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**The position of older Aboriginal
people in the labour market**

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- identify and analyse the factors affecting Aboriginal and Torres Strait Islander participation in the labour force; and
- assist in the development of government strategies aimed at raising the level of Aboriginal and Torres Strait Islander participation in the labour market.

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ABSTRACT

The focus of this paper is on the position of Aboriginal people over the age of 50 years in the labour market, as recorded in the 1986 Population Census. This group accounted for a smaller proportion of the adult Aboriginal population than this age group did in the Australian population in general. Aboriginal men and women in this age group were much less likely to be in paid employment than other Australians. In common with other Aboriginal people, those in employment were in less skilled occupations and were concentrated in the public sector and community services. The occupational distribution of these older Aboriginal people reflected much lower levels of educational attainment compared with other Australians. The paper includes a formal model of the determinants of labour force status for this group. The results show that after holding a range of factors constant, such as educational attainment, age, location of residence, and marital status, Aboriginality had a negative effect on the probability of being in full-time employment. Those with higher levels of education were more likely to be in full-time employment. An important issue for this age group, which requires further research using alternative data sources, is the effect of health status on the ability of people to participate in paid employment.

Acknowledgments

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Foreword

In April 1992, Dr Anne Daly, Research Fellow at the Centre for Aboriginal Economic Policy Research (CAEPR), Australian National University, took up a concurrent half-time Australian Bureau of Statistics (ABS) Research Fellowship. The ABS objectives in providing Research Fellowships are to allow greater use of ABS data in academic research and to encourage the development of new techniques for the analysis of data. In Dr Daly's case, a principal aim of applying for this competitive Fellowship was to allow unimpeded access to the Aboriginal population sub-file so that statistical analysis using the conceptual framework of human capital theory could be undertaken for the first time. Dr Daly's Fellowship runs to 31 March 1994, and in this time she aims to complete a monograph with the working title 'Aboriginal and Torres Strait Islander People in the Australian Labour Market'.

This discussion paper, based on 1986 Census data, provides an analysis of the labour market situation of older Aboriginal and Torres Strait Islander people, those over the age of 50 years. This is one section of the indigenous Australian population that has been almost totally neglected in economic policy research compared to other sectional interest groups, like women and youth. In my opinion, it is path-breaking and innovative. While it is recognised that publishing 1986 Census data in 1993 provides a somewhat dated picture, this analysis should be regarded primarily as a baseline with which Dr Daly will subsequently compare 1991 Census output.

Dr Daly is publishing this preliminary work that forms part of a larger project for two main reasons. First, it is important that the results of her research, especially when of policy significance, are made widely available as soon as completed. Second, Dr Daly is seeking feedback on this work-in-progress that might assist her overall project. The active collaboration between CAEPR and ABS in this research project is very welcome and the assistance of ABS staff is greatly appreciated.

Jon Altman
Series Editor
September 1993

There are important differences in the demographic structure of the Aboriginal and non-Aboriginal populations of Australia.¹ The Aboriginal population is on average younger than the rest of the Australian population; in 1986, 39 per cent of the adult Aboriginal population was under 25 years of age, compared with 22 per cent of other Australians. The labour market status and educational attainment of young Aborigines entering the economically active phase of the life cycle has been discussed in Daly (1993). Here, the focus will be on later stages of working life and the transition out of the workforce for older Aboriginal people, those aged 50 years and over. Older Aborigines form a much smaller proportion of the adult Aboriginal population than older non-Aboriginal people. In 1986, 14.5 per cent of the Aboriginal population aged 15 and over were over 50 years of age, compared with 31.7 per cent of other Australians. Women accounted for 53 per cent of each group.

These figures reflect not only the higher birth rate of Aboriginal people, compared with other Australians, but also their shorter life expectancy. The life expectancy of Aboriginal people varies by region across Australia, and estimates put it at between 10 and 20 years less than that of the total Australian population.² Aborigines have much higher death rates during adult years than other Australians; the major causes of death being circulatory diseases and external causes, such as motor vehicle and other accidents, suicide and homicide (Gray 1990; Siggers and Gray 1991; Thomson and Briscoe 1991a, 1991b, 1991c, 1991d, 1991e). The higher adult death rate is indicative of wider Aboriginal health problems which inhibit the ability of individuals in older age groups to actively participate in paid employment.

The purpose of this paper is to document the position of older Aboriginal people in the labour force, including their occupations and industry of employment. An important issue for this age group, for whom paid employment ceases to be the major source of income, is identifying their alternative sources of income. Unfortunately, the census has not included a question on sources of income since 1976, and it is only possible to make broad statements about sources of income for those over 50 years by indirect means. Another important issue not addressed by census data is the effect of health status on the ability of individuals to be employed.

The paper includes a descriptive analysis comparing the position of older Aboriginal people with their non-Aboriginal counterparts, and presents the results of a formal analysis of the determinants of labour force status for people over 50 years using the methodology applied in the general discussion of the determinants of labour force status.

The labour market status of Aborigines over 50 years

The employment population ratio of Aboriginal men and women over 50 years has fallen below that of other Australians in each census since 1976. An implication of this for Aboriginal men is that their employment ratio has not kept up with the declining ratio in the wider male population.³ Against the general trend of a rising employment population ratio for women, this ratio fell slightly for Aboriginal and non-Aboriginal women over 50 years during the period 1976-86.

Table 1 presents more detailed data from the 1986 Census on the labour force status of this group by age category and sex. The first part of the table relates to men and shows that for both Aborigines and non-Aborigines the strong life cycle effects on labour force participation and employment.⁴ Among 50-54 year old non-Aboriginal men, 83.9 per cent were in employment, but for those over 65 years and entitled to a pension, only a minority were in paid employment. A similar pattern of declining employment rates was also in evidence for Aboriginal men, but even among 50-54 year olds less than half were in employment. The lower employment rates of Aboriginal men in their fifties were offset by higher unemployment rates, but more importantly by a larger proportion who described themselves as being outside the labour force. Almost half of the Aboriginal men in this age group considered themselves outside the labour force, compared with less than one-fifth of non-Aboriginal men. Either this group had never actively participated in paid employment, or the transition out of the labour force came at a much earlier age for Aboriginal than for non-Aboriginal men.

Full-time employment accounted for the larger share of those in employment for both Aboriginal and other Australian men. Although the Community Development Employment Projects (CDEP) scheme provides part-time jobs for people in Aboriginal communities, and therefore could be expected to add to the number of reported part-time workers, the proportion of men working part-time was higher among other Australians than among Aboriginal people. This finding may not apply in 1991 when the scheme expanded to provide 18,000 places, compared with 4,000 in 1986.⁵

There were fewer women over 50 years in paid employment than men, but the same pattern of reducing attachment to the labour force with age was apparent. Almost half of non-Aboriginal women aged 50-54 years were in employment, while less than 5 per cent of those over 65 years of age were employed. There was a similar, but not so dramatic, decline in the employment rate of Aboriginal women. Even at its peak among 50-54 year olds, only one-fifth of Aboriginal women were in employment, but this figure fell to 2 per cent among those over 65 years.

Table 1. Labour force status of older Aborigines and other Australians by sex, 1986.

Age	Full-time employment ^a Per cent	Part-time employment ^b Per cent	Total employment ^c Per cent	Labour force status ^d			Total labour force Per cent	Not in labour force Per cent
				Full-time unemployment ^e Per cent	Part-time unemployment ^f Per cent			
Males								
Aborigines								
50-54	32.2	8.2	43.2	12.1	3.3		58.6	41.4
55-59	27.7	7.3	37.3	9.1	2.9		49.4	50.6
60-64	14.3	4.9	21.3	6.3	1.6		29.2	70.8
65-69	3.9	3.2	7.6	3.6	1.0		12.3	87.8
70+	1.7	1.7	3.6	1.2	0.6		5.4	94.6
Total	19.2	5.7	26.8	7.5	2.2		36.4	63.6
Non-Aborigines								
50-54	74.8	9.1	83.9	4.6	0.6		89.1	11.0
55-59	62.6	10.1	72.6	4.9	1.1		78.6	21.4
60-64	36.1	8.3	44.4	3.1	0.9		48.4	51.6
65-69	7.9	5.5	13.4	0.1	0.2		13.7	86.
70+	3.3	2.7	6.1	0.1	0.1		6.3	93.8
Total	38.6	7.2	45.8	2.7	0.6		49.1	50.9

Continued over page.

Table 1. Continued.

Age	Full-time employment ^a Per cent	Part-time employment ^b Per cent	Total employment ^c Per cent	Labour force status ^d		Total labour force Per cent	Not in labour force Per cent
				Full-time unemployment ^e Per cent	Part-time unemployment ^f Per cent		
Females							
Aborigines							
50-54	10.5	7.8	19.6	3.3	1.8	24.7	75.3
55-59	7.8	6.6	15.3	2.0	1.4	18.6	81.4
60-64	3.4	2.3	5.9	1.6	0.7	8.2	91.8
65-69	1.3	1.0	2.5	1.4	0.6	4.5	95.5
70+	0.4	0.6	1.2	0.3	0.2	2.7	97.3
Total	5.5	4.3	10.5	2.0	1.1	13.6	86.4
Non-Aborigines							
50-54	27.3	20.6	47.9	1.0	1.0	49.9	50.1
55-59	16.4	13.2	29.6	0.9	0.9	31.4	68.7
60-64	7.1	6.1	13.2	0.2	0.1	13.5	86.5
65-69	2.3	2.8	5.1	0	0.1	5.2	94.7
70+	0.8	1.1	1.9	0.1	0.2	2.2	97.9
Total	9.9	8.1	18.0	0.4	0.4	18.8	81.2

a. 35+ hours worked per week.

b. Less than 35 hours worked per week.

c. Includes those who stated that they were employed but did not state their hours of work.

d. Excludes those who did not state their labour force status.

e. Includes those who were actively looking for full-time employment.

f. Includes those who were actively looking for part-time employment.

Source: 1986 Population Census, full Aboriginal sub-file and the 1 per cent section-of-State public use sample.

Women are eligible for the old age pension from 60 years, but the largest reduction in the proportion of non-Aboriginal women in employment came between the age categories 50-54 years and 55-59 years, preceding the age of eligibility for the old age pension. Unemployment was markedly lower among women than among men, but the Aboriginal rate remained above the non-Aboriginal rate.

Location of residence, as measured by section-of-State, has been an important determinant of labour force status for Aboriginal people (Daly 1991).⁶ Table 2 presents labour force status for older Aborigines and other Australians for two broad age categories; those still of working age, those aged 50-64 years and those over 64 years, by section-of-State. A first important difference between Aborigines and non-Aborigines is the geographical distribution of these older Australians. Older Aboriginal men and women were concentrated outside the major urban areas in roughly similar proportions in both other urban and rural areas. In contrast, about two-thirds of other Australians lived in the major urban areas.

Aboriginal men and women of working age were more likely to be in employment in the major urban areas than in rural areas. This difference was offset by both higher unemployment rates and a larger group not in the labour force in rural areas. Aboriginal people aged 50-64 years were less likely to be in employment than their non-Aboriginal counterparts and were more likely to be unemployed in each section-of-State.

Retirement from paid employment was the major activity for all people over the age of 64 years. The largest group to remain in employment among this age category were those living in rural areas. Almost a quarter of non-Aboriginal men over the age of 64 years and living in a rural area were employed.

The educational attainment of Aboriginal people over 50 years

Tables 3 and 4 present comparative data on the educational attainment of Aboriginal men and women over the age of 50. It is important to remember that these data relate to people born before 1936, and as such their involvement in the education system substantially predates all the government policies which have aimed to raise the educational attainment of Aboriginal people. As Table 3 shows, the average years of schooling for Aborigines was less than that of other Australians, by 3.2 years for men and 2.8 years for women. This is a substantial difference and probably a conservative estimate of the differences in 'effective' schooling received by each group. Recent evidence suggests that Aboriginal people have higher truancy rates than other members of the Australian population, and there is

Table 2. Labour force status of older Aborigines and other Australians, by section-of-State, 1986.

Section-of-State	Aborigines			Other Australians		
	Major urban Per cent	Other urban Per cent	Rural Per cent	Major urban Per cent	Other urban Per cent	Rural Per cent
Males						
50-64 years age group in each section-of-State	19.1	39.3	41.6	63.9	20.7	15.4
Labour force status						
Employed	43.1	35.2	33.5	69.8	62.4	70.2
Unemployed	9.8	11.8	14.3	4.6	5.8	5.7
NILF ^a	47.1	53.0	52.2	25.6	31.9	24.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
65+ years age group in each section-of-State	14.5	40.4	45.0	61.9	24.2	13.9
Labour force status						
Employed	7.0	3.1	7.2	7.7	6.6	22.5
Unemployed	3.9	3.4	2.5	0.2	0.2	0.3
NILF ^a	89.2	93.5	90.3	92.0	93.2	77.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Females						
50-64 years age group in each section-of-State	22.7	40.2	37.1	64.4	22.0	13.5
Labour force status						
Employed	20.4	14.2	11.5	30.9	23.8	37.3
Unemployed	3.2	3.4	4.6	1.4	1.4	1.0
NILF ^a	76.4	82.5	83.9	67.7	74.8	61.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
65+ years age group in each section-of-State (%)	21.0	41.0	38.0	66.8	23.7	9.5
Labour force status						
Employed	1.9	1.3	2.2	2.6	2.4	9.0
Unemployed	0.9	1.8	1.8	0.3	0.3	0
NILF ^a	97.2	96.9	96.0	97.1	97.3	91.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

a. Not in the labour force.

Source: 1986 Population Census, full Aboriginal sub-file and the 1 per cent section-of-State public use sample.

Table 3. Age on leaving school for Aboriginal and other Australians aged 50 years and over, by sex, 1986.

Age	Males		Females	
	Aborigines Per cent (1)	Others Per cent (2)	Aborigines Per cent (3)	Others Per cent (4)
Age on leaving school				
12 or younger	8.9	5.9	6.6	4.9
13	8.4	6.8	7.6	5.7
14	25.5	35.5	26.4	37.0
15	17.0	21.7	20.3	23.5
16	8.4	14.3	9.1	15.7
17	2.1	7.4	1.7	7.4
18	0.1	4.8	1.1	3.2
19 and older	0.8	2.6	0.5	1.1
Still at school	0.2	0	0.2	0
No schooling	28.1	1.2	26.3	1.5
Average years of completed schooling ^a	6.5	9.7	6.8	9.6

a. These figures are calculated on the assumption that children begin school at the age of five.

Source: 1986 Population Census, full Aboriginal sub-file and the 1 per cent section-of-State public use sample.

no reason to believe that this was different in the past (House of Representatives Standing Committee on Aboriginal and Torres Strait Islander Affairs 1992). The major difference between Aborigines and other Australians was the large proportion of Aboriginal people who had received no schooling; about a quarter of Aboriginal people compared with less than 2 per cent of other Australians. There were also relatively few Aboriginal people who had stayed at school after the age of 15 years; 11.3 per cent of Aboriginal men compared with 29.1 per cent of non-Aboriginal men, and 12.4 per cent of Aboriginal women compared with 27.4 per cent of other women. Table 4 also shows a substantial difference in the level of qualifications held by Aboriginal and other Australians. Over 90 per cent of Aboriginal men and women more than 50 years of age held no qualification, compared with 62.3 per cent of other Australian men and 81.7 per cent of other Australian women. Men were more likely to hold a qualification than women. Trade certificates were the most important type of qualification held by non-Aboriginal men, but they were held by only a small percentage of Aboriginal men. Women were more likely to hold 'other certificates' which include, for example, secretarial and business qualifications.

Table 4. Level of qualification for those aged over 50 years, by sex, 1986.

Type of qualification	Males		Females	
	Aborigines Per cent (1)	Others Per cent (2)	Aborigines Per cent (3)	Others Per cent (4)
University degree	0.2	4.6	0.1	1.6
Diploma	3.6	18.7	0.5	2.0
Other certificate	3.4	10.2	2.8	11.8
No qualification	92.4	62.3	96.2	81.7
Total	100.0	100.0	100.0	100.0

Source: 1986 Population Census, full Aboriginal sub-file and the 1 per cent section-of-State public use sample.

Industry and occupation of employment of those of working age

As Table 1 shows, paid employment among these older people was mainly restricted to those of working age, that is aged 50-64 years. Tables 5 and 6 therefore relate to this age group. The results follow the pattern explained earlier, in discussions on Aboriginal industry and occupation of employment, of Aboriginal employment concentration in the less skilled occupations, and in particular, industries.

The implications of low levels of educational attainment are apparent in the occupational distribution of Aboriginal people. Almost half of Aboriginal men and women in employment were occupied as labourers, in contrast to less than 20 per cent of other Australian men and women. Aboriginal men were correspondingly under-represented among the more skilled occupations of managers, professionals and para-professionals. While proportionately fewer Aboriginal women were occupied as managers and professionals, it is interesting to note that para-professionals represented a larger proportion of employed Aboriginal women than other Australian women. Older Aboriginal women were less likely to be employed as clerks than other Australian women. For each sex, there was a positive, but not particularly close, correlation between the occupational distributions of Aborigines and other Australians at this level of occupational aggregation; ($r = 0.51$ for men and 0.40 for women).

Table 5. Occupation of employed Aboriginal and non-Aboriginal people aged 50-64 years, 1986.

	Males		Females	
	Aborigines Per cent (1)	Others Per cent (2)	Aborigines Per cent (3)	Others Per cent (4)
Managers and administrators	5.7	19.6	5.5	14.6
Professionals	4.2	10.4	5.4	9.0
Para-professionals	4.6	5.9	8.1	6.4
Tradespersons	13.7	19.5	11.4	3.5
Clerks	3.7	6.8	11.9	29.4
Salespersons, etc.	1.7	7.4	10.2	14.6
Plant and machinery operators and drivers	18.2	12.9	1.8	3.8
Labourers	48.1	17.6	45.7	18.9
Total	100.0	100.0	100.0	100.0
Correlation coefficient (r) - Aboriginal and others	0.51		0.40	

Source: 1986 Population Census, full Aboriginal sub-file and the 1 per cent section-of-State public use sample.

Table 6 describes the industry of employment of Aboriginal people aged 50-64 years and compares this to the industry distribution of other Australians. While there was a close positive correlation between the industry distribution of employment for females ($r = 0.88$), there was a relatively low correlation for males ($r = 0.37$). The general result that Aboriginal people tend to be concentrated in community services and public administration is also apparent among these older workers (Taylor 1992). In contrast, Aboriginal men were less likely to be in the manufacturing and wholesale and retail trades than other Australian men. Aboriginal women were also under-represented in the wholesale and retail trade and in the finance and property industries.

Table 6. Industry of employment for Aboriginal and other Australian people aged 50-64 years, 1986.

	Males		Females	
	Aborigines Per cent (1)	Others Per cent (2)	Aborigines Per cent (3)	Others Per cent (4)
Agriculture	13.0	9.1	4.3	9.6
Mining	3.0	1.2	0.7	0.2
Manufacturing	9.5	20.5	8.2	11.7
Electricity, gas, water	4.0	4.0	0.4	0.4
Construction	8.2	8.4	1.4	2.4
Wholesale, retail trade	4.6	14.8	7.0	18.5
Transport, storage	13.8	9.1	2.7	2.6
Communications	1.4	2.5	1.7	1.3
Finance, property etc.	2.1	8.1	4.3	9.8
Public administration	14.5	7.4	6.1	4.3
Community services	22.2	10.6	55.1	32.0
Recreation, personal services	3.8	4.1	8.1	7.2
Total	100.0	100.0	100.0	100.0
Correlation coefficient (r) - Aboriginal and others	0.37		0.88	

Source: 1986 Population Census, full Aboriginal sub-file and the 1 per cent section-of-State public use sample.

Table 7 presents industry data in terms of the government/private sector split of employment. The standard results are apparent. Both Aboriginal men and women were more likely to work in the public sector than their non-Aboriginal counterparts. The State governments were particularly important employers of Aboriginal people.

The income of older Aboriginal people

A major research question which arises out of any discussion of the declining labour force participation of people over 50 years relates to their alternative sources of income other than employment. Unfortunately, as already stated, the census does not provide any information on sources of income, but case study evidence relating to Aboriginal people suggests that welfare transfers from government accounted for an important part of the income of people who were not in paid employment (Fisk 1985; Altman and Smith 1993). Among Australians in general, the 1986 Income and Housing Survey showed that for those over the age of 50 years, 50 per cent of men and 80 per cent of women cited a government pension as their principle source of income. Amongst those not in the labour force, 70 per cent received more than half of their income from government pensions.⁷

Table 7. Government and private sector employment of Aboriginal and other Australians, 50-64 years, 1986.

	Males		Females	
	Aborigines Per cent (1)	Others Per cent (2)	Aborigines Per cent (3)	Others Per cent (4)
Government				
Commonwealth	5.9	7.8	8.0	5.2
State	28.2	16.5	36.0	18.4
Local	13.7	4.3	2.8	1.7
Private	52.1	71.4	53.2	74.7
Total	100.0	100.0	100.0	100.0

Source: 1986 Population Census, full Aboriginal sub-file and the 1 per cent section-of-State public use sample.

In the Australian context, there has been some discussion of the effects of availability of a pension on people's labour supply decisions. Woodland (1987) examined the labour force participation behaviour of a cross-section sample of Sydney, Melbourne and Adelaide people over the age of 60 years and concluded that the availability of pension benefits was a major reason for people to retire from paid employment. He argued that health, age, sex and level of education were the other deciding factors, although the close relationship between health status and the eligibility for income support from sickness and disability pensions makes it difficult to separate health effects from the income effects on labour force status. The data collected in the census are not appropriate for further investigation of this issue in the context of the low rates of employment among Aboriginal people over 50 years, but it seems likely that the relatively poor state of health of many older Aboriginal people makes them eligible for sickness and disability pensions, providing income support outside the labour force.

The census does enable a breakdown of income according to labour force status, and these figures for Aboriginal and non-Aboriginal men and women aged 50-64 years are presented in Table 8. The table also presents data on the median income of those 65 years and over. Familiar themes are apparent in these data. Aboriginal men aged 50-64 years and in employment had a median income equal to 80 per cent of other Australian men in employment. However, for those classified as either unemployed or not in the labour force, the median income was identical to that of other Australian males. Taking the group as a whole, Aboriginal men had a median income which was 50 per cent that of other Australians in the same

age category. This difference can be explained by the much larger proportion of non-Aboriginal men in employment.

Aboriginal women aged 50-64 years had a median income equal to that of other Australian women. The median income of Aboriginal women who were either unemployed or outside the labour force was 10 per cent higher than that of other women in this age group, but those in employment had a lower income than their non-Aboriginal counterparts.

In 1986, the basic annual old age pension was \$102.10 per week (\$5,309.20 per year) for an individual and \$170.30 per week (\$8,855.60 per year) for a couple living together. Women over the age of 60 years and men over the age of 65 were entitled to this, subject to both income and assets tests. The median income for those 65 years and over reported in Table 8 is rather low given this pension entitlement, and suggests that there may be some under-reporting of income by this group. The census figures show that Aboriginal men had an income which was 80 per cent of their non-Aboriginal counterparts, while Aboriginal women had the same median income.

The data presented in Table 8 relate to individual incomes. An individual's economic wellbeing also depends on the incomes of other members of the household and the number of people who share the household income. Table 9 shows that there are substantial differences in the types of households in which older Aboriginal people and other Australians lived. The most striking feature of the table is the much larger percentage of older Aboriginal people living in large households. About one-third of Aboriginal men and women in each age category lived in households of six or more people, compared with only four per cent of other Australians. This difference was offset by the smaller percentage of non-Aborigines living in small households. About one-third of Aboriginal women over 64 years lived by themselves, compared with 16 per cent of Aboriginal women. It is not proposed to investigate these differences in household structure in greater detail here, but they do suggest that the level of household, as well as individual income, may be an important determinant of the economic status of this age group.

Table 8. Median incomes of Aboriginal and other Australians aged over 50 years, by labour force status, 1986.

	Males		Females	
	Aborigines (1)	Others (2)	Aborigines (3)	Others (4)
Aged 50-64 years				
Labour force status				
Employed	\$14,502	\$19,338	\$11,610	\$12,555
Ratio (1)/(2), (3)/(4)	0.7		0.9	
Unemployed	\$5,523	\$5,754	\$5,001	\$4,410
Ratio (1)/(2), (3)/(4)	1.0		1.1	
NILF ^a	\$5,427	\$5,759	\$5,255	\$4,595
Ratio (1)/(2), (3)/(4)	0.9		1.1	
Total	\$7,314	\$15,747	\$5,519	\$5,343
Ratio (1)/(2), (3)/(4)	0.5		1.0	
Aged 65 years and over				
Total	\$4,497	\$5,747	\$5,299	\$5,393
Ratio (1)/(2), (3)/(4)	0.8		1.0	

a. Not in the labour force.

Source: 1986 Population Census, full Aboriginal sub-file and the 1 per cent section-of-State public use sample.

Table 10 compares the median income per household member for Aboriginal and non-Aboriginal Australians in two age categories: 50-64 years and those over 64 years. There are a number of shortcomings with these figures, and they should be thought of as a rough guide to the order of magnitude of income differences between Aborigines and other Australians. A major problem is one of non-response. Household income was only calculated for households where each individual member reported his/her income, so household income was not calculated where one member of the household was absent or did not respond to the question. This creates high levels of non-response; household income was not calculated for 24 per cent of Aboriginal people and 10 per cent of non-Aboriginal people over the age of 50 years. It seems probable that this non-response is not random. A further limitation of these figures is that they relate to individuals living in private dwellings and exclude the institutionalised population.

Table 9. Distribution of older Aboriginal and other Australians, by size of household and sex, 1986.

Size of household	Males		Females	
	Aborigines Per cent (1)	Others Per cent (2)	Aborigines Per cent (3)	Others Per cent (4)
Age 50-64				
1	10.0	10.0	8.0	13.0
2	18.0	42.0	21.0	48.0
3	13.0	23.0	15.0	21.0
4	12.0	15.0	12.0	10.0
5	9.0	6.0	9.0	5.0
6	8.0	2.0	8.0	2.0
7	8.0	1.0	7.0	1.0
8 or more	21.0	1.0	20.0	1.0
Total	100.0	100.0	100.0	100.0
Age 65+				
1	13.0	15.0	16.0	36.0
2	22.0	63.0	21.0	45.0
3	13.0	12.0	13.0	9.0
4	11.0	5.0	10.0	4.0
5	9.0	3.0	9.0	3.0
6	7.0	2.0	6.0	2.0
7	8.0	1.0	7.0	1.0
8 or more	17.0	1.0	17.0	1.0
Total	100.0	100.0	100.0	100.0

Source: 1986 Population Census, full Aboriginal sub-file and the 1 per cent section-of-State public use sample.

As Table 10 shows, taking the differences in household structures into account did not greatly change the relative position of Aboriginal men, compared with other Australian men in the same age categories. Median income per household member was less than half that of non-Aboriginal men for those aged 50-64 years and 71 per cent of the median income of those aged over 65 years. There was, however, a substantial change in the relative income of Aboriginal women when household structure was taken into account. As Table 8 shows, on an individual basis, Aboriginal women in each of these age categories had a median income equal to that of other Australian women. However, when the total income of the household is taken into account and divided equally between its members, the ratio of median household income for Aboriginal women compared with other Australian women fell to 0.57 for those aged 50-64 years and 0.74 for those aged over 65 years. The differences in household structure had a negative effect on the relative position of Aboriginal women.

Table 10. Median household income per household member for Aboriginal and other Australians aged over 50 years, 1986.

	Males		Females	
	Aborigines (1)	Others (2)	Aborigines (3)	Others (4)
Aged 50-64 years	\$5,220	\$11,464 ^a	\$4,947	\$8,604 ^a
Ratio (1)/(2), (3)/(4)	0.46		0.57	
Aged 65 and over	\$4,814	\$6,740 ^a	\$4,845	\$6,576 ^a
Ratio (1)/(2), (3)/(4)	0.71		0.74	

a. The median income for large households in this group fell into the open-ended income category of \$40,001 or more per annum, so it was necessary to estimate the median incomes of these types of households. Estimations were made for 12 per cent of the non-Aboriginal male sample aged 50-64 years, 4 per cent of the non-Aboriginal male sample aged 65 and over, 9 per cent of the non-Aboriginal female sample aged 50-64 years, and 4 per cent of the non-Aboriginal female sample aged 65 and over.

Source: 1986 Population Census, full Aboriginal sub-file and the 1 per cent section-of-State public use sample.

A formal analysis of the labour force status of older Australians

This section presents the results of a formal analysis of the determinants of labour force status for men and women aged 50-64 years, using the framework developed elsewhere (Daly, Allen, Aufflick et al. 1993). The purpose is to determine the important factors which influence an individual's labour force status, that is, whether they work full- or part-time, are unemployed or outside the labour force. Labour force status has been estimated as a function of age, education variables, family variables, location of residence and Aboriginality. Unfortunately the 1986 Census did not collect information on health status, and evidence from other studies (Woodland 1987) shows that health is an important determinant of the labour force status for older people. The omission of these variables may increase the confidence intervals surrounding the coefficient estimates reported here, but it should not bias them. Definitions of the variables used and a more detailed discussion of the estimation method are presented in the Appendix, which also contains the estimated coefficients for men and women.

A random sample of 1986 Census data was used for the analysis. The data consisted of 2,014 Aborigines and 4,400 non-Aborigines aged 50-64 years inclusive. Aboriginal people were therefore over-represented in the sample, and it should not be taken as representative of the Australian population as

a whole. As the dependent variable was not continuous, ordinary linear regression was inappropriate, and it was necessary to use a technique appropriate for a dependent variable with only four possible values. If 'not in the labour force' had not been included as a labour force category, it would have been possible to order the labour force status response variable by number of hours worked. However, the decision to include 'not in the labour force' meant that the response variable needed to be treated as categorical, rather than ordinal and multinomial logit was appropriate (see Daly, Allen, Aufflick et al. (1993) for a fuller discussion of the estimation technique).

The major findings of this analysis are presented in Table 11 for men and Table 12 for women. Table 11 shows that a man with the average characteristics of the men in the sample had a 62.3 per cent probability of being in full-time employment, a 11.8 per cent probability of being in part-time employment, a 9.3 per cent probability of being unemployed, and a 16.6 per cent probability of not being in the labour force. In other words, in a sample of 100 men with the characteristics of the average man, 62 would be in full-time employment, 12 in part-time employment, nine unemployed and 17 outside the labour force. In contrast, in a sample of 100 women with the average characteristics of the female sample, 72 would be outside the labour force, two would be unemployed, 15 would be working full-time and 11 working part-time (see Table 12).

In order to measure the effects of changes in each of the independent variables taken in turn, it was necessary to establish a 'control person' to use as a benchmark against which all the changes could be measured. For each sex, the control person had the following characteristics; they were non-Aboriginal, aged 50 years, left school before the age of 15, had no qualifications, good English ability, were either widowed, separated or divorced, and lived in a rural locality. Tables 11 and 12 show the effect of a change in each independent variable on the probability of a person with the other characteristics of the control person appearing in each labour force status category. The probability distributions must add up to one as the labour force categories are exhaustive.

The estimated effects of changes in this control person are presented in the second part of each table. The results for men will be described first. The probability of an Aboriginal man with all the other characteristics of the 'control man', being in full-time employment was 22.3 percentage points less than for a similar non-Aboriginal man, and he was more likely to be unemployed (the probability increased by 11.7 percentage points) and more likely to be outside the labour force (the probability increased by 10.3 percentage points). This is the largest estimated change in full-time employment probabilities for any change in an independent variable.

Table 11. The impact of changes in the independent variables on labour force status, males, 1986.

	Labour force status			
	Full-time employment Per cent	Part-time employment Per cent	Unemployed Per cent	Not in labour force Per cent
Actual distribution of sample	50.6	6.5	7.4	35.5
Average characteristics of sample	62.3	11.8	9.3	16.6
Control man ^a	64.6	7.9	15.0	12.5
Percentage point change in probabilities with a change in the independent variables for the control man to the following values, holding everything else constant.				
Aboriginal	-22.3	0.3	11.7	10.3
Age on leaving school, 15-16 years	1.6	-1.0	0.8	-1.4
Age on leaving school, 17+ years	3.7	-0.8	0.1	-2.9
Age on leaving school, 15-16 years, diploma	5.4	0.6	-1.7	-4.3
Age on leaving school, 17+ years, higher qual.	9.7	4.9	-5.5	-9.1
Married	13.4	1.6	-8.7	-6.4
Single	1.7	-1.7	0.4	-0.4
Poor English	-18.1	2.5	8.1	7.6
Major urban resident	4.3	-1.3	-4.7	1.7
Other urban resident	-2.8	-0.1	-1.2	4.2

a. The control man was a non-Aboriginal man aged 50 years who left school before the age of 15, had no qualifications, good English ability, was either widowed, separated or divorced and lived in a rural area.

The other large negative effect on the probability of full-time employment was an inability to speak good English. The effects reported here are additive, so the probability of an Aboriginal man with poor English being in full-time employment was 40.4 percentage points (22.3 + 18.2) less than the probability of a non-Aboriginal man with good English being in full-time employment. Additional education, as measured by the age on leaving school and qualifications, increased the probability of full-time employment, compared with the control man, and reduced the probability of being outside the labour force. Married men also had a higher probability of being in full-time employment. Living in a major urban centre increased the probability of full-time employment.

Among women, the most common status was being outside the labour force (see Table 12). However, this was particularly so for Aboriginal women (18.1 percentage points increase in probability) who also had a lower probability of being in full-time employment (13.4 percentage points lower) than a similar non-Aboriginal woman.

Table 12. The impact of changes in the independent variables on labour force status, females, 1986.

	Labour force status			
	Full-time employment Per cent	Part-time employment Per cent	Unemployed Per cent	Not in labour force Per cent
Actual distribution of sample	13.2	9.6	2.3	74.9
Average characteristics of sample	15.1	10.7	2.1	72.2
Control woman ^a	27.5	13.2	3.8	55.4
Percentage point change in probabilities with a change in the independent variables for the control woman to the following values, holding everything else constant.				
Aboriginal	-13.4	-6.8	2.2	18.1
Age on leaving school, 15-16 years	6.3	3.2	-1.1	-8.3
Age on leaving school, 17+ years	6.5	6.5	0.5	-13.4
Age on leaving school, 15-16 years, diploma	25.8	3.0	-2.2	-26.5
Age on leaving school, 17+ years, higher qual.	27.7	12.0	-3.8	-35.8
Married	-4.1	5.8	-1.9	0.4
Single	13.8	-6.7	7.2	-14.3
Poor English	-5.8	-7.4	5.2	8.1
Major urban resident	-7.4	3.3	1.3	2.8
Other urban resident	-9.9	0.3	0.7	9.1

a. The control woman was a non-Aboriginal woman aged 50 years who left school before the age of 15, had no qualifications, good English ability, was either widowed, separated or divorced and lived in a rural locality.

An inability to speak English and residence in either a major or other urban area reduced the probability of full-time employment for women. In contrast to the results for men, marriage reduced the probability of full-time employment for women and increased the probability of part-time employment. Additional education had a dramatic effect on women's labour force status by increasing the probability of full-time employment

and reducing the probability of being outside the labour force. For those women who had left school at the age of 17 or older and who had a higher qualification (a university degree), the probability of them being in full-time employment was 27.7 percentage points higher and the probability of them being outside the labour force was reduced by 35.8 percentage points.

In summary, these results show a large negative effect of Aboriginality on the probability of being in full-time employment. The source of this difference may either be in the labour supply choices of Aboriginal people, perhaps influenced by their inferior health status, or in the demand for Aboriginal labour. These results do not enable a differentiation between these two sources of the difference. The results also emphasise, especially for women, the positive effects of more education on the probability of being in employment.

Summary and conclusion

This paper uses data from the 1986 Census to describe and analyse the position of older Aboriginal people in the labour market. People over 50 years accounted for a smaller part of the Aboriginal adult population than for the rest of the Australian population. An important determinant of this fact is the health status of Aboriginal adults, and other research documents some of the special problems faced by this group.

Many of the results shown by other labour market comparisons between the Aboriginal and non-Aboriginal populations of Australia are also apparent in this comparison of older people. Aboriginal men and women over 50 years were less likely to be employed, and more likely to be unemployed or outside the labour force, than their counterparts among other Australians. Even among 50-54 year old males, less than 50 per cent of Aborigines were employed, compared with 84 per cent among the same age category in the rest of the Australian male population. A similar pattern was also in evidence at each section-of-State level.

Older Aboriginal people had markedly lower levels of educational attainment than other Australians in these age groups. About a quarter had not attended school, compared with less than 2 per cent in the rest of the Australian population. Over 90 per cent of older Aboriginal people had no qualifications. This low level of educational attainment had important implications for the type of occupations available to those Aborigines who were in work. Almost half of both men and women in employment were working as labourers, a category which accounted for less than 20 per cent of employment among other Australians over 50 years of age.

The importance of the public sector as an employer of Aboriginal labour in general was also apparent for these older Aboriginal people. Older Aboriginal workers were concentrated to a greater extent than other Australians in the industry divisions of public administration and community services.

Lower levels of employment and the concentration of older Aboriginal people in less skilled occupations were reflected in their median individual incomes. Men of working age, those aged 50-64 years, had a median income which was 50 per cent of that of non-Aboriginal males of the same age. Even among those over 65 years of age, the age of pension eligibility for men, Aboriginal men had lower incomes. In terms of individual income, Aboriginal women were better off relative to other women than Aboriginal men with their median income equal to that of other Australians. However, it is important to remember the difference in the types of households in which Aborigines and non-Aborigines live. Aboriginal people were less likely to live in sole person households than non-Aboriginal people. A comparison of median household income per household member showed that Aboriginal people, particularly women, were relatively worse off when the differences in household structure were taken into account.

The formal analysis of the determinants of labour force status showed that Aboriginality had a negative affect on the probability of a person being in full-time employment. It was estimated that the probability of being in full-time employment was 22 percentage points lower for an Aboriginal man with the characteristics of a control person than for the comparable non-Aboriginal man. For Aboriginal women, it was 13 percentage points lower. These were the largest negative effects on the probability of being in full-time employment which were measured in the formal model. While the analysis does not attempt to establish the source of this difference, it emphasises the important effects of Aboriginality on employment status.

A second major finding of the formal analysis is the contribution which additional education makes to increasing the probability of being in full-time employment, especially for women. This result would offer support for the current emphasis on education as a means of promoting the economic welfare of Aboriginal people. The census data, however, do not enable a formal investigation of the effects of poor health on the ability of older Aboriginal people to participate in paid employment. This is an important issue which requires further investigation.

Notes

1. The terms Aborigine and Aboriginal will be used here to refer to the Aboriginal and Torres Strait Islander populations of Australia.
2. Siggers and Gray (1991) report that in 1983-84, life expectancy for Aboriginal people varied from 51 years for males and 59 years for females in country New South Wales to 61 years for males and 65 years for females in the Kimberley. This compared with 72 years for males and 79 years for females in the general population.
3. For a discussion of the international trend toward declining participation rates among older men see Pencavel (1986) and Juhn (1992).
4. These data are cross-sectional data and relate to one point in time. In order to infer life-cycle patterns of behaviour from these data, it is necessary to assume that each age cohort will behave over its lifetime as those of a comparable age in the cross-section, but actual outcomes will reflect additional factors. While age affects behaviour, over time, different outcomes may arise due to cohort and period effects. Cohort effects are those which are specific to a group born in the same period and include such things as attitudes to paid employment and the size of the birth cohort. Period effects include any time specific influences on behaviour, for example the state of the business cycle at the time an individual enters the labour force, or changes in the eligibility rules for pensions. See Bowman (1987) for a more detailed discussion of these effects.
5. For a fuller discussion of the CDEP scheme see Sanders (1988); Altman and Sanders (1991); Morony (1991); and Altman and Daly (1992).
6. These categories are derived from the section-of State variable in the census. The three settlement size categories used here are defined as follows: an urban centre is 'one or more adjoining collection districts with urban characteristics and representing a population cluster of 1,000 or more people' (Australian Bureau of Statistics (ABS) 1986: 150). Major urban centres have over 100,000 inhabitants and other urban areas between 1,000 and 99,999 inhabitants. The rural category used here includes both ABS categories 'rural locality' and 'rural balance'. Localities include population clusters which can 'be expected to contain at least 200 people (but not more than 999) by the next census; have at least 40 occupied non-farm dwellings with a discernible urban street pattern; have a discernible nucleus of population' (ABS 1986: 97). The rural balance includes all the collection districts not included elsewhere (ABS 1986: 132).
7. These figures have been calculated from the 1986 public use Income Distribution Survey conducted by ABS.

Appendix

Details of independent variables used in the logistic regressions:

ABORCAT (Aboriginal and Torres Strait Islander indicator):

Aboriginal or Torres Strait Islander (ATSI)
non-ATSI

AGE (treated as continuous):

age ranging from 50 to 64 years

MARITAL (marital status):

never married
married
other (i.e. divorced, separated, widowed)

QUALIF (qualifications):

no qualifications
diploma - e.g. trade
tertiary

ALS (age left school); collapsed for the analysis into:

did not go to school or left <15
left aged 15-16
left school at >16
still at school

ENGLISH (standard of English):

good
poor

SECTION (section-of-State):

major urban
other urban
rural (includes migratory)

Table A1. Labour force status of men aged 50-64 years, 1986.

	Full-time employment $\ln(p1/p4)^a$	Part-time employment $\ln(p2/p4)^a$	Not in labour force $\ln(p3/p4)^a$
Constant	2.0163 (14.93)	-1.9113 (19.84)	24.4341 (15.13)
Age	0.0115 (0.53)	0.0452 (0.71)	-0.9888 (0.54)
Age ²	-0.0005 (0.005)	-0.0003 (0.006)	0.0102 (0.005)
Aborigine	-0.4956 (0.09)	-0.2717 (0.13)	0.0111 (0.09)
Age on leaving school			
Less than 15	0.0858 (0.13)	-0.0006 (0.17)	0.0058 (0.13)
15-16 years	0.0623 (0.13)	-0.1866 (0.18)	-0.1679 (0.13)
17 years and over	0.1407 (0.20)	-0.1163 (0.26)	-0.2637 (0.21)
Marital status			
Married	0.6958 (0.11)	0.7864 (0.16)	0.1241 (0.11)
Never married	-0.3491 (0.13)	-0.5289 (0.23)	-0.0932 (0.13)
Qualifications			
Diploma	-0.0318 (0.21)	-0.0976 (0.25)	0.0980 (0.24)
Higher qualification	0.2866 (0.36)	0.5803 (0.42)	-0.3319 (0.41)
Section-of-State			
Major urban	0.2794 (0.11)	0.1087 (0.15)	0.2122 (0.12)
Other urban	-0.1221 (0.11)	-0.0165 (0.11)	0.0785 (0.15)
Poor English	-0.3773 (0.15)	-0.0812 (0.20)	0.0217 (0.15)
-2 Log likelihood	5874.24		

a. $p1$ = the probability of being in full-time employment; $p2$ = the probability of being in part-time employment; $p3$ = the probability of being outside the labour force; and $p4$ = the probability of being unemployed. Standard errors are in brackets.

Source: 1986 Census.

Table A2. Labour force status of women aged 50-64 years, 1986.

	Full-time employment $\ln(p1/p4)^a$	Part-time employment $\ln(p2/p4)^a$	Not in labour force $\ln(p3/p4)^a$
Constant	0.4477 (83.21)	-4.1091 (83.52)	21.5596 (82.64)
Age	0.1363 (1.00)	0.2825 (10.4)	-0.7123 (0.94)
Age ²	-0.0009 (0.01)	-0.0024 (0.01)	0.0079 (0.01)
Aborigine	-0.5580 (0.16)	-0.5907 (0.17)	-0.0830 (0.15)
Age on leaving school			
Less than 15	0.0453 (0.23)	-0.2135 (0.24)	0.0485 (0.21)
15-16 years	0.5906 (0.24)	0.3416 (0.24)	0.2241 (0.21)
17 years and over	0.1398 (0.34)	0.0667 (0.34)	-0.3465 (0.31)
Marital status			
Married	0.5445 (0.19)	1.0676 (0.22)	0.7131 (0.18)
Never married	-0.5975 (0.24)	-1.4162 (0.32)	-1.0345 (0.21)
Qualifications			
Diploma	-3.6504 (78.42)	-3.8819 (78.42)	-3.8648 (78.42)
Higher qualification	8.2982 (156.84)	8.2944 (156.84)	7.7824 (156.84)
Section-of-State			
Major urban	-0.2025 (0.20)	-0.0022 (0.20)	-0.1615 (0.18)
Other urban	-0.2013 (0.20)	-0.0681 (0.21)	0.0785 (0.19)
Poor English	-0.5452 (0.22)	-0.8389 (0.25)	-0.3581 (0.19)
-2 Log likelihood	4653.03		

a. $p1$ = the probability of being in full-time employment; $p2$ = the probability of being in part-time employment; $p3$ = the probability of being outside the labour force; and $p4$ = the probability of being unemployed. Standard errors are in brackets.

Source: 1986 Census.

References

- Altman, J.C. and Daly, A.E. 1992. 'The CDEP scheme: a census-based analysis of the labour market status of participants in 1986', *CAEPR Discussion Paper No. 36*, Centre for Aboriginal Economic Policy Research, Australian National University, Canberra.
- Altman, J.C. and Sanders, W. 1991. 'The CDEP scheme: administrative and policy issues', *Australian Journal of Public Administration*, 50 (4): 515-25.
- Altman, J.C. and Smith, D.E. 1993. 'Estimating the reliance of Aboriginal Australians on welfare: some policy implications', *Social Security Journal*, March, pp. 19-41.
- Australian Bureau of Statistics (ABS) 1986. *The 1986 Census Dictionary*, cat. no. 2174.0, ABS, Canberra.
- Bowman, M. 1987. 'The importance of examining cohort uniqueness in the formulation of human capital investment policies', *Economics of Education Review*, 6 (2): 67-79.
- Daly, A.E. 1991. 'The participation of Aboriginal people in the Australian labour market', *CAEPR Discussion Paper No. 6*, Centre for Aboriginal Economic Policy Research, Australian National University, Canberra.
- Daly, A.E. 1993. 'Education and employment for young Aborigines', *CAEPR Discussion Paper No. 38*, Centre for Aboriginal Economic Policy Research, Australian National University, Canberra.
- Daly, A.E., Allen, B., Aufflick, L., Bosworth, E. and Caruso, M. 1993. 'Determining the labour force status of Aboriginal people using a multinomial logit model', *CAEPR Discussion Paper No. 44*, Centre for Aboriginal Economic Policy Research, Australian National University, Canberra.
- Fisk, E.K. 1985. *The Aboriginal Economy in Town and Country*, Allen and Unwin, Sydney.
- Gray, A. (Editor) 1990. *A Matter of Life and Death*, Aboriginal Studies Press, Canberra.
- House of Representatives Standing Committee on Aboriginal and Torres Strait Islander Affairs 1992. *Mainly Urban*, Australian Government Publishing Service, Canberra.
- Juhn, C. 1992. 'Decline of male labour market participation: the role of declining market opportunities', *Quarterly Journal of Economics*, 107: 79-121.
- Morony, R. 1991. 'The Community Development Employment Projects (CDEP) Scheme', in J.C. Altman (ed.) *Aboriginal Employment Equity by the Year 2000*, Centre for Aboriginal Economic Policy Research, Australian National University, Canberra.
- Pencavel, J. 1986. 'Labor supply of men: a survey', in O. Ashenfelter and R. Layard (eds) *The Handbook of Labor Economics*, vol. 1, Elsevier Science Publishers BV, New York.
- Saggers, S. and Gray, D. 1991. *Aboriginal Health and Society*, Allen and Unwin, Sydney.

- Sanders, W. 1988. 'The CDEP scheme: bureaucratic politics, remote community politics, and the development of an Aboriginal 'workfare' program in times of rising unemployment', *Politics*, 23 (1): 32-47.
- Taylor, J. 1992. 'Industry segregation among employed Aborigines and Torres Strait Islanders', *CAEPR Discussion Paper No. 22*, Centre for Aboriginal Economic Policy Research, Australian National University, Canberra.
- Thomson, N. and Briscoe, N. 1991a. *Overview of Aboriginal Health Status in Western Australia*, Australian Government Publishing Service, Canberra.
- Thomson, N. and Briscoe, N. 1991b. *Overview of Aboriginal Health Status in the Northern Territory*, Australian Government Publishing Service, Canberra.
- Thomson, N. and Briscoe, N. 1991c. *Overview of Aboriginal Health Status in South Australia*, Australian Government Publishing Service, Canberra.
- Thomson, N. and Briscoe, N. 1991d. *Overview of Aboriginal Health Status in Queensland*, Australian Government Publishing Service, Canberra.
- Thomson, N. and Briscoe, N. 1991e. *Overview of Aboriginal Health Status in New South Wales*, Australian Government Publishing Service, Canberra.
- Woodland, A. 1987. 'Determinants of the labour force status', *The Economic Record*, 63: 97-114.

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