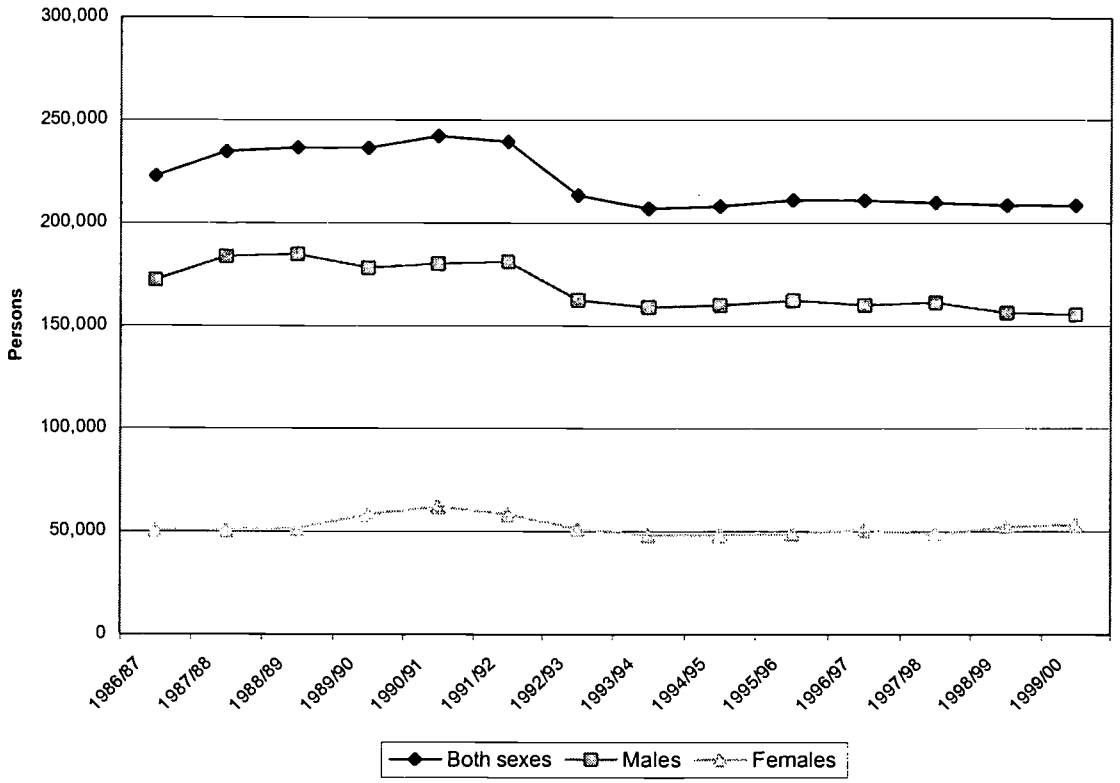


Table 24
Employment in symbolic analytic services (technical), by gender: Australia, 1986-87 to 1999-00

	Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
	absolute	percent	av.annual percent	percent of change		
Males	(16,991)	(9.9)	(1.3)	118.9	77.3	74.5
Females	2,707	5.4	(0.5)	(18.9)	22.7	25.5
Both sexes	**(14,284)**	**(6.4)**	**(1.1)**	**100.0**	**100.0**	**100.0**

Figure 23
Employment in in-person services (professional), by gender: Australia, 1986-87 to 1999-00

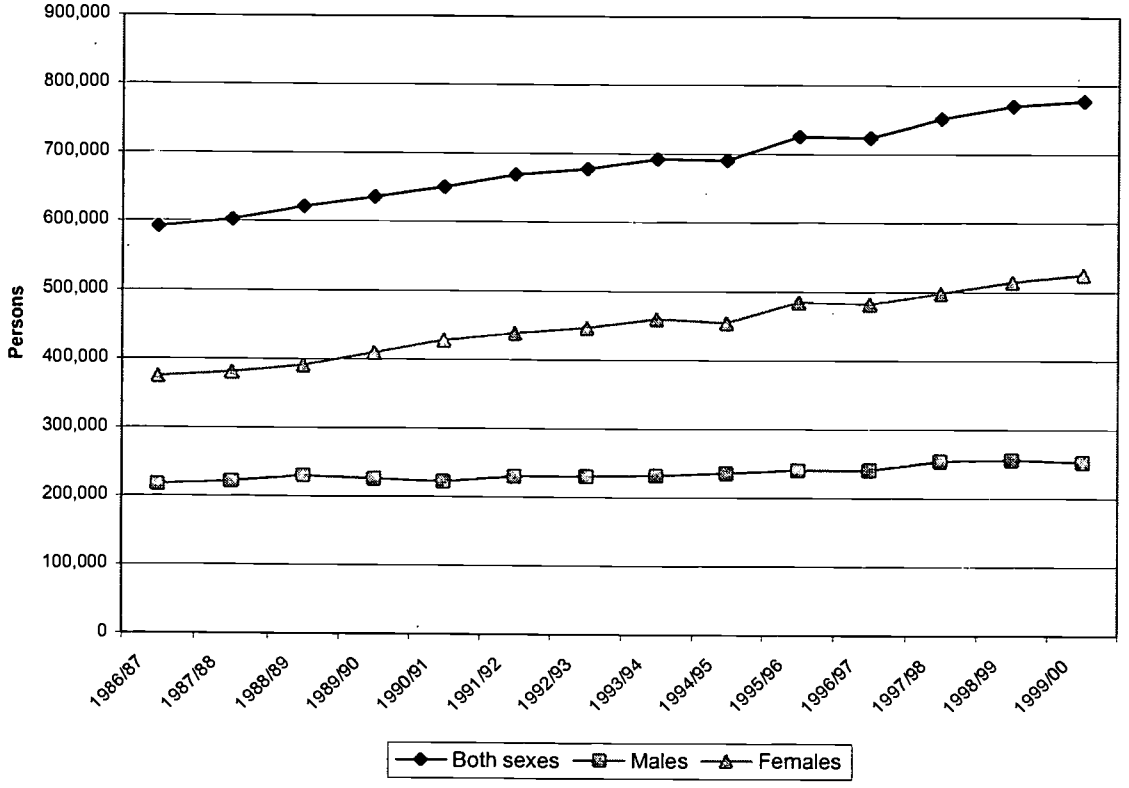


Table 25
Employment in in-person services (professional), by gender: Australia, 1986-87 to 1999-00

	Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
	absolute	percent	av.annual percent	percent of change		
Males	35,315	16.3	1.2	19.0	36.7	32.5
Females	150,204	40.1	2.6	81.0	63.3	67.5
Both sexes	**185,519**	**31.3**	**2.1**	**100.0**	**100.0**	**100.0**

Figure 24
Employment in in-person services (intermediate), by gender: Australia, 1986-87 to 1999-00

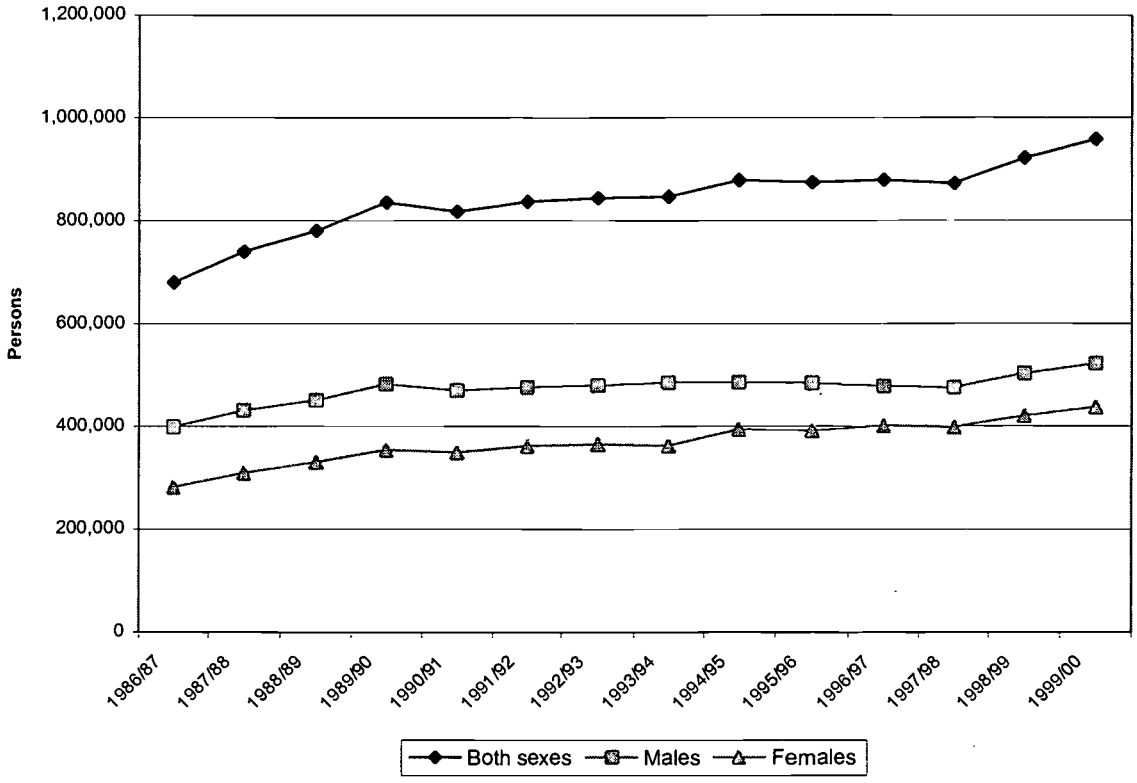


Table 26
Employment in in-person services (intermediate), by gender: Australia, 1986-87 to 1999-00

	Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
	absolute	percent	av.annual percent	percent of change		
Males	123,051	30.9	1.3	44.3	58.6	54.4
Females	154,805	55.0	2.8	55.7	41.4	45.6
Both sexes	**277,856**	**40.9**	**1.9**	**100.0**	**100.0**	**100.0**

Figure 25
Employment in in-person services (elementary), by gender: Australia, 1986-87 to 1999-00

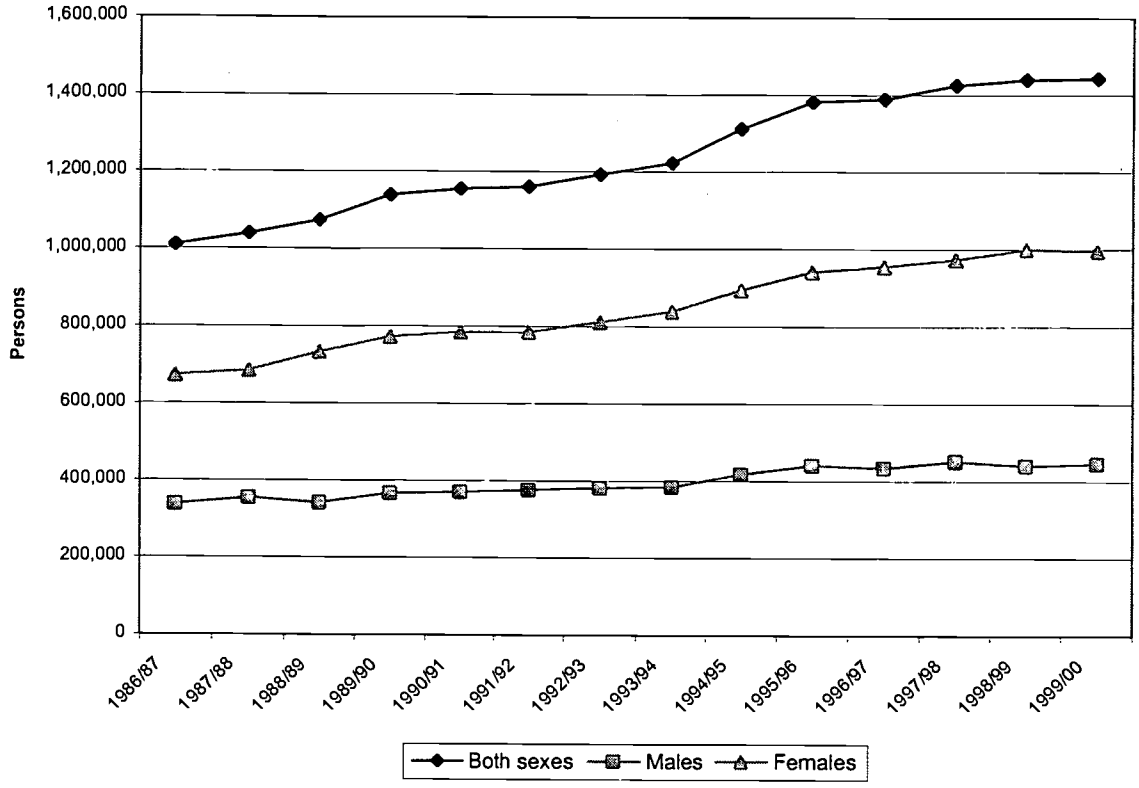


Table 27
Employment in in-person services (elementary), by gender: Australia, 1986-87 to 1999-00

	Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
	absolute	percent	av.annual percent	percent of change		
Males	108,743	32.3	2.4	25.1	33.4	30.9
Females	324,400	48.3	3.3	74.9	66.6	69.1
Both sexes	**433,143**	**42.9**	**3.0**	**100.0**	**100.0**	**100.0**

Figure 26
Employment in routine production services (advanced skill), by gender: Australia, 1986-87 to 1999-00

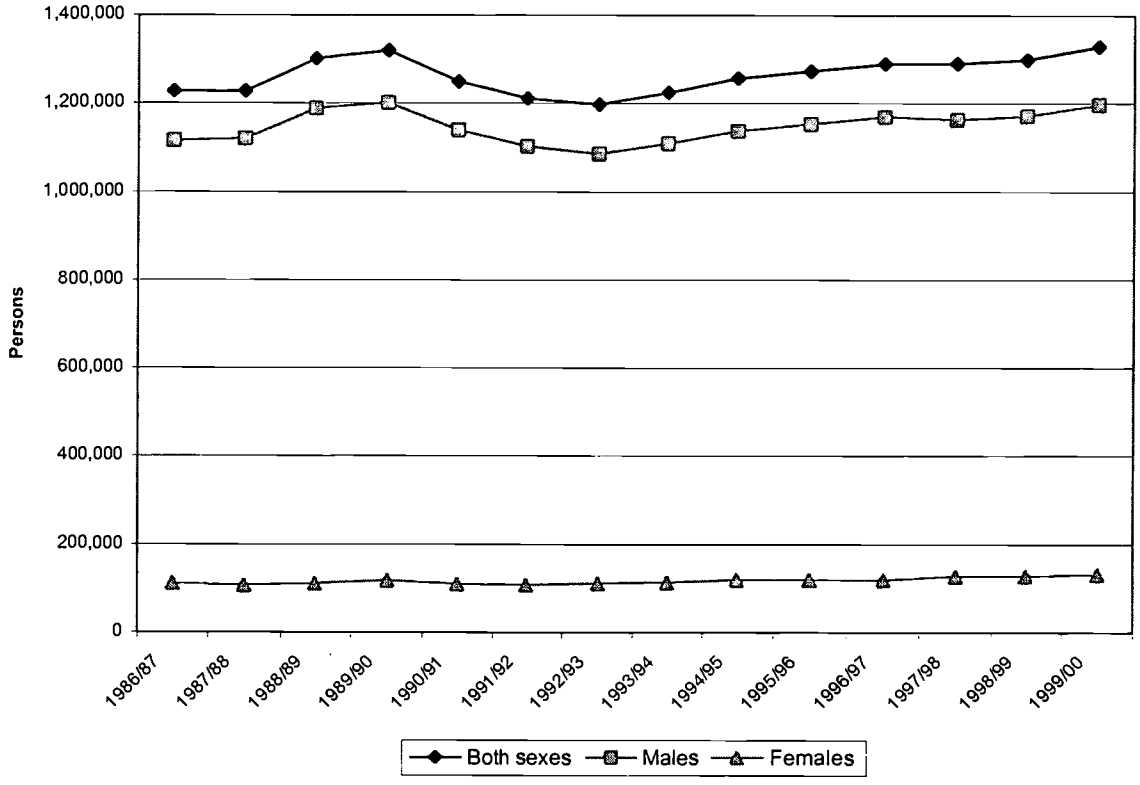


Table 28
Employment in routine production services (advanced skill), by gender: Australia, 1986-87 to 1999-00

	Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
	absolute	percent	av.annual percent	percent of change		
Males	80,327	7.2	0.3	79.6	90.9	90.1
Females	20,525	18.4	1.4	20.4	9.1	9.9
Both sexes	**100,851**	**8.2**	**0.4**	**100.0**	**100.0**	**100.0**

Figure 27
Employment in routine production services (white collar), by gender: Australia, 1986-87 to 1999-00

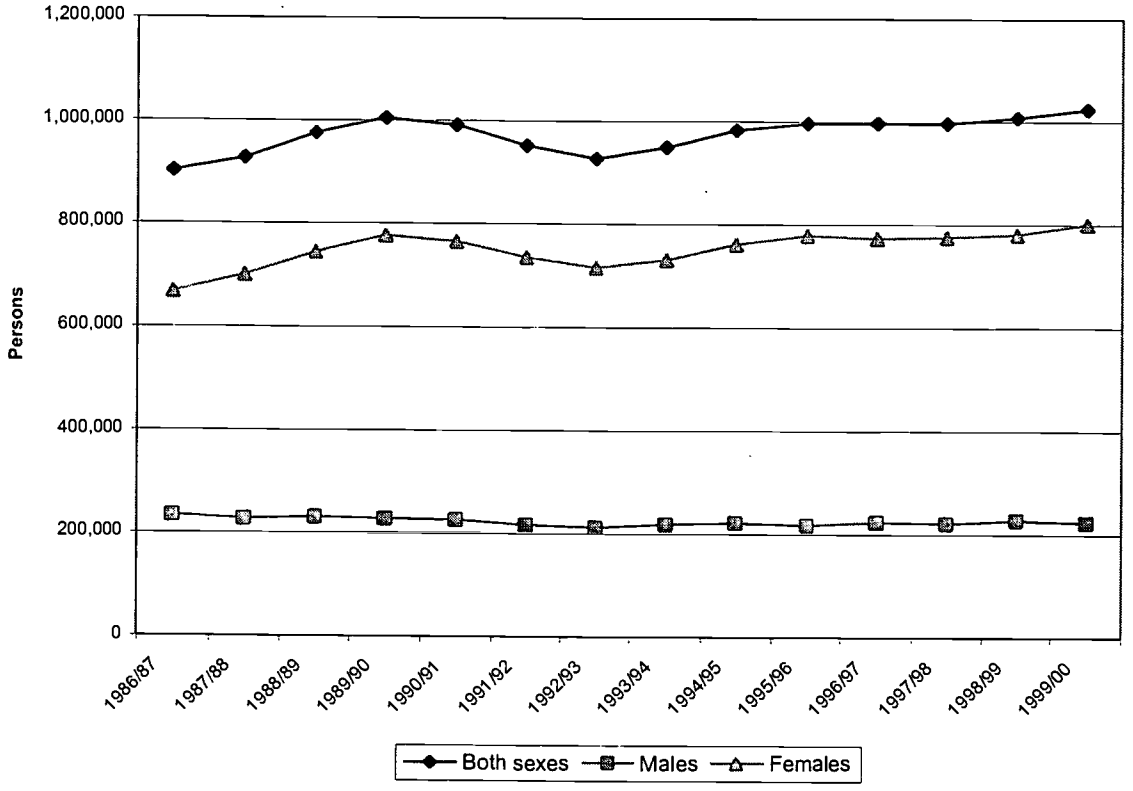


Table 29
Employment in routine production services (white collar), by gender: Australia, 1986-87 to 1999-00

	Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
	absolute	percent	av.annual percent	percent of change		
Males	(10,929)	(4.7)	(0.3)	(9.0)	26.0	21.8
Females	132,745	19.9	0.9	109.0	74.0	78.2
Both sexes	**121,816**	**13.5**	**0.6**	**100.0**	**100.0**	**100.0**

Figure 28
Employment in routine production services (blue collar), by gender: Australia, 1986-87 to 1999-00

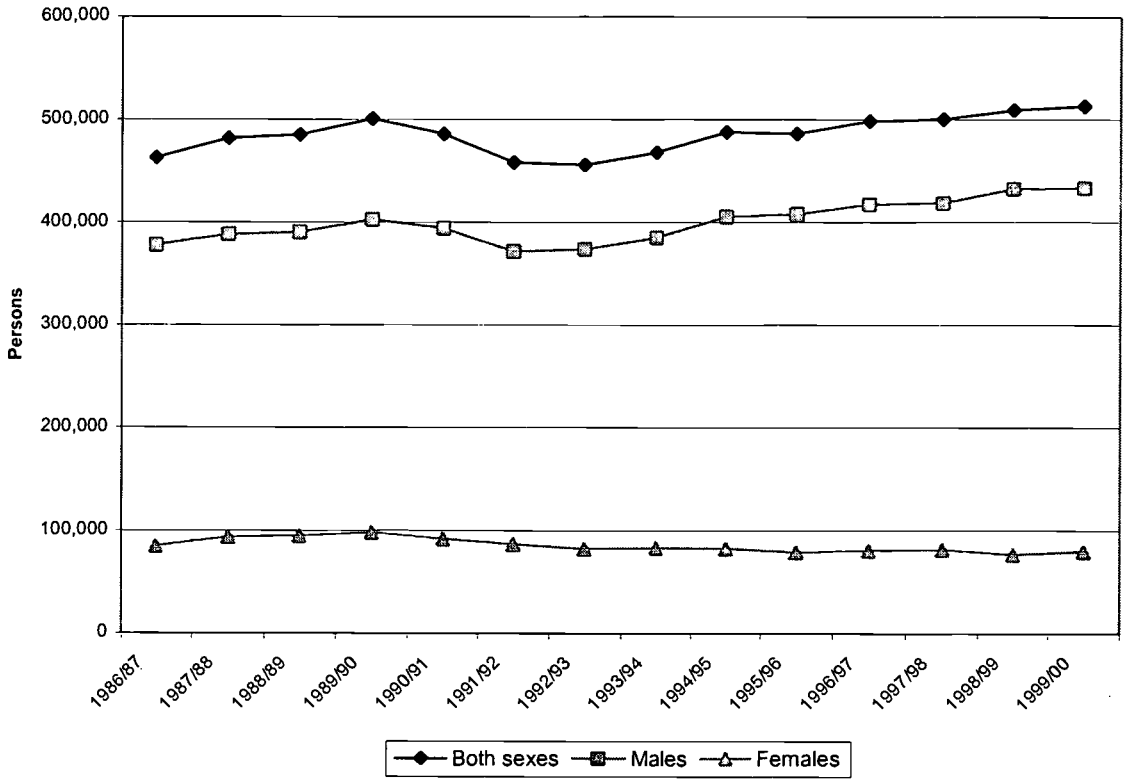


Table 30
Employment in routine production services (blue collar), by gender: Australia, 1986-87 to 1999-00

	Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
	absolute	percent	av.annual percent	percent of change		
Males	55,332	14.6	1.0	110.6	81.7	84.5
Females	(5,284)	(6.2)	(1.5)	(10.6)	18.3	15.5
Both sexes	**50,048**	**10.8**	**0.5**	**100.0**	**100.0**	**100.0**

Figure 29
Employment in routine production services (low skill), by gender: Australia, 1986-87 to 1999-00

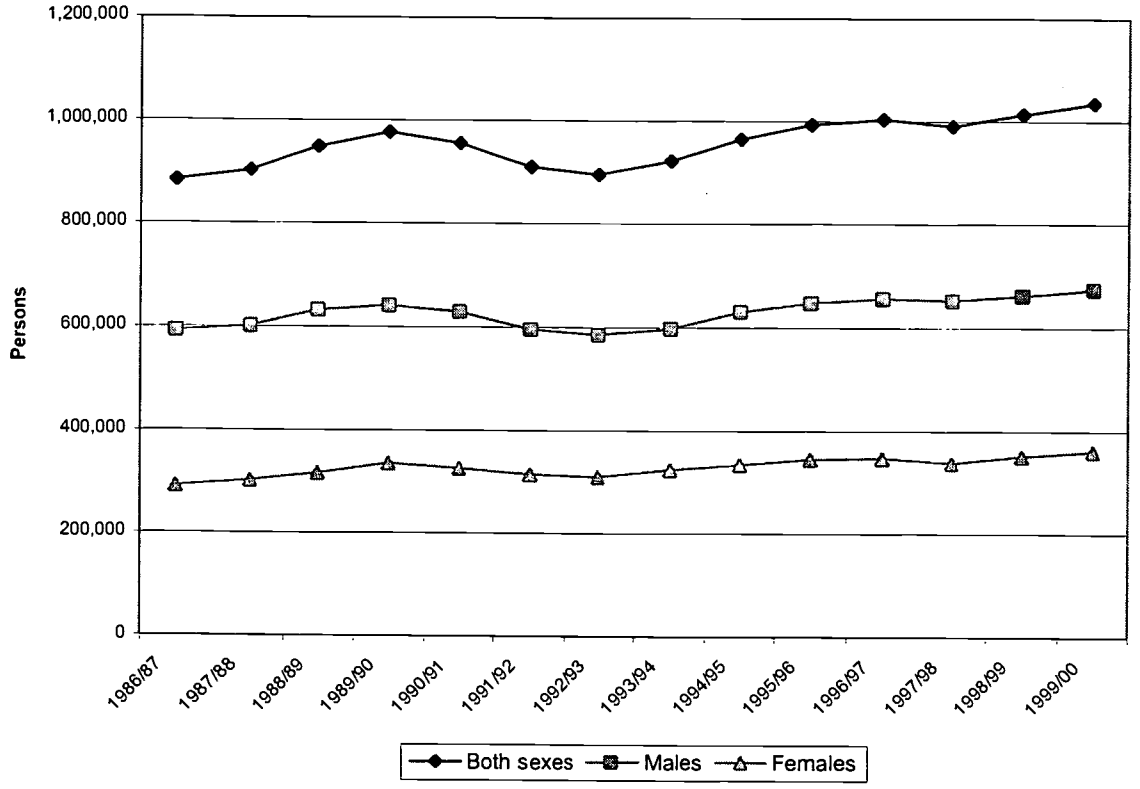


Table 31
Employment in routine production services (low skill), by gender: Australia, 1986-87 to 1999-00

	Change from 1986-87 to 1999-00				percent of total 1986-87	percent of total 1999-00
	absolute	percent	av.annual percent	percent of change		
Males	82,201	13.9	0.8	54.1	67.1	65.1
Females	69,879	24.0	1.3	45.9	32.9	34.9
Both sexes	**152,081**	**17.2**	**1.0**	**100.0**	**100.0**	**100.0**

Figure 30
Changes in employment between 1986-87 and 1999-00, by age group: Australia

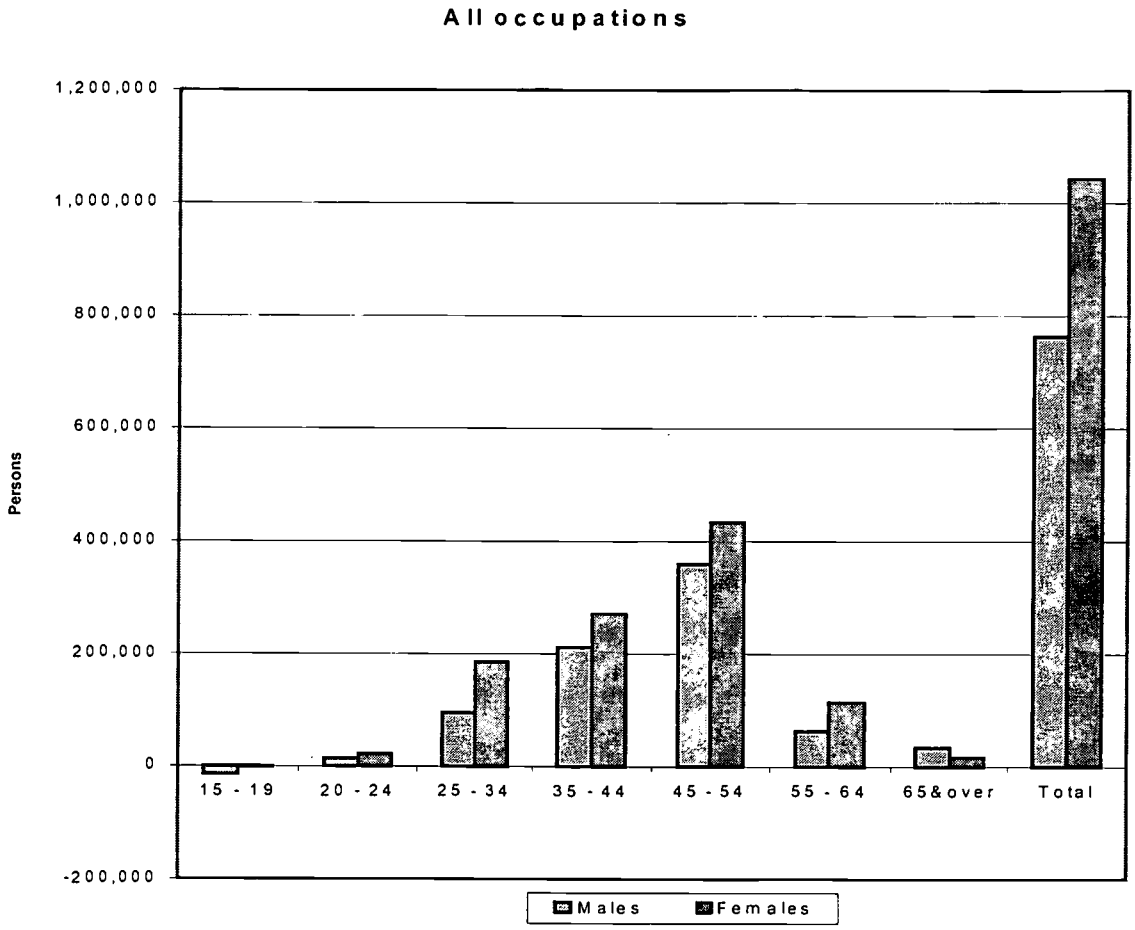


Figure 30
Changes in employment between 1986-87 and 1999-00, by age group: Australia

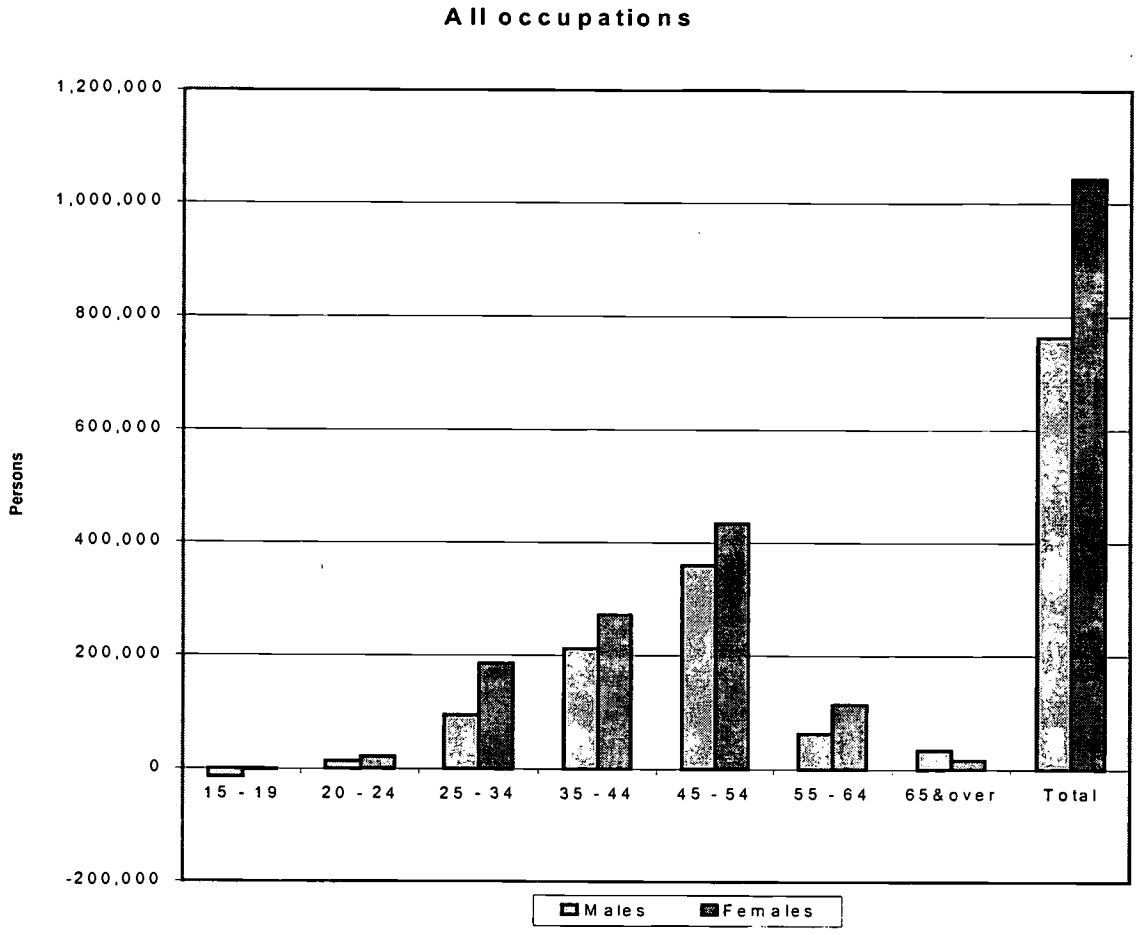
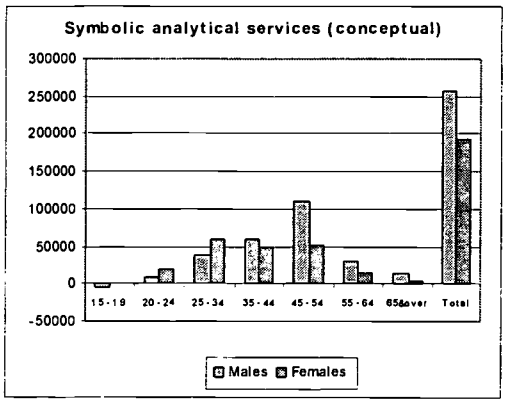
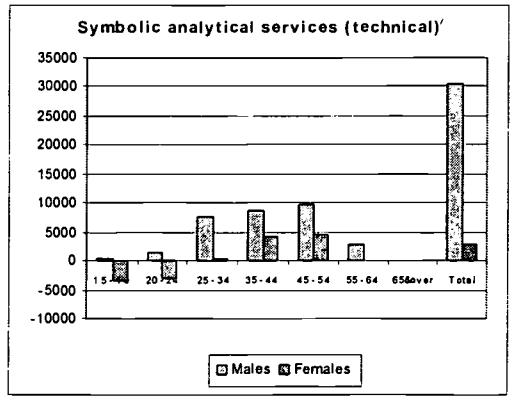
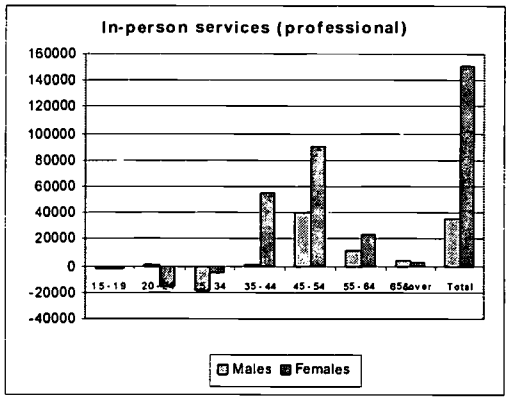
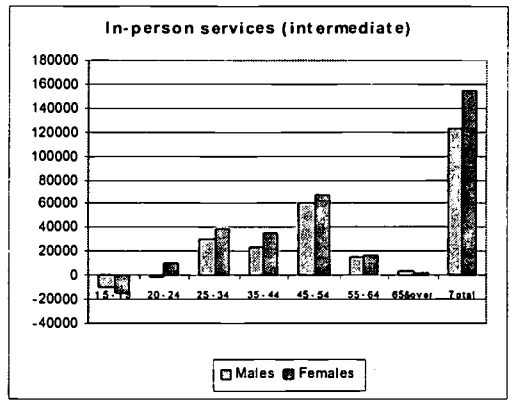


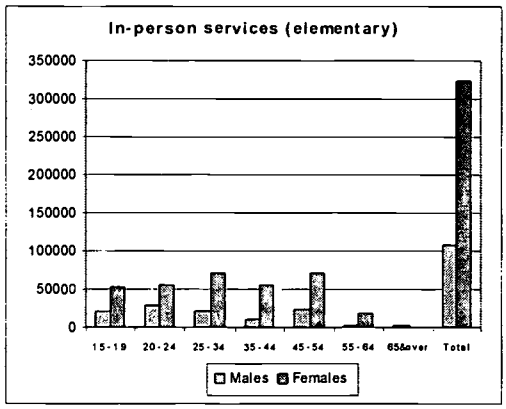
Figure 31
Changes in employment between 1986-87 and 1999-00, by occupational category and age group: Australia

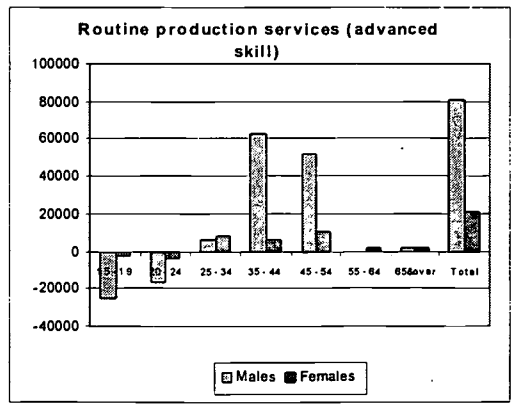


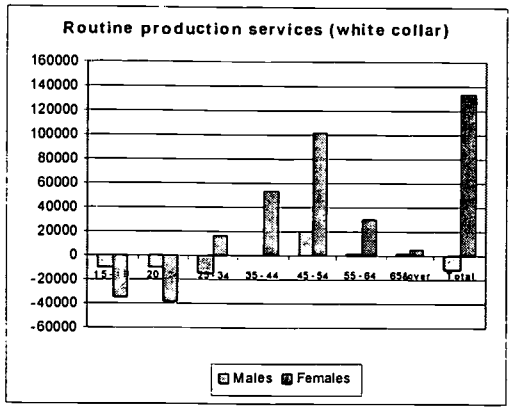


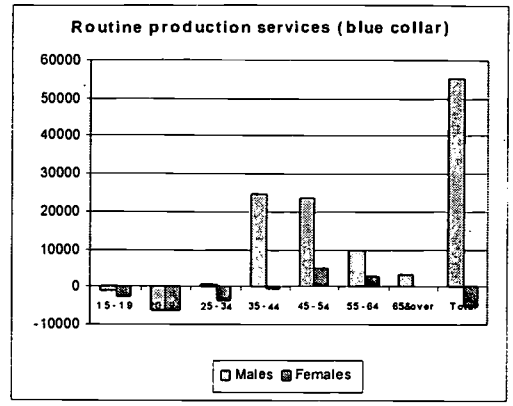









Routine production services (white collar)
160000
140000
120000
100000
80000
60000
40000
20000
0
-20000
-40000
-60000
15-19
20-24
25-34
35-44
45-54
55-64
65&over
Total
Males
Females


Routine production services (blue collar)
60000
50000
40000
30000
20000
10000
0
-10000
15-19
25-34
35-44
45-54
55-64
65&over
Males
Females

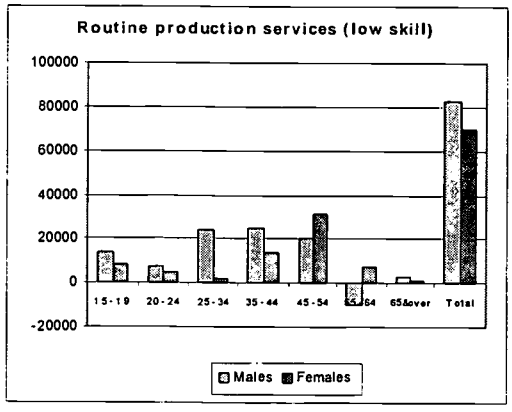

Routine production services (low skill)
100000
80000
60000
40000
20000
0
-20000
15-19
20-24
25-34
35-44
45-54
65&over
Total
Males
Females

Figure 32
Employment for those age 15 to 19, by hours worked per week as a percentage of the population age 15 to 19: Australia, 1986-87 to 1999-00

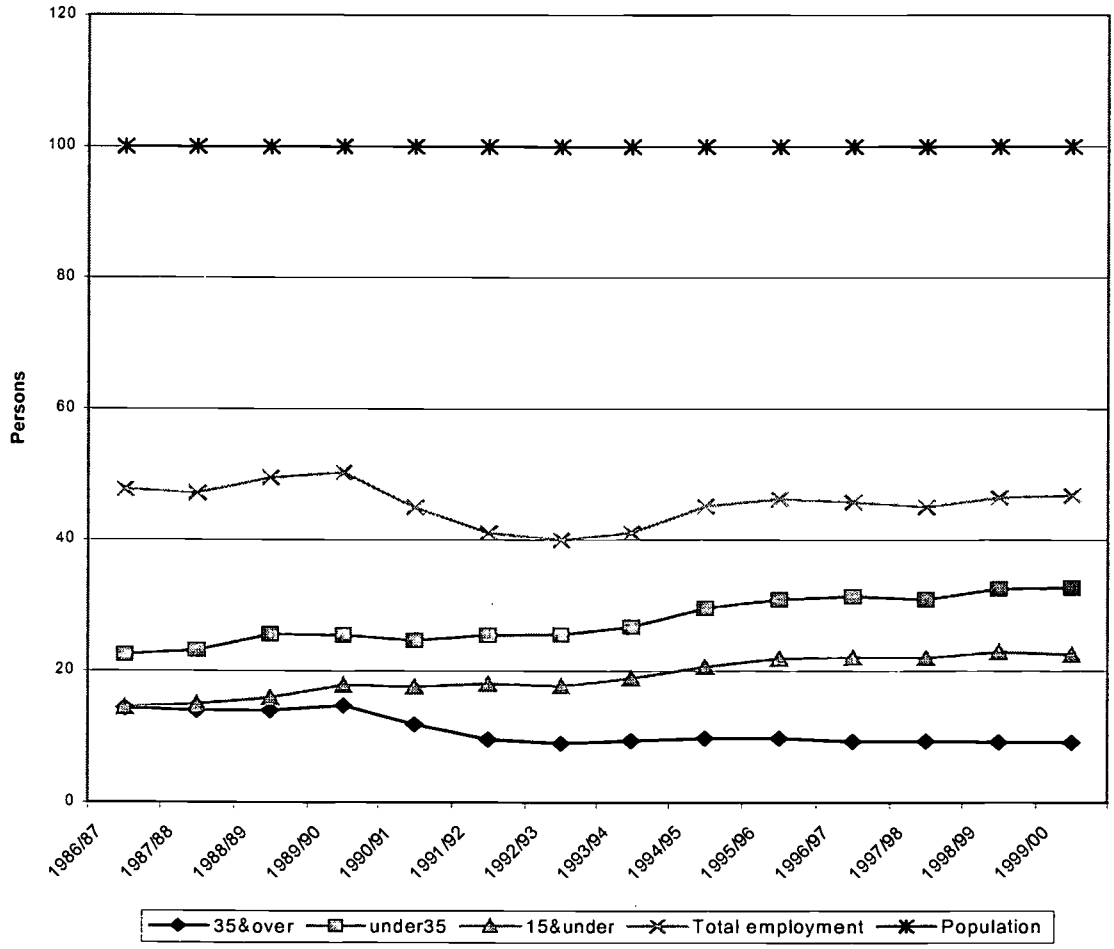


Figure 33
Employment for those age 15 to 19, by hours worked per week: Australia, 1986-87 to 1999-00

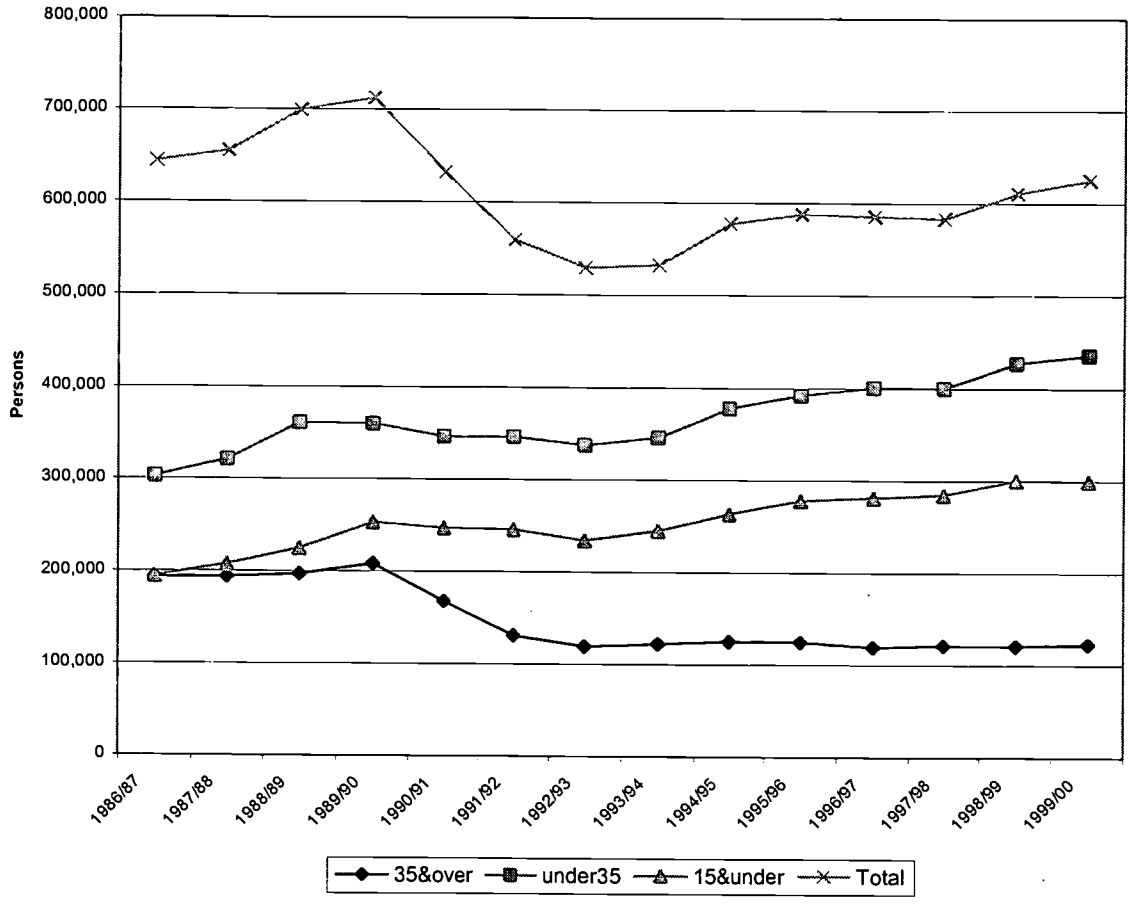


Figure 34
Occupational distribution of those in employment age 15 to 19: Australia, 1986-87 to 1999-00

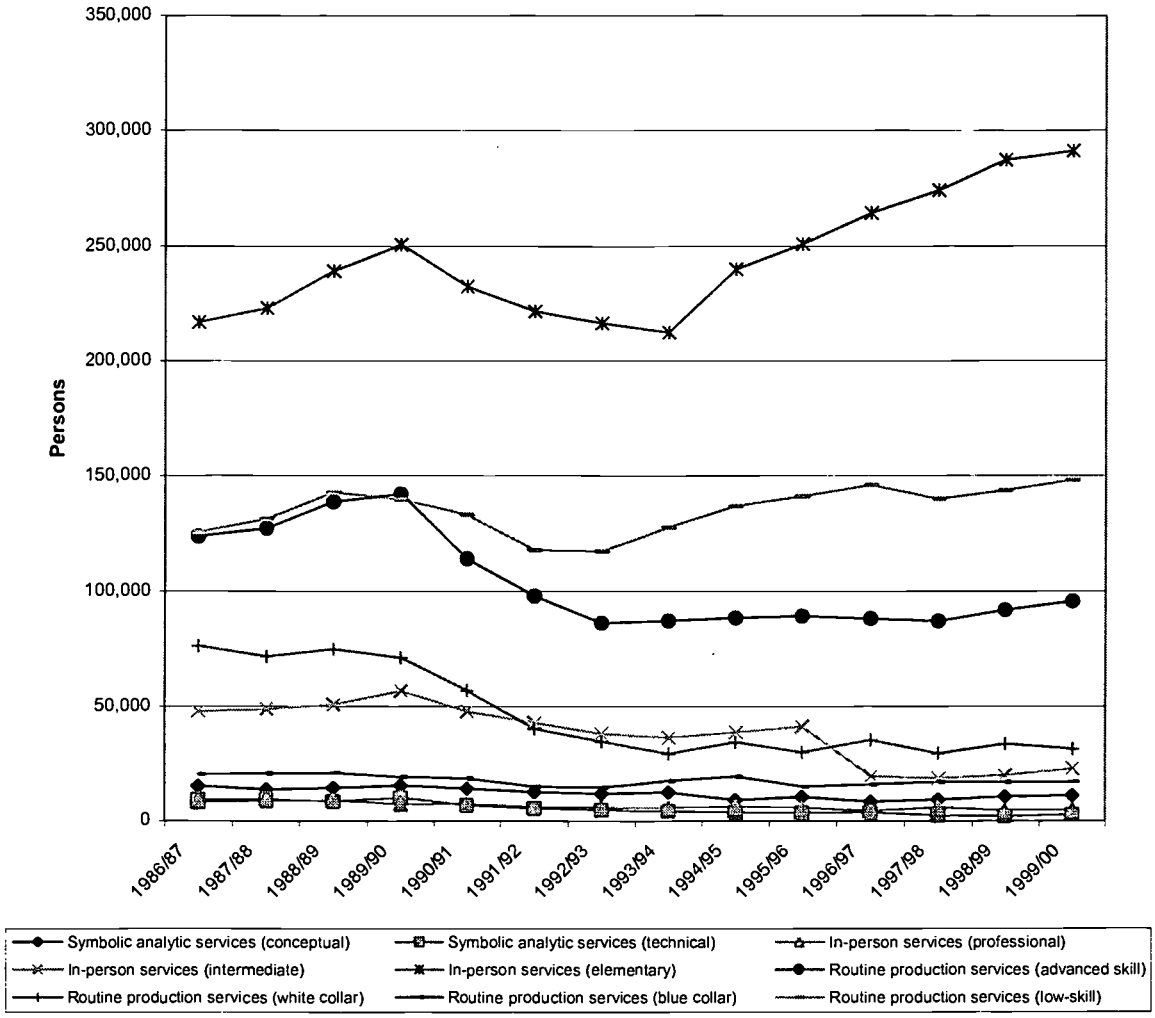


Figure 35
Occupational distribution of those in employment age 15 to 19 working 35 hours or more per week: Australia, 1986-87 to 1999-00

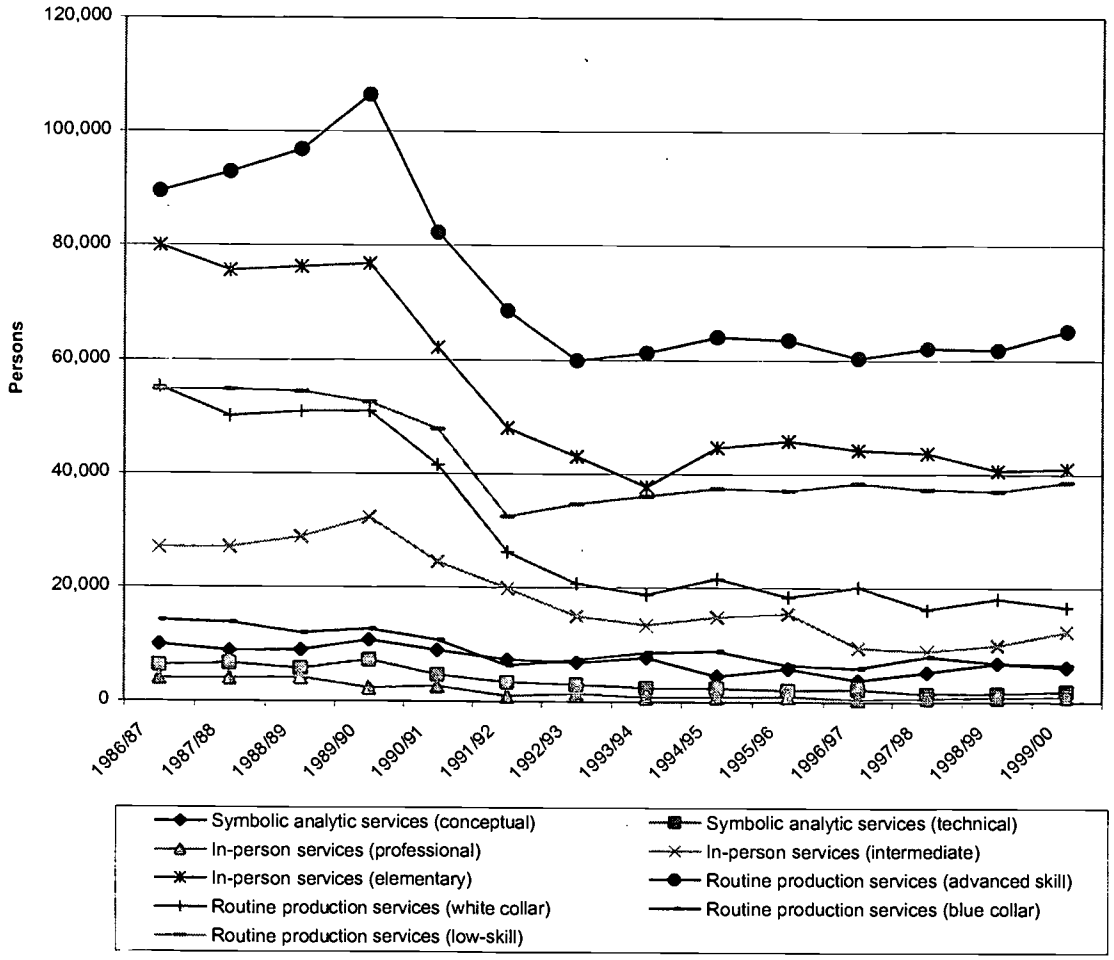


Figure 36
Occupational distribution of those in employment age 15 to 19 working 35 hours or less per week
Australia: 1986-87 to 1999-00

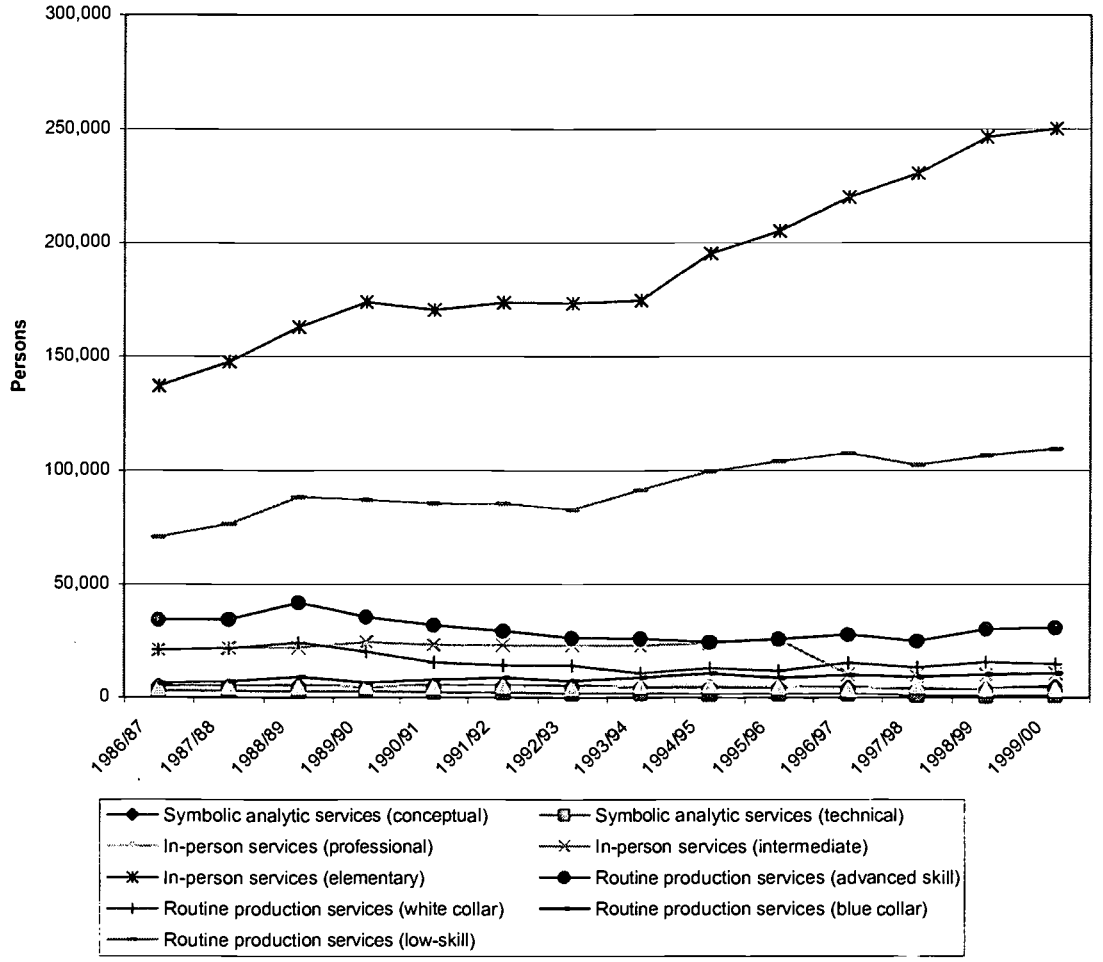


Figure 37
Occupational distribution of those in employment age 15 to 19 working 15 hours or less per week: Australia, 1986-87 to 1999-00

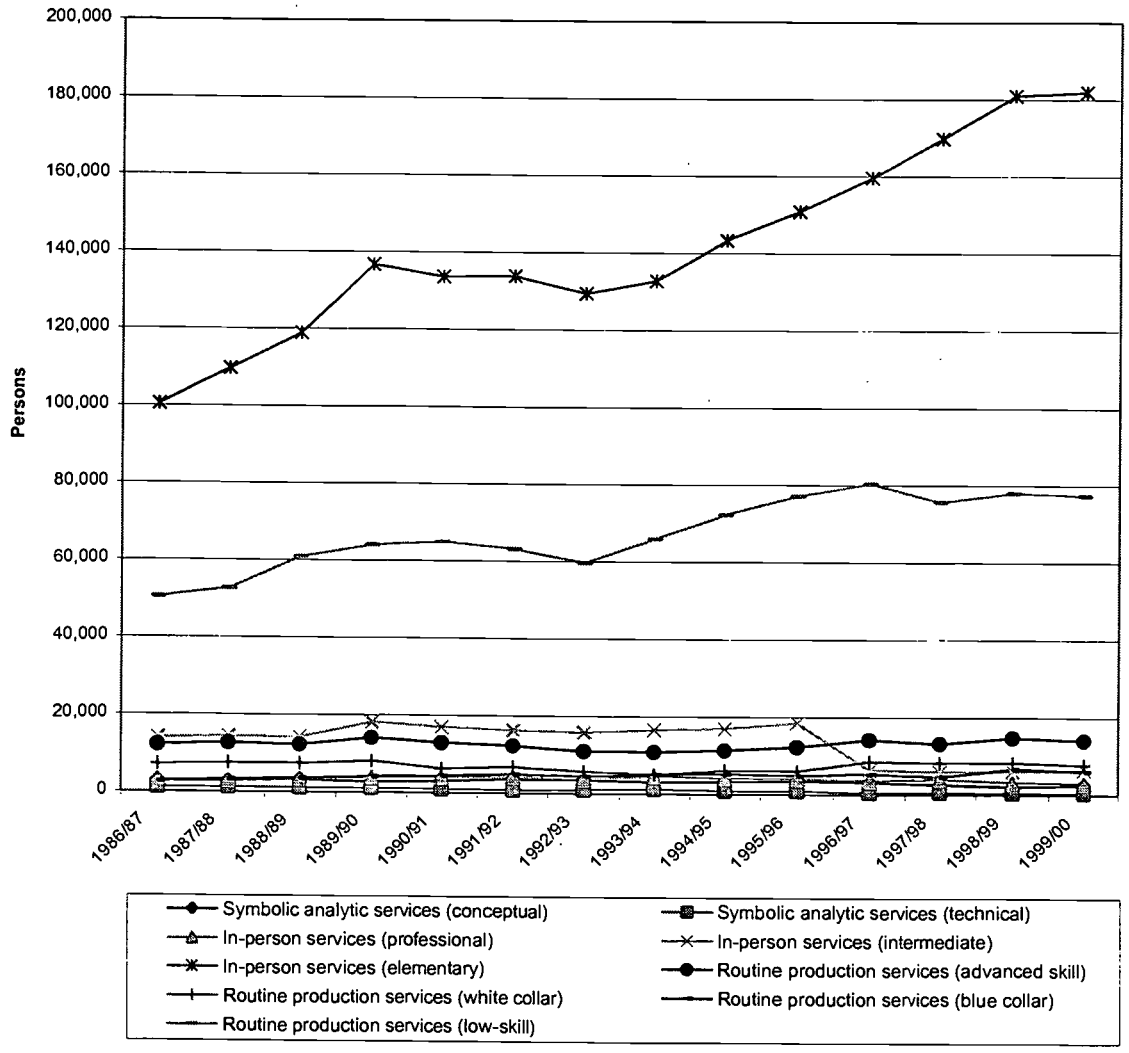


Figure 38
Employment for those age 20 to 24, by hours worked per week, as a percentage of the population age 20 to 24: Australia, 1986-87 to 1999-00

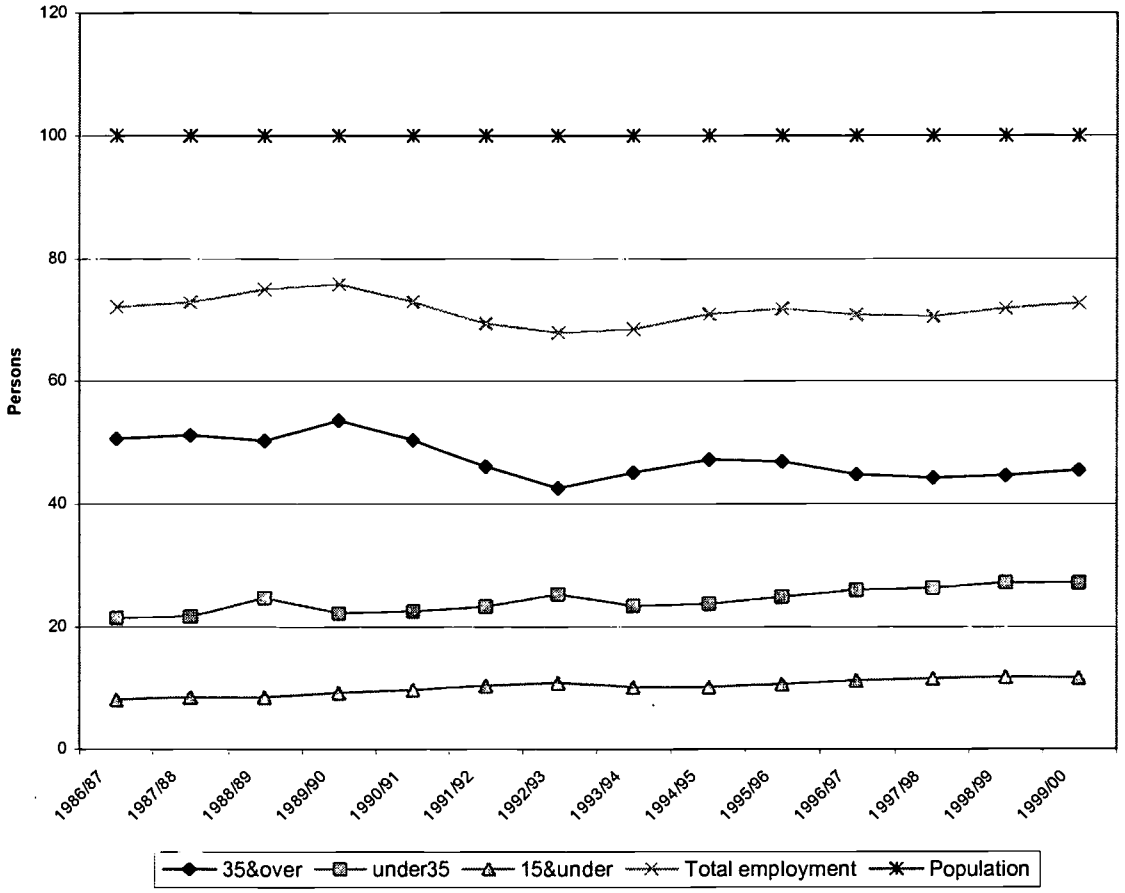


Figure 39
Employment for those age 20 to 24, by hours worked per week: Australia, 1986-87 to 1999-00

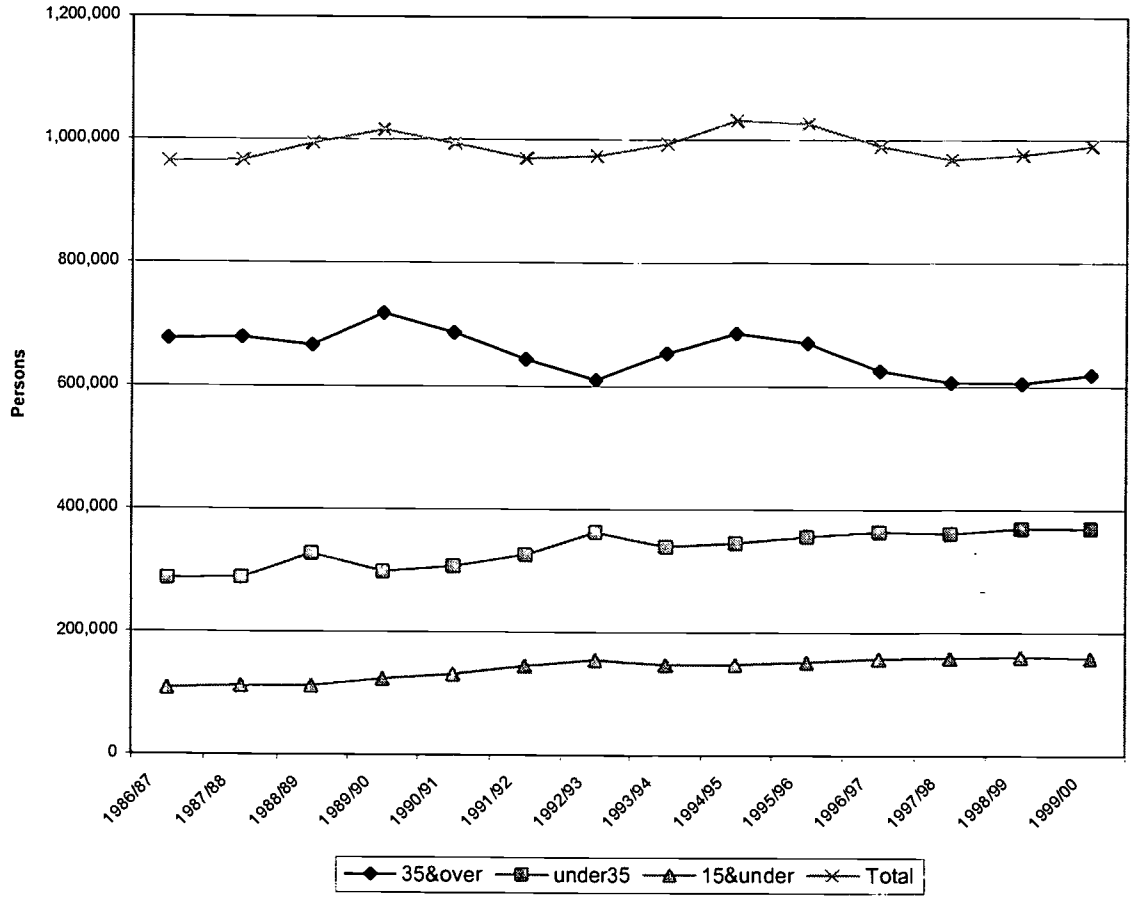


Figure 40
Occupational distribution of those in employment age 20 to 24
Australia: 1986-87 to 1999-00

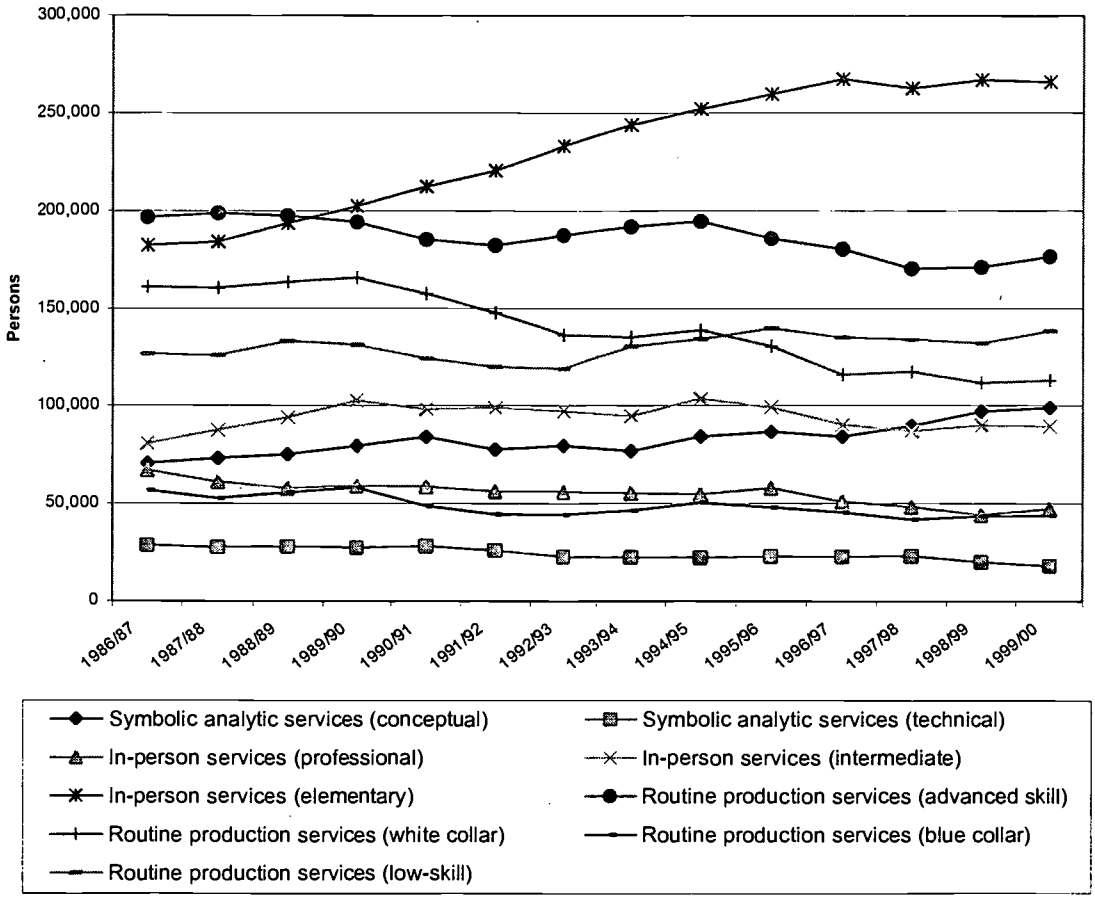


Figure 41
Occupational distribution of those in employment age 20 to 24 working 35 hours or more per week: Australia, 1986-87 to 1999-00

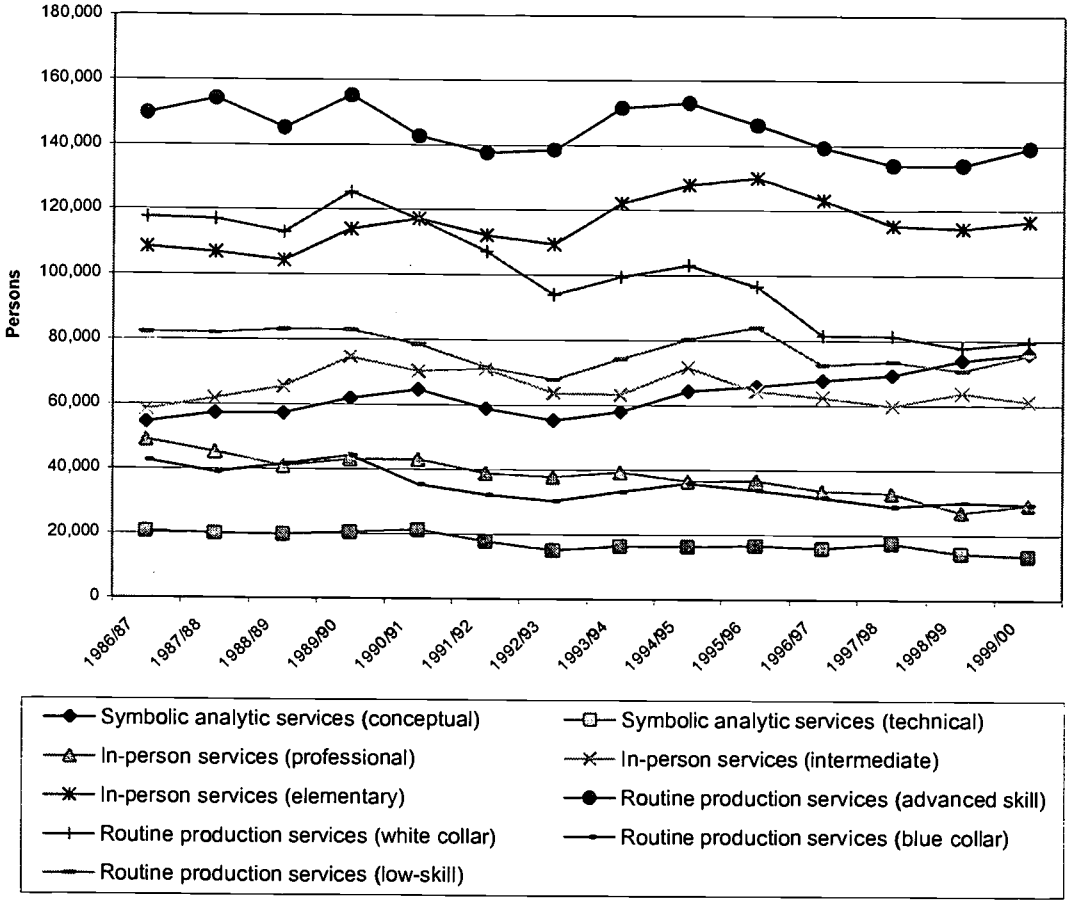


Figure 42
Occupational distribution of those in employment age 20 to 24 working 35 hours or less per week: Australia, 1986-87 to 1999-00

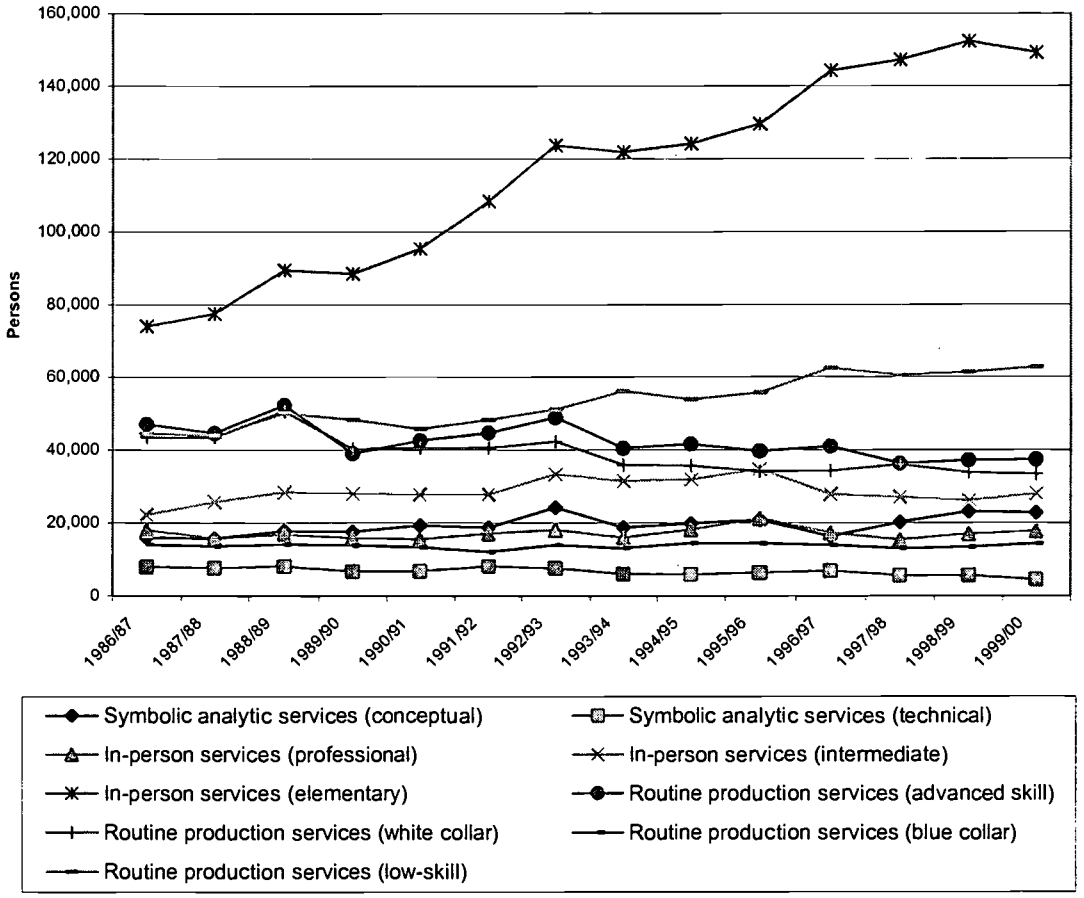
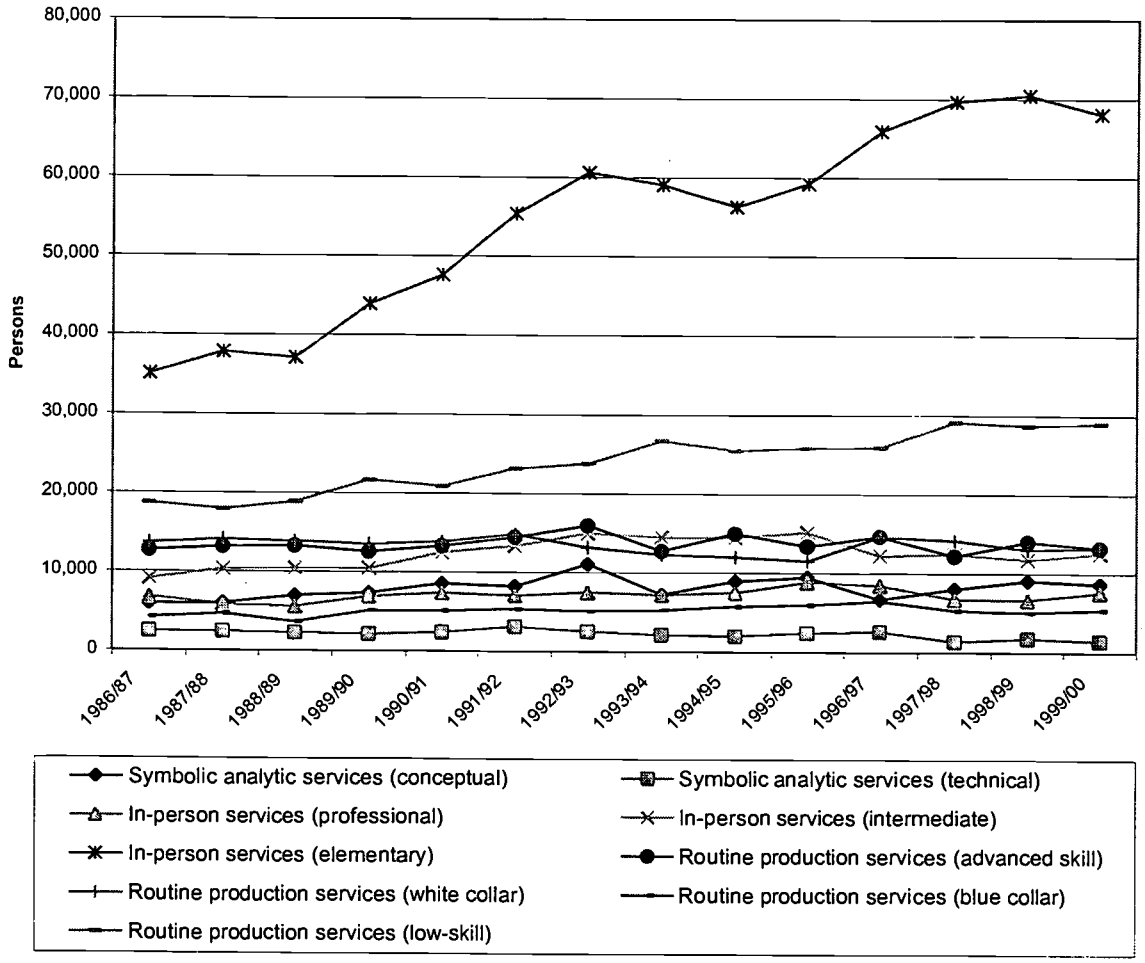


Figure 43
Occupational distribution of those in employment age 20 to 24 working 15 hours or less per week: Australia, 1986-87 to 1999-00



References

Australian Bureau of Statistics (ABS), 2000, *Labour Force Australia* (Cat. No. 6203.0), Canberra.

Dawkins, J. and Holding, A, 1987, *Skills for Australia*, AGPS, Canberra.

Friedman, T, 2000, *The Lexus and the Olive Tree*, Harper Collins, London

Maglen, L. 1994, 'Globalisation of the World Economy and its Impact upon Employment and Training in Australia', *Australian Bulletin of Labour*, 20, 298-319.

Maglen L. and Shah, C 1999, *Emerging Occupational Patterns in Australia in the Era of Globalisation and Rapid Technological Change, and Their Implications for Education and Training*, Centre for the Economics of Education and Training Working Paper No. 21, February 1999.

Maglen, L. and Shah, C. 1995, 'The Globalisation Process and Changes in the Australian Workforce between 1986 and 1991: Implications for Education and Training' in *The Impact of Vocational Education and Training*, (eds), C. Selby-Smith and F. Ferrier, AGPS, Canberra.

Reich, R. 1992, *The Work of Nations*, Simon and Schuster, New York.

APPENDIX

Allocation of the four-digit occupations identified by ASCO (second edition) to the nine occupational groups employed in this Project

1. Symbolic analytic services (conceptual)

1111	Legislators and Government Appointed Officials
1112	General Managers
1192	Importers, Exporters and Wholesalers
1193	Manufacturers
1211	Finance Managers
1212	Company Secretaries
1213	Human Resource Managers
1221	Engineering Managers
1222	Production Managers
1224	Information Technology Managers
1231	Sales and Marketing Managers
1291	Policy and Planning Managers
1292	Health Service Managers
1293	Education Managers
1296	Media Producers and Artistic Directors
1299	Other Special Managers
2111	Chemists
2112	Geologists and Geophysicists
2113	Life Scientists
2114	Environmental and Agricultural Science Professionals
2115	Medical Scientists
2119	Other Natural and Physical Science Professionals
2121	Architects and Landscape Architects
2122	Quantity Surveyors
2123	Cartographers and Surveyors
2124	Civil Engineers
2125	Electrical and Electronic Engineers
2126	Mechanical Production and Plant Engineers
2127	Mining and Materials Engineers
2128	Engineering Technologists
2129	Other Building and Engineering Professionals
2211	Accountants
2212	Auditors
2213	Corporate Treasurers
2221	Marketing and Advertising Professionals
2231	Computing Professionals
2292	Librarians
2293	Mathematicians, Statisticians and Actuaries
2299	Other Business and Information Professionals
2322	Nurse Educators and Researchers
2421	University Lecturers and Tutors

2493 Education Officers
2522 Economists
2523 Urban and Regional Planners
2529 Other Social Professionals
2531 Visual Arts and Crafts Professionals
2532 Photographers
2533 Designers and Illustrators
2534 Journalists and Related Professionals
2535 Authors and Related Professionals
2536 Film, Television, Radio and Stage Directors
2537 Musicians and Related Professionals
2538 Actors, Dancers and Related Professionals
2539 Media Presenters
3211 Branch Accountants and Managers (Financial Institutions)
3212 Financial Dealers and Brokers
3213 Financial Investment Advisers
3292 Project and Program Administrators
3322 Chefs

2. Symbolic analytic services (technical)

2291 Human Resource Professionals
2294 Business and Organisation Analysts
2295 Property Professionals
2391 Medical Imaging Professionals
2541 Air Transport Professionals
2542 Sea Transport Professionals
2543 Occupational and Environmental Health Professionals
2549 Other Professionals
3111 Medical Technical Officers
3112 Science Technical Officers
3121 Building, Architectural and Surveying and Associate Professionals
3122 Civil Engineering Associate Professionals
3123 Electrical Engineering Associate Professionals
3124 Electronic Engineering Associate Professionals
3125 Mechanical Engineering Associate Professionals
3129 Other Building and Engineering Associate Professionals
3294 Computing Support Technicians
3492 Dental Associate Professionals
3991 Primary Products Inspectors
3992 Safety Inspectors
3994 Senior Non-commissioned Defence Force Officers
3995 Senior Fire Fighters
3997 Library Technicians
3999 Other Miscellaneous Associate Professionals
4613 Wool, Hide and Skin Classers
4914 Screen Printers
4985 Fire Fighters
4992 Performing Arts Support Workers

5994 Insurance Risk Surveyors, Investigators and Loss Adjustors
5995 Desktop Publishing Operators

3. In-person services (professional)

1191 Building and Construction Managers
1223 Supply and Distribution Managers
1292 Health Service Managers
1294 Commissioned Officers (Management)
2311 Generalist Medical Practitioners
2312 Specialist Medical Practitioners
2321 Nurse Managers
2323 Registered Nurses
2324 Registered Midwives
2325 Registered Mental Health Nurses
2326 Registered Developmental Disability Nurses
2381 Dental Practitioners
2382 Pharmacists
2383 Occupational Therapists
2384 Optometrists
2385 Physiotherapists
2386 Speech Pathologists
2387 Chiropractors and Osteopaths
2388 Podiatrists
2392 Veterinarians
2393 Dieticians
2394 Natural Therapy Professionals
2399 Other Health Professionals
2411 Pre-primary school teachers
2412 Primary School Teachers
2413 Secondary School Teachers
2414 Special Education Teachers
2491 Extra Systemic Teachers
2492 English as a Second Language Teachers
2511 Social Workers
2512 Welfare and Community Workers
2513 Counsellors
2514 Psychologists
2515 Ministers of Religion
2521 Legal Professionals
3393 Transport Company Managers

4. In-person services (intermediate)

1295 Child Care Co-ordinators
2222 Technical Sales Representatives
3293 Real Estate Associate Professionals
3311 Shop Managers
3321 Restaurant and Catering Managers
3323 Hotel and Motel Managers

3324 Club Managers (Licensed Premises)
3325 Caravan Park and Camping Ground Managers
3329 Other Hospitality and Accommodation Managers
3391 Sports and Recreation Managers
3392 Customer Service Managers
3399 Other Managing Supervisors (Sales and Service)
3411 Enrolled Nurses
3421 Welfare Associate Professionals
3491 Ambulance Officers and Paramedics
3493 Aboriginal and Torres Strait Islander Health Workers
3494 Massage Therapists
3911 Police Officers
3993 Sportspersons, Coaches and Related Support Workers
3996 Retail Buyers
4621 Nurserypersons
4931 Hairdressers
5993 Insurance Agents
5996 Travel Attendants
6131 Receptionists
6143 Bank Workers
6192 Library Assistants
6211 Sales Representatives
6212 Motor Vehicle and Related Products Salespersons
6213 Retail and Checkout Supervisors
6311 Education Aides
6312 Children's Care Workers
6313 Special Care Workers
6391 Dental Assistants
6392 Veterinary Nurses
6393 Prison Officers
6394 Gaming Workers
6395 Beauty Workers
6396 Personal Care Consultants
6397 Fitness Instructors and Related Workers
6399 Travel and Tourism Agents
7313 Automobile Drivers
7914 Insulation and Home Improvements Installers
8311 Guards and Security Officers

5. In-person services (elementary)

6191 Inquiry and Admissions Clerks
6314 Personal Care and Nursing Assistants
6321 Hotel Service Supervisors
6322 Bar Attendants
6323 Waiters
6324 Hospitality Trainees
8115 Betting Clerks
8211 Sales Assistants
8291 Checkout Operators and Cashiers

8292 Ticket Salespersons
8293 Street Vendors and Related Workers
8294 Telemarketers
8295 Sales Demonstrators and Models
8296 Service Station Attendants
8297 Sales and Service Trainees
8299 Other Elementary Sales Workers
8312 Ushers, Porters and Related Workers
8313 Domestic Housekeepers
8314 Caretakers

6. Routine production services (advanced skill)

1311 Mixed Crop and Livestock Farmers
1312 Livestock Farmers
1313 Crop Farmers
1314 Aquaculture Farmers
4111 General Mechanical Engineering Tradespersons
4112 Metal Fitters and Machinists
4113 Toolmakers
4114 Aircraft Maintenance Engineers
4115 Precision Metal Tradespersons
4121 General Fabrication Engineering Tradespersons
4122 Structural Steel and Welding Tradespersons
4123 Forging Tradespersons
4124 Sheetmetal Tradespersons
4125 Metal Casting Tradespersons
4126 Metal Finishing Tradespersons
4211 Motor Mechanics
4212 Automotive Electricians
4213 Panel Beaters
4214 Vehicle Painters
4215 Vehicle Body Makers
4216 Vehicle Trimmers
4311 Electricians
4312 Refrigeration and Airconditioning Mechanics
4313 Electrical Distribution Tradespersons
4314 Electronic Instrument Tradespersons
4315 Electronic and Office Equipment Tradespersons
4316 Communications Tradespersons
4411 Carpentry and Joinery Tradespersons
4412 Fibrous Plasterers
4413 Roof Slaters and Tilers
4414 Bricklayers
4415 Solid Plasterers
4416 Wall and Floor Tilers and Stonemasons
4421 Painters and Decorators
4422 Signwriters
4423 Floor Finishers
4431 Plumbers

4511 Meat Tradespersons
4512 Bakers and Pastrycooks
4513 Cooks
4519 Other Food Tradespersons
4622 Greenkeepers
4623 Gardeners
4911 Graphic Pre-press Tradespersons
4912 Printing Machinists and Small Offset Printers
4913 Binders and Finishers
4921 Wood Machinists and Turners
4922 Cabinetmakers
4929 Other Wood Tradespersons
4941 Clothing Tradespersons
4942 Upholsterers and Bedding Tradespersons
4943 Footwear Tradespersons
4944 Leather Goods, Canvas Goods and Sailmakers
4981 Marine Construction Tradespersons
4982 Glass Tradespersons
4983 Jewellers and Related Tradespersons
4984 Florists
4999 Other Miscellaneous Tradespersons and Related Workers

7. Routine production services (white collar)

3291 Office Managers
5111 Secretaries and Personal Assistants
5911 Bookkeepers
5912 Credit and Loans Officers
5991 Advanced Legal and Related Clerks
5992 Court and Hansard Reporters
6111 General Clerks
6121 Keyboard Operators
6141 Accounting Clerks
6142 Payroll Clerks
6144 Insurance Clerks
6145 Money Market and Statistical Clerks
6151 Production Recording Clerks
6152 Transport and Despatching Clerks
6153 Stock and Purchasing Clerks
6193 Personnel Clerks
6194 Intermediate Inspectors and Examiners
6199 Other Intermediate Clerical Workers
8113 Switchboard Operators
8116 Office Trainees
8119 Other Elementary Clerks
8319 Other Elementary Service Workers

8. Routine production services (blue-collar)

4612 Shearers

4614 Animal Trainers
4986 Drillers
4987 Chemical, Petroleum and Gas Plant Operators
4988 Power Generation Plant Operators
4991 Defence Force Members n e c
7111 Mobile Construction Plant Operators
7112 Forklift Drivers
7119 Other Mobile Plant Operators
7121 Engine and Boiler Operators
7122 Crane, Hoist and Lift Operators
7123 Engineering Production System Workers
7124 Pulp and Paper Mill Operators
7129 Other Intermediate Stationery Plant Operators
7211 Sewing Machinists
7212 Textile and Footwear Production Machine Operators
7291 Plastics Production Machine Operators
7292 Rubber Production Machine Operators
7293 Chemical Production Machine Operators
7294 Wood Processing Machine Operators
7295 Paper Products Machine Operators
7296 Glass Production Machine Operators
7297 Clay, Stone and Concrete Processing Machine Operators
7298 Photographic Developers and Printers
7299 Other Intermediate Machine Operators
7311 Truck Drivers
7312 Bus and Tram Drivers
7314 Delivery Drivers
7315 Train Drivers and Assistants
7911 Miners
7912 Blasting Workers
7913 Structural Steel Construction Workers
7991 Motor Vehicle Parts and Accessories Fitters
7992 Product Quality Controllers
7995 Forestry and Logging Workers

9. Routine production services (low-skill)

4611 Farm Overseers
7993 Storepersons
7994 Seafarers and Fishing Hands
7996 Printing Hands
8111 Registry and Filing Clerks
8112 Mail Sorting Clerk
8114 Messengers
8315 Laundry Workers
9111 Cleaners
9211 Engineering Production Process Workers
9212 Product Assemblers
9213 Meat and Fish Process Workers

9214	Other Food Factory Hands
9215	Wood Products and Factory Hands
9221	Hand Packers
9222	Packagers and Container Fillers
9911	Mining Support Workers and Driller's Assistants
9912	Earthmoving Labourers
9913	Paving and Surfacing Labourer
9914	Survey Hands
9915	Railway Labourers
9916	Construction and Plumber's Assistants
9917	Concreters
9918	Electrical and Telecommunications and Trades Assistants
9919	Other Mining, Construction and Related Labourers
9921	Farm Hands
9922	Nursery and Garden Labourers
9929	Other Agricultural and Horticultural Labourers
9931	Kitchenhands
9932	Fast Food Cooks
9933	Food Trades Assistants
9991	Garbage Collectors
9992	Freight and Furniture Handlers
9993	Handypersons
9999	Other Miscellaneous Labourers and Related Workers
5999	Other Miscellaneous Advanced Clerical and Service Workers

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

NOTICE

Reproduction Basis

X	This document is covered by a signed "Reproduction Release (Blanket)" form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.
	This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").