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Indigenous Australians in the Contemporary Labour Market

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Indigenous Australians in the Contemporary Labour Market

2001

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PREFACE

Late in 2002 I was awarded an Australian Census Analytic Program (ACAP) by the Australian Bureau of Statistics (ABS) to analyse 'Factors Underlying Indigenous Labour Force Status, 1981–2001'. In return for access to largely pre-specified census cross-tabulations, I was to provide a monograph that attempted to address this topic in a creative manner that illustrated the potential uses of census data. This is the resulting monograph that completes this commitment.

Over the last year, I have enjoyed a convivial and productive relationship with the ACAP team within the Census Products and Services section of the ABS. Thanks are also due to Heather Grant from the Australian National University (ANU) who displayed a considerable patience in negotiating the ACAP deed of agreement.

I also would like to thank many people at the ANU and elsewhere. Many staff at the Centre for Aboriginal Economic Policy Research (CAEPR) were generous in their provision of peer review, especially Jon Altman, Anne Daly (also affiliated with the University of Canberra), Roger Jones, and John Taylor. Matthew Gray from the Australian Institute of Family Studies provided useful feedback on a number of chapters. While Melanie Willis and Ross Skinner from the Indigenous Business Review (IBR) provided some comments on the chapter that addresses self-employment.

It should be noted that the conclusions drawn and observations made are my own and do not necessarily represent the views of the Australian Bureau of Statistics.

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January 2004

ABBREVIATIONS

ABA	Aboriginals Benefit Account
ABS	Australian Bureau of Statistics
ACAP	Australian Census Analytic Program
AEDP	Aboriginal Employment Development Policy
ANZSIC	Australian and New Zealand Standard Industrial Classification
ANU	Australian National University
ARIA	Accessibility Remoteness Index of Australia
ASCO	Australian Standard Classification of Occupations
ASIC	Australian Standard Industrial Classification
ATSIC	Aboriginal and Torres Strait Islander Commission
b	billion
CAEPR	Centre for Aboriginal Economic Policy Research
CDEP	Community Development Employment Projects
CGC	Commonwealth Grants Commission
DEWR	Department of Employment and Workplace Relations
HREOC	Human Rights and Equal Opportunity Commission
IBA	Indigenous Business Australia
IBR	Indigenous Business Review
ILC	Indigenous Land Corporation
IEP	Indigenous Employment Policy
ISS	Indigenous Social Survey
LFS	Labour Force Survey
m	million
NATSIS	National Aboriginal and Torres Strait Islander Survey
n.e.c.	not elsewhere classified
n.f.d.	not further defined
NILF	not in the labour force
OEA	Office of Evaluation and Audit
OLS	Ordinary Least Squares
SD	statistical division
SIF	Special Indigenous Form
SLA	statistical local area
TAP	Training for Aboriginals Program

CHAPTER 1 A RECENT HISTORY OF THE INDIGENOUS LABOUR FORCE

1.1 INTRODUCTION

Australia's Indigenous population, which includes both Aboriginal and Torres Strait Islander people, accounted for only two per cent of the total population recorded in the 2001 Census of Population and Housing (hereafter called census for short). Before the arrival of the European settlers, Indigenous people were living throughout the Australian continent. The history of colonisation has lead to many dramatic changes to the lives of the original inhabitants of the land, but the distribution of Indigenous people remain relatively uniform throughout the continent, in stark contrast to other Australians who tend to be disproportionately concentrated in the south-east corner. Accordingly, this process has been extremely uneven with some Indigenous people only being exposed to Western culture and economic systems relatively recently.

Given the large number of different Indigenous nations living in Australia in 1788, the uneven process of colonisation means that there is still a remarkable diversity of the social and cultural characteristics of the current Indigenous population. Notwithstanding, the socioeconomic characteristics of Indigenous Australians are reasonably uniform with high unemployment, low employment, and poor education being the norm, irrespective of the history of the local region.

In her seminal ABS Occasional Paper, Daly (1995) provides a comprehensive overview of the labour force status of Indigenous Australians at the time of the 1991 census (also see Daly 1993; Daly 1994a; Daly 1994b; Daly & Liu 1997). While this continues to be an influential piece of work it is now time to revisit and extend Daly's analysis. Subsequent work on the 1996 census data examined major trends in Indigenous labour markets, but was largely piecemeal — consisting of a disparate set of journal articles that addressed particular academic and policy questions (Altman 2001; Gray, Hunter & Schwab 2000; Hunter & Gray 1998; Hunter & Gray 2001a; Taylor 1997; Taylor & Bell 1998; Taylor & Hunter 1997; Taylor & Hunter 1998). This monograph draws together these disparate themes and updates them to take account of the recently released 2001 census data.

One of the main factors complicating the analysis of trends in Indigenous labour force status since the early 1980s is the rise of the Community Development Employment Projects (CDEP) scheme. The influence of the scheme underlies all the major trends observed in Daly (1995) and clearly needs to be accounted for, especially when making comparisons with the non-Indigenous population. Notwithstanding the creation of a mainstream

work-for-the-dole scheme, which is more limited in scope and conception than the CDEP scheme, there are no comparable institutions for the non-Indigenous population. There is a considerable body of evidence suggesting that the scheme interacts with labour force participation and educational levels as well as directly affecting measured Indigenous employment and unemployment (CGC 2001; Hunter 2002a; Hunter 2002b; Taylor & Hunter 1998). Around the time of the 2001 census, administrative data indicated that 27% of Indigenous workers were employed in the scheme.

This monograph is an Australian Census Analytic Program (ACAP) project that revisits the main analysis in Daly (1995). However, rather than merely replicate Daly's results using more recent data, the preferred approach is to place emphasis on structuring the economic analysis into supply and demand-side approaches to Indigenous involvement in the labour market. In this way, the project will both extend the understanding of important socioeconomic trends and demonstrate the somewhat under-utilised power of census data to illuminate the social and policy agenda for Indigenous Australians.

While the main sources of data are the 1996 and 2001 censuses, the descriptive trends may use data from as far back as the 1971 census. In addition to standard cross-tabulations of relevant variables, the methodology used includes standard demographic techniques, shift-share analysis, segregation indexes, as well as various multi-variate techniques. As with Daly (1995), standard decomposition techniques, such as the Oaxaca (1973)/ Blinder (1973) techniques, are used. However, in contrast with the earlier study, this monograph only estimates the role of 'potential discrimination' in employment rates; that is, the proportion of the average differential in employment rates between Indigenous and other Australians that is roughly attributable to discrimination, is estimated. Note that no attempt is made to decompose the wage differential again because Daly's estimates are likely to be robust over time.

This chapter traces historical trends in the labour force status of Indigenous Australians compared to all Australians, using the five-yearly Census of Population and Housing. Developments since 1971 (when Aborigines and Torres Strait Islanders were first allowed to self-identify in the census) are mapped in some detail, including a comparative analysis of employment by major industry, occupation, and industry sector to further elucidate trends over the past thirty years. Of course, due attention needs to be paid to the importance of changes in census definitions. A short discussion will attempt to reconcile the recent Labour Force Survey (LFS) estimates for the Indigenous population with those provided in the last two censuses. To set the background for this monograph it is first necessary to describe the rise of the CDEP scheme. This task is given a high priority because of the prominence of the scheme, and its potential influence on the analysis of Indigenous census statistics.

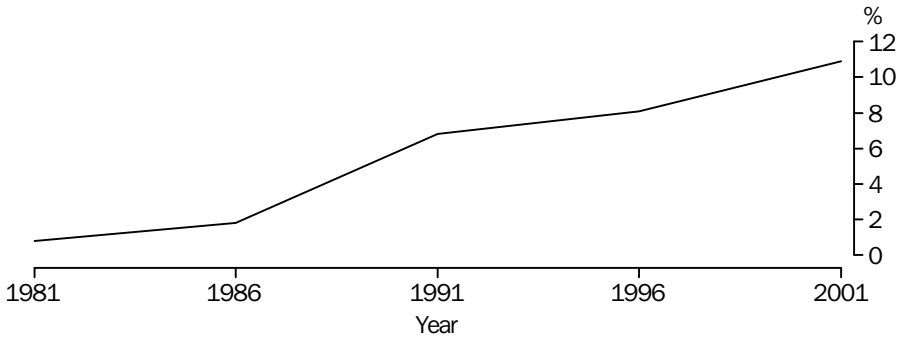
1.2 POLICY BACKGROUND: THE RISE OF THE CDEP SCHEME

The ongoing low labour market status of Indigenous Australians is due to a variety of interdependent factors that can be summarised as historical, including the failure of successive policy regimes, and locational and cultural factors. The history of Indigenous Australians differs markedly from other Australians, especially with respect to their exclusion from the mainstream provisions of the Australian state until the late 1960s. About one-third of Indigenous Australians live in remote Australia where the lack of a developed labour market and the limited availability of services reduce the opportunities for mainstream employment. Cultural factors are also a major determinant of labour force status. Indigenous people in remote areas may be unwilling to migrate for employment because they have other important cultural priorities. On the demand-side, there is also the distinct possibility, though under-researched, that employer discrimination results in labour market distortions. Government policy and programs have attempted to initially ameliorate and then reverse past patterns, but in so doing have created a situation that may circumscribe future options for economic equality. This is particularly the case with respect to the CDEP scheme, which may interact with the incentive to improve educational attainment (Hunter 2002a). This scheme allows Indigenous people to 'work for the dole',[1] but in so doing they are defined, for official purposes, as employed rather than unemployed. However, in most situations only part-time low paid employment is available under the scheme.

The CDEP scheme is a crucial difference between the Indigenous and mainstream labour market, which complicates any comparative analysis. From an analytical perspective, it is a confounding factor that needs to be examined separately. Unfortunately, it is not possible to do this adequately because the census information on the CDEP scheme is only collected in the Special Indigenous Form (SIF). Given that the CDEP scheme is now active in many non-remote areas, where the SIF form was not used, the coverage of CDEP data is incomplete. Consequently, one of the ongoing themes of this monograph is the extent to which the effect of the scheme can be purged by using certain criteria that enhance the interpretability and comparability of Indigenous and other Australian labour force status.

The CDEP scheme was introduced on a small pilot scale by the Fraser Coalition Government in 1977 in response to the spread of Unemployment Benefit payments into remote Indigenous communities (Sanders 1997). In the early 1980s, the 'teething' problems with the scheme were, to some extent, addressed and the scheme began expanding quite rapidly (see graph 1.1).[2] Administrative data from around the time of the 2001 census indicated that 30,474 of the CDEP participants were Indigenous with the scheme accounting for about 38.3% of the Aboriginal and Torres Strait Islander Commission (ATSIC) budget (see the 2001 federal budget).

1.1 THE RISE AND RISE OF THE CDEP SCHEME,
Population aged 15 years and over, employed in the CDEP scheme



Source: 2001 Census of Population and Housing, population data; ATSIC administrative data for August 2001; Hunter (2002a).

From its humble beginnings in 1977, the CDEP scheme grew slowly at first, before expanding rapidly in the mid to late 1980s away from the original strongholds in remote Australia (Sanders 1997). Indeed, participation in the scheme more than quadrupled between 1986 and 1991.

The second major expansion in the number of CDEP scheme jobs occurred as a result of the Spicer review in 1997. This second phase of growth has been characterised as an 'internal expansion' whereby scheme participants were increasingly expected to work for their benefit entitlement (Altman, Gray & Sanders 2000).

The expansion of the CDEP scheme has been uneven throughout Australia, with urban areas having relatively few participants until recently. Recent ATSIC data shows that there are still only just over 1,000 CDEP participants in major urban areas (defined as either capital cities or other urban area with more than 100,000 residents). However, about half of these work in the Perth CDEP scheme, Peedac Pty Ltd, which was established on 6 July 1997 — almost a year after the 1996 census was collected (Humphries 2001: pp. 227–9).

Hunter (2002a; 2002b) uses the differential growth of the CDEP scheme in certain areas to isolate the effect of the CDEP scheme. Obviously this option is not available when examining national statistics that conflate the influence of the scheme with other labour market factors. This monograph explores alternatives to disaggregating the analysis by geographic areas, by focusing on private sector employment and full-time employment. While both techniques have limitations (which will be examined in due course), they provide a basis for describing what may have happened in the absence of the scheme. However, the first task is to describe what happened to Indigenous labour force status overall.

While CDEP scheme employment is specifically identified in census data for many remote areas, it is not a complete record. ATSIC data on CDEP participants for 31 August 2001 indicates that 30,474 Indigenous people worked

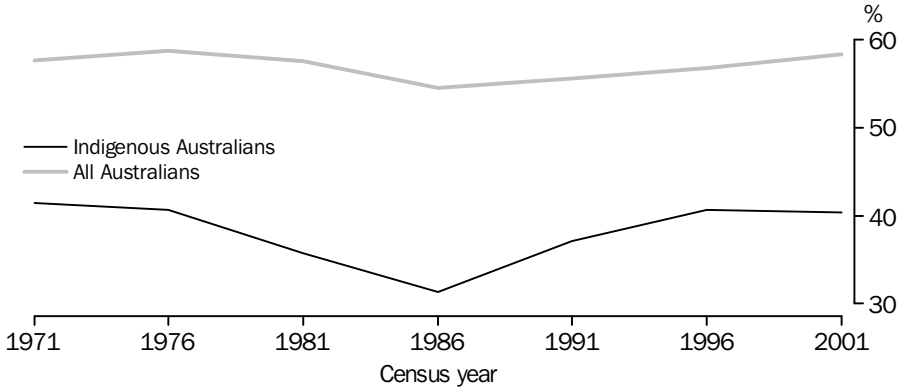
in the scheme. However the census data indicates that only 58.3% (or around 17,800 workers) were enumerated in the scheme on the census form. Consequently, much of this chapter is spent examining the extent to which CDEP scheme employment can be indirectly controlled for by other means.

1.3 LABOUR FORCE STATUS

The census provides a five-yearly snapshot of Indigenous labour force status. At the time of publication of Daly (1995) it was the only source of information available. There are now four ABS collections from which national statistics on Indigenous labour force status may be derived and charted (Hunter & Taylor 2001b).[3] Since the census provides a full enumeration of the self-identified Indigenous population, it would be expected to be associated with the greatest precision in labour force estimates. Although the statistics available from the four collections are based on the same underlying standard International Labour Organisation definitions and concepts, there are differences in methodologies that affect the comparability of data (ABS 2000: 2). Despite these problems, Hunter and Taylor (2001b) show that the employment/population ratio is remarkably consistent across all four collections. The effect of the different survey methodologies is most evident in estimates of the unemployment rate. However, the qualitative analysis of trends in Indigenous labour force status is not changed by the use of these alternative data sources.

Irrespective of any influence of the CDEP scheme, Indigenous employment (as a proportion of adults aged over 15 years) has consistently been far lower than that for the total population since 1971 (graph 1.2). However, CDEP had a role in arresting the large falls in Indigenous employment leading up to 1986, and restoring the relative employment status to a similar level as that experienced in 1971. Given that the scheme now accounts for over one-third of Indigenous employment almost all of the improvement since 1986 is probably attributable to CDEP.

1.2 EMPLOYMENT/POPULATION RATIOS: TREND,
Population aged 15 years and over who are employed

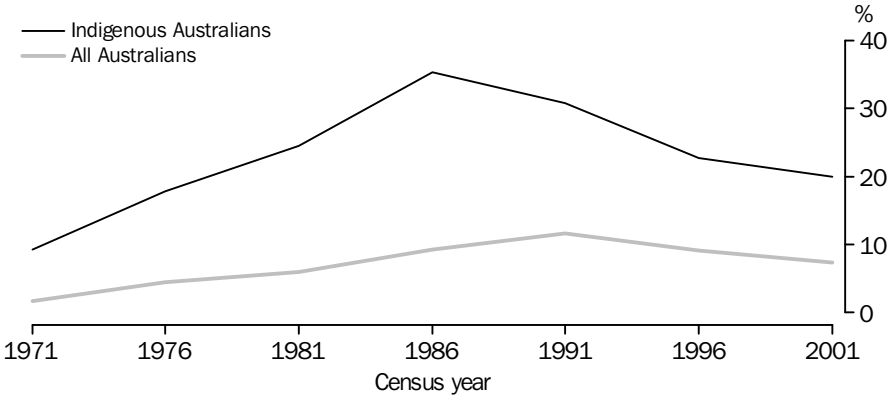


Source: Daly (1995: p. 5, table 1.3); 1996 and 2001 Census of Population and Housing.

Conversely, Indigenous unemployment has always been proportionately higher than non-Indigenous unemployment, although there has been a clear downward trend since the large-scale creation of CDEP scheme jobs after 1986 (graph 1.3). Again the size of the improvement is consistent with this job creation. Indeed, Hunter and Taylor (2001a) estimate that the Indigenous unemployment rate would be more than doubled if the scheme did not exist (to 44.8%). The other notable feature of graph 1.3 is that there is a different turning point for the overall Australian population for whom unemployment was particularly high around the recession of the early 1990s. That is, Indigenous unemployment rates peaked five years before the 1991 recession, which confirms the importance of Indigenous-specific factors.

The finding of significant decline in unemployment rates since 1996 resonates with an analysis of trends in increasing CDEP scheme employment and with the fact that purely administrative changes to the scheme are likely to have raised overall employment levels over the same period (Hunter & Taylor 2001a). Despite appearances that macro-economic factors are driving the results (especially the sustained economic growth since 1991), the recent decline in Indigenous unemployment is not part of a general labour market trend (Altman & Daly 1993).

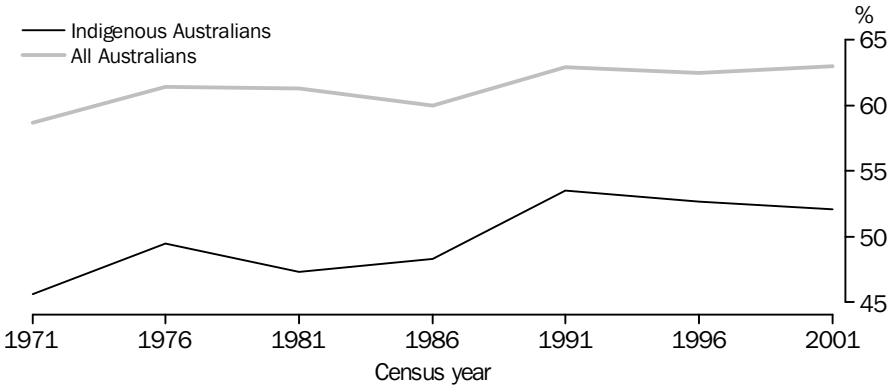
1.3 UNEMPLOYMENT RATES: TREND, Labour force who are employed



Source: Daly (1995: p. 5, table 1.3); 1996 and 2001 Census of Population and Housing.

Data from graph 1.4 clearly indicate that since 1971 Indigenous labour force participation has increased at a rate that is nearly twice that for the total population. Notwithstanding, the participation rate appears to have risen and then stabilised at just over 50%. Unlike the figures for employment and unemployment, the trends in Indigenous participation do not coincide exactly with the rise of the CDEP scheme. While it has been postulated by the Commonwealth Grants Commission (CGC 2001) and others that the scheme raises labour force participation in areas where the scheme is prominent, the effect is not likely to be direct. Hunter (2002b) postulates that the effect of the scheme is mediated through education, especially by reducing the discouraged worker effect for low skilled workers in non-metropolitan areas.

1.4 LABOUR FORCE PARTICIPATION RATES: TRENDS,
Population aged 15 years and over in labour force



Source: Daly (1995: p. 5, table 1.3); 1996 and 2001 Census of Population and Housing.

At the Australia-wide level, the effect of CDEP on participation is even less obvious with a large increase in labour force participation rates only evident between 1986 and 1991. Consequently, the increase in CDEP schemes in urban areas after 1991 may not have influenced participation to the same extent. This underscores the importance of disaggregating the analysis by geography in order to tease out the influence of living in depressed labour market conditions (where the discouraged worker phenomenon is likely to be concentrated).

Daly (1993) shows that the trends in female employment differed from those of males. The proportion of women in employment rose over the period 1971–1991, with particularly strong growth in the employment of Indigenous women between 1986 and 1991. This increase was offset by a reduction in the proportion of women who considered themselves outside the labour force, but women appear to have also moved from this category into unemployment. Unemployment among adult Indigenous females rose from 1.9% in 1971 to 11.8% in 1991. There was also a substantial increase in unemployment over the same period among the total female population, from 0.8% to 5.5% (Daly et al. 1993). Rather than extrapolate separate trends for males and females to 2001, the following discussion will focus on types of employment that are unlikely to be 'contaminated' by the effect of the CDEP scheme.

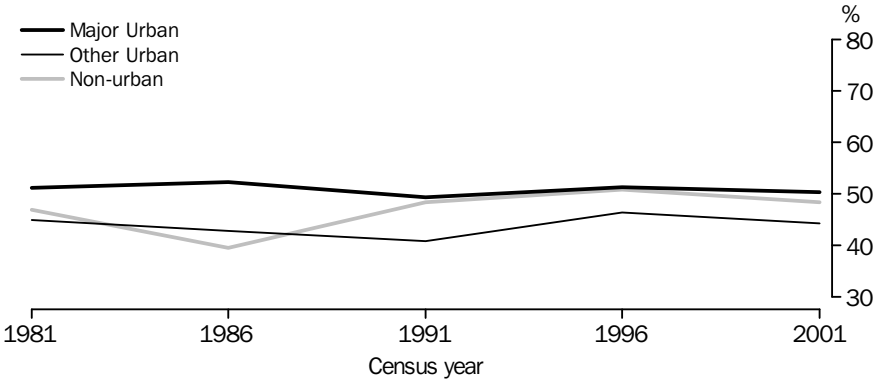
1.4 TRENDS IN EMPLOYMENT BY SECTION OF STATE

Clearly there is a need to disaggregate the overall labour force status to account for the influence of CDEP employment. Following Hunter (2002a), the effect of CDEP can be partially controlled for by exploiting the fact that the scheme has expanded at a differential rate and at different periods in the various sections of state. It is worth noting that the section of state classification provides only broad insights into the role of geography compared to other more recent systems of classifications such as the ABS remoteness categories or the classification devised by Roger Jones (2003). The advantage of a section of state breakdown is that it is comparable right back to 1981 and allows us to

document longer run trends in Indigenous labour force status. However, where long run trends are not being described, the Jones classification will be used in this monograph because it is a more sensitive instrument that permits greater insights into the Indigenous labour market (see Appendix 3).

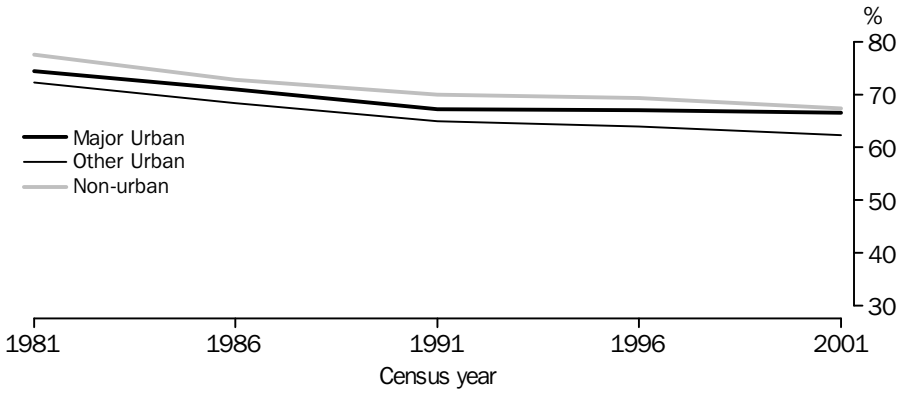
In major urban areas, Indigenous employment has been remarkably stable. Aggregate employment did not change appreciably for Indigenous males, being just over half of the population in both 1981 and 2001. In contrast, employment/population ratios for non-Indigenous males in major urban areas fell from just under three-quarters to two-thirds, largely due to the overall decline in the number of full-time jobs. Given that Indigenous workers are employed in a different segment of the market (Taylor 1993a; Taylor 1994), and are more likely to be employed in part-time work (Hunter & Gray 1998), these trends are easily explained. In the absence of discrimination and other labour market disadvantage, one might expect employment rates to equalise over the long run if the desire to work (i.e. labour supply preferences) is similar for Indigenous and other Australians. Given that Hunter and Gray (2001b) show that Indigenous people want to work as much as other Australians, it is probable that poor educational outcomes and discrimination are the main wedges preventing the convergence of Indigenous and non-Indigenous employment rates.

1.5 EMPLOYMENT/POPULATION RATIOS FOR INDIGENOUS MALES,
Indigenous male population aged 15 years and over, employed



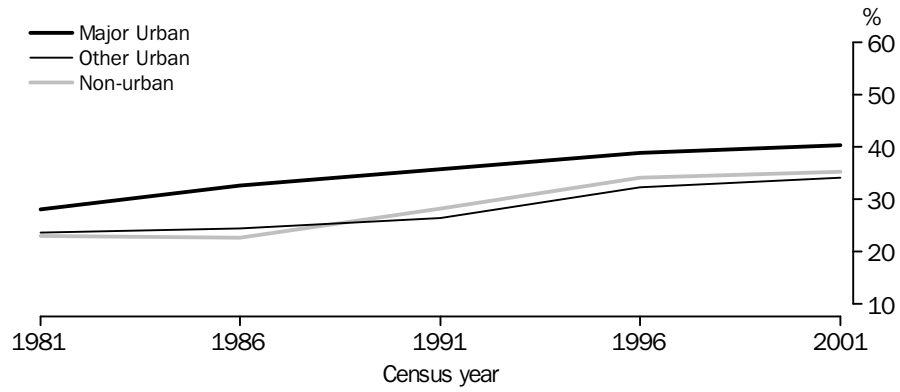
Source: Hunter (2002a); 2001 Census of Population and Housing.

1.6 EMPLOYMENT/POPULATION RATIOS FOR NON-INDIGENOUS MALES,
Non-Indigenous male population aged 15 years and over, employed



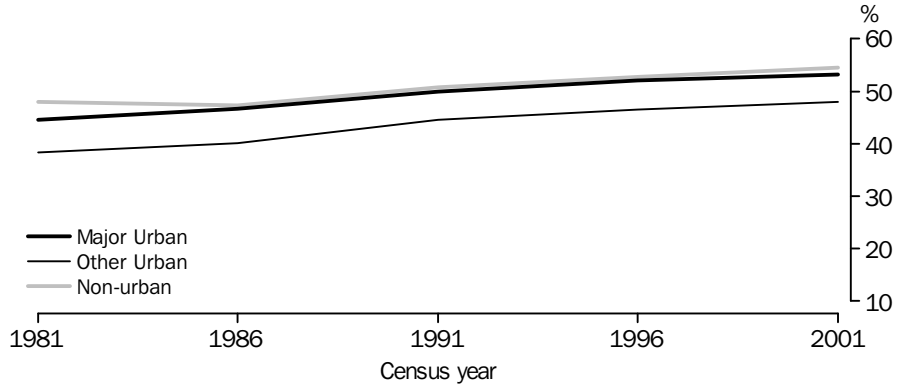
Source: Hunter (2002a); 2001 Census of Population and Housing.

1.7 EMPLOYMENT/POPULATION RATIOS FOR INDIGENOUS FEMALES,
Indigenous female population aged 15 years and over, employed



Source: Hunter (2002a); 2001 Census of Population and Housing.

1.8 EMPLOYMENT/POPULATION RATIOS FOR NON-INDIGENOUS FEMALES,
Non-Indigenous female population aged 15 years and over, employed



Source: Hunter (2002a); 2001 Census of Population and Housing.

As expected, the aggregate improvements in Indigenous employment in other areas are even more marked, presumably due largely to the expansion of the CDEP scheme. Given the impressive growth of the scheme in such areas, it is

probably surprising that employment did not increase by more in non-urban areas. One explanation is that the CDEP scheme is offsetting the general decline in rural industries and regional economies. However, the decline in non-Indigenous employment among males seems to be of a similar magnitude in major urban and non-urban areas. An alternative explanation is that males without employment or job prospects have migrated to the cities. Such explanations tend to be ad hoc and rather unsatisfactory, and this conundrum is briefly examined in the next chapter.

For females in non-urban areas, Indigenous employment grew much faster than that of non-Indigenous employment between 1981 and 2001. Most of the higher growth has coincided with the period in which the CDEP scheme expanded most rapidly. In other urban areas, employment growth among females was similar for Indigenous and non-Indigenous groups although the timing and extent of the growth was consistent with a substantial CDEP effect in other urban areas.

1.5 HOURS WORKED

The Australian economy has generated a disproportionate number of part-time jobs since the 1970s, which has led to a substantial increase in the number of part-time workers. Table 1.9 documents how this change is evident in the number of hours worked by Australians in the last four censuses. The proportion of males working part-time more than doubled for both the Indigenous and non-Indigenous populations. The proportion employed part-time also increased for females. This increase has been less marked because they were already more likely to be employed in such jobs. While the increase in the proportion of part-time work is greater for the Indigenous population, the difference is not as large as that implied by the substantial increase in the main Indigenous-specific labour market institution, the CDEP scheme.

Another less obvious trend is that Australians, especially non-Indigenous males, are now more likely to work longer hours (defined here as working 41 hours or more per week). While the increase in part-time employment is consistent with the rise of the CDEP scheme, it is unlikely to explain the increase in those working relatively long hours. Of course, it is entirely possible that the scheme has prevented the increase in the proportion of Indigenous employed working long hours being as large as it is for the rest of the Australian population.

1.9 DISTRIBUTION OF HOURS WORKED FOR EMPLOYED AUSTRALIANS AGED 15 YEARS AND OVER

	Indigenous				*Non-Indigenous*			
	1981	*1991*	*1996*	*2001*	*1986*	*1991*	*1996*	*2001*
	%	%	%	%	%	%	%	%
Males								
15 hours or less	6.4	7.9	9.8	10.8	3.5	5.0	6.2	6.7
16–34 hours	9.5	18.5	21.0	23.9	5.7	7.4	9.2	10.8
35–40 hours	64.1	53.4	47.0	40.5	53.2	47.6	40.5	38.6
41 hours and over	19.9	20.1	22.3	24.8	37.6	40.0	44.2	43.8
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Females								
15 hours or less	13.6	16.5	18.4	18.5	15.0	17.5	17.7	17.3
16–34 hours	21.2	26.9	29.9	32.9	21.9	24.1	26.9	28.9
35–40 hours	56.0	47.4	41.8	36.6	47.8	42.1	36.5	34.5
41 hours and over	9.1	9.2	9.9	12.1	15.2	16.3	18.9	19.3
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Note: Workers who were on leave from their employment, or did not state how many hours they worked in the week before the census, were excluded from the calculations. That is, they are assumed to have worked in the various categories of hours worked in the same proportion of those who did answer the question. Also, see Appendix 1.

Source: 1986, 1991, 1996 and 2001 Census of Population and Housing.

One operational assumption for eliminating the effect of the CDEP scheme is to focus on the fact that it historically has been provided in the form of part-time employment. Table 1.10 illustrates that CDEP scheme workers are much less likely to be working full-time. For males, 19.8% of CDEP workers are employed full-time compared to between 68.7% and 77.6% in the other industry sectors. Females are more likely to work part-time in all sectors but a similar differential exists between the CDEP scheme work and other employment. Note that in interpreting table 1.10, it should also be remembered that the census only collects data on CDEP status in remote Indigenous communities where a SIF form is used.

1.10 FULL-TIME EMPLOYMENT BY INDUSTRY SECTOR, Indigenous workers — 2001

	Commonwealth government	*State/terriotry government*	*Local government*	*Private sector*	*CDEP*	***Total***
	%	%	%	%	%	**%**
Males	77.6	74.4	71.7	68.7	19.8	**58.6**
Females	66.1	53.7	58.0	45.4	18.0	**43.7**

Note: The CDEP data reported here only represents part of the overall employment in the scheme because the question is only asked where a SIF is used.

Source: 2001 Census of Population and Housing.

That is, the bulk of workers in the CDEP scheme are part-time, but there is a reasonable number who work full-time. Such workers may be drawn from the ranks of managers and administrative staff who may be required to work full-time. The substantial number of full-time CDEP workers, at least in remote

areas, could be considered a measure of the scheme's success in providing 'real work'.

Clearly, focusing on full-time employment does not entirely eliminate the effect of the CDEP scheme on the analysis. However, if the CDEP scheme is to some extent substituting for government services that need to be provided in remote areas, and if these workers are aware of their attachment to the labour market, then full-time CDEP workers may behave like other workers. In this case, focusing on full-time workers will remove the potentially distorting influence of the scheme.

1.6 INCOME

Several chapters in this monograph focus on full-time employees to maintain symmetry with Daly's (1995) analysis. As indicated above it also provides an approximate means of analysing what would happen to the income of the employed if the CDEP scheme did not exist. In order to be consistent with Daly (1995), the annual income for the employed is disaggregated into that for full-time and part-time workers for the last three censuses. Note that the working age population used in this section is defined as being aged between 15 years and 64 years for the same reason.

The income story is obviously complicated by the inclusion of part-time employed CDEP scheme workers. Table 1.11 reports the trends in the real median annual income for part-time and full-time workers since 1991. The results are disaggregated by sex, because separate models will be estimated for males and females in Chapter 4.

Daly (1995) interprets the annual income of people who were employed full-time at the time of the census as reflecting their wage and salary income.[4] If one focuses only on full-time employed, then Indigenous 'wages' are improving relative to non-Indigenous norms. For males employed full-time, the ratio of Indigenous to non-Indigenous income improves from 0.74 to 0.77 with all the improvement in the first intercensal period. For females, the ratio improved from 0.85 to 0.87 with the gains being concentrated in the first five-year period.

If the practical reconciliation put forward by successive Howard government ministers was to be judged in terms of wages achieved (with anticipated flow-on effects for reducing Indigenous poverty), then it would be considered a failure.

Of course, low wages for full-time Indigenous workers could be off-set by increased employment prospects. Unfortunately, there is no aggregate evidence of improvements in Indigenous employment prospects relative to other Australians. Graph 1.2 showed that even if one included the CDEP scheme, employment rates increased at similar rates for both Indigenous and other Australians.

When the median income of the part-time employed is examined a similar picture emerges with substantial falls in the ratio of Indigenous to non-Indigenous outcomes. For Indigenous males employed part-time, there

was actually a fall in real income by approximately $600 between 1991 and 2001. For females, the income of the part-time employed increased from $12,485 to $14,132 over the same period. Consequently, the relative decline for Indigenous females in part-time work arises because they failed to keep up with the larger increases in wages of analogous non-Indigenous females. While the median income of Indigenous people working part-time is constrained by the conditions of the CDEP scheme, Indigenous females are probably less constrained than their male counterparts in that a substantial fraction are likely to have chosen part-time employment irrespective of the availability of the scheme (Hunter 2002b).

1.11 REAL MEDIAN ANNUAL INCOME, By hours worked for Australians aged 15–64 years

	Indigenous	*Non-Indigenous*	*Ratio Indigenous/ non-Indigenous incomes*
	Real median annual income (in $2001)		
1991			
Males			
Employed full-time	25 272	33 946	0.74
Employed part-time	11 676	20 944	0.56
Females			
Employed full-time	23 928	28 229	0.85
Employed part-time	12 485	14 541	0.86
1996			
Males			
Employed full-time	27 094	34 878	0.78
Employed part-time	11 411	18 270	0.62
Females			
Employed full-time	26 191	29 949	0.87
Employed part-time	13 334	15 699	0.85
2001			
Males			
Employed full-time	30 011	39 067	0.77
Employed part-time	11 087	20 684	0.54
Females			
Employed full-time	29 082	33 541	0.87
Employed part-time	14 132	17 619	0.80

Source: 1991, 1996 & 2001 Census of Population and Housing.

While the focus on full-time employment effectively eliminates most of the influence of the CDEP scheme on Indigenous employment, this is not the only method available. Indeed, the major drawback of the technique is that it throws out a lot of information about one of the major sources of job growth in the economy, part-time jobs (i.e. non-CDEP jobs). Another technique would be to disaggregate employment by industry sector, and to focus on what is happening in the private sector. The advantage of using the private sector as a control group when comparing Indigenous and non-Indigenous outcomes is that it focuses on jobs that are largely subject to market forces and can therefore be analysed in terms of labour 'demand' in the Australian labour market. The disadvantage is that it ignores a substantial fraction of

Indigenous employment, the public sector. However, given the policy importance of the private sector, this compromise is worthwhile, especially if it enhances the interpretability of the trends in Indigenous labour market indicators.

1.7 INDUSTRY SECTOR OF EMPLOYMENT

The public or government sector, defined for census purposes as Commonwealth, state/territory and local governments, plays a significant role in Indigenous employment. Table 1.12 shows that the proportion of total Indigenous employment in the government sector increased by 11.6 percentage points between 1976 and 2001, while the proportion of employment for the total population in this sector declined by 7.7 percentage points. Conversely, Indigenous employment in the private sector (the balance) declined, while that for the total population increased.

Within the government sector, the proportion of Indigenous employment in the local government sector has increased by a factor of more than four. Needless to say this increase is related to the CDEP scheme. In the last two censuses, where CDEP data was explicitly collected, it was assumed to be in the local government sector. Before 1996, such employment was most likely to be coded as being in that sector. In contrast, overall Australian employment in the local government sector was almost identical in 1976 and 2001. Other government employment declined for both Indigenous and other Australians, albeit with larger falls for the latter.

1.12 EMPLOYMENT, By industry sector

	1976	*1986*	*1991*	*1996*	*2001*
	%	%	%	%	%
Indigenous Australians					
Commonwealth government	7.3	9.4	8.3	8.4	6.7
State government	18.7	23.3	16.9	15.1	13.7
Local government	5.2	6.9	9.9	21.1	22.5
Total government sector	*31.2*	*39.6*	*34.9*	*44.5*	*42.8*
Total Private sector	*68.8*	*60.4*	*65.1*	*55.5*	*57.2*
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Australian Population					
Commonwealth government	7.6	7.7	6.7	4.9	4.9
State government	15.3	15.7	13.9	11.6	10.2
Local government	1.7	2.2	2.1	1.7	1.8
Total government sector	*24.6*	*25.6*	*22.3*	*18.2*	*16.9*
Total Private sector	*75.4*	*74.4*	*77.7*	*81.8*	*83.1*
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Note: The 'not stated' category is included in the private sector to maintain consistency with 1976. CDEP category in 1996 and 2001 are integrated into the local government sector. Note that the 1981 census results are not included because they were not provided in Altman and Daly (1995).

Source: Altman and Daly (1995); 1996 & 2001 Census of Population and Housing.

As indicated above, given the possibility of substitution between CDEP scheme employment and other government activities, it is analytically cleaner to focus on private sector employment. The fact that the percentage of Indigenous workers employed in the private sector is going in the opposite direction to the overall trend, means that the ratio of Indigenous to total Australian outcomes has fallen from 0.91 in 1976 to 0.69 at the last census.

1.8 INDUSTRY OF EMPLOYMENT

While the effect of CDEP scheme employment on trends in the industry sector is transparent, there have also been other changes in the types of jobs held by Indigenous Australians. Altman and Daly (1995) present the distribution of the Indigenous and non-Indigenous employed populations by industry from 1976 to 1991. After the 1991 census categories were changed to those listed in the second edition of *Australian and New Zealand Standard Industrial Classification* (ANZSIC) cat. no. 1292.0, several new major divisions were included. Notwithstanding the changes in classification, industry data are broadly comparable over time if the appropriate caveats are provided (see Appendix 1). The pre-1996 analysis is based on the data in Altman and Daly (1995), whereas the discussion for the last two censuses arises from tables presented in the text.

In 1971, the broad industry groups of community services, agriculture and manufacturing accounted for just over 60% of Indigenous employment, whereas for the rest of the population manufacturing, wholesale and retail trade, and community services accounted for over 50% of employment. For the non-Indigenous population, the same three broad industry sectors remain of primary significance, although the order of significance has changed since 1971. The two major areas of Indigenous employment in 1991 are community services and public administration, with employment in the latter having grown rapidly as a result of the growth of the CDEP scheme. Important areas of employment decline included agriculture, construction, mining and manufacturing, that is, in the primary and secondary sectors. Similar, but less marked shifts were evident for the total population in the same period. For both, industry of employment concentration has declined as demonstrated by Taylor (1993a).

The transition of Australia towards being a post-industrial economy has affected Indigenous and other Australians differently. Almost one-quarter of Indigenous employment was in agriculture in 1971 — Indigenous workers were 18.2 percentage points more likely to be employed in this sector than non-Indigenous workers. Indigenous employment in this sector more than halved between 1971 and 1976 and then declined at a slightly higher rate than in the Australian economy as a whole. By 1991, the proportions of Indigenous and other Australians employed in this sector were virtually identical. The large decline in Indigenous employment in the pastoral industry in the early 1970s occurred well after the equal pay case that some commentators posited may have priced many Indigenous workers out of the market.[5] In a sense,

Indigenous employment in this sector was a victim of the long run move to more capital intensive agricultural techniques that was happening throughout the economy (Altman & Nieuwenhuysen 1979).

The uneven adjustment of Indigenous employment to emerging industrial trends is most evident in manufacturing where there was a substantial increase between 1971 and 1976, before falling more or less consistently, as it had in the rest of the economy. It is particularly noteworthy that Indigenous employment was always less concentrated in manufacturing, and the wholesale and retail trade — sectors that are traditionally large employers of relatively unskilled labour. From an Indigenous perspective, the decline in the pastoral industry occurred at an unfortunate time, just before the large-scale 'downsizing' and structural change in the manufacturing sector eliminated many potential jobs for unskilled people, including many Indigenous workers.

Indigenous employment in the community services sector is also variable, experiencing a decline of 10 percentage points between 1971 and 1976. Indigenous employment in community services boomed after 1976, especially after 1981. This trend has an obvious symmetry with rise of the CDEP scheme.

Given that there were several changes in the distribution of the industry of employment between 1996 and 2001, the following discussion focuses on the latter census (table 1.13). The only noteworthy change between the last two censuses was that Indigenous male employment in the health and community services sector fell by 9.2 percentage points, whereas government administration and defence increased by 4.6 percentage points. While this partially reflects fluctuations in the areas CDEP employment is located, any decline in males employed in the health sector may be of particular concern given ongoing health issues facing many Indigenous people, especially those of Indigenous males.

At a broad level, the 2001 census has similar concentrations of Indigenous employment to that evident in 1991. Government administration, manufacturing, and construction were the main sources of jobs for Indigenous males, whereas Indigenous females were concentrated in government administration, education, health and community services, and the retail trade.

1.13 DISTRIBUTION OF EMPLOYMENT ACROSS INDUSTRIES — 2001

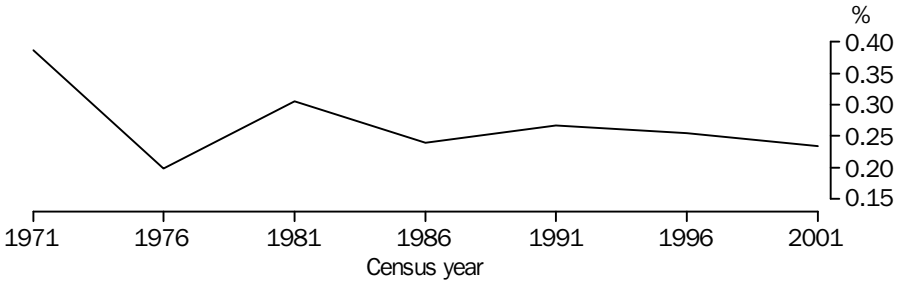
	Indigenous males	*Non-Indigenous males*	*Indigenous females*	*Non-Indigenous females*
	%	%	%	%
Agriculture, Forestry & Fishing	6.2	5.2	2.2	2.7
Mining	2.4	1.5	0.4	0.3
Manufacturing	10.9	16.7	3.5	7.4
Electricity, Gas & Water Supply	0.7	1.1	0.2	0.3
Construction	9.5	10.9	1.2	2.0
Wholesale Trade	4.4	6.7	2.1	3.9
Retail Trade	7.8	13.0	11.7	17.4
Accommodation, Cafes & Restaurants	2.9	4.1	6.0	6.3
Transport and Storage	5.3	6.0	1.4	2.5
Communication Services	1.7	2.2	1.1	1.4
Finance and Insurance	0.6	3.1	1.6	4.8
Property and Business Services	5.8	11.2	8.1	11.7
Government Administration & Defence	21.6	4.4	19.8	4.4
Education	4.2	4.2	14.0	11.1
Health and Community Services	6.6	3.9	19.0	17.3
Cultural and Recreational Services	2.6	2.4	2.4	2.7
Personal and Other Service	6.9	3.5	5.4	3.9
Total	**100.0**	**100.0**	**100.0**	**100.0**

Source: 2001 Census of Population and Housing.

One way of summarising the difference in the industry structure of Indigenous and non-Indigenous employment is to calculate segregation indexes (see Appendix 2). In order to measure changes in industry segregation over time, the segregation index has been calculated for the 12 broad industry divisions as revealed by successive censuses between 1971 and 2001 (see graph 1.14). The Duncan index has been used because it is relatively easy to interpret — it represents the proportion of Indigenous workers (or non-Indigenous workers) who would have to change their industry of employment in order to eliminate any racial difference in the statistical distributions (Duncan & Duncan 1955).

The changes to the ANZSIC classification of industry in 1993 may either increase measured segregation by increasing the number of divisions.[6] Alternatively, the distribution of employment within industries can also lead to apparently lower segregation, depending on which jobs are allocated to which division.

1.14 TRENDS IN INDUSTRY SEGREGATION BETWEEN INDIGENOUS AND NON-INDIGENOUS WORKERS



Note: People who could not be classified according to industry were excluded from this table. Appendix 1 describes the changes to the ANZSIC classifications that took place between 1991 and 1996.

Source: Altman and Daly (1995); and author's calculations based on the Census of Population and Housing, 1996 and 2001.

Despite the potential effect of 1993 changes to ANZSIC on measured segregation, there appeared to be little change in the index in this period. Most of the changes in segregation occurred in the 1970s and early 1980s, a period of significant structural adjustment in the Australian economy. As argued above, the decline of agricultural and manufacturing sectors as employers of labour appeared to have differentially affected Indigenous workers who were historically over-represented in these industries.

Notwithstanding the lower than expected Duncan Index for 1976, it appears from the overall reduction in the index that the degree of industrial segregation has declined at a steady rate since 1971. In statistical terms, this means that almost 40% of Indigenous workers in 1971 would have been required to change their industry of employment to achieve an industry profile equivalent to that of other Australians. In 2001, the same effect would have been achieved if just under one-quarter of employees had relocated their industry of employment.

At first glance, these results would appear to be encouraging, particularly if the trend towards reduced segregation were to continue. It would also seem that the notion of a separate labour market existing for Indigenous people outside of (or within) the wider labour market is less convincing now than in the past. However, before drawing any firm conclusions along these lines a degree of caution is due. Leaving aside doubts over the ability of the Duncan Index to adequately measure changes in segregation over time (Karmel & Maclachlan 1988), analysis at the broad industry level may mislead owing to a capacity of the Index to obscure concentrations which may be present in intra-industry employment patterns.[7] This, however, is another story.

These segregation indexes can be benchmarked against the sex segregation index for the total Australian population. The difference between overall male and female distribution across industries was 0.301 and 0.298 in 1996 and 2001 respectively — substantially higher than segregation between Indigenous and non-Indigenous employment. That is, about 30% of male (or female) workers

would have to change their occupation in order to eliminate the sex differences between two distributions.

The impression of stability is misleading because CDEP is a major factor underlying the growth in community services and government administration. Consequently, the distribution of employment and segregation indexes are also estimated separately for the private sector (tables 1.15 and 1.16).

While some differences remain between the Indigenous and non-Indigenous populations, the distribution of employment by industries is relatively even in the private sector compared to the public sector. Therefore overall segregation is driven by public sector employment, which in turn has a disproportionate concentration of Indigenous workers employed in the industry category 'Government Administration and Defence'.

1.15 DISTRIBUTION OF EMPLOYMENT ACROSS INDUSTRIES IN THE PRIVATE SECTOR — 2001

	Indigenous males	*Non-Indigenous males*	*Indigenous females*	*Non-Indigenous females*
	%	%	%	%
Agriculture, forestry and fishing	8.7	5.8	3.3	3.3
Mining	4.0	1.7	0.6	0.3
Manufacturing	17.7	19.2	6.1	9.1
Electricity, gas and water supply	0.5	0.6	0.1	0.2
Construction	13.3	12.1	1.8	2.5
Wholesale trade	7.2	7.7	3.7	4.8
Retail trade	12.6	15.1	20.4	21.6
Accommodation, cafes & restaurants	4.6	4.7	10.2	7.7
Transport and storage	6.9	6.1	2.2	2.9
Communication services	1.0	1.3	0.6	0.8
Finance and insurance	0.9	3.5	2.7	5.8
Property and business services	7.7	12.4	11.3	13.8
Governement administration & defence	0.2	0.1	0.2	0.1
Education	2.2	1.8	7.8	5.6
Health and community services	5.5	2.9	21.1	14.7
Cultural and recreational services	3.0	2.4	2.9	2.7
Personal and other service	3.9	2.6	4.8	4.0
Total	**100.0**	**100.0**	**100.0**	**100.0**

Source: 2001 Census of Population and Housing.

Table 1.16 confirms this, with the private sector having about half the level of segregation between Indigenous and non-Indigenous employment evident in other sectors. Given that the growth of CDEP employment is in the public sector, it is possible that the trend to lower segregation evident in graph 1.14 may have continued if CDEP did not grow so much since 1986. The fact that segregation of employment between the sexes was almost three times that between Indigenous and non-Indigenous employment in the private sector, confirms that racial segregation is not the most prominent feature of the Australian labour market.

In theory, segregation in employment can be driven by either the preferences of individuals for particular types of work or indicate the degree of constraint on the choices of individual Indigenous workers arising from the decisions of

employers. Given the relatively low level of racial segregation in private sector employment, at least in relation to Indigenous Australians, it would be a mistake to overemphasise the impediments to Indigenous employment in the various industries.

1.16 INDUSTRY SEGREGATION, By sector of employment — 2001

	Indigenous/non-Indigenous segregation			*Sex segregation*
	Males	*Females*	*Persons*	
Private sector	0.124	0.126	0.118	0.308
Non-Private sector	0.276	0.278	0.283	0.319

Note: Arguably, it may be difficult to interpret segregation indexes for the non-private sector for industry given the understandable concentration of activity in the government sector. This is not a problem for measuring occupational segregation because no one occupation is exclusively, or nearly exclusively, identified within the public sector.

Source: Table 1.13; 2001 Census of Population and Housing.

However, before disaggregating everything by industry sector, it is important to recognise that there may be a potential issue arising from the accuracy of ABS coding with some CDEP jobs being possibly coded in the private sector. If this is the case then the technique may not be valid. Altman and Taylor (1995) found this to be an issue for the 1986 and 1991 censuses when they found that certain industry classes associated with the CDEP scheme had disproportionate Indigenous employment in the private sector. The replication of Altman and Taylor's methodology using 1996 or 2001 census data revealed that such coding problems were not evident in the last two censuses. Overall, Indigenous private sector workers were only slightly over-represented in the industry classes identified as being the source of a potential coding problem.[8]

1.9 OCCUPATION

The occupational structure is much less likely to change over time than the industrial structure since it largely reflects the level of skill and education, where Indigenous Australians are unequivocally disadvantaged (Gray, Hunter & Schwab 2000). Consequently, the focus here is on the 2001 census with a passing reference to 1996 distributions.

Table 1.17 illustrates that Indigenous males and females are consistently under-represented in the high skilled occupations, such as managers and professionals, and over-represented in the relatively low skilled occupations especially labourers.

The segmented nature of occupational employment is revealed by estimating segregation indexes. The first thing to note is that the female index is lower than that for males, largely as a result of the relatively large numbers of Indigenous females working as professionals and associate professionals. In general, the occupational segregation index for persons lies between the male and female segregation index. For example, it was 0.202 in both 1996 and 2001.

As anticipated the differences in occupational distributions appear to persist over time.

These segregation indexes can again be benchmarked against the sex segregation index for the total Australian population. The difference between overall male and female distribution across occupations was 0.381 and 0.380 in 1996 and 2001 respectively. That is, about 38% of males (or females) would have to change their occupational affiliation to equate the distributions of the sexes. As with the industry, occupational segregation between Indigenous and non-Indigenous employment is relatively small compared to that between the sexes.

1.17 DISTRIBUTION OF OCCUPATION — 2001

	Indigenous males	*Non-Indigenous males*	*Indigenous females*	*Non-Indigenous females*
	%	%	%	%
Managers & administrators	4.7	12.5	3.1	5.9
Professionals	8.4	16.3	15.4	21.7
Associate professionals	7.9	12.3	10.3	11.7
Tradespersons and related workers	17.0	20.4	3.1	3.0
Advanced clerical and service workers	0.4	0.8	3.7	7.5
Intermediate clerical, sales & service workers	8.5	8.8	31.4	26.5
Intermediate production & transport workers	16.2	12.9	2.8	2.5
Elementary clerical, sales & services workers	5.6	6.1	13.0	14.2
Labourers and related workers	31.2	9.9	17.0	7.0
Total	**100.0**	**100.0**	**100.0**	**100.0**
Segregation of Indigenous and non-Indigenous employment	0.246		0.154	

Source: 2001 Census of Population and Housing.

Again, it is important to control for distortions introduced by the CDEP scheme and other public sector employment. Table 1.18 reports the distribution for the private sector. As expected, the difference between the distribution in the private sector is not that different from the overall distribution when occupational data is examined because no occupations are associated exclusively with a particular industry sector. One feature of this table is that there are fewer professionals and associate professionals in the private sector distributions. The converse of this is that there tends to be more tradespersons, and production and transport workers. The importance of examining the private sector is underscored by the fact that there are more non-Indigenous labourers and related workers in the private sector relative to other sectors, but fewer Indigenous workers in such occupations. This is presumably related to the large number of unskilled labouring positions currently provided in the CDEP scheme.

1.18 DISTRIBUTION OF OCCUPATION OF EMPLOYMENT IN THE PRIVATE SECTOR — 2001

	Indigenous males	*Non-Indigenous males*	*Indigenous females*	*Non-Indigenous females*
	%	%	%	%
Managers & administrators	5.3	13.0	3.3	6.2
Professionals	7.1	13.8	11.6	15.9
Associate professionals	7.1	11.6	10.4	11.9
Tradespersons and related workers	22.4	21.7	4.4	3.6
Advanced clerical and service workers	0.5	0.8	5.1	8.5
Intermediate clerical, sales & service workers	7.6	8.3	30.1	26.7
Intermediate production & transport workers	20.9	13.9	3.8	3.0
Elementary clerical, sales & services workers	6.4	6.2	17.4	16.3
Labourers and related workers	22.6	10.5	13.9	8.0
Total	**100.0**	**100.0**	**100.0**	**100.0**

Source: 2001 Census of Population and Housing.

1.19 OCCUPATIONAL SEGREGATION, By sector of employment — 2001

	Indigenous/non-Indigenous segregation			*Sex segregation*
	Males	*Females*	*Persons*	
Private sector	0.201	0.120	0.161	0.385
Non-Private sector	0.416	0.300	0.339	0.306

Source: Table 1.13; 2001 Census of Population and Housing.

The value of a separate analysis of the private sector is reinforced by the segregation indexes reported in table 1.19. Measured segregation in the private sector is about half that outside the sector. The influence of the CDEP scheme should be controlled for if one wants some insight into constraints on Indigenous employment arising from the demand side of the economy.

The segregation of Indigenous and other employment can be juxtaposed against that evident between the sexes for the Australian population. In contrast to the analysis by Indigenous status, sex segregation is substantially higher in the private sector than elsewhere. This emphasises the nature of CDEP scheme employment, and underscores the importance of controlling for its effect in order to enhance our understanding of the processes underlying the Indigenous labour market.

1.10 OUTLINE OF OTHER CHAPTERS

The next chapter introduces labour supply issues (broadly defined) as revealed by demographic trends and changes in labour force participation rates. The former is particularly important given the substantial increases in Indigenous identification in recent censuses. The issue of geographic mobility needs to be introduced, even if it is not analysed in detail. It should be noted that the analysis of labour supply is not structural in nature, but relates to labour force

participation of the working age population consistent with the self-identified population in 2001.

The analysis of the 'demand-side' of the Indigenous labour market in Chapter 3 also cannot be interpreted as if it were providing information from a structural economic model of the labour market. Rather it is a detailed description of the Indigenous workers employed in the private sector based on the question: what is the expected increase in employment given current persistent industrial and occupational segregation among Indigenous and other Australians? A 'shift-share analysis' of industry and occupation of employment in the 1996 and 2001 censuses will provide the basis for such estimates. Note that such estimates have never been attempted for the Indigenous population and consequently they will represent a substantial contribution in our understanding of Indigenous employment growth.

Chapter 4 uses multivariate regression techniques, such as the simple logistic regression models, (see Appendix 5) to provide some insight into the determinants of Indigenous employment and participation and the income of the employed. Another novel feature of the analysis is that a recently developed decomposition technique is used to summarise the differences between Indigenous and other Australian employment (Nielsen 1998).

Given the prominence of discussions of the role of Indigenous business in promoting economic independence, it is also relevant to update Daly's (1995) analysis of Indigenous self-employment. Chapter 5 sets out to expand on the earlier analysis by using the relatively large numbers of Indigenous people identifying as self-employed in the 2001 census to justify a more disaggregated analysis that accounts for the scale of the business enterprise and the conditions in the local regional market (i.e., labour, product, and service markets).

The final chapter identifies the distinguishing features of the Indigenous labour market by drawing out the lessons of the other chapters. Discussion centres on the extent to which the results are either similar to or different from those of Daly (1995). Charting the evolution of our understanding of Indigenous labour force status is crucial to the design of effective policy to address this vital public issue.

ENDNOTES

1. In practice, some CDEP scheme projects may not always operate in this way. For example, it is possible to top up unemployment benefit entitlements with income from painting Indigenous art, an activity sponsored by many CDEP organisations. Also, some CDEPs do not compel everyone to work for the equivalent of their benefit entitlement.
2. The CDEP scheme proved immediately popular, but was initially beset by a number of budgetary and administrative problems, which inhibited its expansion.
3. The lack of regular and accurate labour force estimates has been a long-standing and recurring concern of Indigenous affairs policy-makers (Altman 1992: pp. 2–4). Indeed, it was the dearth of information with

which to inform the Royal Commission into Aboriginal Deaths in Custody that caused the Commissioner to recommend a special national survey of the Indigenous population (Commonwealth of Australia 1991: p. 62). This recommendation resulted in the 1994 National Aboriginal and Torres Straight Islander Survey (NATSIS) that provided the first estimates of Indigenous labour force characteristics between censuses. Coincidentally, in 1993, the ABS made a decision to include a question on Indigenous identity in the March 1994 LFS. Indigenous identity was also sought in the 1995 National Health Survey, which includes the standard question on labour force status.

4. It is reasonable to assume that full-time workers gross annual income is from wages given that the majority of such workers only receive a small proportion of their income from other sources (ABS 1995). This assumption would tend to break down if people were not employed for a full year (see Daly & Hunter 1999).

5. For example, Kerr (1986) discussed the implications of the Northern Territory Cattle Station Industry Award Case of 1965 in some detail.

6. Note that the segregation indexes were also estimated for the 6-digit industry classification using 1996 and 2001 data. The trends in segregation were the same as those identified above with both male and female segregation indexes hovering about the 0.40 mark. At this extreme, the random allocation of small numbers of Indigenous employed across the various Industries lead to significantly higher measures of segregation — almost twice that measured using the major industry divisions.

7. Jones (1991b) finds no decisive theoretical basis for preferring a weighted index, especially when examining small sub-populations.

8. Indeed, for most of the 'problematic' industry classes identified by Altman and Taylor, there were no Indigenous workers classified in the private sector in 1996 or 2001. The industry categories examined were: Legal Services; Government Administration, undefined; Government Administration ex Defence; Central Government Administration; State Government Administration; Local Government Administration; Justice; Foreign Government Representation; Defence; Government Administration, Defence, undefined; Community Health Centres; Community Services, undefined; Community Care Services, undefined; Health, Community Service, undefined; Police Services; Parks & Gardens, undefined; and Accommodation.

CHAPTER 2 LABOUR SUPPLY, DEMOGRAPHY AND MOBILITY

According to standard economic theory, labour force status is determined in a two-stage process. In the first stage individuals decide whether or not they wish to supply their labour to the market. In the second stage a combination of factors determines whether or not individuals are employed, including labour demand conditions, incentives to search for work, and willingness to accept any job offers. This chapter provides a perspective on the basic insights into Indigenous labour supply available from census data. The next chapter explores some elementary aspects of labour demand.

One early attempt to explore labour supply decisions in an Indigenous context was undertaken by Altman and Nieuwenhuysen (1979: pp. 201–204). They presented a standard neo-classical model of labour supply that explored the implications of Indigenous preferences. Somewhat presciently, Altman and Nieuwenhuysen identify the nascent CDEP scheme as a possible mechanism for enhancing Indigenous labour supply, primarily by introducing flexible working arrangements that would be attractive to communities in remote Australia.

At the outset, it is important to recognise that a census-based analysis is limited by the data available. Given the limited range of variables collected when enumerating the entire population, it is worth recounting the broad findings of the existing literature. Daly (1995) explains labour force participation of individual Indigenous males and females in terms of a basic set of education, marital status, and geographic variables. Understandably, Daly's findings are consistent with a rudimentary human capital model. More sophisticated analysis of labour supply might focus on collective models of family labour supply that examine the interaction between household production and labour provided to the market (Blundell & Macurdy 1999). Unfortunately, the data required to test such models does not exist in the Indigenous context.

Notwithstanding, theoretical difficulties in modelling Indigenous labour supply, survey and other data can be used to extend the range of factors empirically studied to include cultural and social environmental factors. Indigenous-specific cultural factors are particularly important in determining labour force status (Hunter & Gray 2001b). The variables that capture the access of an individual to traditional lifestyles, whether a respondent speaks an Indigenous language or engages in hunting and gathering, are associated with significant reductions in labour supply and declines in the desire to work in the mainstream labour market. Of particular importance, from the perspective of family policy, is the high proportion of Indigenous female discouraged workers who report child care and other family responsibilities as the major reason they are not looking for work. While this result may be surprising given the extensive family

networks and the high rates of informal care typical of Indigenous families, there is evidence that these networks are often not well suited to providing reliable and predictable child care which is required for participation in paid employment (Hunter & Gray 2002).

Hunter (2002b) explored possible interactions between the CDEP and Indigenous labour supply using a combination of census and survey data. He found that the scheme enhanced Indigenous labour force participation between 1981 and 1996 by overcoming established barriers to Indigenous labour force participation and providing work managed by, and on behalf of, the local community. The interaction between education and overall labour supply is one of the main factors underlying the significant increase in Indigenous participation rates since the 1980s. A second order implication of that analysis is that the CDEP scheme tends to hide a high level of underemployment among Indigenous Australians.

While a census-based analysis is constrained in that it cannot directly model the desire to work, it provides important benchmarks of who is participating in the labour force. The remainder of this chapter builds on statistics detailed in the first chapter.

This chapter has three main sections. The first section documents trends in labour force participation rates by age, sex and, in broad terms, labour market conditions; this section includes a cohort analysis that extends Hunter and Gray's work (1998) to take into account 2001 census data. This section also revisits salient aspects of Hunter's (2002b) study and extends it in a similar fashion. The second section provides a detailed examination of patterns in mobility for Indigenous and other Australians. The concluding section explores the policy implications of the evidence on Indigenous labour supply, especially in terms of the prospect for reducing Indigenous disadvantage in labour force status.

2.1 COHORT ANALYSIS OF LABOUR FORCE PARTICIPATION RATES

In line with trends for the overall Australian population, the Indigenous participation rate has generally fallen for males and increased for females. Table 2.1 shows that between 1981 and 2001 the Indigenous male participation rate fell for many age groups, especially between 1991 and 2001. For example, 70.8% of Indigenous males aged between 25 years and 34 years participated in 2001 compared to 79.6% of the same age group in 1991 (i.e., the cohort aged 35–44 years at the 2001 census). At the same time the non-Indigenous participation rates also fell, although the size of the fall was somewhat smaller. The relatively large decline in participation among male youth is attributable to increasing retention rates at school and higher education institutions. In contrast, the participation rate of Indigenous female youth aged 15–24 years increased from 38.4% to 42.5% and the non-Indigenous female rate rose from 63.9% to 64.9%. Since educational retention rates also increased for females, the

lack of change in labour force participation among young non-Indigenous females is probably indicative of the long run tendency for young people to delay their fertility decisions and have fewer children.

Overall, table 2.1 reveals that Indigenous labour force participation is lower in almost all age cohorts except the very oldest age group in 2001. That is, if Indigenous people do survive to old age, they are more likely to be participating in the labour market than in the past. This is probably explained by higher mortality rates selectively affecting the less educated people in the Indigenous population. In contrast, early mortality appears to be less selective among the non-Indigenous population.

2.1 LABOUR FORCE PARTICIPATION, By age cohort

	Indigenous			*Non-Indigenous*		
Age group (years) at 2001 census	*1981*	*1991*	*2001*	*1981*	*1991*	*2001*
	%	%	%	%	%	%
Males						
15–24	na	na	55.3	na	na	66.7
25–34	na	61.9	70.8	na	69.3	91.0
35–44	62.7	79.6	69.4	76.1	94.3	90.6
45–54	77.0	77.0	63.9	95.5	94.1	86.8
55–64	72.2	64.9	42.1	95.2	89.8	62.6
65–74	63.2	44.3	12.3	91.6	64.9	15.8
75 years and over	27.3	9.4	11.2	43.1	9.8	5.5
Females						
15–24	na	na	42.5	na	na	64.9
25–34	na	43.2	47.5	na	63.9	71.0
35–44	38.4	46.3	53.4	63.9	67.9	72.1
45–54	32.6	49.8	50.3	54.3	72.5	72.2
55–64	32.2	39.5	25.2	59.7	65.1	38.8
65–74	26.7	16.0	6.5	51.7	27.3	7.1
75 years and over	10.1	4.7	5.7	14.4	3.9	2.1

Note: na denotes that labour force status was not applicable for people aged less than 15 years at the respective censuses.
Source: 1981, 1991 & 2001 Census of Population and Housing.

Table 2.1 also illustrates changes in labour market participation over the life cycle. For Indigenous males aged between 35 years and 44 years in 2001, their labour force participation rate is initially 62.7% when they first enter the labour market (i.e. in 1981), increases sharply to 79.6% in 1991, before falling away to 69.4% at the last census. For the analogous cohort of non-Indigenous males, participation increases by a similar amount as they enter the prime-age group, but falls away by less as the cohort reaches the 35–44 year age group. Hence the initial difference in labour force participation is perpetrated, and grows slightly over time.

At the other end of the life cycle, non-Indigenous cohorts tend to withdraw from the labour force more rapidly than Indigenous cohorts, largely because of higher rates of initial engagement in the labour market. Indeed, almost two-thirds (or 64.9%) of the second oldest non-Indigenous male cohort were still participating in the labour market when they were aged between 55 years

and 64 years old (in 1991), but this declines to 15.8% when they were aged 65–74 years (in 2001).

The low Indigenous labour force participation rate in every age group, combined with the relatively low levels of Indigenous employment, provides evidence that there is a net discouraged worker effect in operation (also see Hunter 2002b; Hunter & Gray 2001b). The process by which Indigenous people are discouraged from participating in the labour force is observed even for the youngest cohort. That is, the Indigenous cohort who commenced their working lives between 1981 and 1991 are much less likely to participate than their non-Indigenous counterparts. For example, only 38.4% of Indigenous females aged 15–24 years in 1981 participated in the workforce, more than 25 percentage points lower than the analogous non-Indigenous cohort. It is probably not a coincidence that non-CDEP scheme employment for this Indigenous cohort is more than 20 percentage points lower than for the comparable non-Indigenous female cohort (Hunter & Gray 1998). This is particularly troubling for policy makers, since participation appears to be constrained even before Indigenous people have had the opportunity to enter the workforce.

2.2 TRENDS IN LABOUR FORCE PARTICIPATION BY SECTION OF STATE, 1998–2001

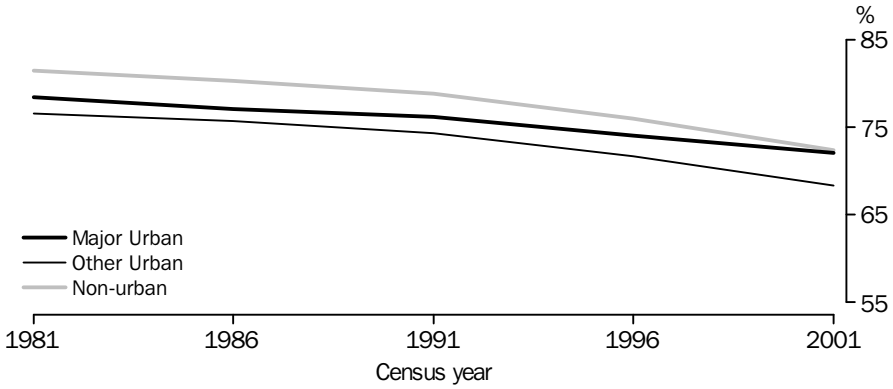
The rise of the CDEP during the 1980s and 1990s was described in detail in Chapter 1. Hunter (2002b) uses the differential growth of the CDEP scheme in metropolitan and remote areas to isolate the effect of the CDEP scheme on both employment and participation rates. In that paper, I demonstrate that Indigenous labour force participation in major urban areas, which was largely untouched by the CDEP scheme in 1996, follows similar paths for the Indigenous and non-Indigenous population. Irrespective of whether a person is Indigenous or not, males tend to participate less, and females experience an increase in 'labour supply' through time. However, in non-urban areas where the expansion of the CDEP scheme has been most pronounced, participation rates of Indigenous males increased substantially between 1981 and 1996. This section extends that analysis to 2001, and focuses on the population aged over 15 years. The section of state classification is used to describe the long run-trends.

The overall trends in Indigenous and non-Indigenous participation rates show that any effect of the presence of a CDEP scheme on labour supply is not as direct as it was for Indigenous employment (which closely tracked the growth of the scheme — see Hunter 2002a detailed analysis). Overall the net trends in labour force participation are not dissimilar, with male rates tending to decline in the long run and female participation tending to rise (see graphs 2.2 to 2.5). The obvious difference between the two populations is that Indigenous people are less likely to be participating in the labour market than their non-Indigenous counterparts.

The changes in Indigenous participation rates are greater than could be explained by the secular changes in labour supply in the rest of the population. While this observation is valid for major urban areas (albeit to a much lesser extent), the main differences occur in areas where the CDEP has expanded dramatically. For example, Indigenous male participation rates in non-urban areas actually increased, especially with the initial expansion of the scheme between 1981 and 1986. However the role of the CDEP scheme should not be overstated in this intercensal period as the increased participation rates among Indigenous males were evident in all three sections of state. Since 1986, the male participation rate has declined slightly, but remained higher than the 1981 rate until the last census.

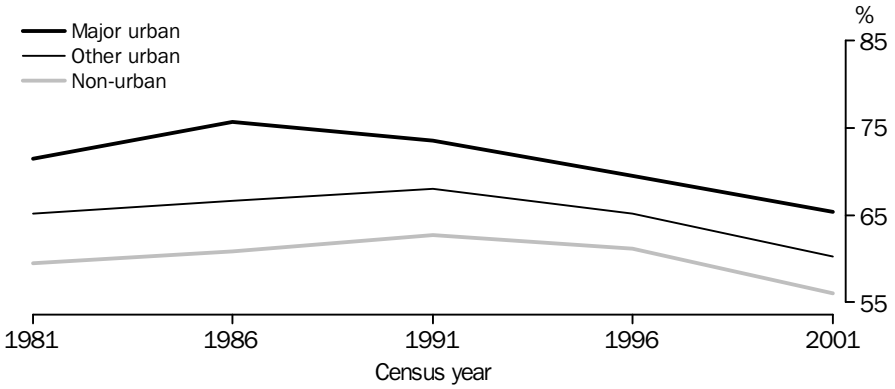
For females in non-urban areas, the increase in labour force participation is much stronger for Indigenous females for whom the rates increased from 29.5% to 40.3% between 1981 and 1996 before falling slightly to 39.9% in 2001. While non-Indigenous females in such areas followed the national trends towards higher engagement with the labour market, driven largely by the growth in the number of part-time jobs and secular changes in family formation and attitudes of women to 'paid' work, the size of the increase was much smaller than that observed for Indigenous females. However, in contrast to the trend for Indigenous females, participation among other females increased in all inter-censal periods.

2.2 NON-INDIGENOUS MALE PARTICIPATION RATES BY SECTION OF STATE, Non-Indigenous male population aged 15 years and over in labour force



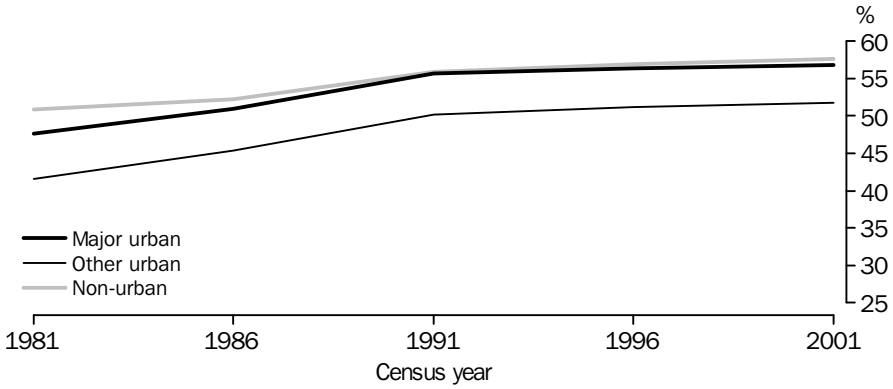
Source: Hunter (2002a); 2001 Census of Population and Housing.

2.3 INDIGENOUS MALE PARTICIPATION RATES BY SECTION OF STATE,
Indigenous male population aged 15 years and over in labour force



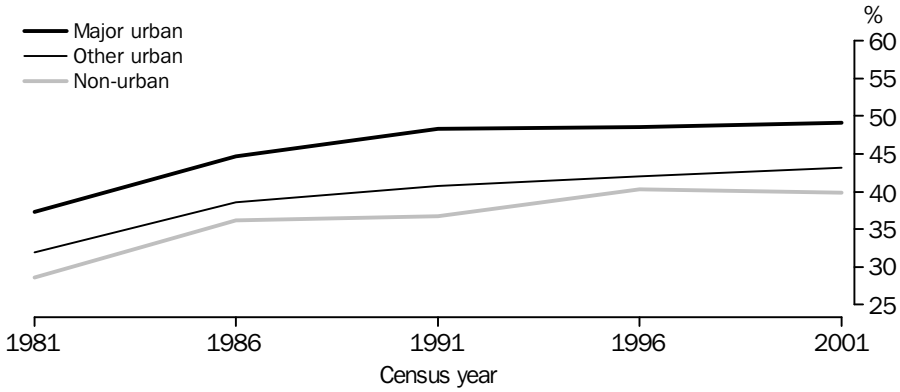
Source: Hunter (2002a); 2001 Census of Population and Housing.

2.4 NON-INDIGENOUS FEMALE PARTICIPATION RATES BY SECTION OF STATE,
Non-Indigenous female population aged 15 years and over in labour force



Source: Hunter (2002a); 2001 Census of Population and Housing.

2.5 INDIGENOUS FEMALE PARTICIPATION RATES BY SECTION OF STATE,
Indigenous female population aged 15 years and over in the labour force.



Source: Hunter (2002a); 2001 Census of Population and Housing.

The other observation about these figures is that Indigenous participation rates were relatively high in 1986 (especially compared to 1981), just before the CDEP scheme took off in non-urban areas, and eventually other urban areas. The fact that this observation is replicated for all three types of areas means that these relatively high participation rates are not driven solely by the CDEP scheme's growth, which is concentrated outside Australian cities. One possible explanation for the 1986 results might be that macro-economic conditions were relatively strong in that year. That is, because there are a disproportionate number of Indigenous people who are discouraged workers or otherwise marginally attached to the labour market, economic upturns are more likely to enhance Indigenous labour force participation rates (Hunter & Gray 2001b).

Taken together, these figures show that the effect of the presence of a CDEP scheme on Indigenous labour force participation is not direct, and is probably quite subtle. Hunter's (2002b) analysis of ATSIC regions and individual census data suggests that the CDEP scheme effect is an interaction between education and the Indigenous labour market. The CDEP scheme appears to partially overcome established barriers to Indigenous labour force participation by providing jobs for low skilled Indigenous workers managed by, and on behalf of, the local community.

While the trends in participation rates are important, it is also worth noting the relative participation rates in the respective sections of state. Indigenous participation rates are always higher in major urban areas compared to both other urban and non-urban areas. The fact that non-urban areas have the lowest participation rates is consistent with Altman and Nieuwenhuysen's (1979: pp. 201–204) conjecture about the importance of individual preferences in Indigenous labour supply decisions in remote communities. In contrast, non-Indigenous participation rates tend to be higher in non-urban areas, although there was some evidence of convergence of the rates in non-urban and major urban areas towards 2001. The relatively high rate of participation in non-urban areas is partially attributable to the relationship between non-Indigenous mobility and labour force status.

2.3 MOBILITY AND LABOUR FORCE STATUS

As demonstrated above, Indigenous labour force status depends upon local labour market conditions and other factors, like CDEP scheme employment, that have a spatial dimension. One such factor is geographic mobility which is strongly correlated with labour force status (Taylor & Bell 1999). This section updates the previous literature and concentrates the focus on possible mechanism underlying the inter-relationship between mobility and Indigenous labour force status.

While it is possible that there is a two-way relationship between employment, unemployment and mobility, analysis is constrained by the nature of census data. Labour force status is a contemporaneous variable that shows a respondent's position in the labour market at the time of the census. Mobility

on the other hand, is historical as it is measured by comparing the current residential address with that either one year or five years ago. Consequently, it is analytically difficult to claim that current employment or unemployment status drives mobility, especially five-year mobility. It is probably more plausible to argue that mobility in the census leads to greater numbers of unemployed if the reason for the move were not for the purposes of taking up a job. The analytical difficulties caused by the different time frames of the mobility and labour force status data in the census is minimised by focusing on one-year mobility.

This case is enhanced by Taylor and Bell (1999) who list two main advantages of using the one-year mobility indicator for analysis as opposed to the five-year indicator. First, non-response to the census question on place of residence one year prior to the census is markedly lower than that measured over a five-year period for Indigenous people, presumably because recall is less of a problem. Second, the characteristics of migrants recorded by the census are temporally much closer to the actual timing of population movement (within the past year), and therefore represent a more reliable indication of the characteristics pertaining at the time of the move than is the case with the five-year period.

The number of people moving over the five-year period leading up to the 2001 census is obviously greater than that moving over a one-year period. Just as in the earlier analysis of the 1996 census, the fact that the Indigenous/non-Indigenous mobility differential is higher for the one-year than for the five-year period underlines another key feature of the Indigenous population: their greater propensity to engage in repeat migration (see Taylor & Bell 1999). However, the types of move are broadly similar for the two time periods in the following analysis. The major difference between the different types of mobility is that five-year mobility has a lower proportion of local moves within a Statistical Local Area (SLA) than the one-year mobility for both Indigenous and non-Indigenous populations. As a result, the focus on the shorter period does not appear to entail much loss of information if the analysis does not attempt to tease out patterns of repeat migration.

It has been amply demonstrated that internal migration is the fundamental force shaping and modifying the pattern of human settlement in Australia, with significant impacts on the demand for services (Newton & Bell 1996). It is also true that mobility is a selective process — for example, it is usually high among young adults and declines with age. Taylor and Bell (1999) examine both the relative propensities to move according to particular characteristics from the 1996 census, and the contribution of mobility to spatial redistribution of the Indigenous population. The following focuses on extending the former analysis to 2001, and refers the reader to Taylor and Bell for details of likely spatial redistribution arising from any mobility. From an economic perspective, redistribution is likely to reduce regional differentials in unemployment rates, employment/population ratios and hence participation rates (Bell & Maher 1995). Persistent differentials in such rates may be a result of individual

preferences for a particular location or that mobility is not related to employment prospects.

As alluded to above, Taylor and Bell (1999) found that Indigenous mobility leading up to the 1996 census was substantially above that for the rest of the population, even after standardising for the effect of differences in age structure.

As we will see later, the 2001 census data confirm this finding. However, our focus on short-run mobility and labour force means it is useful to start with the most rudimentary measure of short-term 'mobility', whether a census respondent was at home on census night. The measure is based on the assumption that the less likely a group is to be home, the greater the recent mobility of that population. Consistent with previous findings, table 2.6 illustrates that Indigenous people are less likely to be enumerated at home on census night, irrespective of their labour force status. The largest differential between Indigenous and non-Indigenous populations is for the unemployed who are 6.2 percentage points and 4.1 percentage points less likely to be at home than their male and female counterparts respectively.

2.6 WORKING AGE POPULATION ENUMERATED AT HOME, By labour force status — 2001

	Indigenous males	*Non-Indigenous males*	*Indigenous females*	*Non-Indigenous females*
	%	%	%	%
Employed	92.0	95.1	94.2	96.4
Unemployed	87.2	93.4	90.6	94.7
Not in the labour force	91.3	94.0	92.5	94.9

Source: 2001 Census of Population and Housing.

The advantage of focusing on what happened on census night, rather than looking at one-year or five-year mobility is that it allows us to plausibly argue that labour force status is affecting mobility in some way. Indeed, being unemployed may be driving mobility among Indigenous people, at least to the extent that the unemployed are about 5% less likely to be at home than either the employed or the not in the labour force categories. The relationship between labour force status and short-run mobility among the non-Indigenous population is not particularly strong, at least as measured by enumeration at home. The Indigenous unemployed appear to have less reason to be at home, possibly because they do not have to be at home to be at work next day. This cannot be the whole story because those outside the labour force do not have to go to work, although they may have other pressing commitments, such as attending educational institutions or family commitments.

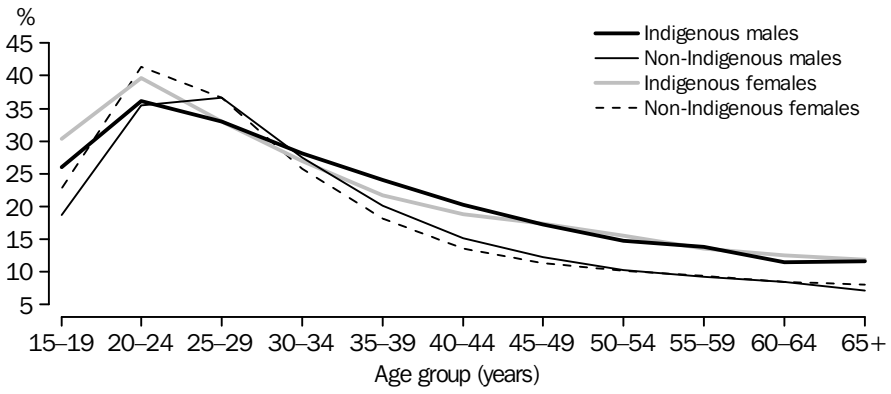
A more conventional measure of mobility can be derived by comparing the current usual residence with that of one year ago. If we exclude those for whom the question is not relevant (i.e. babies who have not yet had their first birthday) or did not provide enough information, then Indigenous people are

7.7 percentage points more likely to have moved in the last year (26.2% and 18.5% of Indigenous and non-Indigenous populations). Note that unlike Taylor and Bell (1999) who focus on internal migration, these numbers include the proportion who moved from overseas because such moves can be related to individual decisions about labour force status, the focus of this monograph.

This higher rate of Indigenous mobility was partly due to the younger age profile of the Indigenous population as younger people tend to be more mobile. Standardising for this effect against the age distribution of the non-Indigenous population reduces the Indigenous rate (to 21.5%), but this is still indicative of a far greater propensity to move within Australia. Indeed, Indigenous mobility would be substantially higher if overseas migration were excluded.

Graph 2.7 plots the one-year mobility for various age groups. Apart from the 20–29 year age groups, Indigenous males and females are more mobile than their non-Indigenous counterparts. These somewhat anomalous relativities for youth are driven by the higher rates of overseas travel among non-Indigenous youth, with most such travel being concentrated in the 15–34 year age group. If overseas in-migration were left out then Indigenous mobility would be uniformly higher across the board.

2.7 TOTAL MOBILITY BY INDIGENOUS STATUS AND AGE,
Overall mobility in the last year



Source: 2001 Census of Population and Housing.

This one-year mobility can be further disaggregated into the length of the move from a move within the same SLA, same Statistical Division (SD), same state, or even a move from overseas (table 2.8).

2.8 MOBILITY OF INDIGENOUS AND NON-INDIGENOUS AUSTRALIANS, By type of move — 2000–2001

	Indigenous		*Non- Indigenous*		*Difference (2)–(4)*	
	no. (1)	% (2)	no. (3)	% (4)	Absolute Difference (%)	Percentage Difference (%)
Moved same SLA	43 047	44.8	1 137 689	36.7	8.2	22.3
Other SLA same SD	27 261	28.4	1 128 938	36.4	–8.0	–22.0
Other SD same state	16 939	17.6	346 380	11.2	6.5	58.1
Interstate	8 317	8.7	274 505	8.8	–0.2	–2.1
Overseas in 2000	454	0.5	215 745	7.0	–6.5	–93.2
Total	**96 018**	**100.0**	**3 103 257**	**100.0**		

Note: Excludes 4,569 Indigenous individuals who changed residence but did not state the SLA to which they moved.
Source: 2001 Census of Population and Housing.

Overall, Indigenous mobility tends to be more localised than others with just under one-half of Indigenous moves being within the same SLA (44.8% compared to 36.7% of non-Indigenous moves). Although non-Indigenous movers tend to be concentrated within the next category of movement which implies only slightly longer distance relocations — those relocating to another SLA within the same SD (36.4% of all non-Indigenous movers compared to 28.4%). This mainly describes movement between metropolitan suburbs, between country towns or between a rural area and a country town. In the third category of movement, between SDs within the same state, the share of Indigenous movers is again notably higher. Relocation within this category typically involves moves between capital cities and their hinterlands, as well as between non-metropolitan regions within each state and territory. Longer-distance moves within Australia — those occurring between states and territories, including between capital cities — accounted for an almost equal share of Indigenous and non-Indigenous movers, although in each case these were the least prevalent relocations. Finally, moves from overseas are far more prominent among non-Indigenous movers with very few Indigenous Australians returning from other countries between 2000 and 2001.

An issue that has permeated policy deliberations regarding Indigenous engagement with the labour market is the question of whether individuals are prepared to move from their place of residence in order to look for and acquire employment, and whether they have the capacity to do so. Related to this is the extent to which people who are already in employment are willing and able to be mobile.

From the time of the 1985 Review of Aboriginal employment and training strategies (Miller 1985), there has been some ambivalence surrounding this issue for the Indigenous population (Taylor 1992). On the one hand, programs such as the CDEP scheme and the community elements of the Training for Aboriginals Program (TAP) have stressed localised participation of mostly unskilled labour. As such, they may be assumed to have been migration inhibiting. On the other hand, the growth of wage subsidies and training for

mainstream labour market participation under the Aboriginal Employment Development Policy (AEDP), Working Nation initiatives, and currently under the Indigenous Employment Policy (IEP), may be viewed as encouraging mobility by either requiring or stimulating relocation for employment and training. Therefore a fundamental question to be addressed is whether there is any evidence from census data to suggest a link between labour force status and mobility.

2.9 PROPENSITIES TO MOVE, By labour force status — 2000–2001

	Males		*Females*	
	Indigenous	*Non-Indigenous*	*Indigenous*	*Non-Indigenous*
	%	%	%	%
Employed				
Same SLA	11.1	6.8	10.8	7.0
Other SLA same SD	7.3	7.7	7.7	8.2
Other SD same state	3.6	1.9	3.2	1.9
Interstate	2.1	1.7	2.1	1.6
Overseas in 2000	0.2	1.1	0.2	1.1
Total	**24.2**	**19.2**	**23.9**	**19.8**
Unemployed				
Same SLA	15.3	9.5	15.5	10.4
Other SLA same SD	10.8	9.6	12.2	10.9
Other SD same state	7.8	4.4	8.2	5.2
Interstate	3.9	3.7	4.3	4.4
Overseas in 2000	0.1	2.8	0.2	3.7
Total	**38.0**	**30.1**	**40.4**	**34.6**
Not in the labour force				
Same SLA	9.3	4.7	11.1	5.7
Other SLA same SD	6.0	4.2	6.9	4.8
Other SD same state	4.5	1.9	4.5	1.9
Interstate	1.9	1.2	2.1	1.4
Overseas in 2000	0.1	1.5	0.1	1.4
Total	**21.7**	**13.6**	**24.7**	**15.2**

Note: Includes the population aged 15 years and over who moved between 2000–01.
Source: 2001 Census of Population and Housing.

Over the one-year period between 2000 and 2001, about one-quarter of Indigenous employed changed their usual place of residence (table 2.9 shows that 24.2% and 23.9% of employed Indigenous males and females moved). This is substantially higher than the proportion of movers recorded amongst the non-Indigenous employed (19.2% and 19.8% respectively).

However, interpretation of this data is complicated by the fact that it cannot be established whether people became employed as a consequence of moving or whether they moved while in employment. Equally significant, but also unknown, is whether moves that resulted in employment were speculative, or contractual. One clue to the labour market significance of this mobility is provided by the labour force status of movers according to the type of move undertaken. From this, it is clear that Indigenous people in employment were

much more likely to be mobile locally as opposed to over long distances — indeed, well within what the Department of Employment and Workplace Relations (DEWR) describes as 'natural labour markets' based on journey-to-work patterns (DEWR 2002). Furthermore, it is clear that this localised mobility occurs at a much greater rate than among non-Indigenous employed persons.

There are two ways in which this much greater propensity for local mobility among the Indigenous employed might be explained. First, it reflects greater involvement by Indigenous people in the secondary labour market that is characterised by high job turnover. This has the effect of both freeing people from immediate work commitments and requiring people to be mobile in order to secure future employment. This particular interpretation accords well with findings from the analysis of the DEWR longitudinal data set on Indigenous job seekers (Hunter, Gray & Jones 2000). This found a substantial amount of shift between labour force status together with a high degree of residential mobility (more than 30% of individuals had changed their address within an 18-month period). Interestingly, it also revealed that most people moved for social rather than work-related reasons.

This leads to the second interpretation of high local mobility rates, which is that it occurs as a function of Indigenous community life regardless of employment status. Indeed, Gale and Wundersitz's (1982) study of Aboriginal mobility within Adelaide showed that the process of urbanisation is facilitated by the capacity for new migrants to move frequently between the households of kinfolk, as needs dictate. The process described by Gale and Wundersitz is consistent with the relatively high rates of Indigenous mobility in the categories 'Other SD same state' and 'interstate' that are often associated with moves to capital cities. Furthermore such mobility is higher for Indigenous people irrespective of their labour force status.

One feature shared with the non-Indigenous population is that mobility is highest among the Indigenous unemployed. Around 40% of Indigenous unemployed persons changed their usual place of residence with little difference in the rate between males and females (38.0% and 40.4% respectively). This was substantially higher than the approximately one-third of non-Indigenous unemployed who recorded moves. Again, much of this difference in overall rates was accounted for by higher Indigenous local mobility with both Indigenous and non-Indigenous unemployed persons moving interstate at roughly equivalent rates.

Another distinctive aspect of mobility among the non-Indigenous unemployed is that they are more likely to have been overseas recently than any other group. This appears to be consistent with substantial numbers of non-Indigenous youth returning to Australia to look for work rather than to engage in study or take up employment. To the extent that such unemployment is short-term and relates to a presumably optional overseas trip,

it may be of less concern than the structural unemployment faced by many Indigenous youth who may live in depressed labour markets.

Table 2.9 also suggests much higher mobility among Indigenous people who are not in the labour force compared to their non-Indigenous counterparts. However, this is partly due to the much smaller number of Indigenous people in the older low mobility age groups. When the data are standardised to eliminate this age structure effect, the overall Indigenous/non-Indigenous ratio for males is reduced so that it is more or less in line with the ratios observed for the employed and unemployed (see Taylor & Bell 1999).

Tables 2.10 to 2.12 use the Jones' classification of areas to further tease out patterns in mobility for Indigenous and non-Indigenous males and females who are either employed, unemployed or not-in-the-labour-force (see Appendix 3). By disaggregating the analysis by metropolitan, provincial and remote zones, it is possible to examine if it matters whether or not a person lives in a relatively depressed labour market, especially remote areas.

For the employed (table 2.10), Indigenous peoples' mobility in the 2001 census is highest in urban and provincial areas, and lowest in remote areas. In contrast, the non-Indigenous employed are most mobile in remote areas, and are actually more mobile than employed Indigenous residents of such areas. The higher level of mobility of non-Indigenous people in remote areas is explained by the relatively large numbers migrating long distances and from other states to take up jobs in the mining industry, tourism and even on Indigenous communities(Taylor & Bell 1996). The profile of local moves is remarkably similar for the Indigenous and non-Indigenous employed in such areas.

2.10 PROPENSITIES TO MOVE OF EMPLOYED ADULTS — 2000–2001

	Males		*Females*	
Jones classification Type of move	*Indigenous*	*Non-Indigenous*	*Indigenous*	*Non-Indigenous*
	%	%	%	%
Metropolitan zone				
Same SLA	9.8	6.2	9.3	6.3
Other SLA same SD	11.9	9.1	12.2	9.7
Other SD same state	3.4	1.3	3.1	1.3
Interstate	2.7	1.6	2.6	1.5
Overseas in 2000	0.3	1.3	0.3	1.2
Total	**28.1**	**19.4**	**27.6**	**20.1**
Provincial zone				
Same SLA	14.5	8.6	13.8	9.1
Other SLA same SD	5.0	3.6	5.3	3.7
Other SD same state	4.5	3.5	4.0	3.4
Interstate	1.8	1.8	1.8	1.6
Overseas in 2000	0.1	0.4	0.2	0.4
Total	**26.0**	**17.9**	**25.0**	**18.3**
Remote zone				
Same SLA	9.0	8.4	9.5	9.0
Other SLA same SD	3.5	3.6	3.2	3.2
Other SD same state	2.8	6.1	2.3	6.1
Interstate	1.4	3.7	1.4	3.9
Overseas in 2000	0.1	0.8	0.0	0.8
Total	**16.7**	**22.6**	**16.4**	**23.1**

Source: 2001 Census of Population and Housing.

Among the unemployed (table 2.11), Indigenous people in remote areas have the lowest mobility compared to both other Indigenous people living in urban environments and non-Indigenous people from any of the categories of areas. Again, non-Indigenous unemployed are most mobile in provincial and remote areas. The relatively high level of mobility of non-Indigenous people in remote areas can be explained by the substantial numbers migrating relatively long distances to take up reasonably well-paid temporary and casual jobs in the mining industry, and tourism industries. The proportion of local moves is remarkably similar for the Indigenous and non-Indigenous unemployed in such areas. However, Indigenous unemployed in metropolitan and provincial areas tend to have far more localised movement than their non-Indigenous counterparts. The obverse of this is that the migration that involves the longest moves (i.e. people who were overseas in 2000) is most pronounced in the urban non-Indigenous population, especially in the metropolitan zone.

2.11 PROPENSITIES TO MOVE OF UNEMPLOYED ADULTS — 2000–2001

	Males		*Females*	
Jones classification Type of move	*Indigenous*	*Non-Indigenous*	*Indigenous*	*Non-Indigenous*
	%	%	%	%
Metropolitan zone				
Same SLA	12.0	8.1	12.2	8.7
Other SLA same SD	15.7	11.1	17.3	12.4
Other SD same state	7.6	3.0	7.4	3.6
Interstate	4.0	3.4	4.7	4.1
Overseas in 2000	0.2	3.6	0.4	4.5
Total	**39.5**	**29.2**	**41.9**	**33.3**
Provincial zone				
Same SLA	19.7	13.1	19.8	15.3
Other SLA same SD	7.3	5.9	8.4	6.9
Other SD same state	8.9	8.0	9.6	9.4
Interstate	4.2	4.5	4.5	5.2
Overseas in 2000	0.1	0.9	0.1	1.3
Total	**40.2**	**32.3**	**42.4**	**38.1**
Remote zone				
Same SLA	12.5	11.7	14.0	15.0
Other SLA same SD	6.8	4.4	7.1	6.4
Other SD same state	5.1	9.4	6.6	13.5
Interstate	2.8	5.1	2.9	7.5
Overseas in 2000	0.0	1.2	0.2	2.4
Total	**27.2**	**31.7**	**30.7**	**44.8**

Source: 2001 Census of Population and Housing.

In contrast to results for employed and unemployed groups, Indigenous males in remote areas who are outside the labour force category do not have lower mobility compared with other groups of similar males (table 2.12). Non-Indigenous males who are not in the labour force (NILF) in remote areas are somewhat less likely to be mobile overall than NILF Indigenous males in remote areas, and far less likely to be mobile than non-Indigenous NILF males in the metropolitan and provincial zones. The relativities among NILF females are similar to those evident for employed and unemployed females with the lowest and highest mobility being for Indigenous and non-Indigenous residents of the remote zone.

2.12 PROPENSITIES TO MOVE OF ADULTS OUTSIDE THE LABOUR FORCE — 2000–2001

	Males		*Females*	
Jones classification Type of move	*Indigenous*	*Non-Indigenous*	*Indigenous*	*Non-Indigenous*
	%	%	%	%
Metropolitan zone				
Same SLA	8.9	4.2	9.9	5.0
Other SLA same SD	9.7	4.9	11.2	5.5
Other SD same state	4.8	1.2	4.6	1.2
Interstate	2.5	1.1	2.5	1.2
Overseas in 2000	0.2	2.0	0.2	1.8
Total	**26.1**	**13.4**	**28.4**	**14.8**
Provincial zone				
Same SLA	12.2	5.9	14.9	7.4
Other SLA same SD	5.3	2.4	5.8	2.9
Other SD same state	6.2	3.5	6.2	3.8
Interstate	2.3	1.5	2.5	1.7
Overseas in 2000	0.1	0.5	0.1	0.4
Total	**26.1**	**13.8**	**29.5**	**16.2**
Remote zone				
Same SLA	6.5	6.5	8.0	8.2
Other SLA same SD	2.7	2.2	3.0	2.8
Other SD same state	2.3	3.6	2.3	4.9
Interstate	0.8	2.1	1.1	2.7
Overseas in 2000	0.0	0.6	0.0	0.7
Total	**12.3**	**15.1**	**14.5**	**19.4**

Source: 2001 Census of Population and Housing.

As a final word of caution, Taylor and Bell (1999) note that the relatively low Indigenous movement propensities in remote regions should not be taken as an indication of immobility, but rather of a lack of migration. The importance of frequent mobility within these regions in the daily, periodic and seasonal round of activities associated with Indigenous social and economic life has been extensively recorded (e.g. see Young 1981 and Taylor & Bell 1999 for full references). The main problem derives from the inability of fixed-period migration questions to capture short-term and circular population movements in the census and other standard ABS collections.

2.4 INSIGHTS FROM NET MIGRATION OF EMPLOYED PERSONS

Taylor and Bell (1999) also analyse the spatial redistribution among employed persons arising from net migration. Their analysis attempts to address whether migration is employment-led and whether Indigenous people show the same signs of responsiveness to labour market opportunities as the rest of the population. Strictly speaking, the data simply refers to the net migration of employed individuals into particular ABS SDs. Given the preponderance of local moves among Indigenous employed, their average mobility is lower than for

the rest of the population. For example, there are relatively few SDs where the migration of Indigenous employed is above the average gain in the migration rate evident for non-Indigenous employed.

The maps in Taylor and Bell (1999) indicated a uniform pattern of net migration gain of non-Indigenous employed persons across many parts of remote and northern Australia. This pattern reflects the long-distance relocation of individuals, mostly from southern states to northern regions, associated with employment in mining, tourism, community service and government industries including the re-deployment of defence personnel (Bell & Maher 1995). For the Indigenous population, little is known about the contributory factors but Taylor and Bell (1999) speculate that net gains are tied to the prevalence of Indigenous-specific service delivery arrangements in many of these same regions and an associated demand for Indigenous labour. However, in other remote regions, including much of western Queensland, Northern and Far West New South Wales, the Far North of South Australia, the Pilbara and central regions of Western Australia, there is a common pattern of exodus among employed persons irrespective of their Indigenous status. Of course, this spatial scale is coarse and there is no doubt that much greater variation would emerge at lower levels of analysis.

Apart from South East Queensland, where net gains of the employed are common to both groups, substantial contrast between the Indigenous and non-Indigenous pattern of redistribution appears. For example, in New South Wales, net migration gains of Indigenous employed people are found in the Hunter, Illawarra, South East, Murrumbidgee and Murray regions extending into the Murray Lands and South East regions of South Australia, while for the non-Indigenous employed, these are all areas of net migration loss. The same occurs in the Eyre region of South Australia and in western regions of Victoria. By contrast, the South West region of Western Australia recorded a net loss of Indigenous employed people but a substantial net gain of the non-Indigenous employed. The considerable differences in the pattern of net rates between Indigenous and non-Indigenous employed confirms that Indigenous people are probably not moving in response to the same labour market stimuli that affect other Australians. While Indigenous mobility may be disproportionately affected by cultural and personal factors, the differences in the spatial pattern of migration is also consistent with the hypothesis that Indigenous people prefer to work, or are constrained to work, in sectors of the labour market that are not as bouyant and hence have relatively few non-Indigenous people working in them.

2.5 SOME REFLECTIONS ON INDIGENOUS LABOUR SUPPLY

Data limitations mean that it is difficult to get detailed insights into Indigenous labour supply beyond the rudimentary descriptions of the factors underlying labour force participation rates. Notwithstanding recent attempts to document the causes and consequences of the large numbers of Indigenous discouraged

workers, marginally attached and underemployed (Hunter & Gray 2001b; Hunter & Gray 2002; Hunter & Taylor 2002), the focus on participation rates is necessary for analysis based on census data.

In broad terms, trends in Indigenous labour force participation rates follow those of other Australians, irrespective of the labour market in which Indigenous people live, or controlling for age and sex. However, the most disconcerting aspect of the Indigenous labour supply is that labour force participation appears to be particularly constrained among younger age groups, possibly before they have had any contact with the workforce. The low levels of attachment to the labour force appear to have persisted among Indigenous youth despite a sustained period of employment growth in the Australian economy between 1991 and 2001.

The patterns of mobility also afford some insights into labour supply, and hence for labour force status. For example, the level and pattern of Indigenous mobility suggests less articulation with mainstream labour market conditions than for non-Indigenous people. Furthermore, the preponderance of local moves for Indigenous people underscores survey evidence that Indigenous mobility is not driven entirely by employment prospects. The main implication for public policy of the above patterns of mobility is that Indigenous labour force status will tend to be more dependent on the local labour market conditions than that for other Australians. Unless future governments mandate or facilitate the movement of Indigenous people away from current residences in high unemployment rate areas, many of which are in or near traditional country, this means that improvements in Indigenous economic status will continue to be overly dependent on the prospects for development in the local region. A crucial dynamic is the extent to which jobs can be generated in regional Australia. Notwithstanding, the high level of segregation in the types of jobs that Indigenous and other Australian work in means that barriers to the employment prospects of individuals also need to be addressed.

The next chapter attempts to move towards a demand side analysis of Indigenous employment. One of the steps towards such an analysis is to construct estimates of the change in Indigenous employment that are consistent with the 2001 population using the 'reverse survival' techniques. Such estimates control for another supply-side factor that was abstracted from in the above discussion, the increasing propensity of many Australians to identify as Indigenous in recent censuses. It will not surprise the reader to find out that employment rates change little when these basic demographic factors are taken into account. However, the estimates of the change in the number of Indigenous jobs, as measured by overall employment levels, will be altered significantly by making the demographic composition of the Indigenous population consistent over time.

CHAPTER 3 TOWARDS A DEMAND-SIDE ANALYSIS OF INDIGENOUS EMPLOYMENT .....

Hunter and Hawke (2001; 2002) made some tentative steps towards a demand-side analysis of Indigenous employment when they documented the conditions under which firms employ Indigenous Australians using the 1995 Australian Workplace Industrial Relations Survey data. In those papers they showed that Indigenous people's experience of the labour market is very different from other workers, often within the same organisation. This chapter indirectly examines what sort of organisations employ Indigenous workers in order to gain an insight into their future employment prospects, and to better understand recent changes in Indigenous employment.

The second half of this chapter provides a detailed description of the industry and occupation of the Indigenous employed based on the question: what is the expected increase in employment given the persistence of industrial and occupational segregation between Indigenous and other Australians? That is, how many jobs are being created for Indigenous people in the various parts of the economy? In this way it is possible to move towards developing a demand-side analysis of Indigenous employment. The conventional means of decomposing employment growth into that attributable to demand-side and other factors, such as aggregate and residual effects, is the shift-share methodology that is frequently used in regional studies (see Hunter 1995). This technique is fully described in Appendix 4, but it has been is adapted for the current circumstances.

Given the changes in the standard ABS classifications after 1991, the following shift-share analysis only focuses on the changes in the industry and occupation of employment between the 1996 and 2001 censuses. Note that such estimates have never been attempted for the Indigenous population, and consequently they will represent a substantial contribution to our understanding of the structural, or demand, component of Indigenous employment growth.

The full shift-share technique requires cross-tabulation of the industry and occupation for broad demographic groups (say 5-year age groups by sex and Indigenous status), educational attainment (educational qualifications), and regional grouping for the last two censuses. Unfortunately, there were too many small (randomised) cells when Indigenous data was examined, and hence it was necessary to examine a higher level of aggregation for a shift-share style analysis. While this compromise yields easily interpretable results, it is not possible to fully separate all the distinct effects on employment growth.

Since a full shift-share analysis would examine how employment changes by, amongst other things, age (and education), the first half of this chapter sets the

scene with a cohort analysis that traces employment across time. This permits a detailed understanding of how particular groups of Indigenous people are faring in terms of their employment prospects after attempting to control for the effect of the CDEP scheme.

The first chapter introduced the issues surrounding the analysis of the industrial and occupational distributions for Indigenous and other Australians. It was argued that the effect of CDEP confounded the interpretation of the data unless one examines either the private sector or full-time employment. Accordingly, the following discussion focuses largely on the private sector, with only passing references to total employment and full-time employment to benchmark the analysis.

3.1 COHORT ANALYSIS OF EMPLOYMENT

Chapter 1 presented an overview of trends in overall Indigenous employment since 1971. The findings clearly show that Indigenous employment has consistently been lower than that for the total population since 1971. However, CDEP had a role in arresting the large falls in Indigenous employment leading up to 1986, and restoring the relative employment status to a similar level as that 'enjoyed' in 1971. Table 3.1 deconstructs what happened to particular age groups or cohorts as a means of getting further insight into the differential processes affecting various age cohorts of Indigenous and non-Indigenous males and females. The other tables in this section attempts to identify what would have happened to these cohorts if the CDEP scheme did not exist by focusing on full-time employment, and then examining private sector employment.

Table 3.1 should be interpreted in a similar manner to the cohort analysis of participation rates in Chapter 2. The main difference is that 5-year age cohorts are used here to maximise the insights into employment dynamics. Another reason for this was that sizes of some cohorts were relatively small when examining employment data from 1981, and hence the data time frame is confined to the last four censuses.

By way of example, let's consider what happened to Indigenous males aged 30–34 years in 2001. The employment/population ratio of this cohort was 24.0% in 1986 when they were just entering the working-age population. Five years later, when they were aged between 20–24 years, they experienced a jump in employment prospects of over 20 percentage points. In the subsequent two censuses, the employment population for the cohort increased steadily in each intercensal period, finally reaching 54.3% in 2001. The pattern was much the same for the analogous cohort of non-Indigenous males whose employment ratios increased from 43.0% to 84.9%. Given that CDEP scheme jobs tend to go to male youth, it is significant to note that the differential between Indigenous and non-Indigenous cohorts started at 19 percentage points and grew to just over 30 percentage points. In light of the fact that Indigenous teenagers are much less likely to be participating in the educational system, the differential

when the respective cohorts were aged between 15–19 years is noteworthy as employment disadvantage is perpetuated from the moment Indigenous males enter the workforce. A similar pattern was evident for females with the employment differential between Indigenous and non-Indigenous cohorts aged 30–34 years in 2001 increasing between the 1986 and 2001 censuses. However, the differential actually fell in the last two intercensal periods.

3.1 COHORT ANALYSIS OF EMPLOYMENT/POPULATION RATIOS

	Indigenous				*Non-Indigenous*			
Age group (years) at 2001 census	*1986*	*1991*	*1996*	*2001*	*1986*	*1991*	*1996*	*2001*
	%	%	%	%	%	%	%	%
Males								
15–19	na	na	na	28.3	na	na	na	41.5
20–24	na	na	26.9	49.7	na	na	39.1	72.6
25–29	na	26.1	48.3	52.2	na	38.3	71.5	82.1
30–34	24.0	44.4	52.9	54.3	43.0	70.9	81.4	84.9
35–39	43.6	50.6	55.2	54.6	77.3	80.7	83.6	84.9
40–44	50.4	54.5	56.8	55.6	85.4	83.8	84.4	84.7
45–49	51.8	56.2	57.6	55.7	87.9	85.1	84.3	83.7
50–54	53.0	57.5	54.7	51.2	88.9	85.6	83.2	79.6
55–59	51.4	51.9	47.6	41.6	88.5	84.1	78.4	67.6
60–64	49.5	45.2	38.3	26.5	86.4	79.1	64.9	45.8
65–69	41.0	36.8	24.0	12.5	82.1	66.7	41.3	19.7
70–74	35.1	25.6	10.0	6.3	72.4	44.9	16.2	9.9
75–79	20.0	9.2	4.9	4.5	42.0	14.0	7.8	5.6
80 years and over	5.2	5.9	5.8	12.1	9.0	6.2	4.0	4.2
Females								
15–19	na	na	na	25.4	na	na	na	45.2
20–24	na	na	22.7	36.8	na	na	41.3	69.0
25–29	na	19.6	35.4	37.0	na	38.4	66.7	69.0
30–34	18.3	30.3	36.2	38.8	41.1	65.5	66.0	63.6
35–39	27.3	31.3	36.6	42.7	65.8	61.6	60.2	64.9
40–44	25.6	34.7	41.4	47.3	56.5	58.0	63.9	70.7
45–49	27.6	38.2	44.6	47.9	53.6	63.8	69.4	72.2
50–54	29.8	38.6	41.4	38.8	58.8	67.9	68.6	65.0
55–59	28.1	34.1	32.3	28.3	61.2	64.8	58.9	47.7
60–64	23.9	25.8	22.2	14.3	56.8	52.9	39.3	23.7
65–69	18.3	16.5	10.6	7.0	45.6	34.6	17.5	9.2
70–74	14.4	6.9	4.6	4.0	30.4	16.0	6.9	4.1
75–79	5.7	4.0	2.4	1.2	13.6	6.0	3.0	2.2
80 years and over	1.6	2.6	3.0	5.3	3.0	2.3	1.2	1.5

Source: 1986, 1991, 1996 & 2001 Census of Population and Housing.

This cohort can also be compared to people who were 15–19 years old in the respective censuses. In this way, we can analyse the age structure of employment as well as how groups of individuals enter and leave the workforce. The relevant employment ratio for Indigenous males aged 15–19 years in 2001, was 28.3% compared to 41.5% for the analogous non-Indigenous males. That is, employment for Indigenous male youth increased by 4.3 percentage points when it fell slightly for other male youth. If this effect can be attributed to the CDEP scheme, which is highly plausible, then the scheme is marginally ameliorating the initial employment disadvantage of

Indigenous youth. However, this is only desirable if there is no associated negative effect on the incentive to study and gain educational qualifications (Hunter 2002a).

All the older cohorts (i.e. aged 35 years or more in 2001) tended to experience a decline in the Indigenous/non-Indigenous employment disadvantage. While the decline in the negative differential merely represents the higher rates of withdrawal of non-Indigenous people from the workforce among the oldest groups, largely as a result of early retirement, the reduced differential for younger groups is probably a CDEP effect. This latter effect appears to be rather small in magnitude, improving relative employment status by around five percentage points.

The cohort analysis is severely circumscribed by the confounding influence of the CDEP scheme evident in the above table. However, it is possible to briefly examine the changes in full-time employment and private sector employment since 1986 (tables 3.2 and 3.3). As argued in Chapter 1, this should minimise CDEP-related distortions affecting the changes in employment identified.

3.2 COHORT ANALYSIS OF PERCENTAGE OF COHORT EMPLOYED FULL-TIME

	Indigenous				*Non-Indigenous*			
Age group (years) at 2001 census	*1986*	*1991*	*1996*	*2001*	*1986*	*1991*	*1996*	*2001*
	%	%	%	%	%	%	%	%
Males								
15–19	na	na	na	12.4	na	na	na	17.9
20–24	na	na	13.5	29.5	na	na	19.7	53.5
25–29	na	15.6	31.6	34.7	na	24.3	56.3	70.7
30–34	18.9	30.9	36.6	37.0	34.2	59.6	71.3	74.9
35–39	37.0	37.3	40.2	38.2	69.7	72.6	74.6	75.4
40–44	43.3	42.0	42.2	40.4	78.9	76.2	75.6	75.2
45–49	44.3	43.4	43.1	40.4	81.5	77.7	75.7	74.2
50–54	45.3	45.4	41.8	36.7	82.9	78.7	74.8	69.7
55–59	43.3	41.4	35.7	29.0	82.7	77.3	69.5	56.1
60–64	42.0	34.9	27.3	17.2	80.6	71.6	54.7	33.8
65–69	34.2	29.1	15.6	6.1	75.9	58.0	31.5	11.5
70–74	29.2	18.1	5.9	3.8	65.5	36.1	9.7	4.9
75–79	15.7	5.7	2.6	2.7	35.9	8.8	4.0	2.7
80 years and over	2.9	3.5	2.9	6.8	5.8	3.5	2.0	2.5
Females								
15–19	na	na	na	7.7	na	na	na	10.9
20–24	na	na	8.5	19.1	na	na	11.5	41.9
25–29	na	9.6	19.9	19.6	na	16.4	43.5	48.1
30–34	12.7	18.8	19.7	19.0	27.1	47.7	45.8	36.0
35–39	20.1	17.6	18.3	20.3	52.6	42.6	32.9	31.6
40–44	16.3	18.6	20.7	23.7	39.5	31.5	31.6	36.4
45–49	16.7	21.3	24.3	25.7	29.8	33.3	37.7	41.1
50–54	18.3	22.9	23.5	21.4	31.6	38.0	39.5	36.9
55–59	16.9	20.1	17.7	14.1	34.8	37.6	33.4	24.7
60–64	14.6	14.8	10.8	7.1	33.6	29.9	20.3	10.3
65–69	11.0	8.5	5.1	2.9	26.9	18.4	8.0	3.3
70–74	8.3	3.8	2.3	1.5	17.7	8.0	2.7	1.4
75–79	3.7	1.1	0.6	0.0	7.6	2.7	1.2	0.8
80 years and over	0.8	1.0	1.3	2.8	1.5	1.0	0.5	0.7

Source: 1986, 1991, 1996 & 2001 Census of Population and Housing.

Table 3.2 shows the proportion of the population working full-time (35 or more hours a week) as a percentage of the population in that age group. For all but one of the Indigenous male cohorts aged over 40 years old at the time of the 2001 census, the proportion working full-time decreased in the last four censuses. The proportion of the oldest Indigenous male cohort in full-time employment increased slightly in this period. For the non-Indigenous cohorts aged over 40 years at the last census, the declines in full-time employment were larger than that for Indigenous cohorts.

This is counterbalanced by larger increases in full-time employment for the younger non-Indigenous male cohorts. Focusing on the cohort aged 30–34 years in 2001, it is apparent that non-Indigenous males increased full-time employment dramatically between 1986 and 1996 when they were aged between 25–29 years old. While the analogous Indigenous male cohort also improved dramatically over this period, the increase was substantially less

— confirming that the employment disadvantage is established in the first ten years in the labour force.

In contrast, the relative disadvantage for Indigenous males and females in the youngest age groups (i.e. aged between 15–24 years in the respective censuses) declined in each intercensal period. Regrettably, this merely reflected the large declines in full-time employment among non-Indigenous youth who were staying on at school and university in record numbers. Note that the proportion of Indigenous youth working full-time also declined, but it declined by less. Consequently, future labour market disadvantage may be driven by this educational disparity.

The story for female cohorts is similar to that for males. One noteworthy difference is that many non-Indigenous females tend to leave full-time employment during their child-bearing years. For example, of the cohort aged 35–39 years in 2001, over one-fifth more had full-time employment in their early twenties. Slightly older cohorts, for example those aged between 45–49 years in 2001, experienced another surge in full-time employment in the last couple of censuses. That is, the distribution of full-time employment of non-Indigenous females is bimodal with the second peak coinciding with the age groups where children become more independent. In contrast, Indigenous female cohorts experienced no or little decline in full-time employment in their thirties, presumably because they were less likely to have such employment in the first place.

The winding back of the public sector in recent years may have had a disproportionate effect on the Indigenous population (Taylor & Hunter 1997). Chapter 1 showed that there was a significant shift in the composition of Indigenous workers to public sector employment in the period analysed in table 3.3. Between 1986 and 2001, the proportion of Indigenous workers in the private sector declined by 3.2 percentage points to 57.2% in 2001. Over the same period non-Indigenous participation in the private sector became more intense with such employment increasing by 8.7 percentage points to 83.1%.

The effect of this cutback in the public sector is reflected in table 3.3, which shows private sector employment for each five-year age group.[9] Indigenous males and females are half as likely to be employed in the private sector as other Australians in all age groups except the oldest group for the last two censuses when employment in this sector picked up for the Indigenous cohort.

The cohort analysis of private sector employment reveals some patterns that are likely to be of concern to policy makers intent on improving Indigenous labour force status. The faster growth rate of private sector employment for non-Indigenous males is much more pronounced for the group aged 30–34 years in 2001, where non-Indigenous male private sector employment grew by 36.4 percentage points between 1986 and 2001 as compared to a growth rate of just 14.6 percentage points for Indigenous males. For male cohorts aged over 55 years at the last census, the decline in private sector employment was less for Indigenous than non-Indigenous males. However,

these declines were not enough to substantially change the relative outcomes of Indigenous and non-Indigenous cohorts, except perhaps in the oldest age groups.

That is, Indigenous male youth just entering the working-age population are half as likely to be in the private sector as other youth. By the age of 25 years the absolute differential between the Indigenous and non-Indigenous cohorts is about 40 percentage points and a sizeable relative disadvantage persists until well after the conventional age at retirement. This pattern is the same for Indigenous and non-Indigenous females with both having proportionally less of their respective age groups employed in the private sector than their male counterparts.

3.3 COHORT ANALYSIS OF PERCENTAGE OF COHORT EMPLOYED IN PRIVATE SECTOR

	Indigenous				*Non-Indigenous*			
Age group (years) at 2001 census	*1986*	*1991*	*1996*	*2001*	*1986*	*1991*	*1996*	*2001*
	%	%	%	%	%	%	%	%
Males								
15–19	na	na	na	18.6	na	na	na	40.0
20–24	na	na	17.1	31.0	na	na	37.4	66.4
25–29	na	19.7	28.8	31.3	na	34.7	63.9	72.6
30–34	16.7	29.6	29.7	31.3	37.2	58.1	69.2	73.6
35–39	26.3	32.7	30.8	31.2	59.3	63.4	69.6	72.5
40–44	28.7	32.8	30.6	31.5	61.7	63.3	68.2	70.5
45–49	29.1	33.5	31.6	31.7	61.3	62.0	66.5	67.9
50–54	29.3	34.8	30.3	29.7	63.6	63.2	66.2	65.1
55–59	29.4	31.6	26.8	24.6	65.3	63.3	63.3	57.3
60–64	28.3	26.7	21.8	15.3	64.5	59.9	54.2	40.4
65–69	21.9	22.5	12.7	7.5	59.9	51.4	35.6	18.0
70–74	17.7	15.9	5.6	3.8	51.7	35.7	14.9	9.3
75–79	10.4	7.3	3.1	2.8	31.1	13.1	7.5	5.4
80 years and over	3.8	4.7	3.0	6.6	8.5	6.0	3.8	4.0
Females								
15–19	na	na	na	18.1	na	na	na	43.9
20–24	na	na	15.5	21.5	na	na	39.9	60.5
25–29	na	14.6	19.5	19.0	na	35.5	57.1	55.7
30–34	11.9	17.7	18.2	19.0	35.3	50.6	52.3	50.4
35–39	14.7	16.6	17.9	21.4	46.6	44.2	46.8	50.6
40–44	13.1	19.1	20.8	24.9	37.6	41.2	48.4	53.4
45–49	14.7	21.4	23.6	24.7	37.6	45.3	51.8	53.7
50–54	16.4	21.7	22.0	20.4	43.4	49.5	52.3	49.4
55–59	15.4	20.0	17.5	15.6	45.8	48.0	45.4	37.3
60–64	12.9	14.3	11.8	8.4	42.2	39.0	30.9	19.2
65–69	9.9	9.5	5.3	3.9	33.9	26.1	14.4	8.0
70–74	7.6	4.8	2.5	2.1	22.6	12.7	6.2	3.8
75–79	2.8	2.5	0.8	0.9	10.6	5.6	2.9	2.0
80 years and over	1.2	1.8	1.6	2.7	2.8	2.2	1.1	1.4

Source: 1986, 1991, 1996 & 2001 Census of Population and Housing.

This monograph presents, *inter alia*, cohort analysis of changes in labour force status over the last four censuses for the Indigenous and non-Indigenous populations. In general, the macro trends in the non-Indigenous workforce

since 1986 are reflected in Indigenous employment and unemployment. The major exception to this rule is in the public sector where Indigenous workers have actually increased their share in employment despite a significant winding back of employment among government and statutory employers. A further curtailment in this sector will probably have an adverse impact on Indigenous employment outcomes. Also, a fall in non-CDEP scheme employment among younger Indigenous cohorts occurred despite relative and absolute increases in educational attainment between 1986 and 1996, which presumably improved the labour market competitiveness of Indigenous youth. Unfortunately, there are signs that the educational attainment of Indigenous youth may have faltered between the last two censuses with a substantial fall in the proportion attending university or equivalent institution (Hunter & Schwab 2003).

3.2 INDIGENOUS EMPLOYMENT AND THE INCREASING PROPENSITY TO IDENTIFY AS INDIGENOUS IN RECENT CENSUSES

The increasing propensity to identify as Indigenous in recent censuses can make inter-temporal comparisons complicated because it is difficult to ensure that populations are consistent over time. The technique of reverse survival is used in demography to ensure this (Hunter, Kinfu & Taylor 2003). In essence, reverse survival takes the population in the latter period and makes it consistent with previous periods by including the new entrants as Indigenous in the earlier period by estimating the number of people who should be alive in the various age groups using detailed mortality data by demographic characteristics. Having estimated the level of the Indigenous population for the earlier period, it is then possible to use the detailed employment profile by demographic characteristics to estimate the 'true' employment level in 1996. That is, the relationships documented in tables 3.1 to 3.3 are used to update the employment levels for 1996 so they are directly comparable with the 2001 population. In this way the data accounts for many demographic variables, and hence some basic supply-side factors.

3.4 INDIGENOUS POPULATION AND EMPLOYMENT — 1996 and 2001

		1996		2001
	Unit	Based on estimated residential population	Estimate from reverse survival	Based on estimated residential population
Population aged 15 years and over	no.	211 577	246 200	279 828
Total employment	no.	82 377	96 068	112 982
	%	38.9	39.0	40.4
Employed full-time	no.	48 970	59 362	65 225
	%	23.1	24.1	23.3
Employed in private sector	no.	45 676	53 251	64 682
	%	21.6	21.6	23.1

Note: Private sector and full-time employment counts include a proportion allocation from the not stated categories for the respective census questions. The employment levels in 1996 and 2001 may differ from the counts presented elsewhere because they are derived for the estimated residential population used in the reverse survival procedure.

Source: Hunter, Kinfu and Taylor (2003).

Table 3.4 illustrates that most of the change in employment ratios is not attributable to changes in basic demographic factors. There is virtually no difference in the total and full-time employment ratios estimated using the 1996 census counts and those based on the reverse survival procedure for the same census. Indeed there is little change in the proportion in employment between 1996 and 2001 once the demographic structures are rendered comparable for the two censuses. Notwithstanding, there is still a substantial change in total Indigenous employment that needs to be explained, especially in the private sector.

3.3 DESCRIBING PRIVATE SECTOR EMPLOYMENT

Taylor and Liu (1995) demonstrate a high level of overall industry segregation between Indigenous and other workers in the 1991 census, especially in non-urban areas.[10] The evidence is two-fold in that Indigenous people work in a different range of industries in different concentrations. For example, total employment in the top ten rural industries, measured at the most disaggregated level, had over 60% of Indigenous workers (mainly in community organisations and local government administration) and less than 30% of other Australians (spread more evenly over a range of rural industries, e.g. agriculture). Analysis of the 2001 census confirms the stylised analysis of Taylor and Liu. However, instead of replicating their analysis, the following concentrates on the industry and occupational distributions in the private sector with a particular focus on the top ten industries and occupations. This is justified on the grounds that the CDEP scheme introduces a confounding element to the analysis of total employment (see Chapter 1). More controversially, Noel Pearson has argued that 'public' sector employment, especially that based in CDEP and work-for-the-dole schemes, does not reflect the demand for workers in a strict definition of the 'real economy' (Pearson 2000).

Tables 3.5 and 3.6 confirm the results in Chapter 1 that there is less industry segregation (i.e. between Indigenous and non-Indigenous males and females) in private sector employment than in the public sector, which was included in Taylor and Liu's analysis. The percentage of employment in the top ten industries is similar for the Indigenous workers in the metropolitan zone, provincial zone and, to a lesser extent, the remote zone. In contrast to Taylor and Liu (1995), non-Indigenous male employment in remote areas is actually more concentrated in the top ten industries than is Indigenous male employment in the same region. In general, the differences in the percentages in major industries are much less than 7 percentage points for males in remote areas.

Not only is there relatively little difference in the proportion of private sector employment in the top ten industries, but there is a reasonable correspondence between the industry classes listed. While there is obviously a different ranking of the top ten industries, there is a remarkable degree of correspondence between the lists that reflects the conditions in the local labour market. For example, males in remote areas have a range of mining, farming, pastoral, and transport industries irrespective of their Indigenous status. The only industries for which Indigenous males in remote areas have no counterparts to those for non-Indigenous males in the similar labour markets were 'Interest Groups, not elsewhere classified (nec)', and Supermarket and Grocery stores. The former reflects a substantial number of non-governmental Indigenous organisations in such areas, whereas the latter reflects the relatively large numbers of low skilled jobs in supermarkets and community stores.

In metropolitan areas, seven of the top ten industry classes appear in the lists of both Indigenous and non-Indigenous males. This reinforces the observation that Indigenous and non-Indigenous males are competing for jobs in the same labour market. The three lowest ranking industries for Indigenous males do not appear in the non-Indigenous list because Indigenous workers are more likely to be concentrated in industries that employ many low skilled workers, such as accommodation workers, care services, and security guards. In contrast, the non-Indigenous industries not included in the Indigenous list are Computer Consultancy Services, Banks and Electrical Services categories.

Turning to table 3.6 which compares the top ten industries for females, there is less evidence of a skill bias in the non-Indigenous lists. For example, there were again seven common categories for Indigenous and non-Indigenous lists for metropolitan areas. The exceptions were Non-Residential Care Services, Child-Care Services and Cleaning Services for Indigenous females, and Banks, Clothing Retailing and Hospitals (except Psychiatric Hospitals) for the non-Indigenous females. The inclusion of clothing retailing class for non-Indigenous females, does not have an unambiguously higher level of skill associated with it compared to the three industries listed for Indigenous females.

3.5 RANK ORDER OF TOP TEN INDUSTRY CLASSES OF PRIVATE SECTOR EMPLOYMENT, By Jones classification, for males — 2001

Indigenous	*Non-Indigenous*
Metropolitan	
Road Freight Transport	Cafes and Restaurants
House Construction	Computer Consultancy Services
Supermarket and Grocery Stores	Supermarket and Grocery Stores
Cafes and Restaurants	Road Freight Transport
Manufacturing, undefined	House Construction
Takeaway Food Retailing	Automotive Repair and Services, n.e.c.
Automotive Repair and Services, n.e.c.	Banks
Accommodation	Takeaway Food Retailing
Non-Residential Care Services, n.e.c.	Manufacturing, undefined
Security and Investigative Services (except Police)	Electrical Services
Per cent of total employment: 19.8	Per cent of total employment: 18.2
Provincial	
Road Freight Transport	Road Freight Transport
Meat Processing	Beef Cattle Farming
Supermarket and Grocery Stores	Grain-Sheep and Grain-Beef Cattle Farming
House Construction	Supermarket and Grocery Stores
Fruit Growing, nec	House Construction
Meat Wholesaling	Dairy Cattle Farming
Takeaway Food Retailing	Automotive Repair and Services, n.e.c.
Non-Residential Care Services, n.e.c.	Accommodation
Accommodation	Sheep Farming
Automotive Repair and Services, n.e.c.	Cafes and Restaurants
Per cent of total employment: 19.4	Per cent of total employment: 19.7
Remote	
Beef Cattle Farming	Grain-Sheep and Grain-Beef Cattle Farming
Interest Groups, nec	Beef Cattle Farming
Iron Ore Mining	Iron Ore Mining
Road Freight Transport	Accommodation
Gold Ore Mining	Gold Ore Mining
Sheep Farming	Grain Growing
Supermarket and Grocery Stores	Sheep Farming
Accommodation	Black Coal Mining
Mining, nec	Sheep-Beef Cattle Farming
Sliver-Lead-Zinc Ore Mining	Road Freight Transport
Per cent of total employment: 27.7	Per cent of total employment: 34.7

Note: n.e.c. is acronym for not elsewhere classified. The 4-digit industry classifications are used in this table (see Appendix 1).

Source: 2001 Census of Population and Housing.

3.6 RANK ORDER OF TOP TEN INDUSTRY CLASSES OF PRIVATE SECTOR EMPLOYMENT, By Jones classification, for females — 2001

Indigenous		*Non-Indigenous*	
		Metropolitan	
Supermarket and Grocery Stores		Supermarket and Grocery Stores	
Non-Residential Care Services, n.e.c.		Cafes and Restaurants	
Cafes and Restaurants		Banks	
Takeaway Food Retailing		Takeaway Food Retailing	
Accommodation		Department Stores	
Nursing Homes		Legal Services	
Child-Care Services		Clothing Retailing	
Cleaning Services		Accommodation	
Legal Services		Nursing Homes	
Department Stores		Hospitals (except Psychiatric Hospitals)	
Per cent of total employment:	30.3	Per cent of total employment:	24.1
		Provincial	
Supermarket and Grocery Stores		Supermarket and Grocery Stores	
Accommodation		Accommodation	
Non-Residential Care Services, n.e.c.		Cafes and Restaurants	
Takeaway Food Retailing		Takeaway Food Retailing	
Child-Care Services		Nursing Homes	
Cafes and Restaurants		Child-Care Services	
Nursing Homes`		Banks	
Cleaning Services		Hairdressing and Beauty Salons	
Primary Education		Cleaning Services	
Preschool Education		Primary Education	
Per cent of total employment:	34.6	Per cent of total employment:	26.8
		Remote	
Supermarket and Grocery Stores		Accommodation	
Accommodation		Grain-Sheep and Grain-Beef Cattle Farming	
Primary Education		Beef Cattle Farming	
Non-Residential Care Services, n.e.c.		Supermarket and Grocery Stores	
Child-Care Services		Cafes and Restaurants	
Community Health Centres		Primary Education	
Interest Groups, n.e.c.		Takeaway Food Retailing	
Health Services, undefined		Cleaning Services	
Cleaning Services		Sheep-Beef Cattle Farming	
Hospitals (except Psychiatric Hospitals)		Child-Care Services	
Per cent of total employment:	37.8	Per cent of total employment:	36.4

Note: n.e.c. is acronym for not elsewhere classified. The 4-digit industry classifications are used in this table (see Appendix 1).

Source: 2001 Census of Population and Housing.

While the industry ranking for overall employment for various groups is not reported to save space, it is worth reporting several broad observations. First, government administration (including categories for central, local and state governments) is elevated to a high ranking for Indigenous employees, but not for their non-Indigenous counterparts. Second, the concentration of employment in the top ten industries is more pronounced for Indigenous workers, especially in remote areas. This is consistent with Taylor and Liu's (1995) observation that Indigenous employment is more than twice as likely to be concentrated in the top ten industries in rural areas. Taking these observations together, it is consistent with the explanation of the high level of industry segregation being explained by the disproportionate level of Indigenous employment in the public sector (including the CDEP scheme).

Tables 3.7 and 3.8 report the analogous results for the private sector occupations in the three zones of the Jones classification. The bias towards categories with a higher level of skill among non-Indigenous workers is more clearly evident than it was in the industrial data with Indigenous employment more likely to be concentrated in the low or semi-skilled professions, and non-Indigenous employment being relatively concentrated among professionals and managers. This observation is particularly relevant for males in metropolitan areas where three of the four categories in the non-Indigenous list, but not in the Indigenous list, where in the managerial-type occupations.

Similar observations can be made for the female lists. In metropolitan areas, the higher level of educational attainment of non-Indigenous females (and hence greater skills) is reflected in the relatively large numbers of shop managers and registered nurses. In provincial and remote areas, non-Indigenous females are more likely to be bookkeepers, while Indigenous females have a concentration of employment in skilled areas such as Aboriginal and Torres Straight Islander health workers and education 'aides'.

Overall, female employment tends to be concentrated in service sector occupations, irrespective of the Indigenous status of the workers. This is confirmed by the fact that seven of the top ten occupations are the same for Indigenous and non-Indigenous females.

In contrast with the industrial lists above, there are fewer direct links with the regional labour market evident in tables 3.7 and 3.8. This is understandable in that regional industries can and do employ a range of occupations. Notwithstanding, the remote zones have a greater number of farmers, farm hands, and miners. The effect of the regional economy is particularly pronounced in the male list of the top ten occupations.

In terms of the percentage of employment in the top ten private sector occupations, there is remarkably little difference between the numbers for the Indigenous and non-Indigenous lists. For example, the top ten occupations for Indigenous males have 24.5% of total employment in the private sector compared to a figure of 23.9% non-Indigenous males.

3.7 RANK ORDER OF TOP TEN OCCUPATIONS IN PRIVATE SECTOR EMPLOYMENT, By Jones classification, for males (per cent) — 2001

Indigenous		*Non-Indigenous*	
	Metropolitan		
Truck Drivers	4.9	Sales Assistants	3.7
Storepersons	3.9	Computing Professionals	2.9
Sales Assistants	3.4	Storepersons	2.8
Cleaners	2.5	Shop Managers	2.3
Carpentry and Joinery Tradespersons	1.9	Truck Drivers	2.3
Guards and Security Officers	1.7	Sales Representatives	2.2
Motor Mechanics	1.6	Sales and Marketing Managers	2.0
Forklift Drivers	1.5	General Managers	1.9
Structural Steel & Welding Tradespersons	1.5	Carpentry and Joinery Tradespersons	1.9
Labourers and Related Workers, n.f.d.	1.5	Cleaners	1.8
Per cent of total employment	24.5	Per cent of total employment	23.9
	Provincial		
Farm Hands	7.2	Livestock Farmers	5.2
Truck Drivers	4.4	Truck Drivers	3.7
Meat and Fish Process Workers	2.9	Farm Hands	3.4
Sales Assistants	2.5	Sales Assistants	3.1
Cleaners	2.4	Crop Farmers	3.0
Structural Steel & Welding Tradespersons	2.1	Shop Managers	2.7
Storepersons	2.0	Mixed Crop and Livestock Farmers	2.6
Labourers and Related Workers, n.f.d.	1.9	Motor Mechanics	2.5
Motor Mechanics	1.8	Metal Fitters and Machinists	2.4
Metal Fitters and Machinists	1.6	Electricians	1.9
Per cent of total employment	28.9	Per cent of total employment	30.4
	Remote		
Farm Hands	10.9	Mixed Crop and Livestock Farmers	7.3
Truck Drivers	4.8	Livestock Farmers	7.0
Miners	4.7	Farm Hands	5.3
Mobile Construction Plant Operators	3.3	Miners	4.4
Metal Fitters and Machinists	2.9	Metal Fitters and Machinists	3.9
Labourers and Related Workers, n.f.d.	2.0	Crop Farmers	3.1
Cleaners	1.8	Truck Drivers	2.8
Structural Steel & Welding Tradespersons	1.7	Electricians	2.4
Storepersons	1.6	Shop Managers	2.0
Gardeners	1.6	Motor Mechanics	1.9
Per cent of total employment	35.3	Per cent of total employment	40.1

Note: n.f.d. is acronym for not further defined. The 4-digit Australian Standard Classification of Occupations (ASCO) are used in this table (see Appendix 1).

Source: 2001 Census of Population and Housing.

The findings of the analysis in Chapter 1 regarding segregation between Indigenous and non-Indigenous workers is again confirmed by the fact that the comparable lists for total employment (i.e. in both the public and private sectors) show a greater disparity between Indigenous and non-Indigenous workers, especially in remote areas. For example, the percentage of employment in the top ten Indigenous male occupations increases dramatically to 50.0% in such areas, compared to the 36.3% for the top ten non-Indigenous male occupations. The effect of the CDEP scheme is clearly evident in that garbage collectors, farm hands, nursery, gardeners, and other labourers become relatively prominent when the public sector is included in the analysis. Among Indigenous female workers in remote areas, cleaners and education account for 20.8% and 8.3% of total employment — far greater than any single

occupational class. This is likely to reflect the type of work provided by the CDEP scheme.

3.8 RANK ORDER OF TOP TEN OCCUPATIONS IN PRIVATE SECTOR EMPLOYMENT, By Jones classification for females (per cent) — 2001

Indigenous		*Non-Indigenous*	
		Metropolitan	
Sales Assistants	10.5	Sales Assistants	10.9
Cleaners	4.3	Secretaries and Personal Assistants	5.4
Receptionists	3.6	Receptionists	3.6
General Clerks	3.6	General Clerks	3.2
Secretaries and Personal Assistants	3.3	Office Managers	2.7
Children's Care Workers	3.2	Cleaners	2.5
Checkout Operators and Cashiers	3.1	Registered Nurses	2.3
Waiters	2.6	Checkout Operators and Cashiers	2.3
Special Care Workers	2.2	Shop Managers	2.2
Office Managers	2.1	Accounting Clerks	2.2
Per cent of total employment	38.6	Per cent of total employment	37.3
		Provincial	
Sales Assistants	10.8	Sales Assistants	12.0
Cleaners	7.0	Cleaners	4.4
Children's Care Workers	4.4	Secretaries and Personal Assistants	4.2
Receptionists	3.1	Livestock Farmers	3.6
General Clerks	3.0	Shop Managers	3.2
Special Care Workers	2.8	General Clerks	3.2
Checkout Operators and Cashiers	2.8	Receptionists	2.9
Educational Aides	2.8	Checkout Operators and Cashiers	2.5
Farm Hands	2.6	Office Managers	2.4
Secretaries and Personal Assistants	2.5	Bookkeepers	2.4
Per cent of total employment	41.9	Per cent of total employment	40.8
		Remote	
Cleaners	9.3	Sales Assistants	8.3
Sales Assistants	6.9	Livestock Farmers	6.2
Educational Aides	4.9	Cleaners	5.5
Child Care Workers	4.0	Mixed Crop and Livestock Farmers	5.4
Receptionists	3.6	Secretaries and Personal Assistants	3.9
Checkout Operators and Cashiers	3.5	Shop Managers	3.4
Cooks	3.1	General Clerks	2.9
ATSI Health Workers	3.0	Bookkeepers	2.5
Special Care Workers	2.9	Office Manages	2.3
General Clerks	2.9	Receptionists	2.3
Per cent of total employment	43.9	Per cent of total employment	42.7

Note: The 4-digit ASCO are used in this table (see Appendix 1).
Source: 2001 Census of Population and Housing.

To summarise, there are systematic differences in the type of employment that Indigenous and non-Indigenous workers are engaged in. The greatest difference is that Indigenous workers are disproportionately concentrated in unskilled and semi-skilled jobs. Given the substantial growth in the returns to skill, as evident in higher wages for skilled, and reduced employment prospects for the unskilled (see Hunter 2002a), these differences should be reflected in differences in the demand for Indigenous workers. The next section attempts to quantify the likely number of jobs created for Indigenous males and females between 1996 and 2001 as a result of their distribution in the various occupations and industries.

3.4 TOWARDS AN ANALYSIS OF THE EFFECT OF THE DEMAND FOR INDIGENOUS WORKERS: A 'SHIFT SHARE STYLE' ANALYSIS OF EMPLOYMENT GROWTH

The previous section illustrates the disaggregated data on industry and occupation in order to illustrate where Indigenous workers are employed. In contrast, this section focuses on the broad industry and occupation divisions to provide a summary of the underlying demand conditions facing the Indigenous labour force.

Shift-share methodology, one conventional technique for gaining information about the influence of demand, is set out in Appendix 4. It is not possible to conduct a full shift-share analysis because there was not enough variation in employment structure for Indigenous people when all these dimensions are disaggregated for the intercensal period between 1996 and 2001. Instead, two related 'thought experiments' were conducted. Using the broad definitions of industry and occupation, Indigenous employment growth can be attributed to aggregate and industry/occupation-mix effects using simple cross-tabulations. The aggregate effect is simply the growth of Indigenous jobs that would be expected, if Indigenous employment grew at the national average (i.e. approximately 10.7% between 1996 and 2001). The industrial/occupational-mix effect is basically the growth of Indigenous jobs that would be expected, if 1996 Indigenous employment grew at the national or regional average of the respective industries/occupations. That is, it estimates the expected growth in Indigenous jobs given the current distribution of employment across industries and occupations. Note that the difference between these estimates of the aggregate and industrial/occupational-mix effect provides an insight into the importance of the segregation between Indigenous and non-Indigenous workers identified in Chapter 1, at least in terms of the likely number of jobs to be created for Indigenous and other workers. While such calculations are not as formal as the traditional shift-share analysis, it does provide some intuitive insight into the likely effect of labour demand on Indigenous employment.

Given the concentration of this monograph on enhancing the interpretability of Indigenous employment data, this section focuses on an analysis of the private sector. The proportion of Indigenous males aged 15 years and over who were employed in the private sector increased from 26.0% to 27.2% between 1996 and 2001. For Indigenous females, the per cent increased from 17.5% to 19.2%. For non-Indigenous males and females, the percentage in the private sector increased from 53.1% to 56.1%, and from 38.9% to 41.2% respectively. That is, Indigenous employment in the private sector was significantly lower in relative terms in 1996, and lower growth rates in the last intercensal period reinforced the relative job deficit.

Table 3.9 analyses the results for industry and occupation data in that order. If one holds the current composition of Indigenous employment constant, then about one-half of the actual employment growth can be explained in terms of

the industry-wide or occupation-wide employment growth. In general, this is similar to the level of growth of Indigenous employment that would be expected that if the number of jobs held by Indigenous people grew at the rate that they did elsewhere in the economy. The broad similarity of the expected growth using the aggregate and industry-specific and occupation-specific growth rates means that segregation may not be as important as previous research suggests.

For males, the industry-mix and occupation-mix component is substantially smaller than the aggregate component, especially in the industry employment data for Indigenous males across all sectors (Taylor 1993a). Holding industry composition constant for overall male employment leads to an expected increase that accounts for only 39.7% of the actual employment growth across all sectors. In contrast, the aggregate expected growth in Indigenous employment would account for 52.3% of all job growth. That is, overall Indigenous male employment growth is depressed by 12.6 percentage points by being concentrated in declining industries. This result also confirms that the segregation between Indigenous and non-Indigenous employment is particularly important outside the private sector — probably being driven by the concentration of Indigenous males in CDEP schemes that provide jobs in particular industries.

While there was also a concentration of Indigenous males in low growth industries in the private sector, as evidenced by the differential between the industry-mix and aggregate effects (i.e. a 6.1 percentage point differential), it was substantially less than that evident for all sectors. Indigenous males also tend to be concentrated in the low growth occupations (i.e. unskilled) in both the private sector and across all sectors with a differential of about eight percentage points for both.

There is no equivalent effect on overall Indigenous female employment growth given that industry-mix and aggregate effects are virtually identical (38.3% and 37.6%). Therefore Indigenous females tend not to be concentrated in low growth industries, irrespective of the influence of the CDEP scheme or other public sector employment. Indeed, if anything Indigenous females are concentrated in relatively high growth industries in the private sector with the industry-mix effect explaining almost ten percentage points more of the actual growth in the private sector (51.3% and 41.9% respectively). That is, Indigenous females' greater concentration in particular industries, especially non-residential care services, child-care services and cleaning services, seem to be enhancing their employment growth relative to non-Indigenous females. The occupational distribution of Indigenous females also tends to explain about eight percentage points more of the actual employment growth than the aggregate effect in both the private sector and across all sectors.

3.9 EXPECTED GROWTH RATES IN JOBS FOR INDIGENOUS MALES AND FEMALES — 1996–2001

	Males		*Females*	
	Industry	*Occupation*	*Industry*	*Occupation*
Private sector only				
Expected growth assuming average industrial/occupational rate (% of actual)	44.6	42.5	51.3	49.6
Expected growth assuming national rate (% of actual)	50.7	50.7	41.9	41.9
Actual employment growth, 1996–2001	5 935		5 525	
All sectors				
Expected growth assuming average industrial/occupational rate (% of actual)	39.7	44.9	38.3	46.1
Expected growth assuming national rate (% of actual)	52.3	52.3	37.6	37.6
Actual employment growth, 1996–2001	8 370		9 688	

The large unexplained component of about half the observed growth in Indigenous employment must be explained by other factors that are related to either the supply or demand-side of the labour market. Several possible alternative explanations are canvassed in Appendix 4. Note that the substantial growth in the Indigenous population between 1996 and 2001 cannot explain the residual growth in table 3.9 because the growth rates are calculated using the 2001 census results as the base. That is, the growth calculations are consistent with the relatively larger population who identified as Indigenous at the last census. Given that there was little difference between the expected growth in Indigenous employment, irrespective of whether the 1996 census or the 2001 census was used as the base, the effect of population growth on Indigenous employment was unexpectedly small.

Improvements in educational attainment of Indigenous people provides another explanation, although the preliminary evidence from the census is equivocal with little or no improvements evident relative to the non-Indigenous population (Hunter & Schwab 2003). If one discounts the effect of population growth and educational mix, then the majority of the unexplained growth in Indigenous employment must be explained by the residual component or share effect (see Appendix 4). The share of an industry or occupation in overall Indigenous employment may increase because individuals are choosing to look for work in different sectors or there are certain factors specific to a particular industry or occupation. For example, growth in native title claims may lead to expansion of employment in the mining industries where there are a number of agreements in place between companies and local communities (140 agreements were examined in Indigenous Support Services and ACIL Consulting 2001). Alternatively, guaranteed access to ancestral lands and waters, arising from successful native title claims, may enhance participation in the traditional activities that may be classified as Agriculture, Forestry & Fishing in the respective censuses.

The above speculation is consistent with the fact that the actual private sector employment growth of Indigenous males and females in Agriculture, Forestry & Fishing grew at between 11 and 17 times that expected using our industry-based projections. Even if the focus is on all sectors, actual employment in that industry grew at ten times the rate predicted by our projections. However, it should be noted that relatively few Indigenous people were employed in that industry in 1996 and hence the influx still does not constitute a large portion of overall Indigenous employment.

The other industries where Indigenous employment growth was exceptionally good were wholesale trade, and manufacturing. In the former, the industry actually shrunk while the actual growth in Indigenous employment was 11 times the absolute size of the overall decline in the industry. Again, Indigenous involvement in the wholesale trade industry remains small. While the actual private sector growth in Indigenous employment in manufacturing is only five and three times that anticipated (for Indigenous males and females respectively), the growth is more significant given the relatively large numbers of Indigenous people currently working in that industry. Manufacturing appears to be generating many jobs for Indigenous workers. This is probably not surprising given that manufacturing still tends to be relatively labour intensive with a number of jobs available to unskilled and semi-skilled labour, such as Indigenous workers.

The mining industry declined slightly in terms of the number of employed but this was not reflected in the number of Indigenous jobs. About 250 extra jobs were created for Indigenous males and females over and above the industry average. While this is only small in number, it does represent the result of the 'concerted effort' of mining companies, many of whom have targets for the number of jobs filled by Indigenous workers. For example, Indigenous Support Services and ACIL Consulting (2001: vii) show that while employment schemes are an integral part of most agreements between mining companies and Indigenous communities, the provisions have had limited success in improving outcomes to date. It is worth noting that the Mining industry still only employs relatively few Indigenous people although the number may be a relatively significant portion of private sector employment in remote areas.

The Indigenous growth in two occupational groups was particularly strong relative to that expected. The actual growth in private sector employment in Intermediate Production and Transport Workers was about six times that expected if Indigenous employment grew at the average rate for that occupation between 1996 and 2001. If one examines all sector growth, this factor increases to between 11 and 18 for Indigenous males and females. The difference between the private sector and total Indigenous employment is driven by the inclusion of the CDEP scheme. The role of other public sector employment can probably be discounted because few Intermediate Production and Transport Workers are employed in that sector.

To end on a more positive note, it is encouraging that the actual growth of Indigenous males employed in the private sector as Tradespersons and Related Workers was four times that anticipated. That is consistent with the relatively good performance of the Australian manufacturing sector and may provide a positive sign that some Indigenous males are finding skilled work.

3.5 THE ROLE OF LABOUR DEMAND IN THE IEP

The prospect of large increases in the working age population of Indigenous Australians continues to put pressure on the number of jobs required to stop Indigenous labour force status from deteriorating (Taylor & Hunter 1998). The situation is further complicated by the effect of non-biological increases of the Indigenous population whereby many people are increasingly willing to identify as Indigenous on the census form. Notwithstanding, this chapter demonstrates that the overall increase in the level of Indigenous private sector employment appears to be only partially related to these demographic factors. At least one half of the employment increase is explained by demand-side factors. The residual component can be explained by a combination of supply and demand side factors.

Hunter, Kinfu and Taylor (2003) provide detailed employment projections to 2011 that account for measurable demographic factors. While private sector employment appears to be more dynamic than full-time employment or even overall employment, the recent and prospective improvement in Indigenous employment rates for that sector are driven by the low base from which it started. Private sector growth is also made to look good by recent efforts at privatising public enterprise that may generate more low skilled jobs. In this way, formerly public sector jobs are transformed into private sector jobs, thus artificially inflating the growth in the short term. If there is a limit to the number of public assets that could be privatised, then the reasonably high levels of Indigenous growth in the private sector is not sustainable.

Notwithstanding such caveats, government initiatives aimed at Indigenous job creation do appear to have had some effect. Around 12,000 jobs have been created for Indigenous people since the inception of the IEP in 1998 — with about 9,000 of these jobs being in the private sector. Interestingly, our reverse survival estimates of growth in this sector indicate that around 11,000 jobs were created. Therefore, despite some minor churning through IEP programs (about 7%), a substantial part of this increase is probably real (Evaluation and Programme Performance Branch 2002).

ENDNOTE

9 Note that since the table shows the proportion of the population in each age group employed in the private sector, the trends can be at variance with those reported in Chapter 1 (table 1.5).

10 Taylor and Liu (1995) used the section-of-state classification because they had no alternative.

CHAPTER 4 FACTORS UNDERLYING INDIGENOUS EMPLOYMENT OUTCOMES

This monograph has so far concentrated on cross-tabulations of employment and participation rates by relevant variables. However, multivariate techniques can also be used to identify the salient factors underlying Indigenous employment. Such techniques, including the logistic regression model used in this chapter, allow us to determine the relative importance of various factors after controlling for the influences of other measurable factors. A recent decomposition technique is also used to summarise the differences in employment outcomes of Indigenous and other Australians (Nielsen 1998).

Studies of the determinants of the labour force status of Indigenous Australians cannot ignore Indigenous-specific institutional factors such as the CDEP scheme. The dominance of the CDEP scheme in certain regions of Australia complicates the interpretation of any analysis of Indigenous employment. In order to enhance interpretation, the factors underlying Indigenous employment can be examined separately for areas where CDEP is relatively prominent. For example, Hunter (2002a; 2002b) conduct a separate census analysis for Indigenous and non-Indigenous males and females in the various sections of state. Unfortunately, changes to important explanatory factors such as the census data on schooling means that it is not possible to replicate those studies. This constraint is a blessing in disguise in that the 2001 analysis can start afresh, unconstrained by previous data limitations. One case in point is the availability of a new form of census geography that accords more closely to regional labour market conditions, which should improve the interpretability of results relative to previous studies (see Appendix 3).

The new geography used in this monograph is partially based on Accessibility Remoteness Index of Australia (ARIA), and hence captures the access to markets in a way that the section of state classification does not (Jones 2003). The use of the Jones classification is also preferable because less accessible areas on the edge of major cities are not classified as remote. From an Indigenous perspective this is particularly important, because the people on the edges of cities have a long history and extensive experience of colonisation, and hence are likely to be culturally different from other 'remote' Indigenous peoples in the standard unmodified ARIA classification.

The failure to distinguish CDEP scheme employment from other employment may lead to misleading conclusions in research, and policies based on such research. For example, given that the CDEP scheme is a government-funded program available to many Indigenous unemployed, it is unlikely to be strongly correlated with education. Hence any analysis that conflates the CDEP scheme jobs with other jobs may understate the returns to education (both social and

individual), and therefore lead to distortions in the decisions of governments or individuals. This chapter seeks to redress this situation by using information about the geographic distribution of CDEP scheme employment to infer the likely distortions in effect of education and other explanatory factors on total employment in the 2001 census. Following the approach adopted elsewhere in this monograph, the effect of CDEP can be largely eliminated by focusing on private sector and full-time employment.

The remainder of this chapter has five main sections. The next section introduces the data and methodology used in broad terms. Appendix 5 provides technical details of the multivariate regression model, and documents the descriptive statistics for the data used. A second section provides a detailed analysis of the results for total employment, private sector employment and full-time employment. A third section estimates and briefly discusses some new measures of potential labour market discrimination against Indigenous Australians. The penultimate section then examines the labour force status of Indigenous students. The concluding section explores the policy implications of the evidence, especially in terms of the prospect for reducing Indigenous disadvantage in labour force status.

4.1 DATA AND METHOD

The inability to completely separate out CDEP scheme jobs from other census data on employment means that the main analysis necessarily focuses on total employment, private sector employment and full-time employment. The regression analysis is conducted separately for each broad region in the Jones classification so as to maximise the insights into the role of the CDEP scheme. While the CDEP scheme moved progressively into urban Australia over the last 25 years, it is reasonable to assume that very few CDEP scheme jobs are in metropolitan areas. Indeed, recent ATSIC data show that there is only just over 1,000 CDEP participants in capital cities or any other urban area with more than 100,000 residents — this coincides almost identically with Jones classification, the metropolitan zone.

While the dominance of the CDEP scheme in certain areas of Australia complicates the interpretation of any analysis of overall Indigenous employment, the contrast of the results with those for private sector employment and full-time employment ensures that the analysis is robust, and allows us to accurately identify the effect of the CDEP scheme on the measured determinants of Indigenous employment in metropolitan, provincial and remote areas. The disaggregation of results by geography is particularly important since the Jones classification captures important differences in local labour market conditions. Furthermore, by conducting the analysis separately for various geographic areas it effectively distinguishes between groups of Indigenous people whose labour supply preferences may differ because of cultural differences, which themselves are conditioned by historical factors and the experience of colonisation.

The main purpose of this study is to replicate and develop Daly's (1995) analysis of the determinants of Indigenous labour force status using the 2001 census data. The determinants of the probability of employment are similar to those used in other studies of Indigenous population, largely because such studies are also constrained by the availability of census data (Daly 1993; Miller 1989; Miller 1991).

For example, the analysis should take into account the factors which human capital theory suggests should be important in determining labour force status and the results of earlier studies of Aboriginal employment and unemployment (also see Jones 1991a; Miller 1987; Miller 1989; Miller 1991; Ross 1991). Education has been included in two forms: highest level of schooling completed, and whether a person has post-school qualification. Additional education is expected to raise the probability of employment.

Additional work experience is also predicted to have a positive effect on the probability of employment through most of an individual's working life. It is difficult to accurately measure work experience from the information collected in the census, as the census focuses on the current period and contains no information on past labour force experience. Many studies have approximated work experience with current age, minus the age on leaving school (Mincer 1974). This assumes that individuals have spent all their adult life in employment, however, this is an inappropriate assumption for Aboriginal people. Rather than use this standard approximation of labour force experience, age has been included. Age captures not only the effects of labour market experience on labour force status, but also broader life cycle effects. This variable has the additional advantage of being truly exogenous, that is, it is determined independently of the model.

An additional measure of skill that has been included in this analysis is the ability to communicate in English. Other studies have found that poor English skills reduced the probability of being in employment (Daly 1995; Gray & Hunter 2002; Hunter 2002a; Hunter 2002b; Jones 1991a).

Many studies of the determinants of labour force status have included family characteristics as important control variables. In addition to some of the Indigenous studies cited above, the classic study was conducted by Hill (1979). An individual's marital status is likely to affect their range of employment opportunities and their motivation. The effects will differ between the sexes where family responsibilities are allocated according to conventional patterns.

The variables used in the empirical analysis include: having a post-secondary qualification; highest year of secondary school completed; difficulty in speaking English; age (measured in broad ten-year age groups); and marital status: whether married (including de facto); and whether widowed, separated or divorced. Table 4.1 describes all the variables used in the regression analysis, while Appendix 5 provides the relevant summary statistics.

4.1 THE VARIABLES USED TO ANALYSE THE LABOUR FORCE STATUS — 2001

Variable	*Variable description*
	Dependent variables
Total employed	Total number of employed including CDEP scheme participants
Labour force participation	Whether a person is either employed or unemployed
Full-time employed	Employed more than 35 hours per week in the week before the census
Private Sector	Employed in the private sector
Population	Total number of people aged between 15 years and 64 years
	Explanatory variables
Education	
POSTSEC	Has a post secondary qualification
YR12	Completed Year 12
YR1011	Highest level of schooling completed was Year 10 or Year 11
NOTWELL	Does not speak English well
Age	
AGE2534	Whether a person was aged between 25 and 34 years
AGE3544	Whether a person was aged between 35 and 44 years
AGE4554	Whether a person was aged between 45 and 54 years
AGE5564	Whether a person was aged between 55 and 64 years
Marital Status	
MARRIED	Married
WIDSEPDI	Widowed, separated or divorced
Conditioning variables (analysis conducted separately for these variables)	
METRO	Lives in a metropolitan area (broad Jones Classification
PROVINC	Lives in a provincial area (broad Jones Classification)
REMOTE	Lives in a remote area (broad Jones Classification)
MALE	Male
INDIG	A person who identified as either Aboriginal, Torres Straight Islander, or both

Note: People who do not answer the questions on Indigenous status or labour force status are excluded from the analysis. The other exclusions were persons aged under 15 years or aged 65 years and over, and students still at school. These exclusions are designed to maximise comparability with Daly (1995).

Source: 2001 Census of Population and Housing.

One other important determinant of employment is the presence of children in the family. Unfortunately, it was not possible to control for children because the process of data construction was intractable. While data on children can be provided at a household or family level, it is not obvious how such data can easily be integrated into the cross-tabulations based on individual level data.

Given the intensive nature of an exercise that separately examines remote, provincial and metropolitan areas, it is necessary to use the full census file. While this has the benefit of providing a complete analysis, it is limited by the ABS' requirement that the identity of individuals be kept anonymous. The process of confidentialising the data means that the structure analysis is rather inflexible. Notwithstanding, the following analysis is entirely consistent with basic insights provided by more sophisticated and flexible specifications used elsewhere (e.g. Borland & Hunter 2000).

The analysis at a sub-national level was facilitated by using the broadest categories for the variables in the specification. This compromise was necessary because of the relatively small numbers of Indigenous people, especially in remote areas, but reduced the possible insights from the following analysis. For

example, the educational qualification variable is a crude measure that includes any post-secondary qualification.

In order to be consistent with Daly (1995), people were excluded if they were aged 65 years and over or were still at school. The final data used included only those people for which we had complete information for all the variables used, i.e. missing data was excluded. Sensitivity analysis was conducted by treating missing data as if it were separate variables, but the results did not vary significantly from those reported. Note that those who did not state their Indigenous status were also excluded from the analysis.

The ABS provided the data in a series of detailed, confidentialised cross-tabulations, which were used to construct a multivariate analysis of the determinants of employment. The grouped nature of the data means that the dependent variables are the proportion of the population that is employed. Given that the dependent variables are bounded between the values of zero and one, the standard Ordinary Least Squares (OLS) estimation is also inappropriate. The solution adopted in this paper is to transform the dependent variables using a logistic transformation, and then perform a weighted OLS analysis on the transformed data. Details of the estimation method are presented in Appendix 5.

The coefficients of logistic regression analysis are informative but are notoriously difficult to interpret. One statistic that is relatively easy to interpret is the 'marginal effect' of each explanatory variable. This involves estimating the change in the predicted probability of employment arising from a given change in a variable, holding the value of the other variables constant. Since the effect of changes in the explanatory variables on the probability varies with the value of all the explanatory variables in the model, it is essential that marginal effects are measured at values which are representative of a significant proportion of the population. Therefore, the reference person for the calculated marginal effects is a hypothetical Indigenous person whose characteristics are equal to the population average. In each case the marginal effect is calculated as the difference in probability of employment for a person with and without the specified characteristic, with all other characteristics fixed at average values. While no single person embodies the 'average', this change means that the estimated marginal effects are more robust and are relevant to a greater number of people.

Another important question for this study is whether Indigenous status in itself has an effect on labour force status or whether the lower Indigenous employment rates merely reflect their smaller stock of labour market skills. Any independent effect of Indigenous status on labour force status may reflect factors on either the supply or demand sides of the labour market. Indigenous people who were identical in every other measured respect to comparable non-Indigenous people may choose a different labour force status. Alternatively, factors on the demand-side of the labour market, for example

discrimination in employment, may frustrate Indigenous people in their attempts to achieve equality in their employment status.

There is an extensive literature that aims to explain differences in income according to racial group and gender in terms of potential discrimination (see Blinder 1973; Ehrenberg & Smith 1997; Oaxaca 1973). Preston (2001) describes two main approaches to the measurement of wage discrimination: one involving the direct measurement of the extent of wage disadvantage that remains after directly controlling for education and other observable characteristics (i.e., age, sex, location, marital status, occupation, industry); and the other is to decompose the wage gap between two groups assuming that the productive returns to the various characteristics are the same. Both of these techniques capture discrimination by the residual differences between groups after controlling for measurable factors.

Unfortunately, since employment is not a continuous variable, that is people are either employed or they are not, it is not possible to directly apply such techniques in this study. However, Nielsen (1998) has suggested an analogous technique that can be applied when logistic regression analysis is used (n.b. similar techniques also used in earlier studies — e.g. Even & Macpherson 1993). The basic idea is that the probabilities are estimated for the Indigenous population using the measured effect of important factors for non-Indigenous population. The extent to which the average differential in employment is not explained by differences in characteristics of the respective population (i.e. residual differences) can be called potential discrimination. The description of these residual differences as discrimination is contestable because it probably conflates many factors, including the preference for particular types of work that may vary systematically between Indigenous and non-Indigenous people, and even groups of Indigenous people (Altman & Nieuwenhuysen 1979). Also, such techniques may be sensitive to measurement error in the explanatory variables (e.g. having completed school to Year 10 may mean different things in different locations). Notwithstanding these issues, Nielsen's index provides a rough indication of the scope for explanations that involve labour market discrimination.

4.2 RESULTS: REGRESSIONS ANALYSIS OF EMPLOYMENT OUTCOMES

The following multivariate analysis explains the various types of employment (total, private sector and full-time) using several basic education, demographic and marital status variables. In addition to separate analysis of metropolitan, provincial and remote areas, the results are also conducted by sex and Indigenous status within each area (see tables 4.2 to 4.5, and appendix tables 5.3 and 5.4). As indicated above, marginal effects are reported because of their relative ease in interpretation. The coefficient of determination, or R-squared, are reported to provide an indication of the goodness-of-fit of the respective regression models. This statistic can be interpreted as the per cent of the

variation of the transformed dependent variable that can be explained by the models.

Total employment

Tables 4.2 and 4.3 report the effect of the respective explanatory variables on overall or total employment (i.e. including CDEP scheme employment). Note that the patterns of significance for these marginal effects are identical to those for the underlying logistic regression coefficients. This should not be surprising since marginal effects are a representation of the same information in a more user-friendly form. Accordingly, only the marginal effects are reported. Note that all regressions provide a reasonable fit to the data in that they explain around 90% of the variation of the transformed dependent variable (as measured by the R-squared).

One outstanding feature of tables 4.2 and 4.3 is that, without exception, the returns to education are higher (or less negative for the English proficiency proxy) for Indigenous people, irrespective of regional labour market conditions. For example, among Indigenous males, having a post-secondary qualification was associated with between 17.8 and 23.3 percentage point higher employment probability. In contrast, non-Indigenous males experienced between 4.6 and 14.5 percentage point higher employment prospects. Having an educational qualification is clearly extremely advantageous for Indigenous people. Note that the quality of educational qualifications is unlikely to explain the better employment outcomes for Indigenous people since their post-secondary qualifications are disproportionately concentrated in the TAFE and non-university sector (Hunter & Schwab 2003).

Given differences in the level (and quality) of qualifications in the Indigenous and non-Indigenous populations, one explanation for the larger effect among Indigenous people is that the relatively small number of Indigenous people with qualifications sends a signal to employers about the ability and motivation of the potential workers. This 'signalling hypothesis' is consistent with the observation that the effect of an Indigenous person having a qualification is particularly high in remote areas where few Indigenous males and females have them.

4.2 MARGINAL EFFECTS FOR TOTAL EMPLOYMENT, Males

	Indigenous			*Non-Indigenous*		
Variable	*Metro-politan*	*Provincial*	*Remote*	*Metro-politan*	*Provincial*	*Remote*
Post secondary qualification	0.178	0.178	0.233	0.145	0.116	0.046
	(0.012)	(0.013)	(0.017)	(0.005)	(0.007)	(0.009)
Completed Year 12	0.292	0.275	0.244	0.183	0.185	0.128
	(0.012)	(0.014)	(0.014)	(0.006)	(0.009)	(0.010)
Completed Year 10 or Year 11	0.173	0.168	0.178	0.127	0.127	0.083
	(0.012)	(0.011)	(0.009)	(0.007)	(0.008)	(0.009)
Does not speak English well	–0.067	0.298	–0.146	–0.286	–0.216	–0.188
	(0.107)	(0.149)	(0.017)	(0.014)	(0.055)	(0.078)
Aged 25–34 years	0.073	0.034	0.049	0.145	0.094	0.084
	(0.014)	(0.014)	(0.012)	(0.007)	(0.011)	(0.013)
Aged 35–44 years	0.049	0.041	0.082	0.125	0.055	0.059
	(0.016)	(0.016)	(0.013)	(0.008)	(0.012)	(0.015)
Aged 45–54 years	0.022	0.030	0.100	0.066	–0.011	–0.016
	(0.020)	(0.019)	(0.015)	(0.009)	(0.014)	(0.018)
Aged 55–64 years	–0.168	–0.174	–0.018	–0.220	–0.296	–0.305
	(0.025)	(0.023)	(0.020)	(0.010)	(0.014)	(0.022)
Married	0.285	0.264	0.031	0.228	0.256	0.145
	(0.013)	(0.013)	(0.010)	(0.007)	(0.010)	(0.011)
Widowed, separated or divorced	0.099	0.054	–0.046	0.081	0.069	0.039
	(0.017)	(0.018)	(0.019)	(0.009)	(0.012)	(0.014)
Regression statistic: R-squared	0.873	0.873	0.831	0.927	0.880	0.845

Note: Table measures the expected change in the probability of being in employment resulting from a change in the explanatory variable. Standard errors in parentheses.

Therefore the second salient point to arise from tables 4.2 and 4.3 is that the marginal effect of having an educational qualification is actually higher for Indigenous people in remote areas compared to other areas. In contrast, non-Indigenous residents in remote areas have relatively poor employment prospects compared to their more urban counterparts. Given that it is reasonable to expect that the demand for workers, including skilled workers, is relatively low in remote areas, the non-Indigenous result is not surprising. However, the contrasting results merely underscore the effect of qualifications for Indigenous people.

Another alternative is that Indigenous people operate in a completely different labour market to other residents of remote areas, because they either: choose to work in different industries, or experience a discrimination in hiring and ongoing employment practices. Note that these explanations are not mutually exclusive since Indigenous people might choose to work in different industries because of the experience of discrimination. One of the latter sections of this chapter attempts to tease out the issues involved when it discusses our estimates of potential labour market discrimination.

The poor prospects of early school leavers are a relatively recent phenomenon among non-Indigenous Australians, but is well established in the Indigenous population (Hunter 2002a). Indeed, there has been an element of convergence in recent censuses. The 2001 census confirms such results with the premium for completing Year 12 (and even completing Year 10 or Year 11) being

relatively high for Indigenous males and females compared to non-Indigenous males and females. For example, Indigenous females living in metropolitan areas who complete Year 12 are 37.0 percentage points more likely to be employed compared to those who left school before completing Year 10. Among non-Indigenous females in metropolitan areas, completing Year 12 is associated with a 24.2 percentage point boost to employment prospects. There is a substantially smaller differential between the Indigenous and non-Indigenous employment effects of completing Year 10 or Year 11 for male and female residents in all areas.

The marginal effects for difficulty in speaking English are also relatively more favourable for the Indigenous population. While the effect is not significant for Indigenous males living in metropolitan areas, and Indigenous females living in non-remote areas, the effect of speaking English relatively poorly is always more positive (or less negative) for the Indigenous population compared to other Australians. Not being able to speak English well has a significant large negative effect for non-Indigenous residents in the various areas. In contrast, Indigenous people have no significant effect arising from their incomplete command of the English language, hence they experience less employment disadvantage as a result.

4.3 MARGINAL EFFECTS FOR TOTAL EMPLOYMENT, Females

	Indigenous			*Non-Indigenous*		
Variable	*Metro-politan*	*Provincial*	*Remote*	*Metro-politan*	*Provincial*	*Remote*
Post secondary qualification	0.234	0.231	0.299	0.154	0.177	0.125
	(0.013)	(0.014)	(0.017)	(0.006)	(0.007)	(0.010)
Completed Year 12	0.370	0.321	0.303	0.242	0.254	0.206
	(0.015)	(0.015)	(0.013)	(0.008)	(0.009)	(0.013)
Completed Year 10 or Year 11	0.186	0.189	0.177	0.158	0.165	0.129
	(0.014)	(0.012)	(0.010)	(0.008)	(0.008)	(0.012)
Does not speak English well	0.200	0.310	–0.106	–0.317	–0.197	–0.218
	(0.241)	(0.212)	(0.017)	(0.012)	(0.048)	(0.066)
Aged 25–34 years	0.004	–0.004	0.037	0.067	–0.020	0.015
	(0.015)	(0.014)	(0.011)	(0.010)	(0.011)	(0.017)
Aged 35–44 years	0.092	0.114	0.130	0.134	0.100	0.147
	(0.018)	(0.017)	(0.013)	(0.011)	(0.012)	(0.016)
Aged 45–54 years	0.144	0.135	0.131	0.191	0.130	0.155
	(0.021)	(0.020)	(0.015)	(0.011)	(0.013)	(0.017)
Aged 55–64 years	–0.056	–0.084	–0.034	–0.105	–0.170	–0.139
	(0.028)	(0.025)	(0.021)	(0.012)	(0.013)	(0.020)
Married	0.155	0.149	0.033	–0.085	0.030	–0.078
	(0.015)	(0.014)	(0.010)	(0.008)	(0.009)	(0.013)
Widowed, separated or divorced	0.033	0.011	–0.027	–0.089	–0.049	–0.083
	(0.017)	(0.016)	(0.015)	(0.010)	(0.011)	(0.018)
Regression statistic: R-squared	0.864	0.874	0.873	0.892	0.905	0.872

Note: Table measures the expected change in the probability of being in employment resulting from a change in the explanatory variable. Standard errors in parentheses.

While the educational variables have the largest effect on employment prospects, the marginal effects of other variables are also potentially important. The demographic, or rather age, variables have a significant effect on both Indigenous and non-Indigenous populations. For example, Indigenous males enter employment in smaller proportions than non-Indigenous males at the beginning of their working life (up to 34 years of age). At the other end of the life cycle, a greater proportion of non-Indigenous males leaves employment between the ages of 55 years and 64 years; This may be a reflection that Indigenous males tend to live in families where economic circumstances mean that they have to stay at work longer. In broad terms, the age profile of male employment is steeper for the non-Indigenous population.

Among females there is less difference in the age profile of employment. In the earlier age group, this observation is probably a reflection of child-rearing, which disproportionately falls on females. However, this consideration is a lesser issue for women aged between 55 years and 64 years, and consequently it is not surprising that non-Indigenous women in this age group appear to choose early retirement. The only exception to these generalisations was in metropolitan areas where non-Indigenous women clearly had a steeper age profile than their Indigenous counterparts. That is, in such areas a greater proportion of non-Indigenous women entered employment in all age groups to 54 years of age when they started to leave employment in larger numbers.

The differences in family structure of Indigenous and non-Indigenous populations lead to substantial differences in the effects of marriage, and being widowed, separated or divorced. For example, married Indigenous males in metropolitan and provincial areas tend to have higher employment rates than other married males. The pattern is reversed in remote areas where access to the CDEP scheme may be affecting results. Among males whose partner has died, or have experienced a separation or divorce, there is no significant difference between the Indigenous and non-Indigenous marginal effects in metropolitan and provincial areas. While there is a difference between marginal effects in remote areas, this may again be driven by the access of Indigenous males to work in the CDEP scheme.

Table 4.3 shows that the marginal effect of being married is significantly higher (i.e. more positive) for Indigenous females than other married Australian females, irrespective of the region of residence. The generally higher marginal effects of marriage among Indigenous females may be associated with better access to informal childcare arrangements. The main caveat attached to this interpretation is that while large extended family networks exist and may assist in the provision of childcare, these arrangements may not be oriented to the demands of regular work (Henry & Daly 2001). Another possible explanation is that the marriage effect is proxying for the effect of 'mixed marriages' for whom there is some evidence that partners in such relationships are better off than other Indigenous people (Peterson & Taylor 2002). This effect may explain the geographic pattern of results since the incidence of marriages between

Indigenous and other Australians is known to be much higher in urban areas, especially cities (Ross 1999).

The other marital status variable is whether a person had been widowed, separated or divorced. The marginal effect of this variable is not significant for Indigenous females, but strongly negative for non-Indigenous females. Since it was not possible to control for the presence of children in our analysis of census data, the effect of being widowed, separated or divorced may proxy for the effect of having children without much potential childcare assistance in the immediate household. Again, the effect of this variable on Indigenous people relative to other Australians in similar circumstances may be explained by the existence of extended family networks. Another possible explanation is that non-Indigenous females may have a greater access to resources from their former partners (either through wills or alimony), especially given the substantially higher starting incomes of non-Indigenous couples (Ross & Mikalauskas 1996).

The main point arising from this analysis is that given the extremely high returns to Indigenous education in terms of access to employment, Indigenous people clearly have a strong economic incentive to become educated and to stay on at school. In spite of this, there is evidence that Indigenous attendance at school and tertiary institutions actually trended down between 1996 and 2001 censuses (Hunter & Schwab 2003).

Whatever the reason for the ongoing low levels of educational attainment among Indigenous people, the significant higher effect of education among Indigenous people means that one could reasonably expect that educational outcomes should explain a substantial portion of the differential employment experience of Indigenous and other Australians. This hypothesis is tested indirectly in a latter section where measures of potential discrimination are constructed.

Analysing factors underlying private sector and full-time employment: eliminating the influence of the CDEP scheme

What happens to the effect of the factors underlying Indigenous employment when the focus is on private sector employment rather than overall employment (tables 4.4 and 4.5)? The marginal effect of having a post-secondary qualification remains significantly higher for Indigenous people. This observation is particularly pronounced in remote areas where the marginal effect of a qualification is about 21.0 percentage points higher for Indigenous males than it is for non-Indigenous males. While the effect of qualifications were also disproportionately higher for Indigenous females in remote areas, non-Indigenous females with qualifications in such areas were also less likely to be employed than analogous Indigenous females in more urban settings (both metropolitan and provincial areas).

Similarly, the marginal effects of being in private sector employment for other educational variables tend to be more positive for Indigenous people. While the

effect of English proficiency on private sector employment is not generally significant for Indigenous people (except males in remote areas), it is always negative and typically significant for non-Indigenous males and females.

Therefore, the previous observation about the relatively high employment returns for Indigenous education also hold in tables 4.4 and 4.5. Note that the comments about the pronounced effect of education for Indigenous males and females in remote areas are also applicable when the private sector is examined. That is, the discussion of the factors underlying total employment remains valid for the private sector analysis. Consequently, the CDEP scheme does not qualitatively affect the relative size of the marginal effects of education variables on Indigenous employment, even where the scheme is relatively prominent in remote Australia.

The marginal effect of the age variables again show that non-Indigenous male employment have a steeper age profile than that for Indigenous males. The disproportionately negative effect of being aged between 55 years and 64 years for non-Indigenous males yet again illustrates the relative attractiveness of early retirement for this group. As above, there are fewer differences in the age profile of Indigenous and non-Indigenous females. However, the relative attractiveness of early retirement is once more prominent among non-Indigenous females compared to their indigenous counterparts.

4.4 MARGINAL EFFECTS FOR PRIVATE SECTOR EMPLOYMENT, Males

	Indigenous			*Non-Indigenous*		
Variable	*Metro-politan*	*Provincial*	*Remote*	*Metro-politan*	*Provincial*	*Remote*
Post secondary qualification	0.099	0.134	0.210	0.066	0.044	0.001
	(0.013)	(0.013)	(0.018)	(0.006)	(0.008)	(0.009)
Completed Year 12	0.158	0.166	0.204	0.084	0.064	0.075
	(0.016)	(0.017)	(0.021)	(0.008)	(0.010)	(0.012)
Completed Year 10 or Year 11	0.129	0.133	0.146	0.108	0.116	0.106
	(0.014)	(0.012)	(0.014)	(0.008)	(0.009)	(0.010)
Does not speak English well	0.081	0.239	–0.134	–0.178	–0.139	–0.129
	(0.112)	(0.204)	(0.024)	(0.016)	(0.061)	(0.069)
Aged 25–34 years	0.009	–0.016	0.027	0.089	0.050	0.033
	(0.015)	(0.014)	(0.014)	(0.009)	(0.013)	(0.015)
Aged 35–44 years	–0.038	–0.047	0.053	0.033	–0.016	0.005
	(0.017)	(0.016)	(0.017)	(0.010)	(0.014)	(0.016)
Aged 45–54 years	–0.058	–0.037	0.090	–0.029	–0.072	–0.056
	(0.020)	(0.019)	(0.021)	(0.011)	(0.015)	(0.017)
Aged 55–64 years	–0.154	–0.137	0.088	–0.187	–0.229	–0.252
	(0.023)	(0.020)	(0.030)	(0.011)	(0.015)	(0.018)
Married	0.185	0.201	–0.027	–0.156	0.172	0.099
	(0.015)	(0.014)	(0.012)	(0.007)	(0.010)	(0.011)
Widowed, separated or divorced	0.077	0.068	0.037	0.062	0.040	0.012
	(0.019)	(0.019)	(0.020)	(0.010)	(0.013)	(0.014)
Regression statistic: R-squared	0.709	0.796	0.797	0.799	0.752	0.766

Note: Table measures the expected change in the probability of being in private sector employment resulting from a change in the explanatory variable. Standard errors in parentheses.

The effect of marital status on private sector employment has a similar pattern to those described above of the analysis of total employment. Among males, having a partner has a larger effect on Indigenous males compared to other Australian males in metropolitan and provincial areas, although the difference was not as large as observed earlier. This observation is reversed in remote areas, where being married has a significant negative effect on Indigenous males but has a significant positive effect on non-Indigenous males. Given that the marginal effects on private sector employment are unlikely to be driven by distortions arising from the presence of the CDEP scheme, there is clearly a significant cultural or social difference between the remote Indigenous males and other males (both Indigenous and non-Indigenous).

4.5 MARGINAL EFFECTS FOR PRIVATE SECTOR EMPLOYMENT, Females

	Indigenous			*Non-Indigenous*		
Variable	*Metro-politan*	*Provincial*	*Remote*	*Metro-politan*	*Provincial*	*Remote*
Post secondary qualification	0.077	0.079	0.134	0.019	0.007	–0.043
	(0.013)	(0.013)	(0.018)	(0.006)	(0.007)	(0.009)
Completed Year 12	0.199	0.195	0.244	0.138	0.132	0.124
	(0.018)	(0.019)	(0.023)	(0.009)	(0.010)	(0.013)
Completed Year 10 or Year 11	0.109	0.116	0.142	0.124	0.132	0.118
	(0.015)	(0.013)	(0.015)	(0.009)	(0.009)	(0.012)
Does not speak English well	0.380	0.141	–0.057	–0.218	–0.106	–0.101
	(0.219)	(0.235)	(0.046)	(0.013)	(0.052)	(0.066)
Aged 25–34 years	–0.064	–0.060	–0.006	–0.009	–0.067	–0.045
	(0.013)	(0.012)	(0.013)	(0.009)	(0.011)	(0.014)
Aged 35–44 years	–0.032	–0.008	0.059	–0.006	–0.028	0.014
	(0.016)	(0.015)	(0.017)	(0.010)	(0.012)	(0.016)
Aged 45–54 years	–0.013	–0.011	0.089	0.009	–0.023	0.020
	(0.019)	(0.018)	(0.023)	(0.011)	(0.013)	(0.017)
Aged 55–64 years	–0.102	–0.105	0.081	–0.172	–0.199	–0.170
	(0.022)	(0.019)	(0.034)	(0.010)	(0.012)	(0.016)
Married	0.113	0.127	–0.009	–0.035	0.033	–0.031
	(0.015)	(0.014)	(0.011)	(0.007)	(0.010)	(0.011)
Widowed, separated or divorced	0.034	0.048	0.002	–0.049	–0.031	–0.052
	(0.017)	(0.017)	(0.016)	(0.009)	(0.012)	(0.015)
Regression statistic: R-squared	0.653	0.714	0.757	0.739	0.722	0.722

Note: Table measures the expected change in the probability of being in private sector employment resulting from a change in the explanatory variable. Standard errors in parentheses.

Among females in remote areas, the difference in the effect of marriage is not clearly significant between the Indigenous and non-Indigenous population. However, having a partner has a significantly larger positive effect for Indigenous females in metropolitan and provincial areas compared to their non-Indigenous counterparts. As above, this may be associated with greater access to childcare from extended family members.

Finally, the effect of being widowed, separated or divorced is not significantly different for Indigenous and non-Indigenous males living in the respective areas. However, among females, Indigenous people have a larger (positive) effect for this variable. While this again reflects relative access to child care, it also would reflect the size of income and wealth effects for Indigenous and

non-Indigenous females following legal settlements often associated with these important life events.

Appendix tables A5.3 and A5.4 report the analogous regression results for full-time employment. The analysis of these tables reveals a similar pattern to the results reported above, especially for private sector employment. The returns to Indigenous education are again relatively high, especially in remote areas. The age profiles of Indigenous and non-Indigenous employed full-time tend to be less different than they were for either total or private sector employment. While there is some evidence that the age profile of full-time employed non-Indigenous people is steeper than that for the Indigenous population, especially in metropolitan areas, there is generally less difference between the two populations. However, the marginal effect for non-Indigenous males aged between 55 years and 64 years in provincial and remote areas are significantly larger and more negative than those for Indigenous males resided in such areas. Notwithstanding such differences, the greater similarity between Indigenous and non-Indigenous full-time employment (compared to the analysis of the private sector employment) may be due to the inclusion of public sector employment in appendix tables A5.3 and A5.4. Finally, note that the basic relativities of the effect of marital status variables are maintained when full-time employment was examined.

In summary, the basic observations of the previous sub-section hold when the effects of the CDEP scheme are taken into account. The marginal effect of education is significantly greater among Indigenous people than for other Australians. The age profile of employment tends to be steeper than that for the non-Indigenous population, while there are significant effect of martial status variables for the respective populations. The next section examines whether these differences can explain the average difference in the employment experience of Indigenous and non-Indigenous peoples. At least in terms of education, the relatively low marginal effects for non-Indigenous education combined with the fact that Indigenous people experience substantial disadvantage across the complete range of educational outcomes, mean that none of the Indigenous employment disadvantage can be explained by the labour market treatment of Indigenous people. That is, Indigenous employment outcomes would be even worse if Indigenous people had the same employment outcomes arising from education as other Australians. While these preliminary indications point to a substantial scope for discrimination in explaining Indigenous employment disadvantage, the next section presents a formal estimate of potential discrimination that covers all the main factors underlying employment outcomes.

4.3 THE SCOPE FOR LABOUR MARKET DISCRIMINATION IN EMPLOYMENT

There are two major studies of discrimination against Indigenous Australians, both of which examine wage discrimination (Daly 1995: 47; Jones 1991a). Both studies are based on a census analysis, which only includes indirect data on wages. Daly (1995: 47) estimates that 'potential discrimination' component as varying between 32.8% and 17.9% (respectively, for males and females employed full-time). Jones's estimates of the proportion of the average wage differential that cannot be explained by the empirical model are slightly higher than those in Daly, but this can easily be accounted by the fact it is calculated on a different basis (e.g., he uses a different benchmark population). Daly goes on to claim that her evidence does not support the hypothesis that Indigenous full-time workers face a high level of discrimination in the earnings they receive. She speculates that this may reflect the Australian system of wage determination, which has limited the extent to which the earnings of individuals can differ from award rates.

The use of Nielsen's (1998) technique provides an opportunity to provide the analogous measure of the scope for discrimination in employment (table 4.6). The 'non-discriminatory' employment probability is estimated by calculating the expected employment rates if Indigenous males and females were treated the same way as non-Indigenous males and females in the labour market (at least in terms of having the same regression coefficients — see third column of table 4.6). Potential discrimination is estimated as the proportion of the average employment differential between Indigenous and non-Indigenous populations that is explained by the increase in Indigenous employment prospects arising from 'non-discriminatory' treatment. This calculation is conducted for Indigenous males and females living in various geographic areas using the regression analysis of total employment, private sector and full-time employment. Note that the non-discriminatory employment prospect can be also estimated for the non-Indigenous population using Indigenous regression coefficients in order to check the robustness of reported results. This was done and the broad observations are not changed by these sensitivity tests.

4.6 ESTIMATING THE POTENTIAL FOR RACIAL DISCRIMINATION IN EMPLOYMENT

	Indigenous	*Non-discriminatory*	*Non-Indigenous*	*Per cent attributable to potential discrimination (%)*
	Total employment			
Males				
Metropolitan zone	0.542	0.697	0.771	67.7
Provincial zone	0.489	0.664	0.744	68.6
Remote zone	0.535	0.766	0.821	80.8
Females				
Metropolitan zone	0.433	0.602	0.636	83.1
Provincial zone	0.368	0.523	0.593	68.7
Remote zone	0.386	0.564	0.658	65.4
	Private sector employment			
Males				
Metropolitan zone	0.395	0.612	0.649	85.5
Provincial zone	0.316	0.583	0.621	87.5
Remote zone	0.156	0.666	0.694	94.8
Females				
Metropolitan zone	0.280	0.503	0.500	101.2
Provincial zone	0.216	0.435	0.452	92.8
Remote zone	0.109	0.465	0.487	94.1
	Full-time employment			
Males				
Metropolitan zone	0.387	0.519	0.607	60.1
Provincial zone	0.308	0.501	0.589	68.8
Remote zone	0.226	0.614	0.673	86.8
Females				
Metropolitan zone	0.232	0.322	0.338	85.3
Provincial zone	0.162	0.248	0.281	72.3
Remote zone	0.140	0.307	0.366	74.1

Note: Table measures the expected probability of being in employment.

Table 4.6 indicates that potential discrimination explains more than two-thirds of the average employment differential in almost all cases (last column of table 4.6). The only exception males in metropolitan areas for whom 'only' 60.1% of the employment differential was explained by the difference between the coefficients in the Indigenous and non-Indigenous male regressions. Therefore, the prima facie evidence would appear to indicate that discrimination against Indigenous Australians is more likely in employment than it is in wages. It is particularly noteworthy that the potential for discrimination is most pronounced in the private sector where the number hovers around 90%, and is as high as 101.2% for females in metropolitan areas. That is, all of the differences in the private sector employment for females in major cities are explained by the better employment treatment of non-Indigenous females within the labour market.

One possible explanation of the high estimates of potential discrimination in table 4.6 is that the regression models do not capture relevant variables. While it is impossible to discount this explanation entirely, it is unlikely to be the whole story since the estimated regression results have a relatively 'high'

coefficients of determination, and therefore the models explain the majority of the variation of the respective employment variables.

A more plausible explanation is to be found in the following criticism of Nielsen's technique. Since Indigenous males and females are not employed in the same sorts of jobs (e.g. in the same industries and occupations) as other Australians, it is understandable that they experience different employment prospects. Unfortunately, it is impossible to account for such differences in a regression analysis of employment because having an industry or occupation is only associated with having a job, and hence cannot be used to explain the incidence of employment. Consequently, just as industrial and occupational segregation is difficult to attribute components due to individual preferences and labour market constraints, Nielsen's measure is somewhat problematic in its ability to separately identify supply-side effects and extraneous demand-side effects on employment. This problem can be made even more transparent by revisiting the discussion in previous sections that often resorted to explanations based on differences in preferences of Indigenous and non-Indigenous people (viz. family formation, early retirement etc.). It is important not to under-estimate the analytical complexities in separately identifying the role of preferences and constraints faced by individuals, including discrimination (Rowse 2002).

These measures of potential discrimination can also be estimated between the sexes for the Indigenous and non-Indigenous populations. When such calculations are made, it is evident that potential discrimination in employment between males and females explains more of the difference in employment outcomes than is evident in table 4.6. That is, the standard measures of potential discrimination appear to indicate that there is more scope for sexual discrimination than racial discrimination. In regards the processes that determine employment, Indigenous males have more in common with non-Indigenous males than they do with Indigenous females. This underscores that the Australian labour market is strongly segregated by both race and sex. Consequently, all future regressions should be conducted separately for Indigenous and non-Indigenous males and females. Indeed, given the substantial differences identified between the processes underlying employment outcomes for remote Indigenous population and other Indigenous Australians, a case can be made for treating these sub-populations separately wherever possible.

4.4 THE LABOUR FORCE STATUS OF STUDENTS

This section documents the labour force status of Indigenous and non-Indigenous students for the various areas. The Jones classification is again used to capture geographic variation in outcomes. Table 4.7 shows that Indigenous students are significantly less likely to be employed than other students. The employment differential is particularly pronounced in remote areas where Indigenous male and female students are less than one-fifth and

one-quarter (respectively) less likely to be employed than their non-Indigenous counterparts. Of course having a job at school could be a mixed blessing, especially if working time impinges on potential study time. Fortunately, it is obvious that full-time employment is rare amongst either Indigenous or non-Indigenous students.

4.7 STUDENTS IN VARIOUS LABOUR FORCE STATES, By Jones classification, Indigenous status — 2001

		Indigenous			*Non-Indigenous*		
	Unit	*Metro-politan*	*Provincial*	*Remote*	*Metro-politan*	*Provincial*	*Remote*
Males							
Employed	%	14.2	10.7	5.5	25.0	25.3	26.9
Private sector	%	12.7	8.9	4.1	23.6	23.8	24.3
Full-time employed	%	1.2	0.8	0.0	1.4	0.9	2.2
Unemployed	%	5.2	4.5	1.7	4.5	4.0	3.6
Not in the labour force	%	80.6	84.8	92.9	70.5	70.7	69.5
Population	no.	2 507	2 439	1 076	173 949	61 035	3 004
Females							
Employed	%	18.8	17.5	10.1	33.5	35.6	36.2
Private sector	%	16.9	15.9	6.9	31.4	33.4	33.1
Full-time employed	%	0.8	1.0	0.6	1.1	0.8	1.6
Unemployed	%	6.0	4.0	1.4	5.0	4.3	3.6
Not in the labour force	%	75.2	78.4	88.5	61.5	60.1	60.3
Population	no.	2 756	2 4 96	1 223	180 100	63 346	3 051

Note: Table measures students (i.e. still at school) in a labour force state.
Source: 2001 Census of Population and Housing.

Historically, Australian studies have indicated that students from disadvantaged backgrounds (such as Indigenous Australians, students with a disability and any child with unreliable parental support) are more sensitive to financial factors than other students (Edwards 1985). Consequently, the low level of part-time employment among Indigenous students may be an issue for the many Indigenous families whose income is heavily constrained.

Hunter (2002a) identified an asymmetry between CDEP scheme and ABSTUDY rules that may drive some students to leave school to take up work in the CDEP scheme. Such policy distortions can both depress the number of Indigenous youth staying on at school and the potential pool of students who want to combine work and studies. If part-time employment is an essential condition for continuation of studies for many Australian students (Edwards 1985: 41), this employment differential could have damaging consequences on the ability of Indigenous youth to complete studies, and hence may adversely affect future employment prospects.

Australian studies confirm that the unemployment level of youth is strongly linked to family background and location as well as other personal characteristics usually associated with poor labour market outcomes (Bradbury, Garde & Vipond 1986: 204). In general, Indigenous students are not more likely to be unemployed than non-Indigenous students (except for males living in

metropolitan areas). Indeed, Indigenous students are less likely to be unemployed in remote areas. Unfortunately, this may not be a particularly good sign if this result is driven by the greater availability of the CDEP scheme in such areas, and a substantial number of Indigenous youth are leaving school to take up places in a scheme before their studies are completed. This concern may also be justified by the relatively low numbers of Indigenous students in such areas.

The last point to make is that overall Indigenous students are far less likely to be in the labour force. That is, the proportion who are not in the labour force at all is between 10 and 30 percentage points higher among Indigenous students. As alluded to above, this is not necessarily a bad thing if it reflected that Indigenous families are not constrained by income and wealth concerns. Another issue is that combining work and schooling can have positive influences on future employment prospects by providing useful labour market networks, introduce youth to the culture of the workplace, and provide vital experiences that lead to informed career choices.

4.5 DISCUSSION

The CDEP scheme is obviously an important dynamic in explaining Indigenous employment. Madden (2000) illustrated that there are strong incentives for CDEP schemes to provide training to recruit staff. However, the main concern raised in the previous section is that such training comes at the expense of completing secondary schooling — a fundamental stepping stone to becoming the sort of skilled worker demanded by the modern economy. Notwithstanding the valuable training provided by many CDEPs, it is important to ensure that future options are not foreclosed by a system which encourages youth to enter the CDEP scheme as soon as possible.

The main finding of this chapter, which is robust to the treatment of the CDEP scheme, is that it is necessary to improve educational opportunities for Indigenous Australians in order to redress Indigenous disadvantage in employment. The collective effect of educational variables on Indigenous employment are significantly larger than either the demographic or marital status variables. The first step is to improve Indigenous participation at schools, before attempting to address the substantial deficit in educational qualifications.

Taken together, the regression results highlight that the statistical processes that determine Indigenous and non-Indigenous employment are very different. Furthermore, there are important differences between males and females living in metropolitan, provincial and remote areas. The analysis in this chapter, which is consistent with that in previous chapters, showed Indigenous employment outcomes are probably driven by a combination of supply and demand considerations.

The analysis of potential discrimination illustrates that over two-thirds of the average difference between Indigenous and non-Indigenous employment

cannot be explained by the regression model estimated separately for the respective populations. While this estimate can in some sense be interpreted as potential discrimination, it also illustrates conclusively that the processes that determine Indigenous and non-Indigenous employment are not the same, even after important local labour market conditions are taken into account. Therefore Daly's (1995) approach, which models the Indigenous labour force status using a shift parameter and a series of interactive terms, does not capture the complex reality of Indigenous labour market experience.

Such findings also have implications for the efficacy of identifying discrimination in legal and quasi-legal settings (e.g. the Human Rights and Equal Opportunity Commission, HREOC). Notwithstanding the methodological limitations identified above, Nielsen's technique probably provides an upper bound of the extent of potential discrimination. Given that there is substantial scope for discrimination against Indigenous Australians, it is notable that only a handful of racial discrimination cases involving employment have been heard since passing of the *Racial Discrimination Act* by the Commonwealth in 1975 (De Plevitz 2000). The major impediments to prosecuting systemic racial discrimination appear to be the narrow interpretation of 'race', and the legal difficulties encountered in proving indirect discrimination. If discrimination is anywhere near as important as indicated by this chapter, then the legal problems that arise when prosecuting racial discrimination need to be addressed as a matter of urgency.

The emphasis of the IEP on the importance of transitions away from the scheme into mainstream employment is unlikely to succeed unless Indigenous workers have the basic educational attainment (of sufficiently high quality) required to compete in the labour market. The irony is that the very success of the CDEP scheme, and its longevity, may defeat this policy objective. The challenge for policy makers is to ensure that the incentives for Indigenous youth to complete school are enhanced without compromising community services provided by the scheme or diminishing employment opportunities provided by CDEP in these depressed labour markets. The importance of maintaining the correct incentive structure for youth is particularly apparent in other urban areas where the mainstream employment opportunities are better.

Interested readers are referred to Schwab (2001) who provides an overview of the diverse range of strategies required to keep Indigenous youths engaged in the later secondary school system. In addition to involving local CDEP schemes, any initiative should involve Indigenous community groups as well as the Department of Education, Science and Training, Centrelink, and Family and Community Services.

The next chapter introduces another avenue for increasing the economic independence of Indigenous Australians, self-employment. Starting your own business or working for yourself are two effective means of circumventing discrimination apparently faced by many Indigenous people attempting to secure employment in the Australian labour market. However, while

self-employment can provide independence to some Indigenous people, it is not a panacea because business opportunities are often limited, especially in remote areas, and poor education and access to finance can be a formidable constraint on setting up a successful business.

CHAPTER 5 EMPLOYERS AND OTHER SELF-EMPLOYED AMONG INDIGENOUS AUSTRALIANS

Self-employment has often been regarded as an important avenue for economic advancement for some groups with limited opportunities in the mainstream labour market. Self-employment is one means by which ethnic groups can overcome problems such as language difficulties and unrecognised qualifications (Bates 1997; Borjas 1986; Kidd 1993). It may also be important as a way of circumventing discrimination in employment. Given that the importance of labour market discrimination appears to have been systematically down-played historically, Hunter's (2003) finding that the potential for such discrimination is substantial and ongoing underscores the importance of pursuing economic independence through self-employment.

Some Australian evidence suggests that self-employment may be particularly profitable where there are large concentrations of an ethnic group. Members have an advantage in providing goods and services to the group through their knowledge of the relevant language and culture (Evans 1989). However, it is important not to overstate the importance of self-employment to Indigenous Australians since the Indigenous population is small, dispersed and, often, politically divided. Hence the opportunities for providing goods to the other members of the Indigenous community can be severely limited.

Historically, self-employment has been of relatively minor significance to Indigenous Australians. For example, the Miller Report (1985) commented on the low rate of self-employment among Indigenous Australians as recorded in the 1971 and 1981 censuses. This chapter provides the latest information on Indigenous self-employment to update our understanding of the extent of self-employment. Furthermore, it documents in detail the composition and characteristics of the Indigenous self-employed at the time of the 2001 census.

Daly (1995) and Hunter (1999) present a comparison of key labour market characteristics of self-employed Indigenous people with Indigenous wage and salary earners and other self-employed Australians. In comparison with Indigenous wage and salary earners, self-employed Indigenous people were more likely to be employed as tradespersons and to work in the private sector. They had lower levels of education than other self-employed Australians and were under-represented among managers and administrators and professionals. This chapter updates the profile of Indigenous self-employed and teases out several new issues that were not possible to address in previous analyses.

The previous three chapters demonstrated that analysis of Indigenous employment needs to be conducted separately in areas where labour market conditions and individual labour supply preferences differ substantially from the

average. Accordingly, it is important to conduct the analysis of Indigenous self-employment separately for each of the three broad geographic zones defined using the Jones classification (see Appendix 3). This approach is obviously more disaggregated than Daly's (1995) for whom the small number of Indigenous self-employed meant it was difficult to conduct a separate analysis for areas with vastly different access to buoyant markets where a range of jobs are available. Note that when analysing Indigenous business, the overall market conditions are as important as the local labour market because the demand for goods and services will be major factors in determining the likely success of a business.

Furthermore, and more importantly, the substantial growth in the number of Indigenous self-employed since 1991 allows us to also separately examine employers and own-account workers. This distinction could be justified on the grounds that Indigenous business that employs other workers are conceptually different from people who work for themselves. The latter group may work for themselves because of tax advantages, or be individual contractors who have more in common with wage and salary employees than with business enterprises. This new focus on distinguishing forms of Indigenous self-employment ensures that this research is consistent with mainstream studies that have routinely analysed the scale of the enterprise for some time (e.g. Evans 1989).

A preliminary literature review by the Indigenous Business Review (IBR), currently being conducted for the Minister for Immigration, Multicultural and Indigenous Affairs, has identified the lack of distinction between the various geographic areas as a crucial weakness of the existing research (IBR 2003). They assert that more attention should be paid to the conditions facing Indigenous businesses in urban areas, in part because this is where the majority of Indigenous people live (about 70% reside in such areas). The following analysis tests this hypothesis by analysing what happens in metropolitan as opposed to provincial and remote areas. This chapter concludes with a discussion about some of the reasons why the level of self-employment remains relatively low amongst Indigenous Australians. Ultimately, the aim of the analysis in this chapter is to suggest areas, occupations or industries, where self-employment of Indigenous Australians could be expanded, and point to impediments to the growth of Indigenous businesses.

5.1 INSTITUTIONAL BACKGROUND ON INDIGENOUS SELF-EMPLOYMENT

The institutional and structural framework provided by government can, potentially, assist Indigenous business to flourish. The following discussion focuses on the contemporary policy environment facing Indigenous businesses in the 1990s and the first years of the 21st Century, but only refers to the earlier institutional history in passing.

Altman and Nieuwenhuysen (1979) document several programs designed to support Indigenous businesses as early as the 1960s. More recently, programs that aimed to promote Indigenous enterprise have been run by ATSIC and its

predecessors since the 1980s. The initial programs, that came under the auspices of the AEDP, met with limited success and their role was reduced in the early 1990s (Office of Evaluation and Audit (OEA) 1991). However, following the recommendations of the Royal Commission into Aboriginal Deaths in Custody, the Community Economic Initiatives Scheme was established for the promotion of Indigenous community enterprises, while the Business Funding Scheme, administered under ATSICs Enterprise Employment Assistance scheme, subsidises employment and otherwise assisted the establishment of commercially viable Indigenous enterprises.

The Howard Government renewed efforts to facilitate Indigenous business with its ongoing, and oft stated, commitment to 'real outcomes' (Herron 1996). Altman (2002a) surveyed the possibilities for generating finance for Indigenous development and potentially Indigenous business enterprise, including:

- ATSIC — Business development and assistance program approved loans and grants at $37m in 2000–01; home ownership program $54m; Community Development Employment Projects $437m with $157m dedicated tonon-wage component available for capital expenditure. ATSIC also administer the Aboriginal and Torres Strait Islander Land Fund with a net asset base of $940m in June 2001 and the Aboriginals Benefit Account (ABA).
- Indigenous Land Corporation (ILC), an independent statutory authority, was established to acquire and manage land for economic, social or cultural benefits of Indigenous people. The ILC received $52m from the land fund in 2000–01. This income stream is assured in perpetuity from the land fund that has an asset base of over $1.2bn.
- Indigenous Business Australia (IBA), an independent statutory authority, aims to advance the commercial and economic interests of Indigenous Australians by using its capital assets for their benefit. IBA invests in joint ventures and seeks to divest its share to Indigenous venture participants. The Aboriginals Benefit Account (ABA) is a special account under the *Commonwealth Financial Management and Accountability Act 1997*. The ABA receives statutory royalty income from mining operations on Aboriginal land in the Northern Territory. The ABA makes payments to land councils for their administrative expenses and distribution to incorporated Aboriginal entities in areas affected by mining. In 2001, the fund made payments of $9.7m to entities and $2.1m in grants.
- The New South Wales Statutory Investment Fund established by the *Aboriginal Land Rights Act 1983*. Between 1983 and 1998, 7.5% of the land tax was provided to Aboriginal interests. The earnings are allocated to the Aboriginal land council system but the capital base remains intact.

In addition to this financial asset base, Indigenous business can potentially use their land base. Indigenous Australians own between 15% and 18% of Australia, although this land is very inequitably distributed on a state-by-state basis, and has highly variable commercial worth (Pollack 2001). There is a general view that Aboriginal land has limited value as collateral for raising commercial finance, even where this land can be leased, because of its generally communal

ownership. But there is no doubt that some groups have been able to use their land ownership to negotiate income generating joint venture agreements.

However, Altman (2002b) argues that there is insufficient public focus on the leverage that such property rights might bestow on Indigenous communities to extract concessions from government and business, especially in the aftermath of the Wik amendments and the ensuing uncertainty engendered by the rather inflammatory debate. Another critical element in the policy framework for Indigenous business, is that business success will, and should be predicated on a separation of commerce and culture (Herron 1998). This view has been challenged both by ATSIC (1998) and others (Pritchard 1998). This debate tends to focus on there being a trade-off between culture and business success; However, this tension may be artificial in that Indigenous culture could be a source of competitive advantage, especially in areas such as cultural and ecological tourism (Altman 2002b). Irrespective of the role of Indigenous culture, the success of Indigenous commercial enterprises, whether run by individuals or communities, will depend on the development of the appropriate management skills and rewards for those working in enterprises.

Indigenous Business Review (IBR 2003) recently provided a comprehensive review of the relevant literature on Indigenous business and self-employment. They documented the criticism of the plethora of government programs that are available to support Indigenous enterprise. For example, it would appear that there is scope for integration (or at least better coordination) to both improve the dissemination of information on programs. Another relevant suggestion is to reduce the number of contact points that an Indigenous person might have to deal with in trying to establish a business or put together employment and training programs relating to the business. These are useful suggestions that will, no doubt, be pursued in the course of the Review.

How successful have these institutional structures been in facilitating Indigenous business? The remainder of this chapter attempts to address this question by describing the composition of Indigenous employers and other self-employed vis-à-vis non-Indigenous counterparts. In so doing, it will point to the major constraints impeding the success of existing policy, and point to future policy directions that may help Indigenous business to prosper.

5.2 RECENT TRENDS IN INDIGENOUS SELF-EMPLOYMENT

One important question is whether Indigenous self-employment has improved during the 1980s and 1990s — a period where the policy emphasis was on providing incentives and support (financial and otherwise) for Indigenous people to set up businesses.

In 1986, the proportion of the Indigenous Australians of working age who were self-employed was one-fifth of that of other Australians. Census figures, however, show that between 1986 and 1991, there was a greater proportional increase in self-employment among the Indigenous population than among other Australians (Taylor 1993b). Table 5.1 shows what has happened to overall Indigenous self-employed since 1991. In contrast to Taylor's estimates, table 5.1 shows the proportion of the labour force who were either employers or other self-employed.

5.1 SELF-EMPLOYMENT AMONG INDIGENOUS AUSTRALIANS AGED 15 YEARS AND OVER (PER CENT OF LABOUR FORCE)

Census year	*Employers and other self-employed combined*		*Employers only*		*Other self-employed*	
	%	no.	%	no.	%	no.
1991	4.0 (0.26)	3 232	1.3 (0.23)	1 050	2.7 (0.28)	2 182
1996	2.4 (0.31)	2 546	0.7 (0.31)	697	1.7 (0.31)	1 849
2001	4.8 (0.30)	6 089	1.6 (0.24)	2 058	3.2 (0.34)	4 031

Note: The ratio of Indigenous to non-Indigenous self-employment rates is provided in parenthesis.
Source: Census of Population and Housing, 1991, 1996 and 2001.

Unfortunately, variations in census questions and methodology have lead to a large fluctuation in the number of Indigenous people reporting that they were engaged in some form of self-employment. Given that the census question used to calculate self-employment was asked in a different way in each of the last three censuses, it is not surprising that the numbers of Indigenous self-employed were unstable and actually fell between 1991 and 1996. Before 1991, two census categories were included in the definition of self-employed: those who said that in the main job held last week they were 'conducting own business but not employing others' and those who were 'conducting own business and employing others'. The 1996 census question was probably unnecessarily complicated in that it specified whether a person worked in a limited liability company, thus scaring off people who were uncertain of their company status. The relevant census question for 2001 was relatively straightforward, and hence it is not entirely unexpected that the number of Indigenous self-employed more than doubled in the last inter-censal period (increasing from 2,546 to 6,089). While the growing numbers probably partially reflect the growth of the Indigenous population (Kinfu & Taylor 2002), it is dominated by census methodology with the ratio of Indigenous to

non-Indigenous self-employment rates actually falling slightly between 1996 and 2001 (from 0.31 to 0.30).

Historically, the low numbers of Indigenous self-employed have meant that the statistical analysis usually combined employers with other self-employed. Daly (1995) included both categories in her definition of self-employment because she was presenting a broad picture of the characteristics of all self-employed Indigenous Australians. In any case, Daly was not particularly interested in the scale of the business being conducted as she was trying to document broad trends in Indigenous self-employment and characterise what sort of people were self-employed. The growing numbers of Indigenous self-employed means that it is now possible to disaggregate the analysis for the 2001 census into two categories, 'employers' and 'other self-employed'. Given that the issues surrounding Indigenous businesses large enough to employ several people are of interest in their own right, this in itself constitutes an important advance on the existing literature.

In broad terms, the trends in the number of Indigenous employers and other self-employed are similar to those noted for overall Indigenous self-employment. For example, the proportion of the Indigenous labour force who were employers fell dramatically between 1991 and 1996 before recovering in 2001 (1.3%, 0.7% and 1.6% respectively). A comparison of this outcome with that for the non-Indigenous self-employed reveals that this pattern was almost reversed when expressed in relative terms (0.23, 0.31 and 0.24 in the last 3 censuses). While some of this variability may be due to the small number of Indigenous employers, especially in 1996, the fact that over 2,000 Indigenous people were classified as employers in 2001 provides us with some confidence that the results for the last census are robust (at least in terms of sample size).

The trends in other self-employment for the Indigenous labour force tend to be more robust because they were either close to or in excess of 2,000 in all three censuses examined. As with employers, the absolute levels of other self-employment fell, and then increased substantially, so that it was again higher in 2001 compared to the 1991 level. The main difference was again in the relative story where the ratio of Indigenous and non-Indigenous outcomes for other self-employment increased in each successive intercensal period (from 0.28 to 0.31, and then 0.34). Taken together, the results in table 5.1 seem to point to bias in the growth in Indigenous self-employment towards small scale businesses that do not employ other people. This observation is important and we should return to it in the discussion.

5.3 THE CHARACTERISTICS OF SELF-EMPLOYED INDIGENOUS AUSTRALIANS

Daly (1995) suggested that self-employed Indigenous Australians were, in many respects, more like the rest of the Australian population than were other Indigenous people. Several reported characteristics support this statement. They were more likely to live in a major urban area than were Indigenous wage

and salary earners and were more likely to be married. However, on neither of these indicators did the percentages reach those of the non-Indigenous self-employed. Self-employed Indigenous Australians were also reported as having a high proficiency in English. However, rather than replicate Daly's analysis, the remainder of this chapter focuses on the characteristics of Indigenous employers and other self-employed compared to their non-Indigenous counterparts running businesses of varying scale.

Following Daly (1995), the self-employed are described in terms of their age, sex, educational attainment, industry, occupation sector, and income. All tables are broken down by metropolitan, provincial, and remote areas so that possible insights can be gleaned into the factors influencing levels of Indigenous self-employment.

Basic demography of the Indigenous self-employed

Table 5.2 presents data on the age distribution of self-employed Indigenous Australians compared with non-Indigenous self-employed. In addition to disaggregating the analysis by employer and other self-employed, the table is presented in three parts with the proportion of males and females in each ten-year age groups being documented separately for metropolitan, provincial and remote areas (tables 5.2a, 5.2b, and 5.2c).

5.2a AGE AND SEX DISTRIBUTION OF THE SELF-EMPLOYED LIVING IN METROPOLITAN AREAS — 2001

		Indigenous		*Non-Indigenous*	
	Unit	*Employer*	*Other self-employed*	*Employer*	*Other self-employed*
Males					
15–24 years	%	6.5	9.6	1.7	4.0
25–34 years	%	24.1	28.4	14.6	18.6
35–44 years	%	33.6	30.4	29.6	27.1
45–54 years	%	23.4	21.3	32.3	27.9
55–64 years	%	10.7	8.2	17.3	17.5
65 years and over	%	1.8	2.1	4.4	4.9
Total	**%**	**100.0**	**100.0**	**100.0**	**100.0**
	no.	**727**	**1 482**	**270 243**	**380 384**
Females					
15–24 years	%	6.9	8.5	1.8	3.7
25–34 years	%	27.4	27.4	15.2	18.5
35–44 years	%	32.6	34.9	32.3	30.9
45–54 years	%	25.4	21.2	33.6	28.9
55–64 years	%	6.0	6.6	14.1	14.3
65 years and over	%	1.7	1.5	3.0	3.7
Total	**%**	**100.0**	**100.0**	**100.0**	**100.0**
	no.	**350**	**591**	**116 471**	**167 331**

Note: Table measures per cent of working age self-employed population in each age group.
Source: 2001 Census of Population and Housing.

Age appears to be directly related to self-employment status. Self-employed Indigenous Australians were, on average, older than other Indigenous people with the largest proportion being concentrated in the 35–44 year age group.

Indigenous male employers living in remote areas tended to be older with about one-third being aged between 45 years and 54 years. Non-Indigenous self-employed also tended to be older than the rest of the population as they tended to be concentrated between the ages of 45 years and 54 years.

5.2b AGE AND SEX DISTRIBUTION OF THE SELF-EMPLOYED LIVING IN PROVINCIAL AREAS — 2001

		Indigenous		*Non-Indigenous*	
	Unit	*Employer*	*Other self-employed*	*Employer*	*Other self-employed*
Males					
15–24 years	%	4.8	7.6	1.2	2.6
25–34 years	%	17.3	23.2	11.3	13.0
35–44 years	%	33.3	28.0	27.8	25.1
45–54 years	%	31.3	27.0	33.3	28.7
55–64 years	%	12.0	12.0	19.6	21.0
65 years and over	%	1.2	2.3	6.8	9.6
Total	**%**	**100.0**	**100.0**	**100.0**	**100.0**
	no.	**498**	**953**	**107 105**	**166 314**
Females					
15–24 years	%	6.3	6.5	1.3	2.2
25–34 years	%	16.3	21.5	12.3	13.3
35–44 years	%	40.7	38.6	30.0	26.7
45–54 years	%	28.5	25.7	33.7	29.6
55–64 years	%	8.1	6.9	17.5	20.4
65 years and over	%	0.0	0.8	5.2	7.8
Total	**%**	**100.0**	**100.0**	**100.0**	**100.0**
	no.	**270**	**479**	**57 894**	**81 914**

Note: Table measures per cent of working age self-employed population in each age group.
Source: 2001 Census of Population and Housing.

While these age differentials partially reflect the high mortality of Indigenous Australians, it is of particular concern to policy makers if successful business operations are conditional upon having sufficient experience. That is, premature mortality and high adult morbidity rates constrain the size and potential growth of the Indigenous pool of potential employers and other self-employed. If Indigenous people have a short life expectancy and a poor quality for the remaining years of their life, then the incentive to invest in new businesses are severely circumscribed. The disproportionately youthful nature of the Indigenous self-employed also works against the success of their business in that they will have had fewer years to accumulate wealth, and hence will tend to have lower levels of savings with which to secure future capital requirements. Lower accumulations of 'social capital', or access to useful contacts and business networks, will also tend to hamper the attempts of these relatively young Indigenous entrepreneurs to establish successful businesses.

5.2c AGE AND SEX DISTRIBUTION OF THE SELF-EMPLOYED LIVING IN REMOTE AREAS — 2001

		Indigenous		*Non-Indigenous*	
	Unit	*Employer*	*Other self-employed*	*Employer*	*Other self-employed*
Males					
15–24 years	%	8.9	8.7	1.4	3.1
25–34 years	%	24.2	25.7	12.2	15.4
35–44 years	%	24.2	31.0	26.6	25.3
45–54 years	%	33.1	21.1	30.7	27.0
55–64 years	%	9.7	9.3	21.0	20.2
65 years and over	%	0.0	4.3	8.0	8.9
Total	**%**	**100.0**	**100.0**	**100.0**	**100.0**
	no.	**124**	**323**	**12 883**	**21 088**
Females					
15–24 years	%	16.7	13.1	1.1	2.1
25–34 years	%	19.2	28.4	12.9	14.8
35–44 years	%	28.2	26.8	28.3	26.7
45–54 years	%	28.2	23.0	32.0	27.2
55–64 years	%	7.7	7.1	19.3	21.3
65 years and over	%	0.0	1.6	6.4	8.0
Total	**%**	**100.0**	**100.0**	**100.0**	**100.0**
	no.	**76**	**183**	**7 139**	**9 889**

Note: Table measures per cent of working age self-employed population in each age group.
Source: 2001 Census of Population and Housing.

The substantial differences in the age distribution of the Indigenous and non-Indigenous self-employed and the underlying populations mean that it is difficult to compare the raw statistics in tables 5.2. That is, the difference in self-employment rates may be partly explained by difference in age structure between the two populations, and therefore the data should be age-standardised. This involves adjusting the Indigenous statistics using the age distribution of all working-aged Australian population as weights (table 5.3). In theory, such statistics allow us to compare the results for the two populations in the various areas. Indeed, it could even enhance the comparability of self-employment for Indigenous people living in various areas, as their age structure may also differ substantially from one another.

The first thing to note about table 5.3 is that there is little difference between the age-standardised self-employment rates (both employers and other self-employed) for the Indigenous population, especially among Indigenous females. However, this is driven largely by the low self-employment rates for Indigenous population. Indeed, if one expresses the Indigenous rates relative to their non-Indigenous counterparts in the respective geographic areas (i.e. expressed as a ratio of the Indigenous to non-Indigenous rates), the age-standardisation process almost uniformly increased the Indigenous incidence of employer and other self-employed by around 10%. That is, about one-tenth of the differential is due to the disproportionately youthful nature of Indigenous males and females. Note that, for females, the main difference in

the age-standardised rates from their raw values was mostly below the first significant digit, and hence it is not reflected in the results presented in table 5.3 (which are rounded in accordance with the style used in the rest of the monograph).

The age-standardising process does not substantially affect the main results. The incidence of Indigenous employer and other self-employed is most pronounced in metropolitan areas, and declines steadily as one moves away from the major cities. For example, the proportion of the working aged Indigenous males who are employers is 1.7% in metropolitan areas, but is only 0.4% in remote areas. Similarly, the incidence of other self-employed among Indigenous males is over three times higher in metropolitan areas compared to remote areas. The similar relationship between geography and the two main types of self-employment is also apparent for females, although the female rates tend to be much lower than those for males.

In contrast, non-Indigenous rates are much higher in remote areas than either provincial or metropolitan areas. The proportion of employers among the working aged non-Indigenous males in remote areas was 7.4%, which compared to the analogous figure of 5.5% in metropolitan areas. The differential is even larger for females, of whom 5.1% and 2.2% of residents were employers in remote and metropolitan areas respectively. That is, non-Indigenous females in remote areas were more than twice as likely to be employers as non-Indigenous females in metropolitan areas.

The difference between the geographic areas was even more pronounced when other self-employment among non-Indigenous males and females is examined. For example, non-Indigenous females in metropolitan areas are half as likely to be classified as other self-employed as the analogous Indigenous female residents in remote areas (3.2% and 7.1% respectively).

The overall incidence of employers is generally much lower than that of other self-employment. This observation is valid for both Indigenous and non-Indigenous populations, although it is probably more pronounced in the Indigenous population. That is, Indigenous people are less likely to be employers than other self-employed compared to other Australians. In general Indigenous people are about half as likely to be employers. While the incidence of employers is also lower in the non-Indigenous population compared to that for other self-employment, the differential tends to be less (in relative terms).

5.3 AGE-STANDARDISED SELF-EMPLOYMENT RATES, By Jones classification — 2001

	Indigenous		*Non-Indigenous*	
	Employer	*Other self-employed*	*Employer*	*Other self-employed*
	%	%	%	%
Metropolitan				
Male raw	1.7	3.4	5.5	7.7
Male age standardised	1.9	3.8	5.5	7.7
Female raw	0.7	1.2	2.2	3.2
Female age standardised	0.7	1.2	2.2	3.2
Provincial				
Male raw	1.2	2.4	6.5	10.0
Male age standardised	1.4	2.7	6.5	10.0
Female raw	0.6	1.1	3.4	4.9
Female age standardised	0.6	1.1	3.4	4.9
Remote				
Male raw	0.4	1.0	7.4	12.1
Male age standardised	0.4	1.2	7.4	12.1
Female raw	0.2	0.6	5.1	7.1
Female age standardised	0.2	0.6	5.1	7.1

Note: Table measures per cent of working age population who are self-employed. The Indigenous self-employment rates are standardised against the age distribution in the whole Australian working aged population (i.e. aged 15 years and over).

Source: 2001 Census of Population and Housing.

Obviously the composition of Indigenous self-employment is skewed towards other self-employment. Given that such businesses will tend to be smaller scale operations (i.e. micro/family businesses), which do not employ other people, this bias probably reflects the relative access to capital of Indigenous and non-Indigenous Australians. Indeed, the lack of adequate physical access to banking and generally low levels of financial literacy mean that many Indigenous people become a captive market for informal credit providers, such as hotels, stores, hawkers and taxi drivers (Taylor & Westbury 2000: 48). Families that do not maintain financial savings often have poor or non-existent credit ratings or debt-to-income ratios that exclude them from mainstream forms of credit (McDonnell & Westbury 2002). Westbury (1999: 20) argues that adequate cross-cultural training for staff, language barriers, and the lack of bank protocol for dealing with the 'proof of identity' problems are also important factors influencing the ongoing financial exclusion faced by many Indigenous people.

The importance of financial exclusion is under-scored by the fact that Indigenous self-employment rates decline as one gets further away from the major cities. In contrast, there is a small but potentially significant rise in non-Indigenous self-employment as the focus is shifted from metropolitan areas to remote areas. The above observations are consistent with the fact, observed in Chapter 3 and elsewhere, that non-Indigenous people are far more likely to work in agriculture industries. Farmers and pastoralists tend to have

greater access to one critical factor of production, arable land. Privately-owned land is an asset that can be used to secure access to credit necessary to run a business. While land rights and native title are politically contested areas, such rights are unlikely to yield a line of credit for Indigenous people. In any case, the nature of native title is that it is based on a communal title from which individual Indigenous entrepreneurs cannot easily secure credit. Notwithstanding the potential importance of land as an asset, it clearly serves a spiritual (non-pecuniary) role for many Indigenous people, and as such is not a panacea to overcome the financial exclusion that is evident across much of the Indigenous community.

Educational attainment

Tables 5.4 to 5.6 relate to education. Given the substantial changes to the education questions asked in the census, the data are presented in quite a different form from that in Daly (1995). Based on the highest level of schooling completed, self-employed Indigenous Australians left school earlier than self-employed non-Indigenous Australians irrespective of the scale of their enterprise (table 5.4). For example, while 29.1% of Indigenous employers in metropolitan areas had left school after completing Year 12 or equivalent, over half of non-Indigenous employers in such areas were in this category (51.6%). There was a similar differential between Indigenous and other Australians among other self-employed. In provincial and remote areas, the differential in Year 12 completion between Indigenous and non-Indigenous self-employed is smaller. This is largely explained by the fact that non-Indigenous self-employed are about 20 percentage points less likely to have completed Year 12 compared to their peers in metropolitan areas.

5.4 HIGHEST LEVEL OF SCHOOL COMPLETED, By Jones classification for Indigenous and non-Indigenous Australians — 2001

	Indigenous		*Non-Indigenous*	
	Employer	*Other self-employed*	*Employer*	*Other self-employed*
	%	%	%	%
Metropolitan				
Still at school	1.2	0.7	0.1	0.2
Did not go to school	1.2	1.3	0.6	0.6
Year 8 or below	8.4	8.0	5.0	5.4
Year 9 or equivalent	10.3	12.6	6.3	7.0
Year 10 or equivalent	40.2	40.4	26.1	29.0
Year 11 or equivalent	9.8	9.4	10.2	11.4
Year 12 or equivalent	29.1	27.6	51.6	46.4
Total	**100.0**	**100.0**	**100.0**	**100.0**
Provincial				
Still at school	0.7	1.1	0.1	0.2
Did not go to school	0.9	0.6	0.2	0.3
Year 8 or below	12.8	12.2	7.5	10.2
Year 9 or equivalent	16.3	15.1	9.5	11.2
Year 10 or equivalent	43.3	42.2	35.7	37.1
Year 11 or equivalent	8.6	10.9	13.2	13.2
Year 12 or equivalent	17.4	17.9	33.7	27.8
Total	**100.0**	**100.0**	**100.0**	**100.0**
Remote				
Still at school	1.6	1.0	0.1	0.1
Did not go to school	1.6	3.1	0.2	0.4
Year 8 or below	19.7	15.2	8.5	10.1
Year 9 or equivalent	16.6	15.2	8.2	9.0
Year 10 or equivalent	35.8	32.9	35.6	36.9
Year 11 or equivalent	7.8	13.4	12.8	13.5
Year 12 or equivalent	17.1	19.1	34.7	30.0
Total	**100.0**	**100.0**	**100.0**	**100.0**

Note: Table measures per cent of working age self-employed with educational attainment.
Source: 2001 Census of Population and Housing.

At the other extreme of the educational spectrum, the Indigenous proportion that had never attended school was much higher than for the self-employed non-Indigenous groups, irrespective of the area in which they live. For example, Indigenous employers and other self-employed in remote areas were about eight times more likely to have no schooling at all than non-Indigenous employers and other self-employed. However, it should be noted that the proportion who did not go to school was often quite small for both Indigenous and non-Indigenous populations. Most of the educational disadvantage of Indigenous employers appears to be driven by the failure of Indigenous people to fully complete secondary school.

Daly (1995) also showed that self-employed Indigenous Australians were substantially more likely to hold a qualification than were Indigenous wage and salary earners, but were less likely to hold a qualification than were non-Indigenous self-employed Australians. Table 5.5 again focuses on the

differences between Indigenous and other Australians who indicated they were employers and other self-employed living in metropolitan, provincial and remote areas.

While Indigenous employers were between 6.8 and 8.3 percentage points less likely to have a qualification that non-Indigenous employers in the respective areas, this differential tended to be significantly smaller than the differences between areas for both populations. For example, 40.2% of non-Indigenous employers in metropolitan areas did not have a qualification compared to 62.4% of their peers in remote areas. For Indigenous employers the per cent without qualifications varied between 48.5% and 70.1% (in metropolitan and remote areas respectively). Also note that, in terms of the absence of qualifications, there was little difference between employers and other self-employed.

The obverse of the above is that lower rates of tertiary qualification are generally evident in provincial and remote areas. The main exception to this generalisation is among certificate level qualifications, which tend to be relatively evenly spread among the Indigenous and other residents in the respective areas. Notwithstanding, almost all categories of degree level qualifications are more likely to occur in metropolitan areas.

5.5 HIGHEST LEVEL OF EDUCATIONAL QUALIFICATION FOR INDIGENOUS AND NON-INDIGENOUS SELF-EMPLOYED — 2001

	Indigenous		*Non-Indigenous*	
	Employer	*Other self-employed*	*Employer*	*Other self-employed*
	%	%	%	%
Metropolitan				
Postgraduate degree level	1.1	2.1	4.0	3.2
Graduate diploma & graduate certificate level	0.6	0.9	1.5	1.6
Bachelor degree level	9.7	6.9	18.9	13.0
Advanced diploma & diploma level	5.7	5.0	8.5	9.1
Certificate level	34.3	34.8	27.0	31.2
No qualification	48.5	50.3	40.2	41.9
Total	**100.0**	**100.0**	**100.0**	**100.0**
Provincial				
Postgraduate degree level	1.1	0.7	1.4	1.0
Graduate diploma & graduate certificate level	0.0	0.8	1.1	0.9
Bachelor degree level	4.2	3.2	10.4	5.8
Advanced diploma & diploma level	3.9	5.3	6.7	6.8
Certificate level	32.0	30.2	28.4	29.7
No qualification	58.7	59.7	51.9	55.9
Total	**100.0**	**100.0**	**100.0**	**100.0**
Remote				
Postgraduate degree level	1.6	0.9	0.9	0.8
Graduate diploma & graduate certificate level	0.0	0.0	0.7	0.7
Bachelor degree level	3.3	1.5	7.6	5.1
Advanced diploma & diploma level	4.3	3.1	6.7	5.8
Certificate level	20.7	21.9	21.8	23.0
No qualification	70.1	72.6	62.4	64.5
Total	**100.0**	**100.0**	**100.0**	**100.0**

Note: Table measures per cent of working age self-employed with educational qualification.
Source: 2001 Census of Population and Housing.

Table 5.6 shows the broad field in which qualifications were held. The main two fields in which self-employed Indigenous Australians held qualifications were based in the academic disciplines of engineering and architecture. Indeed, they accounted for about half of the qualifications held by Indigenous employers and other self-employed. While those two fields of qualifications were also very important among other self-employed Australians, the non-Indigenous group also had substantial concentration in Management and Commerce, and to a lesser extent in Health-related fields. For example, 19.9% non-Indigenous employers resident in metropolitan areas had management and commerce-related qualification compared to 13.1% of Indigenous employers in similar areas. Given the importance of having some background in business, even if it is only theoretically based, such differentials are potentially significant albeit somewhat small. Indigenous and non-Indigenous people in the other self-employed category tend to be less likely to have a management

qualification, possibly reflecting the fact that there are fewer people to manage in smaller enterprises. The fact that non-Indigenous employers also have a relatively large number of health-related qualifications in all three zones may reflect the number of medical (e.g. general) practices employing several staff. The need for medical services is probably relatively uniform in the various geographic areas, and this is reflected in the non-Indigenous distributions. While just over 10% of qualifications of Indigenous employers in remote areas are in health, this may reflect compositional factors driven by the high demand for medical services in remote Indigenous communities, and the small number of other Indigenous employers in such areas.

Overall, table 5.6 can be summarised as indicating that the qualifications of Indigenous employers and other self-employed tend to be more evenly spread among the various fields than for their non-Indigenous counterparts. However, the small level of differences in the composition for important qualification fields, including the management and commerce fields, means that it is important not to overstate the differences between the populations. Notwithstanding, the lack of Indigenous people with suitable qualifications may still be a constraint on the ability to enhance Indigenous participation in business enterprise, but the blockage is more likely to be arising from the relatively few Indigenous Australians to have secured a qualification at all (Hunter & Schwab 2003).

5.6 FIELD OF QUALIFICATION FOR INDIGENOUS AND NON-INDIGENOUS SELF-EMPLOYED WITH QUALIFICATION — 2001

	Indigenous		*Non-Indigenous*	
	Employer	*Other self-employed*	*Employer*	*Other self-employed*
	%	%	%	%
Metropolitan				
Natural and Physical Sciences	1.9	1.6	2.4	2.7
Information Technology	0.8	1.6	1.7	2.3
Engineering & Related Technologies	22.5	23.6	23.8	27.1
Architecture and Building	26.2	26.4	13.5	19.8
Agriculture, Environmental and Related Studies	2.3	3.1	1.8	2.3
Health	6.9	5.9	13.9	6.6
Education	4.6	3.3	3.9	4.4
Management and Commerce	13.1	11.0	19.9	14.5
Society and Culture	8.3	9.7	9.6	8.7
Creative Arts	3.1	6.9	2.9	6.4
Food, Hospitality & Personal Services	10.2	6.9	6.5	5.2
Total	**100.0**	**100.0**	**100.0**	**100.0**
Provincial				
Natural and Physical Sciences	2.3	0.0	1.5	1.9
Information Technology	0.0	0.5	0.7	1.0
Engineering & Related Technologies	31.6	29.4	26.6	28.6
Architecture and Building	18.6	27.3	14.1	20.5
Agriculture, Environmental and Related Studies	6.6	4.4	7.5	10.1
Health	5.6	5.8	14.1	7.5
Education	5.0	2.4	5.2	5.7
Management and Commerce	11.3	8.4	15.1	10.1
Society and Culture	6.0	9.4	5.6	5.3
Creative Arts	2.7	5.3	1.7	3.6
Food, Hospitality & Personal Services	10.3	7.1	8.0	5.6
Total	**100.0**	**100.0**	**100.0**	**100.0**
Remote				
Natural and Physical Sciences	0.0	2.1	1.6	2.1
Information Technology	0.0	2.1	0.7	0.7
Engineering & Related Technologies	28.8	30.5	28.5	30.8
Architecture and Building	15.3	18.7	11.6	15.8
Agriculture, Environmental and Related Studies	15.3	4.9	11.7	13.4
Health	10.2	7.6	12.6	8.5
Education	8.5	4.2	7.2	6.0
Management and Commerce	10.2	14.6	13.1	10.3
Society and Culture	6.8	2.1	4.6	4.6
Creative Arts	0.0	5.6	1.7	2.7
Food, Hospitality & Personal Services	5.1	7.6	6.5	5.2
Total	**100.0**	**100.0**	**100.0**	**100.0**

Note: Table measures per cent of self-employed with qualifications having studied in various fields. The number of self-employed used in this table can be quite small because it only refers to those with some sort of qualifications.

Source: 2001 Census of Population and Housing.

Occupation

Occupation and industry of employment data presented in tables 5.7 and 5.8 partially reflect the educational background of workers. A relatively large number of self-employed Indigenous Australians with certificate qualifications are occupied as tradespersons. Indigenous employers and other self-employed were both more likely to be employed in a trade-based occupation than their non-Indigenous counterparts in all areas. However, there were relatively few tradespersons in remote areas for both Indigenous and non- Indigenous self-employed.

Another large occupational group for the Indigenous self-employed, apart from tradespersons, was managers and administrators. In general, around (mostly a little under) one-fifth of Indigenous employers are in this occupational category. This, however, was a smaller proportion than among non-Indigenous employers for whom between 20.9% and 47.0% were managers or administrators (in metropolitan and remote areas respectively). While there were generally fewer other self-employed working as managers and administrators, non-Indigenous residents in provincial and remote areas were actually more likely to work in this occupation if they were in the 'other self-employed' category. Given the importance of being a good manager and administrator when one conducts a business, the fact that Indigenous self-employed are substantially less likely than non-Indigenous counterparts to work in this occupation is potentially problematic. The largest differential between the Indigenous and non-Indigenous differential for this occupational category was about 40 percentage points for other self-employed in remote areas.

Other substantial occupational groups were the professionals and associate professionals. In spite of the differences in educational attainment noted above, there was remarkably little difference in the proportion of Indigenous and non-Indigenous self-employed associated with these categories. There were more differences between areas than between Indigenous and non-Indigenous distribution. People are obviously more likely to identify with their current work than their educational qualifications, especially when describing occupation.

It is noteworthy that Daly (1995) was able to look at more disaggregated occupational categories than is possible in table 5.7 because she examined all Indigenous self-employed. She found that the largest group of self-employed Indigenous professionals were in the 'artists and related' category. This is consistent with the substantial size of the Indigenous arts and craft industries (e.g. see Altman 2000).

5.7 OCCUPATION OF INDIGENOUS AND NON-INDIGENOUS SELF-EMPLOYED — 2001

	Indigenous		*Non-Indigenous*	
	Employer	*Other self-employed*	*Employer*	*Other self-employed*
	%	%	%	%
Metropolitan				
Managers & Administrators	17.0	6.6	20.9	9.2
Professionals	11.4	18.3	19.2	20.2
Associate Professionals	17.5	9.3	23.2	13.3
Tradespersons and Related Workers	22.2	26.8	16.0	24.0
Advanced Clerical and Service Workers	6.0	3.3	4.7	4.2
Intermediate Clerical, Sales & Service Workers	5.3	7.8	5.5	7.6
Intermediate Production & Transport Workers	8.7	14.2	3.7	9.5
Elementary Clerical, Sales & Services Workers	3.7	4.7	3.1	4.1
Labourers and Related Workers	8.2	9.0	3.7	7.9
Total	**100.0**	**100.0**	**100.0**	**100.0**
Segregation of employers & other self-employed	0.213		0.221	
Segregation of Indigenous & non-Indigenous	0.176	0.094		
Provincial				
Managers & Administrators	18.5	18.0	30.5	38.3
Professionals	7.3	9.8	9.8	8.0
Associate Professionals	19.9	8.5	24.5	10.6
Tradespersons and Related Workers	19.4	23.1	14.0	18.1
Advanced Clerical and Service Workers	5.2	3.4	4.9	3.2
Intermediate Clerical, Sales & Service Workers	5.9	9.1	4.8	5.6
Intermediate Production & Transport Workers	8.1	12.0	4.7	6.7
Elementary Clerical, Sales & Services Workers	4.1	4.5	3.1	3.3
Labourers and Related Workers	11.4	11.5	3.6	6.3
Total	**100.0**	**100.0**	**100.0**	**100.0**
Segregation of employers & other self-employed	0.137		0.173	
Segregation of Indigenous & non-Indigenous	0.191	0.224		
Remote				
Managers & Administrators	22.2	12.9	47.0	52.6
Professionals	5.6	9.3	5.5	5.7
Associate Professionals	17.2	9.5	19.2	8.0
Tradespersons and Related Workers	12.8	18.6	10.4	12.9
Advanced Clerical and Service Workers	5.6	1.8	3.9	2.2
Intermediate Clerical, Sales & Service Workers	8.3	12.7	3.8	4.0
Intermediate Production & Transport Workers	12.8	14.7	5.0	6.8
Elementary Clerical, Sales & Services Workers	1.7	3.6	1.8	2.1
Labourers and Related Workers	13.9	16.8	3.4	5.8
Total	**100.0**	**100.0**	**100.0**	**100.0**
Segregation of employers & other self-employed	0.208		0.130	
Segregation of Indigenous & non-Indigenous	0.269	0.401		

Note: The number of self-employed used in this table can be quite small because it only refers to those with some sort of qualifications.

Source: 2001 Census of Population and Housing.

While the lower status occupations (including labourers, elementary clerical, and intermediate production and clerical workers) tend to be relatively unimportant among non-Indigenous self-employed, they tended to be somewhat more prominent among Indigenous self-employed. This observation is most pronounced in remote areas. For example, 12.4% and 16.8% of Indigenous employers are labourers or related workers compared to only 3.4% and 5.8% of their non-Indigenous counterparts in such areas. This no

doubt partially reflects their educational attainment, but will also be associated with the nature of their current work.

Segregation indexes are provided in table 5.7 to provide a summary measure of the differences in the occupational distributions. As was done in Chapter 1, the Duncan index is calculated because it is relatively easy to interpret — it represents the proportion of workers who would have to change their occupation in order to eliminate the difference between two distributions (Duncan & Duncan 1955). In addition to calculating the differences between the Indigenous and non-Indigenous distributions for employers and other self-employed, the index is also calculated to estimate the segregation between employers and other self-employed. In this way it is possible to summarise whether there is more difference *within* the Indigenous and non-Indigenous self-employed populations than *between* the two populations.

The segregation between Indigenous and non-Indigenous occupational status of employers and other self-employed tends to be a similar order of magnitude, or even smaller, to that identified for the whole workforce identified in Chapter 1. The one possible exception to this generalisation is in remote areas where, for example, around 40% of other self-employed have to change occupations to equate the Indigenous and non-Indigenous distributions. The relatively high level of segregation is driven by the small numbers of Indigenous self-employed working as managers and administrators. In the same areas, occupational segregation between employers and other self-employed is lower, thus indicating Indigenous self-employed are not running similar sorts of businesses to non-Indigenous self-employed.

The difference between Indigenous and non-Indigenous occupations are less pronounced in provincial areas, and is actually smaller than the segregation between employers and other self-employed in metropolitan areas. Consequently, it is arguable whether the occupational distributions of Indigenous and non-Indigenous self-employed are that different in metropolitan areas. For example, only 9.4% of the other self-employed category have to change occupation to eliminate racial differences in the distributions.

Notwithstanding substantial regional differences in the segregation indexes, the sizeable segregation between employers and other self-employed for both Indigenous and non-Indigenous populations justifies the decision to separately analyse differences within the self-employed category.

Industry

The distribution of self-employed Indigenous Australians across the 17 major industry groups differed markedly, reflecting differences between industries in the technologies employed, the scale of production and the extent of public ownership (see table 5.8). Table 5.8 is split into three sub-tables because it is not possible to fit it on the one page (table 5.8a, 5.8b, & 5.8c).

Daly (1995) found that over half of self-employed Indigenous Australians were working in agriculture, construction and the wholesale and retail sectors.

However, these three industries only accounted for only 7.8% of employment amongst self-employed non-Indigenous Australians in 1991. Table 5.8 illustrates that, at least in the 2001 census, there is substantial geographic variation in the industry distribution of self-employed for both the Indigenous and non-Indigenous populations.

In metropolitan areas, there are relatively few opportunities to engage in Agriculture Forestry or Fishing and hence few self-employed work in this industry. There are also relatively little racial difference between the industrial distribution of employers and other self-employed. Unlike Daly's (1995) analysis, the per cent working in the Wholesale and Retail Trade sector does not differ much between Indigenous and non-Indigenous self-employed. The only truly noteworthy difference between the Indigenous and non-Indigenous distributions were in the Construction industry where about 10% more Indigenous employers conducted businesses compared to their non-Indigenous counterparts. Consistent with Daly (1995), there tended to be a smaller proportion of self-employed Indigenous Australians in the finance and property industries compared to non-Indigenous Australians.

5.8a INDUSTRY OF INDIGENOUS AND NON-INDIGENOUS SELF-EMPLOYED IN METROPOLITAN AREA — 2001

	Indigenous		*Non-Indigenous*	
	Employer	*Other self-employed*	*Employer*	*Other self-employed*
	%	%	%	%
Agriculture, Forestry & Fishing	2.5	2.6	2.0	2.5
Mining	0.0	0.2	0.1	0.2
Manufacturing	8.9	8.6	11.2	8.9
Electricity, Gas & Water Supply	0.3	0.2	0.1	0.2
Construction	24.9	24.9	14.4	21.0
Wholesale Trade	5.4	3.2	6.5	4.5
Retail Trade	15.6	9.5	19.8	11.8
Accommodation, Cafes & Restaurants	3.8	1.6	5.7	1.7
Transport and Storage	6.4	8.9	3.9	6.5
Communication Services	0.6	2.7	0.8	1.9
Finance and Insurance	1.7	0.8	2.5	2.9
Property and Business Services	13.8	14.3	18.4	19.6
Government Administration & Defence	0.3	0.4	0.1	0.3
Education	1.6	4.0	1.2	3.1
Health and Community Services	4.3	4.6	7.1	4.8
Cultural and Recreational Services	3.7	7.0	2.0	4.2
Personal and Other Service	6.0	6.6	4.1	6.0
Total	**100.0**	**100.0**	**100.0**	**100.0**
Segregation of employers & other self-employed	0.120		0.186	
Segregation of Indigenous & non-Indigenous	0.179	0.117		

Source: 2001 Census of Population and Housing.

As with the occupation data presented above, table 5.8 reports the segregation of industrial distributions between Indigenous and non-Indigenous self-employed and within the respective self-employed populations. The level of industry segregation in metropolitan areas is generally lower that the overall segregation reported in Chapter 1. There is no systematic difference in the segregation between employers and other self-employed, and that between Indigenous and non-Indigenous distributions for the two categories of self-employed. However, the 'racial' segregation index for employers was slightly smaller than the 'racial' index for other self-employed. Taken as a whole these segregation indexes point to the differences between industry distributions of the self-employed being relatively minor in metropolitan areas. Daly (1995) estimated the correlation coefficients to demonstrate a similar point, namely that the industry distribution of Indigenous self-employed was quite close to the distribution of other self-employed Australians.

5.8b INDUSTRY OF INDIGENOUS AND NON-INDIGENOUS SELF-EMPLOYED IN PROVINCIAL AREA — 2001

	Indigenous		*Non-Indigenous*	
	Employer	*Other self-employed*	*Employer*	*Other self-employed*
	%	%	%	%
Agriculture, Forestry & Fishing	15.3	18.2	23.3	36.6
Mining	0.8	0.5	0.2	0.2
Manufacturing	10.2	8.6	7.7	6.4
Electricity, Gas & Water Supply	0.4	0.6	0.1	0.1
Construction	16.7	19.7	11.4	14.8
Wholesale Trade	3.8	2.8	4.9	3.1
Retail Trade	18.6	11.4	20.7	10.2
Accommodation, Cafes & Restaurants	5.7	1.7	7.1	2.9
Transport and Storage	6.4	6.9	4.4	4.3
Communication Services	0.8	1.2	0.9	1.2
Finance and Insurance	0.4	0.7	1.3	1.0
Property and Business Services	9.7	9.7	8.3	7.8
Government Administration & Defence	0.4	0.7	0.1	0.2
Education	0.8	2.0	0.5	1.6
Health and Community Services	2.3	4.8	4.6	3.4
Cultural and Recreational Services	2.0	4.1	1.3	2.3
Personal and Other Service	5.5	6.6	3.3	4.0
Total	**100.0**	**100.0**	**100.0**	**100.0**
Segregation of employers & other self-employed	0.143		0.199	
Segregation of Indigenous & non-Indigenous	0.157	0.203		

Source: 2001 Census of Population and Housing.

The differences between the industrial distribution of Indigenous and non-Indigenous self-employed are more marked in provincial areas than they are in metropolitan areas. For example, Indigenous people in the other self-employed category are more than half as likely to be working in Agriculture, Forestry and Fishing. However, other differences in the industrial distribution of Indigenous and non-Indigenous self-employed are spread throughout the other industry categories. The racial differences in the per cent in Agriculture, Forestry and Fishing appear to drive the slightly higher segregation index for

other self-employed compared to that for employers. Overall, as in metropolitan areas, the summary measures of the differences between industrial distributions in provincial areas are roughly uniform and even somewhat smaller than the segregation indexes in Chapter 1.

5.8c INDUSTRY OF INDIGENOUS AND NON-INDIGENOUS SELF-EMPLOYED IN REMOTE AREA — 2001

	Indigenous		*Non-Indigenous*	
	Employer	*Other self-employed*	*Employer*	*Other self-employed*
	%	%	%	%
Agriculture, Forestry & Fishing	27.4	20.3	44.0	55.0
Mining	2.2	3.4	0.6	1.8
Manufacturing	5.9	3.9	4.4	3.8
Electricity, Gas & Water Supply	0.0	0.7	0.1	0.2
Construction	12.4	12.5	8.7	10.3
Wholesale Trade	4.3	1.8	3.6	2.4
Retail Trade	13.4	9.1	15.0	6.5
Accommodation, Cafes & Restaurants	5.9	2.7	6.8	2.7
Transport and Storage	7.5	7.3	4.9	4.2
Communication Services	0.0	0.9	1.0	0.9
Finance and Insurance	0.0	0.9	0.6	0.6
Property and Business Services	7.5	6.8	5.3	5.4
Government Administration & Defence	3.2	8.2	0.1	0.3
Education	1.6	5.0	0.3	0.8
Health and Community Services	4.3	7.5	2.0	1.8
Cultural and Recreational Services	0.0	3.6	0.8	1.2
Personal and Other Service	4.3	5.2	1.8	2.1
Total	**100.0**	**100.0**	**100.0**	**100.0**
Segregation of employers & other self-employed	0.198		0.153	
Segregation of Indigenous & non-Indigenous	0.214	0.352		

Source: 2001 Census of Population and Housing.

The greater opportunity to work in primary industries in remote areas is reflected in the higher percentages working in Agriculture, Forestry and Fishing. While this observation is valid for both Indigenous and non-Indigenous self-employed, non-Indigenous self-employed are far more likely to work in this industry. For example, 44.0% and 55.0% of non-Indigenous employers and other self-employed in remote areas have businesses in Agriculture, Forestry and Fishing. In contrast, only 27.4% and 20.3% of their Indigenous counterparts have businesses in that industry. This is consistent with the earlier suggestion that access to land may be a major impediment for Indigenous enterprise in remote areas.

The obverse of the disproportionately low level of involvement in Agriculture, Forestry and Fishing is that Indigenous self-employed tend to be more likely to be involved in other industries. That is, there is almost a uniform proportional increase in Indigenous involvement in other industries. As a result, and in contrast to Daly (1995) and the above results for metropolitan areas, Indigenous self-employed in remote areas tend to be more likely to be involved in Property and Business Services than their non-Indigenous counterparts. Even

Indigenous involvement in Government Administration and Defence is higher than that of non-Indigenous self-employed, although there must be limited opportunities for business to operate in this sector.

Therefore, the relatively high level of segregation in remote areas, especially the difference between Indigenous and non-Indigenous other self-employed, is driven by the low level of Indigenous involvement in Agriculture, Forestry and Fishing. However, on balance, the differences in industrial distribution for self-employed in remote areas are not particularly large compared to those for other areas, or the overall statistics reported above.

In summary, while Indigenous self-employed people were employed in similar proportions across the major industry groups compared to their counterparts in the rest of the Australian community, they tended to be employed in the less skilled occupations in these industries as dictated by their existing lower levels of educational attainment.

The changing nature of Indigenous self-employment 1996–2001

Before moving onto the analysis of sector of employment, it is worth briefly reflecting on the overall stable industrial distribution of self-employment of Indigenous Australians. The relatively small number of Indigenous employers and other self-employed means that it is not worthwhile replicating table 5.8 for the 1996 census data. However, by combining the two categories of self-employment it is possible to compare what happened to total self-employment of Indigenous residents during the last intercensal period in the various geographic areas.

There was little intercensal change in the industry distribution of Indigenous self-employment in metropolitan and provincial areas. Indeed, the percentage growth in employment distribution was close to zero for most industries, and the growth rates never had an absolute value over five percentage points. However, the situation was more volatile in remote areas where the growth of involvement in Agriculture, Forestry and Fishing was nine percentage points, while involvement in Government Administration and Defence, and Health and Community Services fell by slightly over 10 percentage points. Even if one discounts the government and health industry results on the grounds that they are based on small number of self-employed (especially in 1996), the growth of participation of Indigenous self-employed in Agriculture, Forestry and Fishing is still noteworthy.

At a time when the number of people involved in Agriculture, Forestry and Fishing declined substantially, Indigenous business in this industry was moving against the trend. Indeed, the percentage decline of non-Indigenous self-employment in this industry was substantial at minus nine percentage points. It appears that Indigenous people are increasing involvement when this industry is undergoing a large structural adjustment. Part of the explanation for the growth in this industry may be the ILC are active in purchasing land in such areas. Irrespective of the reason for the increasing activity of Indigenous

businesses in this industry, the trend towards the establishment of large agribusiness in the general Australian economy will mitigate against the establishment of small Indigenous entrepreneurs, and ensure that these enterprises may be marginalised or non-competitive in the long-term. A more positive aspect of the increased Indigenous involvement in Agriculture, Forestry and Fishing businesses, is that the difficulty arising from access to land titles may not be as great as indicated above. However, it should be reiterated that the improvement was based on the small number of Indigenous self-employed in remote areas in 1996.

Private and public sectors

In the interest of completeness, table 5.9 presents the sector of employment for the two categories of Indigenous self-employed and respective non-Indigenous comparison groups. It is not surprising that self-employment was very much concentrated in the private sector with virtually none of the self-employed residents in metropolitan and provincial areas working in the government sector. Even in remote areas, non-Indigenous employers and other self-employed have almost no presence in the government sector. In contrast, among the Indigenous self-employed in remote areas, 2.5% of employers and 6.5% of other self-employed work outside the private sector.

5.9 GOVERNMENT AND PRIVATE SECTOR EMPLOYMENT FOR INDIGENOUS AND NON-INDIGENOUS SELF-EMPLOYED — 2001

	Indigenous		*Non-Indigenous*	
Jones classification	*Employer*	*Other self-employed*	*Employer*	*Other self-employed*
	%	%	%	%
Metropolitan				
Commonwealth government	0.0	0.0	0.0	0.1
State/territory government	0.0	0.0	0.0	0.1
Local government	0.3	0.2	0.0	0.1
Private sector	99.7	99.8	99.9	99.8
Total	**100.0**	**100.0**	**100.0**	**100.0**
Provincial				
Commonwealth government	0.0	0.2	0.0	0.0
State/territory government	0.0	0.0	0.0	0.0
Local government	0.0	0.0	0.0	0.1
Private sector	100.0	99.8	99.9	99.9
Total	**100.0**	**100.0**	**100.0**	**100.0**
Remote				
Commonwealth government	0.0	0.0	0.0	0.0
State/territory government	0.0	0.0	0.0	0.0
Local government	2.5	6.5	0.0	0.2
Private sector	97.5	93.5	99.9	99.7
Total	**100.0**	**100.0**	**100.0**	**100.0**

Source: 2001 Census of Population and Housing.

There are two likely explanations for this apparent anomaly. First, the distinction between the private and non-private sector is not sharp in remote Indigenous communities where much enterprise is directly or indirectly funded by the public purse. Second, census data on Indigenous self-employment is measured differently in remote areas because it is collected using a SIF that often involves an interviewer rather than the self-completion forms that are used in other census collections. Since the SIF methodology is designed to improve data quality, the most likely explanation lies in the lack of private sector activity in remote communities. This is consistent with the fact that the highest proportion working outside the private sector is the other self-employed category who are probably independent contractors working on government-funded projects, for example CDEP scheme projects. Notwithstanding ad hoc explanations such as these, this anomaly may indicate a problem with data quality and accordingly the discussion will reflect on the issue in a later section.

Income

These differences between the various groups of self-employed might be reflected in income differences. Measurement of incomes of self-employed people, however, is particularly difficult because the separation of expenditure and income into current and investment components is complex. For example, a farmer may have a low annual disposable income because they invested in farm improvements, which will yield a capital gain on the sale of the farm at some point in the future. The current income therefore does not fully reflect his command over goods and services. Complications such as this make a comparison of income difficult between groups of self-employed as the access to investment and tax arrangements, such as family trusts, that distort income flows will vary widely depending upon wealth, education and other historically conditioned factors.

The numbers presented in table 5.10 show that median annual income and the proportion of a group with incomes that fall in four income ranges. The first income range is nil or negative income that could cover both genuinely low income, and differential access to tax arrangements that may artificially lower incomes. Johnson and Scutella (2003) argue that this group may experience low income as a result of transitional life cycle changes, with many in the group being able to sustain a relatively 'high' level of expenditure. Whatever, the reason for having or indicating a zero or negative income, this group does not exhibit the characteristics of those conventionally defined as poor. Consequently, it is prudent to examine this group separately.

The second income range is between $1 and $499 per week. This could be characterised as low income with the upper bound corresponding roughly to the median income for Indigenous population. The third range is upper middle income category ($500–$999 per week), while the top income category of over $1,000 per week is design to capture the extent of relatively high-income earners among the various groups of self-employed.

5.10 INCOME DISTRIBUTION FOR INDIGENOUS AND NON-INDIGENOUS SELF-EMPLOYED — 2001

	Indigenous		*Non-Indigenous*	
Jones classification	*Employer*	*Other self-employed*	*Employer*	*Other self-employed*
	%	%	%	%
Metropolitan				
Nil or negative	2.9	3.9	1.5	2.2
$1–$499	32.7	44.6	24.8	43.3
$500–$999	42.4	36.6	40.0	37.3
$1 000 and over	21.9	14.9	33.7	17.2
Total	**100.0**	**100.0**	**100.0**	**100.0**
Median income	$638	$513	$748	$539
Provincial				
Nil or negative	3.9	5.6	3.3	5.0
$1–$499	51.2	61.0	38.3	56.6
$500–$999	32.1	24.5	38.2	29.2
$1 000 and over	12.8	8.8	20.2	9.2
Total	**100.0**	**100.0**	**100.0**	**100.0**
Median income	$467	$374	$566	$414
Remote				
Nil or negative	8.5	4.2	6.9	9.3
$1–$499	50.5	62.2	33.5	48.8
$500–$999	29.3	23.6	35.6	28.3
$1 000 and over	11.7	9.9	24.0	13.7
Total	**100.0**	**100.0**	**100.0**	**100.0**
Median income	$437	$363	$586	$432

Note: Median income denotes median weekly income.
Source: 2001 Census of Population and Housing.

The median incomes of Indigenous self-employed are uniformly lower than their non-Indigenous counterparts. The median income of Indigenous employers is between $99 and $149 less than that for Indigenous employers in the respective areas with the largest differential being in remote areas. The differential between the median income of other self-employed was substantially less varying between $26 and $69 with the latter again being associated with remote areas. Among Indigenous self-employed, employers had a higher median income than other Indigenous self-employed. For example, Indigenous employers in metropolitan areas had a median income of $638, $125 higher than other Indigenous self-employed living in the same areas. While this is substantial differential, it is much lower than the non-Indigenous differential between employers and other self-employed in metropolitan areas, which was $209 per week (i.e. over $10,000 per annum). Given that employers are likely to run larger scale enterprises than businesses without other employees, and hence involve larger capital investment, some of this differential probably reflects the return to this capital. The fact that Indigenous self-employed always had smaller incomes than non-Indigenous counterparts, is an indication that Indigenous businesses are either under-capitalised or conducted on a smaller scale than non-Indigenous business (or possibly both).

The income distribution in table 5.10 reveals several things. First, there is not much difference between the per cent of Indigenous and non-Indigenous self-employed categories whose income was nil or negative. Indeed, the largest difference between Indigenous and non-Indigenous self-employed was for the other self-employed category in remote areas where the non-Indigenous distribution indicated 9.3% had a nil or negative income compared to 4.2% in the analogous Indigenous distribution. As indicated above, this either indicates transitional factors, data measurement problems, differential access to certain tax arrangements or that there are more marginal enterprises in remote Australia.

The rest of the income distributions in table 5.10 are consistent with the above analysis of median income. Indigenous self-employed are more likely to be in low income range and less likely to be in the high income range. The largest differences in income distributions were for employers. For example, the proportion of Indigenous employers earning over $1,000 per week in metropolitan areas was 21.9%, compared to over one-third of non-Indigenous employers in such areas (33.7%). The differentials in the incidence in the high-income group for Indigenous and non-Indigenous employers were similar in provincial and remote areas. The large numbers in this open income category means that the median income estimates (and resulting differentials) are conservative and the mean income differentials are probably understated.

5.4 A CRITICAL APPRAISAL OF CENSUS DATA ON INDIGENOUS SELF-EMPLOYMENT

Daly (1995) provided some possible explanations of the low level of Indigenous self-employment, and made specific reference to the data quality issues. This section re-visits the data quality problems inherent in census data, but does not return to the more general discussion. Interested readers should revisit the discussion in Daly's monograph or examine the burgeoning literature on the development potential of the Indigenous business (Altman 2002b provides an introduction to relevant studies).

The census data reported here show that for Indigenous Australians, self-employment is a minor, but possibly growing activity. Daly identifies a number of reasons why census statistics may under-represent the extent of self-employment and entrepreneurial activity among Indigenous Australians.

The main issue is that Indigenous artists and hunter-gatherers may not classify themselves or be recognised as self-employed under existing definitions. Wright and Altman (2000) report more recent estimates of the number of Indigenous artists being around 6,000 people. While many artists are not explicitly identified as such in the census, the incidence has probably improved in recent census collections. The Aboriginal Arts and Crafts Review estimated that there were more than 80 times the number of Indigenous artists in Australia than census data indicated (Altman 1989).

Similarly, hunter-gatherers are unlikely to be included among the self-employed as they could not be described as 'conducting their own business' even though they are working to produce non-monetary income for themselves. Altman and Taylor (1989) estimated that about 10% of the Indigenous population lived at outstations where some hunting and gathering activities were undertaken (also see Altman & Allen 1992). The inclusion of these groups would increase the importance of self-employment among Indigenous Australians. However, in order to compare this figure with that of the total Australian population, it would be necessary to make a similar adjustment for other Australians who earned 'income' from similar sources. Notwithstanding, it seems likely that the proportion of Indigenous Australians in a more broadly defined category of self-employment would remain below that of other Australians.

It is questionable, however, whether it is appropriate to think of these artists and hunter-gatherers as self-employed in the sense of being self-supporting and independent of government transfers. The majority of the artists surveyed for the Arts and Crafts Review earned less than $1,000 a year from these activities; this income was usually a supplement to income derived from other sources. Similarly, hunting and gathering activities produced only part of the income of people living at outstations (Altman & Taylor 1989) as many adults received income transfers from government. The use of a broader definition of self-employment to include these groups would conceal important characteristics of the individuals concerned. For example, the income generated by most Indigenous artists was not sufficient to make them economically independent; to describe them as self-employed would suggest otherwise. This point resonates with the fact that the Indigenous self-employed are more likely to have nil or negative income. The need for income support from sources other than arts and crafts production and hunting and gathering would remain if incomes of Indigenous Australians were not to fall even further behind those of other Australians.

The analysis in this chapter points to other data quality issues that potentially overstate the level of Indigenous self-employment, albeit marginally. Industry data appears to point to a significant number of Indigenous employers and other self-employed in remote areas who work in the Government, Administration and Defence industry. A related point is that Indigenous self-employment is not confined to the private sector in remote areas. While the ABS could have re-coded such data, this would have begged the question of what the respondent intended. It is probable that many of the non-private sector Indigenous self-employed, all of whom indicated they worked in Local Government, were contractors associated with CDEP schemes or other local authorities. If their work was funded by 'Local Government', the 'misclassification' may have arisen from legitimate confusion as to how they should answer particular census questions. However, it is arguable whether such responses should be included in an analysis of self-employment. Given that Altman (2002a) argue that the CDEP scheme is a valuable source of finance to generate Indigenous business, and hence integrally associated with

Indigenous self-employment, it is prudent to retain them in the analysis at this stage.

The overall importance of these factors in explaining self-employment among Indigenous Australians remains unquantified, and census data are not conducive to a direct investigation of these issues. However, such issues should be borne in mind when interpreting the above analysis.

5.5 CONCLUSION

Napoleon once quipped that England was a nation of shopkeepers. While Napoleon meant this as a cutting remark, it is not a statement that can be used to put-down Indigenous Australians, at least in the immediate future. This chapter demonstrates that while the overall number of Indigenous self-employed has increased substantially since 1991, the increase has been somewhat marginal when compared to trends in total Australian self-employment. Indigenous people are still about three times less likely to be self-employed than other Australians. Perhaps the most important aspect of recent trends is that the growth in Indigenous self-employment is concentrated among the 'own account workers' category who do not employ any other people. In contrast, the proportion of Indigenous employers in the labour force was relatively stable between 1991 and 2001.

To the extent that government policy has been effective in encouraging Indigenous business, it appears to have had most effect in encouraging small-scale businesses that do not employ any other people. This observation highlights the fact that policies that encourage Indigenous self-employment are unlikely to have a substantial impact on the overall employment disadvantage experienced by Indigenous Australians. Notwithstanding, the facilitation of Indigenous business may be an important strategic aspect of future economic development for Indigenous people.

Several reasons have been put forward to explain the lack of entrepreneurial success among Indigenous Australians, especially the lack of education and training in the organisation of viable commercial enterprises. Shortages of capital and the limited opportunities related to remote locations of residence may also contribute to low levels of self-employment. The legal uncertainty arising in the aftermath of the Wik decision may contribute to the difficulty in raising capital. The role of customary value systems that do not fit well with the efficient organisation of a viable commercial enterprise has also been emphasised. Daly (1995) even pointed to the reliance on government funding as one factor contributing to the lower rate of self-employment among Indigenous Australians. This view has gained some currency in public debate following Pearson's characterisation of welfare as a 'poison' that continues to subvert Indigenous participation in the 'real economy' (Pearson 2000). However, such views tend to discount structural limitations of trying to conduct business in remote Indigenous communities.

Some of these factors may have positive as well as negative aspects. Indigenous Australians living customary lifestyles in remote locations may be considered to have unique opportunities for the development of small business. For example, despite the worldwide downturn in travel following the events of 11 September 2001, cultural and ecological tourism is a potential area for future growth that could be exploited by Indigenous business. Also, as discussed above, there are several largely unexploited options for communities and individuals to leverage capital, especially in the context of joint ventures and native title negotiations. Furthermore, Altman and Johnson (2000) argue that the trade-off between business efficacy and culture is not necessarily problematic and can in some circumstances be an advantage. The high levels of 'bonding' social capital in remote Indigenous communities may facilitate business transactions among community members (see Hunter 2000 for a critical analysis of such issues).

This chapter confirms Daly's (1995) main findings that, in comparison with other self-employed Australians, self-employed Indigenous Australians had spent less time at school and were less likely to have a formal qualification. They were mainly employed in trade occupations and in the lower-skilled occupations of plant and machinery operators and labourers. Self-employed Indigenous Australians were under-represented among managers and administrators and professionals compared with other self-employed Australians. Raising educational attainment is likely to increase the number of Indigenous Australians in these groups, although this is a long-term process requiring not only human capital but physical capital inputs.

The evidence in this chapter seems to point to financial exclusion of Indigenous people being an ongoing impediment to the development of Indigenous business. Not only does financial exclusion constrain the possibility for raising capital, but limited credit options may direct consumption patterns away from local communities and towards major regional and commercial centres. To the extent that Indigenous businesses are reliant on customers from the Indigenous community, this could be a major problem.

One of the main findings of this chapter is that the occupation and industry structure of Indigenous self-employment is different from that of other Australian businesses in remote areas. While there is some convergence apparent in the last intercensal period, the convergence is largely as a result of the apparent growth of Indigenous self-employment in declining primary industries. If the recent growth in Indigenous employment in Agriculture, Forestry and Fishing is concentrated in small scale ventures, it is questionable how viable such operations will be in the long-term when faced with competition from large, sometimes multinational agribusinesses.

Hopefully the above descriptions of the differences between Indigenous businesses (of various scales) in metropolitan, provincial and remote areas will be useful in formulation of more effective policy. While it is beyond the scope of this chapter to canvass policy options, the report of the current Indigenous Business Review could be instrumental in focusing public debate and could be

sensibly informed by the statistical evidence presented above. In view of the high level of labour market discrimination demonstrated in the previous chapter, and the ongoing social exclusion of the Indigenous community (Hunter 2000), there should be no illusion as to the enormity of the task at hand. Promoting Indigenous business may seem like a relatively direct means to removing the 'welfare shackles', but the structural impediments arising from education and access to capital may also require long run commitment going beyond the life of the current parliament.

CHAPTER 6 WHAT DO WE NOW KNOW ABOUT THE FACTORS UNDERLYING INDIGENOUS LABOUR FORCE STATUS

The aim of this study has been to describe the position of Indigenous Australians in the labour market, and to consider some of the possible causes of ongoing disparities in Indigenous labour force status. This final chapter identifies the distinguishing features of the Indigenous labour market by drawing out the lessons of the above chapters. While the stated aim of this monograph is to revisit Daly (1995), the above analysis is not a sterile reproduction of her results. Such an exercise would, in all likelihood, not differ that much from the original monograph. For example, the depressing accuracy of Taylor and Hunter's (1998) labour force projections illustrates that Indigenous labour force status is remarkably stable over time, and could possibly be even characterised as being stagnant. Consequently, the following discussion centres on the extent to which the results differ from those of Daly (1995) in order to document what we now know about the factors underlying Indigenous labour force status.

The overall results point to a remarkable continuity with Daly's (1995) monograph. Indigenous people continue to be less educated, and more likely to be unemployed, and less likely to be either participating in the labour force or working than are other Australians. Indigenous workers continue to be disproportionately wage and salary earners, as opposed to being self-employed, and tended to be concentrated in the public sector, low skilled occupations and particular industries. The formal statistical analysis confirms that the lower educational attainment is the major factor underlying Indigenous labour force status. Other important factors include basic demographic factors, especially the disproportionately youthful nature of the Indigenous workforce, regional factors, family variables and marital status.

In contrast to Daly (1995), this monograph has attempted to unpack the role of demographic factors, and industrial or occupational structure on trends in Indigenous employment. That is, the analysis takes some tentative steps towards understanding the supply and demand factors underlying Indigenous labour force status. Furthermore, the novel use of decomposition techniques for 'limited dependent variables' allows us to identify the incidence of potential discrimination in the Indigenous labour market. In addition to updating the labour force profile of Indigenous Australians to take into account 2001 census data, this monograph has attempted to place enough structure on the analysis to ensure that we can get some new insight into the major impediments to improving Indigenous employment. The geographic dimension of the analysis is particularly important given that it exploits the new census geography that facilitates the differentiation of people by access to services, and ultimately to

labour markets and jobs. While Daly (1995) obviously provided considerable information on the geography of Indigenous labour force status, this monograph sort to extend and refine the approach to maximise the interpretability of the available information.

6.1 HOW THE RESULTS DIFFER FROM DALY (1995)?

History and institutional factors are crucially important in understanding the factors underlying Indigenous labour force status. For example, naïve analysis of trends in employment obscure important changes to the provision of labour market assistance, especially the rise of the CDEP scheme. While it has always been recognised as a confounding factor that makes comparison difficult between the Indigenous and non-Indigenous populations, it also distorts our understanding of Indigenous employment and labour force status. Chapter 1 demonstrated how the history of Indigenous employment can be transformed by taking into account the rise of the CDEP scheme. By focusing largely on full-time jobs and private sector employment, the majority of the analysis abstracts from the effect of this important institution.

The presence of the CDEP scheme has tended to overstate the employment prospects (and understate unemployment rates) of Indigenous Australians, especially in non-urban areas. The scheme also had a 'distortionary' effect on the composition of Indigenous employment with the vast majority of such jobs being part-time, and are largely concentrated in particular industries and occupations. The effect of the CDEP scheme on segregation in industrial and occupational distribution has been severely under-appreciated in previous analysis.

In theory, segregation in employment can be driven by either the preferences of individuals for particular types of work or indicate the degree of constraint on the choices of individual Indigenous workers arising from the decisions of employers. Given the relatively low level of segregation between Indigenous and non-Indigenous private sector employment, (i.e. relative to sex segregation in Australian employment), it would may be a mistake to overemphasise the impediments to Indigenous employment in the various industries and occupations.

Clearly, it is important to disaggregate the analysis Indigenous labour force status to enhance the interpretability of the results. Chapter 2 analyses labour supply and mobility issues for Indigenous and other Australians. While this chapter updates previous analysis so as to take into account the most recent census data, it also introduces a new geography that allows us to better distinguish between groups of Indigenous people and take into account accessibility to labour markets and various services. The previous section of state classification of areas was rather crude as it tended to group disparate groups of Indigenous people together — for example, Indigenous people on the peri-urban fringe were classified together with remote Indigenous communities with a short history of colonisation and limited exposure to white

Australia. The majority of the chapters uses a recently designed geographic classification, known as the Jones classification, to maximise the possibility of insights into Indigenous labour force status (see Appendix 3).

In broad terms, trends in Indigenous labour force participation rates follow those of other Australians, irrespective of the labour market in which Indigenous people live, or controlling for age and sex. However, the most disconcerting aspect of the Indigenous labour supply is that labour force participation appears to be particularly constrained among younger age groups, possibly before they have had any contact with the workforce. The low levels of attachment to the labour force appear to have persisted among Indigenous youth despite a sustained period of employment growth in the Australian economy between 1991 and 2001.

Consistent with previous studies, and in contrast with non-Indigenous mobility, Indigenous mobility is not strongly correlated to overall labour market conditions. While the CDEP is one possible explanation of the lack of Indigenous responsiveness to the labour market, it cannot be the whole story since the observation is still valid in metropolitan areas where the influence of the CDEP scheme could reasonably be discounted. A more plausible explanation is that Indigenous people are more responsive to family and cultural pressures than the prospect of employment, which in any case is rather small for most under-educated Indigenous people. The main implication of the patterns of Indigenous mobility is that unless future governments mandate or facilitate the movement of Indigenous people away from current residences in high unemployment rate areas — many of which are in or near traditional country — Indigenous labour force status will continue to be more dependent on the local labour market conditions than that for other Australians.

A cohort analysis of Indigenous and non-Indigenous employment (total, full-time, and private sector employment) shows that the employment disparity between Australians established by the age of 25 years is maintained at a similar level for the rest of the working life. While the disparity between Indigenous and other employment is slightly smaller for youth than for these older age groups, this may itself be of concern for policy-makers since the reduced differential may be attributable to either non-participation in the education system or moving straight into the CDEP scheme — both of which may indicate that future employment prospects are not strong.

The effect of the demand-side of the labour market is introduced in Chapter 3 in a rudimentary fashion. The first step was to control for the increasing numbers of Australians who identify as Indigenous on census forms. A demographic technique is used to ensure that the census populations are consistent over time. The second step uses a 'shift-share' technique to describe the influence of demand in broad terms. Even though there is limited information in the census on the firms which employed Indigenous people, it was possible to use industry and occupation data to estimate how much of employment growth was related to demand-side factors broadly defined.

Overall, it appears that about half of employment growth is attributable to demand-side factors. Clearly, more attention needs to be paid to identifying the characteristics of firms that employ (and do not employ) Indigenous people.

Notwithstanding the fact that Indigenous people appear to secure work in the depressed and declining sectors of the economy, the need to enhance educational attainment of Indigenous people is crucial for enhancing the economic independence of Indigenous Australians. That is, Indigenous people must get educational qualifications that allow them to secure work in the growth sectors of the economy. Unfortunately this requires a quantum leap in Indigenous educational attainment since there is a heavy skill bias in most recent economic growth.

The need to improve the quantity and quality of Indigenous educational attainment is highlighted by the multivariate analysis in Chapter 4. It is obviously important to improve secondary school retention rates and the level of educational qualifications if policy is to have any appreciable success in reducing Indigenous labour market disadvantage. This regression analysis confirms previous studies that education explains more than half of the employment differential between Indigenous and other Australians (e.g. Hunter 1997).

Another new finding was that the scope for labour market discrimination is more important than previously thought. While it is obviously a difficult area for policy-makers, it cannot be ignored because ongoing inability to secure a job on the merits of an individual will undermine other policy initiatives. Indeed, it ultimately would perpetuate the social exclusion of Indigenous people by undermining their desire to participate in Australia's society and economic system.

The conundrum that arises from this research is: why are there so few prosecutions in the HREOC, or the analogous bodies in the respective states, that involve labour market discrimination against Indigenous Australians? The Indigenous researcher, Lorretta De Plevitz (2000), recently identified structural deficiencies in the way racism is prosecuted using the *Racial Discrimination Act 1975* and related legislation. One crucial issue is that the legal definition of race in terms of biology rather than culture means that it is difficult to legitimately prosecute. Another important issue surrounds the problem of identifying indirect and systemic discrimination when most cases are settled out of court, and hence are not subject to public scrutiny. Even when legal determinations are made the remedies are based on (inadequate) compensation rather than changes to recruitment policy.

Given the evidence of the substantial scope for discrimination against Indigenous Australians, one must have some regard to the central issue of justice. This is not merely an issue of history, it appears that discrimination is an ongoing impediment to engaging in the 'real' economy. Racial discrimination is clearly not merely in the 'mind', and one cannot put complaints down to an unhealthy obsession with a 'victim mentality'. Obviously, it is important to take

responsibility for those things over which one has control; however, the state has a responsibility for ensuring that some citizens do not infringe the liberties of other individuals, and other circumscribe the ability of citizens to fully participate in society. No matter how much sympathy one has for the arguments put forward by Noel Pearson (2000), it is important to recognise the probable existence of structural impediments to Indigenous employment, especially racial discrimination.

It is important to reconcile the relatively low level of industrial and occupational segregation between Indigenous and non-Indigenous workers in Chapter 1 with the high level of potential discrimination in Chapter 4. If segregation is interpreted in terms of the level of constraint on choices of individual workers, then racial discrimination is one possible explanation for employment segregation. In the absence of other analyses, it would be reasonable to assume that labour market discrimination against Indigenous Australians appears to be more important in affecting employment prospects *within* industries and occupations, rather than curtailing the movement *between* industries and occupations.

One important avenue to circumvent labour market discrimination is through the cultivation of Indigenous self-employment. Chapter 5 provides a reasonably comprehensive analysis of Indigenous employers and other self-employed relative to their non-Indigenous counterparts. Therefore, in contrast to Daly (1995), this analysis examines how the scale of Indigenous business varies from other Australian business, and how important labour market characteristics interact with the scale of the enterprise. The disaggregation by the Jones classification is particularly important in this context since the opportunities to conduct business are crucially determined by the buoyancy of the local market, and access to infrastructure, as well as the preferences and capacities of the entrepreneur.

While the overall number of Indigenous self-employed has increased substantially since 1991, the increase has been somewhat marginal when compared to trends in total Australian self-employment. Indigenous people are still about three times less likely to be self-employed than other Australians. Perhaps the most important aspect of recent trends is that the growth in Indigenous self-employment is concentrated among the 'own account workers' category who do not employ any other people. In contrast, the proportion of Indigenous employers in the labour force was relatively stable between 1991 and 2001. That is, government policy has been effective in encouraging small-scale Indigenous businesses that do not employ any other people.

Like the rest of the Indigenous population, Indigenous business people face a similar set of hurdles, namely poor quality and insufficient education. This study emphasised the disproportionately youthful nature of the Indigenous entrepreneur, which could itself be a disadvantage for the ongoing success of their enterprise. That is, the high rates of Indigenous mortality may reduce the potential pool of entrepreneurs with sufficient experience and social networks

(i.e. social capital) to successfully run a business. High rates of morbidity in the Indigenous population may be even more important than mortality as ongoing ill-health can impede the ability to conduct a business, or enjoy the fruits of one's investment.

Indigenous self-employment is particularly low in remote areas even after one controls for the influence of age. Financial exclusion appears to be an important factor in such areas. Another related issue is access to land. Interestingly, there is also little industrial and occupational segregation between Indigenous and non-Indigenous self-employed except in remote areas — almost all of the difference between Indigenous and non-Indigenous business in such areas is driven by the low numbers of Indigenous farmers and pastoralists. However, the fact that there is relatively little segregation between Indigenous and other Australian self-employed in metropolitan and provincial areas may indicate that Indigenous businesses appear to be investing in the growth sectors of the economy, at least in these areas.

6.2 CENSUS VERSUS OTHER DATA SOURCES

This monograph has demonstrated that the census data can provide useful policy insights, especially for small populations such as Indigenous Australians for whom the alternatives are extremely limited. Ongoing analyses of Indigenous labour markets using census data are required to supplement micro-analysis of Indigenous labour force behaviour using existing survey data such as the National Aboriginal and Torres Strait Islander Survey (NATSIS), Labour Force Survey, and the Indigenous Social Survey (ISS). The relatively small size of the Indigenous population means that it is unwise to rely too heavily on these 'representative' surveys for insights into behaviour. Census data have the advantage that they are close to a complete enumeration of the population and are by definition truly representative. Consequently, census-based behavioural analyses (not to mention population estimates) are not subject to the vagaries of sampling procedures (see Hunter & Taylor 2001b).

However, the trade-off required to achieve this greater accuracy is that census data has far less information, and hence there is a limit to the new insights into the behaviour factors underlying Indigenous disadvantage. As such, the release of the ISS in the next few months offers an opportunity to ensure that policy-makers are fully informed. The substantial interactions between the various policy domains means that researchers need to analyse the behaviour complexities that can best be examined using detailed and extensive survey data, such as the ISS (e.g. Borland & Hunter 2000 use the NATSIS to examine the interaction between arrest and employment).

At the other end of the data spectrum, ethnographic and case-study data collected by individual researchers provide other important bases for 'rational' policy decisions. While smaller scale data collections can never be guaranteed to be representative of a population, they can provide insights into the localised

and contextualised processes underlying many social and cultural customs that shape much of the economic life of both Indigenous and other peoples (Scott 1998).

Clearly, the provision of census data is not a sufficient basis for good policy, it is also necessary to use it in a creative way to inform policy makers about what is happening at a macro level. However, Indigenous labour market disadvantage will only be reduced if the decision-makers also understand the contextualised processes that can differ from locality to locality, and the inter-relationships between policy domains. This ambition could only ever be achieved through a sophisticated appreciation of, and analysis of, the various data sources.

APPENDIX 1 THE CHANGING DEFINITIONS OF LABOUR FORCE STATUS FOR RECENT CENSUSES

LABOUR FORCE STATUS

The latest Census Dictionary indicates that labour force status for 2001 is derived using responses to several census questions :

- full/part-time job (question 32)
- job last week (question 33)
- hours worked (question 40)
- transport to work (question 41)
- looking for work (question 42)
- availability to start work (question 43).

The derivation methodology takes into account answers to these questions to derive the most appropriate labour force status.

For census purposes, the labour force includes people aged 15 years and over who:

- work for payment or profit, or as an unpaid helper in a family business, during the week prior to census night
- have a job from which they are on leave or otherwise temporarily absent
- are on strike or stood down temporarily
- do not have a job but are actively looking for work and available to start work.

The following people are classified as being in the labour force:

- employed people (i.e. the first three groups above)
- unemployed (the last group above).

The not in the labour force category includes people who are retired, pensioners, and people engaged solely in home duties.

The valid comparison of census data across time requires that attention be paid to both the question asked and the coding of the information received. The following discussion details the relevant changes for labour force status, the number of hours worked, industry sector, industry, and occupation of employment since 1981.

Table A1.1 identifies the coding of data on labour force in recent censuses. Most changes are relatively superficial. For example, the 'self-employed' category changed name so that it has been called 'own account worker' for the last two censuses.

Several factors are not teased out in this table. Overseas visitors were not excluded from labour force status population prior to 1996. While the question on labour force status was identical in 1986 and 1991 there were several subtle changes in the way the question was asked for the last two censuses. The self-employment question changed between 1991 and 1996 with recent questions specifying whether a person worked in a limited liability company, thus causing people who were uncertain of their company status not to answer the question (Hunter 1999). The question changed again in 2001 to make it easier for people filling out the census form, but all major changes in questions make inter-temporal comparisons somewhat problematic.

A1.1 CENSUS LABOUR FORCE STATUS CATEGORIES — 1986–2001

1986	1991	1996 and 2001
▪ Wage or slalary earner	▪ Employed—wage or salary earner	▪ Employee
▪ Self-employed	▪ Employed—self-employed	▪ Employer
▪ Employer	▪ Employed—employer	▪ Own account worker
▪ Unpaid helper	▪ Employed—unpaid helper	▪ Contributing family worker
▪ Unemployed—looking for full-time work	▪ Unemployed—looking for full-time work	▪ Unemployed looking for full-time work
▪ Unemployed—looking for part-time work	▪ Unemployed—looking for part-time work	▪ Unemployed looking for part-time work
▪ Not in labour force aged 15 years and over	▪ Not in the labour force	▪ Not in the labour force
▪ Not stated	▪ Not stated	▪ Not stated
▪ Not applicable	▪ Not applicable	▪ Not applicable
▪ Total	▪ Total	▪ Total

The recent census data on hours worked records the number of hours worked in all jobs held during the week before census night, by employed people aged 15 years and over. This excludes any time off, but includes any overtime or extra time worked. Hours worked, when used in combination with labour force status, provides information on full-time and part-time employment. For census purposes, a person is considered to be working full-time if they worked 35 hours or more in all jobs during the week prior to census night.

One issue for comparability is that prior to 1996, the question only related to the main job. While this change in focus to the number of hours worked in all jobs will mean that some part of the trend towards longer working hours will be due to the change in the question, the effect should be minimal since relatively few people hold multiple jobs. However, the categories of hours worked were virtually identical in recent censuses.

A1.2 CENSUS CATEGORIES FOR INDUSTRY SECTOR — 1986–2001

1986	1991	1996 and 2001
▪ Australian government	▪ Commonwealth government	▪ Commonwealth government
▪ State government	▪ State/territory government	▪ State/territory government
▪ Local government	▪ Local government	▪ Local government
▪ Private sector	▪ Private sector	▪ Private sector
▪ Not stated	▪ Not stated	▪ CDEP
▪ Not applicable	▪ Not applicable	▪ Not stated
▪ Total	▪ Total	▪ Not applicable
		▪ Total

The name of the workplace of employed persons is used to classify employed persons into government or non-government industry sectors. Table A1.2 documents the changes in the categories of industry sector since 1986. Apart from the relatively cosmetic change of 'Australian government' to 'Commonwealth government', and 'State government' to 'State/territory government', the most potentially important change is the creation of a special category for the CDEP scheme. Unfortunately, the CDEP scheme category added in the 1996 census was only for the SIF (also known as the remote area form). Therefore information on CDEP is only available in remote areas. Note that, unlike the information on hours worked, the industry sector question relates to the main job in all censuses.

INDUSTRY AND OCCUPATION

The census uses Australian Standard Classifications where available and appropriate. Examples of these are the Australian Standard Classification of Occupations (ASCO). The 2001 Census Dictionary (ABS 2001), and ABS (2001a) describe the major revisions to the standard Australian system of classification of industry and occupation between 1996 and 2001. The occupation code assigned is based on the main job held during the week prior to census night.

ASCO is used to code responses to questions on occupation in Australian censuses. In ASCO, a job is defined as a set of tasks performed by one individual, and an occupation is defined as a set of jobs sufficiently similar in their main tasks to be grouped together. Within ASCO, occupations are classified according to two criteria: skill level and skill specialisation. ASCO First Edition was published in 1986 and was used in both the 1986 and 1991 censuses. ASCO Second Edition has been used since the 1996 census. In ASCO Second Edition, there are five hierarchical levels based on skill level and broadly defined skill specialisation. These vary from the broadest level of ASCO, the nine Major Groups, to the most detailed level of occupation that includes 987 classifications

The most recent edition of ASCO uses six digits. The first digit in the code represents the Major Group. The first and second digits indicate the Sub-Major Group. The first, second and third digits indicate the Minor Group. The first,

second, third and fourth digits indicate the Unit Group, whilst all six digits indicate occupation.

Occupation is collected in the census for all employed people aged 15 years and over. Two questions are used in the census. The first of these asks for occupation title (in main job held in the week prior to census night). The second asks for the main tasks usually performed by the person in their occupation. Collecting both occupation title and task information ensures more accurate coding of occupations.

ANZSIC is used to classify responses to questions on industry in Australian censuses. First published in 1993, it has been used in the census since 1996. Earlier censuses were coded according to the Australian Standard Industrial Classification (ASIC). The ANZSIC has a four level hierarchical structure, comprising Divisions (the broadest level), Subdivisions, Groups and Classes (the finest level). The 17 Divisions (identified by an alphabetic character) provide a broad overall picture of the economy whilst the Subdivision, Group and Class levels provide increasingly detailed dissections. Note that only 12 divisions were used in the censuses before 1996. Since the number of categories can have a significant effect on the level of measured segregation, the discussion in the text will briefly address this issue.

The ANZSIC class is the basic building block of the classification and is defined in terms of a specified range of activities which characterise that class. These are referred to as the primary activities of the class.

APPENDIX 2 SEGREGATION INDEXES

In a statistical sense, segregation refers to the degree of difference in the pattern of proportional distribution between two otherwise similar sets of data (Taylor 1993a). A relative measure of such difference is provided by a wide range of segregation indices and one commonly used in studies of labour force segregation, the Duncan Index, is applied here (Duncan & Duncan 1955). This is calculated by summing the absolute differences between the per cent of all Indigenous and all other workers employed in different industries and dividing the answer by two. For example, using hypothetical data showing the percentage of Indigenous and others employed in three industries:

A2.1 HYPOTHETICAL EXAMPLE OF CONSTRUCTING SEGREGATION INDEX

	Indigenous employed (per cent)	Non-Indigenous employed (per cent)	Absolute difference
Industry A	55	20	35
Industry B	10	50	40
Industry C	45	30	15
Total	**100**	**100**	**90**

In this case, the Duncan Index of industrial segregation would equal 90/2 = 45 per cent. In other words, almost half of Indigenous workers (or non-Indigenous workers) would have to change their industry of employment in this example, in order to eliminate any racial difference in the statistical distributions.

The Duncan index has been criticised because the implied redistribution of workers would change the overall occupational (or industrial) distributions of employment (Karmel & Maclachlan 1988). However, the small Indigenous population means that the redistribution of workers required to equate the distributions is also small. Hence any movement of workers would not render the overall occupational (or industrial) distributions inconsistent.

APPENDIX 3 SECTION OF STATE VERSUS THE JONES CLASSIFICATION OF AREAS .....

Roger Jones has developed a system of geographic classification of areas that is, arguably, more consistent with conventional notions of labour markets (2003). The monograph uses it where there is no need to compare results over time when section of state classification is used. However, section of state classification has severe weaknesses outside the major urban areas because of an ambiguity about the definition of remoteness and the boundary of the peri-urban fringe. This Appendix highlights the issues concerned by comparing the distributions of Indigenous and non-Indigenous populations across the broad zones identified in the Jones classification (table A3.1).

A3.1 SECTION OF STATE POPULATION IN VARIOUS CATEGORIES OF JONES CLASSIFICATION, By Indigenous status — 2001

		Section of State					
		Major urban		*Other urban*		*Non-urban*	
	Unit	*Indigenous*	*Non-Indigenous*	*Indigenous*	*Non-Indigenous*	*Indigenous*	*Non-Indigenous*
Metropolitan Zone	%	100.0	100.0	12.9	20.8	5.9	22.3
Provincial Zone	%	—	—	63.7	74.1	32.7	68.7
Remote Zone	%	—	–	23.3	5.1	61.4	9.1
Total	**%**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
	no.	**127 505**	**11 561 581**	**175 324**	**3 806 625**	**106 994**	**2 216 205**

Note: Table measures the per cent of population living in zones classified using Jones (2003).
Source: 2001 Census of Population and Housing.

Our reservations about the section of state classification are borne out by the lack of concordance outside major urban areas. The main area of concern is that less than one-tenth of non-Indigenous people in non-urban areas live in the remote zone. In contrast, 61.4% of the corresponding Indigenous population lives in the remote zone, with the majority of the remainder (32.7%) being classified by Jones as provincial. The major correspondence for the non-Indigenous population is between non-urban areas (i.e. also known as 'rural/bounded localities' in the formal section of state classification) and the provincial zone.

If one anticipated that the correspondence would be strongest between other urban areas and the provincial zone, and between non-urban areas and remote

zones, then you would be disappointed. At least one-quarter of the respective sections of state population falls outside such correspondences.

In terms of labour market analysis, the major urban areas will provide direct insights into the state of the local labour market. However, other urban areas and non-urban areas are likely to be heterogenous with respect to labour market conditions. For example, over one-fifth of non-Indigenous residents is such areas were classified as being in the metropolitan zone, presumably with some access to the relatively bouyant labour market in the major cities.

The comparisons between the Indigenous and non-Indigenous population are rendered complicated by the substantial variation in the distributions in table A3.1. For example, non-Indigenous people are almost four times more likely as Indigenous population to be mis-classified as non-urban areas when in fact they form part of a metropolitan areas, at least as classified as Jones (22.3% and 5.9% respectively).

APPENDIX 4 SHIFT-SHARE METHODOLOGY AND RELATED CALCULATIONS

A full shift-share analysis allows us to quantify changes in employment along various dimensions without resorting to regression techniques. The following discussion documents a full version of shift-share analysis.

One variant of shift-share analysis relies on decompositions of growth rates (percentage changes) of employment levels, E, between educational categories or age groups (Karmel & Aungles 1993). Let there be i industries, j education (or age groups), and k demographic groups for both sexes (also by Indigenous status). The following identity would then hold in all periods:

$$E^t_{..k} = \sum_i \sum_j \left(E^t_{...} * \left(\frac{IP^t}{E^t_{...}} \right) * \left(\frac{E^t_{..k}}{IP^t} \right) * \left(\frac{E^t_{.jk}}{E^t_{..k}} \right) * \left(\frac{E^t_{ijk}}{E^t_{.jk}} \right) \right) \quad (4.1)$$

where E refers to employment and IP refers to the Indigenous working aged population.

Taking the percentage changes for both sides of (1) and applying traditional shift-share techniques we can derive the full shift-share analysis. Shift-share analysis can be thought of as a decomposition of employment levels changes in each demographic group. This procedure theoretically allows us to decompose Indigenous employment growth into five effects or terms:

(a) The first term is the Aggregate Growth effect. It measures the contribution to employment growth in a particular demographic group resulting from the overall employment growth in the economy or region.

(b) The second term is the Indigenous Population effect. It can be interpreted as the extent to which increasing Indigenous population relative to overall employment growth should have resulted in employment growth for Indigenous people.

(c) The third term is the Industrial or Occupational-mix component. It can be interpreted as the contribution to employment growth resulting from differential growth of employment in various industries. If industrial-mix or employment structure for a regional group is concentrated in industries that have high average growth rates then this effect will be positive. The industry-mix component is closely related to many popular indexes of employment demand (see Katz & Murphy 1992).

(d) The fourth term is the Educational-mix component. It can be interpreted as the contribution to employment growth resulting from differential growth of employment in various educational groups. In some of the analysis, broad age groups or regional aggregations are used instead of education to gain an insight into the role of differential growth of employment for various demographic groups or regional labour market conditions.

(e) The final term is the Residual component or Share effect. It can be interpreted as the contribution to employment growth from the changing share of labour input for each demographic group, k. A positive value denotes that a group's share of total employment is increasing. It is also called the residual component because all non-structural effects, such as differences in personal characteristics, search technology, and pure spatial effects, will influence it.

The industrial-mix component is of particular interest since it can be interpreted as the amount of job growth we would expect in a region, or for a demographic group, given the industrial structure of employment. It is important to remember that shift-share analysis is merely a statistical technique for analysing employment growth. Detailed explanation of what has happened requires that theory also be utilised. Furthermore, the industry-mix effect may be sensitive to the degree of disaggregation of industry employment.

In terms of the taxonomy of supply or demand, the industry-mix component is clearly related to demand side. A positive industry component increases the employment rate for individuals with the same set of characteristics at differing rates depending on which industry they were initially employed in. Note that the residual component can be driven by either supply or demand.

It is not informative to conduct a full shift-share analysis because there was not enough variation in employment structure for Indigenous people when all these dimensions are disaggregated for the intercensal period between 1996 and 2001. Instead, two related 'thought experiments' were conducted. Using the broad definitions of industry and occupations, Indigenous employment growth can be attributed to aggregate and industry/occupation-mix effects using simple cross-tabulations. The aggregate effect is simply the growth of Indigenous jobs that would be expected, if Indigenous employment grew at the national average (i.e. approximately 10.7% between 1996 and 2001). The industrial/occupational-mix effect is simply the growth of Indigenous jobs that would be expected, if 1996 Indigenous employment grew at the national or regional average of the respective industries/occupations. That is, what is the expected growth in Indigenous jobs given the current distribution of employment across industries and occupations. Note that the difference between these estimates of the aggregate and industrial/occupational-mix effect provides an insight into the importance of the segregation between Indigenous and non-Indigenous workers identified in Chapter 1, at least in terms of the likely number of jobs to be created for Indigenous and other workers. While

such calculations are not as formal as the traditional shift-share analysis, it does provide some intuitive insights into the likely effect of labour demand on Indigenous employment.

APPENDIX 5 FORMAL PRESENTATION OF THE ESTIMATION MODEL

The regression model estimated for the analysis of census and NATSIS data can be formally expressed as follows in Equation (E1):

$$\frac{1}{n_j}\sum_j Y_i = \frac{1}{n_j}\sum_j F(X_j\beta) = F(X_j\beta) = P_j \tag{5.1}$$

where $\frac{1}{n_j}\sum_j y_i$ represents the proportion of 1's in the jth class and $n_1,\ldots..,n_j$ are

the number of observation in each group, X represents a vector of characteristics, b a vector of coefficients and F is the logistic function. To simplify notation $\frac{1}{n_j}\sum_j y_i$ can be represented as P_j.

Applying the logistic function the model becomes:

$$p_j = \frac{\exp(X_j\beta)}{1+\exp(X_i\beta)} \tag{5.2}$$

with the dependent with the variable, being given in Equation (E3):

$$\log\left(\frac{p_j}{1-p_j}\right) \tag{5.3}$$

The variance being given in Equation (E4):

$$\frac{1}{n_j p_j (1-p_j)} \tag{5.4}$$

This model can be estimated using weighted OLS where the weights are given by inverse of the square root of this estimated variance.

The construction of the data set on which the estimation is based involves calculating the proportion employed for every possible combination of explanatory variables. These groups are constructed using the full census data. For example, the employment probability is estimated for all males in 1981 who were aged between 25 years and 34 years in that year, with a post-secondary qualification living in major urban areas and so on. The logistic transformation is

applied to these proportions and standard weighted least squares logit estimation procedures were used for grouped data.

It is necessary to calculate the proportion employed (or participating in the labour force) for every possible combination of explanatory variables because of the fact that for any non-linear function such as the logistic function:

$$\sum_J F(X_i) \neq F(\sum_J X_i) \tag{5.5}$$

The procedure of estimating P_j for each group or cell for every possible combination of explanatory variables means that the probability of employment and participation is constant for explanatory variables defined separately for every combination of explanatory variables, thus avoiding the aggregation problem described in Equation 5.5.

A5.1 SUMMARY STATISTICS FOR REGRESSION ANALYSIS, Males

	Indigenous			*Non-Indigenous*		
Variable	*Metro-politan*	*Provincial*	*Remote*	*Metro-politan*	*Provincial*	*Remote*
Dependent variables						
Total employed	0.531	0.471	0.527	0.772	0.744	0.823
	(0.220)	(0.208)	(0.173)	(0.161)	(0.172)	(0.143)
Participation rate	0.693	0.647	0.604	0.835	0.815	0.864
	(0.194)	(0.204)	(0.185)	(0.139)	(0.151)	(0.132)
Full-time employed	0.374	0.292	0.215	0.606	0.587	0.672
	(0.193)	(0.180)	(0.152)	(0.187)	(0.179)	(0.153)
Private Sector	0.380	0.300	0.144	0.649	0.621	0.695
	(0.155)	(0.151)	(0.115)	(0.127)	(0.138)	(0.127)
Explanatory variables						
Post secondary qualification	0.256	0.179	0.080	0.484	0.418	0.426
	(0.436)	(0.383)	(0.272)	(0.500)	(0.493)	(0.494)
Completed Year 12	0.250	0.154	0.097	0.492	0.304	0.323
	(0.433)	(0.361)	(0.296)	(0.500)	(0.460)	(0.468)
Completed Year 10 or Year 11	0.423	0.417	0.319	0.352	0.469	0.477
	(0.494)	(0.493)	(0.466)	(0.478)	(0.499)	(0.499)
Does not speak English well	0.006	0.003	0.081	0.027	0.003	0.005
	(0.078)	(0.058)	(0.273)	(0.161)	(0.058)	(0.069)
Aged between 25 and 34 years	0.283	0.264	0.285	0.232	0.192	0.227
	(0.450)	(0.441)	(0.452)	(0.422)	(0.394)	(0.419)
Aged between 35 and 44 years	0.214	0.228	0.215	0.235	0.241	0.248
	(0.410)	(0.419)	(0.411)	(0.424)	(0.428)	(0.432)
Aged between 45 and 54 years	0.139	0.149	0.140	0.210	0.234	0.224
	(0.346)	(0.356)	(0.347)	(0.407)	(0.423)	(0.417)
Aged between 55 and 64 years	0.063	0.076	0.071	0.141	0.174	0.172
	(0.243)	(0.266)	(0.257)	(0.348)	(0.379)	(0.378)
Married	0.262	0.270	0.355	0.511	0.547	0.527
	(0.440)	(0.444)	(0.478)	(0.500)	(0.498)	(0.499)
Widowed, separated or divorced	0.125	0.116	0.072	0.106	0.120	0.128
	(0.331)	(0.320)	(0.258)	(0.307)	(0.325)	(0.334)
Number of people	39 811	36 141	29 068	4 100 000	1 300 000	149 509

Note: Table measures proportion of population with particular characteristics. Standard errors in parentheses.

A5.2 SUMMARY STATISTICS FOR REGRESSION ANALYSIS, Females

	Indigenous			*Non-Indigenous*		
Variable	*Metro-politan*	*Provincial*	*Remote*	*Metro-politan*	*Provincial*	*Remote*
Dependent variables						
Total employed	0.426	0.359	0.383	0.637	0.593	0.659
	(0.209)	(0.186)	(0.172)	(0.177)	(0.178)	(0.165)
Participation rate	0.521	0.457	0.430	0.679	0.639	0.688
	(0.199)	(0.183)	(0.180)	(0.176)	(0.177)	(0.165)
Full-time employed	0.223	0.151	0.133	0.335	0.279	0.363
	(0.142)	(0.118)	(0.126)	(0.150)	(0.122)	(0.143)
Private Sector	0.268	0.205	0.099	0.499	0.451	0.486
	(0.125)	(0.114)	(0.092)	(0.127)	(0.117)	(0.111)
Explanatory variables						
Post secondary qualification	0.208	0.142	0.069	0.371	0.296	0.319
	(0.406)	(0.349)	(0.253)	(0.483)	(0.457)	(0.466)
Completed Year 12	0.274	0.185	0.115	0.501	0.351	0.400
	(0.446)	(0.388)	(0.319)	(0.500)	(0.477)	(0.490)
Completed Year 10 or Year 11	0.428	0.453	0.352	0.347	0.463	0.447
	(0.495)	(0.498)	(0.478)	(0.476)	(0.499)	(0.497)
Does not speak English well	0.003	0.002	0.081	0.037	0.004	0.005
	(0.056)	(0.042)	(0.273)	(0.188)	(0.060)	(0.073)
Aged between 25 and 34 years	0.291	0.282	0.287	0.236	0.202	0.241
	(0.454)	(0.450)	(0.452)	(0.425)	(0.401)	(0.427)
Aged between 35 and 44 years	0.226	0.234	0.222	0.240	0.253	0.242
	(0.418)	(0.423)	(0.416)	(0.427)	(0.435)	(0.429)
Aged between 45 and 54 years	0.143	0.147	0.136	0.213	0.229	0.217
	(0.350)	(0.354)	(0.343)	(0.410)	(0.420)	(0.412)
Aged between 55 and 64 years	0.066	0.074	0.077	0.137	0.170	0.174
	(0.248)	(0.262)	(0.266)	(0.344)	(0.375)	(0.379)
Married	0.258	0.269	0.365	0.530	0.587	0.618
	(0.438)	(0.444)	(0.481)	(0.499)	(0.492)	(0.486)
Widowed, separated or divorced	0.186	0.165	0.129	0.155	0.160	0.127
	(0.389)	(0.371)	(0.335)	(0.362)	(0.366)	(0.333)
Number of people	44 436	38 789	29 616	4 200 000	1 300 000	118 596

Note: Table measures proportion of population with particular characteristics. Standard errors in parentheses.

A5.3 MARGINAL EFFECTS FOR FULL-TIME EMPLOYMENT, Males

	Indigenous			*Non-Indigenous*		
Variable	*Metro-politan*	*Provincial*	*Remote*	*Metro-politan*	*Provincial*	*Remote*
Post secondary qualification	0.160	0.171	0.272	0.141	0.109	0.038
	(0.010)	(0.013)	(0.018)	(0.005)	(0.006)	(0.008)
Completed Year 12	0.250	0.260	0.299	0.144	0.162	0.144
	(0.013)	(0.016)	(0.018)	(0.007)	(0.009)	(0.011)
Completed Year 10 or Year 11	0.153	0.162	0.183	0.124	0.121	0.100
	(0.012)	(0.012)	(0.012)	(0.007)	(0.008)	(0.010)
Does not speak English well	0.041	0.340	–0.123	–0.238	–0.201	–0.132
	(0.108)	(0.170)	(0.020)	(0.012)	(0.047)	(0.069)
Aged between 25 and 34 years	0.090	0.055	0.086	0.212	0.117	0.085
	(0.013)	(0.015)	(0.015)	(0.007)	(0.011)	(0.013)
Aged between 35 and 44 years	0.079	0.066	0.142	0.202	0.088	0.058
	(0.015)	(0.017)	(0.017)	(0.008)	(0.012)	(0.015)
Aged between 45 and 54 years	0.061	0.084	0.190	0.163	0.039	–0.013
	(0.018)	(0.020)	(0.020)	(0.009)	(0.012)	(0.016)
Aged between 55 and 64 years	–0.089	–0.081	0.146	–0.085	–0.202	–0.269
	(0.021)	(0.022)	(0.026)	(0.009)	(0.012)	(0.017)
Married	0.245	0.238	0.019	0.195	0.230	0.132
	(0.012)	(0.013)	(0.011)	(0.006)	(0.008)	(0.010)
Widowed, separated or divorced	0.095	0.073	0.038	0.071	0.060	0.132
	(0.016)	(0.018)	(0.020)	(0.009)	(0.011)	(0.014)
Regression statistic: R-squared	0.890	0.883	0.871	0.933	0.896	0.858

Note: Table measures expected change in the probability of being in full-time employment resulting from a change in the explanatory variable. Standard errors in parentheses.

A5.4 MARGINAL EFFECTS FOR FULL-TIME EMPLOYMENT, Females

	Indigenous			*Non-Indigenous*		
Variable	*Metro-politan*	*Provincial*	*Remote*	*Metro-politan*	*Provincial*	*Remote*
Post secondary qualification	0.162 (0.011)	0.161 (0.014)	0.231 (0.018)	0.106 (0.006)	0.106 (0.006)	0.100 (0.010)
Completed Year 12	0.267 (0.017)	0.242 (0.020)	0.329 (0.019)	0.149 (0.009)	0.171 (0.010)	0.184 (0.015)
Completed Year 10 or Year 11	0.118 (0.014)	0.115 (0.014)	0.166 (0.013)	0.081 (0.009)	0.095 (0.009)	0.097 (0.014)
Does not speak English well	0.349 (0.251)	0.179 (0.323)	–0.072 (0.026)	–0.118 (0.013)	–0.025 (0.049)	–0.069 (0.081)
Aged between 25 and 34 years	0.027 (0.013)	0.016 (0.014)	0.031 (0.014)	0.139 (0.009)	0.023 (0.009)	0.002 (0.015)
Aged between 35 and 44 years	0.067 (0.016)	0.076 (0.018)	0.112 (0.016)	0.117 (0.010)	0.056 (0.011)	0.073 (0.017)
Aged between 45 and 54 years	0.131 (0.020)	0.122 (0.022)	0.161 (0.021)	0.194 (0.011)	0.129 (0.012)	0.134 (0.019)
Aged between 55 and 64 years	0.015 (0.025)	–0.005 (0.027)	0.100 (0.031)	0.002 (0.011)	–0.039 (0.011)	–0.066 (0.019)
Married	0.032 (0.012)	0.053 (0.012)	–0.002 (0.010)	–0.126 (0.006)	–0.063 (0.007)	–0.135 (0.012)
Widowed, separated or divorced	0.003 (0.014)	0.005 (0.015)	0.003 (0.015)	–0.069 (0.007)	–0.069 (0.009)	–0.090 (0.015)
Regression statistic: R-squared	0.826	0.810	0.871	0.827	0.834	0.814

Note: Table measures expected change in the probability of being in full-time employment resulting from a change in the explanatory variable. Standard errors in parentheses.

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