PRODUCTIVITY COMMISSION

Unemployment and Re-employment of Displaced Workers

Staff Research Paper

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Key Findings

- Since the mid 1970s, the aggregate annual rate of retrenchment (number of people retrenched relative to the number who had a job at some time in a 12 month period) has fluctuated in a counter-cyclical pattern around a relatively stable long term trend of about 5 per cent.

- The probability of retrenchment and the nature of post-retrenchment adjustment were found to vary between different groups of workers. For example:

  – a disproportionate share of retrenchments occurred among males, people who had been working in their job for less than 5 years, those with low levels of education, who had worked in a blue collar occupation, were full-time casual employees, or were employed in manufacturing;

  – the probability of being retrenched increased markedly during recessions for people who had been working in their job for less than 5 years (especially for males);

  – males were more likely than females to continue searching for a job after being retrenched (one in four females retrenched during 1994–97 left the labour force compared to around one in ten males); and

  – the probability of being re-employed was relatively high for people aged 25-44 years; or whose last retrenched job involved working in a high skill occupation, or as a permanent employee, or in the Mining, Finance and insurance, or Property and business services industries.

- The data also suggest that since the 1980s there has been an increase in the (low) rate of retrenchment for people who have been working in their job for 10 or more years and a decrease in the (high) retrenchment rate for people whose job duration is less than 1 year.

- An econometric analysis using individual-level data on people who were retrenched between July 1994 and June 1997 revealed that:

  – re-employment became more likely as the time since being retrenched increased, suggesting that the adverse employment effects of retrenchment dissipate over time; and

  – retrenched people were more likely to find re-employment if they were aged less than 50 years; had been retrenched from a high skill occupation, a part-time job, a job with high tenure, or as a permanent employee; or had been born in an English speaking country.

- The evidence examined in this paper supports the conclusion that the adjustment costs experienced by workers who are displaced by structural changes in the economy depend on the phase of the business cycle and the types of workers affected.

Overview

This study examines the incidence and adjustment experiences of workers who are displaced by economic change. Worker displacement can be the result of market based factors (such as changed technology and consumer tastes) or policy changes (such as tariff reductions and deregulation). Market based factors are responsible for most changes in the structure of Australian employment (Murtough, Pearson and Wreford 1998). Where workers are displaced by policy reforms, they may experience some of the associated adjustment costs. These include periods of non-employment and a reduction in work hours or earnings once re-employed. These impacts can affect the net benefits of policy reforms and the distribution of the costs and benefits.

Among the reasons for job separation collected by the Australian Bureau of Statistics (ABS), retrenchment is closest to the concept of displacement. ABS data show that, since the mid 1970s, the aggregate rate of retrenchment (number of people retrenched in a 12 month period divided by the number of people who had a job at some time over that period) has fluctuated in a counter-cyclical pattern around a relatively stable long term trend . This suggests that short run movements in retrenchments are largely driven by the business cycle. The average rate of retrenchment over the long term is around 5 per cent of people who had a job in a given 12 month period.

Results of past research

A large number of studies of displaced workers have been published but most of them are for the United States, reflecting the detailed data available for that country. Australian data are not as detailed (particularly for earnings) and so existing research is less extensive.

US research shows that, on average, displaced workers experience a large and sustained reduction in earnings but the adverse employment effects dissipate after about four years. However, overseas research has also found that adjustment experiences vary markedly between different groups. One of the most important factors appears to be the amount of time spent working in a job (tenure). The limited research on Australian workers shows that those who have been in their job for more than five years are much less likely to be retrenched. However, overseas

research shows that when highly tenured workers do lose their job, their adjustment costs (duration of non-employment and reduction in work hours or earnings once re-employed) can be significant, particularly if they change industry, occupation or region.

Overseas research indicates that relatively high adjustment costs (long term for earnings and short term for non-employment) also tend to be experienced by males; people who had high earnings in their retrenched job; older age groups; those with a low level of education; people displaced from blue collar occupations; workers laid-off from an ongoing business; and where re-employment involves changing from a highly unionised workplace to one with low union density, a large firm to a small firm, or to a different occupation or industry.

Australian data

An examination of Australian data confirmed that retrenchment is more likely for certain types of workers than others and that post-retrenchment adjustment also varies between different groups. The most notable findings were that:

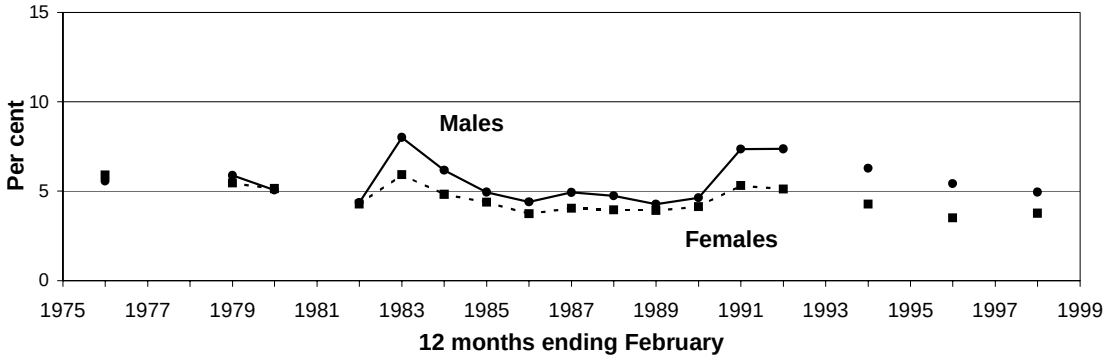
- the probability of being retrenched falls significantly throughout the first 5 years in a job and then stabilises at less than 4 per cent (compared to around 12 per cent when tenure is less than one year);
- females tended to be less likely than males to be retrenched, particularly when the length of time spent working in a job was less than 5 years;
- the probability of being retrenched increased markedly during recessions for people who have been working in their job for less than 5 years;
- a disproportionate share of retrenchments occurs among people with low levels of education, who work in blue collar occupations, are full-time casual employees, or are employed in manufacturing;
- males are more likely than females to continue searching for a job after being retrenched (one in four females retrenched during 1994–97 left the labour force);
- the probability of being re-employed is relatively low for people who are retrenched from a job with tenure of less than 9 months, who were formerly employed as casual employees, who had worked in a low skill occupation, or were aged 18-24 years. Conversely, the likelihood of re-employment is relatively high for people who were formerly employed as permanent employees, who had worked in a high skill occupation, who were retrenched in

the Mining, Finance and insurance, or Property and business services industries, or were aged 25-44 years; and

- retrenched workers who find a new job often experience a change in the nature of their work, such as occupation, industry and permanent/casual status.

The data also show that the gap between male and female retrenchment rates increased during the recessions of the early 1980s and 1990s (figure 1). For example, the rate of retrenchment for females was almost one-third lower than that for males in the 12 months to February 1992, compared to only a small difference two years earlier. This occurred because male retrenchments grew more rapidly during the early 1990s recession. Since the last recession ended, the gap between male and female retrenchment rates has fallen (from 2.2 percentage points in the 12 months to February 1992, to 1.2 percentage points in the 12 months to February 1998). Thus, the male retrenchment rate appears to be more sensitive to the business cycle.

Figure 1 **Rate of retrenchment by gender[a]**



a The rate of retrenchment was calculated by dividing the number of people who had been retrenched by the number of people who had a job during a 12 month period ending in February.

Source: PC estimates based on ABS (Labour Mobility: Australia, Cat no. 6209.0).

It appears that there has been a slight structural change since the 1980s towards a more even distribution of retrenchments between people with different levels of tenure. In particular, there seems to have been an upward trend in the (low) rate of retrenchment for people who have been working in their job for ten or more years and a decrease in the (high) retrenchment rate for people with less than one year of tenure. Other researchers have found evidence of a temporary increase in the rate of retrenchment in the early 1990s (particularly for males) which cannot be attributed to the business cycle (Borland and McDonald 2000).

Econometric analysis

The above findings are generally consistent with those of past overseas and Australian research. Nevertheless, they need to be qualified because the apparent effect of one variable may in fact be due to several other factors. Econometric techniques can overcome such problems by isolating the impact of each influential variable.

An econometric analysis was undertaken for this study using individual-level data collected by the ABS in the July 1997 Labour Force Survey (LFS). This survey included a series of supplementary questions which gathered information about people aged 18 to 64 years who had been retrenched between July 1994 and June 1997. For those who had been retrenched, data were collected on the job from which they were most recently retrenched, circumstances of that retrenchment, and subsequent job search activities. Because data on many individual characteristics were available only for people who had been retrenched, the emphasis of the analysis was on post-retrenchment adjustment. Furthermore, no data were collected on changes in earnings and the duration of unemployment experienced by retrenched workers. As a result, the analysis of post-retrenchment adjustment was confined to outcomes at the survey date (such as whether re-employed). Nevertheless, the data analysed in this study were the most comprehensive available on post-retrenchment adjustment. The econometric results are summarised in tables 1 and 2. They confirm that retrenchment is more likely for certain types of workers and post-retrenchment adjustment varies between different groups.

Multiple retrenchments

US research indicates that multiple retrenchments are an important source of medium term persistence in earnings losses for retrenched workers. While it was not possible to assess earnings changes for retrenched Australian workers, data were available on the incidence of multiple retrenchments. It was found that people were more likely to have experienced more than one retrenchment during 1994–97 if they had been working in their last job for a short period; were most recently retrenched as Tradespersons and related workers, Intermediate production and transport workers, or Labourers and related workers; were most recently retrenched from the Construction industry; were aged more than 44; or were most recently retrenched as a casual employee.

Not in the labour force

The July 1997 LFS did not ask people whether they left the labour force or found another job immediately after being retrenched. However, retrenched workers were asked about their labour force status at the survey date. Thus, it was possible to determine the impact of individual characteristics on the probability that a person retrenched between July 1994 and June 1997 was either not in the labour force or re-employed by the survey date (July 1997).

Retrenched people were less likely to be in the labour force at the survey date if they were female; in an older age group; were last retrenched from a low skill occupation; were last retrenched from a job in Electricity, gas and water, or Government administration and defence; had worked part-time prior to their last retrenchment; had been working in their last retrenched job for a long period; or were married with dependents.

Re-employment

For those retrenched workers who were in the labour force at the survey date, re-employment became more likely as the time since last being retrenched increased. This confirms the finding of past research that the adverse employment effects of retrenchment dissipate over time (Borland et al. 1999; Fallick 1996; Ruhm 1991).

Retrenched people were less likely to have been re-employed at the survey date if they were aged 50 years or more; had been retrenched from a low skill occupation, a full-time job, a job with low tenure, or as a casual employee; were most recently retrenched in Electricity, gas and water, or Education, health and community services; or had been born in a non-English speaking country.

Changed occupation

US research shows that the average fall in earnings after being displaced is significantly greater for people who change occupation. This may be due to the accumulation of industry or occupation specific skills which cannot be transferred to different industries and occupations. While data were not available from the July 1997 LFS to investigate such earnings effects for Australia, it was possible to identify people who had changed occupation between their last retrenchment and the survey date.

Table 1 **Qualitative summary of econometric results for retrenched workers**

Individual characteristic	*Probability of multiple retrenchments*	*Probability that not in the labour force*	*Probability of re-employment, given that in the labour force*
Age	▪ Increases with age up to 35 years and then falls slightly	▪ Increases with age	▪ Much lower if aged over 49 years
Sex		▪ Females much more likely to leave the labour force	▪ No difference between males and females
Birthplace	▪ Lower if born in a non-English speaking country		▪ Lower if born in a non-English speaking country
Location (July 1997)	▪ Lower if resides in New South Wales or a state capital city		
Relationship in household (July 1997)	▪ Higher if not living with other family members	▪ Lower if had no dependents	
Timing of most recent retrenchment	▪ Lower if last retrenchment was further in the past		▪ Higher if last retrenchment was further in the past
Tenure of most recent retrenched job	▪ Falls significantly after being in a job for 3 years	▪ Higher if tenure was more than 5 years	▪ Positive correlation
Status of most recent retrenched job	▪ Higher if last retrenchment was from a casual job	▪ Higher if last retrenchment was from a part-time or casual job	▪ Higher if last retrenchment was from a part-time or permanent job
Occupation of most recent retrenched job	▪ Higher for Tradespersons & related workers; Intermediate production & transport workers; and Labourers & related workers	▪ Inverse correlation with skill	▪ Higher for Managers & administrators
Industry of most recent retrenched job	▪ Lowest for Accommodation, cafes and restaurants	▪ High for Electricity, gas & water; & Government administration & defence ▪ Lowest for Education, health & community services	▪ Low for Electricity, gas & water; and Education, health & community services
Employment assistance received after most recent retrenchment	▪ Lower if referred to a CES notice board ▪ Higher if referred to a job interview	▪ Lower if referred to a CES notice board or job interview, or had a job placement	▪ Higher if had a job placement

Source: PC estimates detailed in appendix B.

Table 2 **Qualitative summary of econometric results for re-employed retrenched workers**

Individual characteristic	*Probability of changing occupation*	*Probability of changing from full-time to part-time*	*Probability of changing from permanent to casual*
Age	▪ Decreases with age	▪ Highest for people aged over 54 years	▪ Lowest for people aged 50-54 years
Sex	▪ Lower for females	▪ Higher for females	▪ Higher for females
Location (July 1997)	▪ Higher if not residing in a state capital city	▪ Higher if residing in Victoria or outside a state capital city	▪ Higher if residing in South Australia
Relationship in household (July 1997)	▪ Higher if a lone parent with dependents		
Education (July 1997)		▪ Lower if had tertiary qualifications	
Timing of most recent retrenchment	▪ Increases with time since last retrenchment		▪ Decreases with time since last retrenchment
Tenure of most recent retrenched job		▪ Lower if had tenure of less than 1 year	
Occupation of most recent retrenched job	▪ Lower for Professionals; Tradespersons & related workers; Intermediate production & transport workers; and Labourers & related workers	▪ Lower for Professionals; and Advanced clerical and service workers	▪ Higher for Intermediate clerical, sales & service workers; and Elementary clerical, sales & service workers
Industry of most recent retrenched job	▪ Lowest for Primary industries and Construction ▪ Highest for Government administration & defence	▪ Lowest for Primary industries ▪ Highest for Accommodation, cafes & restaurants; and Education, health & community services	
Employment assistance received after most recent retrenchment	▪ Higher if referred to a CES notice board	▪ Higher if referred to a CES notice board ▪ Lower if had a job placement or got career advice	▪ Higher if referred to a CES notice board

Source: PC estimates detailed in appendix B.

The main characteristics associated with a higher probability of changing occupation were being most recently retrenched from an occupation other than Professionals, Tradespersons and related workers, Intermediate production and transport workers, or Labourers and related workers; being in a younger age group; being a lone parent with dependants; being most recently retrenched in Government administration and defence; being male; or residing outside a state capital city.

The lower probability of changing occupation for those retrenched as Professionals and Tradespersons and related workers may be due to a greater proportion of their earnings being linked to occupation specific training. Thus, these people could experience greater adjustment costs from changing occupation in relative terms than most other retrenched workers. Higher adjustment costs also appear to be a problem for Intermediate production and transport workers; and Labourers and related workers. However, in this case it may be due to a lack of skills that can be readily utilised in other occupations.

Changed from full-time to part-time

Overseas research indicates that some displaced workers are more likely to experience a short term reduction in work hours due to being displaced from a full-time job and then re-employed on a part-time basis. The third column of table 2 indicates how individual characteristics affected the probability that a person retrenched from a full-time job during 1994–97 was a part-time worker at the survey date (given that they were re-employed). It should be noted that full/part-time status at the survey date was determined on the basis of total hours worked in *all* jobs.

The main characteristics associated with a higher probability of being a part-time worker at the survey date (given that the person was retrenched from a full-time job and was re-employed at the survey date) were being female; aged over 54 years; not getting career advice after last being retrenched; being most recently retrenched in Accommodation, cafes and restaurants, or Education, health and community services; occupation in most recently retrenched job was not Professionals, or Advanced clerical and service workers; duration of job in which most recently retrenched was more than one year; or had no post-school qualifications.

Changed from permanent to casual

The main characteristics associated with a higher probability of being a casual employee at the survey date (given that the person was retrenched as a permanent employee and was re-employed at the survey date) were being female; being most recently retrenched in Accommodation, cafes and restaurants; occupation in last

retrenched job was Intermediate production and transport workers, or Elementary clerical, sales and service workers; not aged 50-54 years; was retrenched in the last 6 months; or was referred to a CES notice board after last being retrenched. Because the probability declines as the time since last retrenchment increases, it appears that changing from permanent to casual status is a temporary phenomenon.

Implications

The evidence examined in this paper suggests that when workers are displaced (due to either market based factors or government policy changes), the associated adjustment costs (related to periods of non-employment and a reduction in work hours or earnings once re-employed) will depend on when displacement occurs and the types of workers affected. For example, the dislocation caused by the expansion of some sectors of the economy and the contraction of others will be accentuated during recessions (especially for males). Also, if the contracting sector has a disproportionate share of people who have greater trouble in adjusting, then the adjustment costs are likely to be higher. The results of this paper indicate that such people include those aged 50 years or more, females, and people retrenched from low skill occupations.

These are important considerations for policy makers in assessing the trade-offs associated with microeconomic reforms and in designing adjustment assistance for workers who might be displaced by such reforms. However, it should be noted that a general safety net is in place to assist people displaced by economic change, such as unemployment benefits and job search assistance. Support is also available from non-government organisations, such as private employment agencies.

The impacts of different forms of employment assistance were examined in this report. The data analysed were for the period July 1994 to June 1997, which was prior to many of the Federal Government's reforms of employment assistance. Also, no distinction was made between assistance funded by government or other sources. The results indicate that the types of employment assistance utilised by displaced workers during 1994–97 had mixed effects. People who had a job placement were more likely to be re-employed. Most other forms of employment assistance were associated with a lower probability of re-employment compared to people who had received no assistance. This may not be due to the assistance itself, but could reflect a tendency for less employable workers to seek assistance.

Employment assistance also appeared to have some impact on the types of jobs that re-employed retrenched workers obtain. Compared to re-employed retrenched workers who received no employment assistance, those referred to a CES notice board were more likely to change industry and occupation; shift from permanent to

casual employment; and move from full-time to part-time status. In contrast, people retrenched from a full-time job were less likely to become part-time workers if they had a job placement or got career advice after being retrenched.

1 Introduction

The Australian economy is constantly subject to changing market conditions, such as the invention of new production technologies, shifts in consumer preferences, and movements in export prices. An additional source of change is government policy reform. While the ability to adapt to this ever changing environment is an important factor influencing the economy's performance, there are adjustment costs associated with economic change, including those arising from involuntary job loss.

This study examines the incidence and adjustment experiences of Australian workers who are displaced by economic change. It is not suggested that change is always undesirable. Rather, this study is motivated by the current lack of research on Australian labour market adjustment. This has made it difficult for governments to implement policy reforms that deliver economy-wide benefits while taking account of the adjustment costs for particular individuals. The potential adjustment costs considered in this paper are periods of non-employment and a reduction in work hours or earnings once re-employed. The objective is to help policy makers more accurately assess the trade-offs involved in implementing microeconomic reforms and designing adjustment assistance for displaced workers.

The remainder of this chapter clarifies what is meant by the term displaced worker, discusses the potential adjustment costs associated with displacement, and quantifies the relative importance of job displacements in Australia. In chapter 2, past research on the incidence and adjustment experiences of displaced workers is summarised. This is used as a starting point for a descriptive analysis of Australian data which is presented in chapter 3. Econometric techniques are then used in chapter 4 to provide a rigorous statistical test of the potential relationships identified in earlier chapters. The concluding chapter summarises the key findings of this study and discusses their implications for future policy reforms.

1.1 Defining a displaced worker

There is some disagreement in the economic literature about the precise definition of a displaced worker. A broad description of displacement is that it involves an involuntarily job separation caused by adverse economic conditions (Abbring et al. 1999; Borland 1998). Thus, the key criteria are that the job separation was

initiated by the employer and not caused by the individual worker's performance. Some authors have argued in favour of a stricter definition. For example, Fallick (1996) outlined the following three pre-requisites for a job displacement:

- there is a structural cause for the job separation (such as changes in trade, technology, composition of final demand, or government policy) rather than a cyclical downturn or the idiosyncratic fortunes of an individual firm;
- there is little prospect of returning to a comparable job within a reasonable period of time (because of limited opportunities in the same industry, occupation or region); and
- the worker was strongly attached to the sector in which they were formerly employed.

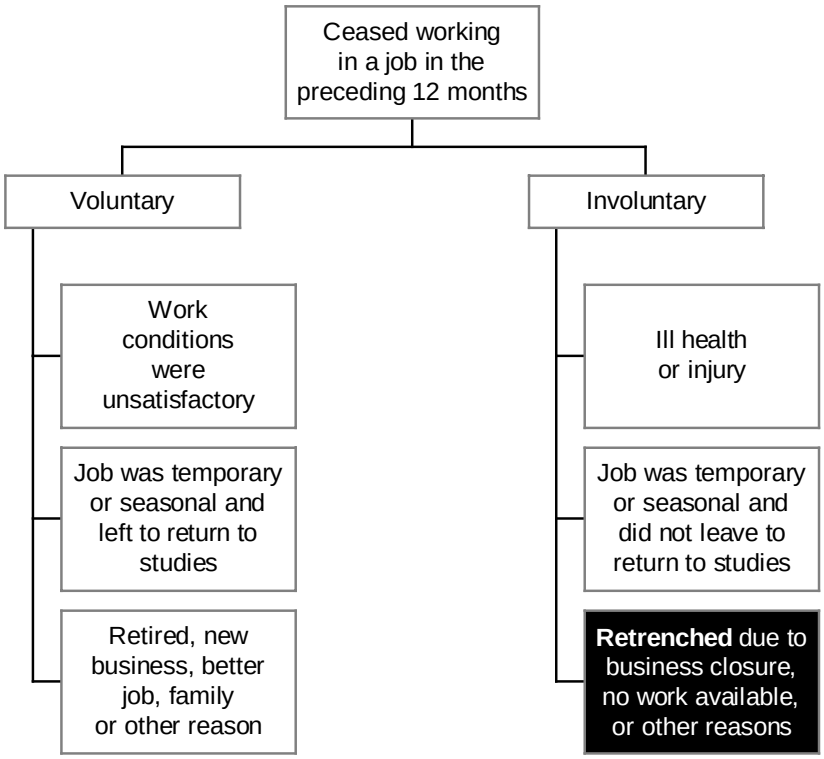
A distinction could also be made between structural change which is market based (such as changed technology and consumer tastes) or policy induced (such as tariff reductions and deregulation). Market based factors are responsible for most changes in the structure of Australian employment (Murtough, Pearson and Wreford 1998).

Few studies are able to implement the strict definition suggested by Fallick (1996) in practice. For example, the US Bureau of Labor Statistics classifies a person as having been displaced if they respond that they are aged more than 19 years and lost or left a job because of (a) plant or company closure or relocation; (b) insufficient work; or (c) abolition of position or shift (Bureau of Labor Statistics 1999; Fallick 1996). Being fired for poor work performance is not included in this definition. However, workers who are laid off from a job and then re-hired in a different position by the same employer are treated as having been displaced (Farber 1993). The definition used by the US Bureau of Labor Statistics also fails to link displacement to structural change or limited prospect of returning to a comparable job (Fallick 1996). Some US studies attempt to address these problems by requiring a displaced job to be in a declining industry (see for example Howland and Peterson 1988). Nevertheless, Fallick (1996) argued that many workers are probably counted as being displaced in US studies when they do not meet his three criteria.

Problems are also encountered in using data from the Australian Bureau of Statistics (ABS), which unlike its US counterpart does not attempt to identify displaced workers. Among the reasons for job separation collected by the ABS from employees, retrenchment is closest to the concept of displacement (see figure 1.1). However, it is not ideal because the ABS definition of retrenchment does not distinguish between people who are fired for underperformance and those who lose their job due to adverse economic conditions (and hence are displaced workers). In the ABS Labour Mobility Survey (Cat. no. 6209.0), workers are classified as having been retrenched if they (a) lose their job due to business closure; or (b) are laid off

due to no work being available or for other reasons (including underperformance). It is also possible for fired workers to respond that they left their job voluntarily due to unsatisfactory work conditions. Thus, there can be self reporting problems due to the difficulty in getting respondents to accurately report their work history.

Figure 1.1 **ABS categorisation of job separations**



Source: ABS (Labour Mobility, Australia, Cat no. 6209.0).

Between 1979 and 1986, the ABS disaggregated retrenchments by whether a person was laid off due to lack of work or for other reasons. Over that period, 75 per cent of retrenchments were caused by lack of work. The relative importance of lack of work ranged from a low of 71 per cent of retrenchments in the 12 months to February 1982 to 82 per cent in the 12 months to February 1983. In addition, an analysis of the 1979–1986 data by Borland and McDonald (2000) found that more than 80 per cent of the variance in total retrenchments was caused by those retrenched due to lack of work. This led them to conclude that an analysis of the determinants of worker displacement using the ABS retrenchment data would primarily reflect the experiences of workers retrenched due to adverse demand conditions.

In summary, it is rarely possible to obtain data that satisfy a strict definition of a displaced worker. This is particularly true in the case of Australia, where official statistics do not distinguish between people who are fired for cause and those who

lose their job due to adverse economic conditions. As a result, an imperfect measure of Australian displaced workers had to be used in this study. It was decided to use the ABS definition of retrenchment as a proxy for displacement. This could lead to an overstatement of the adjustment costs associated with displacement because the sample includes workers who, regardless of the extent of structural changes in the economy, are more prone to losing their job and less likely to be re-employed.

1.2 Why displaced workers matter

Displaced workers are of interest because they can experience some of the potential adjustment costs associated with policy reforms that cause certain industries to expand and others to contract. These adjustment costs are important because they can affect the net economy-wide benefits of policy reforms, alter the distribution of income, and may result in some resistance to reform (Borland 1998).

There are many adjustment costs that workers experience after being displaced. If given advance warning of being displaced, some people may be able to find a similar job elsewhere and therefore do not experience significant adverse effects. However, it is likely that many displaced workers experience a period of non-employment. These people can either withdraw from the labour force (because they do not look for another job) or be unemployed (because they are searching for work). In either case, they are likely to experience a shortfall between what they earned in their job and any welfare payments they receive. For unemployed displaced workers, there will be search costs associated with finding another job, including possibly retraining and moving to areas with greater employment opportunities. If a displaced worker becomes re-employed, their new job may involve reduced hours and earnings compared to their displaced job. This could lead to lower lifetime earnings compared to what would have occurred if they had not been displaced. Due to data considerations, this paper focuses on the adjustment costs arising from periods of non-employment and reductions in work hours or earnings once re-employed.

1.3 Relative importance of job displacements

Around a quarter of employed people in Australia cease their job in any year (ABS 1998a). More than half (and usually more than 60 per cent) of these job separations are voluntary. About one in three involuntary job departures are due to reasons other than retrenchment (ill health and expiration of a fixed term, seasonal or temporary job). As a result, retrenchments usually account for less than a quarter of all Australian job separations. The relative importance of displacements would be

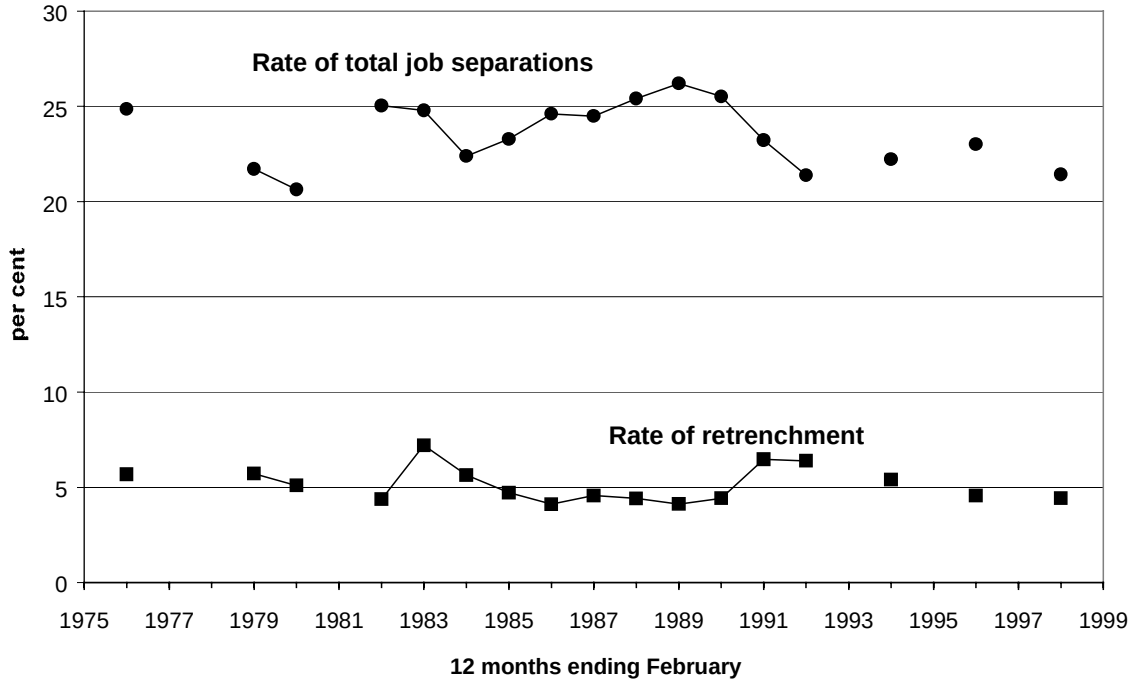
even smaller because, as noted above, retrenchments include workers fired for poor performance.

The aggregate rate of retrenchment has, since the mid 1970s, been remarkably stable over the long term at around 5 per cent of people who had a job in a given 12 month period (figure 1.2). The rate of retrenchment does, however, fluctuate in a counter-cyclical pattern in the short term. This indicates that short run movements in retrenchments are largely driven by the business cycle. The long term stability of the rate of retrenchment suggests that if the pace of structural change has accelerated since the 1970s then it has had little impact on job displacements. The rate of total job separations has also been relatively stable over the long term but, unlike retrenchments, it tends to be pro-cyclical. This is consistent with the dominance of voluntary job departures in total separations.

The above findings need to be qualified because the rate of retrenchment was calculated by dividing ABS data on the number of people who experienced at least one retrenchment over a 12 month period by the number of people who had a job at some time over that period. The numerator in this calculation understates the number of retrenchments because some people are retrenched more than once over a 12 month period. The denominator is also an underestimate since some people work in more than one job over a 12 month period. It was not possible to determine the net impact of these effects on the calculated rate of retrenchment.

The high rate of turnover in the Australian labour market is also evident in statistics on job commencements. The equivalent of the entire labour force finds a new job every four to five years (Productivity Commission 1998). Most people who change jobs remain in the same industry and occupation. Where inter-industry job mobility does occur, it tends to be between similar industries. Workers in Agriculture and Community services tend to have lower than average rates of inter-industry mobility. In contrast, the rate of job mobility into and out of Recreation and personal services is relatively high. Job mobility is lower for those aged over 35 years and, to a lesser extent, for those born in a non-English speaking country or with no post-school qualifications. These job mobility patterns suggest that certain groups would have greater difficulty in finding a new job if they were displaced by structural change. This is investigated further in subsequent chapters.

Figure 1.2 **Rate of retrenchment and total job separations[a]**



a Both rates of job separation shown in the figure are calculated by dividing the relevant number of separations by the total number of people who had a job during the 12 months ending February. The data report the reason for ceasing last job and so there is a maximum of one job separation for each person in any 12 month period. The ABS definition of retrenchment includes involuntary job separations due to retrenchment, redundancy or business closure. It excludes involuntary job separations due to ill health or the end of a temporary job, such as seasonal and fixed term employment. Total job separations include people who left their job voluntarily.

Data source: ABS (*Labour Mobility: Australia*, Cat no. 6209.0).

International comparison

The rate of displacement in other developed economies appears to be close to the 5 per cent retrenchment rate recorded in Australia. Using data collated by Farber (1997) for the period 1981–95, the average annual rate of displacement in the United States is estimated to be 4 per cent. This probably underestimates the true annual rate of displacement because US statistics record a maximum of one displacement over a three year interval (Abbring et al. 1999). Stevens (1997) showed that it is not unusual for displaced US workers to experience multiple job losses over a period of more than one year. Other studies have estimated that the average annual rate of displacement is 5 per cent in Canada, Belgium and Britain (Abe et al. 1999; Albaek et al. 1999; Borland et al. 1999). However, it needs to be stressed that the survey methods used to collect Australian data on retrenchments differ from those used to identify displaced workers in other countries.

2 Review of past research

This chapter summarises past research on the incidence and adjustment experiences of displaced workers. The focus is largely on economy-wide research rather than narrower case studies of particular groups of displaced workers (for a summary of Australian case studies see Borland 1998; Webber and Campbell 1997; Wooden 1988). Case studies suffer from the weakness that their findings may reflect the unique circumstances of the group examined rather than providing insights about the experiences of displaced workers more generally. For example, Borland (1998) found that Australian case studies tend to use unrepresentative samples and that differences in research techniques make it difficult to integrate their findings.

A large number of economy-wide studies have been published but most of them are for the United States, reflecting the detailed data available for that country. Australian data are not as detailed (particularly for earnings) and so existing research is less extensive. As noted in chapter 1, retrenchment is used as an imperfect measure of displacement in the case of Australia.

2.1 Methodologies

The methodologies used in past research can be grouped into descriptive and econometric analyses. Descriptive analysis includes both univariate and bivariate analysis. Univariate analysis typically involves the examination of trends in a single measure, such as the number of retrenchments per thousand employees. The correlation between such a measure and another variable thought to influence it (such as education) is the subject of bivariate analysis. This provides a useful preliminary guide to the factors influencing the incidence and adjustment experiences of displaced workers. It does, however, suffer from the problem that the apparent effect of one variable may in fact be due to several other factors. Econometric analyses can overcome this problem by using statistical techniques to isolate the impact of each influential variable.

The main econometric techniques used in past studies of displaced workers are binary dependent variable models, ‘hazard’ functions, and wage equations. Binary dependent variable models are used to analyse the probability of displacement or re-employment. Hazard functions are used to analyse the factors influencing the

duration of non-employment (the non-parametric Kaplan Meier approach is sometimes used as a prelude to this). Wage equations are used to model the determinants of wage changes for re-employed displaced workers.

Analysis of post-displacement adjustment is best implemented using data that tracks the same displaced individuals over time (longitudinal data). In practice, such data are rarely available. Most studies use statistics collected by asking individuals at a point in time about their employment experience over the previous few years. A weakness of such information is that it can be subject to 'recall bias' as individuals find it difficult to recall precise details from several years previously.

2.2 Incidence of displacements

Past studies have found that the probability of being displaced from a job varies markedly between workers with different characteristics. There is also evidence to suggest that the distribution of displacements among different groups of workers has changed over time, partly as a result of the business cycle.

Tenure

The probability of an Australian worker being retrenched appears to be inversely correlated to the time spent in their job. For example, Borland (1998) found that the probability of being retrenched falls markedly during the first five years in a job. Using data from the 1995 Labour Mobility Survey, he found that workers who had been in their job for less than three years were more than twice as likely to be retrenched as those employed in the same job for more than ten years. Stromback (1988) reached similar conclusions using Australian data for the mid 1980s. Indeed, Borland et al. (1999) found that the rate of retrenchment has consistently been inversely correlated with tenure since 1983. Similarly, McDonald and Felmingham (1999) found that, between 1987 and 1996, Australian male workers with less than one year of tenure always had a much higher chance of being retrenched than other males. Studies for other countries also tend to find an inverse correlation between tenure and the rate of displacement (Abbring et al. 1999; Albaek et al. 1999; Bender et al. 1999; Fallick 1996).

While there is a strong inverse relationship between tenure and the probability of being retrenched, it does not necessarily follow that short tenure causes retrenchment. An alternative explanation is that worker productivity and the non-pecuniary benefits of a job are only revealed by on-the-job experience (Stromback 1988). If a poor match is revealed between an employer and employee during the initial period of employment, then the worker is more likely to be retrenched. Under

this scenario, workers with long tenure tend to be well matched with their employer and this is why they have a lower probability of retrenchment.

Education

It appears that a disproportionate share of retrenchments occur among less educated workers. McDonald and Felmingham (1999) found that male Australian workers with a university degree consistently had a lower probability of being retrenched between 1987 and 1996. An econometric analysis of data for the period 1987–1996 by Borland and McDonald (2000) showed that retrenchment was more likely for people who had not completed high school. Overseas studies have also found a long term inverse correlation between education and displacement (see for example Farber 1997; Polsky 1999; Bender et al. 1999).

Age

A descriptive analysis of data for the period 1987–1996 by McDonald and Felmingham (1999) found that the probability of retrenchment for male Australian workers varies across age groups. This finding was confirmed in an econometric study of the period 1984–1996 by Borland and McDonald (2000). Their results show that there is a "U-shaped" relationship between male retrenchments and age: males aged less than 35 years or more than 54 years are more likely to be retrenched than males aged 35-54 years. Borland and McDonald found little evidence of a strong link between age and retrenchment for females.

Econometric analyses of US data since the mid 1970s by Farber (1997) and Polsky (1999) also suggest that the probability of displacement is related to age. However, neither of these studies accounted for differences in tenure between workers and so the estimated age effect may in fact reflect the tendency for older workers to have longer tenure. Other US studies using data for the 1980s did not find a link between age and displacement (Fallick 1996). For France and Germany, Bender et al. (1999) found no significant relationship between age and displacement probability.

Gender

There is mixed evidence on the role of gender in displacements. Stromback (1988) found that the rate of retrenchment in Australia was similar for females and males in the 12 months to February 1985. However, time-series data indicate that the rate of retrenchment for females and males diverged during the early 1990s recession. In the 12 months to February 1992, the average rate of retrenchment for females was

almost one-third lower than that for males, compared to only a small difference two years earlier. This divergence in retrenchment rates occurred because male retrenchments grew more rapidly during the early 1990s recession. Since the last recession ended, the gap between male and female retrenchment rates has fallen (from 2.2 percentage points in the 12 months to February 1992, to 1.2 percentage points in the 12 months to February 1998). Thus, it appears that the male retrenchment rate is more sensitive to the business cycle.

The underlying cause of gender based differences in Australia is unclear. It may reflect the different distributions of males and females between industries and occupations rather than a tendency for employers to retain female workers. Borland et al. (1999) found support for this hypothesis in the case of Great Britain, where men were more than twice as likely as women to be displaced during 1991–1996. An econometric analysis revealed that this was not due to gender per se but rather differences in other worker characteristics, such as industry, occupation, age, education and tenure. Using a similar technique on Australian data, Borland and McDonald (2000) reached a different conclusion. They found that there were marked differences between retrenchments for males and females after controlling for other personal characteristics and the business cycle. A similar conclusion was reached by Farber (1997) using US data. He found that females were about 2 percentage points less likely to lose their job than males during 1981–95. However, Farber's model did not control for differences in tenure, industry and occupation between genders (his model did control for age, education, race, and time period).

Industry

It appears that the probability of a worker being displaced depends on the industry they work in. For example, the rate of retrenchment for Australian males working in construction and manufacturing during 1987–1996 was counter-cyclical whereas a relatively constant rate of retrenchment occurred in other Australian industries (McDonald and Felmingham 1999). An econometric analysis by Borland and McDonald (2000) found that the rate of retrenchment is relatively low in finance, property and business services; and areas with a large public sector presence (such as defence and communications).

Inter-industry diversity in displacements is also evident for other countries. Farber (1997) found that the rate of displacement in US manufacturing between 1981 and 1995 was consistently greater than that for other industries and had a strong counter-cyclical pattern. At the other extreme, professional services had a very low rate of displacement. For Britain, Borland et al. (1999) found that construction and manufacturing workers had the highest displacement rates during 1991–1996.

Occupation

The likelihood of being retrenched appears to decline as a person's occupation requires greater training and skills. Borland and McDonald (2000) found that Australians employed in the lowest skill occupation of Labourers and related workers have a relatively high probability of being retrenched. For males, they found that being employed in the highest skill occupations of Managers and administrators, or Professionals is associated with a relatively low likelihood of being retrenched.

In the United States, the rate of displacement has consistently been much higher for blue collar occupations (craftsmen, operatives and labourers) since at least the late 1970s (Farber 1997; Kletzer 1998; Polsky 1999). Blue collar displacements have also followed a more pronounced counter-cyclical pattern. An econometric analysis by Polsky (1999) found that this could not be attributed solely to differences in other worker characteristics, such as education or industry. Similarly, Albaek et al. (1999) found that the probability of displacement in Belgium and Denmark was higher for blue collar occupations.

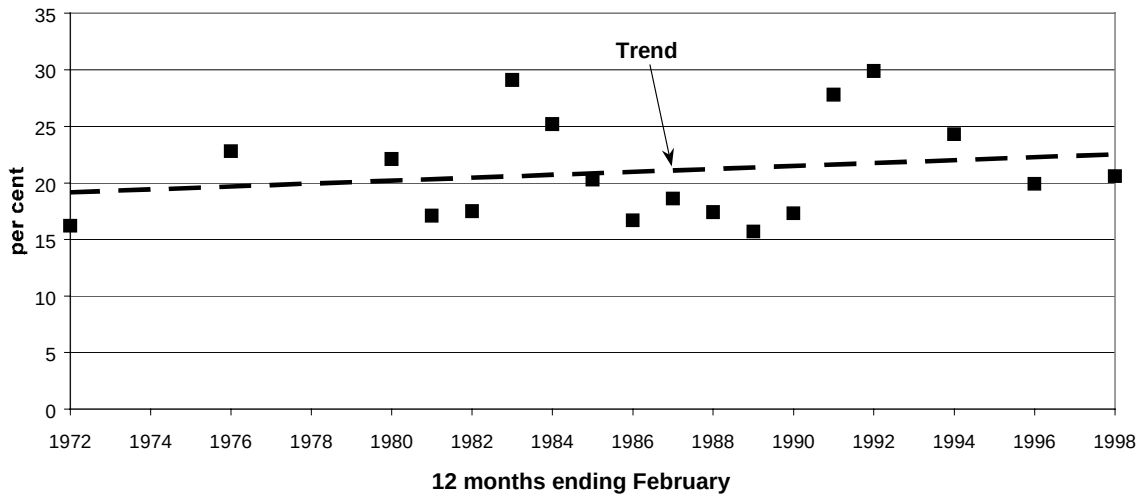
Changes over time

Changes over time in the rate of displacement (for all workers or particular groups) can be divided into cyclical and structural components. The cyclical component is the result of movements in the business cycle and so oscillates around a (possibly varying) long run rate of displacement. Movements in the long run rate of displacement are the result of structural changes.

Past research confirms that the rate of retrenchment in Australia is affected by the business cycle. For example, McDonald and Felmingham (1999) showed that there was a counter-cyclical pattern in the share of male workers retrenched between 1987 and 1996. Similarly, Borland (1998) observed that the rate of retrenchment is correlated with the unemployment rate, which is itself counter-cyclical. As noted above, the cyclical pattern of displacements appears to be most pronounced for males. However, this finding is based on data that include only the most recent recession and so one-off factors may be responsible. Nevertheless, US studies have also found that the rate of displacement is usually lower for females and that the relative size of this gender gap varies over the business cycle (Fallick 1996; Farber 1997; Kletzer 1998). US research also indicates that the cyclical component is strongest for less educated workers (Farber 1997). Other research confirms that displacement rates are also counter-cyclical in European countries (Bender et al. 1999; Abbring et al. 1999).

It is more difficult to identify structural changes in the incidence of displacement. Based on aggregate data published in past research by the Productivity Commission (1998), there was a slight upward trend between 1972 and 1998 in the share of total Australian job separations that were retrenchments (figure 2.1). However, this finding may not be robust because data are unavailable for many years, particularly for the 1970s. In addition, the aggregate data presented in chapter 1 show that the probability of being retrenched in a 12 month period has been stable over the long term at around 5 per cent (see figure 1.2). Therefore, it is prudent to conclude that there is not strong prima facie evidence of structural change in retrenchments at an aggregate level. This is consistent with an analysis of time-series data on worker perceptions of job security by Borland (forthcoming). Using data from the Morgan Gallup Poll for the period 1975 to 1998, he found that there was little evidence of an upward trend in perceptions of the probability of retrenchment. However, Borland did find that there was a perceived decline in more broadly defined types of job security, such as the ability of employers to change work arrangements.

Figure 2.1 **Share of total Australian job separations due to retrenchment[a]**



a Retrenchment is defined as an involuntary job separation due to business closure, no work available, or other reasons. Total job separations include people who ceased their job voluntarily.

Data source: Productivity Commission (1998).

As noted above, descriptive data analyses can conceal the true nature of how retrenchments vary according to particular characteristics (including time periods). Econometric analyses can overcome this problem by using statistical techniques to isolate the impact of each influential variable. Such an analysis was undertaken by Borland and McDonald (2000) using data on Australian retrenchments for the period 1984 to 1996. Their results suggest that there was an increase in the rate of retrenchment in the early 1990s which cannot be attributed to the business cycle but this effect appears to have been a temporary phenomenon. In particular, they found

that, after controlling for the business cycle and worker heterogeneity, the rate of retrenchment increased significantly at the start of the 1990s but has since moved back towards its level of the 1980s. The increase in the early 1990s was much larger for males and to some extent was still evident in 1996. In contrast, the female rate of retrenchment had returned to its mid 1980s level by 1996.

US research provides more comprehensive evidence of structural change. In summary, differences in the rate of displacement across different groups in the US economy have narrowed since the early 1980s. The share of displacements has shifted away from manufacturing to service industries (Gardner 1995; Kletzer 1998; Podgursky 1992). Displacements have become more evenly distributed across occupations (Fallick 1996; Gardner 1995; Kletzer 1998). The importance of tenure as a predictor of displacement has decreased (Fallick 1996). The rate of displacement for workers with five or more years of tenure has increased (Aaronson and Sullivan 1998). Differences in the incidence and experiences of displaced workers attributable to the level of education appear to have narrowed over time (Fallick 1996). This is partly due to a large increase in the probability of displacement for workers with more than 15 years of education (Farber 1997). An econometric analysis by Polsky (1999) revealed that the probability of involuntary job mobility increased between 1976–81 and 1986–91 for those aged 45-54 (relative to younger workers) and for those in service occupations (relative to blue collar workers).

Booth et al. (1999) found evidence suggesting that structural changes have also occurred in Britain. They used a survey of work histories for individuals aged more than 15 years in September 1990 to show that the probability of a British worker being retrenched was lower if they started their first job in the 1950s (compared to those who first entered the labour market in the 1960s, 1970s or 1980s). Booth et al. also found that the probability of a male worker being retrenched increases from 15 per cent in their first job and plateaus at around 21 per cent in their fifth and subsequent jobs. Thus, retrenchments become an increasingly important cause of job separations for males as they move through their first five jobs. Workers may have a high rate of voluntary separations in their first five jobs because they have yet to discover what type of job best suits their skills and preferences. Booth et al. found that the probability of females being retrenched was more stable over their working lives and much lower than for males.

2.3 Post-displacement adjustment

Past research indicates that the adverse employment effects of displacement generally dissipate over time. However, some overseas studies have found that

displaced workers tend to experience a large and permanent fall in earnings. Worker characteristics and the business cycle also appear to affect the adjustment process.

Employment effects

Displaced workers can experience both a period of unemployment and then a reduction in working hours once re-employed (a shift to self-employment can also occur). Past research indicates that the magnitude of these effects varies markedly between individuals and over time (see for example Swaim and Podgursky 1991). Indeed, some displaced workers are able to find a new job with similar hours prior to displacement and so do not experience any adverse employment effects. Bender et al. (1999) found evidence that a large share of displaced males in France and Germany could be in this category. Borland et al. (1999) found that one third of British displaced workers do not experience a period of unemployment. Nevertheless, it appears that a substantial proportion of displaced workers in most countries, including Australia, experience adverse employment effects. It should also be noted that some displaced workers permanently leave the workforce. For example, Abbring et al. (1999) found evidence that displacement hastens retirement or transitions into disability status in both the United States and the Netherlands.

The probability of a retrenched Australian worker being re-employed tends to decline with age and increase with education (Borland et al. 1999). People who last worked in a blue collar occupation are less likely to find another job than other retrenched workers. Re-employment probabilities also vary over the business cycle, with the extent of this volatility depending on the industry and occupation of a person's last job (McDonald and Felmingham 1999).

Females are much more likely to leave the workforce after being retrenched than males (Stromback 1988). The share of retrenched males who leave the labour force has been relatively stable over time at around 10 per cent (McDonald and Felmingham 1999). A similar proportion of males leave the labour force after departing their job voluntarily.

An Australian survey by Davidson and Associates of 1 000 workers retrenched in 1998-99 indicates that there is a correlation between pre-retrenchment earnings and unemployment duration. They found that 92 per cent of people who earned up to $40 000 per annum in their old job were re-employed within 6 months (Field 1999; Mason 1999). This percentage fell significantly as pre-retrenchment income increased. Only 56 per cent of those who previously earned more than $100 000 were re-employed within 6 months. The survey also found that unemployment duration increases with age. This may explain why older workers were more likely

to become self-employed. One-third of retrenched workers aged over 50 became self-employed compared to only 13 per cent of those under 40.

In an econometric analysis of the Australian Youth in Transition Survey, Borland et al. (1999) found that the probability of young retrenched workers finding a new job increases with their time out of work. They also found that young retrenched workers tend to work less hours once re-employed. However, these results may not apply for older retrenched workers in Australia.

Where comparisons are possible, the employment effects of retrenchment in Australia appear to be broadly similar to those in other developed countries. For example, US re-employment probabilities tend to increase with education and decline with age (Farber 1997; Kletzer 1991). They are also cyclical (Kletzer 1998).

There is evidence of a short term reduction in work hours for some US workers due to being displaced from a full-time job and then re-employed on a part-time basis (Farber 1997). This shift to part-time employment is less prevalent for people with a tertiary education. For Canada, McCall (1997) found that females had a greater probability of being re-employed in a part-time job. In addition, union membership in the pre-displacement job tends to prolong the jobless spell for US displaced workers (Swaim and Podgursky 1991).

The time that North American displaced workers spend in unemployment is also correlated with tenure and earnings in their last job (Abe et al. 1999; Farber 1997; Swaim and Podgursky 1991). For example, Fallick (1996) observed that each year of tenure that US males accrue in their last job is associated with an increase in their unemployment duration of between 2 to 5 per cent. He argued that this effect is partly due to a greater reluctance among highly tenured workers to change industries. This may in turn be linked to a tendency for workers to earn higher wages as they accumulate human capital in a particular industry (Neal 1995; Topel 1991). If this is the case, then people who have worked in the same job for a long period have more to lose by changing industries.

US research indicates that the duration of unemployment is affected by the cause of displacement. Swaim and Podgursky (1991) found that workers displaced by plant closures experience one-third fewer weeks of unemployment than those who are laid-off from ongoing establishments. Econometric analysis by Gibbons and Katz (1991) showed that this result could not be attributed solely to differences in observable worker characteristics. They argued that it was caused by a ‘lemons’ effect in which prospective employers perceive laid-off workers as being of low ability compared to people who lose their job due to plant closure.

On average, the adverse employment effects of displacement in the United States dissipate after about four years (Fallick 1996; Ruhm 1991). Nevertheless, a minority of displaced workers can remain unemployed over the long term, particularly if they have low skills or reside in economically depressed regions. Weller and Webber (1999) found evidence of this in a case study of workers retrenched from the Australian textiles, clothing and footwear industry.

For some US workers, the adverse employment effects of displacement include multiple job losses. Stevens (1997) found that around 10 per cent of US workers who are displaced experience at least one additional job loss in the two years after their initial displacement (compared to an unconditional displacement probability of less than 5 per cent). Her results also indicate that the probability of multiple job loss declines as the time from the first displacement increases and that it is higher for workers who are laid-off rather than displaced in a plant closure. The latter finding provides further support for a lemons effect.

There is also evidence that there have been structural changes in US employment effects. For example, Polsky (1999) found that between 1976–81 and 1986–91 the probability of re-employment within one year of displacement for professional and managerial workers fell relative to service occupations. However, it could be argued that such findings are driven by the business cycle rather than structural change.

Earnings effects

Australian studies of earnings changes tend to focus on a subset of retrenched workers because comprehensive data are unavailable. For example, Borland et al. (1999) undertook an econometric analysis of earnings data from the Australian Youth in Transition Survey. They found that retrenchment had little impact on the earnings of young workers once they were re-employed. This finding may not apply to older Australian workers, given that it differs significantly from the results of some overseas studies that examine workers of all ages.

It is useful to distinguish between overseas research that analyses short term versus long term earnings changes. Many studies focus on short term effects by comparing the wage when displaced with that at the time of re-employment. However, the long term effects may be very different. Several US studies have found that the wages of displaced workers decline up to three years prior to displacement and then partially recover over time in post-displacement employment (see for example De La Rica 1995; Jacobson, LaLonde and Sullivan 1993a, 1993b; Ruhm 1991). There is also downward pressure on wages prior to displacement in Britain (Blanchflower 1991; Gregory, Lobban and Thomson 1987). Nevertheless, re-employed displaced workers in Europe seem to experience smaller long term wage losses than their US

counterparts (Gregory and Jukes 1997). Displaced European workers do, however, appear to have longer average unemployment spells.

US research has found that, on average, displaced workers experience an earnings loss in the short term (Fallick 1996; Farber 1997; Kletzer 1991). However, this average outcome masks considerable diversity. In the period 1981–1995, up to 40 per cent of re-employed displaced workers found a job with higher earnings (Kletzer 1998). This may have been due, in part, to some people experiencing a fall in earnings prior to displacement. At the other extreme, one-third of re-employed displaced workers experienced earnings losses of at least 25 per cent compared to their previous job.

Abe et al. (1999) found that the short term earnings experiences of displaced Canadian men are also very diverse. For Japan, they found that earnings losses are strongly related to age. On average, re-employed displaced Japanese males under 45 years of age experienced an increase in earnings whereas those over 55 experienced large losses. They attributed this result in part to the unique employment arrangements operating in Japan. Another possibility is that age is a proxy for tenure.

For France, Bender et al. (1999) found that the average earnings of displaced workers increase relative to continuously employed people from the year preceding to the year following displacement. However, this appears to be because the average earnings of displaced French workers fall in the year preceding displacement. Bender et al. found that the rapid short term earnings growth experienced by displaced workers does not continue in the long run. After five years, their earnings are about the same as in the year prior to displacement.

An econometric analysis by Farber (1997) found that the short term fall in earnings of re-employed US displaced workers increases with age and falls with education. Similarly, Abe et al. (1999) found that the mean wage loss due to displacement increases with age in Canada and Japan. Other research indicates that multiple job losses are an important source of medium term persistence in US wage reductions following displacement (Stevens 1997).

In the longer term, the size of the average US earnings loss appears to decline but remains significant (Jacobson, LaLonde and Sullivan 1993a, 1993b; Ruhm 1991). However, there is disagreement about this finding because it is difficult to estimate what workers would have earned if they had remained in their old job (Gustafson 1998). Nevertheless, it appears that many people continue their job search activities after finding their first post-displacement job, presumably to reduce their short term earnings loss (see for example Abe et al. 1999).

Carrington and Zaman (1994) found that post-displacement wage reductions in the United States tend to be greater for those who had long tenure in their previous job (Abe et al. 1999 reached a similar conclusion for Canadian males). The strength of this relationship varied between industries, with wage losses being greater for highly tenured workers in manufacturing. These results reflect a tendency for earnings to rise with tenure and the existence of inter-industry differences in the wages paid to apparently identical workers. The underlying causes of these phenomena are therefore an important factor in understanding why adjustment costs following displacement differ between individuals.

Possible reasons for the correlation between tenure and earnings are that:

- job 'match' quality is only revealed to employers and employees by on-the-job experience (hence workers with long tenure tend have a better match with their job than short tenure workers);
- highly tenured workers accumulate industry and/or firm specific human capital through training and experience that raises their productivity; and
- backloaded pay schemes that reward long service in a job (wage premium for seniority).

For the United States, Kletzer (1989, 1991, 1998) argued that blue collar workers have the strongest job match and specific human capital effects. This was based on econometric estimates which indicated that pre-displacement tenure had a muted effect on post-displacement earnings for blue collar workers (Crossley et al. (1994) got similar results for Canada). Kletzer found a stronger relationship between pre-displacement tenure and post-displacement earnings for white collar workers. This led her to conclude that individual ability and transferable skills are a more important component of the returns to tenure for white collar workers. Thus, it appears that the cost of displacement for highly tenured US workers is greatest in proportionate terms for blue collar occupations.

Inter-industry wage differences may be due to:

- differences in product market rents and the ability of workers to capture them as higher wages;
- 'compensating differentials' for the undesirable working conditions experienced in some industries (eg: higher rate of injuries in construction);
- differences in the rate of union membership (Kuhn and Sweetman (1998) found that loss of a union job in Canada leads to a significantly larger wage loss); and
- variation across industries in monitoring or turnover costs that lead to different 'efficiency' wages to reduce employee shirking or turnover.

Borland and Suen (1990) showed that inter-industry wage differences occur in Australia that cannot be entirely explained by observable worker characteristics (Wooden and Bora (1999) showed that these differentials also apply across workplaces within Australian industries). However, some authors have found evidence that suggests that inter-industry wage differences are largely due to unmeasured worker characteristics (such as ability) that effectively sort workers between low and high paying industries (see for example Borland and Suen 1990; Harris and Loundes 1999; Vella and Woodbridge 1993).

The average fall in earnings for re-employed displaced workers in the United States is significantly greater for those re-employed in a different industry, occupation or region (Fallick 1996; Hamermesh 1989; Podgursky and Swaim 1987). This suggests that structural changes involving the reallocation of workers between industries and/or occupations involves higher adjustment costs than otherwise. This is particularly the case for highly tenured workers. US research by Neal (1995) found that the first 10 years of tenure for males increased the earnings loss from changing industries by 21 percentage points. This led Neal to conclude that the wage-tenure premium must be partly linked to the accumulation of industry specific human capital (rather than only being a function of skills that are either generally applicable or firm specific). Another factor to consider is whether a displaced person moves to an industry that tends to pay a higher wage for a given worker. Krueger and Summers (1988) found that, on average, such displaced workers experience an increase in earnings compared to their pre-displacement job.

Firm size appears to also have a bearing on the magnitude of earnings losses. Abe et al. (1999) found that displaced Canadian males who moved from a large to a small firm lost 24 per cent more in wages than those remaining in small firms before and after displacement (large firms were defined as having 500 or more workers). A similar, but less pronounced, effect was found for Japanese males.

Econometric analysis of US data by Farber (1997) and Gibbons and Katz (1991) indicates that a lemons effect also applies for post-displacement earnings (as noted above, a lemons effect occurs when prospective employers perceive laid-off workers as being of low ability compared to people who lose their job due to plant closure). Gibbons and Katz found that the average fall in earnings was 4 per cent larger for a full-time male worker who was laid-off from an ongoing establishment compared to a similar worker who was displaced by plant closure. They also found that the lemons effect was largely confined to white collar occupations and industries with a low rate of union membership. This was attributed to more flexible retrenchment procedures for these occupations and industries. A similar Canadian study by Doiron (1995) also found evidence of a lemons effect largely confined to

white collar workers. However, Doiron found that union membership had no impact on the size of this effect in Canada.

2.4 Implications for this study

The substantial amount of overseas research provides insights into what are likely to be the key factors affecting the incidence and adjustment experiences of displaced Australian workers. US research shows that, on average, displaced workers experience a large and sustained reduction in earnings but the adverse employment effects dissipate after about four years. However, overseas research has also found that adjustment experiences are diverse, reflecting marked variation in worker characteristics.

One of the most important factors appears to be pre-displacement tenure. Australian workers who have been in their job for more than five years are much less likely to be retrenched (Borland 1998). However, overseas research shows that when highly tenured workers do lose their job, the adjustment costs can be significant, particularly if they change industry, occupation or region. There are several possible explanations for this, including the loss of job specific skills, high quality job match, and union membership.

The adjustment experiences of displaced workers also seem to vary according to education and gender. Higher levels of education are generally associated with a greater ability to find a new job and a smaller proportionate loss in earnings. Females are much more likely to leave the labour force after being displaced but their probability of displacement is less cyclical. Other influential factors include industry and occupation of the displaced job, whether the worker was laid-off from an ongoing business (lemons effect), firm size, and stage of the business cycle.

In summary, relatively high adjustment costs (long term for earnings and short term for non-employment) are correlated with the following individual characteristics:

- long tenure and/or high earnings in the retrenched job;
- older age groups;
- blue collar occupations;
- being laid-off from an ongoing business;
- no post school qualifications;
- female workers; and
- post-retrenchment re-employment which involves:

- movement from a large firm to a small firm;
- a shift from a highly unionised workplace to one with low union density; and
- a change in occupation or industry.

Table 2.1 details what seem to be the more important determinants of the employment effects. These relationships are investigated in the following chapter using bivariate techniques on Australian data. This provides a useful preliminary guide to the many factors influencing the incidence and experiences of displaced workers. It does, however, suffer from the problem that the apparent effect of one variable may in fact be due to several other factors. An econometric analysis can overcome this problem by using statistical techniques to isolate the impact of each influential variable. This is the subject of chapter 4. Only the results of binary dependent variable models are presented because of a lack of suitable data on earnings and unemployment duration for Australian displaced workers. Thus, the focus of the econometric analysis is on the probabilities of displacement and re-employment.

Table 2.1 **Possible sources of variation in post-displacement adjustment**

Source of variation	*Displacement probability*	*Unemployment duration*	*Re-employment probability*	*Earnings loss*
Tenure	• Inverse correlation	• Positive correlation		• Positive correlation
Education	• Inverse correlation		• Positive correlation	• Inverse correlation
Age	• Lower for males aged 35-54 years	• Positive correlation	• Inverse correlation	• Positive correlation
Gender	• Lower for females	• Displaced females have a high probability of leaving the labour force		
Industry	• Higher for construction & manufacturing			• Higher for manufacturing
Occupation	• Higher for blue collar workers		• Lower for blue collar workers	• Higher for blue collar workers
Cause of displacement		• Higher for people laid-off from ongoing establishments	• Lower for people laid-off from ongoing establishments	• Higher for people laid-off from ongoing establishments
Earnings in last job		• Positive correlation		• Positive correlation
Business cycle	• Counter-cyclical • Largely due to construction & manufacturing? • Stronger cyclical pattern for males and less educated workers	• Counter-cyclical • Varies between industries & occupations	• Pro-cyclical • Varies between industries & occupations	
Change industry, occupation or region				• Positive correlation

Source: Based on the results of past Australian and overseas research.

3 Descriptive analysis of Australian data

This chapter summarises the results of an analysis of published ABS statistics on retrenched workers. The analysis first focuses on detailed cross-section data for the period 1994–97. Time-series data that provide an indication of changes over time are then examined. The analysis does not include an examination of earnings changes or unemployment durations due to the lack of suitable Australian data.

3.1 Cross-section analysis

The July 1997 Labour Force Survey (LFS) included a series of supplementary questions which gathered information about people aged 18-64 years who had been retrenched in the three years to 30 June 1997. For those who had been retrenched, data were collected on the job in which they were most recently retrenched, circumstances of that retrenchment, and subsequent job search activities. Aggregated results were published in ABS (1997) catalogue no. 6266.0 (*Retrenchment and Redundancy: Australia*). These results are analysed below.

Incidence of retrenchment

Consistent with the findings of past research, the data show that retrenchments are not evenly distributed across the workforce. People were more likely to be retrenched during 1994–97 if they were male, had low tenure in their job, a low level of education, worked in a blue collar occupation, or were employed in manufacturing.

Gender and Region

Males accounted for a disproportionate share of retrenchments in each state and territory (table 3.1). At a national level, males accounted for 68 per cent of all persons retrenched during 1994–97 but only 55 per cent of people who held a job at some time in that period. For males in most states, the likelihood of being retrenched was lower in the capital city. The exceptions were Queensland and South

Australia. In contrast, females were more likely to be retrenched in the capital city of all states except Victoria and Western Australia.

Table 3.1 **Distribution of retrenchments by state/territory and gender, July 1994 to June 1997[a]**

	NSW	*Vic*	*Qld*	*SA*	*WA*	*Tas*	*NT*	*ACT*	*Aust*
	%	%	%	%	%	%	%	%	%
Share of people who had a job during 1994–97 (per cent)									
Males	55	55	55	55	55	56	52	53	55
Females	45	45	45	45	45	44	48	47	45
Persons	100	100	100	100	100	100	100	100	100
Share of retrenched persons (per cent)									
Males	71	68	66	68	68	71	64	65	68
Females	29	32	34	32	32	29	39	35	32
Persons	100	100	100	100	100	100	103	100	100

a Data are for people aged 18-64 years.

Source: PC estimates based on ABS (*Retrenchment and Redundancy, Australia*, Cat no. 6266.0).

Multiple retrenchments

Around 15 per cent of people who had been retrenched in the three years to June 1997 had experienced more than one retrenchment. Around one-third of these people had experienced three or more retrenchments. This is consistent with past US research by Stevens (1997), who found that around 10 per cent of displaced US workers experience at least one additional job loss in the two years after their initial displacement.

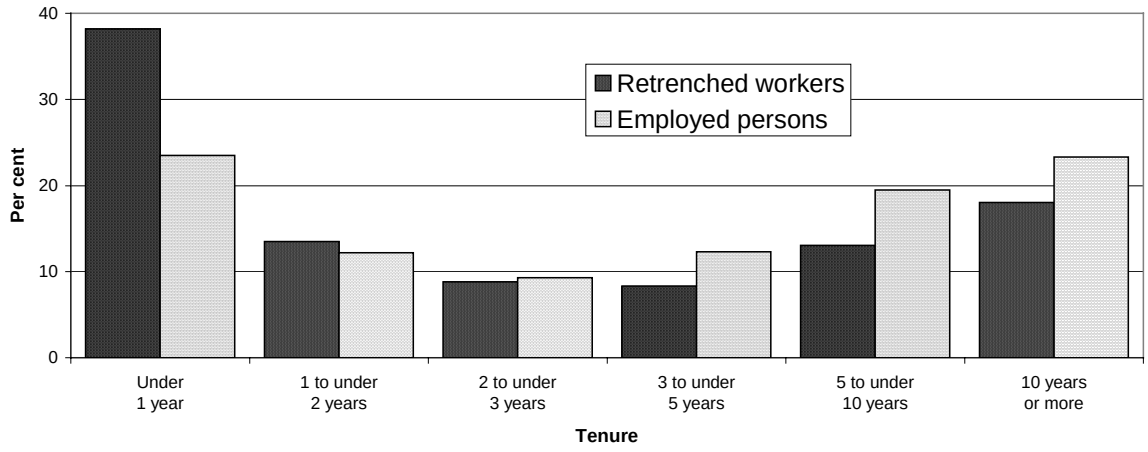
The probability of a retrenched Australian worker experiencing multiple retrenchments decreased with age. Around 21 per cent of 18-24 year olds retrenched during 1994–97 reported more than one retrenchment, compared to only 8 per cent of 55-64 year olds.

The existence of multiple retrenchments affects the interpretation of the retrenched worker surveys because job details were only collected for a person's most recent retrenchment. Hence, the data analysed here could understate the incidence of retrenchments for some types of jobs, such as those in certain industries or occupations. No information is available on the extent to which this downward bias is concentrated in particular job categories. However, this may not be a significant problem, given that 85 per cent of people were retrenched only once and just 5 per cent had more than two retrenchments.

Tenure

Workers with less than one year of tenure accounted for 38 per cent of all retrenchments but only around a quarter of employed persons (figure 3.1). Thus, they appear to be significantly over-represented in retrenchments. The data also indicate that the probability of retrenchment is inversely related to tenure up to 10 years and then increases slightly for tenure of 10 years or more.

Figure 3.1 **Distribution of retrenchments and employment by tenure, July 1994 to June 1997[a]**



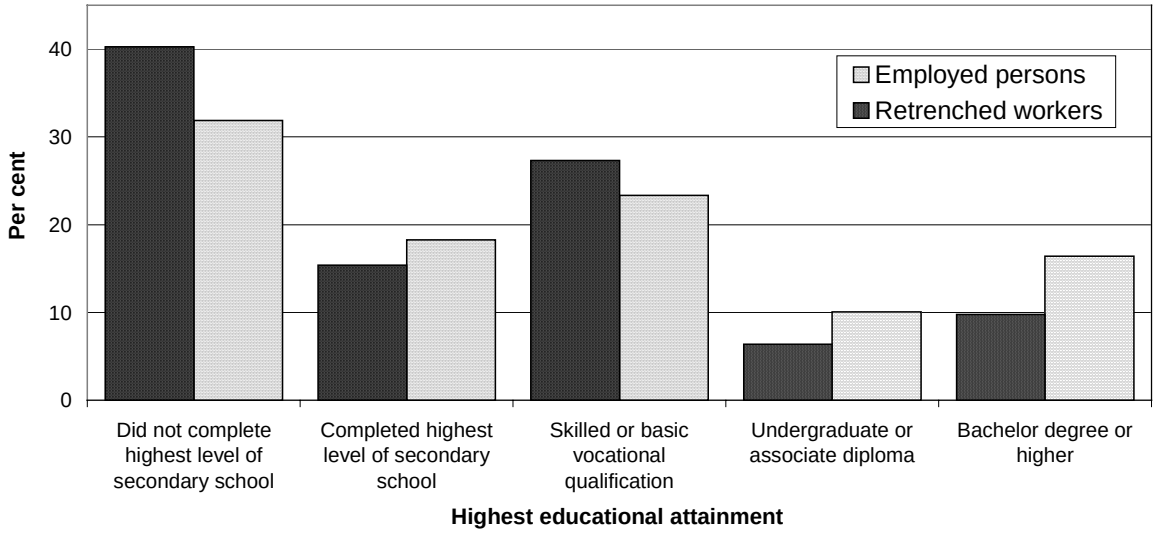
a Data for employed persons are for February 1996.

Source: PC estimates based on ABS (*Retrenchment and Redundancy, Australia*, Cat no. 6266.0 and *Labour Mobility, Australia*, Cat no. 6209.0).

Education

Consistent with the results of past Australian and overseas research, a disproportionate share of retrenchments were found to be among the least educated workers. In particular, people who had not completed the highest level of secondary school accounted for 40 per cent of retrenchments between 1994-95 and 1996-97 but only around 32 per cent of employed persons (figure 3.2). Those with skilled or basic vocational qualifications were also over-represented in retrenchments. In contrast, the share of retrenched workers with a bachelor degree or higher (10 per cent) was well below their share of employed persons (around 16 per cent).

Figure 3.2 **Distribution of retrenchments and employment by education, 1994-95 to 1996-97[a]**



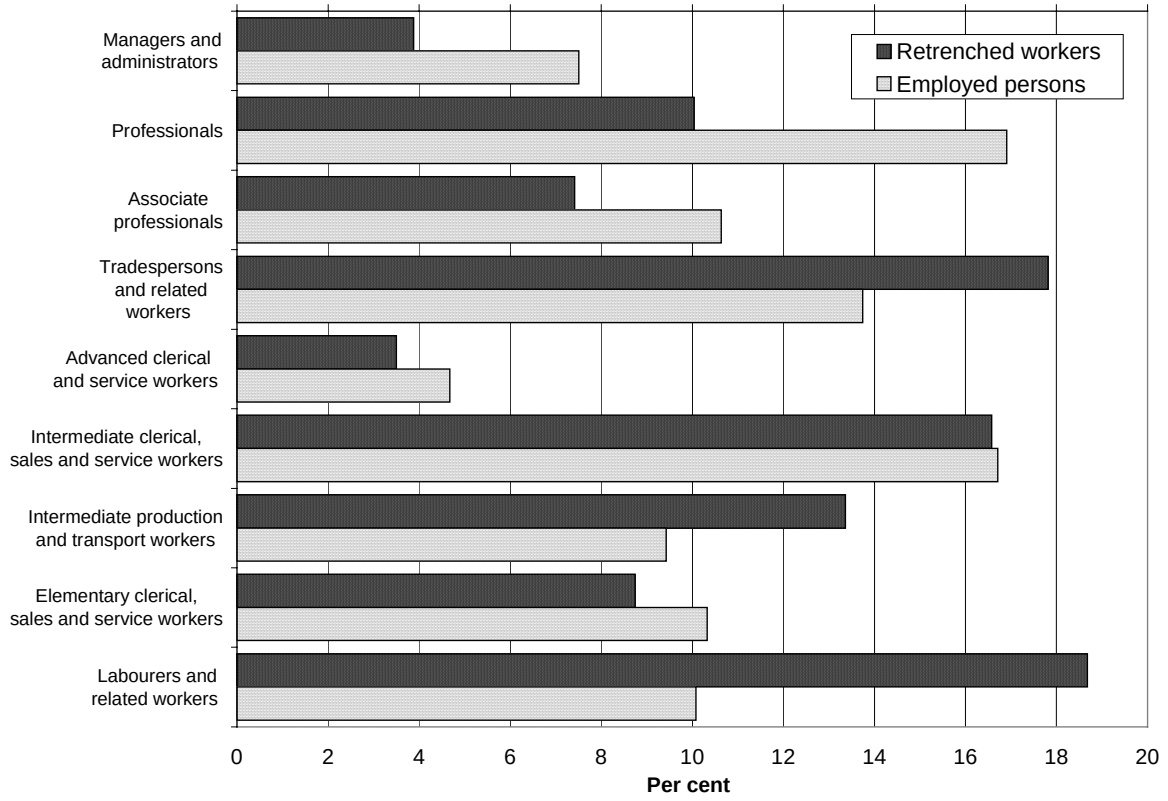
a Data on the educational attainment of all employed persons are averages of published data for May 1995, 1996 and 1997 from ABS cat. no. 6227.0 (*Transition from Education to Work, Australia*). The July 1997 Labour Force Survey did not collect data on the educational attainment of people who had not been retrenched between July 1994 and June 1997.

Source: PC estimates based on ABS (*Retrenchment and Redundancy, Australia*, Cat no. 6266.0 and *Transition from Education to Work, Australia*, Cat no. 6227.0).

Occupation

As noted in chapter 2, past research shows that US blue collar workers have a higher rate of retrenchment than white collar workers. The data presented in figure 3.3 appear to confirm that a similar situation applies in Australia. In particular, a disproportionate share of retrenchments between 1994-95 and 1996-97 were for Labourers and related workers; Tradespersons and related workers; and Intermediate production and transport workers. In contrast, the white collar occupations of Managers and administrators; Professionals; and Associate professionals were significantly under-represented in total retrenchments.

Figure 3.3 **Distribution of retrenchments and employment by occupation, 1994-95 to 1996-97[a]**



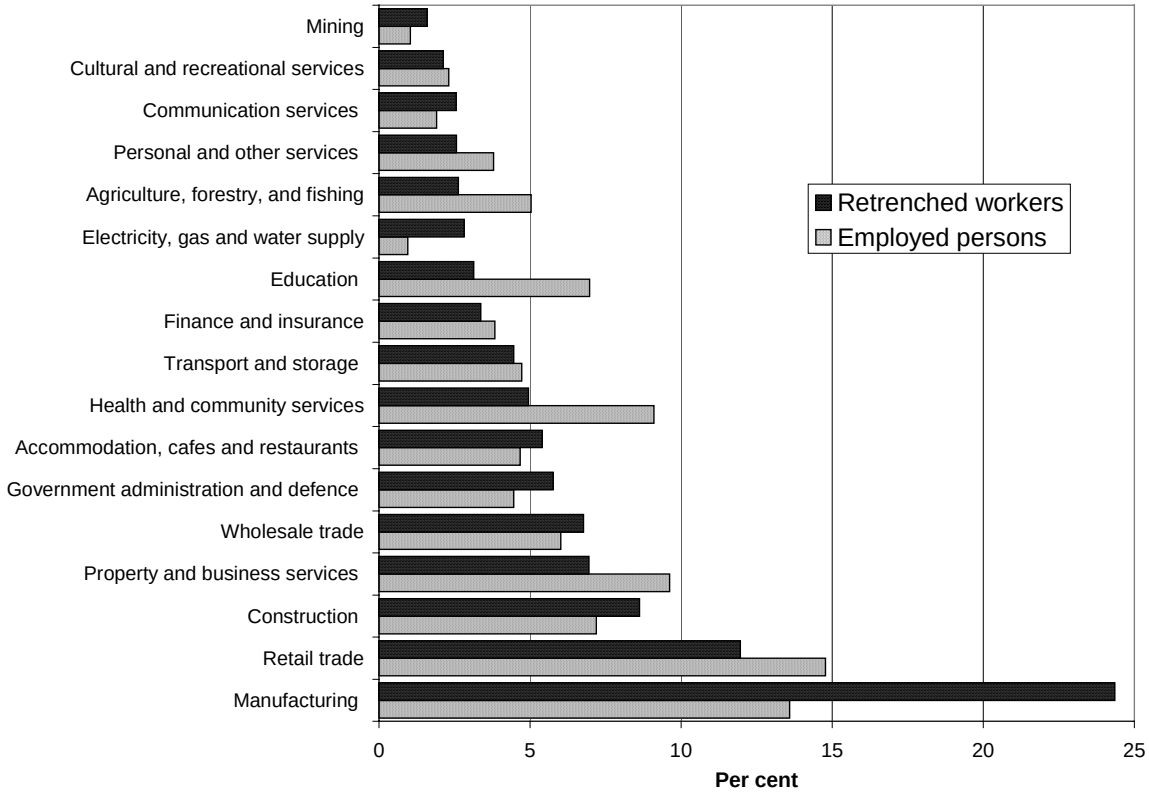
a The distribution of employed persons between occupations is based on averages of published data from ABS cat. no. 6203.0 (*Labour Force, Australia*) for 1996 (August and November) and 1997 (February and May). Earlier editions of the Labour Force Survey used a different occupational classification. The July 1997 Labour Force Survey did not collect data on the occupation of people who had not been retrenched between July 1994 and June 1997.

Source: PC estimates based on ABS (*Retrenchment and Redundancy, Australia*, Cat no. 6266.0 and *Labour Force, Australia*, Cat no. 6203.0).

Industry

Manufacturing workers have among the highest rate of displacement in the United States and Britain (Farber 1997; Borland et al. 1999). This also appears to be the case in Australia. Manufacturing accounted for about a quarter of all Australian retrenchments between 1994-95 and 1996-97 but only 14 per cent of employment (figure 3.4). A disproportionate share of Australian retrenchments also occurred in Mining; Electricity, gas and water supply; Construction; Accommodation, cafes and restaurants; Government administration and defence; and Wholesale trade.

Figure 3.4 **Distribution of retrenchments and employment by industry, 1994-95 to 1996-97[a]**



a The distribution of employed persons between industries is based on averages of published data from ABS cat. no. 6203.0 (*Labour Force, Australia*) for 1994 (September and December), 1995 and 1996 (March, June, September and December), and 1997 (March and June). The July 1997 Labour Force Survey did not collect data on the industry of people who had not been retrenched between July 1994 and June 1997.

Source: PC estimates based on ABS (*Retrenchment and Redundancy, Australia*, Cat no. 6266.0 and *Labour Force, Australia*, Cat no. 6203.0).

Full-time/part-time/casual status

Full-time casual employees accounted for a disproportionate share of retrenchments between 1994-95 and 1996-97 (table 3.2). In contrast, the share of full-time permanent employees who were retrenched was broadly in line with their share of employed workers. Part-time employees (including those employed on a casual basis) appeared to have a relatively low probability of retrenchment. However, an econometric analysis of data for the period 1984–1997 by Borland and McDonald (2000) showed that full/part-time status has no impact on the likelihood of retrenchment. This indicates that differences in retrenchment rates between full-time and part-time workers are due to factors other than their work hours.

Table 3.2 **Distribution of retrenchments by full-time/part-time/casual status and gender, 1994-95 to 1996-97[a]**

	Full-time			
	Permanent employee	*Casual employee*	*Part-time*	*Total*
Share of employees (per cent)				
Males	77	10	13	100
Females	50	5	45	100
Persons	65	8	27	100
Share of total retrenchments (per cent)				
Males	73	19	8	100
Females	55	12	33	100
Persons	67	17	16	100

a The distribution of employees between full/part-time and permanent/casual categories is based on published data from the August 1997 edition of ABS cat no. 6310.0 (*Employee Earnings, Benefits and Trade Union Membership*). The July 1997 Labour Force Survey did not collect such data for people who had not been retrenched between July 1994 and June 1997.

Source: PC estimates based on ABS (*Retrenchment and Redundancy, Australia*, Cat no. 6266.0 and *Employee Earnings, Benefits and Trade Union Membership, Australia*, Cat no. 6310.0).

Not in the labour force

Of those people retrenched between July 1994 and June 1997, 16 per cent were not in the labour force at the survey date (July 1997). Variation in the probability of not being in the labour force was found for the following factors:

- **Sex:** More than one in four retrenched females left the labour force. In contrast, only 11 per cent of males left the labour force after being retrenched.
- **Age:** Retrenched workers aged less than 55 years had a probability of leaving the leaving the labour force of only 13 per cent. In contrast, 44 per cent of retrenched workers aged 55-64 years were not in the labour force.
- **Tenure:** Around 10 per cent of people retrenched from a job with less than one year of tenure had left the labour force. In contrast, about a third of people retrenched from a job with ten or more years of tenure had left the labour force.
- **Status of retrenched job:** Almost 30 per cent of people retrenched from a part-time job were out of the labour force, compared to only 14 per cent of those retrenched from a full-time job.
- **Occupation:** People retrenched as Managers and administrators had a probability of not being in the labour force of only 8 per cent. In contrast, 26 per cent of those retrenched as Advanced clerical and service workers were not in the labour force.

- **Industry:** People retrenched from a job in Electricity, gas and water supply; Communication services; Finance and insurance; or Government administration and defence had a probability of not being in the labour force of more than 22 per cent.

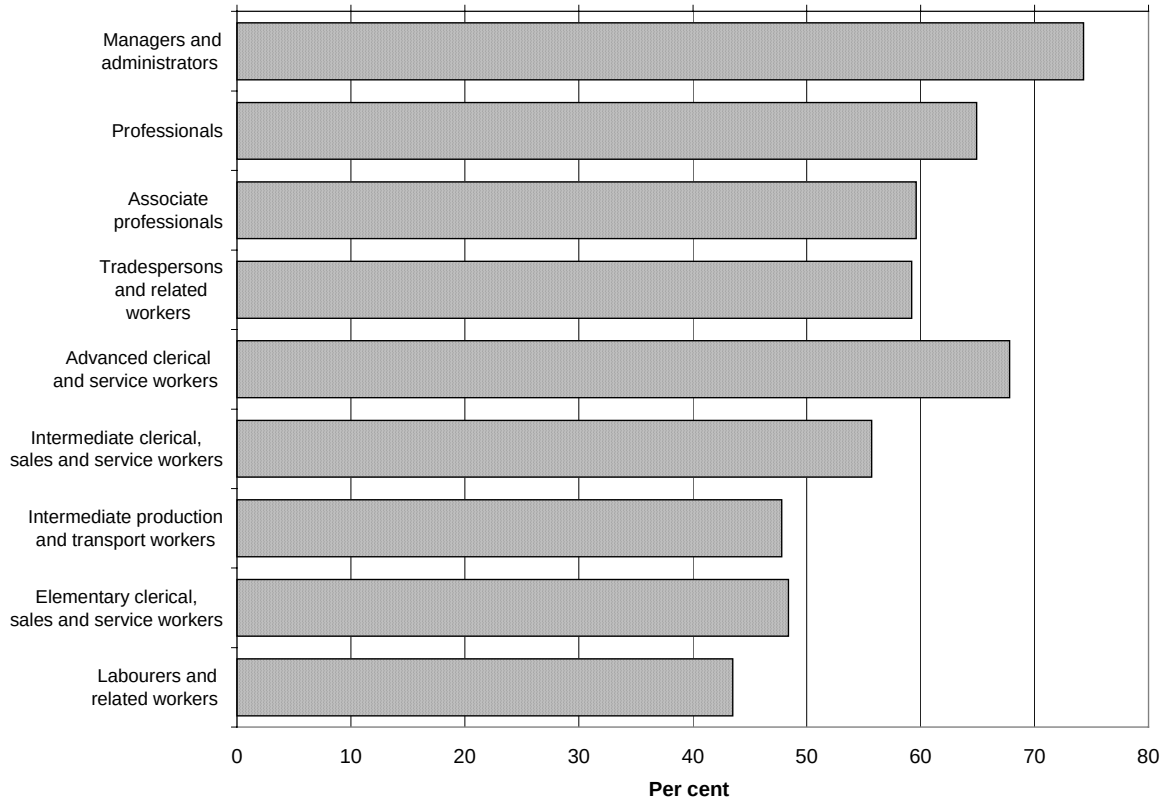
Incidence of re-employment

Around 55 per cent of people who had been retrenched between July 1994 and June 1997 were re-employed at the survey date (July 1997). A further 29 per cent were still looking for work (the remaining 16 per cent were not in the labour force). While retrenched females were much more likely to leave the labour force, the probability of re-employment was similar for retrenched males and females.

Variation in re-employment probabilities was found for the following factors:

- **Tenure:** People who had worked in their retrenched job for less than 9 months only had a 42 per cent probability of being re-employed at the survey date. In contrast, those who had from 9 months to less than 20 years of tenure had similar re-employment probabilities of around 60 per cent. Only about half of retrenched workers who had 20 years or more of tenure had found a job, reflecting the greater tendency for this group to leave the labour force.
- **Permanent/casual status:** Only 43 per cent of people retrenched from a casual job were re-employed at the survey date, compared to 60 per cent of those retrenched from a permanent job. This disparity was most pronounced for males. Only 39 per cent of males retrenched from a casual job were re-employed, compared to 61 per cent of males retrenched from a permanent job.
- **Age**: A below average re-employment probability was recorded for 18-24 year olds (49 per cent) because a large proportion were still looking for work (43 per cent). People aged 25 to 44 had the highest probability of re-employment (61 per cent). Those in the 55-64 age group had the lowest re-employment probability (33 per cent) because many had left the labour force (44 per cent).
- **Industry:** More than 60 per cent of people retrenched from Mining; Finance and insurance; and Property and business services were re-employed at the survey date. At the other extreme, only about 40 per cent of people retrenched from Personal and other services; Communication services; and Electricity, Gas and water supply had found another job.
- **Occupation:** The probability of re-employment tended to be inversely related to skill (see figure 3.5). Only 44 per cent of the lowest skill occupation (Labourers and related workers) were re-employed at the survey date compared to 74 per cent of the highest skill category (Managers and administrators).

Figure 3.5 **Re-employment probability by occupation of job from which retrenched, 1994-95 to 1996-97**



Source: PC estimates based on ABS (*Retrenchment and Redundancy, Australia*, Cat no. 6266.0).

Changes in job characteristics

US research shows that the average fall in earnings after being displaced is significantly greater for people who change industry or occupation (Fallick 1996; Hamermesh 1989; Podgursky and Swaim 1987). This is particularly the case for highly tenured workers (Neal 1995). There are several possible explanations for this, including the loss of job specific skills, high quality job match, and union membership. While data were not available from the July 1997 LFS to investigate such earnings effects for Australia, it was possible to examine changes in job characteristics for re-employed retrenched workers. It was found that a large proportion of people retrenched between July 1994 and June 1997 and re-employed at the survey date (July 1997) had experienced a change in the characteristics of their employment.

Occupation and industry

Of those retrenched workers who were re-employed, 42 per cent changed occupation. Those retrenched from jobs as Managers, or Elementary clerical, sales and service workers were most likely to change occupation (almost 60 per cent did so). In contrast, less than a third of those retrenched from jobs as Professionals or Tradespersons had changed occupation.

About 55 per cent of re-employed retrenched workers changed industry. Almost 90 per cent of those retrenched from jobs in Electricity, gas and water supply, and Government administration and defence changed industry. Communication services also had a high level of outflows (75 per cent). In contrast, inter-industry mobility was below average for those retrenched in Construction (40 per cent).

These differences in mobility between occupations and industries could be due to a combination of supply and demand side factors. For example, on the supply side a greater proportion of earnings for Professionals, and Tradespersons and related workers could be linked to occupation specific training. If this is the case, then these people may be more reluctant to change occupation because of the prospect of greater proportionate earnings losses than other retrenched workers. On the demand side, the large outflow from Electricity, gas and water supply, and Government administration and defence could be related to the one-off effect of restructuring government business enterprises in the early 1990s. The low inter-industry mobility of people retrenched in Construction could be due to the project based nature of employment in that industry, with many instances of re-employment being the result of movements from one construction project to another.

Job status

Around 20 per cent of re-employed retrenched workers had been laid off from a permanent job and then become re-employed in a casual job (table 3.3). About 8 per cent had moved in the opposite direction (from casual to permanent employment). Around 11 per cent of re-employed retrenched workers had become self-employed. Changes in permanent/casual status were more prevalent for those who changed industry or occupation.

Table 3.3 **Employment status of people retrenched during 1994–97 and re-employed in July 1997**

	Changed industry	*Changed occupation*	*Did not change industry or occupation*	*Total*
	%	%	%	%
Permanent/casual status				
Did not change permanent/casual status	52	54	72	61
Changed from permanent to casual status	24	23	14	20
Changed from casual to permanent status	9	9	8	8
Current job is not an employee job	15	14	6	11
Total	100	100	100	100
Full/part-time status				
Did not change full-time/part-time status	71	69	85	77
Changed from full-time to part-time	20	22	8	16
Changed from part-time to full-time	9	9	6	8
Total	100	100	100	100

Source: PC estimates based on ABS (*Retrenchment and Redundancy, Australia*, Cat no. 6266.0).

Almost a quarter of all re-employed retrenched workers changed their full-time/part-time status. There were twice as many movements from full-time to part-time status as there were in the opposite direction. The largest changes in proportionate terms (in both directions) were for females. Changes in full-time/part-time status were also more prevalent among those who changed industry or occupation.

3.2 Time-series analysis

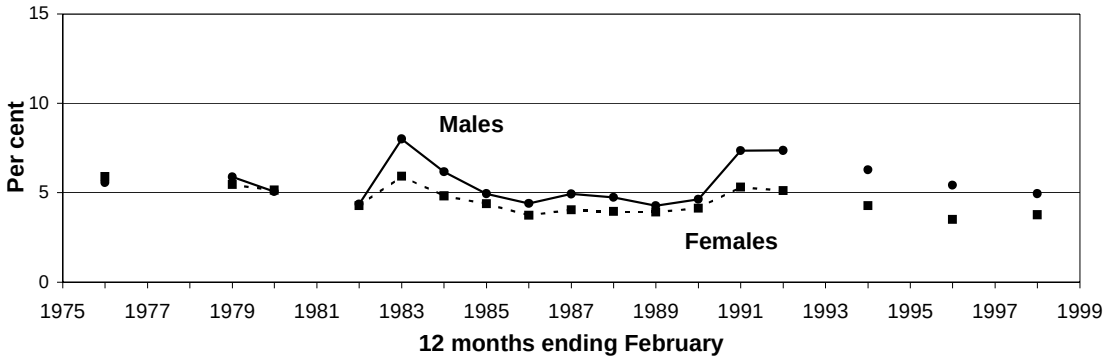
In chapter 1 it was shown that, since the mid 1970s, the aggregate rate of retrenchment has been stable over the long run at around 5 per cent of people who had a job in a given 12 month period. Nevertheless, there may have been structural changes in the rate of retrenchment for specific groups of workers (movements over time which cannot be attributed to the business cycle). This section investigates whether such changes occurred based on gender and tenure of job from which retrenched. Movements over time in the labour force participation of retrenched workers are also analysed.

Gender

As noted in chapter 2, there is a marked difference in retrenchment rates between males and females. Figure 3.6 shows that, since the early 1980s, the male rate of

retrenchment has consistently been above the rate for females. These data also show that the difference between male and female retrenchment rates increased during the recessions of the early 1980s and 1990s and then subsequently declined with more favourable economic conditions. This confirms the male rate of retrenchment is more sensitive to fluctuations in the business cycle than that for females.

Figure 3.6 **Rate of retrenchment by gender[a]**



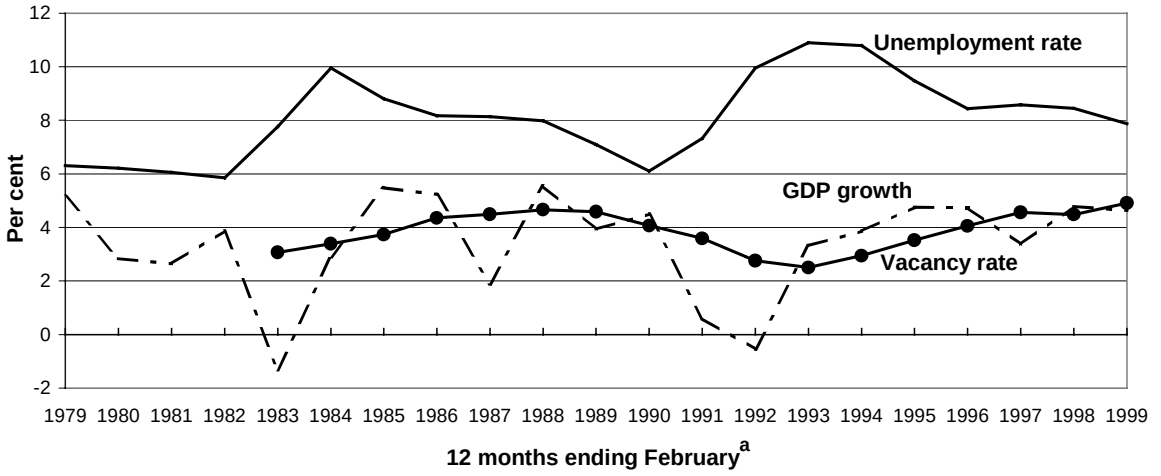
a The rate of retrenchment was calculated by dividing the number of people who had been retrenched by the number of people who had a job during a 12 month period ending in February.

Source: PC estimates based on ABS (Labour Mobility: Australia, Cat no. 6209.0).

Tenure

As noted in chapter 2, past Australian and overseas research shows that there is an inverse correlation between length of tenure in a job and the probability of being retrenched. To investigate whether there have been any structural changes in this phenomenon for Australia, two similar points in the business cycle were compared. This minimises the impact of short term cyclical movements in the rate of retrenchment. The periods selected for comparison were the 12 months ending in February 1988 and February 1998 (data on the tenure of retrenched workers are only published for 12 month periods ending in February). Figure 3.7 shows that these periods had similar rates of economic growth, unemployment and job vacancies.

Figure 3.7 **Rate of GDP growth, unemployment and job vacancies, 1979 to 1999**



[a] Data for GDP growth and the vacancy rate are for the 12 months ending in the March quarter.

Data Source: EconData DX database.

In the 12 months ending in both February 1988 and February 1998, employees with less than one year of tenure accounted for more than 40 per cent of retrenchments but only around a quarter of employees (figure 3.8). Thus, the inverse correlation between retrenchment rates and tenure is clearly evident.

Figure 3.8 **Distribution of retrenchments and employment by tenure, selected years**

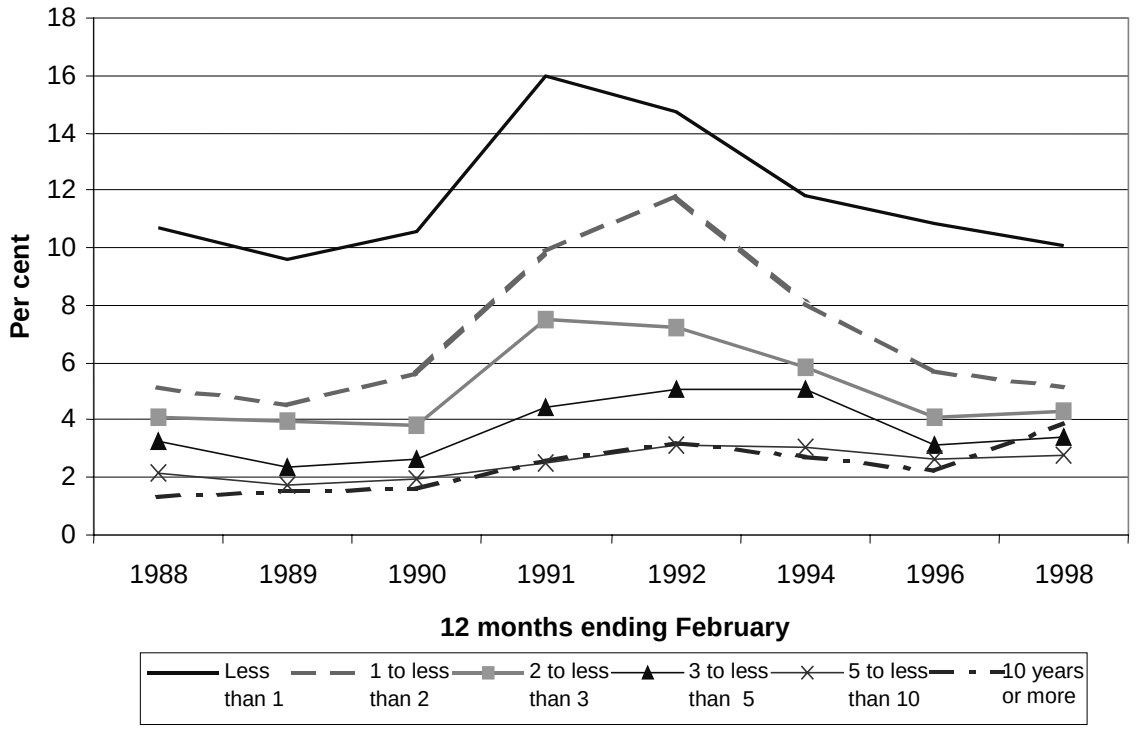
Data source: *ABS (Labour Mobility, Australia,* Cat no. 6209.0 and *Labour Force, Australia,* Cat no. 6203.0).

It appears that there has been a structural change toward a more even distribution of employees and retrenchments across tenure groups. This is most evident for the lowest and highest tenure groups The probability of retrenchment seems to have increased significantly for people with more than 10 years tenure. This is due, in part, to a fall in the prevalence of high tenure workers.

Impact of the business cycle

Workers with at least five years of tenure have a relatively low and stable rate of retrenchment over time (figure 3.9). Below five years of tenure, the rate of retrenchment has a marked counter-cyclical pattern, with the strength of this behaviour inversely correlated with tenure. Hence, workers with less than one year of tenure tend to experience the greatest percentage point variation in retrenchment rates over the business cycle.

Figure 3.9 **Retrenchment rates by tenure, February 1988 to February 1998[a]**



a Retrenchment rates are calculated by dividing the number of retrenchments in a given tenure group by the number of employed persons in that group in the survey month (February).

Source: PC estimates based on ABS (*Labour Mobility, Australia*, Cat no. 6209.0).

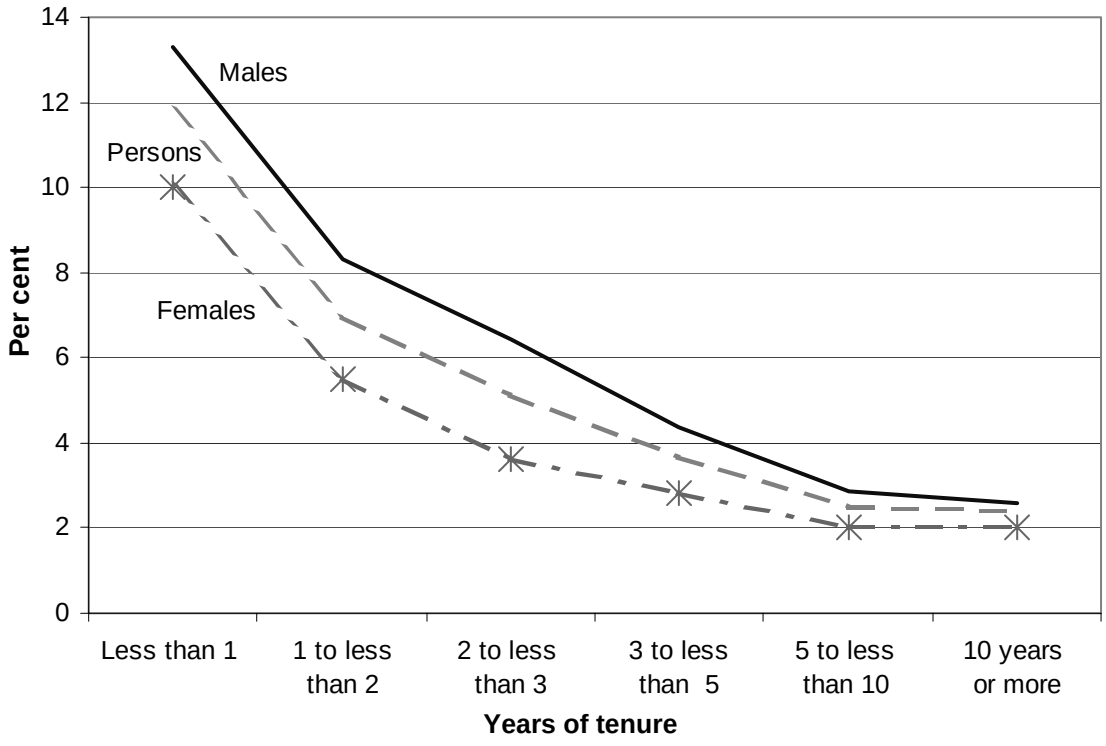
There do not appear to be significant structural changes in retrenchment rates based on tenure. This can be seen from the similarity in retrenchment rates for the 12

month periods ending in February 1988 and February 1998. Nevertheless, the data for 1998 seem to show that the rate of retrenchment for people with 2 or more years of tenure has increased relative to those with less than 2 years of tenure. An upward trend in the retrenchment rate is particularly evident for workers with over 10 years tenure.

Tenure and Gender

Past research indicates that males have a greater probability of retrenchment than females. As noted in chapter 2, this became most evident in Australia during the early 1990s recession. To minimise the impact of such cyclical effects, the average annual rate of retrenchment between March 1987 and February 1998 (inclusive) was calculated for each tenure and gender group. The results are summarised in figure 3.10.

Figure 3.10 **Average annual rate of retrenchment by tenure and gender, March 1987 to February 1998[a]**



a Retrenchment rates are calculated by dividing the number of retrenchments in a given tenure group by the number of employed persons in that group in the survey month (February).

Source: PC estimates based on ABS (*Labour Mobility, Australia*, Cat no. 6209.0).

For all workers, the probability of retrenchment declined from around 12 per cent for those with less than 1 year of tenure, to below 3 per cent for those with tenure of

more than 10 years. It is also apparent that the rate of retrenchment tends to stabilise at less than 4 per cent once five years of tenure has been reached.

The average probability of retrenchment over the period March 1987 to February 1998 was lower for females in every tenure group. However, the size of this gap was small in absolute terms for workers with at least 5 years of tenure.

Data presented in table 3.4 show retrenchment rates by tenure and gender for each year. With few exceptions, male rates of retrenchment were greater than female rates in each tenure group. It is evident that the rate of retrenchment for both males and females with low tenure (less than two years) is the most sensitive to changes in the business cycle. There also appears some evidence of structural change with increased retrenchment rates for workers with tenure greater than 10 years between 1996 and 1998.

Table 3.4 **Retrenchment rates by sex and tenure[a]**

	Years of Tenure					
12 months ending February	*Less than 1*	*1 to less than 2*	*2 to less than 3*	*3 to less than 5*	*5 to less than 10*	*10 or more*
	%	%	%	%	%	%
Males						
1988	11.3	6.6	5.2	3.6	2.6	1.4
1989	9.9	5.1	5.6	2.5	1.8	1.4
1990	11.2	6.2	4.0	3.0	2.1	1.6
1991	18.7	11.8	9.4	5.2	3.2	2.6
1992	17.4	14.1	9.2	6.3	3.8	3.4
1994	13.6	9.4	7.5	6.5	3.6	3.1
1996	13.0	7.1	5.3	3.9	3.0	2.6
1998	11.2	6.4	5.4	4.1	2.6	4.6
Females						
1988	10.0	3.5	2.8	2.9	1.4	1.2
1989	9.2	3.9	2.4	2.2	1.6	1.9
1990	9.7	5.0	3.6	2.1	1.7	1.4
1991	12.9	7.8	5.3	3.6	1.6	2.3
1992	11.5	9.4	5.1	3.6	2.3	2.8
1994	9.7	6.5	4.2	3.5	2.3	1.9
1996	8.4	4.1	2.7	2.2	2.3	1.6
1998	8.8	3.7	3.1	2.6	3.0	3.0

a Retrenchment rates are calculated by dividing the number of retrenchments in a given tenure group by the number of employed persons in that group in the survey month (February).

Source: PC estimates based on ABS (*Labour Mobility, Australia*, Cat no. 6209.0).

Labour force participation

Being retrenched may prompt some people to retire earlier than previously intended. Data limitations make it difficult to determine whether there have been

structural changes in the tendency for retrenched workers to retire. The years for which data are available are at different points in the business cycle. These data show that, between 1983 and 1997, males less than 55 years old became more likely to retire following retrenchment. A similar, but less pronounced, trend was evident for female workers.

Rather than retire, some retrenched workers may temporarily leave the labour force by not searching for a new job. However, ABS data show that people who were retrenched from their last job account for only a small proportion of those people re-entering the labour force (11 per cent in 1993). This is particularly the case for females, many of whom leave the labour force voluntarily to have children and then re-enter the labour force.

3.3 Key findings

This chapter summarised the results of a descriptive analysis of Australian data on the incidence and adjustment experiences of retrenched workers. It is evident that there is considerable heterogeneity between different types of workers. The most notable findings were that:

- the probability of being retrenched falls significantly in the first 5 years in a job and then stabilises at less than 4 per cent (compared to around 12 per cent when tenure is less than one year);
- the rate of retrenchment has a marked counter-cyclical pattern for workers with less than 5 years tenure (these cyclical fluctuations also diminish as tenure approaches 5 years);
- females are less likely than males to be retrenched, particularly when tenure is less than 5 years;
- a disproportionate share of retrenchments occur among people with low levels of education, who work in blue collar occupations, are full-time casual employees, or are employed in manufacturing;
- around 15 per cent of retrenched workers experienced multiple retrenchments during 1994–97;
- males are more likely than females to continue searching for a job after being retrenched (one in four females retrenched during 1994–97 left the labour force);
- the probability of being re-employed is relatively low for people who are retrenched from a job with tenure of less than 9 months, who were formerly

employed on a casual basis, who had worked in a low skill occupation, or were aged 18-24 years; and

- retrenched workers who find a new job often experience a change in the nature of their work, such as occupation, industry and permanent/casual status.

These results are generally consistent with the findings of past overseas and Australian research. In particular, it is evident that tenure is an important factor affecting the incidence of retrenchments and post-retrenchment adjustment. Nevertheless, the results need to be qualified because the apparent effect of one variable may in fact be due to several other factors. The relative importance of each variable is also unclear. These problems can be overcome using regression analysis, which is the subject of the next chapter.

4 Main findings of econometric analysis

In the previous chapter it was shown that the incidence and adjustment experiences of retrenched workers vary according to individual characteristics such as education and gender. However, these results may be misleading because the apparent effect of one variable could be due to several other factors. For example, the higher observed rate of retrenchment for males may be due to their greater concentration in Manufacturing and Construction rather than their gender per se.

Econometric analyses can overcome this problem by using statistical techniques to isolate the impact of each variable. Such an analysis was undertaken for this study using the cross-section data which were summarised in the previous chapter. These data were collected in a series of one-off supplementary questions to the July 1997 Labour Force Survey (LFS). In particular, respondents to that survey were asked a series of additional questions if they indicated that they had been retrenched in the previous three years (July 1994 to June 1997).

Appendix A outlines the methodology used for the econometric analysis and provides a comprehensive summary of the statistically significant results. The complete model results are presented in tabular form in appendix B. The purpose of this chapter is to provide a non-technical summary of the main findings. The emphasis here is on post-retrenchment adjustment because the July 1997 LFS did not collect data on many individual characteristics for people who had not been retrenched. As a result, it was not possible to verify past Australian research, which shows that characteristics such as job tenure are important factors affecting the likelihood of retrenchment. Nevertheless, the data analysed here are the most comprehensive available for those interested in post-retrenchment adjustment, since detailed data were collected for retrenched workers.

4.1 Retrenchment

As noted above, only a limited set of individual characteristics were available to analyse the incidence of retrenchment. Keeping this limitation in mind, the main characteristics associated with a higher probability of being retrenched between July 1994 and June 1997 were the following:

- males (probability of retrenchment for males was 5.4 percentage points higher than for females);
- resides outside New South Wales (up to 4.9 percentage points more likely to be retrenched) or a state capital city (1.5 percentage points more likely to be retrenched);
- lone parent with dependents (4.9 percentage points more likely to be retrenched than married people with dependents); and
- aged over 54 years (4.8 percentage points more likely to be retrenched than 18-24 year olds).

Again, these results should be interpreted with care due to the omission of variables which past studies have shown to be important. For example, Borland et al. (1999) found that displacement rates in Britain are similar for males and females once differences in tenure, education, industry and occupation are controlled for.

Multiple retrenchments

US research indicates that multiple retrenchments are an important source of medium term persistence in earnings losses for retrenched workers (Stevens 1997). While it was not possible to assess earnings changes for retrenched Australian workers, data were available on the incidence of multiple retrenchments. As noted in chapter 3, around 15 per cent of people who had been retrenched between July 1994 and June 1997 had experienced more than one retrenchment during that period.

The second column of table 4.1 indicates how the probability of multiple retrenchments varied according to individual characteristics (given that at least one retrenchment was experienced). The main characteristics associated with a higher probability of multiple retrenchments between July 1994 and June 1997 were the following (broadly ranked from the most to least influential):

- low tenure in last retrenched job (to some extent this is tautological, since it is not possible to experience more than one retrenchment in a three year period if tenure of the last retrenched job is more than three years. Nevertheless, people who had been in their retrenched job for less than two years were up to 39.1 percentage points more likely to experience multiple retrenchments than people who had tenure of more than five years);
- most recently retrenched as Tradespersons and related workers; Intermediate production and transport workers; or Labourers and related workers (up to 9.4 percentage points more likely to experience multiple retrenchments than people most recently retrenched as Managers and administrators);

Table 4.1 **Qualitative summary of econometric results for retrenched workers**

Individual characteristic	*Probability of multiple retrenchments*	*Probability that not in the labour force*	*Probability of re-employment, given that in the labour force*
Age	▪ Increases with age up to 35 years and then falls slightly	▪ Increases with age	▪ Much lower if aged over 49 years
Sex		▪ Females much more likely to leave the labour force	▪ No difference between males and females
Birthplace	▪ Lower if born in a non-English speaking country		▪ Lower if born in a non-English speaking country
Location (July 1997)	▪ Lower if resides in New South Wales or a state capital city		
Relationship in household (July 1997)	▪ Higher if not living with other family members	▪ Lower if had no dependents	
Timing of most recent retrenchment	▪ Lower if last retrenchment was further in the past		▪ Higher if last retrenchment was further in the past
Tenure of most recent retrenched job	▪ Falls significantly after being in a job for 3 years	▪ Higher if tenure was more than 5 years	▪ Positive correlation
Status of most recent retrenched job	▪ Higher if last retrenchment was from a casual job	▪ Higher if last retrenchment was from a part-time or casual job	▪ Higher if last retrenchment was from a part-time or permanent job
Occupation of most recent retrenched job	▪ Higher for Tradespersons & related workers; Intermediate production & transport workers; and Labourers & related workers	▪ Inverse correlation with skill	▪ Higher for Managers & administrators
Industry of most recent retrenched job	▪ Lowest for Accommodation, cafes and restaurants	▪ High for Electricity, gas & water; & Government administration & defence ▪ Lowest for Education, health & community services	▪ Low for Electricity, gas & water; and Education, health & community services
Employment assistance received after most recent retrenchment	▪ Lower if referred to a CES notice board ▪ Higher if referred to a job interview	▪ Lower if referred to a CES notice board or job interview, or had a job placement	▪ Higher if had a job placement

Source: PC estimates detailed in appendix B.

- most recently retrenched in Construction (6.3 percentage points more likely than people whose last retrenched job was in Manufacturing);
- older age groups (compared to 18-24 year olds, the probability of multiple retrenchments was 6.0 percentage points higher for people aged 35-39 years and 5.0 percentage points higher for those aged over 54 years);
- most recently retrenched as a casual employee (5.3 percentage points more likely to experience multiple retrenchments than people last retrenched as a permanent employee); and
- resides in Victoria, South Australia or Western Australia (up to 5.1 percentage points more likely than for residents of New South Wales) or outside a state capital city (2.1 percentage points more likely than state capital city residents).

These results indicate that having longer tenure is an important factor in reducing the likelihood of multiple retrenchments. It also appears that blue collar occupations and those working in Construction are more susceptible to multiple retrenchments. However, this could be due to the project nature of work in Construction. People retrenched from casual jobs and older age groups also seem to be more vulnerable. The reasons for the regional results are unclear. They may be partly due to one-off factors that were evident in the period 1994–97.

4.2 Changed labour force status

The July 1997 LFS did not ask people whether they left the labour force or found another job immediately after being retrenched. However, retrenched workers were asked about their labour force status at the survey date. Thus, it was possible to determine the impact of individual characteristics on the probability that a person retrenched between July 1994 and June 1997 was either not in the labour force or re-employed by the survey date (July 1997).

Not in the labour force

Of those people retrenched between July 1994 and June 1997, 16 per cent were not in the labour force at the survey date. The third column of table 4.1 indicates how individual characteristics affected the likelihood of being out of the labour force. The main characteristics associated with a higher probability of not being in the labour force were:

- older age groups (people over 54 years were 37.4 percentage points more likely to be out of the labour force than 18-24 year olds);

- retrenched from a lower skill occupation (compared to those retrenched as Managers and administrators, the probability of not being in the labour force ranged from 10.7 percentage points higher for Professionals to 17.1 percentage points higher for Labourers and related workers);
- females (12.6 percentage points more likely to be out of the labour force than males);
- retrenched from a part-time job (8.5 percentage points more likely to be out of the labour force than workers retrenched from a full-time job);
- retrenched in Electricity, gas and water; or Government administration and defence (up to 7.8 percentage points more likely to be out of the labour force than people retrenched in Manufacturing);
- tenure of at least five years in retrenched job (5.8 percentage points more likely to be out of the labour force than other retrenched workers); and
- married with dependents (4.0 percentage points more likely to be out of the labour force than lone parents and married people without dependents).

The above results support conclusions from existing research that retrenchment leads to early (and possibly involuntary) retirement for people aged at least 50 years (Abbring et al 1999). Other groups also appear to have a tendency to withdraw (possibly temporarily) from the labour market following retrenchment (females, those who were in low skill occupations, people who were working part-time, those who had high tenure, and married people with dependents). It is not possible to determine how many of these people voluntarily left the labour force or the proportion of discouraged jobseekers. The implication for policy makers is that if the above mentioned groups were displaced by microeconomic reform then they would have a greater tendency to leave the labour force rather than benefit from increased employment opportunities in other sectors of the economy.

Re-employed

Of those retrenched workers who remained in the labour force, 65 per cent were re-employed at the survey date. The final column of table 4.1 indicates how individual characteristics affected the probability that a retrenched worker was re-employed at the survey date, given that they were in the labour force (employed or looking for work). The main characteristics associated with a lower probability of re-employment were:

- aged 50 years or more (probability of re-employment more than 18.9 percentage points lower than for other retrenched workers);

- retrenched from a low skill occupation (this was most evident for Labourers and related workers, who were 28.6 percentage points less likely to be re-employed than people retrenched as Managers and administrators);
- retrenched from a full-time job (29.0 percentage points less likely to be re-employed than people retrenched from a part-time job);
- lower tenure in retrenched job (people who had less than one year of tenure were 27.5 percentage points less likely to be re-employed than those with at least five years tenure);
- retrenched as a casual employee (25.0 percentage points less likely to be re-employed than those retrenched as a permanent employee);
- the more recently a person was last retrenched (people retrenched in the last 6 months were 30.2 percentage points less likely to be re-employed than those retrenched between 31 and 36 months previously);
- retrenched in Electricity, gas and water; or Education, health and community services (up to 17.8 percentage points less likely to be re-employed than workers retrenched in Manufacturing); and
- born in a non-English speaking country (8.2 percentage points less likely to be re-employed than people born in Australia).

The relatively low re-employment probability for people aged 50 or more years indicates why these people have such a high likelihood of withdrawing from the labour force after being retrenched. Namely, their prospect of being re-employed is much lower than for other workers.

In contrast, there was no difference between the re-employment probabilities for males and females who remained in the labour force. This suggests that the reasons why retrenched females have a greater tendency to leave the labour force are more complex than for older workers.

The finding that people who worked in low skill occupations were less likely to be re-employed is consistent with past research discussed in chapter 2. That research also indicates that differences in re-employment probabilities between occupations vary with the business cycle (McDonald and Felmingham 1999). Thus, the precise magnitude of the results discussed here for the mid 1990s may not apply for other periods.

The increase in re-employment probability as a retrenchment becomes less recent is consistent with past research which shows that the adverse employment effects of retrenchment dissipate over time (Borland et al. 1999; Fallick 1996; Ruhm 1991). However, unlike previous studies, there was no evidence of a link between the level

of education and re-employment probability. This may be because of a positive correlation between the level of education and more skilled occupations.

As noted in chapter 2, past research shows that the time that displaced North American workers spend in unemployment is correlated with tenure of the retrenched job. For example, Fallick (1996) observed that each year of tenure that US males accrue in their last job is associated with an increase in their unemployment duration of between 2 to 5 per cent. This seems to be inconsistent with the finding here that the probability of re-employment for Australian retrenched workers increases with tenure.

Finally, it is worth noting the significantly lower re-employment probabilities for people retrenched as casual employees or from a full-time job. The reasons for this remain unclear.

4.3 Changed occupation or industry

US research shows that the average fall in earnings after being displaced is significantly greater for people who change industry or occupation (Fallick 1996; Hamermesh 1989; Podgursky and Swaim 1987). This may be due to the accumulation of industry or occupation specific skills which cannot be transferred to different industries and occupations. While data were not available from the July 1997 LFS to investigate such earnings effects for Australia, it was possible to examine changes in job characteristics for re-employed retrenched workers.

Changed occupation

Around 42 per cent of re-employed retrenched workers had an occupation at the survey date which was different from the one they had in their last retrenched job (using the 1 digit level of the Australian Standard Classification of Occupations). The second column of table 4.2 indicates how individual characteristics affected the probability that a re-employed retrenched worker changed occupation after being retrenched. The main characteristics associated with a higher probability of changing occupation were:

- retrenched occupation was not Professionals; Tradespersons and related workers; Intermediate production and transport workers; or Labourers and related workers (these people had a probability of changing occupation that was up to 29.3 percentage points lower than other occupations);
- younger age (18-24 year olds were 19.1 percentage points more likely to change occupation than people aged more than 54 years);

Table 4.2 **Qualitative summary of econometric results for re-employed retrenched workers**

Individual characteristic	*Probability of changing occupation*	*Probability of changing from full-time to part-time*	*Probability of changing from permanent to casual*
Age	▪ Decreases with age	▪ Highest for people aged over 54 years	▪ Lowest for people aged 50-54 years
Sex	▪ Lower for females	▪ Higher for females	▪ Higher for females
Location (July 1997)	▪ Higher if not residing in a state capital city	▪ Higher if residing in Victoria or outside a state capital city	▪ Higher if residing in South Australia
Relationship in household (July 1997)	▪ Higher if a lone parent with dependents		
Education (July 1997)		▪ Lower if had tertiary qualifications	
Timing of most recent retrenchment	▪ Increases with time since last retrenchment		▪ Decreases with time since last retrenchment
Tenure of most recent retrenched job		▪ Lower if had tenure of less than 1 year	
Occupation of most recent retrenched job	▪ Lower for Professionals; Tradespersons & related workers; Intermediate production & transport workers; and Labourers & related workers	▪ Lower for Professionals; and Advanced clerical and service workers	▪ Higher for Intermediate clerical, sales & service workers; and Elementary clerical, sales & service workers
Industry of most recent retrenched job	▪ Lowest for Primary industries and Construction ▪ Highest for Government administration & defence	▪ Lowest for Primary industries ▪ Highest for Accommodation, cafes & restaurants; and Education, health & community services	
Employment assistance received after most recent retrenchment	▪ Higher if referred to a CES notice board	▪ Higher if referred to a CES notice board ▪ Lower if had a job placement or got career advice	▪ Higher if referred to a CES notice board

Source: PC estimates detailed in appendix B.

- lone parent with dependents (16.9 percentage points more likely to change occupation than people who were married and had dependents);
- not retrenched in Primary industries or Construction (these people were up to 19.7 percentage points less likely to change occupation than those retrenched in Manufacturing); and
- retrenched in Government administration and defence (14.7 percentage points more likely to change occupation than people retrenched in Manufacturing);
- males (12.9 percentage points more likely to change occupation than females);
- resides outside a state capital city (8.2 percentage points more likely to change occupation than state capital city residents).

The lower probability of changing occupation for those retrenched as Professionals and Tradespersons and related workers may be due to a greater proportion of their earnings being linked to occupation specific training. Thus, these people could experience greater adjustment costs from changing occupation in relative terms than most other retrenched workers. Higher adjustment costs also appear to be a problem for Intermediate production and transport workers; and Labourers and related workers. However, in this case it may be due to a lack of skills that can be readily utilised in other occupations.

The greater tendency to change occupation among young people is not surprising, given that they tend to have less invested in the development of occupation specific skills.

The low probability of changing occupation among those retrenched in Construction probably reflects the project based nature of the industry. In particular, being retrenched may not be symptomatic of a general decline in employment opportunities in the industry, but rather the completion of tasks for an existing construction project.

Changed industry

Of those people who had been retrenched and were re-employed at the survey date, half were working in an industry that was different from their retrenched job. Few individual characteristics had a statistically significant impact on the probability that a re-employed retrenched worker had changed industry since being retrenched. Nevertheless, the results do indicate that people were more likely to change industry if they were:

- retrenched in Electricity, gas and water; or Government administration and defence;
- were a lone parent with no dependents;

- received employment assistance after their most recent retrenchment; or
- did not reside in a state capital city.

4.4 Changed from full-time to part-time

US research indicates that displaced workers often experience a short term reduction in work hours due to being displaced from a full-time job and then re-employed on a part-time basis (Farber 1997). Furthermore, Canadian research shows that moving from full-time to part-time status is more likely for displaced females (McCall 1997).

The third column of table 4.2 indicates how individual characteristics affected the probability that a person retrenched from a full-time job was a part-time worker at the survey date (given that they were re-employed). It should be noted that full/part-time status at the survey date was determined on the basis of total hours worked in *all* jobs. Of those people who had been retrenched from a full-time job and were re-employed at the survey date, 19 per cent had become part-time workers. The main characteristics associated with a higher probability of being a part-time worker at the survey date (given that the person was retrenched from a full-time job and was re-employed at the survey date) were:

- females (21.0 percentage points more likely than males to be re-employed as a part-time worker after being retrenched from a full-time job);
- aged over 54 years (19.2 percentage points more likely than 18-24 year olds to be working part-time);
- referred to a CES notice board or did not get career advice after being retrenched (more than 8.0 percentage points more likely to be working part-time than those who received no employment assistance);
- retrenched in Accommodation, cafes and restaurants; or Education, health and community services (up to 22.0 percentage points more likely to be part-time workers than people retrenched in Manufacturing);
- not retrenched in Primary industries (10.0 percentage points less likely to become part-time workers than people retrenched from a full-time job in Manufacturing);
- retrenched occupation was not Professionals; or Advanced clerical and service workers (these people were up to 12.7 percentage points less likely to become part-time workers than other retrenched people);
- resides in Victoria (6.2 percentage points more likely to be working part-time than those living in New South Wales);

- tenure of retrenched job more than one year (5.9 percentage points more likely to be working part-time); and
- no post-school qualifications (4.8 percentage points more likely to be working part-time).

The above results suggest that the groups at greatest risk of experiencing a (possibly temporary) reduction in work hours are females, people aged over 54 years, those who did not get career advice after being retrenched, and service industry workers.

It was also found that some groups were more likely to be retrenched from a part-time job and then be re-employed as a full-time worker at the survey date (see appendix A for details).

4.5 Changed from permanent to casual

The ABS classifies employees as being casuals if they are entitled to neither paid holiday nor sick leave (otherwise they are deemed to be permanent employees). This is often seen as being a simple and objective method of identifying employees who have a casual employment contract. However, Murtough and Waite (2000) showed that there are a number of problems with the approach used by the ABS. They found that, in August 1998, about a third of people categorised as casuals did not have a casual employment contract and/or were not genuine employees (working in somebody else's business). Of those people who were genuine casual employees, about a third were not 'true' casuals in the sense that they worked in a way that was occasional, irregular or short term.

The inclusion of owner managers in the category of casual employees is not a major problem for this study since owner managers are highly unlikely to retrench themselves. The issue of 'true' casuals is more difficult because no data were collected in the July 1997 LFS on the regularity of jobs and whether there was an implicit contract for ongoing employment. This qualification should be borne in mind when interpreting the final column of table 4.2, which indicates how individual characteristics affected the probability that a person retrenched as a permanent employee had become a casual employee by the survey date (given that they were re-employed). Of those people who had been retrenched as permanent employees and were re-employed at the survey date, 26 per cent had become casual employees. The main characteristics associated with a higher probability of being a casual employee at the survey date (given that the person was retrenched as a permanent employee and was re-employed at the survey date) were:

- retrenched occupation was Intermediate production and transport workers; or Elementary clerical, sales and service workers (up to 18.6 percentage points

more likely to be re-employed as a casual employee than people retrenched as Manager and administrators);

- retrenched in Accommodation, cafes and restaurants (14.8 percentage points more likely to become casual employees than people retrenched from a permanent job in Manufacturing);
- not aged 50-54 years (these people were 12.4 percentage points less likely to be re-employed as casual employees than other workers retrenched from a permanent job);
- resides in South Australia (9.6 percentage points more likely to shift from permanent to casual status than those living in New South Wales);
- the more recent a person was last retrenched (people retrenched in the last 6 months were 9.0 percentage points more likely to be re-employed as casuals than those retrenched between 31 and 36 months previously);
- referred to a CES notice board after being retrenched (9.0 percentage points more likely to move from permanent to casual employment than people who received no employment assistance after being retrenched); and
- females (6.6 percentage points more likely than males to be re-employed as a casual employee).

The above results suggest that changing from permanent to casual status is a temporary phenomenon (since the probability of this occurring declines as the time since last retrenchment increases). Those more prone to this appear to include females, and clerical, sales and service workers.

It was also found that some groups were more likely to be retrenched as a casual employee and be re-employed as a permanent employee at the survey date (see appendix A for details).

4.6 Illustrative probabilities

To illustrate how post-retrenchment adjustment varies significantly between different groups, the model results were used to estimate probabilities for certain types of individuals. The estimates are given in tables 4.3 and 4.4.

Example 1 in table 4.3 shows that the probability of not being in the labour force in July 1997 (given that was retrenched during 1994–97) was only 0.1 per cent for a male who was married with no dependents; aged 18-24; had been referred to a job interview after last being retrenched; and was last retrenched from a job that was full-time, had lasted less than 1 year, and involved working as a Manager or

administrator in Education, health and community services (holding all other characteristics at the mean). In comparison, 16 per cent of all retrenched workers were out of the labour force at the survey date. Example 2 shows a retrenched worker who had a very high probability of not being in the labour force.

Table 4.3 **Probability of changing labour force status for simulated retrenched workers[a]**
(Probit model estimates)

	Not in the labour force in July 1997		*Employed in July 1997*	
	Example 1	*Example 2*	*Example 3*	*Example 4*
Individual characteristics				
Age	18-24	over 54	over 54	18-24
Sex	Male	Female		
Birthplace			Non-English speaking country	Australia
Relationship in household (July 1997)	Married with no dependents	Married with dependents		
Timing of most recent retrenchment				Between 31 and 36 months prior to the survey
Duration of most recent retrenched job	Less than one year	Five or more years	Less than one year	Five or more years
Status of most recent retrenched job	Full-time employee	Part-time employee	Full-time casual employee	Part-time permanent employee
Occupation of most recent retrenched job	Manager or administrator	Intermediate clerical, sales or service worker	Labourer or related worker	Manager or administrator
Industry of most recent retrenchment	Education, health and community services	Government administration and defence	Electricity, gas and water	Manufacturing
Employment assistance received after most recent retrenchment	Referred to a job interview			
Probability (per cent)	**0.1**	**89.8**	**3.9**	**99.9**

a The not in the labour force model was estimated using the sample of people who had been retrenched between July 1994 to June 1997. The employed model was estimated using the sample of people who had been retrenched and were in the labour force in July 1997. Individual characteristics not shown in the table were held at the mean.

Source: PC estimates detailed in appendix B.

Example 3 in table 4.3 shows that the probability of being employed in July 1997 (given that was retrenched during 1994–97) was just 3.9 per cent for a person who was aged over 54; was born in a non-English speaking country; and was last

retrenched as a full-time casual employee in a job that had lasted less than 1 year, and had involved working as a Labourer or related worker in the Electricity, gas and water industry (holding all other characteristics at the mean). In comparison, 65 per cent of all retrenched workers who were in the labour force at the survey date were re-employed. Example 4 shows a retrenched worker who had a very high probability of being re-employed by the survey date.

Table 4.4 **Probability of changing job characteristics for simulated re-employed retrenched workers[a]**

(Probit model estimates)

	Worked full-time in last retrenched job but was a part-time worker in July 1997		*Permanent employee in last retrenched job but a casual employee in July 1997*	
	Example A	*Example B*	*Example C*	*Example D*
Individual characteristics				
Age	18-24	over 54	50-54	18-24
Sex	Male	Female	Male	Female
Education (July 1997)	Completed post-school training	Did not complete highest level of secondary school		
Duration of most recent retrenched job	One or more years	Five or more years		
Timing of most recent retrenchment			Between 31 and 36 months prior to the survey	No more than 6 months prior to the survey
Occupation of most recent retrenched job	Advanced clerical or service worker	Manager or administrator	Manager or administrator	Elementary clerical, sales or service worker
Industry of most recent retrenchment	Primary industries	Accommodation, cafes and restaurants	Manufacturing	Accommodation, cafes and restaurants
Employment assistance received after most recent retrenchment	Received career advice	Did not get career advice		Referred to a CES notice board
Probability (per cent)	**0.1**	**89.1**	**7.9**	**76.9**

a The full-time to part-time model was estimated using the sample of people who had been retrenched from a full-time job between July 1994 to June 1997 and were re-employed in July 1997. The permanent to casual model was estimated using the sample of people who had been retrenched from a permanent job between July 1994 to June 1997 and were re-employed in July 1997. Individual characteristics not shown in the table were held at the mean.

Source: PC estimates detailed in appendix B.

Example A in table 4.4 shows that the probability of being a part-time worker in July 1997 (given that was last retrenched from a full-time job during 1994–97 and was re-employed in July 1997) was just 0.1 per cent for a male who had completed

post-school training; got career advice after their last retrenchment; and were last retrenched from a job that had lasted at least 1 year, and involved working as an Advanced clerical or service worker in Primary industries (holding all other characteristics at the mean). In comparison, 19 per cent of all re-employed people who were last retrenched from a full-time job were part-time workers at the survey date. Example B shows a retrenched worker who had a very high probability of changing from full-time to part-time status.

Example C in table 4.4 shows that the probability of being a casual employee in July 1997 (given that was last retrenched as a permanent employee during 1994–97 and was re-employed in July 1997) was 7.9 per cent for a male who was aged 50-54 years; was last retrenched more than 2.5 years prior to the survey; and was last retrenched from a job as a Manager or administrator in Manufacturing (holding all other characteristics at the mean). In comparison, 26 per cent of all re-employed people who were last retrenched as a permanent employee were casual employees at the survey date. The final column of table 4.4 gives an example of a retrenched worker who had a high probability of changing from permanent to casual status.

5 Conclusions

This study examined the incidence and adjustment experiences of Australian workers who are displaced by economic change. Among the reasons for job separation collected by the ABS, retrenchment was found to be closest to the concept of displacement. Analysis of ABS data revealed that retrenchments are not evenly distributed across the workforce and that post-retrenchment adjustment varies between different categories of workers. For example, the probability of being retrenched falls significantly in the first five years in a job and then stabilises below 4 per cent (which is less than half the retrenchment rate for workers with tenure below one year). It was also found that retrenchment is more likely for males, people with low levels of education, those who work in blue collar occupations, are aged over 54 years, or are employed in manufacturing.

The evidence examined in this paper leads to three main conclusions:

1. short term movements in the rate of retrenchment are largely driven by the business cycle;
2. there have been structural changes in the rate of retrenchment since the mid 1980s (movements which cannot be attributed to the business cycle); and
3. the adjustment process following retrenchment varies between different groups of workers.

This chapter summarises the evidence supporting these three conclusions and discusses the resulting policy implications.

5.1 Short term variation in retrenchments

Since the mid 1970s, the aggregate rate of retrenchment has fluctuated in a counter-cyclical pattern around a relatively stable long term trend. For example, during the recessions of the early 1980s and 1990s the rate of retrenchment rose significantly but subsequently returned to its pre-recession level as economic conditions became more favourable. This indicates that changes in the aggregate rate of retrenchment are largely driven by the business cycle and that these movements are short term.

However, the aggregate data on retrenchments conceal marked differences in the impact of the business cycle on different groups of workers. For example, people

who have been working in their job for at least five years have a relatively low and stable rate of retrenchment. Below five years of tenure, the rate of retrenchment has a marked counter-cyclical pattern, with the strength of this behaviour tending to be inversely correlated with tenure. Hence, workers with less than one year of tenure tend to experience the greatest percentage point variation in retrenchment rates over the business cycle.

Disaggregated data also show that the impact of the business cycle varies according to sex. Most notably, the data show that the rate of retrenchment for females and males diverged during the recessions of the early 1980s and 1990s. In the 12 months to February 1992, the average rate of retrenchment for females was almost one-third lower than that for males, compared to only a small difference two years earlier. This divergence in retrenchment rates occurred because male retrenchments grew more rapidly during the early 1990s recession. Since the last recession ended, the gap between male and female retrenchment rates has fallen (from 2.2 percentage points in the 12 months to February 1992, to 1.2 percentage points in the 12 months to February 1998). Thus, it appears that the male retrenchment rate is more sensitive to the business cycle.

5.2 Structural changes

The aggregate data presented in chapter 1 show that the probability of being retrenched in a 12 month period has been stable over the long term at around 5 per cent (figure 1.2). This suggests that if the pace of structural change in the economy has accelerated since the 1970s then it has had little impact on the rate of retrenchment. However, disaggregated data analysed in chapter 3 show that there has been a slight shift towards a more even distribution of retrenchments between people with different levels of tenure. In particular, there seems to have been an upward trend in the (low) rate of retrenchment for people with ten or more years of tenure and a decrease in the (high) retrenchment rate for people with less than one year of tenure.

It should be noted that the analysis of time-series data in this paper did not use econometric techniques to control for interactions between variables and the impact of short term variations associated with the business cycle. Results produced by Borland and McDonald (2000) suggest that doing so would have led to the conclusion that there was an increase in the rate of retrenchment in the early 1990s which cannot be attributed to the business cycle but this effect was a temporary phenomenon. In particular, Borland and McDonald found that, after controlling for the business cycle and worker heterogeneity, the rate of retrenchment increased significantly at the start of the 1990s but has since moved back towards its level of

the 1980s. The increase in the early 1990s was much larger for males and to some extent was still evident in 1996. In contrast, the female rate of retrenchment had returned to its mid 1980s level by 1996. These findings provide support for the hypothesis that structural changes in retrenchments have occurred but also seem to indicate that such changes have not led to a permanent increase in the rate of retrenchment.

5.3 Differences in post-retrenchment adjustment

An econometric analysis was undertaken for this study using individual-level data collected by the ABS in a one-off national survey of people who had been retrenched between July 1994 and June 1997. These data are the most comprehensive available on post-retrenchment adjustment. A key finding of the econometric analysis is that there are marked differences in post-retrenchment adjustment between different groups of workers.

It was found that some groups are much more likely to leave the labour force after being retrenched. For example, it appears that retrenchment leads to early (and possibly involuntary) retirement for people aged at least 50 years. Other groups which have a greater tendency to withdraw from the labour market following retrenchment are females, those who are retrenched from a low skill occupation, had been working part-time, had long tenure in their retrenched job, and are married with dependents.

For those who remain in the labour force, re-employment becomes more likely as the time since being retrenched increases. This is consistent with past research which shows that the adverse employment effects of retrenchment dissipate over time (Borland et al. 1999; Fallick 1996; Ruhm 1991).

However, the results of this report show that people aged 50 or more years who remain in the labour force have a much lower probability of re-employment than younger retrenched workers. This indicates why older people have such a high likelihood of withdrawing from the labour force after being retrenched. It is also consistent with reports that older workers face greater difficulties in finding employment (Standing Committee on Employment, Education and Workplace Relations 2000). It was also found that people retrenched from low skill occupations were less likely to be re-employed.

In contrast, there was no difference between the re-employment probabilities for males and females who remained in the labour force. This suggests that the reasons why retrenched females have a greater tendency to leave the labour force are more complex than for older workers.

Overseas research shows that the average fall in earnings after being displaced is much higher for people who change industry or occupation. While no earnings data on individual retrenched workers were available to comprehensively test this for Australia, it was possible to examine the impact of individual characteristics on the probability of changing occupation or industry. It was found that people retrenched as Professionals, or Tradespersons and related workers were much less likely to change occupation, possibly because a greater proportion of their earnings are linked to occupation specific training. Intermediate production and transport workers; and Labourers and related workers were also much less likely to change occupation. This may be because they only possess basic skills which in isolation are insufficient to enable them to shift to other occupations.

Workers employed in areas outside state capital cities were much more likely to change both occupation and industry following retrenchment. These results could reflect differences in employment opportunities in regional areas.

US research indicates that displaced workers often experience a short term reduction in work hours (and hence probably earnings) due to being displaced from a full-time job and then re-employed on a part-time basis (Farber 1997). In this paper it was found that the groups at greatest risk of experiencing a (possibly temporary) reduction in work hours are females, people aged over 54 years, those who do not get career advice after being retrenched, and workers who are retrenched from Accommodation, cafes and restaurants; or Education, health and community services industries. Professionals and Advanced clerical and service workers were much less likely to become part-time workers than other people retrenched from full-time jobs.

Another concern is that people are retrenched from permanent positions but can only find re-employment as casual employees. However, the results of this paper suggest that changes from permanent to casual status are a temporary phenomenon (since the probability of a retrenched permanent employee being a casual employee at the survey date fell as the time since retrenchment increased). Those more prone to this phenomenon include females, and clerical, sales and service workers.

5.4 Implications

There appears to be a widespread perception that the precariousness of employment has increased. However, the evidence presented in this paper shows that perceptions of declining job security cannot be attributed to a widespread long term increase in the rate of retrenchment. This is consistent with the results of a study of worker perceptions by Borland (forthcoming). Using data from the Morgan Gallup Poll for

the period 1975 to 1998, he found that there was not strong evidence of an upward trend in worker perceptions of the likelihood of being retrenched. However, Borland did find that there was a perceived decline in more broadly defined types of job security, such as the ability of employers to change work arrangements.

The results of this paper also suggest that the timing of microeconomic reforms and the types of workers they displace could affect the associated adjustment costs (periods of non-employment and a reduction in work hours or earnings once re-employed). Clearly, the dislocation caused by policy changes that are expected to result in the expansion of some sectors of the economy and the contraction of others will be accentuated during recessions (especially for males). Also, if the contracting sector has a disproportionate share of people identified in this paper as having greater trouble in adjusting, then the adjustment costs are likely to be higher. This includes people aged 50 years or more, females, and those retrenched from low skill occupations.

These are important considerations for policy makers in assessing the trade-offs associated with microeconomic reforms and in designing adjustment assistance for workers who might be displaced by such reforms. However, it should be noted that a general safety net is in place to assist people displaced by economic change, such as unemployment benefits and job search assistance. Support is also available from non-government organisations, such as private employment agencies.

The impacts of different forms of employment assistance were examined in this report. The data analysed were for the period July 1994 to June 1997, which was prior to many of the Federal Government's reforms of employment assistance. Also, no distinction was made between assistance funded by government or other sources. The results indicate that the types of employment assistance utilised by displaced workers during 1994–97 had mixed effects. People who had a job placement were more likely to be re-employed. Most other forms of employment assistance were associated with a lower probability of re-employment compared to people who had received no assistance. This may not be due to the assistance itself, but could reflect a tendency for less employable workers to seek assistance.

Employment assistance also appeared to have some impact on the types of jobs that re-employed retrenched workers obtain. Compared to re-employed retrenched workers who received no employment assistance, those referred to a CES notice board were more likely to change industry and occupation; shift from permanent to casual employment; and move from full-time to part-time status. In contrast, people retrenched from a full-time job were less likely to become part-time workers if they had a job placement or got career advice after being retrenched.

APPENDIXES

A Summary of econometric methodology and results

Data on individual respondents to the July 1997 Labour Force Survey (LFS) were used in the econometric analysis for this study. These data were prepared by the ABS as a confidentialised unit record file (CURF). The July 1997 LFS included a series of one-off supplementary questions which gathered information about people aged 18 to 64 years who had been retrenched in the three years to 30 June 1997. For those who had been retrenched, data were collected on the job in which they were most recently retrenched, circumstances of that retrenchment, and subsequent job search activities. Aggregated results from the supplementary survey were published in ABS catalogue no. 6266.0 (*Retrenchment and Redundancy: Australia*) and were used in the cross-section analysis in chapter 3.

The sample for the July 1997 LFS comprised 25 163 wage and salary earners aged 18 to 64 years. There were 2 557 individuals aged 18 to 64 years who had been retrenched or made redundant in the three years to 30 June 1997. Among those who had been retrenched, 1 488 were re-employed by July 1997, 630 were unemployed, and the remaining 439 were not in the labour force. Sample weights supplied by the ABS were used to generate population estimates. Table A.1 presents a summary of the population estimates by gender.

Table A.1 **Population estimates from the July 1997 Labour Force Survey**

	Males	*Females*	*Persons*
	'000	'000	'000
Wage or salary earners aged 18-64 years[a]	3 522.9	2 959.1	6 482.0
Persons aged 18-64 years who had been retrenched or made redundant in the three years to 30 June 1997	469.3	216.1	685.4
Labour force status in July 1997 of those retrenched or made redundant in the three years to 30 June 1997			
▪ Employed	259.1	115.8	374.9
▪ Unemployed	157.7	42.8	200.5
▪ Not in the labour force	52.5	57.5	110.0

a Excludes owner managers of incorporated enterprises.

Source: ABS (*Retrenchment and Redundancy, Australia*, Cat no. 6266.0).

There are a number of limitations with the data from the July 1997 LFS. First, information was only collected on the most recent retrenchment. Hence, the data could understate the incidence of retrenchments for certain groups, such as those working in particular industries or occupations. However, this may not be a significant problem, given that 85 per cent of people were retrenched only once and just 5 per cent had more than two retrenchments.

Second, the data may be subject to recall bias because respondents were asked to provide details about retrenchments they experienced up to three years previously. It is possible that the accuracy of responses declined as the period since retrenchment increased.

Third, no data were collected on changes in earnings and the duration of unemployment experienced by those who had been retrenched. As a result, the analysis of post-retrenchment adjustment is confined to outcomes at the survey date (such as whether re-employed).

Fourth, no data on job tenure, industry or occupation were collected for people who had not been retrenched. Thus, it was not possible to verify past Australian research, which shows that these characteristics are important factors affecting the likelihood of retrenchment. Nevertheless, the data analysed here are the most comprehensive available for those interested in post-retrenchment adjustment, since detailed information was collected about retrenched workers.

Methodology

The methodology used in this appendix is similar to that adopted by Farber (1997) in his analysis of the US Displaced Worker Survey (DWS). That survey gathers information on people who are retrenched in the previous three years, which is the same time frame used by the ABS in the July 1997 LFS.

Farber estimated a probit model which identified how the probability of job loss varied according to age, education, gender and race (see box A.1 for a technical discussion of probit models). The dependent variable in his model was a dummy variable indicating whether a job loss was experienced in the three years prior to the survey date. Farber also estimated probit models to analyse adjustment following a job loss (probability of being re-employed and probability of having a part-time job at the survey date). For these models, the sample was restricted to people who had experienced a job loss in the three years prior to the survey.

Box A.1 **Probit models**

It is inappropriate to use the standard regression technique of ordinary least squares (OLS) when the variable being modelled can only equal zero or one (termed a binary dependent variable) and the probability of that variable being one is the issue of interest. This is because the underlying assumptions of OLS would be violated and the predicted probability of the dependent variable being equal to one could be negative or more than 100 per cent.

In the probit model, the probability of the (binary) dependent variable being equal to one is specified as being a function of a cumulative standard normal distribution:

$$P(y_i = 1 | x_i) = \Phi(x_i \beta) = \int_{-\infty}^{x_i \beta} \frac{1}{\sqrt{2\pi}} e^{\frac{-t^2}{2}} dt$$

where y_i is the value of the (binary) dependent variable for the ith observation; x_i is a vector of characteristics for the ith observation; $P(y_i = 1 | x_i)$ is the probability that $y_i = 1$, given x_i; β is a vector of parameters; $\Phi(x_i \beta)$ is the cumulative standard normal distribution of $(x_i \beta)$; and t is a standardised normal variable (mean of zero and variance of one). This formulation ensures that the predicted probability cannot be less than zero or more than one. The parameters are estimated using the technique of maximum likelihood.

The parameter associated with the jth characteristic (β_j) shows how the probit index $(x\beta)$ would change if there was a unit increase in the jth characteristic. This can be difficult to interpret in practice because it is expressed in the normal quantile metric. A common approach is to translate the results into how each characteristic affects the probability ($\Phi(x\beta)$) for a given set of other characteristics.

Sources: Gujarati (1988); Long (1997); Stata Corporation (1999).

A similar approach was used in this study to examine the probability of retrenchment and the probability that retrenched workers were in the following categories at the survey date:

- experienced multiple retrenchments;
- changed labour force status (to not in the labour force or re-employed);
- changed industry or occupation; and
- changed full/part-time or permanent/casual status.

Like Farber (1997), the impact of each individual characteristic was evaluated at the predicted probability and the results were expressed as the change in probability compared to a reference group. The reference groups used for each characteristic

are specified in table A.2. No particular significance should be attached to these groups. They merely provide a reference point for presenting the model results and so do not change the conclusions about who is more likely to be retrenched or experience certain types of post-retrenchment adjustment.

Table A.2 **Reference groups for probit models[a]**

Individual characteristics	*Reference groups*
Age:	18 to 24 years
Sex:	Male
Birthplace:	Australia
Location (July 1997):	New South Wales State capital city
Relationship in household (July 1997):	Married with dependents
Education (July 1997):	Did not complete highest level of secondary school Not attending an educational institution
Timing of most recent retrenchment:	January to June 1997
Duration of most recent retrenched job:	Five years or more
Status in most recent retrenched job:	Full-time
	Permanent employee
Occupation in most recent retrenched job:	Manager or administrator
Industry of most recent retrenchment:	Manufacturing
Employment assistance:	No assistance received after being retrenched
Other characteristics:	Retrenched only once during July 1994 to June 1997 Most recent retrenchment due to a business closure Had only one job in July 1997

a The only characteristics available to model the probability of retrenchment were age, sex, birthplace, location, and relationship in household.

A.1 Probability of retrenchment

Farber (1997) estimated his model of the probability of job loss using the sample of people who, at the survey date, were employed or had experienced a job loss (regardless of whether they were employed). The same approach was adopted in this study to analyse the probability of retrenchment. Thus, a three year rate of retrenchment was calculated by dividing the number of people who had been retrenched at least once between July 1994 and June 1997 by the number of people who were employed in July 1997 and/or had been retrenched between July 1994 and June 1997. The numerator in this calculation understates the number of

retrenchments because some people were retrenched more than once between July 1994 and June 1997. The denominator is also an underestimate since some people were working in more than one job in July 1997 while others were not employed in July 1997 but had been at some time in the previous three years. No data were available to determine the net impact of these effects on the calculated three year rate of retrenchment.

Like Farber, we did not have data on some individual characteristics (particularly tenure of retrenched job) which past research suggests are important factors influencing the probability of retrenchment. Thus, our results for the probability of retrenchment need to be interpreted with this qualification in mind. This limitation does not apply to the other models presented in this appendix because the sample was confined to retrenched workers (for which more comprehensive characteristics were collected).

As mentioned above, the impact of each individual characteristic was evaluated at the predicted probability and the results were expressed as the change in probability compared to a reference group. The first column of numbers in table B.1 shows that people aged 40 to 44 years were 2.2 percentage points less likely to be retrenched than 18 to 24 year olds. In contrast, people aged more than 54 years had a probability of retrenchment that was 4.8 percentage points greater than that for 18 to 24 year olds.

The discrete effects for other age groups were not statistically significant at the 10 per cent level (indicated by a value for P>|z| of more than 0.10). In other words, there was a greater than 10 per cent chance that the relevant age group had an impact which was no different from the reference group (18 to 24 year olds). For example, people aged 25 to 29 years had a discrete effect of –0.1 percentage points but there was an 86.6 per cent chance (P>|z| is 0.866) that this was not statistically different from zero (and hence the probability of retrenchment was the same as for 18 to 24 year olds).

The statistically significant results reported here for age should be interpreted with caution, given that some characteristics could not be included in the model and past Australian research has shown that age has little impact on the likelihood of retrenchment (Stromback 1988; Borland et al. 1999; McDonald and Felmingham 1999). For example, it is possible that the result for 40 to 44 year olds is due to age being positively correlated with tenure, which past studies have shown to reduce the likelihood of retrenchment.

Other characteristics that had a statistically significant impact on the probability of retrenchment at the 10 per cent level were:

- **Sex:** Females were 5.4 percentage points less likely to be retrenched than males.
- **Location:** Residents of New South Wales were between 2.6 and 4.9 percentage points less likely to be retrenched than people in other states. People not residing in a state capital city were 1.5 percentage points more likely to be retrenched.
- **Relationship in household:** Lone parents with dependents were 4.9 percentage points more likely to be retrenched than married people with dependents. In contrast, lone parents without dependents were 3.2 percentage points less likely to be retrenched.

Again, these results should be interpreted with care due to the omission of variables which past studies have shown to be important. For example, Borland et al. (1999) found that displacement rates in Britain are similar for males and females once differences in tenure, education, industry and occupation are controlled for. Also, the pseudo R^2 for the model presented in table B.1 was just 0.024, indicating that little of the variation in retrenchments was explained by the model. Nevertheless, the predicted probability calculated at the mean of the individual characteristics (0.094) was close to the observed average probability of retrenchment (0.100).

A.2 Probability of being retrenched more than once

As noted in chapter 3, around 15 per cent of people who had been retrenched between July 1994 and June 1997 had experienced more than one retrenchment. The third column of numbers in table B.1 shows the impact of individual characteristics on the probability of being retrenched more than once, given that at least one retrenchment was experienced between July 1994 and June 1997. While the pseudo R^2 for this model was 0.249, the predicted probability (0.063) was much smaller than the observed probability (0.145). Nevertheless, the results indicate that the following characteristics had a statistically significant impact at the 10 per cent level:

- **Age:** The probability of experiencing multiple retrenchments tended to increase with age up to the 35 to 39 year old group and then fall slightly for older people. People aged 35 to 39 years were 6.0 percentage points more likely to experience multiple retrenchments than 18 to 24 year olds.
- **Birthplace:** People born in a non-English speaking country were 3.0 percentage points less likely to experience multiple retrenchments than Australian born workers.
- **Location:** People in New South Wales tended to experience a lower incidence of multiple retrenchments. Workers in Western Australia were 5.1 percentage points more likely to experience multiple retrenchments than people in New

South Wales. People who did not reside in a state capital city were 2.1 percentage points more likely to experience multiple retrenchments.

- **Relationship in household:** People whose status was a non-family member or not determined were 2.5 percentage points more likely to be experience multiple retrenchments than people who were married and had dependents.
- **Timing of last retrenchment:** The probability of multiple retrenchments decreased as the timing of the most recent retrenchment was further in the past.
- **Duration of last retrenched job:** The probability of multiple retrenchments falls dramatically once a person has been in a job for three years. This is understandable, given that it is not possible for a person to experience more than one retrenchment in the previous three years if they had been working in their last retrenched job for more than three years. Nevertheless, people who had been in their retrenched job for less than one year were 30.9 percentage points more likely to experience multiple retrenchments than people who had tenure of more than five years. People who had tenure of one to less than two years were 39.1 percentage points more likely to experience multiple retrenchments than people who had tenure of more than five years.
- **Permanent/casual status:** Being retrenched from a casual job increased the probability of experiencing multiple retrenchments by 5.3 percentage points.
- **Occupation:** Managers and administrators appear to be the least likely to be retrenched more than once. The probability of multiple retrenchments was statistically significant and more than 8.0 percentage points higher for Tradespersons and related workers; Intermediate production and transport workers; and Labourers and related workers.
- **Industry:** Compared to people whose most recent retrenchment was in Manufacturing, people were 6.3 percentage points more likely to experience multiple retrenchments if their last retrenched job was in Construction. In contrast, people were 4.2 percentage points less likely to be retrenched more than once if their last retrenched job was in Accommodation, cafes and restaurants.
- **Employment assistance:** People referred to a CES notice board were 2.5 percentage points less likely to experience multiple retrenchments than people who received no employment assistance. People referred to a job interview were 2.5 percentage points more likely to have experienced multiple retrenchments.

A.3 Probability of not being in the labour force

The July 1997 LFS did not ask people whether they left the labour force after being retrenched. Respondents were, however, asked about their labour force status at the survey date. The first column of numbers in table B.2 shows that the following characteristics had a statistically significant impact on whether a retrenched worker was not in the labour force in July 1997:

- **Age:** Being out of the labour force tended to be more likely as age increased, with those aged more than 54 years being 37.4 percentage points more likely to be out of the labour force than 18 to 24 year olds.
- **Sex:** Consistent with the results of past research, retrenched females were found to be significantly more likely to leave the labour force (12.6 percentage points greater than for males).
- **Relationship in household:** People with no dependents were less likely to leave the labour force than those who were married and had dependents.
- **Education:** People attending an educational institution in July 1997 were 10.8 percentage points more likely to be out of the labour force.
- **Duration of last retrenched job:** People who had more than five years tenure in their last retrenched job were more than 5.0 percentage points more likely to be out of the labour force than other retrenched workers.
- **Full/part-time status:** People retrenched from a part-time job were 8.5 percentage points more likely to be out of the labour force than workers retrenched from a full-time job.
- **Permanent/casual status:** People retrenched from a casual job were 1.6 percentage points more likely to be out of the labour force in July 1997 than those retrenched from a permanent job.
- **Occupation:** The probability of leaving the labour force tended to increase as skill declined. Compared to Managers and administrators, Professionals were 10.7 percentage points more likely to leave the labour force whereas Labourers and related workers were 17.1 percentage points more likely to be out of the labour force.
- **Industry:** Compared to people retrenched from a job in Manufacturing, retrenched workers were more likely to be out of the labour force if their most recent retrenchment was from Electricity, gas and water; or Government administration and defence. Workers retrenched from Education, health and community services were 4.1 percentage points less likely to leave the labour force than those most recently retrenched from a job in Manufacturing.

- **Employment assistance:** Compared to retrenched workers who received no employment assistance, people were less likely to leave the labour force if they had been referred to a CES notice board or job interview, or had a job placement.

There was a sizeable gap between the predicted probability (0.106) for this model and the observed probability of not being in the labour force (0.161). However, the pseudo R^2 was 0.22.

A.4 Probability of re-employment

The third column of numbers in table B.2 shows the impact of individual characteristics on the probability that a retrenched worker was re-employed in July 1997, given that they were in the labour force (employed or looking for work). It is notable that there was no statistically significant difference between the re-employment probabilities for males and females who remained in the labour force. The pseudo R^2 for this model was 0.395 and the predicted probability (0.757) was broadly similar to the observed probability of re-employment (0.652). Individual characteristics that were statistically significant at the 10 per cent level were:

- **Age:** People aged 50 years or more were much less likely to be re-employed than 18 to 24 year olds. Those aged more than 54 years were 21.0 percentage points less likely to be employed in July 1997.
- **Birthplace:** People born in a non-English speaking country were 8.2 percentage points less likely to be re-employed than people born in Australia.
- **Time since last retrenchment:** The more distant in the past was the most recent retrenchment, the greater was the probability of being re-employed. This is consistent with the results of past research noted in chapter 2, which indicate that the adverse employment effects of displacement dissipate over time.
- **Duration of last retrenched job:** The probability of being re-employed tended to increase with the length of time spent in the last retrenched job. People who had spent less than one year in their most recently retrenched job were 27.5 percentage points less likely to be re-employed than people who had more than five years tenure in their last retrenched job.
- **Full/part-time status:** Workers retrenched from a part-time job were 29.0 percentage points more likely to be re-employed.
- **Permanent/casual status:** Workers retrenched from a casual job were 25.0 percentage points less likely to be re-employed than those retrenched from a permanent job.

- **Occupation:** Compared to people retrenched from jobs as Managers and administrators, workers retrenched from other occupations tended to be much less likely to be re-employed. This effect was most pronounced for the lower skill occupations, with Labourers and related workers 28.6 percentage points less likely to be re-employed.
- **Industry:** People retrenched from a job in Electricity, gas and water or Education, health and community services were at least 15.0 percentage points less likely to be re-employed than workers retrenched from a Manufacturing job.
- **Employment assistance:** Not surprisingly, people who had received a job placement were much more likely to be re-employed. Most other forms of employment assistance were associated with a lower probability of re-employment compared to people who had received no assistance. This may not be due to the assistance itself, but reflect a tendency for less employable workers to seek assistance.
- **Multiple retrenchments:** People retrenched more than once were 17.1 percentage points more likely to be re-employed.
- **More than one job:** Having more than one job at the survey date was associated with a much higher probability of being employed. Many of these people could have been retrenched from one job but continued to be employed in another job.

It is notable that the level of education had no statistically significant impact on the probability of re-employment. Note, however, that the probability of re-employment tended to be greater for workers retrenched from a higher skill occupation.

It is possible that workers who were observed as being re-employed at the survey date were not representative of all re-employed retrenched workers. If this was the case, then the results could have been different if the survey had been conducted at a later date (so as to include a larger sample of re-employed retrenched workers, assuming that the likelihood of re-employment rises as the time since being retrenched increases). In theory, it would be possible to test for such a "selection effect" by jointly estimating equations for the probability of retrenchment and re-employment. However, a disadvantage of this approach is that it is difficult to select variables that enable the identification of separate equations. This is particularly a problem in this study because certain important variables (especially tenure) had to be excluded from the probability of retrenchment model due to lack of data, possibly leading to biased results. As a result, it was felt that a test for selection effects was not viable.

A.5 Probability of changing occupation or industry

US research shows that displaced workers who change occupation or industry experience a much greater fall in earnings (Fallick 1996; Hamermesh 1989; Podgursky and Swaim 1987). Unfortunately, the July 1997 LFS did not collect data on earnings changes experienced by retrenched workers. However, it is possible to identify people who changed occupation or industry between the time of their retrenchment and the survey date.

Changed occupation

The first column of numbers in table B.3 shows the impact of individual characteristics on the probability that a re-employed retrenched worker had changed occupation since their last retrenched job (using the 1 digit level of the Australian Standard Classification of Occupations). The pseudo R^2 for this model was 0.099 and the predicted probability (0.414) was very close to the observed probability (0.422). The following characteristics were found to be statistically significant at the 10 per cent level:

- **Age:** Compared to 18 to 24 year olds, older age groups tended to be less likely to change occupation. This was most evident for people aged more than 54 years, who were 19.1 percentage points less likely to change occupation.
- **Sex:** Females were 12.9 percentage points less likely to change occupation than males.
- **Location:** People who did not reside in a state capital city were 8.2 percentage points more likely to change occupation than state capital city residents.
- **Relationship in household:** Lone parents with dependents were 16.9 percentage points more likely to change occupation than people who were married and had dependents.
- **Timing of last retrenchment:** The more distant in the past was the most recent retrenchment, the greater the probability that a person had changed their occupation since that retrenchment.
- **Occupation:** Compared to Managers and administrators, people who were retrenched from jobs as Professionals, Tradespersons and related workers; Intermediate production and transport workers; and Labourers and related workers were much less likely to change occupation.
- **Industry:** Compared to people retrenched from a Manufacturing job, workers retrenched in Primary industries and Construction were more than 12.0 percentage points less likely to change occupation. In contrast, people whose

most recent retrenchment was in Government administration and defence were 14.7 percentage points more likely to change occupation than people retrenched in Manufacturing.

- **Employment assistance:** People referred to a CES notice board were 8.7 percentage points more likely to have changed occupation than those who had received no assistance.
- **More than one job:** Compared to people with only one job, workers with multiple jobs were 12.9 percentage points more likely to be working most of their hours in an occupation which was different from that in which they were most recently retrenched.

Changed industry

Few individual characteristics had a statistically significant impact on the probability that a re-employed retrenched worker had changed industry since their last retrenchment. Nevertheless, the results do indicate that people were more likely to change industry if they:

- did not reside in a state capital city;
- were a lone parent with no dependents;
- were retrenched from a job in Electricity, gas and water; or Government administration and defence; or
- received employment assistance after their most recent retrenchment.

A.6 Probability of changing full/part-time status

Table B.4 shows the impact of individual characteristics on the probability that a re-employed retrenched worker changed their full/part-time status between the time of their retrenchment and the survey date. This is of interest because US research indicates that displaced workers often experience a short term reduction in work hours due to being displaced from a full-time job and then re-employed on a part-time basis (Farber 1997). Furthermore, Canadian research shows that moving from full-time to part-time status is more likely for displaced females (McCall 1997).

Change from full-time to part-time

The first column of numbers in table B.4 shows how individual characteristics affected the probability that a person retrenched from a full-time job was a part-time

worker at the survey date. It should be noted that full/part-time status at the survey date was determined on the basis of total hours worked in *all* jobs. The pseudo R^2 for the model was 0.158 and the predicted probability (0.151) was similar to the observed probability (0.189). The statistically significant characteristics at the 10 per cent level were:

- **Age:** People aged over 54 years who were retrenched from a full-time job were 19.2 percentage points more likely than 18 to 24 year olds to be part-time workers at the survey date.
- **Sex:** Consistent with overseas research, females were 21.0 percentage points more likely than males to shift from full-time to part-time employment.
- **Location:** People living in Victoria were 6.2 percentage points more likely to move from full-time to part-time status than those living in New South Wales. There was also a greater likelihood of becoming a part-time worker if a person did not reside in a state capital city.
- **Education:** People with post-school qualifications were 4.8 percentage points less likely to move from full-time to part-time status than people who had not completed the highest level of secondary school.
- **Duration of last retrenched job:** People who had less than one year of tenure in their retrenched job were 5.9 percentage points less likely to move from full-time to part-time status than people who had more than five years tenure in their last retrenched job.
- **Occupation:** Professionals; and Advanced clerical and service workers were less likely to change from full-time to part-time status than Managers and administrators.
- **Industry:** People retrenched from a full-time job in Primary industries were 10.0 percentage points less likely to become part-time workers by the survey date than those retrenched from a Manufacturing job. In contrast, people retrenched from a full-time job in Accommodation, cafes and restaurants; or Education, health and community services were more likely to become part-time workers than those retrenched in Manufacturing.
- **Employment assistance:** People who were referred to a CES notice board were 10.3 percentage points more likely to become part-time workers than those who received no employment assistance. In contrast, people retrenched from a full-time job were less likely to become part-time workers by the survey date if they had a job placement or got career advice after their last retrenchment.

Change from part-time to full-time

There were only 267 individuals in the sample who had been retrenched from a part-time job and were re-employed at the survey date. This raises concerns about how robust the results would be using the full set of 58 individual characteristics available for the model specification. Long (1997) argued that it is desirable to have at least 10 observations per parameter, which translates to 580 observations for the full model specification used in this appendix.

To address this problem, we first used all 58 individual characteristics to estimate a probit model for the probability of being retrenched from a part-time job and being re-employed as a full-time worker (results are given in table B.6). We then removed characteristics from the model specification if they had a greater than 30 per cent chance of having the same impact as their relevant reference group (that is, P>|z| was greater than 0.3). The results of this abridged model (25 characteristics) are presented in the final two columns of table B.4. The pseudo R^2 for this model was 0.234 and the predicted probability (0.428) was similar to the observed probability (0.444). The characteristics that were found to be statistically significant at the 10 per cent level were:

- **Age:** People aged over 54 years who were retrenched from a part-time job were 43.9 percentage points less likely to be a full-time worker at the survey date than 18 to 24 year olds.
- **Sex:** Females were 48.2 percentage points less likely to move from part-time to full-time status than males.
- **Location:** People who lived in Western Australia were 23.6 percentage points more likely to change from part-time to full-time status than people living in New South Wales. People residing outside a state capital city were 19.0 percentage points less likely to shift from a part-time position to being a full-time worker.
- **Timing of last retrenchment:** Compared to people retrenched from a part-time job in 1997, people retrenched from part-time jobs in 1995 and 1996 were around 20.0 percentage points more likely to be full-time workers at the survey date.
- **Permanent/casual status:** People retrenched from a part-time casual job were 16.2 percentage points less likely to be full-time workers at the survey date than people retrenched from a permanent part-time job.
- **Occupation:** People were significantly less likely to change from part-time to full-time status if their retrenched job was not in the category of Managers and administrators.

- **Industry:** People retrenched from a part-time job in Electricity, gas and water were 45.4 percentage points less likely to become full-time workers than people retrenched from a part-time job in Manufacturing.
- **More than one job:** People with more than one job at the survey date were 34.5 percentage points more likely to have moved from part-time to full-time status. It should be noted that full/part-time status at the survey date was determined on the basis of hours worked in *all* jobs.

A.7 Probability of changing permanent/casual status

The ABS classifies employees as being casuals if they are entitled to neither paid holiday nor sick leave (otherwise they are deemed to be permanent employees). This is often seen as being a simple and objective method of identifying employees who have a casual employment contract. However, Murtough and Waite (2000) showed that there are a number of problems with the approach used by the ABS. They found that, in August 1998, about a third of people categorised as casuals did not have a casual employment contract and/or were not genuine employees (working in somebody else's business). Of those people who were genuine casual employees, about a third were not 'true' casuals in the sense that they worked in a way that was occasional, irregular or short term.

The inclusion of owner managers in the category of casual employees is not a major problem here since owner managers are highly unlikely to retrench themselves. The issue of 'true' casuals is more difficult because no data were collected in the July 1997 LFS on the regularity of jobs and whether there was an implicit contract for ongoing employment. This qualification should be borne in mind when interpreting the results in table B.5, which show the impact of individual characteristics on the probability that a re-employed retrenched worker changed their permanent/casual status.

Change from permanent to casual

The first column of numbers in table B.5 shows how individual characteristics affected the probability that a person retrenched from a permanent job was a casual employee at the survey date. The pseudo R^2 for this model was 0.076 and the predicted probability (0.239) was similar to the observed probability (0.256). The statistically significant characteristics at the 10 per cent level were:

- **Age:** People aged 50-54 years who were retrenched from a permanent job were 12.4 percentage points less likely than 18-24 year olds to be re-employed as a casual employee at the survey date.

- **Sex:** Females retrenched from a permanent job were 6.6 percentage points more likely to be re-employed as a casual employee than males retrenched from a permanent job.
- **Location:** People residing in South Australia were 9.6 percentage points more likely to shift from permanent to casual status than those living in New South Wales.
- **Timing of last retrenchment:** People retrenched from a permanent job in 1994 and 1995 were around 9.0 percentage points less likely to be re-employed as a casual employee at the survey date than were people retrenched in 1997.
- **Occupation:** People retrenched from a permanent job as an Intermediate production and transport worker; or Elementary clerical, sales and service worker were more than 15.0 percentage points more likely to be re-employed as a casual employee at the survey date than people retrenched from a permanent job as a Manager and administrator.
- **Industry:** People retrenched from a permanent job in Accommodation, cafes and restaurants were 14.8 percentage points more likely to become casual employees than people retrenched from a permanent job in Manufacturing.
- **Employment assistance:** People referred to a CES notice board were 9.0 percentage points more likely to move from permanent to casual employment.

Change from casual to permanent

There were only 339 individuals in the sample who had been retrenched from a casual job and were re-employed at the survey date. As a result, we used a similar procedure to that used for the part-time to full-time model. In particular, we first estimated a probit model for the probability of changing from casual to permanent status using all 58 individual characteristics (results are given in table B.6). We then removed characteristics from the model specification if they had a greater than 40 per cent chance of having the same impact as their relevant reference group (that is, P>|z| was greater than 0.4). The results of this abridged model (31 characteristics) are presented in the last two columns of table B.5. The pseudo R^2 for this model was 0.210 and the predicted probability (0.335) was broadly similar to the observed probability (0.374). The characteristics that were found to be statistically significant at the 10 per cent level were:

- **Age:** People aged 30 to 34 years who were retrenched from a casual job were 15.8 percentage points less likely to be re-employed as a permanent employee at the survey date than 18 to 24 year olds.

- **Sex:** Females were 15.9 percentage points less likely to move from casual to permanent status.
- **Location:** People residing outside a state capital city were 17.6 percentage points less likely to move from casual to permanent status.
- **Timing of last retrenchment:** People retrenched from a casual job between 1994 and 1996 and re-employed by July 1997 were much more likely to have a permanent job at the survey date than re-employed workers who were retrenched between January and June 1997.
- **Duration of retrenched job:** People retrenched from a casual job with from three to less than five years of tenure were 27.6 percentage points less likely to move from casual to permanent status, compared to people who had more than five years tenure in their retrenched job.
- **Occupation:** People retrenched from a casual job as an Associate professional were 30.9 percentage points less likely to be re-employed as a permanent employee at the survey date than people retrenched from a casual job as a Manager or administrator.
- **Industry:** Compared to people retrenched from a casual job in Manufacturing, people retrenched from a casual job in Accommodation, cafes and restaurants; or Transport and storage were much less likely to be re-employed in a permanent job at the survey date. In contrast, people retrenched from a casual job in Government administration and defence were 45.8 percentage points more likely to be re-employed in a permanent job than people retrenched from a casual job in Manufacturing.
- **Employment assistance:** People who received other employment assistance after being retrenched from a casual job were 39.0 percentage points more likely to be re-employed in a permanent job at the survey date than people who received no employment assistance.

B Tables of econometric results

Table B.1 Impact of individual characteristics on the probability of retrenchment, July 1994 to June 1997[a]

(Probit model estimates)

	Retrenched		*Retrenched more than once*	
Individual characteristics[b]	*Discrete effect*[c]	*P>|z|*	*Discrete effect*[c]	*P>|z|*
Age				
25 – 29	–0.001	0.866	0.035*	0.047
30 – 34	–0.001	0.861	0.013	0.504
35 – 39	–0.005	0.501	0.060*	0.008
40 – 44	–0.022*	0.007	0.022	0.342
45 – 49	0.000	0.957	0.050*	0.038
50 – 54	0.015	0.108	0.033	0.212
over 54	0.048*	0.000	0.050*	0.085
Sex				
Female	–0.054*	0.000	–0.015	0.230
Birthplace				
Born overseas in an English speaking country	0.004	0.580	–0.008	0.597
Born overseas in a non-English speaking country	–0.006	0.297	–0.030*	0.041
Location (July 1997)				
VIC	0.031*	0.000	0.042*	0.015
QLD	0.043*	0.000	0.024	0.141
SA	0.049*	0.000	0.041*	0.051
WA	0.026*	0.000	0.051*	0.018
TAS	0.030*	0.001	–0.002	0.945
NT or ACT	–0.006	0.470	0.043	0.121
Does not reside in State capital city	0.015*	0.001	0.021*	0.052
Relationship in household (July 1997)				
Married with no dependents	–0.004	0.482	–0.008	0.619
Lone parent with dependents	0.049*	0.000	–0.005	0.860
Lone parent without dependents	–0.032*	0.085	0.010	0.869
Non-family member/Not determined	0.006	0.266	0.025*	0.057
Education (July 1997)				
Attending an educational institution	na	na	–0.008	0.578
Completed post-school training	na	na	0.014	0.219
Only completed highest level of high school	na	na	0.009	0.520
Timing of most recent retrenchment				
July – December 1994	na	na	–0.070*	0.000
1995	na	na	–0.049*	0.000
1996	na	na	–0.012	0.248
Duration of most recent retrenched job				
Less than one year	na	na	0.309*	0.000
One to less than two years	na	na	0.391*	0.000
Two to less than three years	na	na	0.290*	0.000
Three to less than five years	na	na	0.099*	0.018
Status of most recent retrenched job				
Part-time employee	na	na	–0.003	0.827
Casual employee	na	na	0.053*	0.000

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Table B.1 (Continued)

Individual characteristics[b]	Retrenched		Retrenched more than once	
	Discrete effect[c]	P>|z|	Discrete effect[c]	P>|z|
Occupation of most recent retrenched job				
Professionals	na	na	0.031	0.452
Associate Professionals	na	na	0.120*	0.025
Tradespersons and related workers	na	na	0.094*	0.031
Advanced clerical and service workers	na	na	0.081	0.194
Intermediate clerical, sales and service workers	na	na	0.065	0.121
Intermediate production and transport workers	na	na	0.088*	0.049
Elementary clerical, sales and service workers	na	na	0.047	0.286
Labourers and related workers	na	na	0.086*	0.048
Industry of most recent retrenchment				
Primary industries	na	na	0.009	0.727
Electricity, gas and water	na	na	–0.003	0.948
Construction	na	na	0.063*	0.004
Wholesale and retail trade	na	na	–0.004	0.779
Accommodation, cafes and restaurants	na	na	–0.042*	0.011
Transport and storage	na	na	0.019	0.484
Government administration and defence	na	na	–0.022	0.399
Education, health and community services	na	na	–0.033	0.116
Other services	na	na	0.008	0.607
Employment assistance received after most recent retrenchment				
Referred to a CES notice board	na	na	–0.025*	0.013
Referred to a job interview	na	na	0.025*	0.049
Job placement	na	na	0.002	0.907
Advice on job hunting	na	na	0.010	0.506
Career advice	na	na	–0.009	0.624
Other assistance	na	na	0.007	0.752
Other characteristics				
Most recent retrenchment was from an ongoing business	na	na	0.014	0.148
Had more than one job in July 1997	na	na	0.026	0.353
Number of observations	26 441		2 557	
Predicted probability	0.095		0.063	
Pseudo R^2	0.024		0.249	
Prob > χ^2	0.000		0.000	

a The sample for the retrenched model was people who were employed in July 1997 or had been retrenched between July 1994 to June 1997. The sample for the multiple retrenchment model was people who had experienced at least one retrenchment. Data were weighted by ABS sample weights. **b** The reference groups are Australian born, male, married with dependents, aged 18 to 24 years, resides in Sydney, did not complete highest level of secondary school, retrenched in 1997 from a job with tenure greater than 5 years as a manager or administrator in manufacturing as a full-time permanent employee, received no job search assistance, and not attending an educational institution at the survey date. **c** Change in probability when the relevant individual characteristic goes from being false to being true, given that all other characteristics are held at their mean. * indicates statistically significant at 10 per cent level. **na** Not available.

Table B.2 **Impact of individual characteristics on the probability that a retrenched worker changed labour force status by July 1997[a]**
(Probit model estimates)

	Not in the labour force		*Employed*	
Individual characteristics[b]	*Discrete effect*[c]	*P>|z|*	*Discrete effect*[c]	*P>|z|*
Age				
25 – 29	0.033	0.260	–0.015	0.712
30 – 34	0.061*	0.048	0.053	0.225
35 – 39	0.038	0.233	0.001	0.983
40 – 44	0.015	0.643	–0.037	0.483
45 – 49	0.020	0.534	–0.055	0.279
50 – 54	0.114*	0.002	–0.189*	0.002
over 54	0.374*	0.000	–0.210*	0.003
Sex				
Female	0.126*	0.000	0.019	0.563
Birthplace				
Born overseas in an English speaking country	–0.013	0.506	–0.018	0.617
Born overseas in a non-English speaking country	–0.002	0.937	–0.082*	0.049
Location (July 1997)				
VIC	–0.005	0.768	–0.038	0.304
QLD	–0.013	0.505	0.003	0.931
SA	–0.005	0.820	–0.029	0.504
WA	–0.001	0.976	0.042	0.323
TAS	0.002	0.935	0.054	0.292
NT or ACT	0.008	0.799	0.014	0.814
Does not reside in State capital city	0.001	0.927	0.020	0.456
Relationship in household (July 1997)				
Married with no dependents	–0.040*	0.020	0.049	0.180
Lone parent with dependents	0.054	0.126	–0.097	0.298
Lone parent without dependents	–0.085*	0.089	0.159	0.122
Non-family member/Not determined	–0.030*	0.080	–0.033	0.303
Education (July 1997)				
Attending an educational institution	0.108*	0.000	–0.055	0.261
Completed post-school training	–0.016	0.286	0.043	0.133
Only completed highest level of high school	0.014	0.496	–0.039	0.310
Timing of most recent retrenchment				
July – December 1994	–0.017	0.451	0.302*	0.000
1995	0.024	0.204	0.274*	0.000
1996	0.000	0.989	0.180*	0.000
Duration of most recent retrenched job				
Less than one year	–0.080*	0.000	–0.275*	0.000
One to less than two years	–0.059*	0.002	–0.197*	0.000
Two to less than three years	–0.065*	0.001	–0.146*	0.006
Three to less than five years	–0.058*	0.003	–0.156*	0.004
Status of most recent retrenched job				
Part-time employee	0.085*	0.000	0.290*	0.000
Casual employee	0.016*	0.408	–0.250*	0.000

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Table B.2 (Continued)

Individual characteristics[b]	*Not in the labour force*		*Employed*	
	Discrete effect[c]	*P>|z|*	*Discrete effect*[c]	*P>|z|*
Occupation of most recent retrenched job				
Professionals	0.107*	0.044	–0.092	0.219
Associate Professionals	0.116*	0.038	–0.163*	0.040
Tradespersons and related workers	0.151*	0.005	–0.171*	0.016
Advanced clerical and service workers	0.149*	0.027	0.017	0.876
Intermediate clerical, sales and service workers	0.164*	0.002	–0.142*	0.058
Intermediate production and transport workers	0.176*	0.002	–0.243*	0.001
Elementary clerical, sales and service workers	0.157*	0.010	–0.268*	0.002
Labourers and related workers	0.171*	0.002	–0.286*	0.000
Industry of most recent retrenched job				
Primary industries	0.010	0.800	–0.032	0.648
Electricity, gas and water	0.078*	0.071	–0.178*	0.039
Construction	0.001	0.981	0.068	0.117
Wholesale and retail trade	–0.001	0.965	–0.045	0.264
Accommodation, cafes and restaurants	–0.036	0.229	0.039	0.508
Transport and storage	0.029	0.409	–0.036	0.547
Government administration and defence	0.067*	0.047	–0.052	0.423
Education, health and community services	–0.041*	0.068	–0.151*	0.010
Other services	0.013	0.565	–0.056	0.176
Employment assistance received after most recent retrenchment				
Referred to a CES notice board	–0.049*	0.001	–0.234*	0.000
Referred to a job interview	–0.050*	0.006	–0.039	0.239
Job placement	–0.101*	0.000	0.298*	0.000
Advice on job hunting	–0.024	0.281	–0.074*	0.060
Career advice	0.015	0.629	–0.177*	0.001
Other assistance	0.021	0.476	–0.187*	0.001
Other characteristics				
Retrenched more than once during July 1994 to June 1997	–0.007	0.761	0.171*	0.000
Most recent retrenchment was from an ongoing business	–0.020	0.131	0.005	0.842
Had more than one job in July 1997[d]			0.244*	0.000
Number of observations	2 557		2 557	
Predicted probability	0.106		0.757	
Pseudo R^2	0.220		0.395	
Prob > χ^2	0.000		0.000	

a The not in the labour force model was estimated using the sample of people who had been retrenched between July 1994 to June 1997. The employed model was estimated using the sample of people who had been retrenched and were in the labour force in July 1997. Data were weighted by ABS sample weights. **b** The reference groups are Australian born, male, married with dependents, aged 18 to 24 years, resides in Sydney, did not complete highest level of secondary school, retrenched in 1997 from a job with tenure greater than 5 years as a manager or administrator in manufacturing as a full-time permanent employee, received no job search assistance, and not attending an educational institution at the survey date. **c** Change in probability when the relevant individual characteristic goes from being false to being true, given that all other characteristics are held at their mean. * indicates statistically significant at 10 per cent level. **d** This variable was excluded from the not in the labour force model due to multicolinearity.

Table B.3 Impact of individual characteristics on the probability that a retrenched worker changed occupation or industry[a]

(Probit model estimates)

	Changed occupation		*Changed industry*	
Individual characteristics[b]	*Discrete effect*[c]	*P>|z|*	*Discrete effect*[c]	*P>|z|*
Age				
25 – 29	–0.124*	0.017	–0.060	0.271
30 – 34	–0.017	0.761	0.072	0.212
35 – 39	–0.096*	0.098	–0.042	0.486
40 – 44	–0.063	0.312	–0.017	0.790
45 – 49	–0.048	0.431	0.029	0.641
50 – 54	–0.085	0.201	0.106	0.125
over 54	–0.191*	0.006	0.042	0.578
Sex				
Female	–0.129*	0.001	–0.039	0.311
Birthplace				
Born overseas in an English speaking country	0.020	0.657	0.004	0.926
Born overseas in a non-English speaking country	–0.020	0.696	–0.044	0.381
Location (July 1997)				
VIC	0.030	0.498	0.048	0.281
QLD	–0.047	0.294	0.010	0.822
SA	–0.045	0.363	0.019	0.705
WA	–0.008	0.868	0.034	0.487
TAS	–0.093	0.139	0.021	0.747
NT or ACT	–0.003	0.966	0.058	0.422
Does not reside in State capital city	0.082*	0.017	0.057*	0.098
Relationship in household (July 1997)				
Married with no dependents	0.012	0.764	–0.026	0.526
Lone parent with dependents	0.169*	0.050	0.104	0.211
Lone parent without dependents	0.262	0.100	0.313*	0.062
Non-family member/Not determined	0.019	0.633	0.103*	0.010
Education (July 1997)				
Attending an educational institution	0.068	0.182	0.032	0.547
Completed post-school training	–0.036	0.300	0.005	0.877
Only completed highest level of high school	–0.054	0.242	–0.069	0.151
Timing of most recent retrenchment				
July – December 1994	0.173*	0.001	0.060	0.238
1995	0.145*	0.001	–0.012	0.790
1996	0.088*	0.027	–0.003	0.946
Duration of most recent retrenched job				
Less than one year	–0.034	0.435	0.022	0.628
One to less than two years	–0.067	0.161	–0.039	0.429
Two to less than three years	–0.048	0.375	–0.024	0.669
Three to less than five years	–0.085	0.109	–0.055	0.309
Status of most recent retrenched job				
Part-time employee	0.070	0.176	0.067	0.191
Casual employee	0.028	0.548	–0.020	0.669

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Table B.3 (Continued)

Individual characteristics[b]	*Changed occupation*		*Changed industry*	
	Discrete effect[c]	*P>|z|*	*Discrete effect*[c]	*P>|z|*
Occupation of most recent retrenched job				
Professionals	–0.293*	0.000	–0.097	0.222
Associate Professionals	–0.036	0.649	–0.011	0.895
Tradespersons and related workers	–0.246*	0.000	–0.061	0.419
Advanced clerical and service workers	–0.115	0.219	–0.044	0.659
Intermediate clerical, sales and service workers	–0.093	0.196	0.065	0.394
Intermediate production and transport workers	–0.193*	0.007	0.001	0.993
Elementary clerical, sales and service workers	–0.004	0.967	0.030	0.732
Labourers and related workers	–0.136*	0.067	0.078	0.330
Industry of most recent retrenchment				
Primary industries	–0.197*	0.007	–0.076	0.315
Electricity, gas and water	0.012	0.915	0.409*	0.000
Construction	–0.126*	0.023	–0.079	0.163
Wholesale and retail trade	–0.032	0.491	–0.018	0.711
Accommodation, cafes and restaurants	0.032	0.661	–0.083	0.264
Transport and storage	–0.054	0.474	0.080	0.280
Government administration and defence	0.147*	0.049	0.368*	0.000
Education, health and community services	–0.037	0.554	–0.012	0.853
Other services	–0.008	0.878	–0.040	0.416
Employment assistance received after most recent retrenchment				
Referred to a CES notice board	0.087*	0.014	0.112*	0.002
Referred to a job interview	0.055	0.146	0.029	0.448
Job placement	–0.038	0.299	0.003	0.925
Advice on job hunting	–0.055	0.293	–0.009	0.867
Career advice	0.073	0.272	0.036	0.588
Other assistance	0.005	0.945	0.131*	0.069
Other characteristics				
Retrenched more than once during July 1994 to June 1997	–0.054	0.220	–0.063	0.157
Most recent retrenchment was from an ongoing business	0.039	0.190	0.025	0.410
Had more than one job in July 1997	0.129*	0.023	0.087	0.127
Number of observations	1 488		1 488	
Predicted probability	0.414		0.515	
Pseudo R^2	0.099		0.089	
Prob > χ^2	0.000		0.000	

a The models were estimated using the sample of people who had been retrenched between July 1994 to June 1997 and were re-employed by July 1997. Data were weighted by ABS sample weights. **b** The reference groups are Australian born, male, married with dependents, aged 18 to 24 years, resides in Sydney, did not complete highest level of secondary school, retrenched in 1997 from a job with tenure greater than 5 years as a manager or administrator in manufacturing as a full-time permanent employee, received no job search assistance, and not attending an educational institution at the survey date. **c** Change in probability when the relevant individual characteristic goes from being false to being true, given that all other characteristics are held at their mean. * indicates statistically significant at 10 per cent level.

Table B.4 Impact of individual characteristics on the probability that a retrenched worker changed full/part-time status[a]

(Probit model estimates)

	Full-time to part-time		*Part-time to full-time*	
Individual characteristics[b]	*Discrete effect*[c]	*P>|z|*	*Discrete effect*[c]	*P>|z|*
Age				
25 – 29	–0.032	0.451		
30 – 34	0.019	0.686		
35 – 39	–0.011	0.815		
40 – 44	0.044	0.393		
45 – 49	0.051	0.329		
50 – 54	0.038	0.495		
over 54	0.192*	0.006	–0.439*	0.000
Sex				
Female	0.210*	0.000	–0.482*	0.000
Birthplace				
Born overseas in an English speaking country	–0.028	0.394	–0.105	0.355
Born overseas in a non-English speaking country	–0.004	0.905		
Location (July 1997)				
VIC	0.062*	0.091		
QLD	0.012	0.733		
SA	0.047	0.268		
WA	0.027	0.532	0.236*	0.023
TAS	0.039	0.478		
NT or ACT	–0.018	0.732		
Does not reside in State capital city	0.046*	0.084	–0.190*	0.012
Relationship in household (July 1997)				
Married with no dependents	–0.008	0.788		
Lone parent with dependents	0.119	0.127		
Lone parent without dependents	0.120	0.538		
Non-family member/Not determined	0.004	0.895	–0.103	0.224
Education (July 1997)				
Attending an educational institution	0.007	0.873	–0.128	0.212
Completed post-school training	–0.048*	0.082		
Only completed highest level of high school	0.013	0.738		
Timing of most recent retrenchment				
July – December 1994	–0.053	0.140	0.212	0.112
1995	–0.012	0.720	0.189*	0.055
1996	0.010	0.750	0.206*	0.025
Duration of most recent retrenched job				
Less than one year	–0.059*	0.077		
One to less than two years	–0.032	0.366		
Two to less than three years	–0.036	0.363	0.199	0.130
Three to less than five years	–0.022	0.585		
Status of most recent retrenched job				
Casual employee	0.026	0.505	–0.162*	0.073

(Continued on next page)

Table B.4 (Continued)

Individual characteristics[b]	Full-time to part-time		Part-time to full-time	
	Discrete effect[c]	P>|z|	Discrete effect[c]	P>|z|
Occupation of most recent retrenched job				
Professionals	–0.090*	0.054	–0.811*	0.000
Associate Professionals	–0.042	0.407	–0.559*	0.000
Tradespersons and related workers	–0.030	0.534	–0.732*	0.000
Advanced clerical and service workers	–0.127*	0.006	–0.709*	0.000
Intermediate clerical, sales and service workers	–0.031	0.519	–0.998*	0.000
Intermediate production and transport workers	–0.056	0.253	–0.831*	0.000
Elementary clerical, sales and service workers	0.097	0.178	–0.991*	0.000
Labourers and related workers	0.004	0.947	–0.999*	0.000
Industry of most recent retrenchment				
Primary industries	–0.100*	0.049	–0.164	0.368
Electricity, gas and water	–0.097	0.187	–0.454*	0.000
Construction	–0.053	0.195		
Wholesale and retail trade	–0.006	0.880		
Accommodation, cafes and restaurants	0.220*	0.004	–0.058	0.614
Transport and storage	0.019	0.743		
Government administration and defence	0.081	0.144		
Education, health and community services	0.113*	0.041		
Other services	0.012	0.738		
Employment assistance received after most recent retrenchment				
Referred to a CES notice board	0.103*	0.000		
Referred to a job interview	0.019	0.532		
Job placement	–0.055*	0.042		
Advice on job hunting	0.046	0.251	–0.091	0.426
Career advice	–0.087*	0.052		
Other assistance	0.031	0.584		
Other characteristics				
Retrenched more than once during July 1994 to June 1997	0.028	0.450		
Most recent retrenchment was from an ongoing business	0.022	0.316		
Had more than one job in July 1997	0.008	0.865	0.345*	0.002
Number of observations	1 221		267	
Predicted probability	0.151		0.428	
Pseudo R^2	0.158		0.234	
Prob > χ^2	0.000		0.000	

a The full-time to part-time model was estimated using the sample of people who had been retrenched from a full-time job between July 1994 to June 1997 and were re-employed in July 1997. The part-time to full-time model was estimated using the sample of people who had been retrenched from a part-time job and were re-employed in July 1997. Full/part-time status at the survey date was determined on the basis of hours worked in *all* jobs. Data were weighted by ABS sample weights. **b** The reference groups are Australian born, male, married with dependents, aged 18 to 24 years, resides in Sydney, did not complete highest level of secondary school, retrenched in 1997 from a job with tenure greater than 5 years as a manager or administrator in manufacturing as a full-time permanent employee, received no job search assistance, and not attending an educational institution at the survey date. **c** Change in probability when the relevant individual characteristic goes from being false to being true, given that all other characteristics are held at their mean. * indicates statistically significant at 10 per cent level.

Table B.5 Impact of individual characteristics on the probability that a retrenched worker changed permanent/casual status[a]

(Probit model estimates)

	Permanent to casual		*Casual to permanent*	
Individual characteristics[b]	*Discrete effect*[c]	*P>|z|*	*Discrete effect*[c]	*P>|z|*
Age				
25 – 29	–0.008	0.888		
30 – 34	0.016	0.779	–0.158*	0.047
35 – 39	–0.090	0.104		
40 – 44	–0.036	0.555		
45 – 49	0.030	0.632		
50 – 54	–0.124*	0.042	–0.226	0.102
over 54	0.108	0.158	–0.195	0.151
Sex				
Female	0.066*	0.086	–0.159*	0.017
Birthplace				
Born overseas in an English speaking country	0.052	0.229	–0.085	0.389
Born overseas in a non-English speaking country	0.027	0.579	0.105	0.352
Location (July 1997)				
VIC	–0.017	0.683	0.095	0.228
QLD	0.010	0.820	–0.101	0.145
SA	0.096*	0.058		
WA	0.004	0.939		
TAS	–0.018	0.758	0.100	0.548
NT or ACT	–0.038	0.559		
Does not reside in State capital city	0.048	0.152	–0.176*	0.008
Relationship in household (July 1997)				
Married with no dependents	–0.041	0.294	0.125	0.182
Lone parent with dependents	0.123	0.140	–0.137	0.333
Lone parent without dependents	–0.017	0.924		
Non-family member/Not determined	0.028	0.454	–0.058	0.424
Education (July 1997)				
Attending an educational institution	0.013	0.807		
Completed post-school training	0.010	0.774		
Only completed highest level of high school	0.028	0.547	0.087	0.318
Timing of most recent retrenchment				
July – December 1994	–0.090*	0.045	0.342*	0.003
1995	–0.085*	0.031	0.253*	0.003
1996	–0.049	0.191	0.154*	0.045
Duration of most recent retrenched job				
Less than one year	–0.059	0.153	0.032	0.641
One to less than two years	–0.044	0.332		
Two to less than three years	–0.046	0.345		
Three to less than five years	–0.036	0.431	–0.276*	0.004
Status of most recent retrenched job				
Part-time employee	–0.033	0.583	–0.101	0.136

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Table B.5 (Continued)

Individual characteristics[b]	*Permanent to casual*		*Casual to permanent*	
	Discrete effect[c]	*P>|z|*	*Discrete effect*[c]	*P>|z|*
Occupation of most recent retrenched job				
Professionals	–0.031	0.669		
Associate Professionals	0.010	0.892	–0.309*	0.005
Tradespersons and related workers	0.039	0.565		
Advanced clerical and service workers	0.015	0.876		
Intermediate clerical, sales and service workers	0.057	0.434		
Intermediate production and transport workers	0.162*	0.042		
Elementary clerical, sales and service workers	0.186*	0.047		
Labourers and related workers	0.081	0.315		
Industry of most recent retrenchment				
Primary industries	–0.071	0.249		
Electricity, gas and water	0.061	0.557		
Construction	–0.056	0.275		
Wholesale and retail trade	–0.005	0.915		
Accommodation, cafes and restaurants	0.148*	0.100	–0.166*	0.084
Transport and storage	0.010	0.886	–0.271*	0.072
Government administration and defence	–0.055	0.374	0.458*	0.044
Education, health and community services	0.019	0.749	–0.099	0.388
Other services	–0.021	0.633		
Employment assistance received after most recent retrenchment				
Referred to a CES notice board	0.090*	0.013	–0.068	0.293
Referred to a job interview	–0.023	0.528	0.066	0.388
Job placement	0.024	0.503	0.124	0.111
Advice on job hunting	0.078	0.138		
Career advice	–0.079	0.189		
Other assistance	0.046	0.512	0.390*	0.005
Other characteristics				
Retrenched more than once during July 1994 to June 1997	0.024	0.614	0.102	0.146
Most recent retrenchment was from an ongoing business	–0.018	0.527		
Had more than one job in July 1997	0.084	0.180	–0.079	0.444
Number of observations	1 149		339	
Predicted probability	0.239		0.335	
Pseudo R^2	0.076		0.210	
Prob > χ^2	0.021		0.000	

a The permanent to casual model was estimated using the sample of people who had been retrenched from a permanent job between July 1994 to June 1997 and were re-employed in July 1997. The casual to permanent model was estimated using the sample of people who had been retrenched from a casual job and were re-employed in July 1997. Data were weighted by ABS sample weights. **b** The reference groups are Australian born, male, married with dependents, aged 18 to 24 years, resides in Sydney, did not complete highest level of secondary school, retrenched in 1997 from a job with tenure greater than 5 years as a manager or administrator in manufacturing as a full-time permanent employee, received no job search assistance, and not attending an educational institution at the survey date. **c** Change in probability when the relevant individual characteristic goes from being false to being true, given that all other characteristics are held at their mean. * indicates statistically significant at 10 per cent level.

Table B.6 Impact of individual characteristics on the probability that a retrenched worker changed from part-time to full-time or casual to permanent status (full specification)[a]

(Probit model estimates)

	Part-time to full-time		*Casual to permanent*	
Individual characteristics[b]	*Discrete effect*[c]	*P>|z|*	*Discrete effect*[c]	*P>|z|*
Age				
25 – 29	–0.057	0.690	–0.003	0.979
30 – 34	–0.018	0.905	–0.201*	0.061
35 – 39	–0.064	0.698	–0.038	0.773
40 – 44	–0.022	0.903	–0.012	0.927
45 – 49	–0.024	0.885	–0.060	0.628
50 – 54	–0.084	0.707	–0.229	0.172
over 54	–0.452*	0.000	–0.202	0.197
Sex				
Female	–0.510*	0.000	–0.142*	0.084
Birthplace				
Born overseas in an English speaking country	–0.174	0.124	–0.090	0.385
Born overseas in a non-English speaking country	–0.046	0.707	0.111	0.324
Location (July 1997)				
VIC	0.048	0.693	0.114	0.308
QLD	–0.020	0.867	–0.101	0.337
SA	–0.058	0.667	0.033	0.779
WA	0.281*	0.048	–0.016	0.896
TAS	–0.189	0.352	0.165	0.397
NT or ACT	0.124	0.630	–0.058	0.761
Does not reside in State capital city	–0.226*	0.009	–0.170*	0.017
Relationship in household (July 1997)				
Married with no dependents	0.115	0.361	0.126	0.229
Lone parent with dependents	0.078	0.612	–0.138	0.328
Lone parent without dependents	–0.078	0.758	0.000	1.000
Non-family member/Not determined	–0.158	0.183	–0.063	0.500
Education (July 1997)				
Attending an educational institution	–0.165	0.172	0.000	0.999
Completed post-school training	–0.003	0.979	0.021	0.783
Only completed highest level of high school	0.078	0.502	0.109	0.310
Timing of most recent retrenchment				
July – December 1994	0.334*	0.023	0.384*	0.002
1995	0.239*	0.025	0.263*	0.004
1996	0.261*	0.010	0.162*	0.041
Duration of most recent retrenched job				
Less than one year	0.137	0.313	0.114	0.362
One to less than two years	–0.012	0.930	0.081	0.568
Two to less than three years	0.290	0.114	0.110	0.484
Three to less than five years	0.008	0.961	–0.248*	0.051
Status of most recent retrenched job				
Part-time employee			–0.078	0.284
Casual employee	–0.223*	0.029		

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Table B.6 (Continued)

Individual characteristics[b]	*Part-time to full-time*		*Casual to permanent*	
	Discrete effect[c]	*P>|z|*	*Discrete effect*[c]	*P>|z|*
Occupation of most recent retrenched job				
Professionals	–0.808*	0.000	0.244	0.412
Associate Professionals	–0.558*	0.000	–0.251	0.262
Tradespersons and related workers	–0.728*	0.000	0.136	0.624
Advanced clerical and service workers	–0.707*	0.000	0.051	0.878
Intermediate clerical, sales and service workers	–0.998*	0.000	0.059	0.831
Intermediate production and transport workers	–0.831*	0.000	0.019	0.944
Elementary clerical, sales and service workers	–0.991*	0.000	–0.028	0.920
Labourers and related workers	–0.999*	0.000	0.016	0.952
Industry of most recent retrenchment				
Primary industries	–0.208	0.290	–0.028	0.847
Electricity, gas and water[d]	–0.456*	0.000		
Construction	–0.084	0.795	–0.051	0.686
Wholesale and retail trade	–0.078	0.577	–0.024	0.805
Accommodation, cafes and restaurants	–0.179	0.214	–0.177	0.160
Transport and storage	–0.211	0.441	–0.264	0.101
Government administration and defence	0.287	0.384	0.504*	0.053
Education, health and community services	–0.132	0.358	–0.160	0.242
Other services	–0.096	0.495	0.057	0.627
Employment assistance received after most recent retrenchment				
Referred to a CES notice board	–0.008	0.936	–0.066	0.341
Referred to a job interview	–0.075	0.451	0.079	0.335
Job placement	0.087	0.369	0.123	0.127
Advice on job hunting	–0.145	0.274	–0.066	0.523
Career advice	0.014	0.942	–0.001	0.992
Other assistance	0.132	0.361	0.409*	0.009
Other characteristics				
Retrenched more than once during July 1994 to June 1997	0.090	0.399	0.111	0.141
Most recent retrenchment was from an ongoing business	0.031	0.698	0.022	0.738
Had more than one job in July 1997	0.382*	0.001	–0.114	0.273
Number of observations	267		338[d]	
Predicted probability	0.444		0.375	
Pseudo R^2	0.277		0.076	
Prob > χ^2	0.000		0.000	

a The casual to permanent model was estimated using the sample of people who had been retrenched from a casual job between July 1994 to June 1997 and were re-employed in July 1997. The part-time to full-time model was estimated using the sample of people who had been retrenched from a part-time job and were re-employed in July 1997. Data were weighted by ABS sample weights. **b** The reference groups are Australian born, male, married with dependents, aged 18 to 24 years, resides in Sydney, did not complete highest level of secondary school, retrenched in 1997 from a job with tenure greater than 5 years as a manager or administrator in manufacturing as a full-time permanent employee, received no job search assistance, and not attending an educational institution at the survey date. **c** Change in probability when the relevant individual characteristic goes from being false to being true, given that all other characteristics are held at their mean. * indicates statistically significant at 10 per cent level. **d** This variable was excluded from the casual to permanent model due to multicolinearity. This also caused one observation to be excluded.

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