



Australian Government
Productivity Commission

Men Not at Work: An Analysis of Men Outside the Labour Force

Staff Working Paper

Ralph Lattimore

January 2007

The views expressed in this paper are those of the staff involved and do not necessarily reflect those of the Productivity Commission.

© Commonwealth of Australia 2007

ISBN 978-1-74037-221-3

This work is subject to copyright. Apart from any use as permitted under the *Copyright Act 1968*, the work may be reproduced in whole or in part for study or training purposes, subject to the inclusion of an acknowledgment of the source. Reproduction for commercial use or sale requires prior written permission from the Attorney-General's Department. Requests and inquiries concerning reproduction and rights should be addressed to the Commonwealth Copyright Administration, Attorney-General's Department, Robert Garran Offices, National Circuit, Canberra ACT 2600.

This publication is available in hard copy or PDF format from the Productivity Commission website at www.pc.gov.au. If you require part or all of this publication in a different format, please contact Media and Publications (see below).

Publications Inquiries:

Media and Publications
Productivity Commission
Locked Bag 2 Collins Street East
Melbourne VIC 8003

Tel: (03) 9653 2244
Fax: (03) 9653 2303
Email: maps@pc.gov.au

General Inquiries:

Tel: (03) 9653 2100 or (02) 6240 3200

An appropriate citation for this paper is:

Lattimore, R. 2007, *Men Not at Work: An Analysis of Men Outside the Labour Force*, Productivity Commission Staff Working Paper, Canberra, January.

The Productivity Commission

The Productivity Commission, an independent agency, is the Australian Government's principal review and advisory body on microeconomic policy and regulation. It conducts public inquiries and research into a broad range of economic and social issues affecting the welfare of Australians.

The Commission's independence is underpinned by an Act of Parliament. Its processes and outputs are open to public scrutiny and are driven by consideration for the wellbeing of the community as a whole.

Information on the Productivity Commission, its publications and its current work program can be found on the World Wide Web at www.pc.gov.au or by contacting Media and Publications on (03) 9653 2244.

Contents

Foreword	XIII
Acknowledgements	XIV
Abbreviations	XV
Overview	XVII
1 Introduction	1
1.1 What this report is about	1
1.2 What does ‘outside the labour force’ mean?	3
1.3 A snapshot of non-participation in the labour force	6
1.4 Structure of the report	11
2 The dynamics of labour market inactivity	13
2.1 Transitions in labour market status	13
2.2 Trends in male and female inactivity rates differ	22
2.3 Snapshots across age groups suggest the important dynamic effects over the lifecycle	23
2.4 Ageing versus trend effects in the past	25
2.5 Cohort effects	29
3 Who are they?	41
3.1 Introduction	41
3.2 Inactivity by family and relationship type	41
3.3 Educational and occupational characteristics of men outside the labour force	47
3.4 Indigenous males	50
3.5 Does migrant status affect male inactivity?	54
3.6 The role of institutionalisation	66
4 Where do they live?	69
4.1 Variations by States and Territories	69
4.2 A regional picture	71
4.3 What leads to spatial segmentation in inactivity rates?	76

5	Why are men outside the labour force?	85
5.1	What do men give as the reason?	85
5.2	The hidden reasons	93
6	Ill-health and disability	99
6.1	The role of illness, injury and disability in economic inactivity	99
6.2	How has the role of illness, injury and disability changed over time?	108
6.3	Summary	114
7	Impacts of being out of the labour force	115
7.1	Introduction	115
7.2	Aggregate economic impacts	116
7.3	Personal impacts	118
7.4	Wider effects	139
7.5	Conclusions	140
8	The Disability Support Pension	143
8.1	The role of Disability Support Pension	144
8.2	Trends over time and duration of ‘spells’ on the DSP	146
8.3	High DSP coverage is not just about underlying health conditions	153
8.4	What are the factors underlying uptake of the DSP?	162
8.5	Why are men with disabilities now less employable?	174
8.6	What remedies have been suggested?	180
9	Education and participation	187
9.1	In snapshot data, the less educated are more vulnerable to labour market withdrawal	187
9.2	Policy is oriented to increasing education duration	189
9.3	Males with poorer education have become more vulnerable, but women have not	194
9.4	Simple longitudinal studies show some gains for males who complete school	198
9.5	But the link between education and participation can be confounded by other influences	203
9.6	Taking account of the differences generally reduces the labour market benefits of schooling for non-completers	208

9.7	What does the large literature on returns to education imply?	214
9.8	Education and labour market outcomes for special groups	216
9.9	What do international comparisons reveal?	219
9.10	Conclusion	226
10	The effects of what schools do	229
10.1	Strategies for particular groups or problems	232
10.2	Changes in vocational education	239
10.3	Literacy and numeracy	247
10.4	Early childhood development	247
10.5	Conclusions	251
A	Work expectancy	253
A.1	Introduction	253
A.2	Methods	253
B	Illness, injury and disability data	259
C	Engagement of people on DSP	269
D	Output effects of inactivity	273
D.1	Economic impacts	273
D.2	The gross costs of labour market engagement	273
D.3	The feasible change in the participation rate	274
D.4	The gross benefits of engagement	278
D.5	Some wrinkles in this story	288
E	The productivity of outsiders	289
F	Will population ageing reduce male inactivity rates?	295
F.1	Conceptual framework	295
F.2	Cross-country evidence	297
G	Moral hazard and the DSP	301
G.1	Are less verifiable conditions more prevalent among DSP beneficiaries?	301
G.2	Early retirement?	303
G.3	Employment propensities of those on DSP	305
G.4	Low outflow rates?	305

References **309****BOXES**

2.1	Deriving and interpreting transition probabilities	15
5.1	‘Reasons’ for being, and ‘main activities’ while, economically inactive	86
8.1	How many male DSP beneficiaries have profound or severe core limitations?	157
8.2	Diagnosis error has several strands	170
9.1	‘Catch-up’ may explain why education seems to play opposite roles for men and women	197
9.2	Looking at results for ‘virtual’ twins can also identify the effects of schooling	211
9.3	What can be inferred about education effects on activity rates from the returns to schooling literature?	215
9.4	Modelling dilution effects	224
10.1	Career academies in the United States	246
A.1	Different scenarios for life expectancy	255
D.1	Estimating GDP per capita benefits from decreasing male economic inactivity rates	280
G.1	Administrative practices for people on the DSP	307

FIGURES

1.1	Inactivity rates have fallen for females and risen for males	2
1.2	The statistical framework for persons not in the labour force	4
1.3	The contemporary Australian labour market	6
1.4	Labour market orientation of males outside the labour force	7
1.5	Measures of incidence of inactivity	10
2.1	Flows to and from ‘not in the labour force’	14
2.2	Male transition rates in and out of the labour force	16
2.3	Longer run male transitions into and out of the labour force	17
2.4	The effects of lower inflow rates into inactivity by disadvantaged males aged 45–54 years	20
2.5	Illustration of improving employability of disadvantaged males aged 45–54 years	21
2.6	Two alternative policy changes: how are the gains distributed?	21

2.7	Trends in economic inactivity rates	23
2.8	Economic inactivity rises after age 45 years	24
2.9	Males have lower economic inactivity rates than females at all ages	25
2.10	Long run trends in male and female non-participation in the labour market	27
2.11	Net entry rates into the labour force	29
2.12	Net exit rates from the labour force	30
2.13	Lifetime participation of males	32
2.14	What happens to work expectancy if people live longer than expected?	33
2.15	Lifetime economic inactivity among males	34
2.16	The importance of economic inactivity in pre-retirement and post-retirement phases of life	36
2.17	The orthodox view of lifetime participation can be badly astray	38
2.18	Lifetime work and participation	39
3.1	Married prime age men have been more insulated from the significant rise in economic inactivity	44
3.2	Disabled men with no or low income partners have weak incentives to work	45
3.3	Education and labour force participation by age group	48
3.4	The occupational risk of inactivity and unemployment are closely related	50
3.5	Male Indigenous inactivity rates are high, but relatively stable over time	51
3.6	The ‘masking’ role of CDEP	52
3.7	Differences between migrant and Australian-born inactivity rates by age	55
3.8	Migrant versus Australian-born inactivity rates	62
3.9	Inactivity rates by source of migrants	63
3.10	Labour market orientation by age	66
3.11	The role of institutionalisation and imprisonment on economic inactivity rates	67
4.1	Inactivity rates by region	71
4.2	Older male inactivity rates by region	72
4.3	Prime age male inactivity rates in metropolitan areas	73
4.4	Male inactivity rates for different ages in Sydney	75

4.5	Links between unemployment rates and inactivity rates	77
5.1	Attachment to the labour force	91
5.2	Main reason for stopping work	93
5.3	Countries with more rapidly falling male participation rates have bigger shadow economies, but the association is illusory	95
6.1	Disability and illness is the main reason for economic inactivity among prime aged males	100
6.2	Healthy males and females by age	102
6.3	Long term health conditions	102
6.4	The impacts of disability on inactivity grow with age	106
6.5	Comparative information corroborates self-assessment on the importance of disability	107
6.6	Men not in the labour force who are institutionalised and permanently unable to work	108
6.7	Illness, injury and disability is an important and rising source of economic inactivity	110
6.8	Incidence and duration of illness, injury or disability for men outside the labour force	111
6.9	Men with disabilities have become more vulnerable to inactivity, but less to unemployment	114
7.1	Happiness by reason stopped work/lost last job	126
7.2	Happy males and females, 2003	127
7.3	Change in mental health status with changes in labour force status	133
8.1	DSP compared with Newstart Allowance	145
8.2	Disability Support Pension prevalence has risen dramatically	147
8.3	Recipient transfers to and from the Disability Support Pension	148
8.4	Outflow rates have been falling	149
8.5	Net male DSP inflows as a share of the DSP population	149
8.6	Few exits from the DSP are to employment	152
8.7	Disability has several dimensions that affect entry or exit from the Disability Support Pension	154
8.8	Participation declines with more severe disability	156
8.9	The effects of ageing have been small in the past	159
8.10	There is a weak relationship between disability prevalence and the share of the population on disability support	161
8.11	Share of people with disabilities who are on disability support	161

8.12	As unemployment rises, so too do inflows to the DSP	163
8.13	The effect of lowering unemployment risk on DSP rates	166
8.14	Productivity distributions among men	175
8.15	Labour force engagement of people with disabilities	181
9.1	Males have lower retention rates than females	189
9.2	Are educated people doing better?	195
9.3	What happened to people who left school in 2000?	201
9.4	Experiences of young people who are out of the labour force <i>and</i> not in full-time education	202
9.5	Males who score low on literacy or numeracy leave school early	205
9.6	Early leavers have negative attitudes to school	207
9.7	Impact of varying education levels on labour force participation rates	219
9.8	Links between degree attainment rates and labour participation rates, 2003	221
9.9	Is there a link between <i>growth</i> in cross-country participation rates and more degrees?	222
9.10	A large pool of lowly educated men has many geniuses	224
10.1	Boys have lower competency in literacy	231
B.1	Point prevalence of combined illness, injury and disability among men outside the labour force	261
C.1	The Job Network Disability Support Pension Pilot	271
D.1	A policy-useful counterfactual for considering the costs of people not in the labour force	274
D.2	Hypothetical entry and exit rates associated with optimal policy	276
D.3	Male participation rates by age group	278
D.4	Male DSP entry rates have been falling recently	286
D.5	Male DSP propensities are stable for young males and falling for older males	287
D.6	Male DSP numbers still rise under ‘business as usual’	287
E.1	Implied productivity relativities by age between newcomers and existing workers	291
F.1	Ageing and age-specific male participation rates	300
G.1	Relationship between severity of disabilities and take up of the DSP	303
G.2	What’s the chance of getting on DSP for different conditions as people age?	304

TABLES

1.1	A year in a life: male experience of economic inactivity	8
1.2	Incidence, point prevalence and period prevalence rates of male economic inactivity	10
2.1	Transition probabilities to and from the labour market	15
2.2	Average annual time spent in a given labour market state	18
2.3	Employment orientation of males not in the labour force	25
2.4	Population ageing has played a small role in increasing male inactivity for most periods	28
2.5	How are the gains in life expectancy shared between participation and economic inactivity?	35
2.6	Inactivity through the generations	37
3.1	Family relationships of inactive males	42
3.2	Economic inactivity rates by family type	43
3.3	Labour force status by highest educational attainment	47
3.4	Which occupations are most at risk of being inactive?	49
3.5	Male Indigenous and non-Indigenous inactivity and unemployment rates, 2002	51
3.6	High Indigenous inactivity hardly affects aggregate Australian inactivity rates	53
3.7	Inactivity rates by region of birth and age	57
3.8	Male migrant inactivity rates by region of origin and year of arrival	58
3.9	Adjusting inactivity rates for arrival times	59
3.10	Labour force status by visa category and time since arrival for migrants arriving 1999-00	60
3.11	Male migrant inactivity rates by qualification level and year of arrival	61
3.12	Separating the wheat from the chaff: what shapes male migrant labour participation in Australia?	64
3.13	Shifts in male migrant participation rates between 1986 and 2001	65
4.1	Economically inactive males by State, 2005-06	69
4.2	Age-adjusted share of population not in the labour force	70
4.3	Do inactive males of different age groups tend to co-locate?	76
4.4	Sydney — inactivity by the suburb	79
4.5	Areas with poor average English language proficiency and low education attainment rates have higher economic inactivity rates	81

5.1	Reasons for inactivity	87
5.2	How long are males inactive?	88
5.3	Potential workers can be found in unexpected places	89
6.1	Health status by number of conditions	100
6.2	Health status declines significantly with age	101
6.3	Duration by activity of males outside the labour force	103
6.4	Men with disabilities fare worse in labour markets	105
6.5	The ‘effects’ of disability on labour market prospects	106
6.6	The participation ‘gap’ has been widening between men with and without a disability	113
7.1	Financial distress by labour force status	119
7.2	Self-assessed poverty by labour force status	120
7.3	Indicators of financial difficulties by income support group and labour market status	120
7.4	Many economically inactive men have not worked for years	121
7.5	How many economically inactive men want to work?	121
7.6	Health changes and labour force transitions into and out of the labour market	124
7.7	Changes in wellbeing from transitions in labour force status	129
7.8	Aspects of mental health by labour force status	132
7.9	Labour force status of offspring by parents’ employment status	136
7.10	Unemployment and inactivity rates of male offspring aged 25–64 years by parents’ past employment status	136
7.11	Participation and unemployment rate of 15–24 years olds living with parent(s) by parental labour force status	137
7.12	Relationship of males by labour force status	139
8.1	Experimental estimates of the significance of Disability Support Pension beneficiaries to male economic inactivity	146
8.2	Elapsed duration on the DSP: male DSP beneficiaries	150
8.3	Age-specific male DSP rates have risen too	159
8.4	DSP has more attractive benefits than Newstart	167
9.1	Labour participation rates by educational attainment rate by age	188
9.2	Poorly educated males have become more vulnerable, but not poorly educated females	196
9.3	Labour force activities by educational attainment	199

9.4	Does the quality of post-school pathways improve with educational attainment?	200
9.5	Does an additional year of schooling matter?	212
9.6	Marginal effect on the probability of being in various labour force states for Indigenous males who are not currently studying	217
9.7	Fixed effects model: impacts of degrees on participation rates	222
9.8	How much does extra education dilute impacts on participation rates?	225
B.1	Point prevalence measures of illness, injury and disability as the 'main activity' of males not in the labour force	261
B.2	Men not in the labour force, whose main activity is disability	262
B.3	Men not in the labour force, whose main activity is illness or injury	262
B.4	Measures of period prevalence of inactivity involving illness, injury or disability	263
B.5	Measures of the incidence and duration of inactivity involving illness, injury or disability	265
B.6	Men not in the labour force who are permanently unable to work	267
B.7	Men not in the labour force who are institutionalised	268
C.1	Indicative costs per additional long-term job	272
D.1	Male participation rates	277
D.2	Sensitivity of the results to the 'outsiders' productivity discount factor	284
F.1	Does ageing increase standardised participation rates for OECD countries?	299
G.1	Do DSP beneficiaries have different conditions than those with disabilities in the population as a whole?	302
G.2	Health care for new DSP customers	306

Foreword

Population ageing will place increasing pressure on Australia's future labour supply as a greater share of the population shifts to ages with lower labour market involvement. This has given added impetus to policy interest in raising labour participation rates, especially in age groups where Australia's participation rates are low by OECD standards.

It is important to consider the factors underlying men's disengagement from the labour market separately from women, because the drivers and trends are often distinct, and their impacts also differ. Currently over one-quarter of Australia's eight million adult males are not in a job or not looking for one.

This staff working paper explores the reasons for this, and the impacts on the men concerned and on Australia as a whole. It finds that a major factor underlying the growth of labour disengagement by prime-aged males is the growth of the Disability Support Pension, reflecting reduced tolerance in the contemporary economy for the employment of men with disabilities and lower skills, accentuated by incentives posed by the welfare system. The paper does not make policy recommendations, but its findings and analysis should assist policy development in areas central to getting more men into the world of work.

This staff working paper is part of a stream of Productivity Commission research focused on labour participation issues, which commenced with the Commission's study for CoAG on the *Economic Implications of the Ageing of Australia's Population*. A subsequent paper will consider female labour participation issues.

Gary Banks
Chairman
January 2007

Acknowledgements

The author is grateful to the many Commission staff who made significant contributions to the paper. In particular, Philippa Sutton provided invaluable help, particularly in statistical analysis of the HILDA database and in research assistance on the impacts of labour market inactivity. James Mills provided useful research on education. Jim Roberts and Bill Henderson provided invaluable editing assistance.

Staff who were modelling the impacts of the National Reform agenda — Andrew Barker, Graeme Cuxson, Matt Forbes, Paul Gretton, Alan Johnston, Patrick Jomini, Patrick Laplagne and Lou Will — provided feedback and information in several key areas of this paper.

Several organisations gave comments or assistance with data and other information, including the Australian Bureau of Statistics, the Organisation for Economic Co-operation and Development, the Department of Veterans' Affairs and the Department of Education, Science and Technology. The Department of Employment and Workplace Relations deserves special mention for its provision of data and detailed comments, particularly on the Disability Support Pension. Professor Lixin Cai of Melbourne University provided unpublished data.

The views in this paper remain those of the author and do not necessarily reflect the views of the Productivity Commission or of the external organisations and people who provided assistance.

Abbreviations

ABS	Australian Bureau of Statistics
CoAG	Council of Australian Governments
DEWR	Department of Employment and Workplace Relations
DSP	Disability Support Pension
FaCS	Department of Family and Community Services
LSAY	Longitudinal Surveys of Australian Youth
PC	Productivity Commission

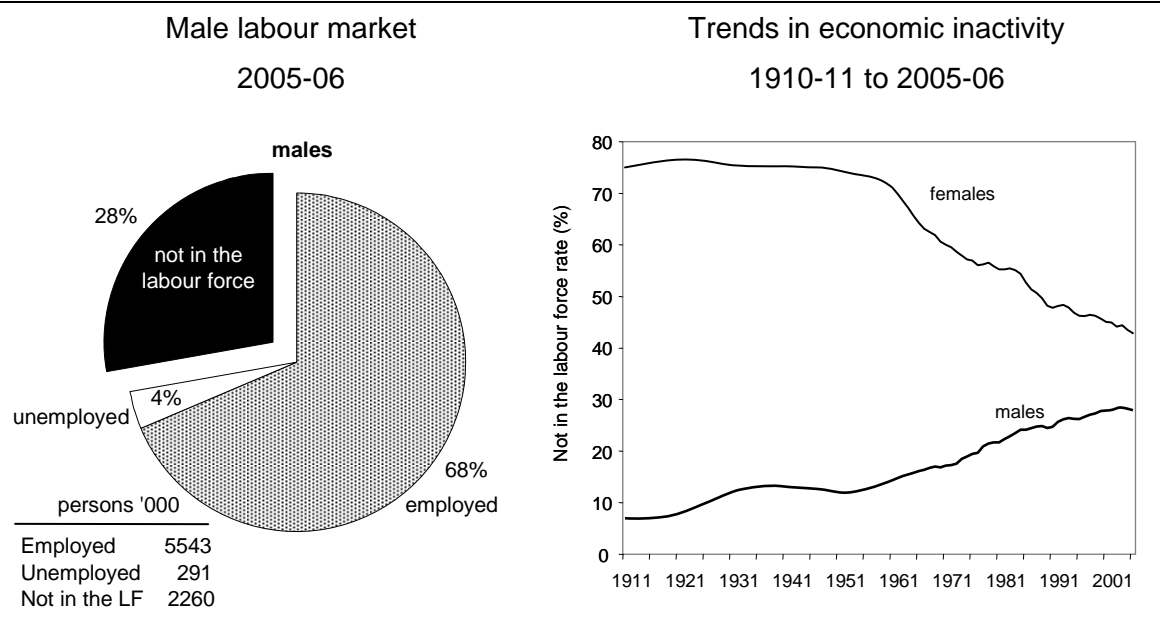
OVERVIEW

Overview

They have been called the invisible men. Of the 8 million Australian males in the adult male civilian population in 2005-06, at any one time over 2.2 million or nearly 30 per cent were outside the labour force (economically ‘inactive’) — neither working nor looking for work (figure 1). These are people whose engagement with the labour market has ceased, in many cases for the rest of their lives. (In contrast, the unemployed are still counted as economically ‘active’ because they are looking for a job and their search activities have effects on the labour market as a whole.)

Some economic inactivity is desirable, as people invest in education when young or seek leisure when older. But a large share of economic inactivity in Australia cannot be traced to retirement or education. Many prime aged males leave the labour force due to injury, ill-health, disability or premature ‘retirement’ and some people never enter the labour force during their lives at all. This imposes adverse economic and social impacts on the men concerned, requires costly social welfare support and has wider consequences for Australian society.

Figure 1 **Many men are outside the labour force**



This study examines who these men are, where they live, the trends in inactivity, the impacts of inactivity on them and Australians more generally. More critically, it considers the question of why, over the long run, there has been a four times

increase in the propensity for men to be outside the labour force, at the same time that female engagement in the labour force has dramatically increased (figure 1). While this working paper does not make policy recommendations, it does look at two areas of policy interest that may have a significant bearing on patterns of male disengagement from the labour force. The first of these is disability and the associated effects of the Disability Support Pension (DSP). The second are education policies targeted at the young, which have the intention of changing the life trajectory of men who might otherwise face high future risks of leaving the labour force.

Why men only? It was considered too unwieldy to attempt to cover both sexes in the one report when their experiences can be so markedly different. A subsequent working paper will consider female labour participation issues.

The ‘dynamics’ of inactivity

Ageing of the population has been part of the reason for climbing aggregate male inactivity rates. The pattern of inactivity by age follows a predictable lifecycle pattern, with considerably more inactivity at ages under 25 years (as males attend educational institutions) and then relatively low inactivity rates until age 55 years, after which exit from the labour force begins to drive up inactivity rates steeply (figure 2). By age 70 or more years, only about one in twenty men have any engagement with the labour force. The ageing of the male population has pushed more men into ages in which inactivity rates are high. But other factors still explain about three quarters of the long-run increase in the aggregate inactivity rate.

Changes in *age-specific* inactivity rates control for the effects of population ageing and show how substantially the labour market fortunes of men have shifted since the shocks hitting the Australian economy in the 1970s (figure 3). Prior to that only those males aged 65 or more years experienced any significantly increasing disengagement from the labour market over time — and that was due to the greater (arguably beneficial) capacity for retirement.

While these figures show how inactivity rates (and by deduction, labour force participation rates) of males have changed over time, they do not provide a picture of what has happened to the cohorts of males (the projected lifetime labour market engagement of people born in specific years). Lifetime economic inactivity can be derived residually as lifetime expectancy less work expectancy (average number of years spent in the labour force over a lifetime).

Figure 2 Age does weary us
Economic inactivity rates by age, males, 2005-06

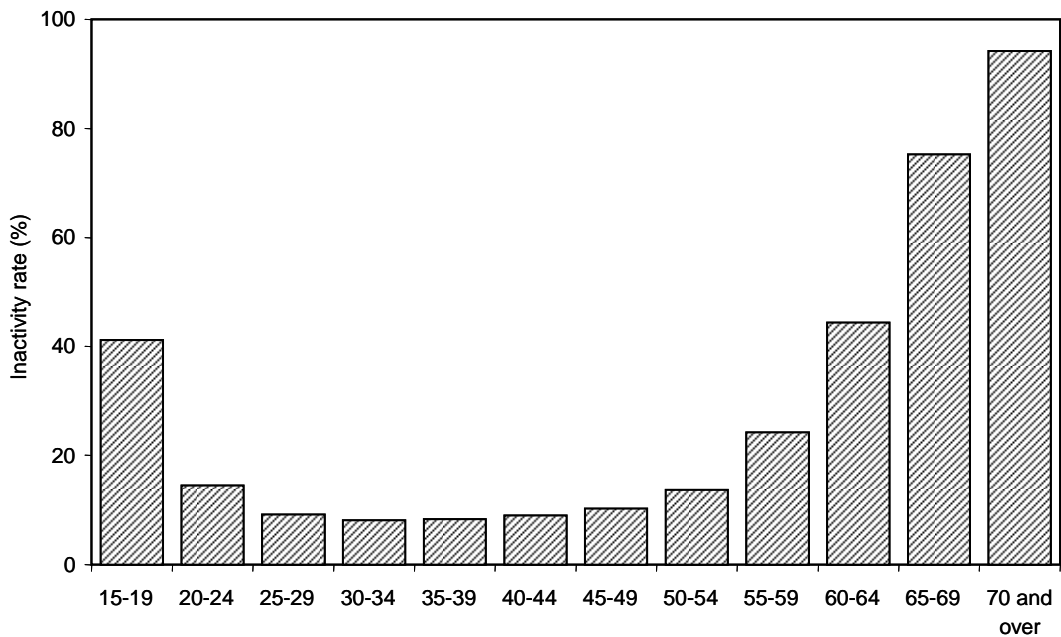
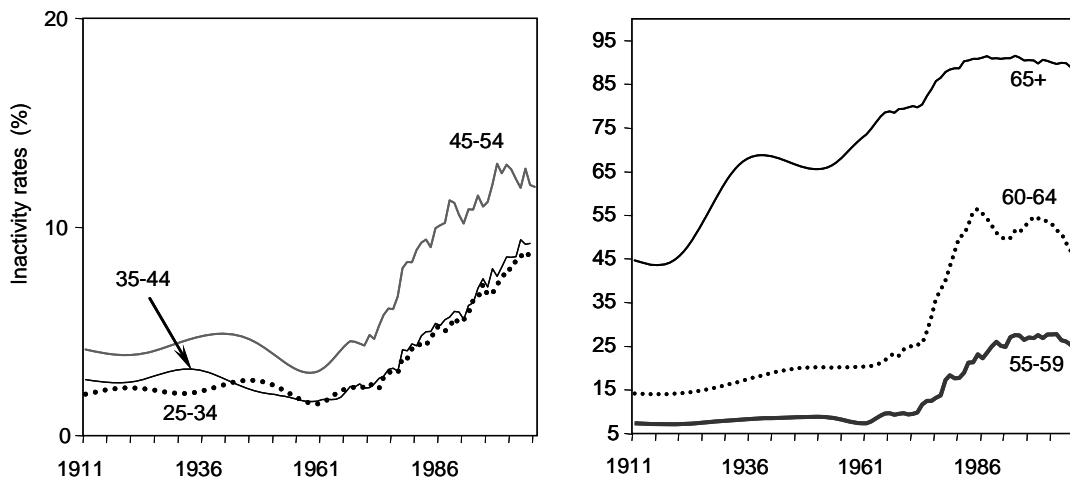


Figure 3 The 1970s had a protracted effect on the Australian labour market
Economic inactivity rates by age group, males, 1910-11 to 2005-06



Lifetime economic inactivity for those aged 15 years is projected to increase roughly threefold (from 9.4 to about 28 years) for males born in 2005 compared with the 1901 cohort — reflecting greater survival into old age and longer retirement periods (table 1). Work expectancy (from age 15 years) is projected to fall marginally from about 44 years to 42 years. Of the generations born after 1925, the ‘baby boomers’ are projected to have — by a small margin — the greatest

average number of years spent participating in labour markets from when they first could enter jobs at 15 years old.

The small changes in the number of years of work expectancy in successive generations may seem surprising given the large decreases in age-specific participation rates shown above. But these changes have been nearly completely offset by strong rises in survival rates — many contemporary males live to work another day.

The big change is in lifetime inactivity rates from 15 years, which have risen appreciably and have continued to rise with successive generations (table 1). For instance, ‘Generation Z’ is projected to have around eight more years of inactivity than the War generation.

These are *average* effects, which disguise an underlying polarisation of labour market experiences among men. What appears to have happened is that many men now have longer working lives than past generations, but that another group — the key interest group for this paper — have sporadic attachment to the labour force, even at the prime of what should be their working lives.

Table 1 Economic inactivity through the generations

<i>Birth cohorts</i>	<i>Average work expectancy at age 15 years</i>	<i>Average life expectancy</i>	<i>Average inactivity</i>	<i>Inactivity share of life</i>
	years	years	years	%
1901 Federation	44.2	53.6	9.4	17.6
1925–1946 War	42.6	62.8	20.2	32.1
1946–1964 Baby Boomers	43.3	67.1	23.7	35.3
1965–1979 Gen X	43.1	68.8	25.7	37.4
1980–2003 Gen Y	42.3	69.9	27.6	39.5
2004–2025 Gen Z	42.5	70.6	28.1	39.8

Who are they?

Economically inactive males represent a diverse group. Clearly age plays a big differentiating role in inactivity rates, as shown above. But what factors other than age are influential?

Unpartnered men are much more vulnerable to labour market withdrawal

Sometimes factors that appear to be drivers of male economic inactivity are really symptoms of other less readily observable features of the men concerned. A good

example is the apparent association between men's family status and engagement in labour markets. Those men who are single parents, live alone or, when older, still live with their parents or in a group house, have much higher rates of inactivity. For example, a man aged 45–54 years living alone is about four times more likely to be outside the labour force than an equivalently aged man who is married or has a partner. The same story holds over time. Since the late 1970s, the inactivity rate of non-partnered males has increased by more than 7 percentage points, whereas the rate for partnered males changed by only about 2 points.

However, marriage status per se is unlikely to cause economic inactivity rates:

- Males with better labour market prospects and more desirable traits are more likely to be chosen by female partners and to maintain a stable relationship.
- The incentive to work imposed by household-based asset and income tests used to determine eligibility for welfare benefits are greater for partnered males. Men with working partners or good household asset bases have strong incentives to work compared with their unpartnered equivalents.

The more you know, the more you can work

In snapshots at a given time (and for given ages), greater educational attainment rates are associated with higher participation rates and lower unemployment risk. For example, about one in twenty men with a postgraduate degree are not in the labour force, compared with around one in five men with year 10 or below educational attainment.

As discussed later, the linkages between educational attainment rates and labour force status have to be carefully interpreted. Some of the differences in labour market engagement can be ascribed to education, but some are due to the effects of the characteristics of people who choose (or are able) to acquire more education.

Indigenous Australians fare badly

Indigenous Australians fare particularly badly, especially in older prime age groups. For example, in comparison with other Australians, around one in three Indigenous men aged 45–54 years are out of the labour force, a rate about three times more than non-Indigenous Australians. The figures actually understate Indigenous Australians' real disengagement from the formal labour market, since people participating in Community Development Employment Projects are counted as in the labour force. High Indigenous inactivity rates mainly reflect lower educational attainment, limited access to jobs in remote areas combined with low mobility, poorer language skills and some other enduring socio-economic disadvantages.

Migrants are more vulnerable to labour market disengagement

Male migrants make up around 30 per cent of the Australian male population aged 15 years and over, so the extent to which they engage in the labour market has significant aggregate effects. They currently face nearly a ten percentage point higher level of economic inactivity than Australian-born males. Part of the reason for the participation gap is age, not ethnicity — migrants are, on average, older than the Australian born. But even at given ages, migrants have lower participation rates than the Australian born.

The inactivity gap has widened over time. Indeed, in the late 1970s, male migrants had lower inactivity rates than Australian-born males. There are several factors behind this widening gulf:

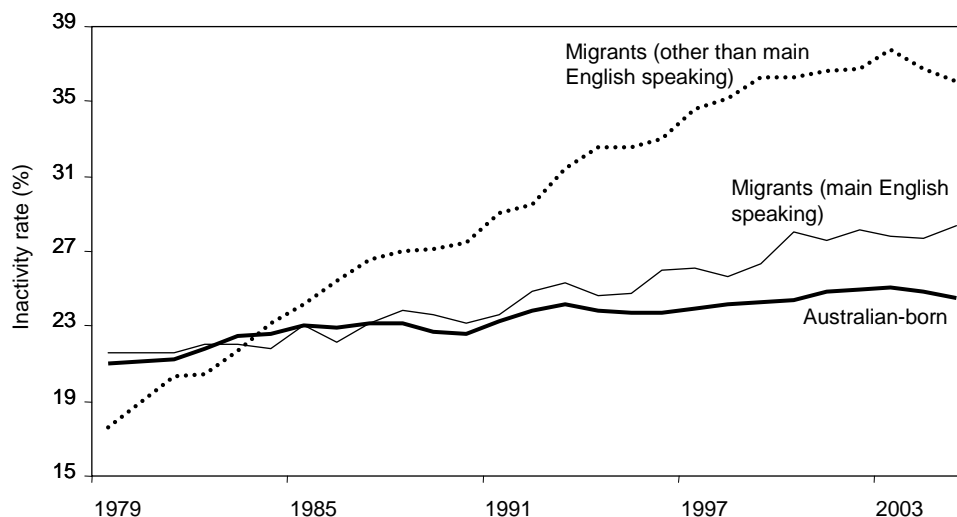
- Given their different age structures, population ageing has affected migrant males more than Australian-born males.
- At the age-specific level, the main factor is the reduced tolerance of Australian labour markets for poor English proficiency, inexperience or low educational attainment, which are more commonly characteristics of migrants. For example, in 2001 the labour market participation disadvantage associated with poor English proficiency increased by nearly 30 points between 1986 and 2001. It is this factor that, to a large extent, explains the languishing labour market fortunes of migrants from countries where English is not the dominant language (figure 4). Structural changes in the economy away from lower skill jobs where English proficiency is not required may explain their greater vulnerability.

Where do they live?

Economically inactive men are not distributed evenly throughout Australia, but tend to be grouped together spatially. Despite the potential for significant labour mobility between States and Territories, there remain significant variations between jurisdictions in the share of males who are economically inactive. At the extremes are the smaller jurisdictions — Tasmania with about one third of its male adult civilian population outside the labour force, and Western Australia and the Australian Capital Territory with less than one quarter. About half of the differences reflect the varying age structures of the populations, but other factors, like educational attainment rates and State growth patterns are also likely to be important. (The variations between the States were much smaller 25 years ago.)

Figure 4 **Inactivity rates have doubled for migrants from non-English speaking countries**

Males, 1979–2005



A more disaggregated regional picture of inactivity rates for males aged 35–44 and 65+ years does not suggest any single factor shaping the spatial pattern of male economic inactivity across Australia.

- There is a limited association between remoteness and economic inactivity.
- There is a tendency for the non-metropolitan south eastern coastal fringes of Australia to have higher levels of economic inactivity among males of prime and ‘old’ ages. For prime age males this may reflect the fact that the impetus to move is lower for men outside the labour force if the local environment is attractive, while for older males it is likely to reflect retirement to the coast. Among old males, spatial variations are much smaller than among younger males, because most males over 65, wherever they are, have left the labour force.
- Areas of greater disadvantage (indicated by higher unemployment rates) have significantly higher inactivity rates — such as Western Adelaide in South Australia, Canterbury-Bankstown in Sydney, the Wide Bay-Burnett Statistical Region in Queensland, and the Southern Statistical Region in Tasmania. At the finer geographic level, the link between unemployment rates and high inactivity rates persists.

While there is a clear causal link between unemployment and subsequent high inactivity rates in men, the fact that the unemployed and inactive are often found together in the same locations — ‘pooling of the poor’ — is probably mostly a reflection of local housing markets (including public housing availability), school location and other local amenity values. Concentration of the disadvantaged has adverse impacts:

-
- Many community members will be receiving welfare payments as a major source of income (even after retirement benefits are excluded). There were a significant number of areas in Sydney alone where around one in seven *pre-retirement* adult residents derived their main livelihood from welfare payments rather than work in 2001. In several locations, this was closer to one in five.
 - Local community expectations about work may become distorted by widespread local receipt of such government benefits. The norms resulting from these, accompanied by community poverty generally, may erode social capital that is useful for acquiring jobs and for creating good communities.
 - Social problems associated with low income and poor prospects may be magnified through agglomeration. For example, children whose peers are delinquent are more likely to become delinquent and to experience longer periods of delinquency.
 - Educational opportunities may be worse because children are drawn disproportionately from disadvantaged backgrounds, which further increases the likelihood that families aspiring to better education leave such areas.

Why are men not in the labour force?

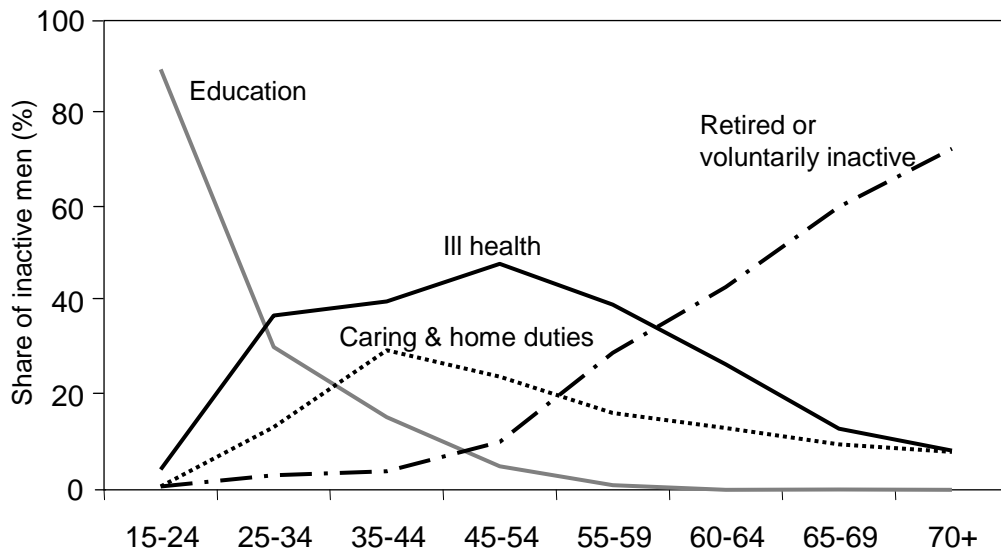
The reasons for economic inactivity vary with lifecycle needs and events (figure 5). Educational participation, ill health (own injury/illness and disability/handicap) and retirement are the major reasons for being out of the labour force, occupying respectively the first, middle and later parts of life respectively. For men aged 15-64 years — so excluding the main retirement ages — ill health is the major overall reason for economic inactivity (and has grown in significance over time).

But the growing role played by men in unpaid ‘domestic’ duties (home duties and childcare; and looking after ill or disabled people) is not well known. In September 2005, there were around 160 000 men aged 15–69 years engaged in this role. Males engaged in such domestic tasks accounted for nearly 30 per cent of the absence of males aged 35–44 years from the labour force and about one quarter of the absence of those aged 45–54 years. The greater male role in this area represents a marked shift from even the recent past.

One factor is missing from the official measures of inactivity — hidden activity. There is a widespread belief that many notionally ‘inactive’ people are really very active indeed, but in the uncounted, informal part of the economy, where their income is untaxed or does not affect the receipt of welfare benefits paid to them. Some estimates have put the size of the ‘shadow’ economy at 14 to 15 per cent of GDP, which would soak up many of the ostensibly inactive. However, these

estimates do not withstand rigorous scrutiny — the true size of the shadow economy is probably about one tenth of these high estimates and is unlikely to play a major role in explaining the significant numbers of inactive men in Australia.

Figure 5 **Why do men say they are inactive?**
2005



Some of the reasons for inactivity are benign or positive. People want leisure, education has long-term benefits for individuals and societies, and men can perform valuable caring roles. On the other hand, there are some problematic features of even these apparently benign aspects of economic inactivity.

- Time spent in education may sometimes really reflect lack of labour market opportunities. For example, enrolments swell during recessions.
- Retirement is affected by incentives not to work, such as high marginal tax rates after receipt of retirement benefits or difficulties in finding jobs for mature aged men. It also disguises other more stigmatised reasons for labour market disengagement, like disability and illness, which is known to increase significantly at older ages, though not appearing to be important in self-assessed reasons for inactivity. The implication of this is that were retirement incentives to be reduced, it would improve participation, but it would also call into play the displaced effects of disability, which would then provide a bigger constraint on participation than suggested by figure 5.

Overwhelmingly, the most socially and economically challenging aspect of economic inactivity by males is the significance of illness and disability as the motivation for detachment from the labour market. Disability is particularly enduring as a reason for detachment compared with other reasons. More than

90 per cent of males citing disability as the reason for not being in the labour force had experienced a spell out of the labour force of over a year. And the importance of disability and illness as the reason for labour market detachment has doubled over the last 30 years. In the early 1970s, less than 3 per cent of all men aged 15–69 years were outside the labour force for this reason, while it was around 6 per cent in 2005.

Impacts of economic inactivity

The key to understanding the net economic costs of labour market inactivity is a comparison of outcomes under current inactivity rates with a realistic alternative that takes account of the fact that it will not be possible to re-engage all inactive men, nor for them to achieve the productivity rates of existing labour market ‘insiders’. It must also take account of the fact that re-engagement will take many years to materialise, reflecting the gradual effects of policies aimed at current and future cohorts of boys and young men to reduce their lifetime inactivity rates. This is why a long timeframe has been used in the analysis. Nevertheless the gains from re-engagement and, therefore, the costs of inactivity are substantial.

- Simulations suggest possible forgone economic output of male inactivity over the next 45 years of cumulatively around \$2150 billion (in non-discounted form). In 2050-51 alone, the loss of output associated with male inactivity would be around \$95 billion or about \$3300 per capita.
- There would be budget savings associated with reduced welfare payments, as DSP rates fell. For example, in one reasonable simulation the budget saving (relative to the base case in that year) would be around \$4.5 billion in 2003-04 prices in 2050-51 alone and an economic saving due to reducing the inefficiency burden of taxes of around \$ 0.9 to \$1.4 billion in that year.

However, an equally important dimension of impact is social. On average, economically inactive men, especially those on benefits, face a more severe range of socio-economic disadvantages compared with their employed counterparts: poverty, family breakdown, poorer physical and mental health, lower wellbeing, and skill loss. They are more likely to have come from disadvantaged families.

What is less clear is the extent to which these traits are an effect of their economic inactivity. Instead, they themselves may cause (or be associated with other factors that precipitate) economic inactivity. In some circumstances, such as mental health, skill loss and poverty, there is reasonably clear evidence to suggest that involuntary economic inactivity is inimical to men. But it is also clear that the causal pathways go both ways. For example, many economically inactive men have pre-existing

traits that made them vulnerable to both labour market withdrawal and to lower levels of wellbeing.

Some policy levers

The high, growing and persistent rates of male inactivity have elicited major policy initiatives by governments around the world, including in Australia, to moderate their levels and effects. These take many forms, such as retirement, mature age training and health policies. This paper concentrates on two policy areas that may be particularly relevant to the poor outcomes for prime aged males in Australia:

- the rising significance of the Disability Support Pension, which mainly affects males aged over 40 years old; and
- at the opposite end of the age spectrum, the potentially scarring labour market effects of inadequate schooling of boys, which have debilitating effects during the rest of their lives.

The purpose here is obviously not to resolve these policy issues, but to provide analytical information that may be useful to policymakers in these areas.

The Disability Support Pension

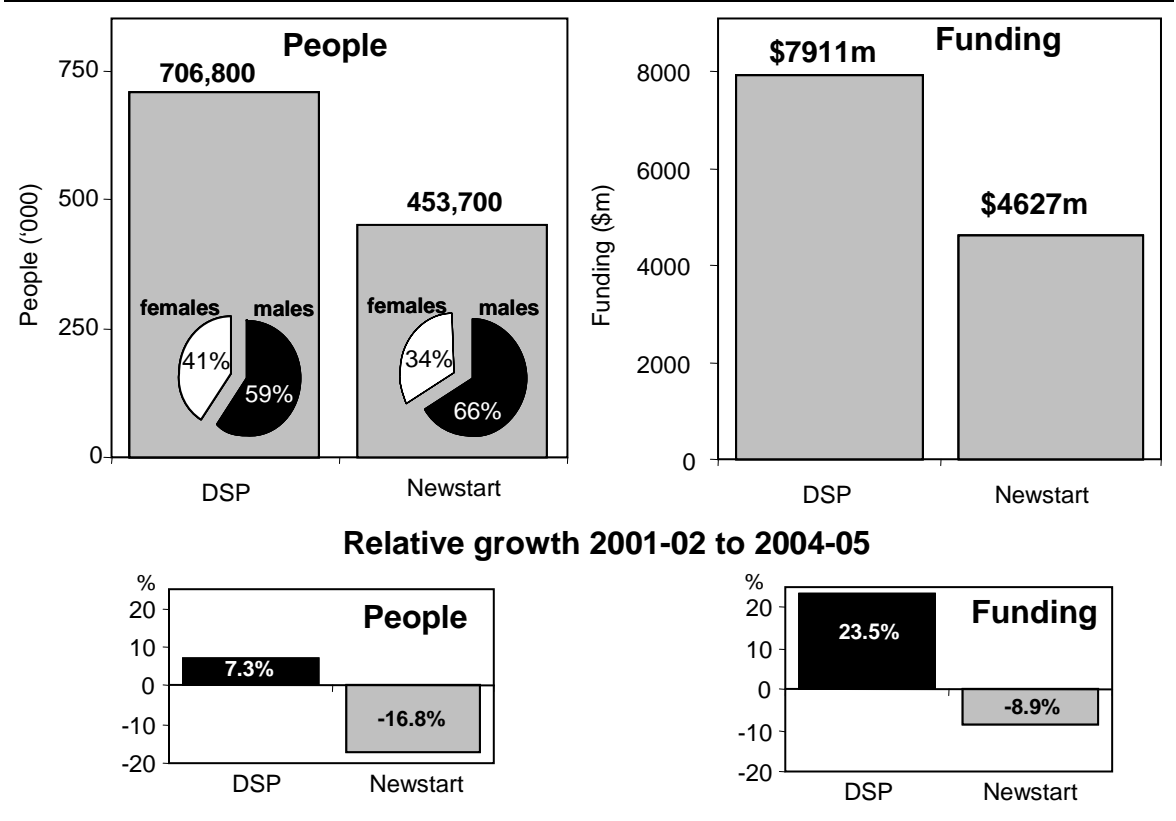
The Disability Support Pension has proved an increasingly major and, from a taxpayer perspective, costly destination for economically inactive men with disabilities:

- There were around 420 000 men aged 16 years and over on DSP at the end of 2005, significantly higher than female numbers (less than 290 000). While unemployment payments and numbers have fallen since 2001-02, DSP has risen strongly (though changes in eligibility and assessment from mid-2006 may arrest that trend).
- Around half of all inactive men aged 25–64 years old receive the DSP.
- The budgetary cost of providing the DSP to both sexes was nearing \$8 billion in 2004-05 (figure 6). This was significantly higher than the principal unemployment allowance (Newstart payments) of \$4.6 billion.

A major reason for the growth of the DSP is the long duration spent on benefits — about seven years, usually preceded by an average further two years on other benefits. The main reason for leaving the DSP is to access the Age Pension at age 65 years. Few leave the DSP to take a job and even fewer to actively search for a job (unemployment). In fact, leaving the DSP due to death is more likely than

leaving it through re-engagement with the labour force. This reflects the fact that age-standardised mortality rates among DSP beneficiaries are about four times those of the general population — underlining their seriously disadvantaged status.

Figure 6 DSP compared with Newstart Allowance
2004-05



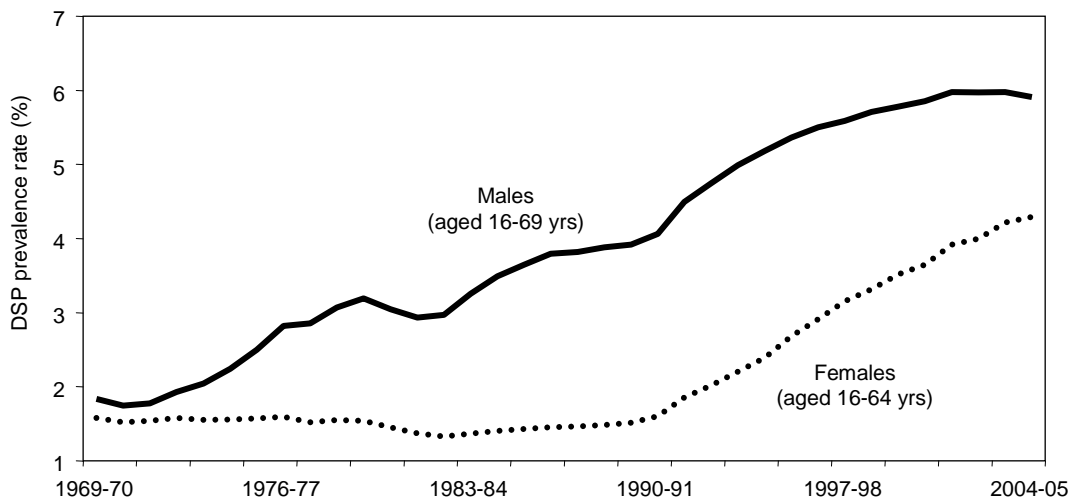
However, high DSP rates are not just about underlying health conditions. First, many people with disabilities can participate in the labour market if the social and work environment facilitates their involvement. That there is better potential for this is suggested by the fact that only about one-third of DSP beneficiaries have profound disabilities and the remaining two-thirds have moderate or lesser core limitations.

Second, people with disabilities in some OECD countries have much higher participation and employment rates than in Australia. And across OECD countries there is a weak relationship between disability prevalence and the share of the population on disability support.

Finally, rates of underlying age-specific disability in the Australian population do not appear to have risen over the long term, yet DSP rates have soared (figure 7). Population ageing does not explain the rise, since age-specific DSP rates have also risen strongly. This suggests that many men with disabilities currently on DSP must

have at one time been inherently employable, and something in the economic or social environment, rather than their disabilities per se, must have affected their job success. This is despite the fact that other social and economic changes, such as more sophisticated aids and anti-discrimination provisions, should have encouraged the greater integration of people with disabilities.

Figure 7 The rise and rise of the DSP
1969-70 to 2004-05



What might these factors be? The most plausible explanation for the growth of DSP is that it reflects changes in the receptiveness of the economy to employment of people with lower skills and disabilities, accentuated by the incentives posed by the welfare system.

With technological change favouring higher skilled jobs and the growth of the service sector, the long-run structure of the economy has shifted away from jobs in which unskilled, less language-proficient, males specialise. For example, blue collar jobs accounted for 63 per cent of male jobs in 1971 and 46 per cent in 2000. People with disabilities are likely to be particularly affected by these changes, due to their disabilities and their socio-economic traits (a higher likelihood of migrant status with poorer English proficiency, greater age, and lower educational attainment). About one in five of people with disabilities attended school only to year 8 or less, compared with less than one in twenty for people with no reported disability. The structural changes in the economy have pushed down the ratio of likely wages to welfare benefits for unskilled males, accentuating the adverse incentive effects observed above.

Incentives are also likely to play an important role. DSP benefit rates exceed unemployment benefits and have no job search requirements. Their relative generosity has generally increased since the 1980s. Accordingly, over the longer-

run, unemployed men with disabilities have found DSP increasingly more attractive than Newstart allowances. This benefit ‘gap’ also discourages any move back from DSP to Newstart, even if disability or job prospects improve. It may also discourage a man on DSP from getting a job with income high enough to make them ineligible for the DSP (you can work on DSP and retain benefits, but only to a certain wage level), since subsequent loss of that job may put them at risk of being placed back on Newstart.

The evidence points to two other culprits, which also appear to play a role.

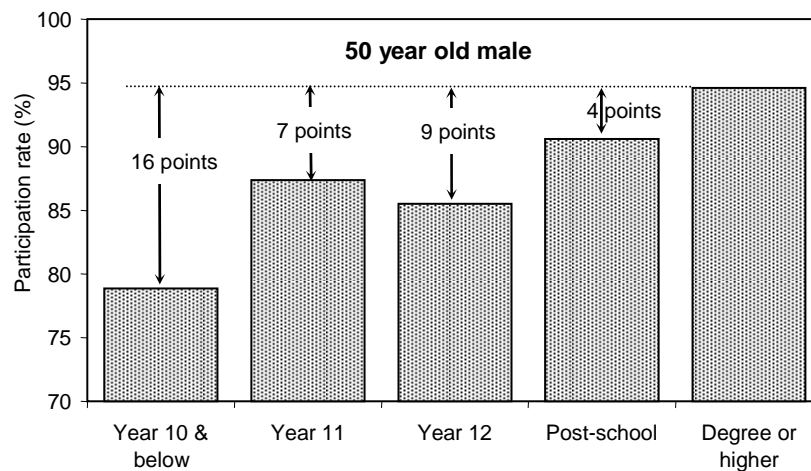
- There is a strong link between economic downturns and the inflows into the DSP, but no cyclical link for outflows. The stock of pensioners on the DSP is like a deep pool with a relatively small, but cyclically responsive, inflow and a small sluggish and unresponsive outflow. Business downturns increase the inflow and the pool fills, dissipating only slowly over time. This explains some of the inertia in the DSP rates, but cannot explain the long-run increase.
- The administration and eligibility arrangements for disability support have varied over time, sometimes favouring high entry. However, recent policy measures have tightened eligibility. This will decrease the DSP inflow rate (but not the outflow rate), placing downward pressure on DSP numbers.

What difference might education make?

Boys staying on at school for longer grow into men who typically remain active in the labour force at older ages (figure 8). This simple equation, matched by the observation that many boys still leave school early in Australia, has led to the frequently made suggestion that mandatory schooling should be extended. And indeed, increasingly that has been the course followed in Australia, with most States increasing the school leaving age to 16 or 17 years old in an effort to increase retention to year 12 and ultimately to achieve better lifetime outcomes.

It is likely that extended schooling will have some benefits. However, the results achieved by voluntary school completers are unlikely to be replicated through involuntary school extension for the boys who currently do not choose to complete school. Students with poorer ability or a non-academic orientation are currently less likely to choose to stay on at school, and these characteristics will play a role, independent from their low education level, in shaping their future labour force involvement.

Figure 8 **Getting through school appears to pay big dividends**



Given the different traits of non-completers, the goal is to assess the relationship between additional schooling and labour market outcomes after controlling for the various individual traits that may confound the relationship. There are several ways of doing this, none perfect, but they generally point to much lower labour market benefits from additional schooling for the current group of non-completers than might be inferred from figure 8. For example:

- using simple controls for the characteristics of students, such as for their initial numeracy competencies, it was found that males who left before even commencing year 11 had future labour market prospects that were not significantly different from those of year 12 completers who did not continue with tertiary education;
- those students with traits that imply a low ex ante probability of completing school who nevertheless go onto complete the maximum 12 years do relatively poorly in labour markets; and
- analysis that matched early-leavers with students having similar traits who stayed on for years 11 and 12 found negligible benefits of staying on.

Two factors degrade the effectiveness of additional schooling for those with a high propensity for early leaving. First, while the reason that these students are different from others is partly related to their inherent abilities, it also reflects the past effectiveness of their schooling. If they have failed to develop adequate numeracy or literacy or have been alienated by school cultures prior to year 11, then the value of further investments are likely to be reduced. So what occurs prior to year 11 can be important in determining the returns in the labour participation rates from extension of schooling past year 10.

Second, what occurs in the mandated extension period is also likely to be important, and may need to be adapted to the needs of hitherto reluctant stayers.

This paper reviews a range of initiatives in both areas. For example, new literacy programs appear to have elicited improvements in year 7 reading. It is not yet certain how big the ultimate benefits will be.

Quite apart from changing the nature of school experiences for the non-academically inclined, some States offer alternative pathways to extended schooling, such as a full-time job or training or education outside schools. Both are critical opportunities for some sub-groups of young people because they take them into a world outside school, with richer interactions with adults and support broader learning environments.

1 Introduction

1.1 What this report is about

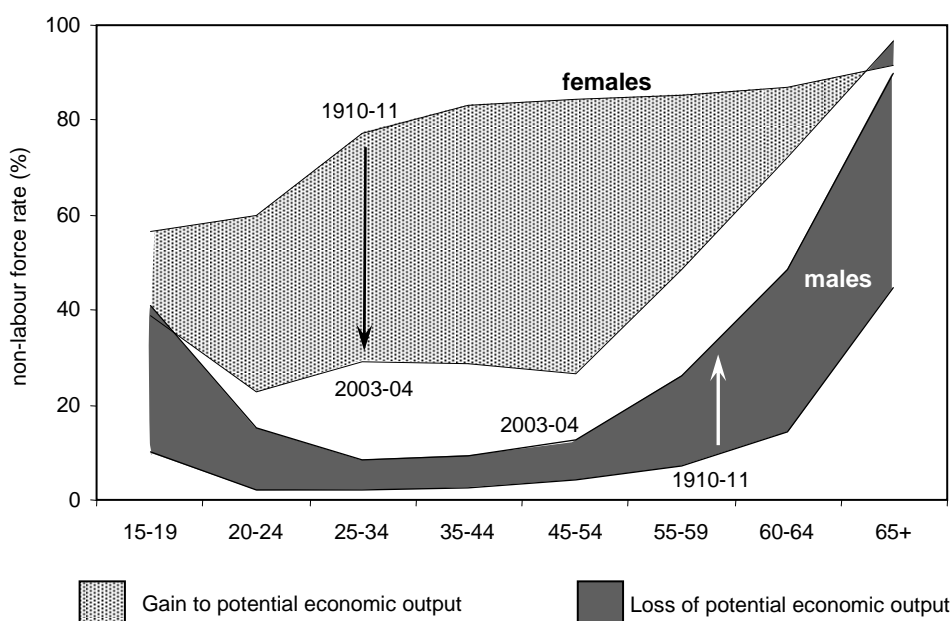
This report is about the increasingly large group of men who do not have jobs or are not looking for one. These men have left (or never entered) the labour force for a variety of reasons — education, discouragement when looking for a job, illness and disability, leisure and retirement. Many receive government-funded welfare benefits, especially those on the Age Pension or the Disability Support Pension. The ageing of Australia’s population looks set to increase the proportion of men unengaged with the world of work (PC 2005).

Against this background, policymakers are therefore increasingly considering options that might offset the effects of ageing and help boost labour force participation. It is useful, in that context, to know more about:

- who these men are;
- where they live;
- what has happened to them over time;
- how non-participation affects them;
- the various forces that have led to their exit from the labour market; and
- some of the policies that might have effects on labour market engagement;

This report has several defining characteristics. First, it is mainly just about men. This is not because the comparable situation for women is not equally deserving of critical analysis. Rather, there are many gender-specific factors that are crucial to understanding patterns of non-participation in labour markets. This is highlighted by the fact that the long-run historical trend for females has seen, to date, much greater labour market engagement, not less (figure 1.1). It was considered too unwieldy to attempt cover both sexes in the one report when their experiences can be so markedly different. (The Commission is currently undertaking a separate study of female labour participation issues.) That said, some of the material — for example that relating to the Disability Support Pension — is equally applicable to both sexes.

Figure 1.1 Inactivity rates have fallen for females and risen for males
1910-11 to 2003-04



Data source: PC 2005.

Second, it concentrates on men whose main reason for leaving the labour market is not retirement. Retirement is, in its own right, a highly policy-relevant question, and a range of initiatives seeking to change work incentives in older age and to address age discrimination have been put in place in recent years. In any case, retirement is often seen positively as well deserved leisure and is not a socially stigmatised activity, as some other forms of labour market exits are sometimes perceived to be. However, in its early parts, the report does consider retirees and examines the role of ageing in shaping aggregate male participation rates.

Third, it does not make policy recommendations as that would have required wider public consultation than was practicable. That said, the report has benefited substantially from comments and feedback on various factual aspects from agencies such as the OECD, the Australian Bureau of Statistics and the Department of Employment and Workplace Relations. The report, nevertheless, attempts to draw some lessons from the existing literature and past policy experiences. In particular, it accentuates empirical issues relating to two policy approaches that have been put forward as relevant to the engagement of prime aged males. These are the role of injury/disability and the Disability Support Pension (chapters 6 and 8); and the role of education as a way of insulating men from future risks of labour market disengagement (chapters 9 and 10).

The next section defines ‘non participation’, while the following two sections give a snapshot of those outside the labour force and an outline of the structure of this report.

1.2 What does ‘outside the labour force’ mean?

The labour force is an abstract concept that relates to the size of the economically active population (figure 1.2). It primarily comprises the employed¹, who, during a specified time, contribute to the production of goods and services as measured by the national accounts (these are those counted as part of gross domestic product or GDP). It also includes those not in jobs, but immediately available to work and contribute to GDP (the ‘unemployed’).²

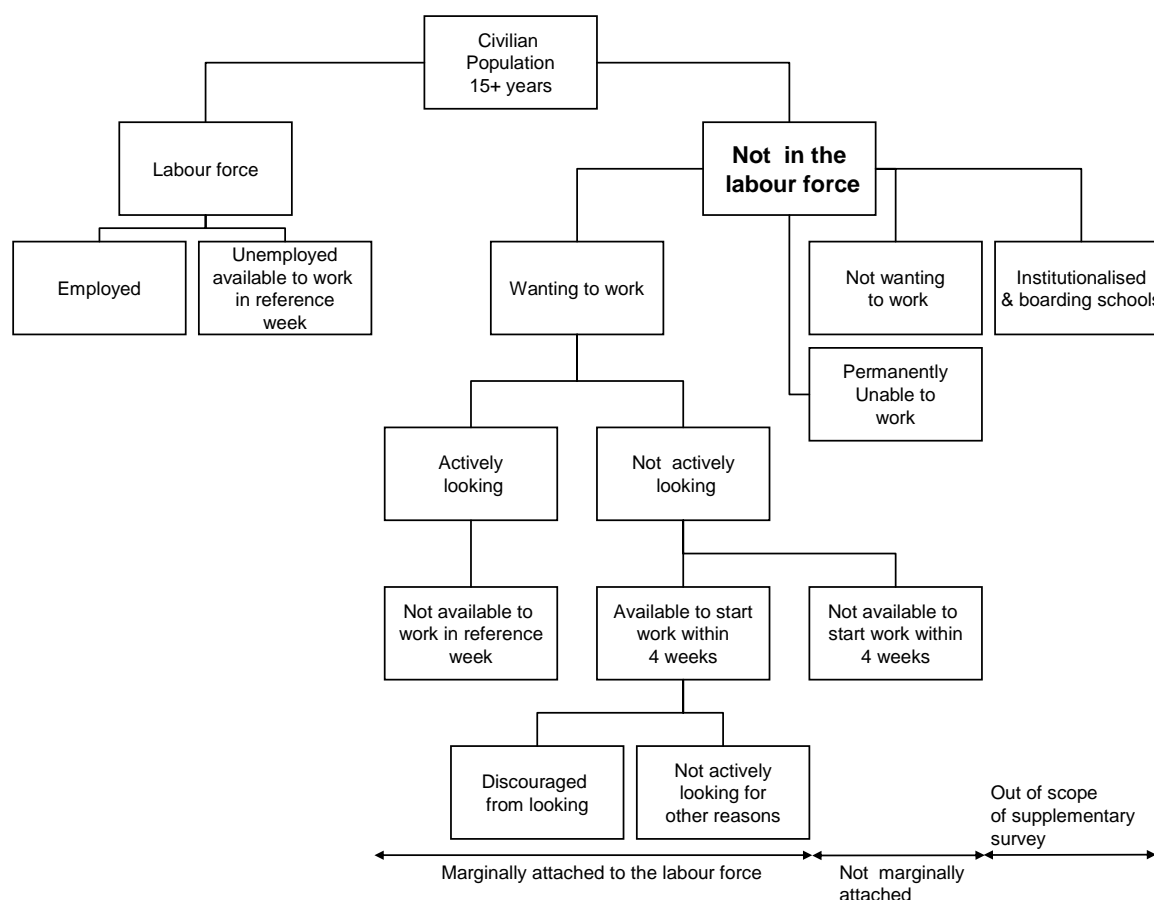
All those in the adult civilian population apart from these two groups are defined as being ‘not in the labour force’ — these are the *economically inactive*. Concepts such as the ‘labour force’ and ‘not in the labour force’ are statistical conventions that, at the margin, separate people who may be quite alike in their labour market experiences and aspirations. Accordingly, some people defined as ‘not in the labour force’ may still perceive themselves as either working or unemployed.

For example, those involved in the production of non-market goods and services, such as volunteering, caring for children, the disabled and the old, and other unpaid household production are clearly involved in productive activities and may well see themselves as working. However, were the concept of employment and production to be expanded to include unpaid household services and volunteering, no one would be defined as unemployed. As noted by the ABS (2004b), the statistics aimed at measuring whether labour markets are functioning well would then become meaningless. Nevertheless, when assessing the implications of changing patterns of non-labour force participation it is important not to categorise disengagement from the labour force as necessarily implying no productive contributions to society.

¹ The employed are those aged 15 years or more that spend at least one hour of the survey reference week working for pay, profit, commission or payment in kind, or worked at least one hour or more without pay for a family business or farm. A person on holiday, sick leave, on strike, or (temporary) worker’s compensation is still measured as employed.

² An unemployed person is someone aged 15 years or more currently not in a job, but who had actively looked for work in the past four weeks and was available to start work immediately (within the reference week).

Figure 1.2 The statistical framework for persons not in the labour force^a



^a The population from which labour force status is calculated also *excludes* people in the external territories, members of the permanent defence forces; certain diplomatic personnel of overseas governments; overseas residents in Australia; and members of non-Australian defence forces (and their dependants) stationed in Australia. Institutionalised people are counted as 'not in the labour force' in the monthly ABS labour force survey, but excluded from the scope of the annual supplementary survey used to determine marginal attachment. The supplementary survey also excludes from its scope various remote areas and people aged 70 or more years.

Data source: ABS 2004, *Labour Statistics: Concepts, Sources and Methods*, Cat. No. 6102.0.55.001, August and ABS 2005, *Persons not in the Labour Force, Australia*, Cat. No. 6220.0, March.

While most males outside the labour force have few links to the labour market,³ some are marginally attached to the labour market and may perceive themselves as unemployed. These marginally attached comprise two groups.

- They may be actively looking for work, but unavailable to start immediately.⁴ For example, a person looking for a job, unable to commence a job this week,

³ They are keeping house, in education, suffering an illness or disability, or retired.

⁴ Another group of people ('future starters') who had not actively looked for work because they were waiting to start a new job within four weeks from the end of the survey reference week, and could have started in the reference week *if* the job had been available then are now classified by

but able to start in two weeks time would be categorised as ‘not in the labour force’. In contrast, someone in identical circumstances able to start work within a week would be classed as ‘in the labour force’.

- A person may be available to start immediately, but is not actively looking any more because they are discouraged by low employment prospects (‘discouraged’ workers).⁵ These may be similar to some unemployed people whose search efforts are low.

Both groups are defined as outside the labour force, but maintain (tenuous) links to the job market.

Just as some people defined as not in the labour force may see themselves as actually in it, some people in it may more closely identify with people outside the labour force. For instance, a person in receipt of welfare benefits, working just one hour a week but unable to work longer, may see themselves as similar to a welfare recipient working zero hours — though the first is categorised as in the labour force and the second is not.

The concepts also have the limitation that sometimes policies to increase labour supply focus on people not in the labour force as the main target group, when policy could equally be applied to increasing hours of work of underemployed people or of prolonging labour supply by those considering exit from the labour force.

Nevertheless, for practicality, some thresholds must be used to define labour force status — and this report has chosen the conventional definitions. Different thresholds can be used, with wider or narrower scope for measuring economic inactivity.

the ABS as unemployed. Prior to February 2004, these persons were classified as not in the labour force. They were re-classified in line with International Labour Organisation guidelines. The change relates only to a small group of persons (around 15 000 in each month).

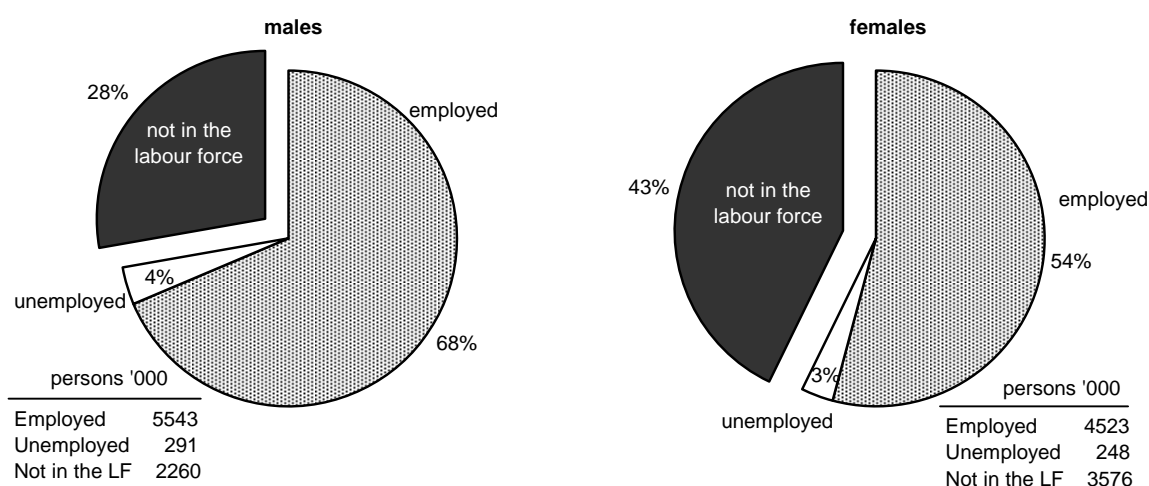
⁵ Discouraged workers are those that want work, are available for work, but not actively looking any more because of specific reasons they give about their weak employment prospects. The specific reasons used by the ABS to identify discouraged workers are that jobseekers were seen as too young or old by employers; lacked the right skills or education; faced difficulties because of language or ethnic background; and there were no jobs in their locality or line of work or no jobs available at all. If they gave other reasons for not looking, the ABS does not categorise them as discouraged.

1.3 A snapshot of non-participation in the labour force

A large number of Australian men currently do not participate in the labour force — the economically ‘inactive’. This section provides a snapshot of those who do not participate.

Of the 8 million males in the adult male civilian population (those aged 15 years and over), at any one time, over 2.2 million or nearly 30 per cent were not active economically in 2005-06 (figure 1.3).⁶ Men, nevertheless, have more formal involvement in the labour market than women, of whom around 3.6 million (or nearly 45 per cent of the civilian female population) are outside the counted labour market.

Figure 1.3 **The contemporary Australian labour market**
2005-06^a



^a Average of monthly data over the fiscal year.

Data source: ABS, *The Labour Force, Australia* (Cat. No. 6202.0.55.001 Table 03. Labour force status by Sex).

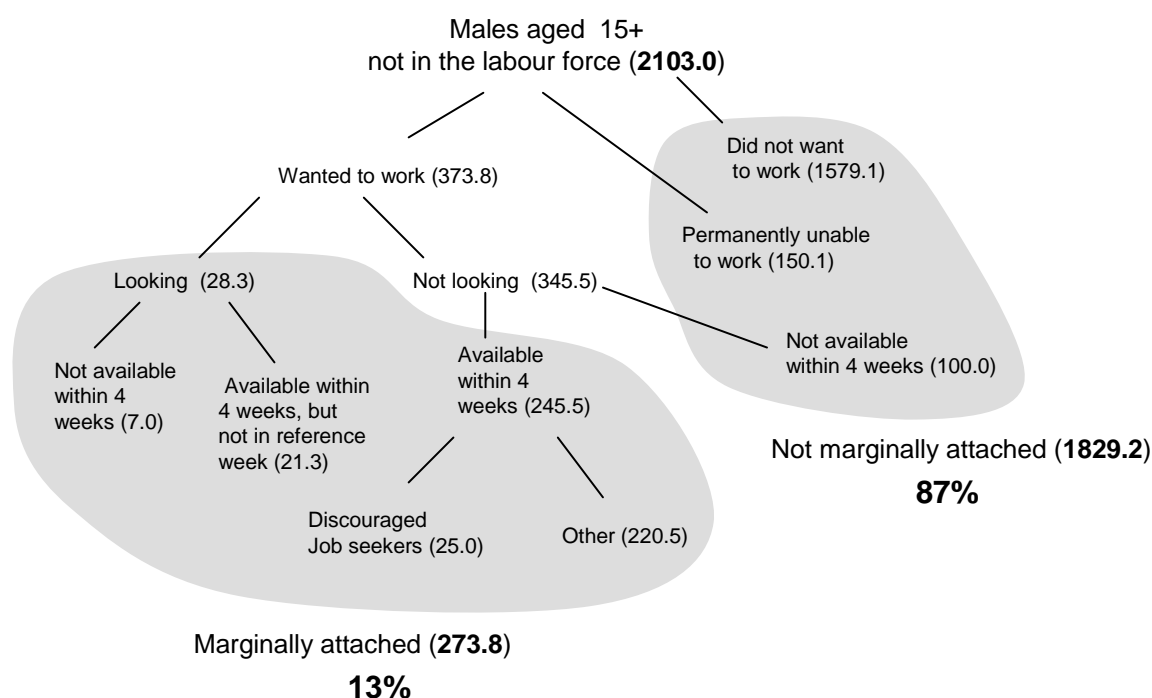
Of those males aged 15 years and over who are not in the labour force, around 87 per cent have effectively no attachment to the labour force. Most of this group indicated that they did not want to work or were permanently unable to work

⁶ The ABS’s Labour Force Survey is regarded as the most appropriate basis for estimating inactivity rates. Unlike alternatives, such as the Population Census, which is only run 5 yearly, it also has the advantage of monthly ongoing estimates. Even so, the differences between the two sources are relatively small. For example, the male inactivity rate (ignoring ‘not stated’ responses from the denominator) from the 2001 census was 29.0 per cent compared with the Labour Force estimate of 28.2 per cent in June 2001.

(figure 1.4). The other 13 per cent were ‘marginally attached’ to the labour force. ‘Discouraged’ male jobseekers are a small subset of this group and comprise around one per cent of total males not in the labour force.

The marginally attached are likely to represent the most responsive group to policies aimed at increasing labour force participation. But their successful integration will not make a big dent in the size of the group outside the labour force. A theme of this report is that this implies that efforts to reduce inactivity rates will often have to assume ‘dynamic’ forms. Such policies would aim to deal with the factors that precipitate the *premature exit* of males from the labour force, rather than coaxing the relatively small group of responsive males back into activity.

Figure 1.4 **Labour market orientation of males outside the labour force**
September 2005, males aged 15 years and over^a



^a Numbers reported are thousands of people. These data relate to information collected as part of the supplement to the labour force survey in September 2005. It should be noted that the data for September 2005 represents a break in the series, which formerly excluded ages from 70+. This change has significantly decreased the relative importance of marginally attached males (were the old statistical scope to be used, marginally attached males would represent about 19 per cent of those outside the labour force). The present survey still excludes some groups, such as institutionalised populations in jails, hospitals and nursing homes. Were the missing groups to be included, it would further decrease the relative importance of the marginally attached.

Data source: ABS 2006, *Persons not in the Labour Force, Australia*, Cat. No. 6220.0, March.

What's the difference between the 'prevalence', 'experience' and 'incidence' of inactivity?

Most ABS labour force surveys assess labour force status during a reference week, the so-called '*point prevalence*' of inactivity. This provides a measure of the proportion of men who are inactive at a point in time. While a point prevalence measure is useful, it does not take account of the fact that the stock of inactive men observed at any time is a reflection of two factors — first, the number of new episodes of inactivity over a period (the '*incidence*') and second, the duration of inactivity. People regularly shift between labour force states over time. For example, while there were 2.204 million inactive males in both April and December 2005, many of them will be different people because some men inactive in April are active by December, while some active in April are inactive by December. The rate of new cases of inactivity is relatively high (table 1.1).

Table 1.1 **A year in a life: male experience of economic inactivity**
Males aged 15–69 years, year ending February 2005^a

<i>Experience of inactivity</i>	<i>1 to < 4 weeks</i>	<i>4 to < 13 weeks</i>	<i>13 to < 26 weeks</i>	<i>26 to < 39 weeks</i>	<i>39 to < 52 weeks</i>	<i>52 weeks</i>	<i>Total</i>
	'000	'000	'000	'000	'000	'000	'000
Males not in the labour force during the preceding year	422.6	460.2	170.4	161.8	265.5	1081.9	2562.4
Share of inactivity experience	16.5	18.0	6.7	6.3	10.4	42.2	100.0

^aThese data are collected as part of a supplement to the usual labour force survey, and exclude from their scope various sub-populations, such as the institutionalised and males aged 70+ years. Caution should be taken in direct comparisons with the usual labour force estimates.

Source: ABS 2005, *Labour Force Experience, Australia*, Cat. 6206.0.

The continual turnover in males experiencing economic inactivity has three implications.

- The number of males experiencing economic inactivity over a year will be greater than the number inactive at a point in time. In the year to February 2005, around 2.6 million males aged 15–69 years experienced some period of economic inactivity, giving a so-called '*period prevalence*' rate of $2.56/7.14 = 36$ per cent (table 1.2). In comparison, the point estimate of the number of men inactive in February 2005 was only 1.6 million, giving the conventionally measured point prevalence rate of $1.59/7.19 = 22$ per cent. So the conventional measure is around 14 percentage points lower. This means that some of the economic and social difficulties of inactivity gauged from the more commonly

available snapshot data may be understated, since the number of inactive men is larger over a given year than suggested by snapshot estimates.

- On the other hand, it is likely that many of the social and economic problems associated with inactivity will depend on duration. For example, reductions in skill and motivation of potential workers take some time (hysteresis). Were many males to have short spells of economic inactivity, this may not be very costly. In fact, around 40 per cent of males aged 15–69 years experiencing inactivity during a year have been out of the labour force for the full year, and about 60 per cent have been inactive for 6 months or more. The implication is that, even among non-old populations, much inactivity is chronic rather than transitional.
- Interpreting time trends in the point prevalence of inactivity is more difficult if there have been shifts over time in the duration and incidence of inactivity. For example, a given prevalence rate may rise because there has been a higher incidence rate of inactivity of a given duration, or a growing duration of inactivity for a given incidence rate. Since 1981, incidence rates have risen faster than prevalence rates and the proportion of men inactive for less than a year has grown (table 1.2).

Most of the data shown in this study are based on conventional prevalence rates or snapshot estimates. It should be borne in mind that the number of men experiencing episodes of economic inactivity will be much larger.

The strict epidemiological definition of incidence is more sophisticated than the one used in table 1.2,⁷ but as figure 1.5 shows, the strict definition is higher, but exhibits a very similar pattern over time as the more simple measure. Throughout this report, the simple measure is used because of its ease of calculation and understanding.

⁷ The more strict definition differs in its treatment of the at risk population. Formally, the incidence rate is the ratio of the number of new cases over a period and the total person years at risk. Two groups need to be removed from the civilian population. First, men who are out of the labour force for the full year are not at risk of exiting the labour force, and so are excluded from the denominator. Second, assuming new cases are evenly spread throughout the year then, on average, around one half of the new cases over the year are also not at risk of becoming new cases (a repeat case is not a new case). In this case, the at risk population is defined as $ATRISKPOP = CPOP - IA52 - 0.5 \times CASES$, where CPOP is the civilian population, IA52 is the number of males who have been inactive for more than 52 weeks at the end of the period and CASES are new cases of inactivity during the year. In this instance, the incidence measure is $CASES / ATRISKPOP$.

Table 1.2 Incidence, point prevalence and period prevalence rates of male economic inactivity

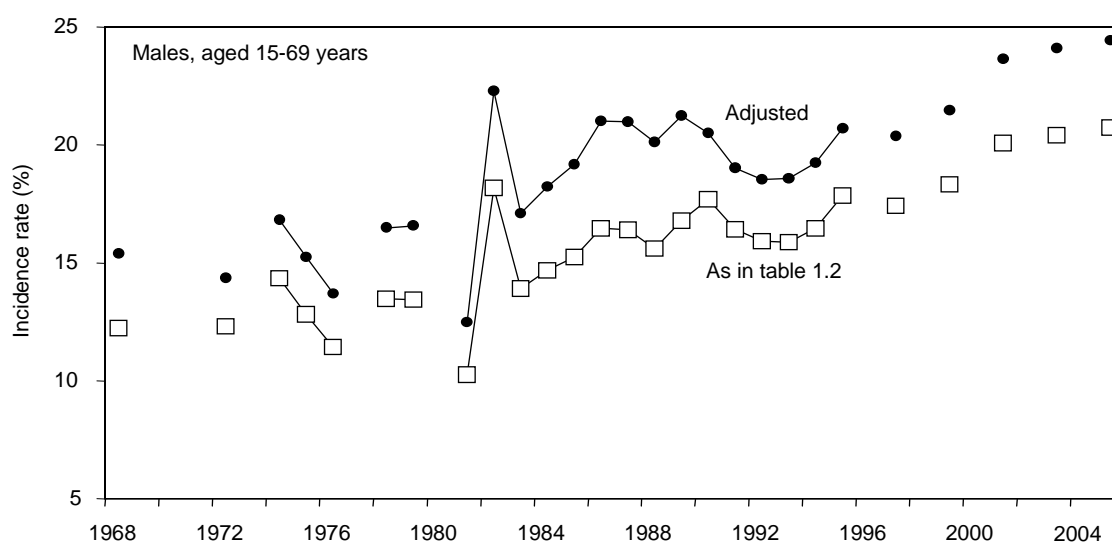
Males aged 15–69 years, year ending February 2005, 1969–2005 ^a

Year	Incidence rate	Prevalence rate	Period prevalence or experience of inactivity	Shorter duration inactivity spells
	%	%	%	%
1969	11.9	12.8	26.0	45.9
1973	12.1	13.6	26.2	46.1
1975	14.2	15.1	28.8	49.3
1981	10.2	16.2	28.1	36.4
1985	15.2	18.4	35.7	42.6
1989	16.8	18.7	37.7	44.5
1993	15.8	20.0	30.4	52.0
1997	17.4	19.7	32.0	54.4
2001	20.1	20.6	35.1	57.1
2005	20.7	20.5	35.9	57.8

^a The incidence rate is the number of new cases of inactive males during a year (derived as the number of people not in the labour force for some of the year, less the number out of the labour force for 52 weeks or more) as a proportion of the 'at risk' population (the average of the monthly civilian population of males aged 15–69 years over that year — but see figure 1.5 for an alternative). The prevalence rate is the total number of inactive males during a reference week to the relevant population at that time (again 15–69 years to place it on a comparable basis with the incidence data). The period prevalence rate is the number of males who experience a spell of not being in the labour force over the past year to the average number of males in the population over that year.

Data source: ABS 2005, *Labour Force Experience, Australia*, Cat. 6206.0 and ABS 2006, *Labour Force, Australia, Detailed - Electronic Delivery (LM8)*, Monthly, Cat. No. 6291.0.55.001 and ABS 1987, *Labour Force, Australia, Historical Summary 1966 to 1984*, Cat. No. 6204.0.

Figure 1.5 Measures of incidence of inactivity^a



^a Two incidence rate measures are shown (a) the simple measure, as calculated in the table above; and (b) a more sophisticated measure that is in line with the epidemiological conventions for measuring incidence.

Data sources: As for table 1.2 (including past issues for historical data).

1.4 Structure of the report

Chapter 2 gauges trends in inactivity, including discussion of future possible movements. Chapter 3 poses the question of what kinds of people are at greatest risk of being outside the labour force (by age, ethnicity, marriage status and educational background). Chapter 4 explores the geographical patterns of male inactivity, since this can exacerbate vulnerability and poverty. Chapter 5 is concerned with the reasons that males give for their labour force status, while chapter 6 explores a critical facet of this — injury, illness and disability. Chapter 7 considers the impacts of economic inactivity on men and society generally.

Finally, a recurring theme in this report is the importance of dynamic policies. Chapters 8 to 10 consider policy areas where the prospects for long-term policy changes have strong prospects of reducing prime age male inactivity rates. Chapter 8 examines the Disability Support Pension (DSP) since this has proved to be a major destination for prime aged males outside the labour force. The remaining two chapters — chapters 9 and 10 — analyse the economic evidence about the possible impacts of educational policies aimed at young people that may insulate them from the risks of future economic inactivity.

2 The dynamics of labour market inactivity

This chapter examines several ‘dynamic’ aspects (how things change over time) of the process of labour market disengagement. It starts with the complex nature of labour market transitions between various labour market states, which has considerable importance in understanding how policy interventions can affect non-participation, sometimes through indirect routes.

The chapter then considers the changing patterns of labour market inactivity by males over time and the lifecycle, and how this may change in the future. It particularly assesses the role of ageing since this is regarded as one of the major drivers of participation in the next 50 years. But has that been true in the past? An interesting associated question is to what extent men are likely to experience more lifetime labour market inactivity in the future relative to now and the past.

2.1 Transitions in labour market status

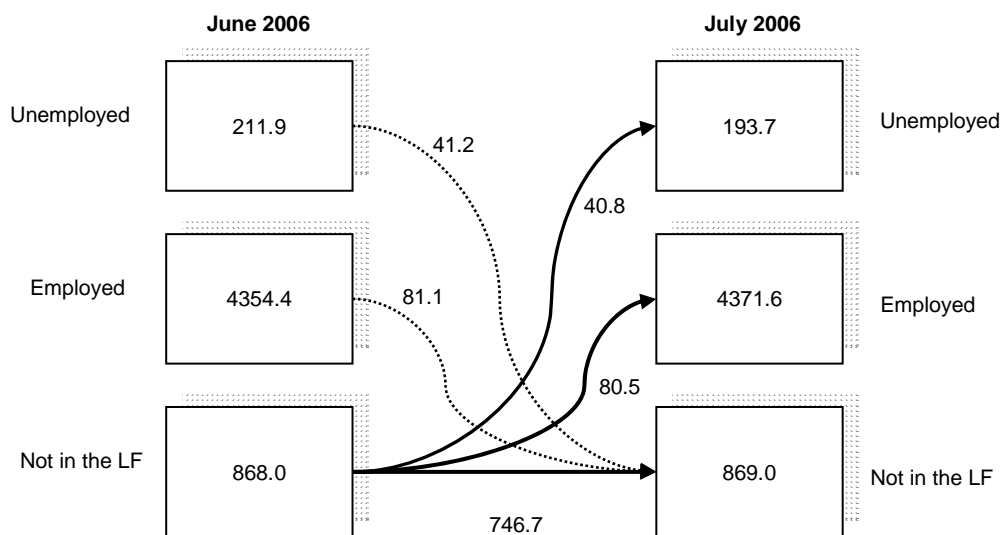
Labour markets are turbulent, with people often shifting between work, unemployment and economic inactivity. This turbulence is often masked in traditional static labour market measures since the gross flows *out* of the labour force are matched by similar flows *into* the labour force (figure 2.1).

Data on labour market transitions (box 2.1) reveal the extent to which the members of the group identified as not in the labour force (NLF) change over time. Transition probabilities are calculated by comparing flows from one labour market state to another. For example, based on matched data from June to July 2006, there were 211 900 men aged 15–64 years who were unemployed (U) in June 2006, of which 41 200 exited to outside the labour force (NLF) in the following month. The transition probability from U to NLF is therefore $41.2/211.9 = 19.4$ per cent for the transition period June to July 2006.

Many men move in the opposite direction. Accordingly, the transition probability from NLF to U is $40.8/868.0 = 4.7$ per cent. Although the actual flow out of NLF *to* U is about the same as the flow into NLF *from* U, the transition probabilities are

very different. This reflects the fact that the starting and ending population stocks that are the sources and destinations of the gross flows are very different in size.

Figure 2.1 Flows to and from ‘not in the labour force’
Males aged 15–64 years, June to July 2006^a



^a Only flows to and from NLF are shown, with flows between other labour market states ignored for the state of clarity. The data recorded by the ABS for men not in the labour force exceed the stocks shown here, but this is because the sample used for gross flows is the one that can be matched from month to month. The important aspect of the story is not the absolute size of the flows or the measured stocks, but their relative sizes to each other.

Data source: ABS, *Labour Force, Australia, Detailed - Electronic Delivery*, (Gross Flows (ST GM1), Cat. No. 6291.0.55.001, July 2006.

A single month’s transition rates reflect seasonal and other factors as well as long-run patterns. A better view of the nature of transition rates is obtained by averaging monthly rates over a year (table 2.1). These show that:

- movements *into* the labour force are much more likely to unemployment, then part-time employment and lastly to full-time employment, consistent with the view that men shifting from outside the labour force take some time to find a job and that unemployment is a stepping stone to jobs; and
- movements *from* the labour force are much more likely for the unemployed, with around one in five 15–64 year old men unemployed in any month moving out of the labour force in the next month. The transition rate from full-time jobs is, by comparison, low, other than for older groups of men. Even for men in the usual pre-retirement age of 60–64 (not shown in table 2.1), the transition rate from employment as a whole reaches 3.2 per cent per month. While this is not very large, it should be noted that it is a monthly transition rate and compounds.

Box 2.1 Deriving and interpreting transition probabilities

Transitions are derived from gross flows data, published monthly by the ABS as part of the monthly labour force survey. Measurement of the data is achieved by matching respondents in consecutive labour force surveys. Between any two months, approximately seven out of eight respondents will remain. This allows matching of 87.5 per cent of the sample size. However, due to problems in the matching process and some exclusions, about 80 per cent are matched in practice and this will vary by month and by age/sex group.

Since gross flows data explicitly excludes certain household types, there is added potential for response bias. Dixon et al. (2002) have estimated that approximately half of the non-matched observations will have characteristics in line with that of the matched sample. Obviously the other excluded half could skew the data and hence, the population not be accurately estimated. The majority of studies that use gross flows data do not correct for any of the above errors because correction techniques can often introduce further, unknown bias.

In order to compare gross flows data over time, the flows are converted into hazards or transition probabilities. This means the flows are expressed relative to the size of the originating labour market state and hence are the probability that a person in a given pool will make a particular movement.

Table 2.1 Transition probabilities to and from the labour market
Males, by age, 2005-06

<i>Labour force status</i>	<i>Age group (years)</i>					
	15-24	25-44	45-64	15-64	65+	Total
	%	%	%	%	%	%
<i>Moving into the labour force to:^a</i>						
Full-time employment	2.7	6.7	2.7	3.5	0.2	1.9
Part-time employment	7.5	4.4	2.5	4.6	0.9	2.8
Unemployment	8.9	7.9	3.0	6.0	0.0	3.1
Stayed not in the labour force	80.9	81.0	91.8	86.0	98.8	92.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
<i>Moving out of the labour force from:^b</i>						
Full-time employment	1.6	0.7	1.0	0.9	4.4	1.0
Part-time employment	8.8	4.9	6.4	7.1	15.1	7.7
Unemployment	25.1	15.4	20.8	20.6	46.8	20.7

^a Proportion of people who were not in the labour force in month 1 and had the specified labour force status in month 2, using gross flows averaged across the fiscal year. For example, the average likelihood that an economically inactive man aged 15-24 years would be employed full-time next month is 2.7 per cent.

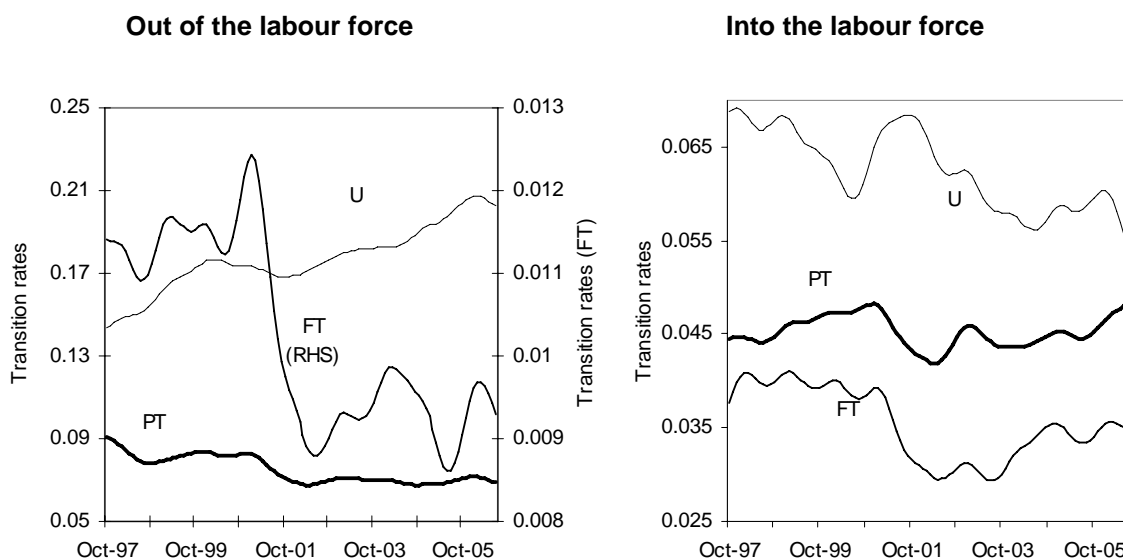
^b Proportion of people who were in various labour force categories in month 1 and went to 'not in the labour force' in month 2. For example, the average likelihood that an unemployed man aged 65 or more years would exit the labour force next month is 46.8 per cent.

Source: ABS, *Labour Force, Australia, Detailed - Electronic Delivery*, GM1, Cat. No. 6291.0.55.001.

Transition rates have been changing

Figure 2.2 (shorter run) and 2.3 (longer run) present the transition probabilities ('hazards') for movements into and out of the labour force over time.

Figure 2.2 **Male transition rates in and out of the labour force^a**
15–64 year olds, October 1997 to July 2006



^a Rates are proportions, not percentages. Data has been smoothed using a Hodrick-Prescott filter. Transition rates from NLF to FT employment are shown on the right hand scale of the right hand graph.

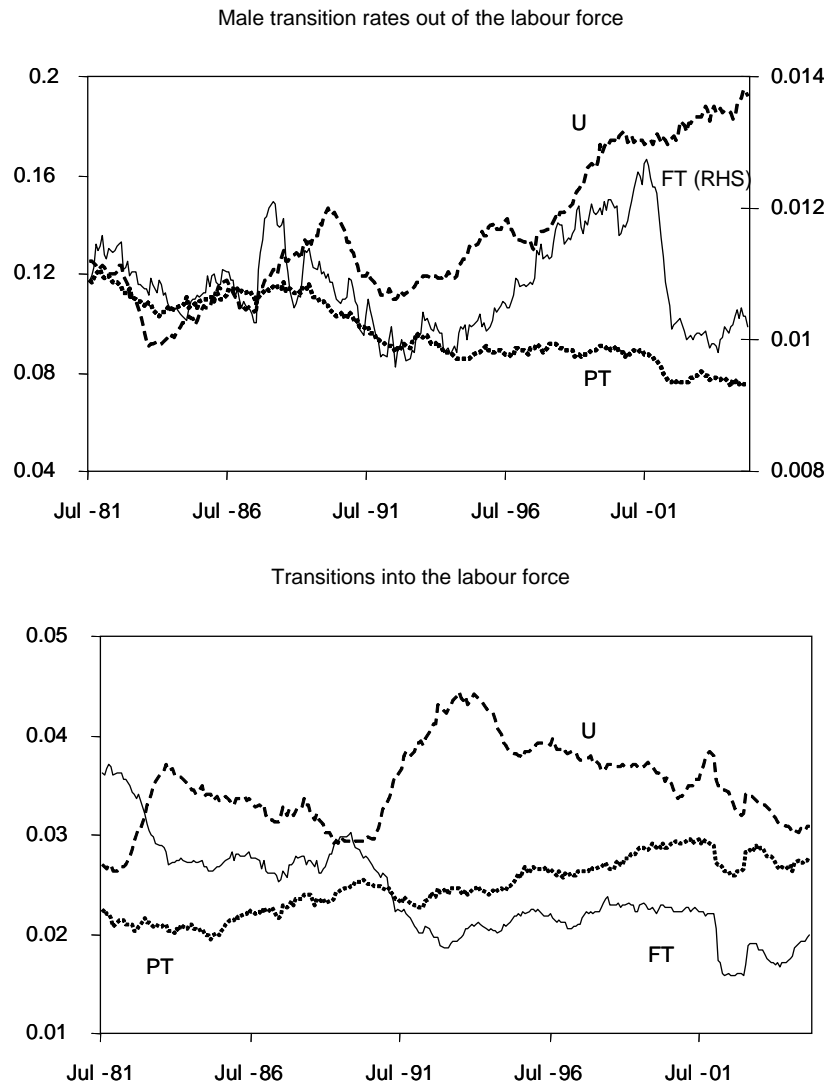
Data source: ABS, *Labour Force, Australia, Detailed - Electronic Delivery*, (Gross Flows (ST GM1), Cat. 6291.0.55.001, July 2006.

There has been a drop in the exit rate from full-time jobs to inactivity in the early 2000s. It is not clear why this has occurred, or why its onset was so rapid. However, the scale of the change is actually relatively modest, only representing a decrease in the monthly exit rate from around 1.25 per cent of the preceding month's stock to 0.9 per cent. (This reflects the high labour force attachment of this group compared with part-time workers.) The longer run data suggests the present exit rates are more akin to the historical average, and that the high rates apparent in the late 1990s were anomalous. But it is not clear why the exit rates for full-time employment reveal such enduring waves. There has been a gradual long run decline in transitions from inactivity to full-time employment, with a larger recent decline that appears to coincide with the decline in transitions from full-time employment to inactivity as well. Increasingly, it appears that movements between inactivity and full-time unemployment — whatever their direction — are muted.

It is also apparent that labour market attachment has increased for part-time employees, so that exit rates from part-time jobs to inactivity have gradually

declined over the long run. This is despite the fact that part-time employment is also increasingly the destination of men who move from outside to inside the labour force. Part-time employment is now the most likely transition route to a job from outside the labour force and its relative likelihood has grown significantly over the longer run.

Figure 2.3 **Longer run male transitions into and out of the labour force^a**



^a Data series prior to 1997 are based on a different statistical methodology than post-1997 data.

Data source: ABS Cat. No. 6203.0 (*Labour Force, Australia*).

Unemployment is now the dominant initial labour force state for transitions out of the labour force. The likelihood of exits from unemployment to outside the labour force over the short and long run has generally increased over the longer run. This has been accompanied by a general decline in transition rates to unemployment from outside the labour market since the 1990s. However, in the aftermath of deep

recessions, such as that in the early 1990s and in the early 1980s, there was a significant rise in transitions to unemployment as discouraged workers re-entered the labour force to look for jobs.

The ‘steady state’ and its policy implications

All possible transition pathways between labour market states are important in determining the longer run likelihood of where a person will end up in the labour market. The pathway to (or out of) economic inactivity is often indirect. For instance, many people will leave employment by first dropping to unemployment before leaving the labour market. This complex set of transition rates determines, on average, how long men will spend in various labour market states. Transition rates for each state to another vary with socio-economic status or other factors (such as education or disability) and are not stable over time.

Davis (2003) shows the nature of these patterns for one group of men. He used labour force unit record data to estimate transition probabilities for four different panels of men aged 25–34 years and then calculated the time, in any given year, a man will spend employed, unemployed and out of the labour force (table 2.2). Men with a history of unemployment tend to gravitate back to that state, regardless of their initial state.

Table 2.2 **Average annual time spent in a given labour market state**

Given a starting state, males aged 25–34 years^a

<i>Initial state</i>	<i>Panel A (skilled with no history of unemployment)</i>			<i>Panel B (unskilled with no history of unemployment)</i>			<i>Panels C & D (any skill, with history of unemployment)</i>		
	E	U	NLF	E	U	NLF	E	U	NLF
	%	%	%	%	%	%	%	%	%
Employed (E)	95.0	1.3	3.7	89.4	2.3	8.3	20.2	69.8	10.0
Unemployed (U)	89.6	4.3	6.1	79.7	6.3	14.0	15.9	74.2	9.9
Not in the labour force (NLF)	84.6	2.5	12.9	69.8	3.6	26.6	16.1	71.4	12.5

^a The left hand column lists three possible initial labour market states, and then the average time spent by that man in three possible destination states over the next year (men dying or migrating having been removed from the sample). For example, a man in panel A who is employed (E) at the start of a year will, on average, spend around 3.7 per cent of the year outside the labour force (NLF). Of course, this is an average, and many men who are initially employed, stay employed for the full year.

Source: Davis (2003).

At older ages, the evidence suggests that the gravitational power exerted by inactivity starts to overwhelm that of unemployment for vulnerable males. This is

why the numbers of inactive men starts to grow so rapidly with age, and why this has become such a major target for policy.

Policies oriented at re-engaging men currently out of the labour force aim to alter the transition rates of less able men to and from NLF to the labour force (a group more like C and D in table 2.2). The importance of transition pathways is that it reveals that *all* possible pathways — including those that relate to backward movements from employment or unemployment to ‘not in the labour force’ — are important in determining the consequence of such policies.

Figures 2.4 and 2.5 consider two alternative policy approaches that alter transition rates for disadvantaged men aged 45–54 years old. The simulations are based on assumptions, but these have been selected to be reasonably realistic.¹

In the first policy experiment (figure 2.4), welfare design is used to lower inflow rates to outside the labour force by unskilled men with a history of unemployment. The policy does not aim to alter the characteristics of the men concerned, so its only effects are to decrease inflow rates from unemployment to outside the labour force, and to (correspondingly) increase the likelihood that a man who is unemployed stays unemployed next period. This policy reduces inactivity rates, but mostly at the expense of unemployment — seventy per cent of the long-run reduction of the inactive end up in unemployment. Nevertheless, the insight of the transition pathways approach is that it shows that there are, nevertheless, gains in employment too, because people who search for a job sometimes find one, and once in one, tend to keep it for a while. In fact, the actual employment gains of a policy like that simulated here are likely to somewhat worse than those projected, because the implicit assumption is that transition rate to outside the labour force can change without affecting the transition probabilities between other labour force states. In fact, the characteristics of the pool of the unemployed is likely to change under such a policy, weakening the chances of the unemployed getting jobs and reducing the duration of any jobs that they do gain. Even so, some employment gains are very likely.

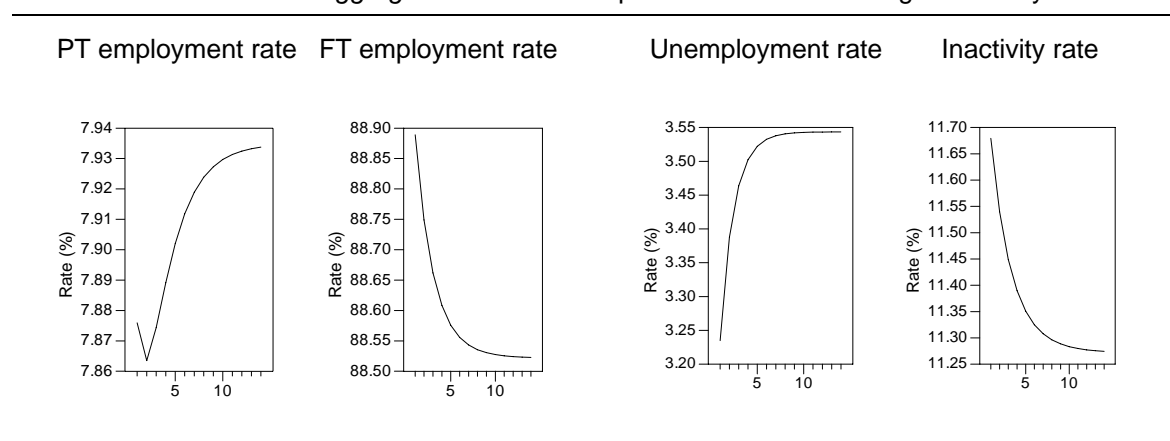
In the second experiment (figure 2.5), policy has broader aspirations by increasing the employability of men with a history of unemployment. In this case, there are higher outflow rates from unemployment to jobs, as well as increased outflows from inactivity to other labour market states. People in jobs tend to keep them longer. As in the first policy experiment, inactivity numbers are reduced, albeit by significantly more. Moreover, while the number of unemployed men still rises, only about one

¹ The transition rates match the overall ABS data on transition rates. Patterns from Davis (2003) on the transition rates of disadvantaged versus non-disadvantaged men are used to infer the rough nature of likely transition rates for disadvantaged men.

third of previously inactive men end up in unemployment, with the remaining group in a job.

The implication is that policy changes targeted at reducing inflow rates to outside the labour force offer some promise of gains in employment, and that these effects are magnified if the employability of the men concerned is increased (figure 2.6). Nevertheless, either approach is likely to increase equilibrium unemployment because lowered transition rates from unemployment to inactivity are also likely to increase transition rates from unemployment in one period to unemployment in the next.

Figure 2.4 The effects of lower inflow rates into inactivity by disadvantaged males aged 45–54 years
Effect on *aggregate* labour market performance of males aged 45–54 years^a



^a The policy experiment is based on altering the transition probabilities between various labour force states for a disadvantaged segment of males aged 45–54. and then observing the change from one steady state to another for the whole group of men aged 45–54 years. The employment rates are defined as the relevant employment measure over the labour force. The original transition equations and post-policy transition equations are, respectively:

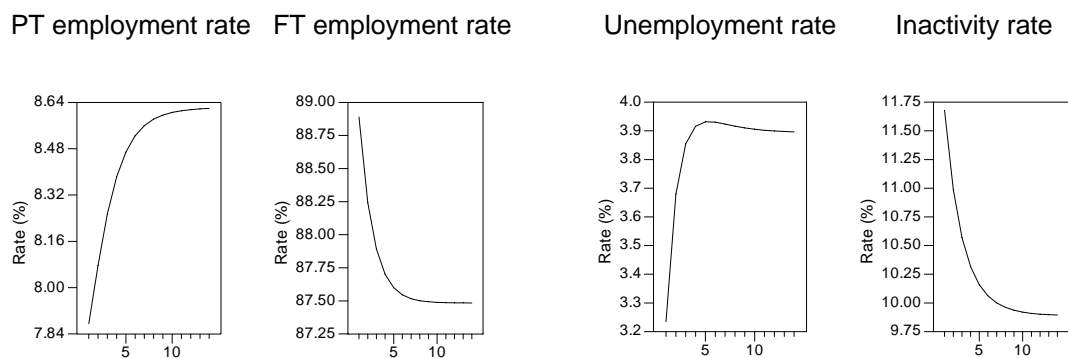
	Original		Post-policy
$\begin{bmatrix} \text{FTD}_t \\ \text{PTD}_t \\ \text{UD}_t \\ \text{NLFD}_t \end{bmatrix}$	$= \begin{bmatrix} 0.65 & 0.10 & 0.05 & 0.025 \\ 0.20 & 0.55 & 0.15 & 0.030 \\ 0.05 & 0.15 & 0.55 & 0.100 \\ 0.10 & 0.20 & 0.25 & 0.845 \end{bmatrix}$	$\begin{bmatrix} \text{FTD}_{t-1} \\ \text{PTD}_{t-1} \\ \text{UD}_{t-1} \\ \text{NLFD}_{t-1} \end{bmatrix}$	$\begin{bmatrix} \text{FTD}_t \\ \text{PTD}_t \\ \text{UD}_t \\ \text{NLFD}_t \end{bmatrix} = \begin{bmatrix} 0.65 & 0.10 & 0.050 & 0.025 \\ 0.20 & 0.55 & 0.150 & 0.030 \\ 0.05 & 0.15 & 0.605 & 0.100 \\ 0.10 & 0.20 & 0.195 & 0.845 \end{bmatrix} \begin{bmatrix} \text{FTD}_{t-1} \\ \text{PTD}_{t-1} \\ \text{UD}_{t-1} \\ \text{NLFD}_{t-1} \end{bmatrix}$

For simplicity, in the example, above, it is assumed that the transition matrix changes in just one period. A more natural assumption is that it would change slowly as policy gradually affected transition rates, but the long run result is identical, just the period of adjustment more prolonged.

Data source: PC calculations and ABS, *Labour Force, Australia, Detailed - Electronic Delivery*, GM1, Cat. No. 6291.0.55.001.

Figure 2.5 Illustration of improving employability of disadvantaged males aged 45–54 years

Effect on *aggregate* labour market performance of males aged 45–54 years^a



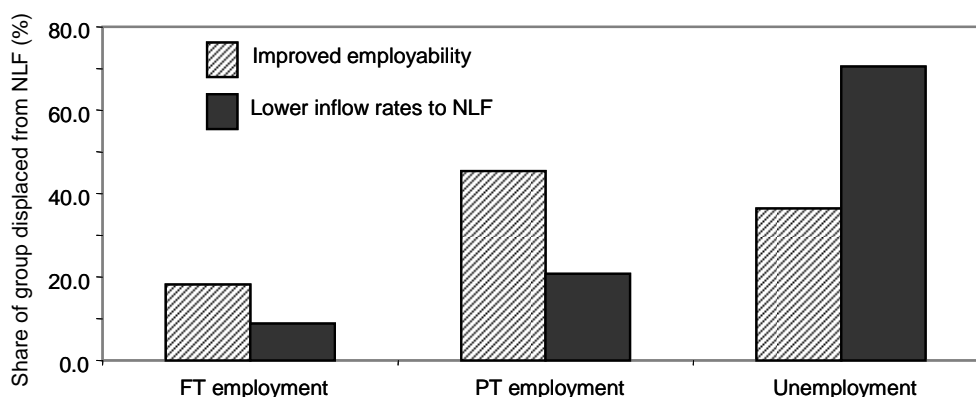
^a The policy experiment is based on altering the transition probabilities between various labour force states for a disadvantaged segment of males aged 45–54, and then observing the change from one steady state to another for the whole group of men aged 45–54 years. The employment rates are defined as the relevant employment measure over the labour force. The original transition equations are as described in the first set of equations in the previous figure. The post-policy transition equations are:

$$\begin{bmatrix} \text{FTD}_t \\ \text{PTD}_t \\ \text{UD}_t \\ \text{NLFD}_t \end{bmatrix} = \begin{bmatrix} 0.66625 & 0.1000 & 0.0525 & 0.02625 \\ 0.19400 & 0.5775 & 0.1875 & 0.04200 \\ 0.04750 & 0.1350 & 0.5775 & 0.15000 \\ 0.09225 & 0.1875 & 0.1825 & 0.78175 \end{bmatrix} \begin{bmatrix} \text{FTD}_{t-1} \\ \text{PTD}_{t-1} \\ \text{UD}_{t-1} \\ \text{NLFD}_{t-1} \end{bmatrix}$$

In general, the changes in the transition rates are intuitive. The exception is the increase in the transition rate from unemployment to unemployment. This is the expected consequence of the reduction in outflows from unemployment to not in the labour force status. As for the previous graph, for simplicity, it is assumed that the transition matrix changes in just one period.

Data source: PC calculations and ABS, *Labour Force, Australia, Detailed - Electronic Delivery*, GM1, Cat. No. 6291.0.55.001.

Figure 2.6 Two alternative policy changes: how are the gains distributed?
45–54 year old men



Data source: PC calculations.

2.2 Trends in male and female inactivity rates differ

There are disparate trends of labour market involvement by gender. Females are becoming more engaged in the labour market and males significantly less so. This is why male economic inactivity particularly has emerged as a major policy concern.

About a century ago, a small minority of men (around 7 per cent) and a large majority of women (75 per cent) were not in the labour force. Over the ensuing years, female engagement has risen rapidly so that the likelihood of a woman not being in the labour force has nearly halved. In contrast, there has been a four-fold increase in the propensity of males to be outside the labour force (figure 2.7). While some decline is evident prior to the 1950s, most of the trend for male disengagement from the labour force occurred in the last 45 years. For prime aged males (aged 25–54 years), inactivity rates rose by nearly 8 percentage points from 1960-61 to 2005-06, while for prime aged females, inactivity rates *fell* by 47 percentage points. The decline in inactivity rates by prime aged females was nearly six times the increase in inactivity rates of prime aged males, so reduced economic inactivity rates by females clearly do not generate a one for one increase in economic inactivity rates for males.

Could the surge in female involvement in the labour market be an important factor explaining declining male rates? There are two possible reasons for such a link.

- First, in theory, the labour supply shock represented by the massive increase in female participation is analogous to labour supply shocks associated with mass migration movements. At least some studies in the US find evidence that migrants may *partly* displace workers at the low skill, low wage end of the labour market, typically black Americans, though this remains a hotly contested area of inquiry.
- Second, decisions to participate by males and females can be linked when they share households. Much of the decrease in female inactivity rates has been among married females (Birch 2005).

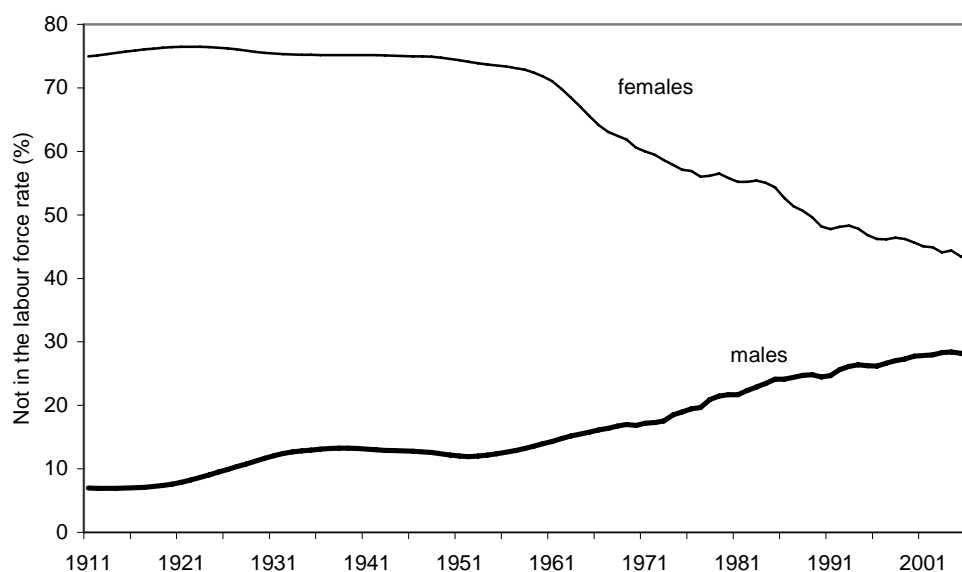
However, several factors suggest that increasing female labour supply has probably not contributed significantly to decreased male labour supply.

- The econometric evidence suggests that, once lags are taken into account, male and female inactivity rates are not statistically associated.²

² While there is a strong apparent negative correlation between male and female inactivity rates over the 90 year period to 2005, it appears to be an example of a spurious regression, reflecting the inevitable association between strongly trending series. The CRDW test suggests that the series are not cointegrated. When lags of male and female inactivity rates are included in the regression, there is no statistically significant association between male rates and female rates.

- Within households, male labour supply is not negatively correlated with female labour supply. The increases in prime age male inactivity rates are much smaller among married rather than unmarried men (an issue explored further below).³
- The occupational choices of females are often different from men.

Figure 2.7 **Trends in economic inactivity rates**
1910–11 to 2005–06^a



^a Economic inactivity rates are defined as the share of civilians of a given age not in the labour force (that is, not in a job or actively seeking one). Note that early data are based on cubic splines fitted to the data.

Data source: ABS labour force data and interpolation by the PC for gaps in early series.

Consequently, it is possible to concentrate on the factors underlying changes in male participation rates, without being concerned about the corresponding patterns for females.

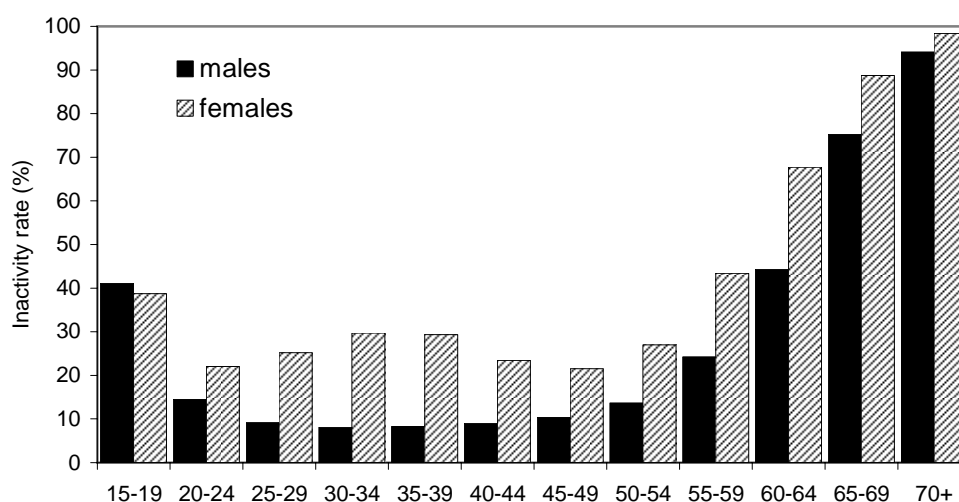
2.3 Snapshots across age groups suggest the important dynamic effects over the lifecycle

Male inactivity rates initially fall with growing age as males make the transition from education to work. They then gradually increase to age 49 years, before steeply climbing for older ages associated with higher rates of disability and with the transition to retirement (figure 2.8). Males have lower economic inactivity rates than females at all ages, but this difference is accentuated during prime childbirth

³ A person is classified as married (husband, wife or partner) if they are living with another person of the same or opposite sex in either a registered or de facto marriage.

years. For the age group 30–39 years, female economic inactivity rates are nearly four times greater than males, reflecting the fact that women still undertake the lion’s share of child caring responsibilities (figure 2.9). By 70+ years, there is little to differentiate male and female labour market engagement — both are very low.

Figure 2.8 Economic inactivity rises after age 45 years
2005-06

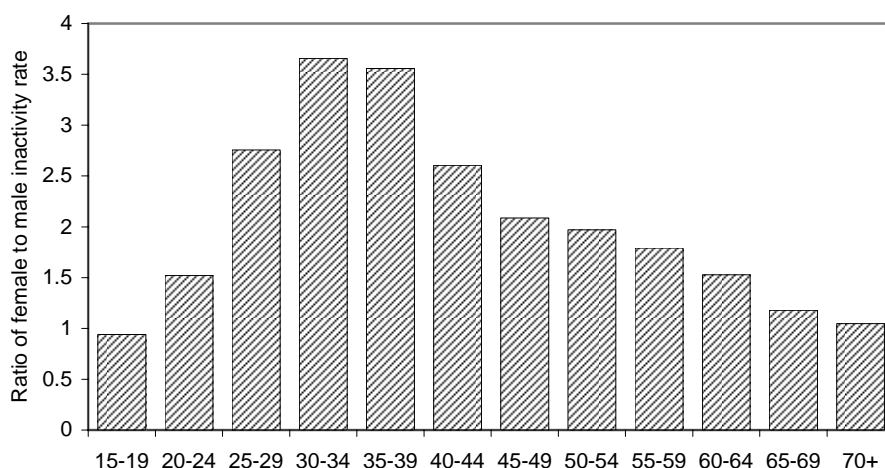


Data source: ABS 2006, *Labour Force, Australia, Detailed - Electronic Delivery* (LM8), Monthly, Cat. No. 6291.0.55.001.

Of course, figure 2.8 would only show true lifecycle inactivity rates if participation rates at given ages were unchanging for different cohorts. However, that certainly has not been the case in the past and is unlikely to be true for the immediate future. Consequently, the cross section of results shown in figure 2.8 represents a mixture of cohort (or birth year) effects and pure age effects. Their roles are disentangled later.

The labour market orientation of males not in the labour force also changes with age (table 2.3). At all ages, most economically inactive males are not currently looking for work or see themselves as unable to work. This is not surprising since most males wanting work are classified as unemployed. However, for young economically inactive males, particularly those aged 20–24 years, just under one in ten are still looking for work and are thereby classified as marginally attached to the labour force. However, marginal attachment declines steeply with age, so that at older ages — whether it be because of retirement, incapacity or preference — most economically inactive males have little (stated) interaction with labour markets.

Figure 2.9 Males have lower economic inactivity rates than females at all ages
2005-06



Data source: ABS 2006, Labour Force, Australia, Detailed - Electronic Delivery (LM8), Monthly, Cat. No. 6291.0.55.001.

Table 2.3 Employment orientation of males not in the labour force
By age, 2005-06

Age	Actively looking	Looking, but not actively	Not looking for work	Permanently not intending to work	Permanently unable to work	Boarding schools & institution-alised	Not in the labour force
	'000	'000	'000	'000	'000	'000	'000
15-19	6.6	8.3	272.2		1.3	6.3	294.8
20-24	4.7	4.5	90.5		3.0	4.0	106.7
25-34	4.7	2.8	91.7		11.1	12.1	122.3
35-44	4.3	2.8	93.6		18.3	9.5	128.6
45-54	3.5	3.2	125.0		28.6	6.0	166.3
55-59	1.4	1.6	123.3		23.4	3.7	153.4
60-64	0.8	1.4	178.1		33.4	3.0	216.6
65+	0.2	0.5	151.1	846.9	15.6	56.7	1071.0
Total	26.1	25.1	1125.5	846.9	134.6	101.5	2259.7

Source: ABS 2006, Labour Force, Australia, Detailed - Electronic Delivery (Supertable NM1_Apr01, Persons Not in the Labour Force), Monthly, Cat. No. 6291.0.55.001.

2.4 Ageing versus trend effects in the past

Population ageing increases the share of the population in older age brackets. Given the clear age-related pattern of labour market inactivity shown above, it is

interesting to consider how much of Australia's historical fall in aggregate male participation rates can be ascribed to ageing.

It is clear that ageing can only have played a partial role in the long term overall increase in inactivity, because inactivity rates have increased significantly for males of *all* ages (figure 2.10). Indeed, the biggest proportional increase in inactivity rates has been highest for young men, though they are still significant for men of all ages.⁴

In this light, it is useful to decompose the total increase in male inactivity rates into ageing and trend effects.⁵ This reveals that 5 percentage points (or 24 per cent) of the total 21.2 percentage points change from 1910-11 can be ascribed to ageing and the remaining 16.2 percentage points to trend increases in age-specific inactivity rates (table 2.4). That is, population ageing has accounted for only about one quarter of the total fall in male inactivity rates over the last century. At times, this effect has been greater. For example:

- in the period to the mid-20th century, the increase in the proportion of males aged over 65 and their (increasingly) high inactivity rates meant that population ageing was an important source of the fall in aggregate male inactivity rates during this period; and
- in the ten year peak to peak period from 1992-93 to 2002-03, population ageing has accounted for more than 60 per cent of the increase in the aggregate male inactivity rate.

⁴ The transition has been very different for females compared with males. The biggest proportional *decrease* in inactivity rates has been greatest for prime age women between ages 35-54 years, with very little change for older women, and more modest decreases for younger women. This attests to the fact that prime aged women started from a position that culturally and institutionally isolated them from the formal labour market (for example, a woman was required to resign from the Australian Public Service if she got married). This has been eroded by cultural, demographic and economic changes that have encouraged more female labour force participation.

⁵ The aggregate male inactivity rate at any time is the weighted sum of the inactivity rates of males of given ages, with the weights determined by civilian population shares. Changes in the aggregate rate reflect shifts in the population age structure (ageing effects) and trends in the age-specific inactivity rates. The change in the total inactivity rate between periods T and T-N can be decomposed into two parts. The first, reflecting ageing, is:

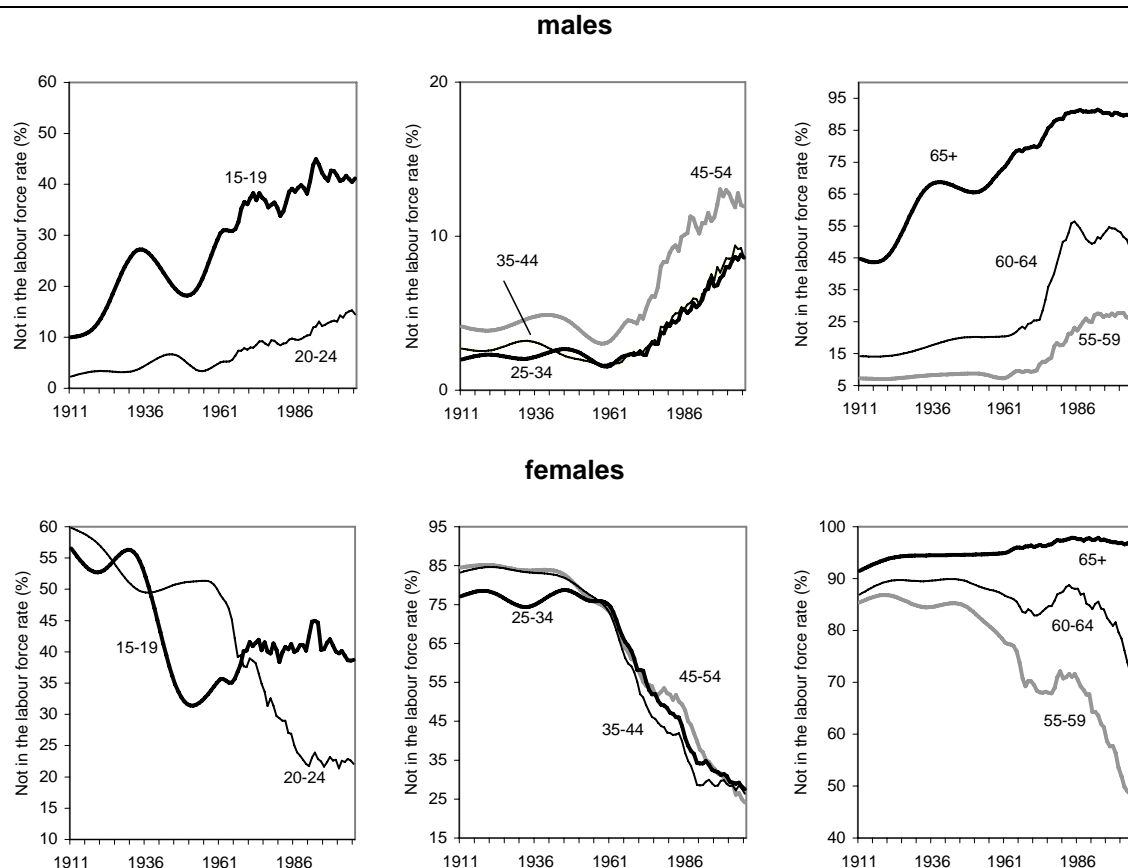
$$Ageing = \sum_{age=15}^{65+} (\alpha_{age,T} - \alpha_{age,T-N}) \times (NLFR_{age,T} + NLFR_{age,T-N}) / 2$$

The second part, reflecting trends in age-specific inactivity rates, is:

$$Trends = \sum_{age=15}^{65+} (NLFR_{age,T} - NLFR_{age,T-N}) \times (\alpha_{age,T} + \alpha_{age,T-N}) / 2$$

Figure 2.10 Long run trends in male and female non-participation in the labour market

1910-11 to 2005-06^a



^a Inactivity rates are defined as the share of civilians of a given age not in the labour force (that is, not in a job or actively seeking one).

Data source: As for appendix A.

Overall, while population ageing has played a relatively modest role in increased male inactivity rates over the last century, in the absence of policy initiatives, it is projected to be far more important in the next forty years (PC 2005). Given policy settings at the time of its study, the Commission projected that aggregate male inactivity rates may rise to above 40 per cent by 2044-45, 12 percentage points higher than its level in 2002-03. Changes in age-specific male inactivity rates were projected to contribute only 2 percentage points to this increase — or about 17 per cent of the total. The remainder of the increase — some 83 per cent — reflects ageing.

The importance of ageing as a driver of even further increases in male inactivity rates, combined with burgeoning social welfare payments for disability support, is the major reason for an interest in policy measures that might reverse the long run trends for lower male economic activity at given ages. Moreover, aggregate female

inactivity rates are also projected to increase (from 44 per cent to 47 per cent) over the next 40 years, reflecting ageing. Therefore, in a break from past trends, increased female labour market involvement will no longer provide economy-wide relief for male labour supply withdrawal. This is because the effects of ageing on aggregate female inactivity rates overwhelm projected trend decreases in age-specific female inactivity rates.

Table 2.4 Population ageing has played a small role in increasing male inactivity for most periods

1910-11 to 2044-45^a

<i>Period</i>	<i>Share of total change accounted for by:</i>		<i>Change in total inactivity rate</i>
	<i>Age-specific trends</i>	<i>Ageing</i>	
	<i>%</i>	<i>%</i>	<i>percentage points</i>
<i>Peak to peak period</i>			
1910-11 to 1953-54	62	38	5.2
1953-54 to 1967-68	86	14	4.5
1967-68 to 1978-79	88	12	4.7
1978-79 to 1984-85	93	7	2.7
1984-85 to 1992-93	76	24	2.0
1992-93 to 2002-03	37	63	2.1
<i>Total period</i>			
1910-11 to 2004-05	76	24	21.2
<i>The Future</i>			
2002-03 to 2044-05	17	83	12.0

^a Inactivity rates are affected by the business cycle. This suggests that decomposition of the trend and ageing impacts on inactivity should be estimated across similar points in the business cycle. As in the productivity literature, peak-to-peak periods were selected. Data prior to 1966-67 were interpolated from various censuses, so that standard peak-to-peak methods could not be used. Judgment was used to pick reasonable years for the early period. For later years, the data were passed through a Hodrick-Prescott filter and the ratio $D_t = Y_t/HPY_t$ formed, where Y is the unadjusted male inactivity rate and HPY is the filtered rate. A peak was identified as $PEAK_t = 1$ if $(D_t > \lambda)$ and $(D_{t+1} < D_t)$ and $((D_{t-1} < D_t)$, else $PEAK = 0$. λ was set at 0.55. This identified peaks at 1967-68, 1978-79, 1984-85, 1987-88, 1992-93, 1999-00 and 2002-03. Some individual peaks occurred too soon after previous peaks, making the period too short for meaningful analysis. In those instances, the next peak was selected.

Source: Commission calculations.

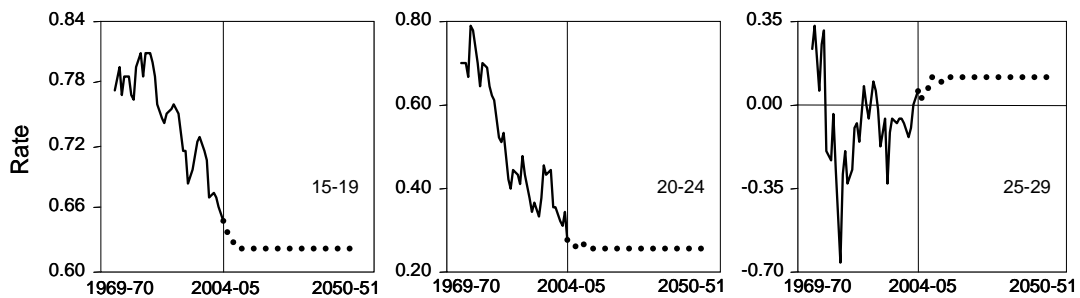
However, some of this growth in non-participation should not be troubling for policy makers. In particular, rates of full time educational participation have risen for the young, reducing their involvement in work.

2.5 Cohort effects

As noted earlier, cross-sectional age profiles of economic inactivity (such as figure 2.10) do not show true lifecycle inactivity rates, because each age group also represents a different cohort, so mixing cohort and age effects. The males observed in figure 2.10 aged 70+ years in 2005-06 were born in the years up to the mid-1930s, while the most recent cohort, those aged 15–19 years in 2005-06 were born between 1986-87 and 1990-91. These cohorts faced (and will face) different labour market conditions, possess different social, cultural attitudes and educational attainment rates and face varying incentives to work. The actual lifecycle inactivity rates of someone currently aged 15–19 years depends on their rates of labour market participation as they age over the next 60 years. Trends in attrition rates from labour market participation as people age provide insights into such lifecycle labour market behaviour.

In general, younger males have net entry into the labour force in the transition from education to work (figure 2.11). Prolonged education has meant that such entry rates into the labour force for those aged under 24 years have been falling over time, though these are expected to stabilise over the next few years.

Figure 2.11 **Net entry rates into the labour force**
1969-70 to 2050-51 (projected)^a



^a The entry rate for the male age group aged a to $a+4$ years over the period from 1999 to 2004 is defined as:

$$E_{a,a+4;2004} = (PR_{a+5,a+9;2004} - PR_{a,a+4;1999}) / (PR^* - PR_{a,a+4;1999})$$

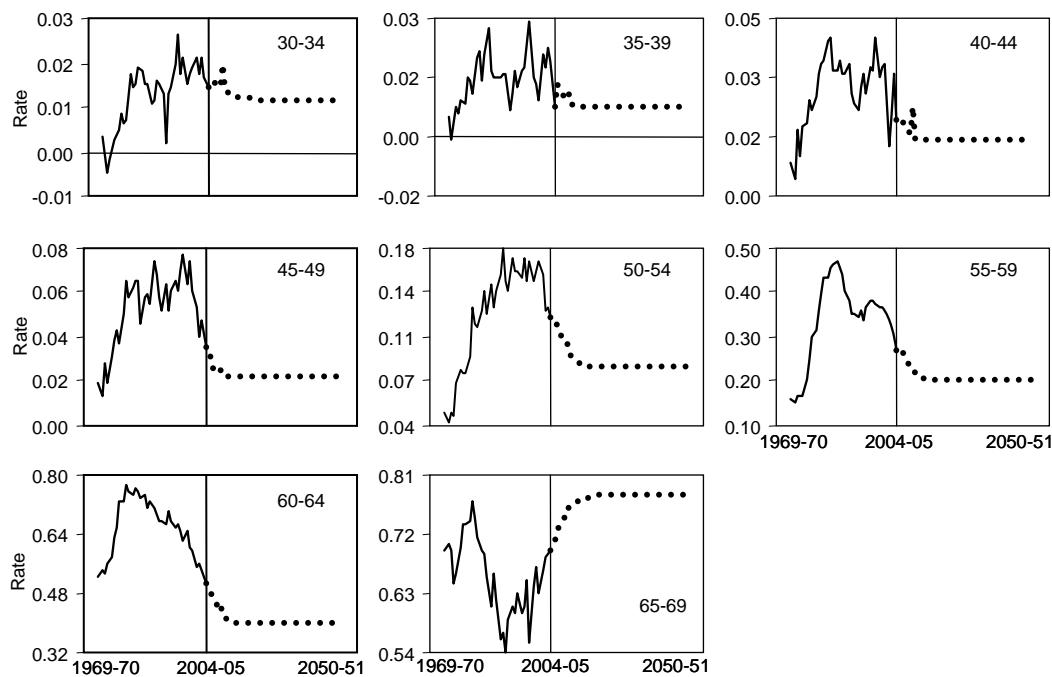
For example, if R^* , the maximum potential participation rate, was 99 per cent, the participation rate for males aged 20–24 years in 1999 was 86.5 per cent, while the participation rate of this birth cohort five years later was $PR_{25-29} = 91$ per cent, the entry rate for 20–24 year olds over the period from 1999 to 2004 would be $(91.0 - 86.5) / (99 - 86.5) = 0.36$ or 36 per cent. The black line is the actual entry rate from 1969-70 to 2004-05, while the dotted line is the projected entry rate.

Data source: ABS, *The Labour Force, Australia* (Cat. No. 6203.0) and updated estimates using the methodology described in PC (2005).

In contrast, there are net exit rates from the labour force for males aged 30 years, with exit rates climbing significantly for older ages (figure 2.12). For instance, exit rates for those aged 60–64 years were around 40 times greater than those of males

aged 30–34 years. However, for all bar those aged 65–69 years, exit rates have tended to fall recently — and this is the basis on which projections were made. These falls, which are greatest for older males, have the implication that the lifetime work experience of current young male cohorts are likely to be quite different from that suggested by current cross-sectional data for older males.

Figure 2.12 Net exit rates from the labour force
1969-70 to 2050-51^a



^a The attrition or exit rate for the male age group aged a to $a+4$ years over the period from 1999 to 2004 is defined as:

$$X_{a,a+4;2004} = (PR_{a,a+4;1999} - PR_{a+5,a+9;2004}) / PR_{a,a+4;1999}$$
 . For example, if the PR for males aged 50–54 years in 1999 was 80 per cent, while the participation rate of this birth cohort five years later was $PR_{55-59} = 60$ per cent, the exit rate for 50–54 year olds over the period from 1999 to 2004 would be $20/80 = 25$ per cent or 0.25. The black line is the actual exit rate from 1969-70 to 2004-05, while the dotted line is the projected exit rate.

Data source: ABS, *The Labour Force, Australia* (Cat. No. 6203.0) and updated estimates using the methodology described in PC (2005).

Work and inactivity ‘expectancy’

The nature of the above cohort trends, combined with changes in mortality, is the basis for understanding lifetime engagement with the labour market. Cohort work *expectancy* measures the number of years a particular cohort can expect to be active in the labour force. ‘Work’ expectancy in this study means years in the labour force, not just in employment, though we also derive employment expectancy measures

below.⁶ It provides a summary measure of different generations' lifetime involvement in the labour market. This can be more accurate than inferring lifetime activity from cross-sectional data for different ages. Changes in the measure give an indication of developments in lifetime economic inactivity for successive generations. The measure controls for the effects of population ageing.

It is often supposed that lifetime labour participation at birth for a male born around Federation is much greater than more recent generations. In fact, this is not so, with expected lifetime participation at birth initially falling after 1900-01, but rising over the longer run (figure 2.13). The reason for this is that lifetime participation depends on two things: future participation *and* survival rates. In early periods, many males did not survive to the prime years of active participation in labour markets. In later periods, improvements in public health, pharmaceuticals and medical procedures mean that many males live to work another day. If there had been no improvements in longevity after 1900-01, lifetime labour participation at birth would have fallen for later cohorts.

An alternative starting age for considering trends in work expectancy is 15 years, the prime age of initial entry to the labour market. The picture of lifetime labour market participation by males from this age is relatively stable for males born over the 150 year period between 1901 and 2051. But unlike the measure at birth, this measure *falls* slightly from 44 to 42 years (figure 2.13). As with work expectancy estimates at birth, gains in life expectancy play a decisive role in explaining the relative stability of work expectancy at 15 years. The stability reflects the fact that gains in life expectancy for groups born after 1900-01 offset lower lifetime participation rates of survivors. Had there been no gains in longevity, then lifetime participation rates from 15 years would have fallen by around 6 years. If there are bigger gains in longevity over the next fifty years (say from 84.2 to 87 years by 2051), then work expectancy is significantly raised (figure 2.14).

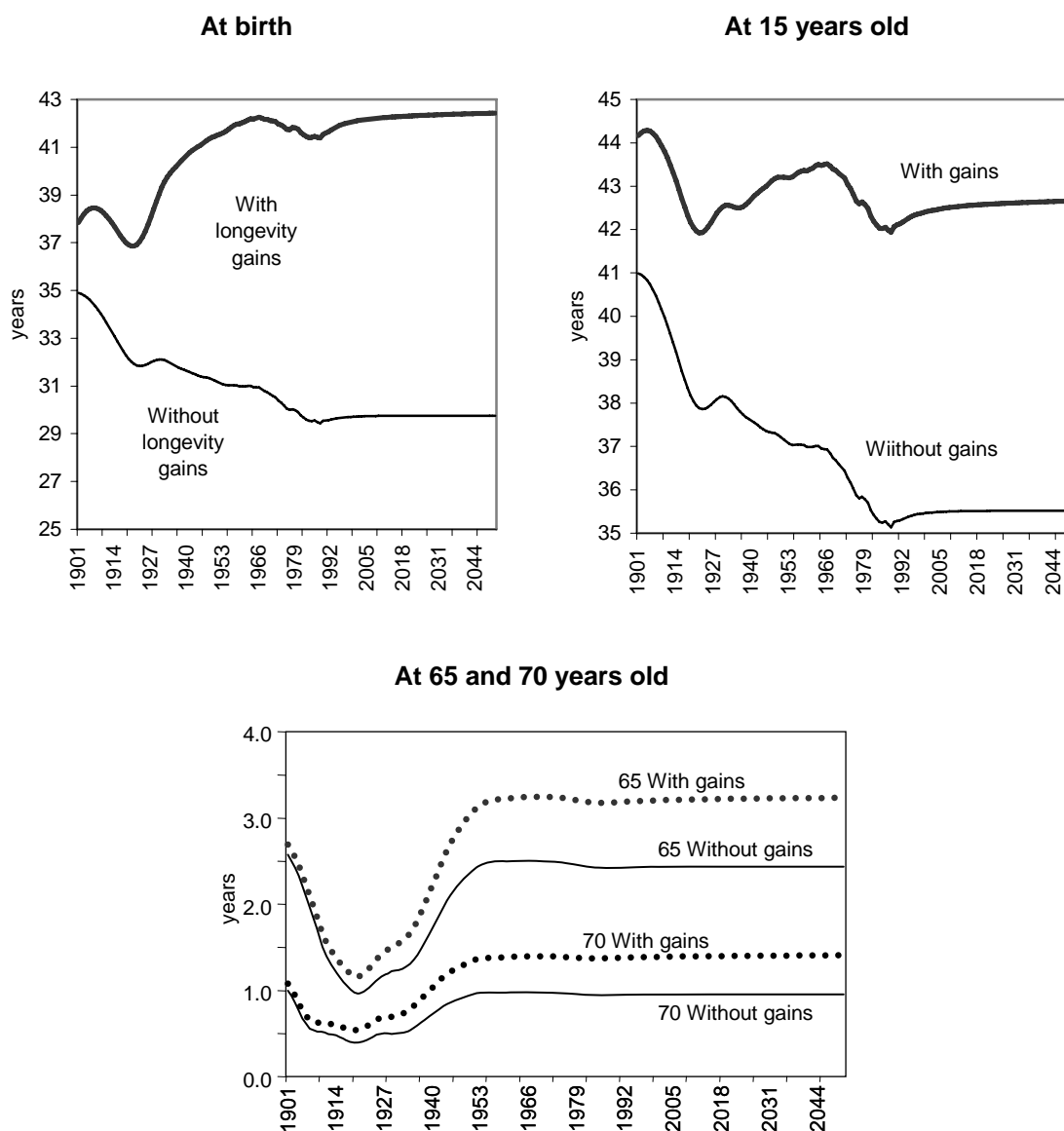
The magnitude of work expectancy derived here are similar to those obtained by Ruzicka (1986), who found a work expectancy for a 15 year old male of about 45.4 years in 1947, 44.3 years in 1966 and 42 years in 1981. These estimates, while of the same broad magnitude as those above, are based on 'period', rather than cohort work expectancies and so ignore future mortality reductions and trends in participation.⁷

⁶ Some studies (quite reasonably) use work expectancy to mean employment expectancy, so it is important to be clear about which measure is being used when making comparisons.

⁷ When period estimates were calculated, based on the data used in this report, nearly identical estimates to Ruzicka (1986) were obtained.

Figure 2.13 Lifetime participation of males

Cohort work expectancy, for birth cohorts from 1900-01 to 2050-51^a



^a For ages other than the birth year, work expectancy measures the *residual* amount of lifetime participation. Work expectancy without longevity gains fixes mortality rates at their 1900-01 levels for all future years.

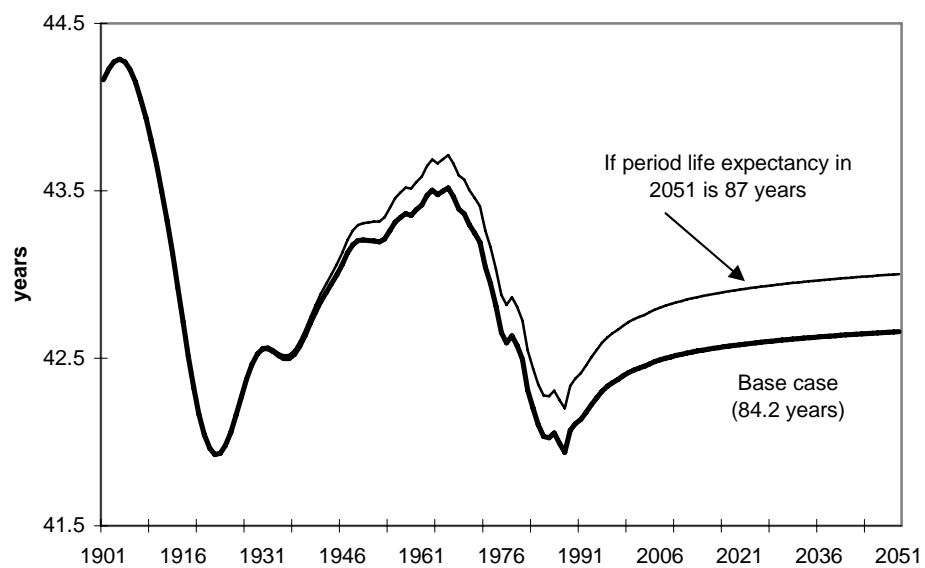
Data source: PC calculations.

For those over 65 years (the ‘old’), a third pattern emerges. For males born from 1901 to 1920, the residual lifetime participation of the old falls, but for subsequent cohorts the residual participation levels rise, ultimately to a degree that exceeds that of the previous apex reached by the 1901 birth cohort. Part of the explanation for this is extension of life expectancy for the old. But the major reason that residual lifetime labour participation levels are high for older people from those cohorts born after the mid 1950s is that these males face higher participation rates, when old,

than males born around the 1920s. So unlike the other two age groups, long run increases in participation rates of old survivors reinforce rather than offset gains in life expectancy. This is evident from figure 2.13, since residual lifetime participation actually rises for cohorts born after the 1920s, even in the absence of gains in longevity.

Figure 2.14 What happens to work expectancy if people live longer than expected?

Lifetime participation levels of male cohorts born from 1901 to 2051



Data source: PC calculations.

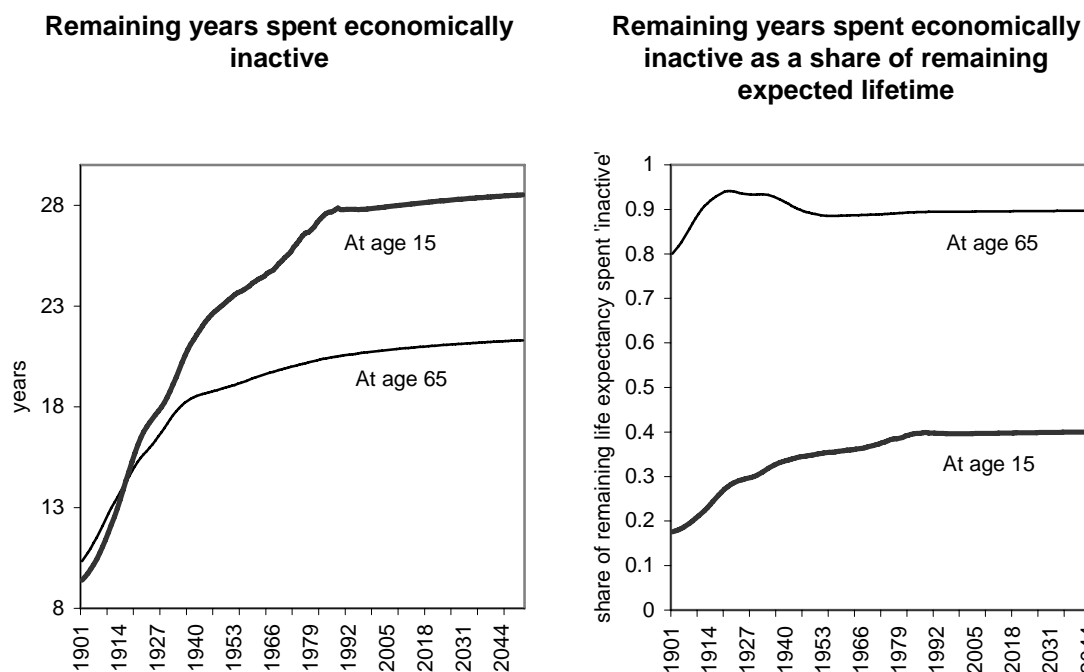
Lifetime economic inactivity

Lifetime economic inactivity can be derived residually as life expectancy less work expectancy (figure 2.15). Lifetime economic inactivity for those aged 15 years is projected to increase roughly threefold (from 9.4 to about 28 years) for the 2005 cohort compared with the 1901 cohort. And residual lifetime economic inactivity for those aged 65 years is projected to double (from 10.2 to 20.0 years) for the same cohorts over the same time period.

Much smaller increases are apparent between more recent birth cohorts. Lifetime economic inactivity for those aged 15 years is projected to increase by about 4 years (24.2 to about 27.9 years) for the 2005 birth cohort compared with the 1960 cohort. For the same period and birth cohorts, residual lifetime economic inactivity for those aged 65 years is projected to increase by only a little over one year (from 18.7 to 20.0 years).

Figure 2.15 Lifetime economic inactivity among males

Lifetime economic inactivity at 15 and 65 years old, birth cohorts 1900-01 to 2050-51



Data source: PC calculations.

Over the long run, increases in life expectancy has primarily been taken as leisure, enforced or otherwise, and education activities (economic inactivity), rather than shared with labour participation. Indeed, since lifetime participation has actually fallen, despite increased life expectancy, inactivity has actually increased by more than the gain in life expectancy. Accordingly, while it is anticipated that life expectancy (for 15 year olds) will increase by 17.6 years for the 2051 birth cohort compared with the 1901 cohort, lifetime inactivity is projected to increase by over 19 years (table 2.5).

But over certain sub-periods and after certain ages, gains in life expectancy are projected to at least be partly taken as increased lifetime participation. For example, around 40 per cent of the gain in (residual) life expectancy for 65 year olds for the 1960 birth cohort compared with the 1925 birth cohort is projected to be taken as greater future participation. Consequently, in this instance, the change in economic inactivity falls far short of the gain in life expectancy.

Table 2.5 How are the gains in life expectancy shared between participation and economic inactivity?

Birth cohorts, 1901 to 2051

<i>Birth cohorts</i>	<i>Change in life expectancy</i>	<i>Change in economic inactivity</i>	<i>Change in lifetime participation</i>
	years	years	years
For 15 yr olds			
1901 to 1925	5.9	8.0	-2.1
1925 to 1960	8.2	6.8	1.3
1960 to 2005	2.8	3.7	-0.9
2005 to 2051	0.8	0.6	0.2
1901 to 2051	17.6	19.1	-1.5
For 65 year olds			
1901 to 1925	4.3	5.7	-1.3
1925 to 1960	4.7	2.8	1.9
1960 to 2005	1.3	1.3	0.0
2005 to 2051	0.5	0.5	0.0
1901 to 2051	10.8	10.3	0.5

Source: PC calculations.

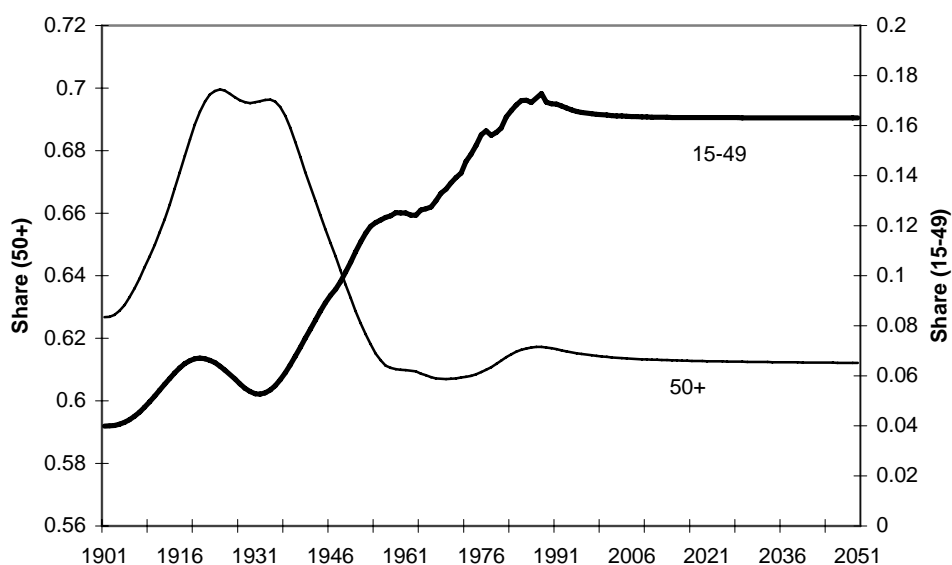
While for some groups of males, there has unquestionably been a tendency for early retirement, it is revealing to break down the relative importance of economic inactivity relative to life expectancy in two phases of a man's life:

- the main working years from 15 to 49 years (noting that participation is now common even for people undertaking study); and
- the 'retirement' years from 50+, which includes the ages in which early retirement are most likely.

The projections show a generally rising importance of inactivity in the first phase of life for all birth cohorts up to the 1990s, but a more complex pattern for the second phase. In particular, the increase in the share of life spent inactive for those at risk of early retirement affected only early generations, before declining strongly for those males born between the 1940s and 1950s (figure 2.16). This implies that the increases in early retirement affecting some men was, over this period, more than offset by delayed retirement by others (showing up as declining participation rates for 50–55 year old males, but increasing rates for older groups).

Figure 2.16 The importance of economic inactivity in pre-retirement and post-retirement phases of life

Share of life expectancy in each phase, by birth cohort, 1901 to 2051^a



^a The data relate to 15 year old male of different cohorts, breaking down their future life expectancy and work expectancy into phases. In the first phase:

work expectancy = $\left(\sum_{x=15}^{49} LLF_{x,t} \right) / l_{15,t}$, while life expectancy = $\left(\sum_{x=15}^{49} L_{x,t} \right) / l_{15,t}$, while in the second

phase (50+), work expectancy = $\left(\sum_{x=50}^{100+} LLF_{x,t} \right) / l_{15,t}$, while life expectancy = $\left(\sum_{x=50}^{100+} L_{x,t} \right) / l_{15,t}$. Inactivity

is derived residually for each phase, and expressed as a share of life expectancy in each phase.

Data source: PC calculations.

The variations in lifetime patterns of participation, inactivity and life expectancy mean that several differences emerge between successive generations. Of the generations born after 1925, the ‘baby boomers’ (those born between 1946 and 1964) are projected to have:

- the greatest average number of years spent participating in labour markets from when they first could enter jobs at 15 years old (table 2.6); and
- when old (65 years or more), the smallest share of remaining life spent in leisure.

But overall, from 15 years, later generations tend to spend a greater share of their lifetime inactive than previous ones. Generation Z, for example, will live on average around 8 years more (from age 15 years) than the War generation and have a lifetime participation level that is about the same.

Table 2.6 Inactivity through the generations

<i>Birth cohorts</i>	<i>Average work expectancy</i>	<i>Average life expectancy</i>	<i>Average inactivity</i>	<i>Inactivity share of life</i>
	years	years	years	%
At age 15 years				
1901 Federation	44.2	53.6	9.4	17.6
1925–1946 War	42.6	62.8	20.2	32.1
1946–1964 Baby Boomers	43.3	67.1	23.7	35.3
1965–1979 Gen X	43.1	68.8	25.7	37.4
1980–2003 Gen Y ^a	42.3	69.9	27.6	39.5
2004–2025 Gen Z ^a	42.5	70.6	28.1	39.8
At age 65 years				
1901 Federation	2.7	12.9	10.2	79.2
1925–1946 War	1.9	19.4	17.4	90.1
1946–1964 Baby Boomers	3.1	21.7	18.5	85.3
1965–1979 Gen X	3.2	22.5	19.2	85.6
1980–2003 Gen Y ^a	3.2	23.0	19.8	86.1
2004–2025 Gen Z ^a	3.2	23.4	20.2	86.2

^a The birth years denoting generations Y or Z and are usually asserted and are neither widely agreed, nor soundly based. Even the labels are contested. But the years applied above are commensurate with some of the definitions applied and provide a convenient basis for referring to successive generations.

Source: PC calculations.

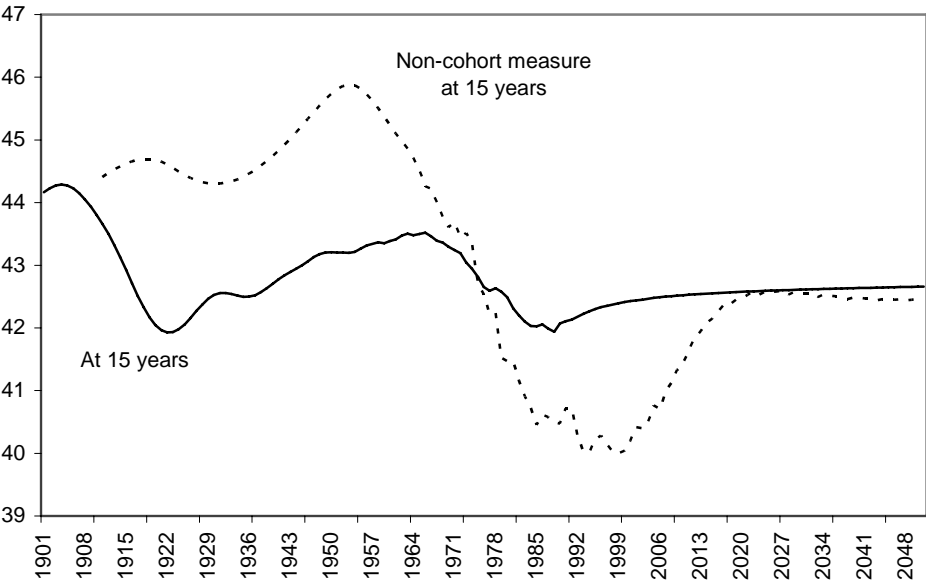
The usual picture is biased

The picture given by cohort or generational analysis above is very different from that given by the ‘period’ or cross-sectional estimates of work expectancy that use the age-specific participation and survival rates observed in a given year as if they will hold in the future. Period measures are easier to compute and do not require forecasts. Commentators often even adopt the period approach *implicitly* when they use age-specific participation rates observed for a given date to reach a rough judgment about how lifetime labour force involvement has changed through the ages. But such explicit or implicit ‘period’ measures can lead to excessively pessimistic views about what is really happening to Australian males’ lifetime work (and inactivity) experiences over time. For instance, the period work expectancy falls by about six years from the mid-1950s to 1999-00, while the cohort measure falls by less than one year over the same interval (figure 2.17).

Why this is the case can be illustrated with a particular example. In 1955, the participation rate of 60 year olds was 86.9 per cent. Such a number would be used in the construction of a period estimate for lifetime participation for males *born* in 1955. But in fact, the level of participation by a male aged 60 years, born in 1955, is not that observed for males aged 60 years in 1955, but of males aged 60 years in

2015, which is projected to be 70.8 per cent or 16 percentage points less. Similarly, the participation rate of a 60 year old in 1999-00 was 58.1 per cent and would be used for the period work expectancy estimate for this birth year. But in fact, the future level of participation by a male aged 60 years, born in 1999-00 would be that of males aged 60 years in 2059-60, which is projected to be 69.8 per cent or 12 percentage points more than the period estimate. Consequently, participation (and inactivity) rates for different ages apparent at a given time, affect a mix of different cohorts and cannot reliably be used to infer lifetime levels of participation or inactivity for different generations.

Figure 2.17 The orthodox view of lifetime participation can be badly astray
Cohort and period work expectancies at 15 years old, 1900-01 to 2050-51^a



^a Cohort measures use a cohort's actual experienced participation and survival rates over time, while period measures use the age-specific participation and survival rates observed in a given year as if they will hold in the future. Period measures are most commonly calculated because they are easy to compute and do not require forecasts. The data for the non-cohort measure is only available from 1910-11.

Data source: PC calculations.

What about labour input through the ages?

The prime focus of this report is on male inactivity rates (or by definition, their inverse, participation rates). But it makes sense to put changes in lifetime inactivity into context by considering the role of other factors that have affected effective male lifetime labour supply. Lifetime effective labour supply (as full time equivalent years in employment) can be measured from estimates of participation,

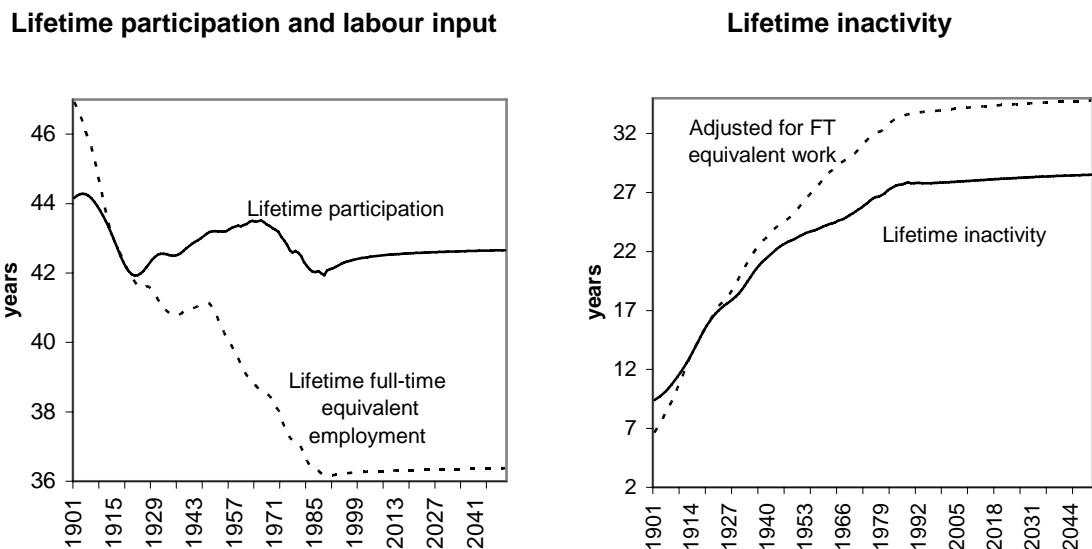
unemployment, part-time shares, and average full-time and part-time hours worked per week (figure 2.18). The estimates suggest that a male aged 15 and born in:

- 1966-67 has a full-time equivalent work expectancy of 38.6 years. This compares with a Treasury estimate (Bingham 2003) of just under 37 years for a male born in the same year, though the latter estimates appears to assume full retirement by age 65;
- 1979-80 has a full-time equivalent work expectancy of 37.0 years;
- 1989-90 has a full-time equivalent work expectancy of 36.2 years; and
- 2004-05 has a full-time equivalent work expectancy of 36.3 years.

When cast in full-time equivalent terms, changes in lifetime labour supply over the very long run have dipped far more sharply than lifetime participation levels, mostly because of the big increase in part-time work among males of all ages. So inactivity *per se* has had a relatively small impact on lifetime effective male labour supply, and therefore, probably, lifetime economic output, over the generations. However, the policy interest in inactivity is wider than just its output effects, but also includes its social and government expenditure impacts.

Figure 2.18 **Lifetime work and participation**

For 15 year olds for birth cohorts from 1901 to 2051^a



^a The adjusted measure for lifetime inactivity is derived simply as cohort life expectancy less lifetime full-time equivalent employment. It thus includes hours spent in unemployment as inactivity, though these are usually excluded from inactivity measures.

Data source: PC calculations.

3 Who are they?

3.1 Introduction

This chapter assesses the, sometimes changing, traits of men outside the labour force. This is critical in understanding why some males are economically inactive and the impacts of inactivity on society and the economy generally.

Economically inactive males represent a diverse group, encompassing many people with different ages, ethnicities and educational levels. Nevertheless, economic inactivity rates are significantly higher among some groups, such as those who are older, with low educational attainment, unpartnered males and those with a disability or chronic illness. The role of age has been considered in the past chapter. And as noted in the next chapter, it also appears to be geographically concentrated in areas of relative disadvantage (low income areas with higher than average unemployment).

There are several ways of considering the characteristics of those outside the labour force. The first is to consider each relevant trait and examine how inactivity rates vary with this trait, while not controlling for the impacts of other traits. However, while this may be useful, this approach can sometimes conflate the effects of several factors. For example, some of the differences in economic inactivity rates between partnered and unpartnered males is likely to reflect underlying differences in education and economic prospects, rather than partnering per se. For that reason, a second approach is to attempt to assess how each relevant trait affects economic inactivity rates, while controlling for other, potentially interacting traits. Where it is useful, both approaches are adopted in assessing the traits of inactive males.

3.2 Inactivity by family and relationship type

Three family types account for most males outside the labour force.

- At the young end of the lifecycle, dependent students living with their families account for a significant share of young males not in the labour force — 79 per cent of inactive 15–19 year olds and 28 per cent of inactive 20–24 year olds (table 3.1).

- Around 60 per cent of males outside the labour force aged 25 or more years (nearly 1.2 million men) are husbands or partners living in a private dwelling, with or without children.
- About one in six males outside the labour force aged 35 years or more are living alone.

Collectively, across all ages, these family types account for around 75 per cent of all males outside the labour force (table 3.2).

Table 3.1 Family relationships of inactive males
Males, 2005-06^a

Age group (years)	Private dwellings						Non-private dwellings	Total
	Husband or partner	Lone parent	Dependent student	Non-dependent child	Person living alone	Non-family member not living alone		
	'000	'000	'000	'000	'000	'000	'000	'000
15-19	1	0	233	21	3	7	11	295
20-24	7	0	30	20	4	22	8	107
25-34	32	5	0	29	14	13	19	122
35-44	54	9	0	19	20	7	14	129
45-54	80	7	0	16	34	9	13	166
55-59	102	4	0	5	25	5	7	153
60-64	154	4	0	2	36	6	8	217
65+	733	16	0	1	189	19	75	1 071
All ages	1 164	45	262	114	324	88	154	2 260

^a Dependent students and a non-dependent children are males living with their family. A non-family member not living alone is a male living in a group household with non-family members. The family relationship of anyone in a non-private dwelling was not determined. Non-private dwellings include hotels, motels, caravan parks, hospitals, homes for the aged, university colleges, boarding houses etc. Some family types are excluded from the table because of their relative unimportance. For example, these include other family persons living with a family and some other categories where the relationship was not determined (eg. visitors).

Source: ABS 2005, *Labour Force, Australia*, Detailed - Electronic Delivery, Monthly, Cat. No. 6291.0.55.001 (Supertable ST FM2).

However, their dominance of males not in the labour force does not mean that the populations from which they are drawn necessarily have high inactivity rates (table 3.2). The main family type, males with partners (with or without children), account for around 60 per cent of the male population, so the fact that they account for about 50 per cent of the comparable group of inactive males indicates their below average inactivity rates. For example, a 35-44 year old male in such a family has a 4.9 per cent inactivity rate. This is about one third that of a similarly aged male living alone, one quarter that of a male lone parent, one fifth of a non-dependent

male living with his family and less than one tenth of those living in non-private dwellings, such as caravan parks and motels.

Table 3.2 Economic inactivity rates by family type
Males, 2005-06

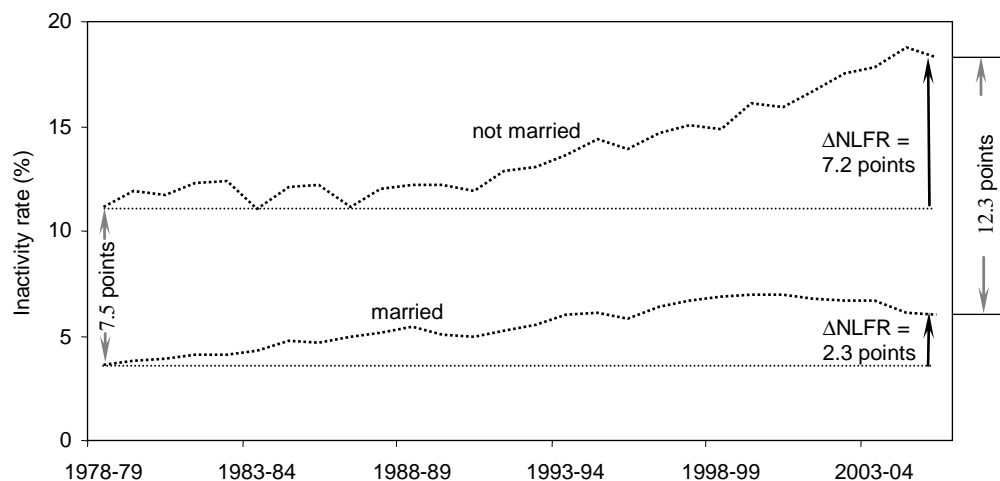
Age group (years)	Private dwellings						Non- private dwellings	Total
	Husband or partner	Lone parent	Depend- -ent student	Non- depend- -ent child	Person living alone	Non- family member not living alone		
	%	%	%	%	%	%	%	%
15–19	9.1	71.4	56.4	10.6	36.3	27.6	74.5	41.2
20–24	5.5	16.3	36.3	7.0	11.1	18.5	51.3	14.5
25–34	4.0	37.1	0.0	14.4	9.4	9.2	61.3	8.6
35–44	4.9	21.4	0.0	26.8	12.4	14.3	55.9	8.6
45–54	7.7	14.4	0.0	37.6	21.1	27.6	48.0	11.9
55–59	21.3	25.4	0.0	44.5	31.6	40.2	49.6	24.2
60–64	40.9	40.5	0.0	55.2	55.7	63.3	64.5	44.4
65+	86.4	87.7	0.0	82.7	90.9	88.7	97.7	88.1
All ages	24.4	30.5	53.1	13.9	37.5	21.3	71.6	27.9
Share of NLF (%)	51.5	2.0	11.6	5.0	14.4	3.9	6.8	100.0
Share of male pop (%)	58.8	1.8	6.1	10.1	10.7	5.1	2.7	100.0

Source: As above.

Males with partners have faced a similarly weaker rise in their inactivity rates over time (figure 3.1). Prime aged males who are married have experienced a modest 2.3 percentage points rise in their likelihood of being outside the labour force over the last 25 years, whereas unmarried males have experienced a 7.2 percentage points rise. The result is that the already wide gulf in their inactivity rates has grown from 7.5 percentage points to more than 12 points. Overall, in 2005-06 around one in 17 married prime aged males was outside the labour force compared with about one in five non-married males. The inactivity rates of married men have been falling since the start of the new millennium, but have risen by a further two and half points for non-married men.

Figure 3.1 Married prime age men have been more insulated from the significant rise in economic inactivity

Males aged 25–54 years, 1978-79 to 2005-06



Data source: ABS 2006 *Labour Force, Australia, Detailed* - Electronic Delivery, Sep 2006 (Cat. No. 6291.0.55.001, LM1 Supertable).

So marriage (formal or de facto) is associated with much better labour force prospects, especially for prime age males. It is unlikely that marriage per se is the major reason for this result, but that it reflects certain characteristics of married males.

- Males with better prospects and more desirable traits are more likely to be chosen by female partners and to maintain a stable relationship.
- People in different family types face different incentives to participate in the labour market. Many government benefits, including the Disability Support Pension, have family asset and income tests. These tests mean that a beneficiary faces high marginal tax rates on work. But these tests also have the implication that people may fail to meet the relevant thresholds, even though they might otherwise qualify for a benefit, if they have partners who are earning sufficient income. As a consequence, a male with a disability, disqualified for the DSP because of their partner's income, faces lower effective marginal tax rates on employment compared with unpartnered males or males with non-working partners. The empirical evidence is consistent with this (figure 3.2). The implication is that as a group, partnered males could expect to have lower inactivity rates.

Figure 3.2 Disabled men with no or low income partners have weak incentives to work

Labour market behaviour of disabled men^a



^a Based on men identifying themselves as having a long-term health condition limiting the work they can do. Not married includes separated, divorced, widowed and never married.

Data source: HILDA data set, wave 3 analysed by the Productivity Commission.

The corollary to the low inactivity rates of partnered males is that some groups with small population shares make a disproportionate contribution to total male inactivity. For example, males living in non-private dwellings accounted for less than 3 per cent of the male population, but nearly 7 per cent of inactive males.

For the large group of dependent students, high inactivity rates are neither unexpected nor problematic. For the very small group of lone male parents, high inactivity rates are also not surprising. As with their female counterparts, they reveal the needs of young children. For lower skilled males undertaking this role, they may also reflect the incentives to work posed by childcare availability and affordability, and the parenting payments in existence at this time (this system has recently been modified).

However, other than the incentive issues discussed earlier, little can be inferred directly about the sources of high inactivity rates for prime age¹ males who are living alone; in group dwellings; who are non-dependents cohabiting with their families; and in non-private dwellings. This group collectively accounts for about 20 per cent of the male population aged 35–64 years, but around one third of comparable inactive males. It is a sizeable inactive group, at around 225 000 people.

¹ Older males (aged over 65 years) are excluded because the majority would be retired widows.

They are likely to be the most disadvantaged and problematic from a policy perspective.

At least one possible explanation for the labour market performance of prime age males without partners is that some may be the flotsam of failed marriages that produced children. There is a widespread view (for example, PIR Independent Research Group 2004) that mandatory child support payments required from divorced/separated males with non-resident dependent children may create strong work disincentives. Since a significant portion of any increase in income is given up to maintenance payments, the disincentives are, in theory, large enough to affect working decisions by low income males (or to affect their disclosure of work to government agencies).

But the evidence to test the importance of these incentive effects is thin. ABS data reveal that more than one in ten² of so-called male 'non-resident parents' (males who are not resident with their dependent children aged 0–17 years) were economically inactive in June 2003 compared with 7.4 per cent for males in residence with their dependent children (aged 0–15 years).³ The unemployment rate of the first group is also more than twice as high (at 9.1 per cent) than the second. However, the difference in labour market behaviour of the two groups is likely to be picking up more than incentives to avoid paying child maintenance payments. In particular, variations in socio-economic traits that affect the likelihood of partner separation may well also be at work. For example, Silvey and Birrell (2004) found that income levels of male non-resident parents appeared to be low *before* separation and not to change significantly afterwards. They saw this as inconsistent with the view that males seek to avoid their obligations by reducing their labour market engagement after separation.

In any case, regardless of the importance of this issue to male non-resident parents themselves, current ABS statistics suggest that they are still a relatively small group and cannot explain why prime age male inactivity rates are so high. Inactive male non-resident parents comprise only around 10 per cent of all inactive males aged 25–54 years old (overwhelmingly the prime group from which they are drawn). Even under the (extreme) hypothesis that all of the difference in inactivity rates between resident and non-resident male parents could be ascribed to incentive effects, eliminating those incentive effects would have modest aggregate impacts.

² 11.6 per cent (sourced from ABS 2004, Family Characteristics, Australia, June 2003, Cat. No. 4442.0).

³ This is from ABS 2005, Labour Force, Australia, Detailed - Electronic Delivery, Monthly, Cat. No. 6291.0.55.001 (Supertable ST FM2) for June 2003. The difference in the age of dependents is unlikely to invalidate the comparison.

Total inactive males would be reduced by only around 17 000 and inactivity rates for males aged 25–54 by 0.4 percentage points.⁴

A concern remains, however, that the data for examining this issue are imperfect. For example, there were 603 043 male payers of child care maintenance overseen by the Child Support Agency (CSA 2003) in June 2003 compared with only an estimated 403 400 non-resident male parents as enumerated by the ABS for the same time. This suggests under-coverage of this group in the official statistics.

3.3 Educational and occupational characteristics of men outside the labour force

In snapshots at a given time, greater educational attainment rates are associated with higher participation rates and lower unemployment risk (table 3.3 and figure 3.3).

Table 3.3 **Labour force status by highest educational attainment**
Males aged 25 to 64 years, May 2005^a

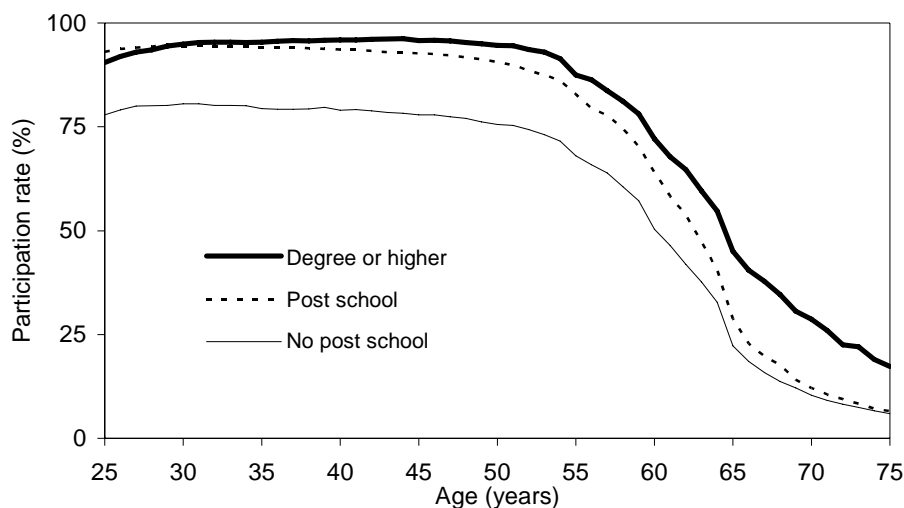
<i>Attainment level</i>	<i>Full-time work</i>	<i>Part-time work</i>	<i>Un-employed</i>	<i>Study-ing</i>	<i>Not in the labour force and not studying</i>	<i>Total</i>
	%	%	%	%	%	%
Postgraduate degree	80.9	9.2	2.8	1.9	5.2	100.0
Grad dip. and graduate certificate	83.8	7.6	1.5	0.9	6.1	100.0
Bachelor degree	81.4	8.5	2.2	2.5	5.5	100.0
Advanced diploma and diploma	82.0	7.4	2.7	0.8	7.2	100.0
Certificate III and IV	81.9	6.4	2.3	0.5	9.0	100.0
Certificate I and II	58.5	7.2 ^a	9.8 ^a	0.0	24.5	100.0
Year 12	76.9	9.0	2.8	1.8	9.4	100.0
Year 11	78.3	6.9	5.0	0.2	9.5	100.0
Year 10 or below	65.5	8.7	5.2	0.3	20.3	100.0
Total	76.9	7.9	3.2	1.0	10.9	100.0

^a The underlying estimates of the number of males in these categories have a relative standard error of greater than 50 per cent. The underlying relative standard errors for all other categories are less than 25 per cent. Categories may not add to 100 due to rounding.

Source: ABS, *Education and Work*, Cat. No. 6227.0, unpublished data.

⁴ The calculations are as follows: There were 46 800 male non-resident parents not in the labour force in June 2003 from a population of 403 400 male non-resident parents altogether, so giving an 11.6 per cent economic inactivity rate. Were the inactivity rate to fall to 7.4 per cent, as for male parents with resident dependent children, then there would be 29 852 male non-resident parents outside the labour force — a decrease of 16 948. There were initially 425 400 males aged 25–44 year not in the labour force (out of a population of 4 240 600, giving an inactivity rate of 10.03 per cent). This would fall to 408 452 under the scenario, giving a new inactivity rate for this age group of 9.63 per cent or a reduction of 0.4 percentage points.

Figure 3.3 Education and labour force participation by age group
Males, 2001^a



^a Post-school is any post-school qualification excluding a degree or higher. No post-school refers to year 12 or lower.

Data source: ABS, Population Census 2001 (provided by Treasury).

The linkages between educational attainment rates and labour force status are complex. On the one hand, greater educational attainment can build skills and human capital, and create the prospects for greater labour market resilience, which may increase lifetime labour market prospects. The circumstances in which this is true are the subject of chapters 9 and 10. On the other hand, low post-school educational attainment and poor labour market performance can sometimes be a consequence of other factors. Some of these may still be educational — such as poor literacy. But others may reflect family or personal circumstances (poverty, lack of motivation, inherent ability). Chapters 9 and 10 unravel these complex strands. But the point to make here is that it should not be assumed that greater educational attainment for males will, by itself, necessarily reproduce outcomes observed for currently well-educated males.

An associated factor is the occupational choices of men. The occupational characteristics of men not in the labour force reveals that men with manual skills — ‘Intermediate Production and Transport Workers’ and ‘Labourers and Related Workers’ — have higher risks than average of being outside the labour force (table 3.4). For example, they are more than twice as likely to be outside the labour force as professionals. This is likely to reflect:

- the greater exposure to injury of occupations involving manual work;
- reduced options for mobility to other occupations given their educational background;

- their lower incentives to work given a smaller gap between wages and welfare alternatives; and
- their higher likelihood of entering unemployment.

As observed in chapter 2, unemployment is a major labour market state prior to exit from the labour force for prime aged males. The close correlation between unemployment and inactivity risks is borne out by the fact that occupations with a higher risk of unemployment are also those with a higher risk of labour force exit (figure 3.4).

Table 3.4 Which occupations are most at risk of being inactive?
Males, 2004^a

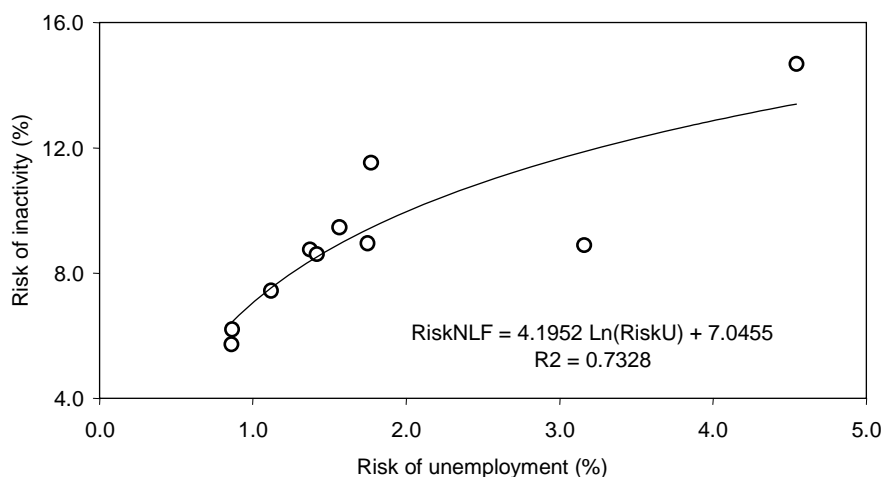
<i>Occupation</i>	<i>Share of EMP</i>	<i>Share of UN</i>	<i>Share of LF</i>	<i>Share of NLF</i>	<i>Risk of NLF</i>	<i>Risk of UN</i>
	%	%	%	%	%	%
Managers and Administrators	10.9	5.3	10.7	7.4	6.2	0.9
Professionals	16.3	7.9	16.0	10.3	5.7	0.9
Associate Professionals	12.7	8.0	12.6	10.5	7.4	1.1
Tradespersons and Related Workers	20.6	16.0	20.4	20.0	8.8	1.4
Advanced Clerical and Service Workers	0.8	0.6	0.8	0.7	8.6	1.4
Intermediate Clerical, Sales and Service Workers	8.3	7.4	8.2	8.7	9.5	1.6
Intermediate Production and Transport Workers	13.6	13.8	13.6	17.5	11.5	1.8
Elementary Clerical, Sales and Service Workers	6.2	11.5	6.4	6.3	8.9	3.2
Labourers and Related Workers	10.7	29.5	11.3	18.6	14.7	4.5
Total	100.0	100.0	100.0	100.0	8.9	1.7

^a EMP denotes employment, UN unemployment, LF the labour force, and NLF not in the labour force. The labour force information is based on all ages of males, but will primarily be for men aged less than 70 years old. The NLF data are based on men aged 15–69 years. (The reason that 2004 data on NLF were used is because the ABS information on persons not in the labour force after that year includes men aged 70 years and over. This includes all retirees and, since most men, regardless of occupation eventually retire, this would reduce the value of a comparison with the existing labour force.)

Source: ABS, *Labour Force, Australia*, Detailed, Quarterly Cat. No. 6291.0.55.003 (datacubes ST E07_Aug96 and ST UQ3_May01) for August 2004 and ABS *Persons Not in the Labour Force, Australia*, September 2004, Cat. No. 6220.0.

Figure 3.4 The occupational risk of inactivity and unemployment are closely related

Males, 2004



Data source: As in table 3.4.

3.4 Indigenous males

Male Indigenous Australians have much higher inactivity rates than their non-Indigenous peers, particularly in the prime working age groups from 25–64 years (table 3.5). (They also have elevated unemployment rates, indicating that they have limited success in finding employment, even when participating.) While some apparently large changes in inactivity rates⁵ have occurred (figure 3.5), the changes are not statistically significant given small sample sizes.

High Indigenous inactivity rates mainly reflect lower educational attainment, limited access to jobs in remote areas combined with low mobility, poorer language skills and some other enduring socio-economic disadvantages (Hunter and Gray 2001, Hunter 2002; SCRGSP 2005).

In fact, the true underlying unemployment and inactivity rates are masked by the effects of the (burgeoning) Community Development Employment Projects (CDEP), particularly in remote areas. The scheme involves employing local labour for projects that benefit the community, and particularly target the low-skilled and poorly qualified (ABS 2003a). Participants are classed as employed in official statistics. Participation is voluntary and the income earned from working replaces unemployment benefits.

⁵ For example, among young people from 2002 to 2005.

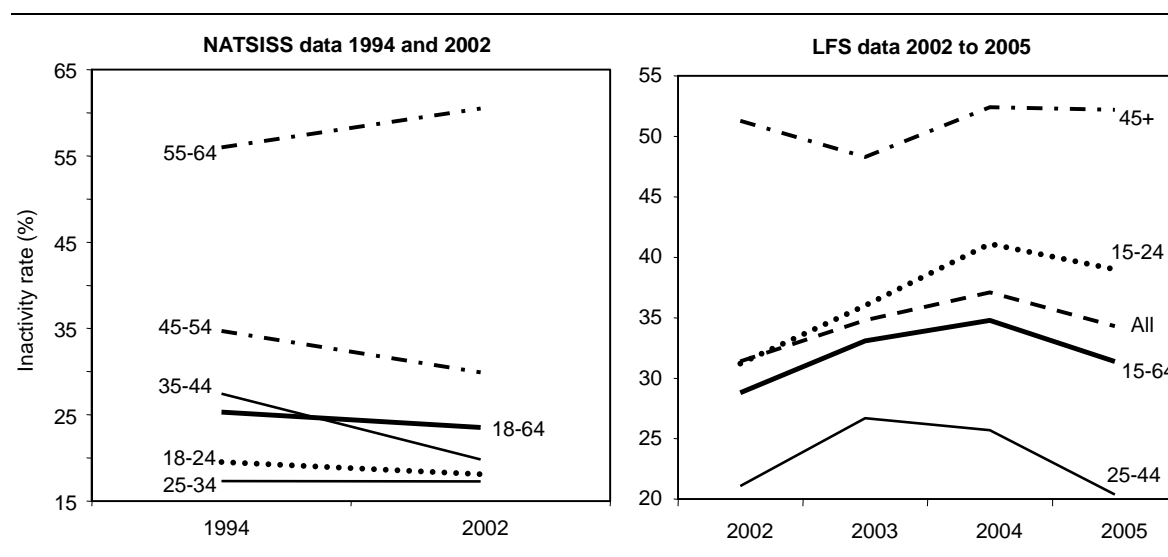
Table 3.5 Male Indigenous and non-Indigenous inactivity and unemployment rates, 2002

Age group	Indigenous inactivity rate	Indigenous unemployment rate	Non-indigenous inactivity rate	Non-indigenous unemployment rate
	%	%	%	%
18–24	18.1	28.4	16.1	13.1
25–34	17.3	21.7	6.0	4.6
35–44	19.8	19.6	7.1	4.6
45–54	29.9	12.5	11.8	4.2
55–64	60.5	10.4	31.6	3.3
18–64	23.5	20.9	17.1	5.6
AS 18+ ^a	38.0	19.0	24.5	5.4

^a AS denotes age-standardised estimates for the open-ended age interval 18+ years..

Source: SCRGSP (2005, p. 3.33–6) based on unpublished ABS NATS/SS data (Cat. No. 4714.0).

Figure 3.5 Male Indigenous inactivity rates are high, but relatively stable over time
1994–2005^a



^a The ABS NATS/SS survey has a different scope to the ABS Labour Force Survey (LFS). For example, the NATS/SS survey is limited to Indigenous people living in private dwellings aged over 18 years, instead of all dwellings and people aged over 15 years as for the LFS. Comparisons of aggregate data of the two series are described by ABS in appendix 1 of its 2005 LFS survey results (as referenced below). ^b The relative standard errors of the participation rates are sufficiently high that the changes over time are not statistically significant at conventional levels.

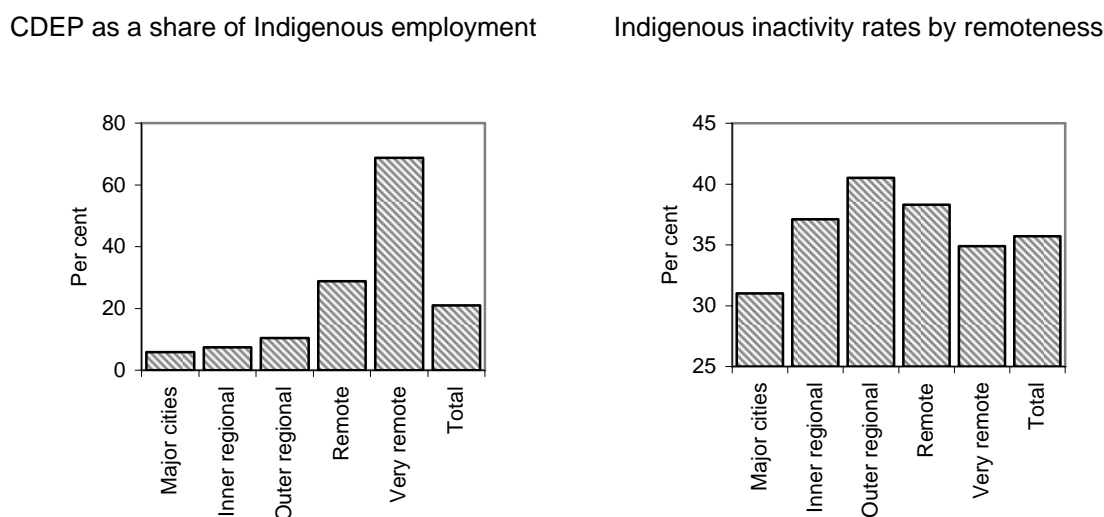
Data source: The NATS/SS data are from SCRGSP (2005, Tables 3A.5.1 and 2) and the LFS data are from the ABS 2006, *2005 Labour Force Characteristics Of Aboriginal And Torres Strait Islander Australians Australia, Experimental Estimates From The Labour Force Survey*, 16 May, Cat. No. 6287.0.

Given this, it might be supposed that the impact would only be on unemployment rates and not inactivity rates. However, Hunter (2002) and previous analyses have

found a strong link between CDEP and labour force participation rates. This suggests that the capacity to move from unemployment to CDEP reduces the counterfactual transition rates from unemployment to inactivity for Indigenous males.

CDEP is particularly important in remoter areas, accounting for roughly 70 per cent of employment in the most remote regions (figure 3.6). This explains the otherwise paradoxical result that despite labour market demand in these areas falling far short of unskilled Indigenous labour supply, (measured) economic inactivity rates in the remotest areas are commensurate with major cities.

Figure 3.6 The ‘masking’ role of CDEP^a



^a Inactivity rates are those for 18–64 year olds (both sexes). Males have a slightly higher CDEP participation rate than females (23.1 per cent of males employed through CDEP compared with 18.2 per cent of females).

Data source: SCRGSP (2005) based on unpublished ABS NATS/ISS data (Cat. No. 4714.0).

While CDEP does provide community jobs for low-skilled Indigenous people, it has also been criticised on several grounds.

- It may reduce the incentives for completion of school, which is a major pathway to better jobs (Hunter 2002).
- For *some participants*, CDEP participation may be closer to economic inactivity than either employment or unemployment. This reflects several concerns. First, CDEP participation can be permanent, with no requirement to look for mainstream employment. Second, ‘jobs’ may not be closely monitored for performance, may fail to provide useful training, and may not build genuine job experience relevant to mainstream employment. In this context, while some assess that CDEP can provide a stepping stone to non-subsidised mainstream

employment (Gray and Thacker 2001), others have considered that too often CDEP jobs actually block pathways to mainstream employment and may not build real employability.

Recently, changes to CDEP have been announced (DEWR 2005a, b). These provide stricter governance mechanisms for CDEP projects, aim to increase employability of CDEP participants (such as through better accountability for job performance) and encourage and measure movements to mainstream jobs or business creation. This should reduce the extent to which CDEP ‘jobs’ represent de facto economic inactivity for some Indigenous people. On the other hand, the aspiration for strong mainstream job and business growth in those remote areas where CDEP proliferates is constrained by the characteristics of those locations (for example, high costs of infrastructure, distance to markets and limited local demand). (In general, across an economy, increased employability increases employment, but this may break down in very remote locations if workers are immobile).

While, Indigenous inactivity rates are comparatively high, the Indigenous population makes up only a small share of the Australian population (in contrast to the migrant stock). As a consequence, the overall contribution of high Indigenous inactivity rates to aggregate Australian male inactivity rates is relatively modest, though it can be as high as half a percentage point for the young (table 3.6). The impact would be greater were a proportion of the roughly 20 000 CDEP male participants (SCRGSP 2005 Table 11A.1.5 for 2002) to be considered as really ‘not in the labour force’, but would not materially alter these conclusions.

Table 3.6 High Indigenous inactivity hardly affects aggregate Australian inactivity rates
2004

<i>Age bracket</i>	<i>Indigenous share of the Australian civilian population</i>	<i>Inactivity rate with Indigenous</i>	<i>Inactivity rate without Indigenous</i>	<i>Difference</i>
	%	%	%	%
15 to 24 years	3.4	28.1	27.6	0.46
25 to 44 years	2.2	8.8	8.4	0.38
45 to 64 years	1.2	22.8	22.5	0.26
15 to 64 years	2.2	17.9	17.4	0.43

Source: Table 3.5 above and ABS, Labour Force Survey.

3.5 Does migrant status affect male inactivity?

Male migrants make up a significant share of the Australian male population aged 15 years and over (27.9 per cent in 2005) and an even larger share of males not in the labour force — around 34.3 per cent.⁶ This disparity reflects the higher than average inactivity rates of migrants. In 2005, male inactivity rates among migrants were 33.2 per cent compared with 24.6 per cent for Australian born males — nearly a 9 percentage point divergence (An even larger divergence is apparent for females).

Inactivity is higher, but male migrants are older than Australian-born

However, age confounds the comparisons. Not many babies migrate to Australia. So the age structure of migrants is weighted to the old. Since older males have higher inactivity rates, this means that the aggregate inactivity rate of migrants will be higher than people born in Australia. If migrants had the same age structure as Australian born males, then the aggregate migrant inactivity rate in 2005 would be 29.9 per cent instead of the observed 33.2 per cent (compared with 24.6 per cent for Australian born males; figure 3.7). Around 40 per cent of the difference in inactivity rates between native born and migrants can, therefore, be explained by age structure alone.⁷

The main source of the remaining difference is the relatively high inactivity rates of male migrants aged between 15 to 34 years⁸ and particularly 15–24 years (figure 3.7). The difference between participation rates of Australian born males aged 15–24 years and migrants was about 16 percentage points. Many of these were migrants had only recently arrived in Australia.⁹

⁶ The data are from the ABS Labour Force Survey averaged over the calendar year.

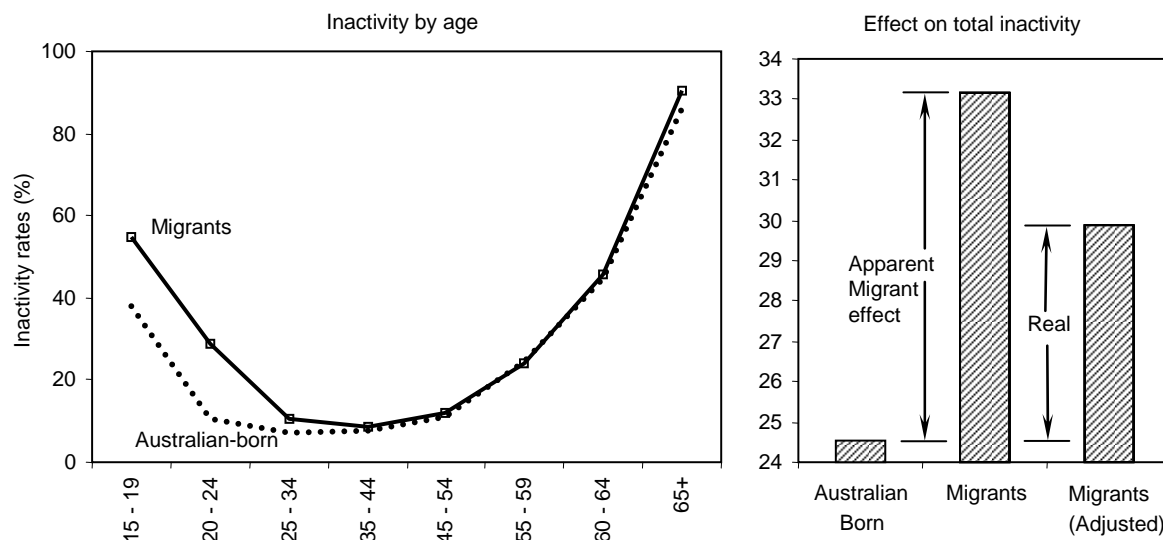
⁷ Bridge (2001) found a similar result for an earlier year.

⁸ Over 80 per cent of the remaining difference can be ascribed to these age groups in 2005.

⁹ While some of these will be migrants who came when very young (0–5 years), and then grew up in Australia, the migrant age structure strongly under represents this group. Accordingly, many migrants aged 15–34 must have arrived relatively recently. Examining 2001 Census data shows that around one third of males in this age group arrived in the past five years and around 70 per cent in the last 15 years. Only around 10 per cent of males aged 65+ years arrived in the past 15 years.

Figure 3.7 Differences between migrant and Australian-born inactivity rates by age

Males, 2005



^a Those institutionalised and born at sea are excluded. Data are averages over the calendar year.

Source: ABS 2005, *Labour Force, Australia*, Detailed - Electronic Delivery, Monthly, Cat. No. 6291.0.55.001 (Supertable LM5).

Closer analysis suggests that educational involvement by non-English speaking students, rather than migrant status more generally, plays an important role in the low relative engagement of young migrants.¹⁰

- Migrants in the 15–24 years age group had a greater higher likelihood of being from a non-English speaking background (regardless of their self-assessed English proficiency) and were more likely (inevitably) to have arrived recently in Australia. But higher inactivity rates are not a reflection of migrant status *per se*. For example, on average, a long-term male migrant aged 15–24 years from an English-speaking country who had arrived more than 15 years ago actually had a significantly *higher* participation rate than an Australian-born male of the same age, no matter what their qualifications.
- A non-English speaking background appears to have a bigger adverse effect on labour participation for young migrant males than for other age groups. In 2001, a male 15–24 year old migrant from a non-English speaking background had a

¹⁰ Data from the 2001 Census helps unravel the underlying determinants of labour force outcomes for migrants. Regression analysis allows the impacts of migrant status *per se* to be distinguished from other characteristics that are sometimes (but not always) present in migrants (such as poor English proficiency or lower educational attainment rates). The modelling approach used to do this in this report was akin to that in PC (2006, pp. 245ff).

9 percentage points lower labour participation rate than a 25+ year old male migrant, all other things being equal.¹¹

- The most important factor likely to lie behind the labour market prospects of male migrants aged 15–24 years is their high educational participation rates. A significant (and growing) proportion of young migrants are overseas students from non-English speaking countries, residing in Australia while they acquire their qualifications.¹² Regardless of migrant status, students have much higher inactivity rates than non-students. For example, in 2005 the average inactivity rate of male students aged 20–24 years (both migrant and Australian-born) was 40.8 per cent compared with just over 3 per cent for non-students.¹³

Moreover, those young migrants who are students appear to have lower labour force participation rates than their Australian-born student peers. Foreign students find it harder to obtain part-time jobs while being educated (reflecting poorer language skills, the implicit and explicit costs of applying to the Australian Government to get permission to work, and less developed local networks and social capital).

Inactivity varies with the home country of migrants

The risk of male inactivity varies significantly with the regional source of the migrant (table 3.7).

Male migrants from Oceania (mainly New Zealand) have generally lower inactivity rates than the Australian born, especially at ages 55–64 years. Only migrants from this source region have lower age-adjusted average inactivity rates below the Australian-born. This is explained by two factors. First, these migrants have high English proficiency (which, as shown above, reduces inactivity). Second, many migrants from New Zealand who retire early probably retire to New Zealand (a form of ‘selection bias’), leaving more job-oriented New Zealanders behind in Australia during the early retirement years from 55–64.

North West Europeans, including the UK, have inactivity rates roughly equivalent across age groups to ‘natives’.

¹¹ English proficiency skills play a complex role for this group. On *arrival* they may have poor skills that impede labour market involvement. However, many in this group are students, for whom acquisition of English skills is a major reason for studying in Australia. Consequently, as education progresses, their proficiency develops, so that male migrants aged 15 to 34 years report that they have, on average, better English proficiency than migrants in other age groups, even though their likelihood of arriving recently is higher.

¹² If they are residing in Australia for more than a year, the census will record their labour market activity.

¹³ Based on ABS labour force data.

Table 3.7 Inactivity rates by region of birth and age
Males, 2005^a

<i>Region</i>	15– 19	20– 24	25– 34	35– 44	45– 54	55– 59	60– 64	65+	<i>Total</i>	<i>Age adjust.</i>
	%	%	%	%	%	%	%	%	%	%
Australia	38.1	10.5	7.0	7.7	11.1	24.7	44.6	86.2	24.6	24.6
NZ & other										
Oceania	40.4	11.1	5.6	5.8	9.9	16.0	32.0	78.8	15.7	21.9
NW Europe	38.5	14.2	6.7	6.0	10.5	21.8	44.4	90.6	35.7	24.9
S & E Europe	48.9	18.2	10.7	9.1	17.6	30.0	46.3	92.0	50.2	29.8
N Africa and Middle East	67.8	30.2	16.8	22.4	21.8	42.3	61.6	95.1	39.7	39.4
SE Asia	59.9	36.6	10.7	10.7	11.0	28.1	54.9	89.8	24.2	32.1
NE Asia	77.0	55.7	26.0	11.4	11.1	25.0	50	92.7	37.4	38.8
Southern & Central Asia	50.2	18.6	7.4	8.3	7.9	21.6	28.3	83.1	18.8	24.9
Americas	45.4	16.4	13.6	5.7	12.4	14.1	58.2	83.4	21.7	26.7
Sub-Saharan Africa	50	22.1	11.7	6.8	7.9	4.4	53.0	82.2	20.3	25.8

^a Those institutionalised and born at sea are excluded. Data are averages over the calendar year. Age adjusted totals are calculated by weighting each country's age-specific inactivity rates by Australia's population age structure.

Source: ABS 2005, *Labour Force, Australia*, Detailed - Electronic Delivery, Monthly, Cat. No. 6291.0.55.001 (Supertable LM5).

Southern European, Eastern European and Asian migrants generally have higher inactivity rates for younger males. Much less significant labour market disadvantages are apparent for older males. This is likely to reflect the fact that most of these have been resident in Australia for a long time (66 per cent came before 1971 and only 2.4 per cent between 2001 and 2005) and that, all other things being equal, labour disadvantages do not persist strongly for migrants as they acquire language proficiency and local experience.

North African and Middle Eastern migrants have much higher inactivity rates across *all* age groups. For example, inactivity rates for young men are around 20 to 30 percentage points higher than the comparable Australian rates, while rates for males aged 55–64 are also around 20 percentage points higher. This group also has much higher unemployment rates, so their engagement with labour markets is low compared with other migrants groups and 'natives'. As shown below, their labour market outcomes do not seem to reflect differences in their age structure or their time of arrival from other migrants, and remains to be examined in closer detail. They are an important migrant group, representing about one in 17 of all Australian migrants.

Table 3.7 shows why it is so important to adjust average inactivity rates experienced by different migrant groups for their differing age structures. For example, male migrants from Southern and Eastern Europe had an average inactivity rate of around 50 per cent, more than double the 'native' average. But around 80 per cent of this difference can be ascribed to the different age structure of these migrants (reflecting the fact that the very large migrant intakes from this region occurred some decades ago, and that the cohort has therefore aged considerably).

Equally, it can be important to consider time of arrival explicitly as a factor that explains male inactivity rates (table 3.8). Generally, though not always, more recently arriving groups of male migrants face high inactivity rates than groups that arrived some years ago. For example, in 2005 nearly 60 per cent of males arriving from N.E. Asia from 2001 to 2005 are inactive, while this falls to about half this for the group that arrived from 1991-95. Some of this transformation will involve acquisition of better English language skills, experience within Australia and recognition of overseas qualifications, but in part, it reflects the likelihood that they represent different groups and the effects of current economic conditions at the time of arrival. Many foreign students will, for example, be included in the 2001-05 group, but will not be included in the 1991-95 group (as they will have returned home).

Table 3.8 Male migrant inactivity rates by region of origin and year of arrival

For the stock of migrants in 2005^a

<i>Country of origin</i>	<i>Arriving in:</i>			
	<i>1971-75</i>	<i>1981-85</i>	<i>1991-95</i>	<i>2001-05</i>
	%	%	%	%
Oceania and Antarctica	17.3	12.9	15.1	11.0
North-West Europe	29.9	18.3	15.4	17.0
Southern and Eastern Europe	33.2	21.4	19.2	28.6
North Africa and the Middle East	55.9	27.3	24.7	41.2
South-East Asia	24.4	15.5	26.5	43.6
North-East Asia	43.9	19.0	29.3	56.8
Southern and Central Asia	23.7	17.6	14.6	15.2
Americas	30.7	10.1	21.5	20.1
Sub-Saharan Africa	25.7	11.0	22.6	20.8
Total migrants	31.0	16.9	20.7	27.8
Australian born (2005)	..	..	..	24.6

^a Those institutionalised and born at sea are excluded. Data are averages over the calendar year. Arrival-adjusted totals are calculated by weighting each country's arrival-specific inactivity rates by NZ and Oceania's population arrival time structure.

Source: ABS 2005, *Labour Force, Australia*, Detailed - Electronic Delivery, Monthly, Cat. No. 6291.0.55.001 (Supertable LM4_Apr01).

Average rates of inactivity can be adjusted for the differences in arrival times for different migrant groups, as in age-adjustment. For male migrants from regions where mass migration has principally occurred in past decades (Europeans generally), adjustment for recency significantly reduces inactivity rates (table 3.9).

Table 3.9 Adjusting inactivity rates for arrival times
Males, 2005^a

<i>Region</i>	<i>Total</i>	<i>Arrival adj.</i>
	%	%
New Zealand & other Oceania	15.7	15.7
NW Europe	35.7	21.0
S & E Europe	50.2	29.3
N Africa and Middle East	39.7	35.4
SE Asia	24.2	25.8
NE Asia	37.4	36.1
Southern & Central Asia	18.8	18.9
Americas	21.7	21.0
Sub-Saharan Africa	20.3	19.5

^a Those institutionalised and born at sea are excluded. Data are averages over the calendar year. Arrival-adjusted totals are calculated by weighting each country's arrival-specific inactivity rates by New Zealand and Oceania's population arrival time structure.

Source: ABS 2005, *Labour Force, Australia*, Detailed - Electronic Delivery, Monthly, Cat. No. 6291.0.55.001 (Supertable LM4_Apr01).

Skilled migrant streams are more engaged in Australian labour markets

All skilled streams, except those on business skills visas have low inactivity (and unemployment) rates six months after arrival and these reduce further with duration of residence (table 3.10). Those migrating to Australia under the Employer Nomination Scheme (ENS) have the lowest unemployment and inactivity rates of all visa categories. Having been in the country for six months, this group has no unemployment and almost total participation (only 1 per cent inactivity).

Family and humanitarian visa categories perform poorly in the labour market (table 3.10). While improving with the duration of residency, unemployment and inactivity rates are still much higher than the skilled stream migrants and Australian rates. This is to be expected as these migrants are being granted entry due to their circumstances, not abilities.

Table 3.10 **Labour force status by visa category and time since arrival for migrants arriving 1999-00**

Males and females

Indicator	Skilled stream				Other streams	
	Business skills	ENS ^a	Independent	SAS ^b	Family	Humanitarian
	6 months after arrival					
	%	%	%	%	%	%
Unemployment	8	0	8	21	22	71
Inactivity	46	1	11	15	47	82
	18 months after arrival					
Unemployment	0	0	7	6	13	43
Inactivity	20	0	8	13	38	68
Proportion of total migrants ^c				35 ^d	22	8

^a Employer Nominated Scheme; ^b Skill Australia Sponsored; ^c 35 per cent of migrants are non-visaed (mostly New Zealand migrants); ^d Includes all skilled categories.

Source: Longitudinal Survey of Immigrants to Australia, Second cohort, wave 1 and 2 (DIMIA 2003); and ABS (*Migration 1999-2000*, Cat. no. 3412.0).

The effects of qualifications for male migrants

As noted previously, educational attainment levels play a major role in labour market inactivity rates — and this applies strongly to migrant labour market experiences (table 3.11). With some exceptions, it can be generally seen that labour market inactivity decreases as level of qualifications increase. One notable exception is the low inactivity rates of migrants with Certificate levels III and IV and to a lesser extent levels I and II (though not shown, the same pattern is evident in unemployment rates). This could be indicative of demand outstripping supply for qualified tradespeople in Australia.

The fact that migrants with higher educational attainment rates do better in labour markets need not reflect the benefits of education alone.

- Those with higher attainment levels are likely to have other innate characteristics that pre-dispose them to a higher likelihood of a job.
- For migrants with a post-school qualification, there is greater recognition in Australia of a bachelor degree (or higher) and for a certificate III/IV, than for a diploma, advanced diploma or certificate I/II.¹⁴

¹⁴ ABS 2006, *Year Book Australia 2006*, Cat. No. 1301.0.

Table 3.11 Male migrant inactivity rates by qualification level and year of arrival

<i>Qualification</i>	<i>Arrived between 1996 and 1998</i>	<i>Arrived between 1999 and 2001</i>	<i>Control group^a</i>
	%	%	%
Postgraduate degree level	12.50	18.70	12.47
Graduate diploma and graduate certificate level	13.38	21.19	10.63
Bachelor degree level	17.75	22.56	12.11
Advanced diploma and diploma	23.94	35.78	18.68
Certificate level III and IV	14.74	16.80	21.07
Certificate level I and II	22.94	27.59	18.83
Other (incl. certificate not defined, inadequate description and not stated)	35.03	39.22	29.87
No non school qualification – highest schooling year 9 or above	35.29	43.56	26.05
No non school qualification – highest schooling year 8 or below	47.41	46.12	62.53
No non school qualification – did not go to primary/secondary school	48.26	46.43	64.54

^a Males born in Australia or migrated before 1999.

Source: ABS (*Census 2001* (unpublished)).

The divergence in migrant labour inactivity rates has been growing

The divergence between aggregate migrant and Australian-born inactivity rates has grown greatly since the late 1970s. At that time, male inactivity rates were actually lower for migrants than Australian-born males by around 1.6 percentage points (figure 3.8). Had migrants maintained the same relative advantage they had in 1979, then their inactivity rate would have been 23.0 percentage points in 2005,¹⁵ and the aggregate Australian male inactivity rate would have been around 24 per cent instead of around 27 per cent. Under this scenario, the significant rise in aggregate male inactivity rates from 1979 to 2005 would have nearly been halved. So the effects of differential migrant labour market performance have been influential in Australia.

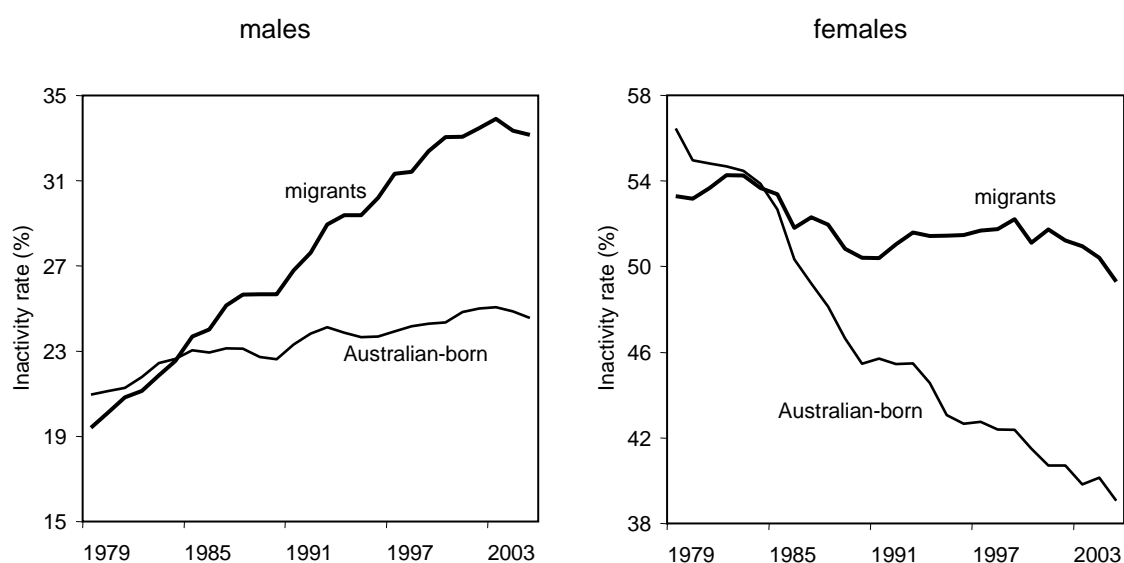
Accordingly, it is important to understand what might lie behind the apparently growing labour market disadvantage experienced by male migrants in Australia.

At least part of the story is population ageing. The different age structure of migrants, noted earlier, is reinforced over time. In 1978 the average age of migrants

¹⁵ The Australian rate in 2005 (24.6 percentage points) less 1.6 points.

was 42.1 years compared with 39.7 years for a person born in Australia (a difference of 2.4 years). By the end of the 1990s these averages had increased to 46.2 and 41.1 years, respectively (a difference of 5.1 years) (Kryger 2003). Bridge (2001) estimated that ageing accounted for less than half of the increase in inactivity rates of migrants (of both sexes) from 1978 to 2000.¹⁶

Figure 3.8 Migrant versus Australian-born inactivity rates
Males and females, 1979–2005^a



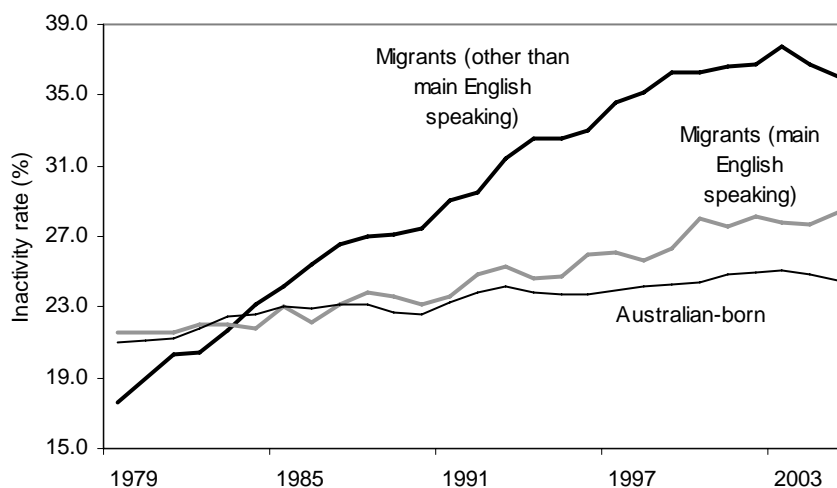
^a Data are calendar year averages.

Source: ABS 2005, *Labour Force, Australia*, Detailed - Electronic Delivery, Monthly, Cat. No. 6291.0.55.001 (Supertable LM7).

A second step is to separate migrants into those from English speaking and non-English speaking countries, since poor language skills frustrate job success. It is clear that most of the widening disparity between migrant and non-migrant inactivity rates relates to migrants from other than the main English speaking countries (figure 3.9).

¹⁶ But in some periods, ageing has certainly been more important. For example, the inactivity rate of male migrants rose from 27.6 to 33.2 per cent from 1992 to 2005, and around 90 per cent of this change was due to ageing rather than increases in age-specific inactivity rates.

Figure 3.9 Inactivity rates by source of migrants
Males, 1979–2005



Data source: As above.

To assess this more rigorously, a model was developed that explored the extent to which various factors shaped the labour force participation rates of migrants (and Australian-born as well). These factors were educational attainment, English proficiency, age and recency of arrival. A large grouped record sample was obtained from the ABS for the 1986 and 2001 population censuses (described in PC 2006, Appendix E) and equations estimated for labour force participation. The variables are described in detail in PC (2006), but are largely self-explanatory.

As well as finding the (usual) story that higher educational attainment is associated with higher labour force participation, a consistent finding across migrant males of all ages is that English proficiency is critical for participation (or its inverse, inactivity). For example, for a male migrant aged 45–64 years, poor English proficiency reduced participation by 25.2 percentage points in 2001, for any given level of educational attainment or recency of arrival (table 3.12). Migrants who are recent arrivals *and* young also fare worse.

The more interesting story is that these results are not stable over time.

- Poor language proficiency exacted a much larger toll in labour participation in 2001 than 1986. For example, in 2001 poor English proficiency reduced participation rates of young migrants by 24.7 points, nearly 30 points more than in 1986. Even those migrants from a non-English speaking language who self-assessed themselves as speaking English ‘well or very well’ found heightening barriers to participation than those migrating from English-speaking countries;

- Recency of arrival also poses an accelerating cost for males aged 15–44, though not for those aged 45 or more years.
- Migrants with no qualifications fared increasingly poorly in labour markets. This is suggested by the estimate of the constant in the equations, which picks up a combination of traits, but most importantly, the absence of qualifications. Thus a 25–44 year old male migrant with no qualifications, who is a speaker of English in their home country and who arrived over 15 years ago had a 89.6 per cent participation rate in 2001 (10.4 per cent inactivity rate), but an 95.0 per cent participation rate (5 per cent inactivity rate) in 1986. A somewhat weaker effect is notable for Australian-born males.

Table 3.12 **Separating the wheat from the chaff: what shapes male migrant labour participation in Australia?**

Participation rates, 1986 to 2001, ABS Population censuses^a

Coefficient	Migrants							
	15–24 years		25–44 years		45–64 years		65+ years	
	2001	1986	2001	1986	2001	1986	2001	1986
Constant	76.0	80.9	89.6	95.0	71.8	77.2	8.0	6.2
Certificate	28.6	26.2	5.7	2.5	8.2	4.8	1.8	0.9
Degree	22.5	17.5	6.0	2.3	14.3	10.2	11.4	12.4
Postgraduate qual	35.0	21.4	7.4	1.8	17.8	12.9	19.7	19.6
Poor English	-24.7	4.0	-15.7	-7.4	-25.2	-11.5	-5.0	-2.5
Speaks well/very well	-17.8	-14.0	-5.2	-3.2	-5.3	-0.3	1.7	4.0
Recent arrival	-26.2	-19.8	-6.3	-2.2	0.3	3.2	0.6	0.9
Medium term arrival	-15.3	-14.8	1.8	0.9	9.3	8.5	1.3	1.6

Coefficient	Australian-born							
	15–24 years		25–44 years		45–64 years		65+ years	
	2001	1986	2001	1986	2001	1986	2001	1986
Constant	64.8	66.5	87.1	93.4	72.0	74.0	11.7	9.8
Certificate	28.8	30.8	7.4	4.1	8.9	7.2	0.2	-0.7
Degree	27.0	25.4	9.2	4.6	15.4	12.3	9.7	12.1
Postgraduate qual	27.2	26.5	10.4	5.0	18.6	17.7	17.6	17.3
Poor English	..	..	..	..	..	..	..	..
Speaks well/very well	..	..	..	..	..	..	..	..
Recent arrival	..	..	..	..	..	..	..	..
Medium term arrival	..	..	..	..	..	..	..	..

^a In addition to the characteristics shown above, a person could have no qualifications, be a migrant from an English-speaking country and be a long term arrival. These are picked up in the constant (to avoid collinearity).

Source: Sub-sample of ABS census datasets for 1986 and 2001.

The reduced tolerance of Australian labour markets for poor English proficiency, inexperience or low educational attainments is the major factor underlying reduced *age-specific* participation rates by migrant males, with changing traits of migrants being much less significant (table 3.13). For example, of the 5.2 percentage points

reduction in participation rates between 1986 and 2001 for male migrants aged 25–44 years, all could be attributed to reduced tolerance of undesirable labour market traits.

Table 3.13 Shifts in male migrant participation rates between 1986 and 2001^a

<i>Explanatory factors</i>	<i>Age group (years)</i>			
	<i>15–24</i>	<i>25–44</i>	<i>45–64</i>	<i>65+</i>
	points	points	points	points
Explained by changing 'tolerance' of economy to migrant characteristics	-9.3 ^b	-5.2	-6.8	0.8
Explained by changes in migrant characteristics	-7.6	0.0	2.8	0.8
Total change in participation rates	-16.8	-5.2	-4.0	1.6

^a Results will not exactly match results from the ABS Labour Force Survey because of sample frame and sampling differences. Results may also not match the result from the entire Population Censuses since they are based on sub-samples. While the (not shown) overall reduction in rates was less for Australian-born males, as with migrants, reduced tolerance for undesirable labour market traits appeared to explain most of the decrease. ^b Some of this will reflect the student effect discussed earlier rather than intolerance per se.

Source: Sub-sample of ABS census datasets for 1986 and 2001 (described in PC 2006).

It appears that Australian labour markets have become less receptive to people with these traits, as occupational and job skill needs have changed following widespread structural change in Australian industry. Manufacturing and agriculture have become much less significant employers (PC 2003), and within all sectors, the demand for manual skills that have little requirement for proficiency in English has fallen. Even apparently low skill jobs in the service sector that have grown rapidly, such as retail sales, often require high degrees of competency in spoken English language and awareness of local social nuances. Unskilled male migrants from a non-English speaking background are particularly disadvantaged in this new labour market.

While this diminishing 'tolerance' will likely continue, it is being countered by another force. Skilled migrants make up an increasing proportion of new migrants — 43 per cent in 2004-05.¹⁷ This suggests that the marked disparity between migrant and 'native' inactivity rates may weaken eventually (though ageing will continue to place disproportionate pressure on activity rates by migrants).

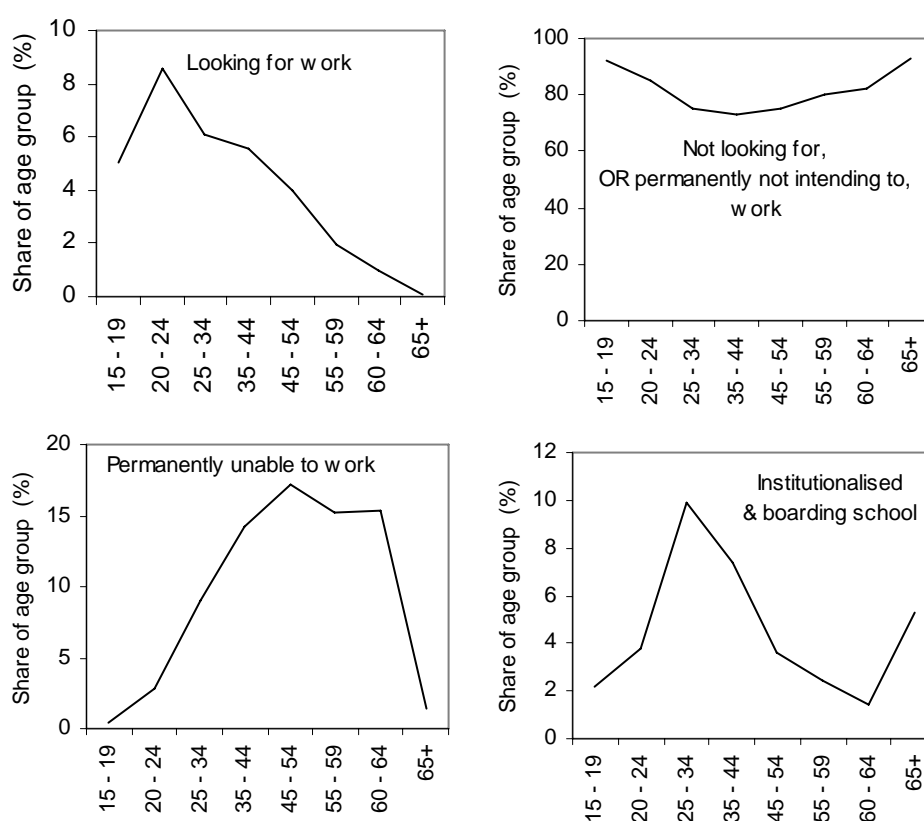
¹⁷ ABS 2006, *Migration Australia, 2004-05*, Cat. No. 3412.0.

It also should not be assumed that the higher inactivity records of male migrants imply that migration has adverse economic effects. Recent modelling by the Commission has shown small positive gains to economic growth (PC 2006).

3.6 The role of institutionalisation

While institutionalisation is generally unimportant as a factor leading to male economic inactivity, it accounts for about one in ten males aged 25–34 years who are outside the labour force and is also significant for ages 20–24 and 35–44 years (figure 3.10). It is low for all other ages, other than those aged 65 years, reflecting their higher needs for residential nursing home care.

Figure 3.10 **Labour market orientation by age**
Males, 2005-06, share of each age group by labour market orientation



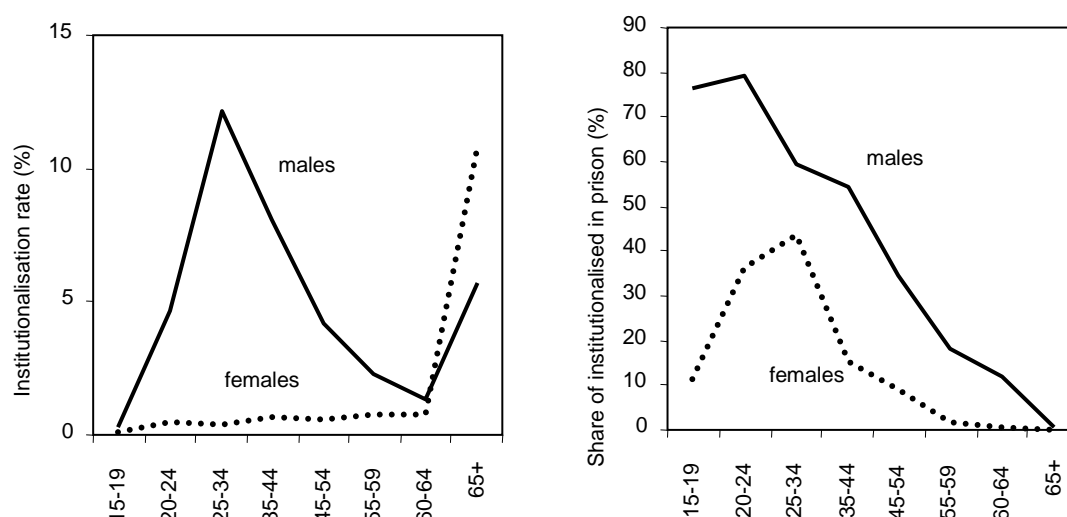
Source: ABS 2006, *Labour Force, Australia, Detailed* - Electronic Delivery (Supertable NM1_Apr01, Persons Not in the Labour Force), Monthly, Cat. No. 6291.0.55.001.

A major reason for institutionalisation among males aged 20–44 years (and even more so for those aged 25–44 years) is imprisonment. This may seem unusual given that aggregate imprisonment rates are low in Australia. However, imprisonment is

concentrated in relatively young males and so plays a far more important role in determining their labour market status than the aggregate imprisonment figures might suggest. Overall, imprisonment accounts for around an estimated sixty per cent of males institutionalised for these ages.¹⁸ This implies that around one in every 13 economically inactive males aged 25–34 years are inactive because they are in prison and around one in 20 of inactive males aged 20–44 years. By contrast, females show very low rates of institutionalisation at all ages, bar women aged 65+ years (figure 3.11). And of those institutionalised, few women are in prison. This is just one of the reasons why economic inactivity is a symptom of more serious problems for males than for females.

Figure 3.11 The role of institutionalisation and imprisonment on economic inactivity rates

Average of June 2004 and 2005^a



^a The institutionalisation rate is the number in institutions as a share of those not in the labour force (average of June 2004 and June 2005). The share of those institutionalised who are in prison is based on averaged data for June 2004 and 2005. Averaging of the labour force data is needed to reduce problems associated with sampling variability.

Data source: ABS 2005, *Prisoners in Australia 2005 and 2004*, Cat. No. 4517.0 and ABS 2005, *Labour Force, Australia, Detailed - Electronic Delivery* (Supertable NM1_Apr01, Persons Not in the Labour Force), Monthly, Cat. No. 6291.0.55.001.

¹⁸ There were an average of 18 638 male prison inmates aged 20–44 years for the June 2004 and June 2005 periods (ABS, *Prisoners in Australia 2004 and 2005*, Cat. 4157.0), while the aggregate average institutionalised population for this age group, excluding boarding schools for the same months was 30 476 (ABS 2005, *Labour Force, Australia, Detailed - Electronic Delivery* (NM1_Apr01), Monthly, Cat. No. 6291.0.55.001). Averaging of June data reduced sampling variability associated with the labour force survey.

4 Where do they live?

Economically inactive men are not distributed evenly throughout Australia, but tend to group together spatially. This chapter explores the nature of this clustering, considers some of its apparent causes and suggests why this might be relevant for policy.

4.1 Variations by States and Territories

Despite the potential for significant labour mobility between States and Territories, there remain significant variations between jurisdictions in the share of males who are economically inactive. At the extremes are the smaller jurisdictions — Tasmania with about one third of its male civilian population outside the labour force, and the Australian Capital Territory with less than one quarter (table 4.1). These broad regional variations have been noted in previous studies, albeit for both genders (for example, Bray 2000).

Table 4.1 Economically inactive males by State, 2005-06

<i>Jurisdiction</i>	<i>Not in Labour Force</i>	<i>State share of total</i>	<i>Labour force</i>	<i>State share of labour force</i>	<i>Inactivity rate</i>
	'000	%	'000	%	%
NSW	792.2	35.1	1 902.8	32.6	29.4
VIC	555.1	24.6	1 446.5	24.8	27.7
QLD	419.0	18.5	1 154.6	19.8	26.6
SA	191.6	8.5	428.7	7.3	30.9
WA	192.1	8.5	617.3	10.6	23.7
TAS	60.8	2.7	130.4	2.2	31.8
NT	20.5	0.9	56.3	1.0	26.6
ACT	28.4	1.3	98.2	1.7	22.4
Australia	2 259.7	100.0	5 834.7	100.0	27.9

Source: ABS, *Labour Force, Australia*, Detailed - Electronic Delivery, Monthly, Cat. No. 6291.0.55.001 (LM2).

Economic inactivity rates are strongly age-related (chapter 2), so that part of the reason for jurisdictional variations may be demographic. In fact, adjusting for the age structure of the population in each jurisdiction does not alter inactivity rates appreciably for the bigger states (table 4.2). Two notable exceptions are the

Australian Capital Territory (but only for 1978-79, when it had a very young population) and the Northern Territory more generally. In the latter case, the age-adjusted inactivity rate was still more than five percentage points above the unadjusted rate in 2005-06. The low *unadjusted* rate for this jurisdiction reflects the fact that a small share (about 3.8 per cent) of the male population is aged over 70 years — those ages associated with very low participation rates — in this jurisdiction compared with over 7.5 per cent for Australia as a whole in 2005-06. This demographic peculiarity masks the underlying high rate of economic inactivity among prime age males in the Territory. In large part, this is testimony to the very low economic activity rates of Indigenous males, who make up around 30 per cent of the male population in this jurisdiction.

The historical perspective given by table 4.2 also suggests that the high relative inactivity rates of Tasmania and South Australia apparent in 2005-06 did not prevail in 1978-79, probably testimony to the economic shocks that have particularly affected these States.

Table 4.2 Age-adjusted share of population not in the labour force
1978-79 and 2005-06^a

Jurisdiction	1978-79			2005-06		
	Inactivity rate	Age-adjusted inactivity rate	Ratio of adjusted to unadjusted	Inactivity rate	Age-adjusted inactivity rate	Ratio of adjusted to unadjusted
	%	%	ratio	%	%	ratio
NSW	22.4	22.3	1.00	29.4	29.0	0.99
VIC	21.6	21.5	1.00	27.7	27.7	1.00
QLD	21.3	20.7	0.97	26.6	27.0	1.01
SA	20.7	20.2	0.98	30.9	29.4	0.95
WA	20.1	21.2	1.05	23.7	24.8	1.04
TAS	21.1	20.4	0.97	31.8	29.9	0.94
NT	14.3	23.1	1.61	26.6	31.9	1.20
ACT	15.4	21.6	1.40	22.4	25.4	1.13
Australia	21.5	..	..	27.9	..	..

^a Age variations explained about half of the variations between State and Territory inactivity rates in 2005-06. The age-adjusted inactivity rates are estimated as:

$$\text{AdjustedIR}_{\text{state}} = \sum_{\text{age}=15-19}^{70+} S_{\text{age, Aus}} \times \text{IR}_{\text{state, age}} \text{ where the Australian male population share,}$$

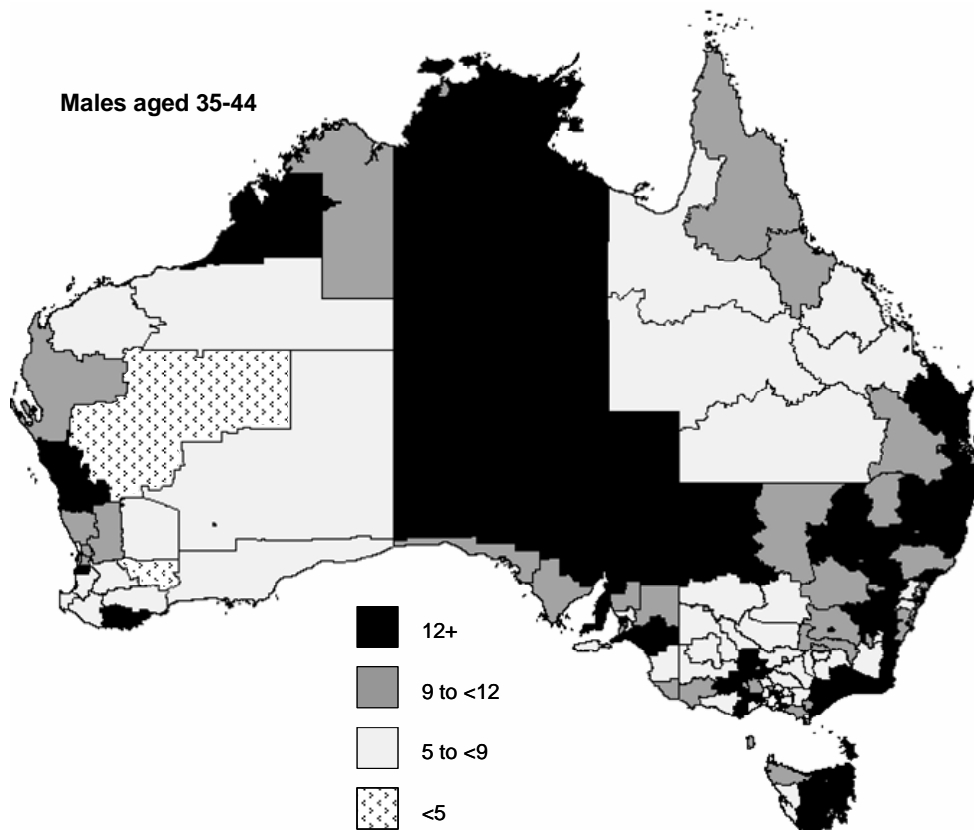
$$S_{\text{age}} = \frac{\text{CPOP}_{\text{age, AUS}}}{\sum_{\text{age}=15-19}^{70+} \text{CPOP}_{\text{age, AUS}}} \text{ is used as the weight.}$$

Source: PC calculations and ABS, *Labour Force, Australia, Detailed - Electronic Delivery (LM2)*, Monthly, Cat. No. 6291.0.55.001.

4.2 A regional picture

A more disaggregated regional picture of inactivity rates for males aged 35–44¹ and 65+ years (figures 4.1 and 4.2) does not suggest any single factor shaping the spatial pattern of male economic inactivity across Australia.

Figure 4.1 **Inactivity rates by region**
35–44 year olds, SSDs, Australia, 2001, per cent^a



^a SSDs denote statistical subdivisions.

Data source: ABS Integrated Regional Database (Cat. 1353.0) based on 2001 Census data.

- There is a limited association between remoteness and economic inactivity. Some remote areas have high inactivity rates. For example, there is band of statistical districts running north through South Australia and Northern Territory characterised by high inactivity rates among prime aged males — such as Pirie (SA), the Flinders Ranges (SA), the Far West (NSW), the Far North (SA) and the Northern Territory — possibly reflecting the high Indigenous share of the male population. Yet other remote regions have low inactivity rates among

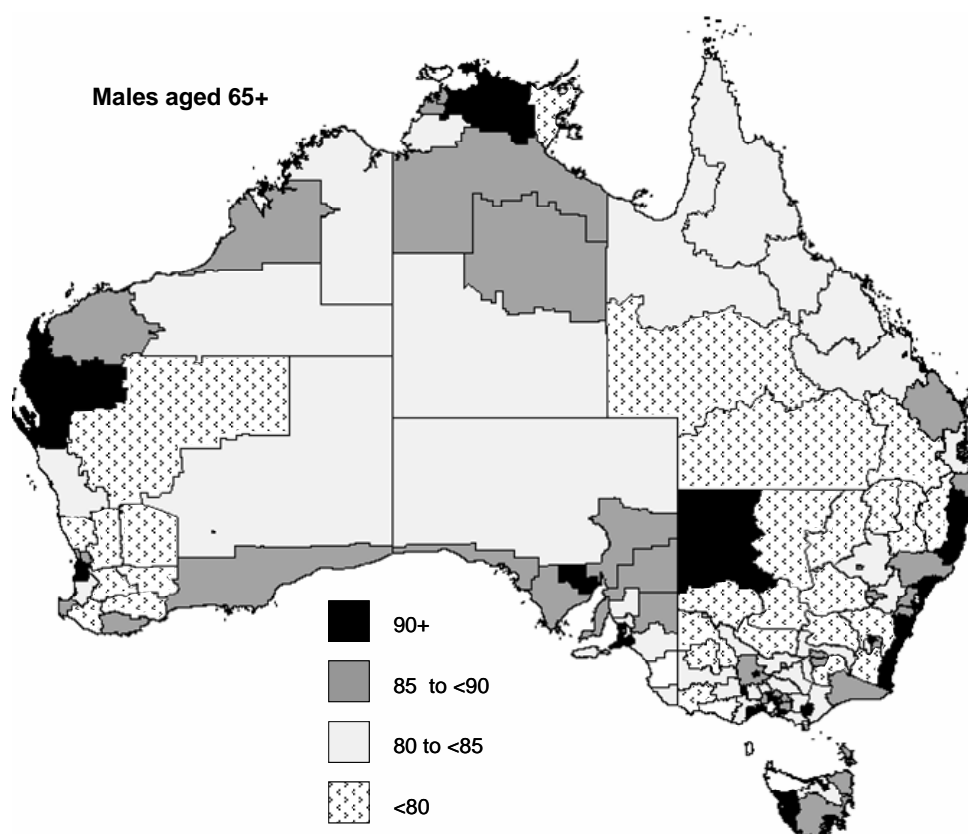
¹ This age group is selected since it will control for any differences between regions in their age structures. They are similar (but easier to calculate) to results that would be obtained through an age-standardised inactivity rate.

prime age males — such as most of West Queensland and the De Grey, Lefroy and Carnegie districts of Western Australia.

- There is a tendency for the non-metropolitan south eastern coastal fringes of Australia to have higher levels of economic inactivity among males of prime and ‘old’ ages. For prime age males this may reflect the fact that the impetus to move is lower for men outside the labour force if the local environment is attractive, while for older males it is likely to reflect retirement to the coast. Among old males, spatial variations are much smaller than among younger males, because most males over 65, wherever they are, have left the labour force.
- Areas of greater disadvantage (indicated by higher unemployment rates) have significantly higher inactivity rates — such as Western Adelaide in South Australia, Canterbury-Bankstown in Sydney, the Wide Bay-Burnett Statistical Region in Queensland, and the Southern Statistical Region in Tasmania.

Figure 4.2 **Older male inactivity rates by region**

65+ year olds, SSDs, 2001, per cent^a



^a SSDs denote statistical subdivisions.

Data source: ABS Integrated Regional Database (Cat. 1353.0) based on 2001 Census data.

The same wide variations in the spatial distribution of inactivity rates are apparent at much smaller scales — within Australia’s metropolitan areas (figure 4.3). Poorer areas closer to the central business districts generally have higher inactivity rates among prime aged males. Given their economic circumstances, it is not surprising that men outside the labour force are not highly represented in those outer suburbs experiencing high dwelling construction rates and rapid expansion.

Figure 4.3 Prime age male inactivity rates in metropolitan areas
35–44 year olds, statistical local areas (SLAs), 2001, per cent^a

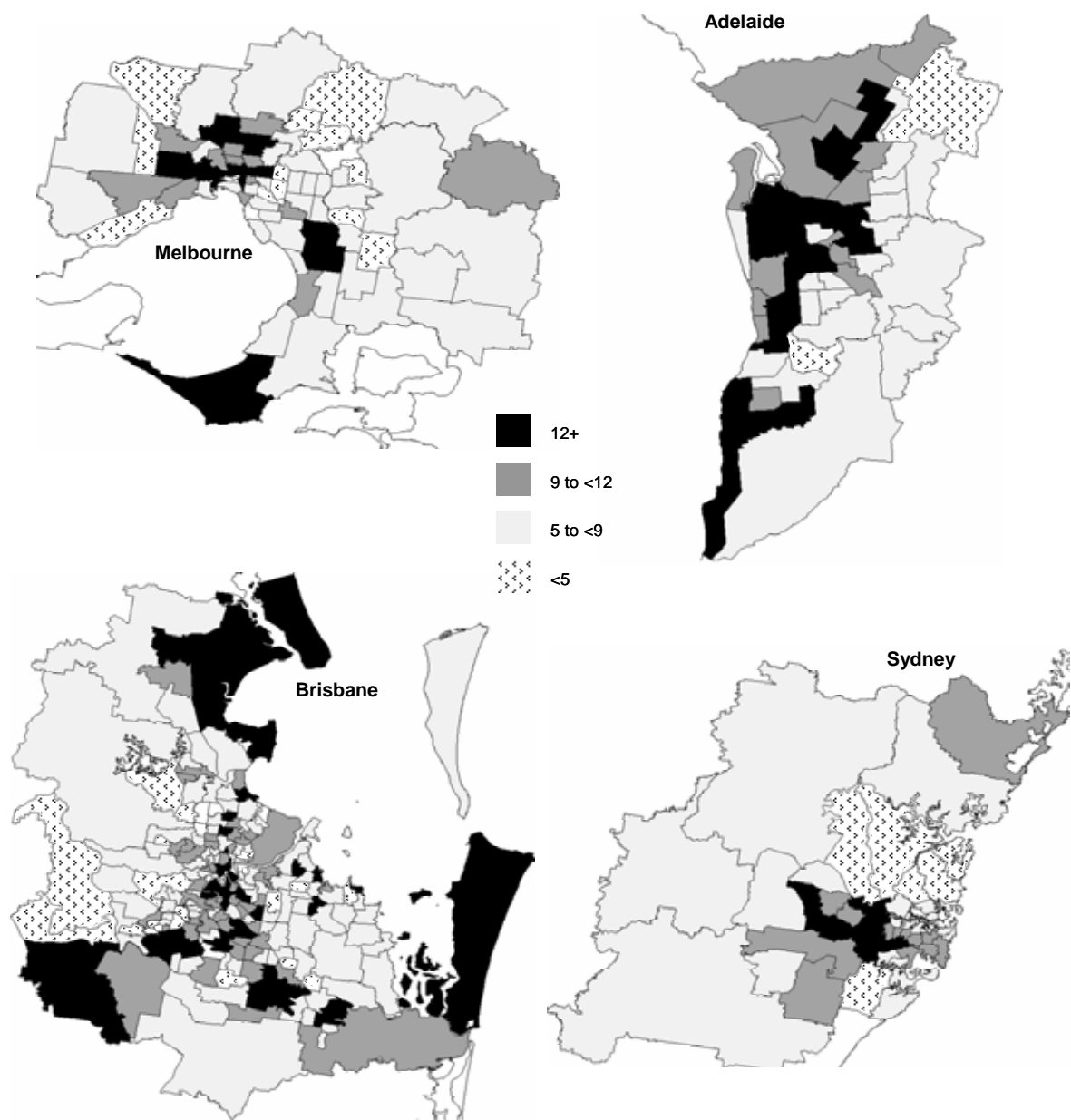
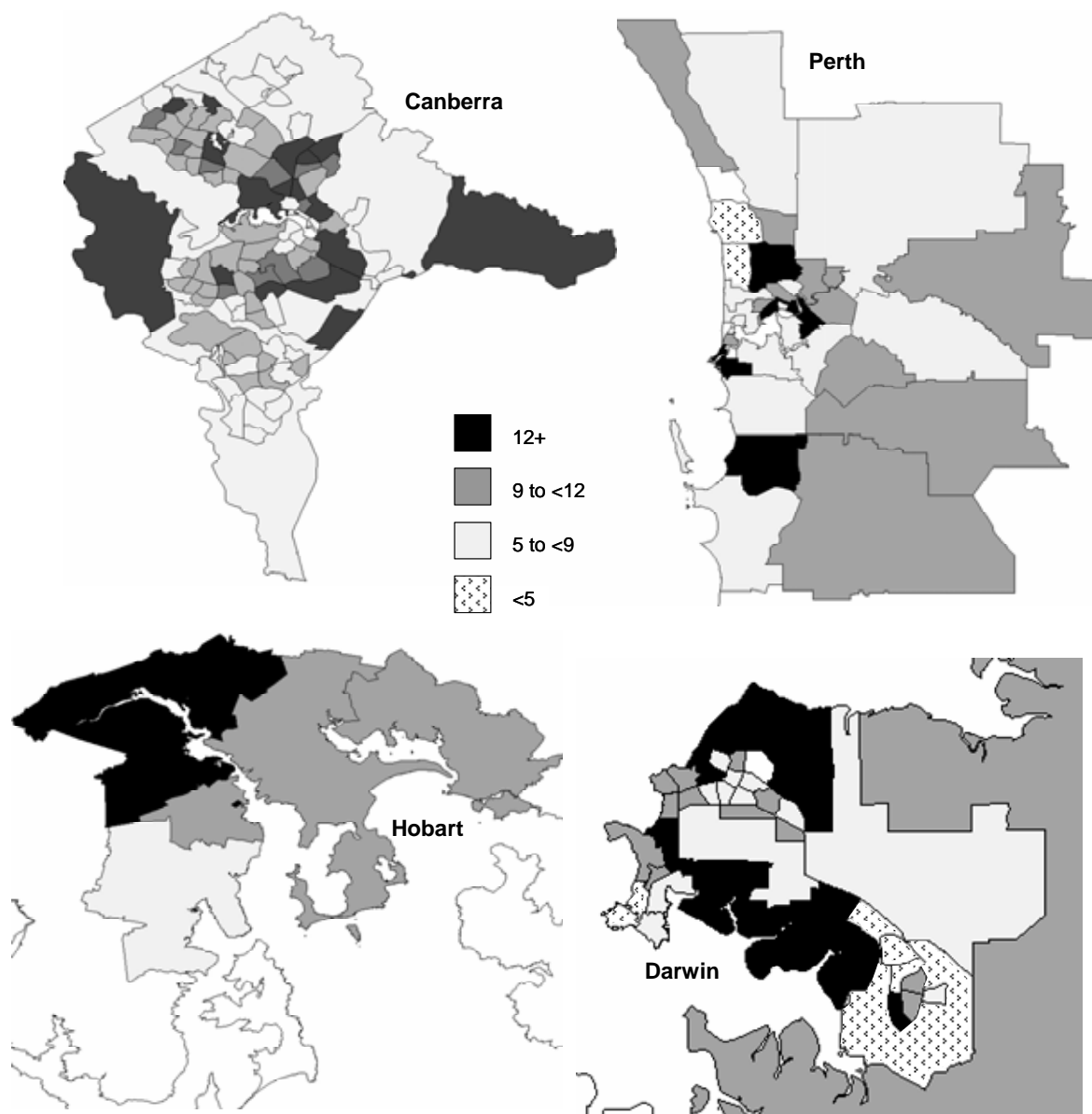


Figure 4.3 continued **Prime age male inactivity rates in metropolitan areas**
 35–44 year olds, statistical local areas (SLAs), 2001, per cent^a



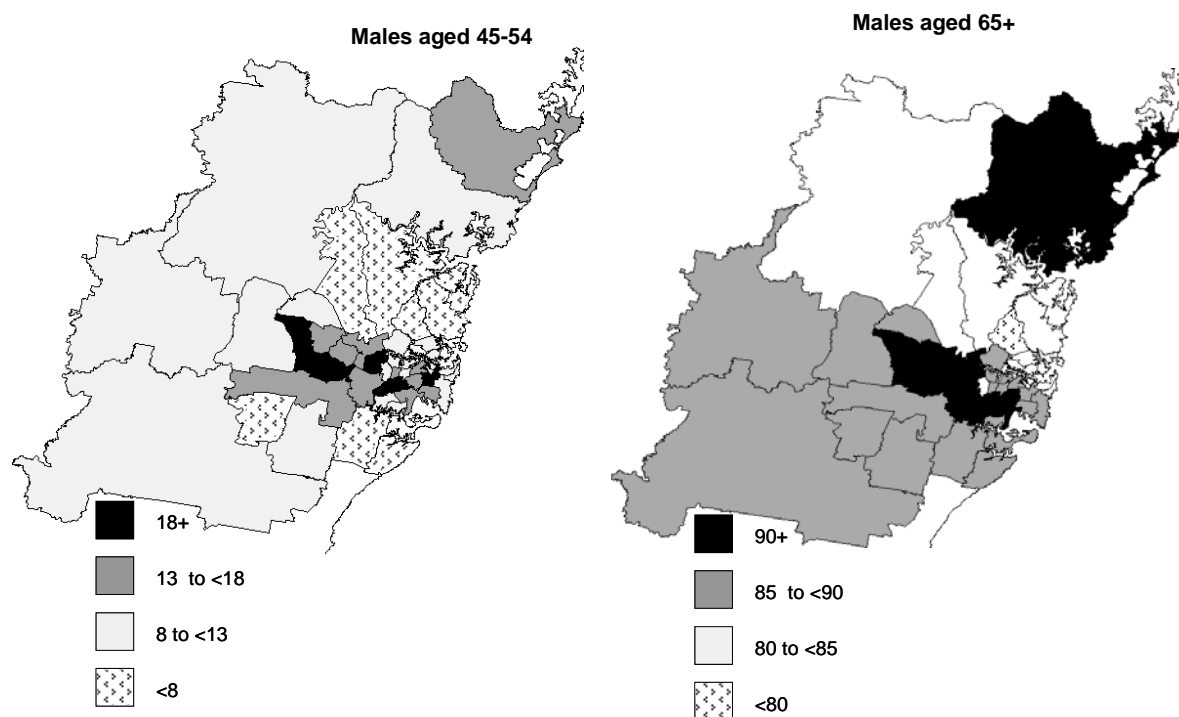
^a The general perspective given by SLAs for inactivity rates is similar to that provided by finer geographical areas, such as postcodes.

Data source: ABS Integrated Regional Database (Cat. 1353.0) based on 2001 Census data.

The spatial pattern shown for males aged 35–44 years is not peculiar to this age group. They are replicated for the other important age group comprising prime aged males — those aged 45–54 years. It is generally found that those areas in which inactivity rates are higher than the average for 35–44 year old males are also higher than the average for 45–54 year old males (though the inactivity rates themselves are proportionately higher for the older group). The results for 45–54 year olds in Sydney are an exemplar (figure 4.3 cf figure 4.4). More generally, there is a very

strong (typically over 90 per cent) correlation between the inactivity rates of males aged 35–44 and those for males aged 45–54 (table 4.3). A strong, but slightly weaker, association is found for the inactivity rates between the 35–44 age group and those for the 25–34, and 55–64 age groups. Consequently, the spatial patterns in figures 4.3 and 4.4 are not mere random variations in inactivity rates of particular age groups, but reflect systemic factors shaping the location of prime aged males outside the labour force.

Figure 4.4 Male inactivity rates for different ages in Sydney
45–54 and 65+ year olds, SLAs, 2001, per cent^a



^a SLAs denote statistical local areas.

Data source: ABS Integrated Regional Database (Cat. 1353.0) based on 2001 Census data.

On the other hand, the spatial pattern for inactivity rates among old males imperfectly replicates those of prime age groups, representing an amalgam of two influences.

- As with other age groups, areas with high inactivity rates among 35–44 year old males also tend to have higher than average inactivity rates among old males (probably representing the ageing of cohorts of males who were inactive at younger ages).
- On retirement, some older males migrate within cities to areas attractive for retirees, increasing the average inactivity rate for older males in such areas (the Blue Mountains in Sydney is an example — figure 4.4).

Table 4.3 Do inactive males of different age groups tend to co-locate?
SLAs within Australia's 8 major metropolitan cities, 2001

City	Correlation coefficient with inactivity rates of males aged 35–44					
	15–19	20–24	25–34	45–54	55–64	65+
Sydney	0.22	0.44	0.87	0.97	0.88	0.59
Melbourne	0.25	0.24	0.78	0.92	0.75	0.49
Brisbane	0.10	0.33	0.76	0.86	0.69	0.36
Adelaide	0.13	0.24	0.85	0.94	0.78	0.45
Perth	-0.20	0.31	0.70	0.92	0.68	0.42
Hobart	0.52	0.35	0.82	0.93	0.84	0.26

Data source: PC calculations based on ABS Integrated Regional Database (Cat. 1353.0) drawn from 2001 Census data.

4.3 What leads to spatial segmentation in inactivity rates?

To examine these spatial issues in greater depth, the relationships between male economic inactivity rates and other socio-demographic variables by Statistical Local Areas (SLAs)² were explored more systematically.

Unemployment and inactivity are linked

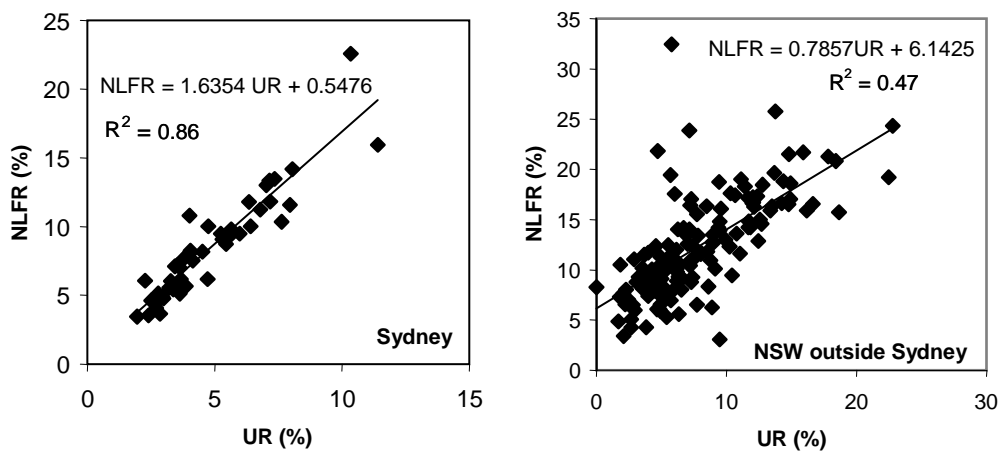
The most noticeable spatial pattern was the strong association between inactivity rates in major metropolitan SLAs and unemployment rates, particularly for males aged 35–44 and 45–54 years (figure 4.5). For example, around 85 per cent of the variation in the inactivity rates of males aged 35–44 in Sydney SLAs was 'explained' by variations in local unemployment rates. The relationship still held outside Australia's major cities, but was less strong (as shown by the greater dispersion in the second panel of figure 4.5).

The critical policy question is whether the spatial coexistence of high unemployment and high rates of economic inactivity are causal or merely reflect some common factor. From a conceptual view, there are some potential causal links. High unemployment decreases the prospects for successful job search by existing unemployed people, encouraging them to leave the labour market altogether (assuming they can finance this). This is the so-called 'discouraged

² There are over 1300 SLAs throughout Australia, varying significantly in population size and area. In Sydney, for example, there are around 50 SLAs covering more than half of the State's male population, with a further 150, less densely populated, SLAs accounting for the remainder of the State's population.

worker' effect. There is evidence that many DSP recipients were once long run unemployed, which is partly consistent with this story (Cai and Gregory 2005). As well, high regional unemployment may result in delayed job search by those considering re-entering the labour force and by those who have just lost a job through retrenchment or by being sacked.

Figure 4.5 **Links between unemployment rates and inactivity rates**
Census 2001^a



^a Areas with low sample sizes have been excluded. The inactivity rates shown are for males aged 35–44 years, while the unemployment rate is the rate for 25–64 year olds to broadly capture local labour market conditions.

Data source: ABS Integrated Regional Database (Cat. 1353.0) based on 2001 Census data.

However, while poor local labour market prospects may play a role in some cases, it is likely that the strong observed spatial relationship between prime age male inactivity rates and local unemployment rates is a coincidental, rather than causal, feature. There are two reasons for this, one conceptual and the other empirical.

First, there are few conceptual grounds for a link between unemployment rates and activity rates in small geographic areas within major metropolitan centres, even were the discouraged worker hypothesis to be generally true. In major capital cities, transport infrastructure generally provides good access to the whole regional labour market for most inhabitants. Accordingly, a high (or, for that matter, low) unemployment rate experienced in a small area of a city is not a reliable guide to the labour market prospects available to inhabitants of that area. Even were the discouraged worker effect to be true, such mobility would only imply a link between aggregate inactivity rates for a regional labour market (such as a city) and the relevant labour market conditions in that region. Then other factors would concentrate the inactive and unemployed in certain areas of those regions. This has the immediate policy implication that since people are mobile within cities, policy-

led job creation within a particular high unemployment/inactive area is unlikely to have many benefits for locals.

Second, on the empirical front, the cross-sectional link between inactivity and unemployment is, at best, only weakly reproduced over time, especially for more highly disaggregated geographical areas. In Sydney, for instance, there is no link between *changes* in unemployment rates between 1996 and 2001 and male inactivity rates by SLA (and a negative one between 1991 and 2001). Even using aggregate time series data for Australia, there is little evidence of any link between unemployment rates and economic inactivity rates by males aged 35–44 years old (there is for younger males, and older males, for whom, respectively, education and early retirement are alternatives to labour market activity). The discouraged worker effect does not seem to hold for the age group being considered here, and cannot therefore explain why unemployment and inactivity are linked spatially.

As a specific example, Auburn SLA in central western Sydney had an aggregate unemployment rate of nearly 13 per cent in 2001 (the highest at the time in the Sydney region and about twice that for Sydney as a whole — table 4.4). Auburn also had the highest male inactivity rates for Sydney at the time — around 40 per cent of Auburn's adult males were economically inactive (Fairfield in Sydney shows similar results, while Mosman represents the other end of the spectrum). And even usually highly active groups, such as those aged 35–44 years, experienced inactivity rates of nearly 25 per cent in Auburn, compared with a Sydney average of about 9 per cent. Yet over the period from 1996 to 2001, the inactivity rate for 35–44 year olds in Auburn increased by 7.7 percentage points (the highest increase for Sydney SLAs), even though unemployment rates *fell* by over 2 percentage points (one of the better outcomes among Sydney SLAs).

A likely explanation for the contrasting time and cross-sectional patterns, of which Auburn is an extreme example, is agglomeration of the disadvantaged, driven by local housing markets and other factors. Groups having poorer labour market prospects, however these arise, are concentrated in particular geographic areas. As Birrell et al. (1999) notes, 'winners and losers in the economic race are sorting themselves out geographically through the agency of the private housing market'. They provide evidence for Melbourne that areas with poorer housing stocks, more public housing and less attractive local features experience greater out-migration by higher income families, concentrating the poor. Lower median house prices provided an indication of the reduced relative amenity value of these areas.

Table 4.4 **Sydney — inactivity by the suburb**
Census 2001^a

SLA	NLFR	NLFR 35-44	LOW EDUC	BAD ENG	DSP RATE	WELF RATE	UR	Income
	%	%	%	%	%	%	%	Index
Botany Bay	29.6	10.0	20.2	7.3	3.1	10.2	6.6	126
Leichhardt	21.9	8.2	11.1	2.5	3.1	9.1	5.7	188
Marrickville	26.4	11.2	18.1	8.9	4.1	14.3	8.1	152
South Sydney	24.4	11.8	10.0	3.9	4.9	13.7	7.3	156
Sydney- Inner	15.8	6.1	6.8	1.1	1.8	4.2	3.8	191
Sydney - Rest	24.5	8.3	6.0	5.0	2.0	5.8	6.8	108
Randwick	30.4	10.8	11.6	3.4	2.4	8.0	6.0	144
Waverley	22.6	6.2	7.6	2.0	1.6	7.0	5.5	171
Woollahra	22.2	5.4	4.4	0.8	1.0	4.4	3.8	178
Hurstville	30.4	8.1	17.3	6.3	2.5	9.3	5.8	136
Kogarah	28.8	7.5	15.0	5.7	2.0	7.5	5.0	152
Rockdale	30.8	9.8	19.8	7.5	2.6	9.8	6.8	121
Sutherland-East	25.2	5.6	13.6	1.0	1.5	6.1	4.0	155
Sutherland-West	19.5	3.5	11.6	0.7	1.3	4.7	3.5	186
Bankstown	33.4	13.0	23.4	7.9	3.3	14.0	8.6	115
Canterbury	33.9	14.2	23.6	12.9	3.4	14.0	9.4	112
Fairfield	34.3	15.9	29.0	16.6	3.5	18.6	12.5	103
Liverpool	26.3	11.8	21.4	6.8	3.2	13.5	8.6	139
Camden	18.6	5.1	17.8	0.9	1.6	6.1	3.9	171
Campbelltown	24.5	9.5	19.7	2.1	3.1	12.5	8.7	133
Wollondilly	23.4	7.0	20.9	0.4	2.6	8.8	4.9	152
Ashfield	29.3	9.1	16.8	8.1	2.9	10.1	6.8	147
Burwood	32.7	9.3	16.8	10.2	2.6	9.5	7.8	126
Concord	26.7	6.2	17.0	5.4	1.8	6.2	4.8	158
Drummoyne	24.8	6.0	16.5	4.0	2.1	5.9	4.0	184
Strathfield	33.1	9.5	13.5	8.9	1.9	8.6	6.9	129
Auburn	39.5	22.6	23.9	15.0	3.7	18.4	12.6	100
Holroyd	28.2	10.3	21.7	5.4	4.0	13.7	8.2	119
Parramatta	30.1	13.5	17.5	6.1	3.3	11.9	7.9	133
Blue Mountains	27.9	7.9	12.7	0.2	3.3	10.8	6.0	150
Hawkesbury	20.8	7.1	19.7	0.4	2.6	8.4	4.7	152
Penrith	21.9	8.1	19.9	1.2	3.1	10.1	6.0	141
Blacktown-North	20.4	7.2	16.6	2.2	2.5	8.4	5.5	156
Blacktown-SE	28.1	10.0	21.2	4.0	3.6	12.3	8.0	125
Blacktown-SW	28.4	13.4	25.0	3.2	5.0	17.3	10.8	121
Hunter's Hill	34.8	5.7	9.2	1.8	1.3	4.3	4.2	175
Lane Cove	23.2	4.5	6.3	1.8	1.0	3.7	3.7	203
Mosman	21.0	3.7	3.8	0.8	0.6	2.9	3.4	234
North Sydney	16.6	5.1	3.8	1.6	1.0	3.5	3.9	193

Table 4.4 Continued

<i>SLA</i>	<i>NLFR</i>	<i>NLFR</i> <i>35–44</i>	<i>LOW</i> <i>EDUC</i>	<i>BAD</i> <i>ENG</i>	<i>DSP</i> <i>RATE</i>	<i>WELF</i> <i>RATE</i>	<i>UR</i>	<i>Income</i>
	%	%	%	%	%	%	%	Index
Ryde	27.6	7.7	13.0	4.7	2.2	7.1	5.1	170
Willoughby	23.8	5.6	7.4	4.4	1.1	4.3	4.5	203
Baulkham Hills	20.3	3.5	10.0	1.9	1.3	4.6	3.5	181
Hornsby	24.1	4.8	9.2	2.3	1.3	5.0	4.2	190
Ku-ring-gai	27.7	4.0	4.9	1.7	0.6	3.0	4.0	201
Manly	22.6	5.5	6.5	0.7	1.4	4.7	4.3	210
Pittwater	22.1	4.6	9.4	0.5	1.0	4.1	3.4	180
Warringah	23.0	4.9	11.5	1.8	1.5	5.1	3.9	173
Gosford	32.8	8.7	20.0	0.3	3.2	12.4	8.0	136
Wyong	37.0	11.6	26.3	0.3	4.5	16.5	10.9	114
Sydney	27.1	9.1	16.4	4.4	2.7	9.9	6.6	149
max	39.5	22.6	29.0	16.6	5.0	18.6	12.6	234
min	15.8	3.5	3.8	0.2	0.6	2.9	3.4	100

^a NLFR35–44 and NLFR 25–64 are the economic inactivity rates for 35–44 and 25–64 year old males respectively. LOWEDUC is the proportion of males with year 9 or less schooling and BADENG is the share of people in the area with poor English proficiency. The DSP rate is the proportion of people on the Disability pension, WELF rate is the proportion of people aged 15 to 64 years old who are on benefits that are intended to provide incomes for living such as DSP, Youth Allowance, Newstart, Sickness Allowance and Special Benefits. It excludes a range of allowances for which data were not available. It also excludes benefits, such as family payments, that provide only partial assistance and any payments for the old. UR is the aggregate male unemployment rate. Income in an index of income, indexed to the lowest SLA (Auburn).

Source: Data source: ABS Integrated Regional Database (Cat. 1353.0) based on 2001 Census data and data from FaCS.

To investigate this further, we modelled the spatial distribution of male inactivity rates among 35–44 year olds among SLAs in Sydney, Melbourne, Brisbane, Adelaide, Perth and non-city areas of NSW, Victoria and Queensland based on 2001 census data. In all metropolitan areas bar Perth, the models suggested the coexistence of disadvantage with lower local rentals or the greater availability of public housing, consistent with Birrell et al's view. (Housing factors were not relevant in explaining variations in less densely populated non-metropolitan areas.)

What other factors may lie behind spatial variations in inactivity rates?

This study considered several other variables, such as ethnicity, educational attainment and language ability, which might explain why certain sub-populations experienced lower economic activity rates than others. The results³ suggested that, apart from public housing availability, areas with greater proportions of people with

³ Based on multiple regressions.

below year 10 educational achievement, high recent migrant arrival rates⁴ and (associated with migrant status) the proportion of people with poorer English proficiency, had higher average rates of economic inactivity in metropolitan areas. These four variables explained around 80 per cent of the spatial variation in inactivity rates in Sydney (about the same in Perth and a little less in Brisbane and Melbourne). Even individually, educational status and poor English proficiency had strong associations with the geographic concentration of inactivity rates in Australia's major cities (table 4.5). For example, in Auburn and Fairfield's cases, their populations had a set of socio-economic characteristics — such as significantly lower than average educational outcomes and recent migrant backgrounds with a higher probability of language difficulties — that pre-disposed them to poorer labour market outcomes generally compared with other areas.

The effect of migrant status was unclear for non-metropolitan areas, sometimes being associated with reduced inactivity rates (for example, for NSW areas outside Sydney this effect was particularly strong). The explanation for this apparently anomalous result is that few migrants go to a country area to be inactive, so higher migrant flows to particular country areas only occur if there are strong job opportunities.

Table 4.5 Areas with poor average English language proficiency and low education attainment rates have higher economic inactivity rates^a

Area	Low education		Poor English proficiency	
	Increase in inactivity rate from a 1 point increase in low education rate	Proportion of variation in SLA inactivity rates explained by variation in education rates (%)	Increase in inactivity rate from a 1 point increase in low proficiency rate	Proportion of variation in SLA inactivity rates explained by variation in proficiency rates (%)
Sydney	0.40	51	0.71	56
Melbourne	0.24	28	0.74	52
Brisbane	0.43	28	1.00	12
Adelaide	0.28	17	1.02	17
Perth	0.43	43	0.81	10

^a For men aged 35–44 years only (to control for varying age distributions). It is important not to see the coefficients on proficiency and education as precise indicators of the effects of these variables on *individuals'* likelihoods of economic inactivity. For this purpose they are distorted by aggregation errors (the 'ecological' fallacy) and omitted variable bias. But they certainly suggest a causal link and give a measure of the factors lying behind the concentration of inactive males among statistical areas.

Data source: ABS Integrated Regional Database (Cat. 1353.0) based on 2001 Census data.

⁴ Measured as the share of total migrant arrivals arriving from 1999 to 2001.

Nevertheless, while the spatial pattern in figure 4.5 is not predominantly a reflection of a causal link between unemployment and inactivity, their strong local coexistence may still be policy relevant.

In theory, concentration of disadvantage may present the potential for more economical government interventions. For example, different educational approaches or increased resourcing for education may be better targeted where there are many students from disadvantaged backgrounds in the one school, than when they are spread thinly throughout many schools.

However, the general view is that concentration of the disadvantaged has adverse impacts.

- There is ‘pooling of the poor’ — poverty will be concentrated geographically. And indeed this is strongly suggested by the concentration of low average incomes in areas of high average inactivity. For the five major Australian cities, a 10 per cent (not points) higher inactivity rate of males aged 35–44 years in a given area is associated with between a 3.8 and 4.4 per cent smaller average income for males (aged 15 years and over) in this area.⁵
- Many community members will be receiving welfare payments as a major source of income (even after retirement benefits are excluded). There were a significant number of areas in Sydney alone where around one in seven pre-retirement adult residents derived their main livelihood from welfare payments rather than work in 2001 (table 4.4).⁶ In Auburn and Fairfield this was closer to one in five. There can be even greater concentrations of specific types of welfare recipients. For example, rates of access to special benefits per adult range from zero to 10.5 times the average rate of reciprocity across Sydney SLAs in 2001. Five of 49 SLAs and 14 of 248 postcodes in Sydney accounted for just over half of the number of special benefit beneficiaries.
- Local community expectations about work may become distorted by widespread local receipt of such government benefits. The norms resulting from these, accompanied by community poverty generally, may erode social capital that is useful for acquiring jobs and for creating good communities. If nothing else, informal networks for getting jobs are likely to be worse in areas where economic inactivity and unemployment are concentrated.
- Social problems associated with low income and poor prospects may be magnified through agglomeration. For example, children whose peers are delinquent are more likely to become delinquent and to experience longer

⁵ Income is proxied by the mid-points in the Census income ranges.

⁶ Even based on a limited set of welfare payments — Newstart and youth allowances, special benefits, sickness allowances and pensions.

periods of delinquency (Weatherburn 1995). Based on a suite of research, the Australian Housing and Urban Research Institute (AHURI 2005) also concluded that: ‘Concentration of the unemployed and economically inactive in particular segments of the housing market (and neighbourhoods) can be socially corrosive’.

- Educational opportunities may be worse because children are drawn disproportionately from disadvantaged backgrounds, which further increase the likelihood that families aspiring to better education leave such areas (Birrell et al., 1999).

It is not likely that these difficulties can be averted by *local* job creation initiatives for the reasons discussed earlier. Even when such local job creation programs are targeted at the unemployed, such as the various State programs discussed by Wood and Ong (2005), they do not seem to have had large impacts.

Other policy options that directly affect the location of, and incentives brought about by, public housing may better help resolve these difficulties. First, the location of such housing is a major factor behind the spatial concentration of the economically inactive and unemployed. It is generally recognised as good policy to avoid large concentrations of public housing (Wood and Ong 2005). AHURI (2005) argued that housing assistance policies may need to be ‘scrutinised with a view to breaking up such concentrations and improving rates of economic participation.’ But despite some policy measures, such as the NSW Community Renewal Strategy (Samuels and Judd 2002), the stock and location of public housing is largely determined historically and cannot be shifted quickly.

Second, eligibility for public housing and the associated rentals is determined by asset and income tests, which vary by jurisdiction. These typically result in steep effective marginal taxes on employment for housing tenants not in a job. Wood and Ong (2005) found that of those benefiting from housing assistance, public housing tenants were most prone to severe poverty traps — keeping people unemployed or out of the labour force. This could suggest re-design of eligibility tests. For example, rentals could be raised more gradually after employment and tenancy only withdrawn after a longer period of employment or higher income threshold is achieved.

More generally, pooling of the poor — of which inactive prime age males are a critical group — is likely to be best resolved through greater upward economic mobility that make stays on welfare temporary rather than enduring. This is likely to be achieved by measures that improve:

-
- *employability* (for example, motivation and rehabilitation and early interventions prior to inactivity and unemployment, such as more appropriate early year education — chapter 10); and
 - *incentives to work* (for example, welfare and tax design changes beyond those just relating to housing assistance).

5 Why are men outside the labour force?

Whether inactivity is economically or socially problematic depends on whether it is principally a voluntary and socially accepted activity, whether it is enduring, and its impacts (mainly examined in chapter 7).

5.1 What do men give as the reason?

As is suggested by the information on labour market orientation in chapter 2, the reasons for economic inactivity vary with lifecycle needs and events (box 5.1 and table 5.1). Educational participation, ill health (own injury/illness and disability/handicap) and retirement are the major reasons for being out of the labour force, occupying respectively the first, middle and later parts of life respectively. For men aged 15–64 years (so excluding the main retirement ages), ill health or disability is the major reason for economic inactivity (appendix B).

But the growing role played by men in ‘domestic’ duties (home duties and childcare; and looking after ill or disabled people) is often not well known. In September 2005, there were around 160 000 men aged 15–69 years engaged in this role. That provides a snapshot of their role for a particular week in September, but understates the role men may play over a longer period. For example, in the year preceding February 2005, there were around 220 000 men performing this role, while economically inactive, at some stage over the year.¹

This role is more important for prime aged males than others. In September 2005, males engaged in such domestic tasks accounted for nearly 30 per cent of the absence of males aged 35–44 years from the labour force and about one quarter of the absence of those aged 45–54 years (table 5.1). The greater male role in undertaking this role represents a marked shift from even the recent past. In September 1992, for example, such tasks accounted for only about 17 per cent of the absence of males aged 35–44 years from the labour force and about 13 per cent for those aged 45–54 years. While the data are on a different basis, in 1968, only

¹ ABS 2005, *Labour Force Experience, Australia*, Cat. No. 6206.0.

about 1.4 per cent of males who were inactive for at least part of the previous year 'kept house', while the comparable figure in 2005 was around 7 per cent.²

Box 5.1 'Reasons' for being, and 'main activities' while, economically inactive

The ABS has collected information on why men are not in the labour force since the 1970s. In early questionnaires, respondents were asked their *reason* for being out of the labour force, but more recently, the ABS asks respondents for the *main activity* while out of the labour force. The survey questions posed typically suggest that the answers to 'main activity' questions still reflect reasons. For example, activities include 'retired or voluntarily inactive' and 'illness and disability', which are clearly reasons for economic inactivity, rather than daily pursued activities *per se*.

Where corroboration is available, the equivalence between 'reasons' and 'main activities' is reasonably supported. Accordingly, it is generally assumed that the 'main activity' is a good proxy for the *reason* for their labour force status. This simplifies exposition.

However, while the survey categories usually suggest the motivation for inactivity, that will not always be the case. For example, a man may become inactive due to lack of employment prospects and with no intention of taking up education, but may afterwards enrol in full-time education.

The activity of males outside the labour force that least varies across the lifecycle is travel, holiday or leisure activity, with a prevalence rate of about 5 to 11 per cent of inactive males for all age groups from 25 to 69 years in September 2005 (table 5.1). (This form of inactivity is distinct from holidays while a person is on short-term or paid leave from work — people in that situation are recorded as employed.)³

² Unlike the data in table 5.1, these two estimates are based on roles undertaken by males if they experienced a period of inactivity over the past year (rather than just in a reference week as in the usual labour force survey). Moreover, unlike the previously cited figures, it encompasses the full age group from 15–69 years and only relates to home duties/childcare and excludes looking after an ill or disabled person. The estimates are based on various issues of ABS, *Labour Force Experience, Australia*, Cat. No. 6206.0.

³ These are employees (a) who had a job but were not at work and were on holiday for less than four weeks up to the end of the reference week; or (b) employees away from work for more than four weeks up to the end of the reference week and received pay for some or all of the four week period to the end of the reference week.

Table 5.1 Reasons for inactivity
Males aged 15+ years, September 2005

<i>Activity</i>	<i>15–24</i>	<i>25–34</i>	<i>35–44</i>	<i>45–54</i>	<i>55–59</i>	<i>60–64</i>	<i>65–69</i>	<i>70+</i>	<i>Total</i>
	%	%	%	%	%	%	%	%	%
Education	89.6	30.4	15.5	5.0	1.0	0.0	0.1	0.0	19.4
Own disability or handicap	2.3	22.0	22.4	23.9	19.4	14.8	5.5	3.3	9.0
Own injury or illness	2.0	15.1	17.7	24.2	20.0	11.9	7.5	5.0	9.0
Looking after ill or disabled person	0.2	1.9	7.4	7.6	4.7	4.2	2.2	1.7	2.7
Travel holiday or leisure activity	1.7	6.6	3.6	5.3	9.2	11.3	10.9	7.9	7.1
Retired or voluntarily inactive	0.7	3.1	3.9	10.2	29.2	43.2	60.3	72.7	40.3
Home duties or childcare	0.5	11.5	22.4	16.6	11.7	9.0	7.5	6.4	7.9
Unpaid voluntary job	0.1	1.2	0.7	1.8	3.7	4.4	3.7	2.3	2.2
Other	3.0	8.1	6.4	5.3	1.0	1.1	2.3	0.7	2.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Persons ('000)	391.5	99.3	106.9	153.4	145.3	208.7	284.1	713.8	2 103

Data source: ABS 2006, Persons Not in the Labour Force, Australia, September, Cat. No. 6220.0.

This source of inactivity is even more important when considering males experiencing inactive periods over a given year. For example, in 2005 such activities accounted for more than one quarter of inactive spells by males under 69 years old. The reason for the discrepancy between the prevalence measure and the experience or period prevalence rate (chapter 2) is that most periods of leisure enjoyed by economically inactive males are short, with around half being of only one to under four weeks in duration (table 5.2).

Of the broad activities undertaken by men outside the labour force, many suggest no immediately obvious social or economic problems.

- Educational participation ostensibly presents the least problematic face of male inactivity. Participation strongly accords with the goals of stimulating human capital accumulation and economic opportunity, social norms and personal ambitions. As shown in chapter 7, inactive males with this motivation appear to be happiest.
- The increasing role men play in caring roles for children and the disabled reflects changing social norms.

Table 5.2 How long are males inactive?

Year to February 2005, Males 15–69 years

<i>Reason for inactivity</i>	<i>Weeks inactive</i>						
	<i>1 – < 4 wks</i>	<i>4 – < 13 wks</i>	<i>13 – < 26 wks</i>	<i>26 – < 39 wks</i>	<i>26 – < 39 wks</i>	<i>52 wks</i>	<i>Total</i>
	'000	'000	'000	'000	'000	'000	'000
Number of spells							
Retired or voluntarily inactive	18.9	27.5	19.2	19	23.4	377.4	485.4
Home duties/childcare	14.5	34.7	19.1	15.3	18	76.5	178.2
Education	15.1	58.7	50.8	68.9	169.2	244	606.8
Own injury or illness	28.9	46.6	25.9	15.3	16.2	127.1	260.1
Own disability/ handicap	0.5	2	3.1	1.7	4.6	158.9	170.8
Looking after ill/disabled	2.7	4.4	2	4.1	4.3	26.1	43.6
Travel holiday or leisure	319.4	242.2	35.3	25.5	18.6	45.2	686.1
Unpaid voluntary job	1.9	6.2	4.3	4.2	2.2	17	35.7
Other	20.7	37.8	10.7	8	8.8	9.8	95.8
Total	422.6	460.2	170.4	161.8	265.5	1 081.9	2 562.4
	%	%	%	%	%	%	%
Share of each reason							
Retired or voluntarily inactive	3.9	5.7	4.0	3.9	4.8	77.8	100.0
Home duties/childcare	8.1	19.5	10.7	8.6	10.1	42.9	100.0
Education	2.5	9.7	8.4	11.4	27.9	40.2	100.0
Own injury or illness	11.1	17.9	10.0	5.9	6.2	48.9	100.0
Own disability/handicap	0.3	1.2	1.8	1.0	2.7	93.0	100.0
Looking after ill/disabled	6.2	10.1	4.6	9.4	9.9	59.9	100.0
Travel holiday or leisure	46.6	35.3	5.1	3.7	2.7	6.6	100.0
Unpaid voluntary job	5.3	17.4	12.0	11.8	6.2	47.6	100.0
Other	21.6	39.5	11.2	8.4	9.2	10.2	100.0
Total	16.5	18.0	6.7	6.3	10.4	42.2	100.0

Source: ABS 2005, Labour Force Experience, Australia, July, Cat. No. 6206.0.

- Holiday, travel and leisure activities largely meet personal preferences and are not (legally) funded by social security benefits. They often represent the tradeoffs people make between working and leisure. In any case, as noted above, these activities are typically short in duration, with more than 80 per cent of spells being under 13 weeks in length (table 5.2). Few people (2.5 per cent) undertaking these activities are discouraged workers (table 5.3).

Table 5.3 Potential workers can be found in unexpected places

Share of all males outside the labour force aged 15–69 years^a

<i>Activity</i>	<i>Marginally attached</i>		
	<i>Discouraged</i>	<i>Other wanting to work, not actively looking but available</i>	<i>Wanting to work, looking, but not available</i>
	%	%	%
Retired or voluntarily inactive	2.4	4.2	0.1
Home duties or childcare	4.4	23.0	3.8
Education	1.3	23.6	2.8
Own disability or handicap	0.7	7.8	1.2
Own injury or illness	0.3	16.5	1.0
Looking after ill or disabled person	0.8	13.2	1.8
Travel holiday or leisure activity	2.5	27.3	4.7
Working in an unpaid voluntary job	8.6	18.5	1.7
Other	7.8	27.4	13.6
Total	2.1	15.6	2.1

	<i>Not marginally attached</i>		
	<i>Wanting to work, not looking, not available</i>	<i>Did not want to work</i>	<i>Permanently unable to work</i>
	%	%	%
Retired or voluntarily inactive	1.8	88.2	3.2
Home duties or childcare	9.6	52.9	6.3
Education	11.1	61.1	0.1
Own disability or handicap	10.9	46.4	33.0
Own injury or illness	16.2	46.1	19.8
Looking after ill or disabled person	14.0	64.7	5.5
Travel holiday or leisure activity	5.0	58.0	2.5
Working in an unpaid voluntary job	3.6	60.4	7.3
Other	15.9	31.0	4.4
Total	8.9	63.2	8.1

^a The 2004 data is used instead of the most recent (2005) data because the latter has an expanded scope that includes men aged 70+ years. Men over this age are less likely to be marginally attached and so provide a distorted picture of marginal attachment for the age groups that are of most policy interest.

Data source: ABS 2005, *Persons Not in the Labour Force, Australia*, September, Cat. No. 6220.0.

- The capacity for retirement is also a basic tenet of rich developed countries, and like those in education, most retirees report high levels of personal well being. While some commentators suggest that ‘retirement’ can be a disguise for males discouraged by poor job prospects, in 2004, very few men in the group aged 15–

69 years who were retired or voluntarily inactive (2.4 per cent) were discouraged jobseekers.⁴ A few more would like jobs — though are not actively looking or able to take a job soon. But of all those men aged 15–69 years who are retired or voluntarily inactive, more than 90 per cent reported they did not want, or were permanently unable, to work (table 5.3).

On the other hand, there are clearly some problematic features of even these apparently benign aspects of economic inactivity.

Many 'inactive' men want to work

Many inactive men want to work. These are not defined as unemployed given limits on their existing degree of job search or availability. But, like the unemployed, they do clearly represent a pool of untapped economic potential. This study defines three types of economically inactive males.

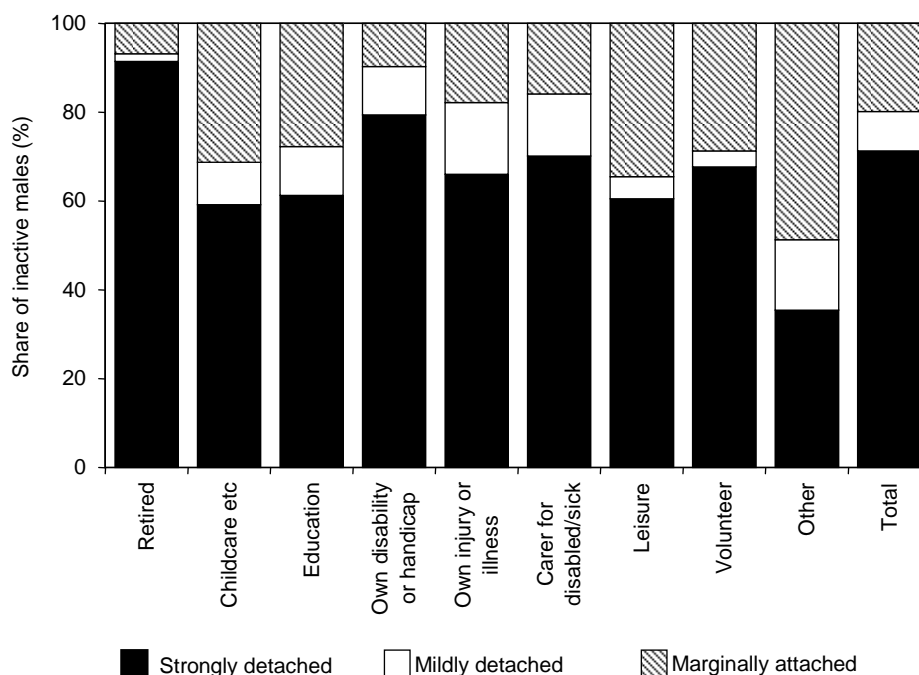
First, there are the marginally attached, a conventional labour market term that describes people who are close to being part of the labour market and most resemble the unemployed. This accounted for about one in five inactive males aged 15–69 years altogether (figure 5.1), but more than one in four inactive males in education and childcare and more than one in three of those in leisure. The high value for men who give leisure as the reason for inactivity suggest that in many cases it represents a short spell between jobs before renewed job search occurs.

Second, there are the mildly *detached* — people who still want work, but are not actively looking or available soon. This accounts for just less than one in ten inactive males aged 15–69 years altogether (figure 5.1), but is significantly higher for those inactive because of their own illness or injury, suggesting a long term desire for work after a period of rehabilitation.

Finally, there are the strongly detached — people who do not want or permanently are unable to work. This still accounts for around 70 per cent of all inactive males aged 15–69 and 80 and 90 per cent of those inactive due to disability and retirement respectively.

⁴ The scope of the 2005 survey was expanded to include those aged 70+ years. For 2005, less than 1 per cent of retired men aged 15+ years were discouraged. This is not surprising given that discouragement effects must eventually wane with age.

Figure 5.1 Attachment to the labour force
Males, September 2004^a



^a Strongly detached are those who did not work or were permanently unable to work. Mildly detached are those who are wanting to work, not actively looking and not available within the next four weeks. Marginally attached is defined in chapter 2 in figure 2.1.

Data source: ABS 2005, *Persons Not in the Labour Force, Australia*, September, Cat. No. 6220.0.

Retirement is affected by many policy variables

While retired or voluntarily inactive men themselves were overwhelmingly not concerned about changing their inactive status, retirement remains a critical policy issue. Retirement decisions are affected by many policies. Some affect incentives. These include social security measures (such as the age for eligibility to the Aged Pension and the effective marginal tax rates on work while on a pension); superannuation policies (such as the preservation age); and tax incentive policies (such as the Pension Bonus Scheme and the Mature Age Workers tax Offset). The employment law and industrial relations framework may affect wages and conditions that, as for young people, may deter employment of older people in some cases. Through their laws and institutions, Governments affect the extent to which old workers may face discrimination against their employment. Ill-health often precipitates retirement for those who would otherwise wish to work much longer, raising the question of the role that a more effective health and rehabilitation system could play in prolonging people's working lives.

Education is not always effective

While there are generally good economic or social benefits from education, for certain individuals time spent in existing types of education may waste scarce government funds and divert people from more productive opportunities. This may justify the development of new models of education for disadvantaged or failing youth. Educational participation may also mask poor labour market opportunities. For example, during periods of economic downturn, retention rates at school are often higher and enrolments at other educational institutions increase. Accordingly, educational participation does not constitute a legitimate basis for economic inactivity per se. Its legitimacy then rests on the quality and appropriateness of education to different sub-groups of men and whether its duration and other characteristics suits their and society's needs (chapters 9 and 10).

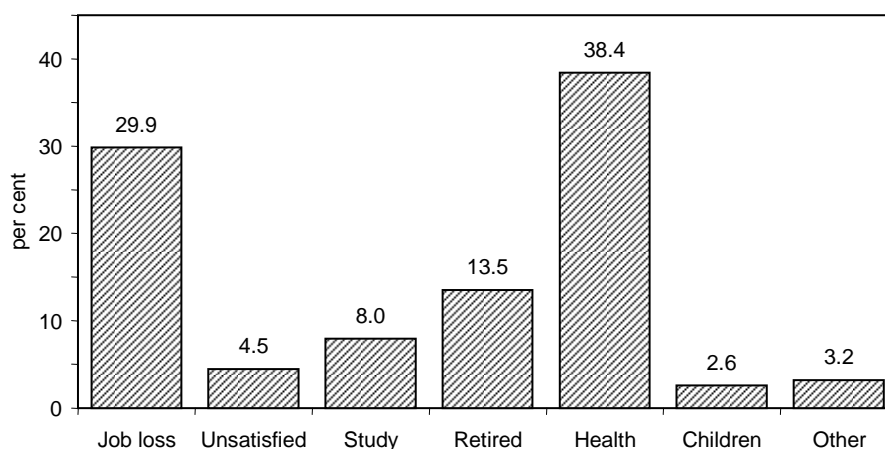
The pivotal role of disability, illness and injury

Finally, the most socially and economically challenging aspect of economic inactivity by males is the significance of illness and disability as the motivation for detachment from the labour market.

While these factors are apparent as a major reason for inactivity, they play an even more important role if transitions from the labour force to inactivity by males aged less than 65 years are considered (figure 5.2). The ABS data for the reason for (or main activity while) being economically inactive considers *all* people currently outside the labour force, even if they have always been outside (as in those pursuing education after school or with severe lifetime disabilities) or always unemployed prior to shifting outside the labour force. A narrower, and policy relevant question is the reason why people might shift from a job to outside the labour force. This includes people who shift directly from a job, or via unemployment. The HILDA survey provides useful insights into this question. Men aged over 65 years are excluded so as to avoid counting people whose transition to outside the labour force is normal (rather than early) retirement.

It is clear that the major reason for shifts to inactivity by men aged 15–64 years from a job is poor health status and job loss (which includes closure of the business, personal loss of job, and end of a temporary job). Early retirement and education figure as relatively unimportant for those groups who held a job prior to economic inactivity.

Figure 5.2 Main reason for stopping work
15–64 year old males not in the labour force, 2001^a



^a The sample includes males currently not in the labour force. As noted in the text, some transitions from a job to economic inactivity may be through an initial state of unemployment. In this case, the reason for stopping work would be the reason for entering unemployment. It is unknown what share fall into this category.

Data source: PC calculations based on the HILDA survey.

Given the central importance of health and disability status, we discuss it further in chapters 6 and 8.

5.2 The hidden reasons

Inactivity and the shadow economy

One hidden aspect of male economic inactivity is that some of it is illusory. Some ostensibly inactive men are in fact active in the ‘shadow’ or ‘underground’ economy, where official records are not kept, regulations are ignored and taxes not collected.

The extent to which this holds is more than a statistical nicety. Quite apart from its legal, tax revenue, consumer and worker protection implications, it suggests that there may be greater scope for integration into formal labour markets of some inactive men than official estimates might suggest. The mechanisms for doing this might be different from the usual labour market-oriented approaches, encompassing measures such as easier business formation and lower business taxes (Djankov et al. 2003 pp. 73ff). It also means that assessments of the impacts of ‘inactivity’ are biased, since actual income will be higher (poverty lower) and skill depreciation less than the officially observed estimates. On the other hand, the real output gains

from shifting a male from the shadow to the formal economy may be relatively small.

The shadow economy includes legitimate work that is not declared as income, usually for tax evasion or welfare fraud purposes, but also directly illegal activities such as trading in stolen goods. By its illicit nature, it is hard to use direct measures of the extent to which male activity postures as inactivity — since a man engaged in such activities will tend to conceal them from any government agency to avoid the risk of prosecution for tax avoidance, welfare fraud or other criminal activities. In fact, the ABS does not pass data to other agencies, but it is unlikely that this is widely appreciated by the relevant group of men.

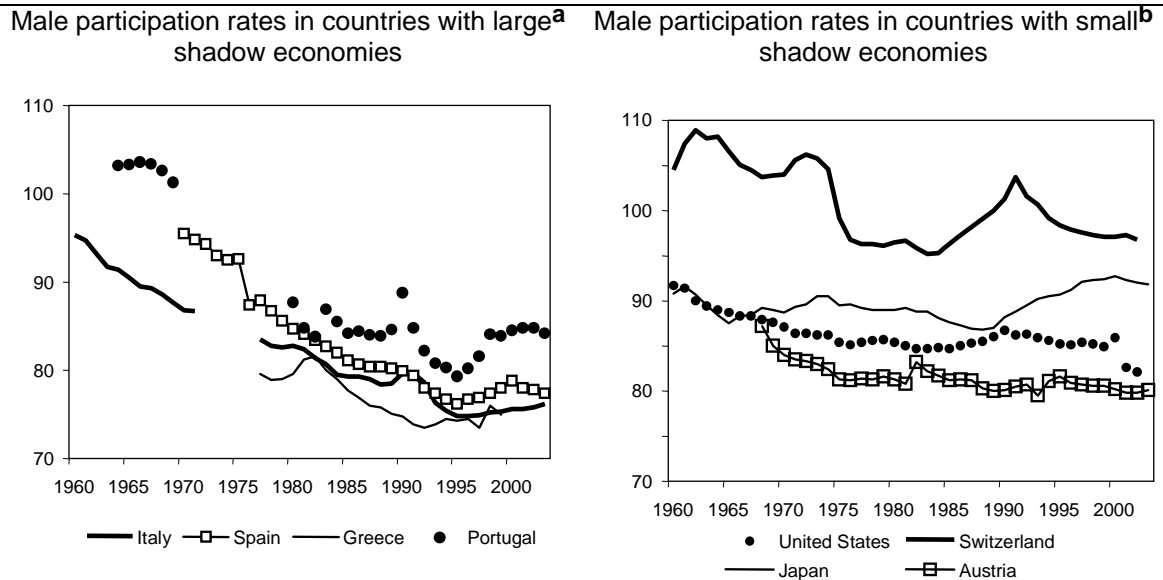
One avenue for gauging whether inactivity rates *may* be significantly affected is to consider the size of the underground economy relative to GDP and gross national income. At first glance, this prospect looks real. The most often quoted estimates for Australia suggest that the underground economy might represent as much as one seventh of GDP, with the obvious potential for many apparently inactive males to be active in the phantom economy.

- Using a particular type of currency demand model, Bajada (1999, 2001, 2002, 2003) estimates that the underground economy was around 15 per cent of GDP, with little apparent trend over time.
- Using so-called MIMIC econometric models, based on the view that the underground economy is a latent variable, Schneider (2002, 2003, 2004) estimates that the Australian shadow economy grew by 4 percentage points from 10.1 per cent of GDP in 1989-90 to 14.1 per cent in 2001-02 and fell to 13.5 per cent in 2002-03. This placed Australia in the middle of OECD countries and with a small shadow economy relative to most non-advanced economies. There is an apparently significant link between the measured shadow economy and male participation, with economies with declining male participation rates having more important shadow economies (figure 5.3).
- Based on survey estimates and making a range of assumptions, Schneider et al. (2001) estimated that the shadow economy was between 4.8 and 8.8 per cent of GNI in 2000.

However, the phantom economy measures produced by these methods are phantoms too — the accuracy and interpretability of the estimates from this vein of empirical research are highly questionable. Breusch (2005a) shows that Bajada's results are the product of flawed methods and are likely to be spurious. Equally, Breusch (2005bc) finds substantial econometric weaknesses in Schneider's MIMIC approach. In any case, the MIMIC measure of the shadow economy is in part *determined* by the male participation rate (Schneider 2004, p. 53), so the apparent link between the size of shadow economies and male participation rates shown in

figure 5.3 is likely to be an artefact of the construction of the measure of the shadow economy. Finally, the Australian estimates produced by Schneider et al. (2001) from survey results make several simple errors that would appear to exaggerate the shadow economy share by more than twenty fold.⁵

Figure 5.3 Countries with more rapidly falling male participation rates have bigger shadow economies, but the association is illusory



^a Higher than 20 per cent of GDP. Participation rates are for males aged 15–64 years for 1960 to 2003, while the shadow economy estimates are for 2002-03. ^b Approximately 11 per cent of GDP or less. The participation rates above 100 per cent in Switzerland is due to a definitional problem that counts foreign workers without residency as part of the labour force, while excluding them from the population. Looking at economies with small and large shadow economies neglects those in between. However, there is still a relationship when these are considered. The size of the shadow economy is negatively associated with the growth of male participation rates for OECD countries ($\rho=-0.41$).

Data source: OECD, *Economic Outlook* and Schneider (2004).

Second, the magnitudes suggested fail some basic credibility tests. The ABS (2003b) and the ATO (2003) reject estimates as high as 15 per cent as implausible because the areas of the economy where a large amount of activity takes places — government and medium sized and large businesses — are principally outside the cash economy. Moreover, cash economy estimates of the magnitude suggested by Schneider and Bajada imply improbably large household expenditure on the limited range of goods that can be purchased under the counter. The ABS applies explicit adjustments for the underground economy in its national accounts data. For 2000-01

⁵ These errors are transparent in the calculations in table 11 of the paper. In a personal communication, anticipating a publication to be shortly published, Trevor Breusch has revealed several other major shortcomings.

the adjustment was 1.3 per cent, a similar figure to previous years. The ABS' upper bound for underground activity is 4.8 per cent.

These more plausible low estimates need not imply that the underground economy has no implications for male inactivity rates. Labour in the underground economy is likely to involve lower wage rates and short average hours compared with its lawful alternative. The ABS (2003b) considers that those more likely to be involved in the cash economy are workers in labour intensive jobs and in low skill or trades areas, such as cleaning, gardening jobs and construction, which tend to have lower average wages.

The Centre for Tax System Integrity (a joint ANU and ATO enterprise) undertook two surveys that examined participation in the cash economy (Braithwaite et al. 2004).⁶ Overall, 6 per cent of respondents had supplied labour in the cash economy. Many people working in the cash economy did so for relatively short periods and average earnings were modest. The average amount was \$2000, but 62 per cent earned less than \$1000. Only 11 per cent of the sample earned over \$5000. The most common sources of this income were household and garden services, repair work (trades) and teaching. When broken down by sex it was slightly more prevalent amongst males (7 per cent compared with 4 per cent for females). The majority were aged 30 years or less and self-employed, with older and least educated people being least represented.⁷ Five per cent of those unemployed or outside the labour force said they worked in the cash economy, less than those in jobs (full time 6 per cent and part time 8 per cent). This was surprising since involvement could be expected to be more prevalent among sub-groups of men with greater incentives to work in this area.

On this evidence, the bulk of people in the shadow economy are already in the labour force. Official participation data only slightly understate the true numbers of people really working in the economy.

The underlying economic determinants

What people *say* is the reason for something may differ from the underlying drivers. For example, school retention rates may climb during recessions. The people concerned may give attendance at an educational institution as the reason for being

⁶ The Community Hopes, Fears and Actions Survey (CHFAS) and Australia Tax System: Fair or Not Survey (ATSFONS). Both surveys had significant under-response, with unknown impacts on the representativeness of the results.

⁷ However, less educated people were also under-represented in responses to the survey, so this result may reflect non-response bias.

not in the labour force. But the underlying causes are poor current job prospects and the gains for future employability from having a higher educational attainment level.

There are many aspects of the labour participation story that are well understood, such as the role of (lifetime and current) after-tax earnings, wealth, education and the importance of social norms (particularly in explaining the rise of female participation rates). There have been many studies undertaken in Australia and hundreds exploring these issues worldwide.

Changes in these underlying determinants help to explain some of the long-run changes in male participation. But there are several facets of male inactivity rates in Australia that are particularly policy relevant or puzzling.

- What underlying economic factors have made prime age male inactivity rates rise by so much over the last 30 years? The economic changes that have increased inactivity rates by prime-aged males have worked particularly intensively through those males with a disability or injury.
- What is the role of health status in determining retirement decisions? Curiously, the role of health status might play a different role for older males (reflecting advances in medical technologies and public health), providing the potential for delayed retirement.
- While increasing education attainment is *generally* a determinant of greater lifetime labour force participation, its individual effects depend on the form of education and the social context of the boys and men subject to it. Understanding the diverse outcomes from education may guide policy change for the losers in the current system.

Disability, illness and injury — particularly disability affecting pre-retirement males — is the subject of chapters 6 and 8. The role played by education is considered in chapters 9 and 10. The role of health issues for participation by older males is largely ignored in this report.

6 Ill-health and disability

6.1 The role of illness, injury and disability in economic inactivity

Apart from the direct effects of the underlying medical conditions, illness, injury and disability is associated with adverse effects on educational, social and economic opportunity (AIHW 2005a, p. 254ff; PC 2004b). It is the main reason for male economic inactivity in Australia for prime aged males aged 25–64 years, and casts its shadow over older ages, as it is one of the principal determinants of the timing of retirement.

The raw numbers affected are large. In late 2005, there were 166 000 males under 69 years who ascribed their economic inactivity to disability or a handicap and a further 154 000 whose ascribed it to illness or injury.¹ Around 44 000 more males under 69 years cared for a disabled or ill person.

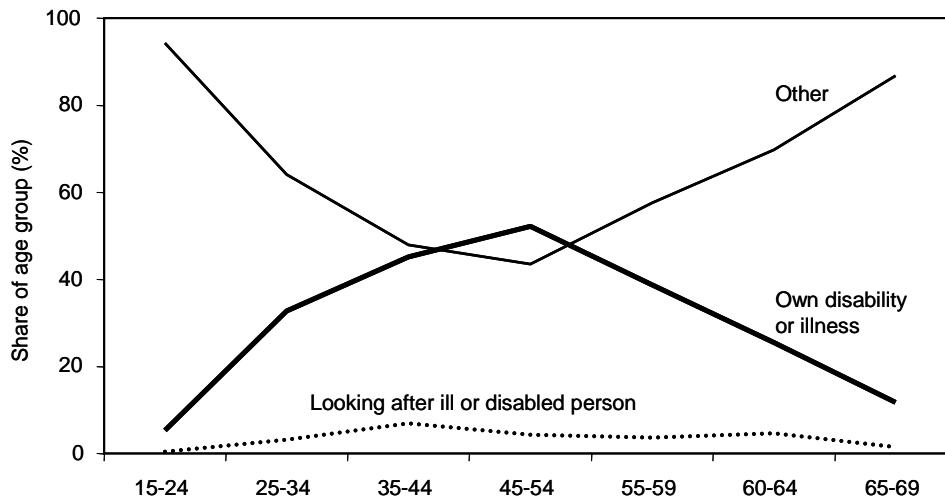
And its relative significance is also large. Excluding their caring role, about one in two males aged between 35 and 54 years were inactive due to disability or illness (figure 6.1). For inactive males aged 25–34 and 55–59 years, the comparable figures are more than one third. Over all ages from 15–64 years, it accounted for about 26 per cent of all inactive men (and 23 per cent of inactive men aged 15–69 years). As noted below, it is likely that these figures actually underestimate the real importance of disability as a factor behind inactivity.

Economic inactivity is also associated with a significant increase in the likelihood of multiple conditions (table 6.1). Overall, around one in three of people not in work have three or more conditions compared with around one in twenty of workers. This indicates the magnitude of the obstacle to re-engagement of people outside the labour force, since more than one health condition may need to be overcome.

¹ It is assumed that a ‘main activity’ while not in the labour force is generally a good proxy for the reason for inactivity (chapter 5).

Figure 6.1 Disability and illness is the main reason for economic inactivity among prime aged males

Males, September 2005



Data source: ABS 2006, *Persons Not in the Labour Force, Australia*, for September 2005, Cat. No. 6220.0.

Table 6.1 Health status by number of conditions

Both genders^a

Number of conditions	Health status					
	Poor	Fair	Good	Very good	Excellent	All
	%	%	%	%	%	%
Workers						
0	6.3	29.2	55.4	71.0	80.2	61.8
1	43.8	30.1	28.6	22.0	15.7	24.6
2	12.5	17.2	10.1	4.7	3.7	7.8
3+	37.5	23.4	5.9	2.3	0.4	5.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
Share in this category	0.7	9.4	37.5	40.3	12.1	100.0
Non-workers						
0	0.0	7.2	35.4	60.6	67.1	34.8
1	6.5	15.5	27.8	23.5	24.1	21.2
2	13.0	18.0	15.2	9.7	5.1	13.2
3+	80.4	59.3	21.7	6.2	3.8	30.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Share in this category	10.8	22.7	30.8	26.5	9.3	100.0

^a Based on the HILDA survey.

Source: Cai (2006).

Curiously, the ABS data underlying figure 6.1 suggest that for men older than 54 years, disability (and for that matter illness and injury too) declines strongly in importance as the *reported* basis for economic inactivity. This appears at odds with other information.

- ABS surveys of disability (Cat. 4430.0) show that the share of men not in the labour force with a disability rises steeply with age, as expected.
- The ABS National Health Survey shows that self assessed health status of Australian males worsens with age, particularly after 54 years (table 6.2). For example, 53 per cent of those aged 45 to 54 years rated themselves in very good to excellent health compared with 47 per cent of those aged 55 to 64 years and 36 per cent of those aged 65–74.
- The HILDA survey shows that the proportion of males outside the labour force who are in good health declines (and therefore, the share in bad health rises) strongly with age (figure 6.2). (Interestingly, health status declines for females much less with age.) The incidence of long term health conditions also rises strongly with age for all labour force states (figure 6.3), but particularly for economically inactive males. This is consistent with chronic illness as a major precipitating factor behind transitions from within the labour market to outside. There is a small decline in the prevalence of long-run conditions after age 54 years, but not by the margin apparent in the ABS *Persons Not in the Labour Force* data.
- There is also a major discrepancy between information on Disability Support Pension beneficiaries by age and the ABS data on economic inactivity. As shown in chapter 8, around 45 per cent of inactive males aged 55–64 years are on the DSP.

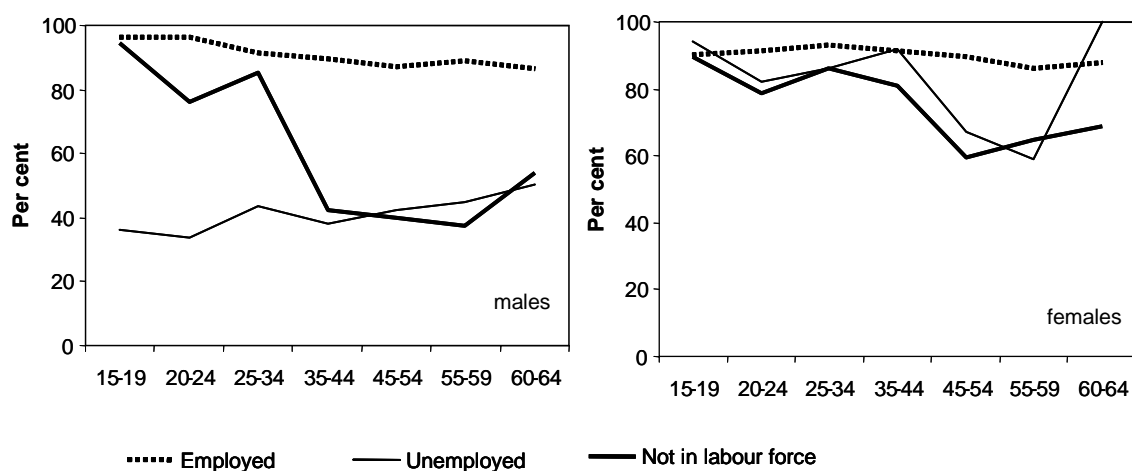
Table 6.2 **Health status declines significantly with age**
Males, 2004-05, Australia

Status	Age categories (years)							Total
	15–24	25–34	35–44	45–54	55–64	65–74	75+	
	%	%	%	%	%	%	%	%
Excellent	35	23	19	18	15	14	7	20
Very Good	36	39	39	35	32	22	22	34
Good	23	29	30	31	28	31	35	29
Fair	5	7	11	11	17	23	23	12
Poor	1	2	2	5	8	10	14	5

Source: ABS, 2006, *National Health Survey: Summary of Results, 2004-05*, Cat. no 4364.0.

Figure 6.2 Healthy males and females by age

Proportion in each age group, 2003^a

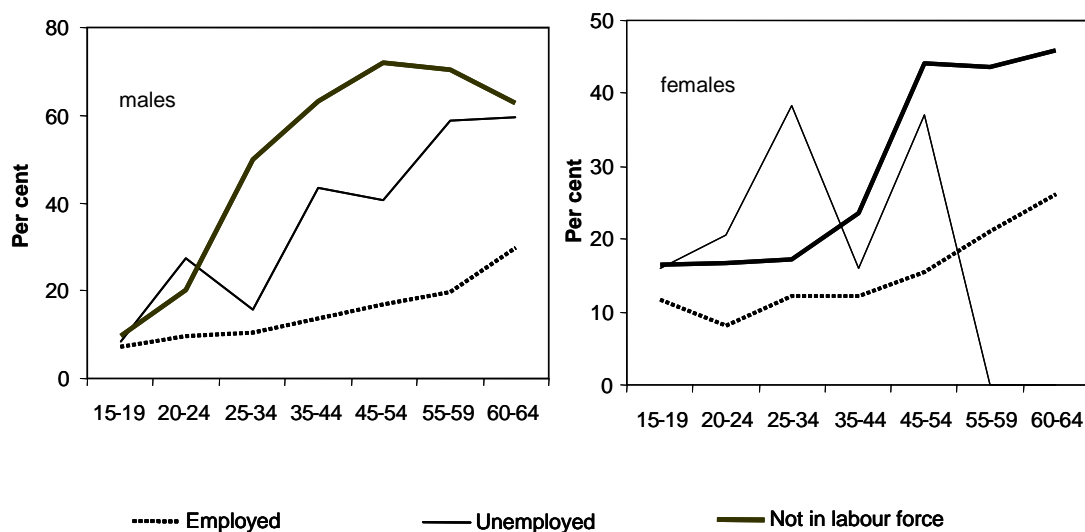


^a Those reporting health to be excellent, very good or good.

Data source: PC calculations based on the HILDA survey.

Figure 6.3 Long term health conditions^a

Percentage of each age group, 2003



^a The proportion in each labour force category replying 'yes' to the question of 'Do you have a long term health condition'.

Data source: PC calculations based on the HILDA survey.

The best explanations for the apparent inconsistencies are that:

- 'retirement' may be seen as a credible and less stigmatising label for males over 55 years, even when the real reason for inactivity is disability; and

- both disability and retirement motives for economic inactivity co-exist. Many men aged 55 years or more retire for reasons other than disability in older ages, while nevertheless having or developing a disability.²

Accordingly, the presence of retirement as a viable option for older men displaces the potential effects of disability on labour force participation at older ages. The policy implications of this is that were retirement incentives to be reduced, it would improve participation, but it would also call into play the displaced effects of disability, which would then provide a bigger constraint on participation than suggested by figure 6.1.

Effects on economic inactivity are enduring

Economic inactivity associated with disability is particularly enduring (table 6.3).

Table 6.3 Duration by activity of males outside the labour force
Males, year ending February 2005^a

Activity	Period out of the labour force (weeks)						Total
	1 to under 4 weeks	4 to under 13 weeks	13 to under 26 weeks	26 to under 39 weeks	39 to under 52 weeks	52 weeks	
	%	%	%	%	%	%	%
Retired or voluntarily inactive	3.9	5.7	4.0	3.9	4.8	77.8	100.0
Home duties or childcare	8.1	19.5	10.7	8.6	10.1	42.9	100.0
Education	2.5	9.7	8.4	11.4	27.9	40.2	100.0
Own injury or illness	11.1	17.9	10.0	5.9	6.2	48.9	100.0
Own disability or handicap	0.3	1.2	1.8	1.0	2.7	93.0	100.0
Looking after ill or disabled person	6.2	10.1	4.6	9.4	9.9	59.9	100.0
Travel holiday or leisure activity	46.6	35.3	5.1	3.7	2.7	6.6	100.0
Worked in an unpaid voluntary job	5.3	17.4	12.0	11.8	6.2	47.6	100.0
Other	21.6	39.5	11.2	8.4	9.2	10.2	100.0
Total	16.5	18.0	6.7	6.3	10.4	42.2	100.0

^a Relates only to males aged 15–69 years and excludes those institutionalised and in boarding schools.

Source: ABS 2005, *Labour Force Experience, Australia*, February 2005, Cat. No. 6206.0.

² As shown later, the pattern in figure 6.1 is consistent with other information on the impact of disability on economic inactivity by men (table 6.5).

More than 90 per cent of males citing disability as the reason for not being in the labour force had experienced a spell out of the labour force of over a year. However, spells outside the labour force for men citing illness or injury as their main activity are shorter, reflecting the more temporary nature of their conditions, with around one in two being economically inactive for less than one year. Collectively, around two thirds of those men who are not in the labour force due to illness, injury or disability have been economically inactive for more than one year.

Comparative labour market performance of men with disabilities

Given its persistence, disability clearly poses special problems for labour force participation. However, a drawback of using surveys that are based on self-assessment by respondents of the impact of disability on inactivity is that their usefulness can be limited by subjectivity.

An alternative is to analyse the comparative labour market performance of men with and without disabilities to assess how much disability affects outcomes. The differences between the two groups depend on the degree of disability and age.

- Men with disabilities, but without specific restrictions on activities of daily living, have labour market outcomes on a par with men with no disabilities (table 6.4).
- But those men with disabilities that involve restrictions on activities of daily living have poor labour market outcomes. They are more than 3.5 times more likely to be outside the labour market than men with no disability, and associated with this, they represent about 40 per cent of men aged 15–64 years old not in the labour force, although they represent less than 14 per cent of the population.
- The relative labour market outcomes deteriorate with the severity of disability. For instance, men with profound disabilities are around seven times more likely to be economically inactive than men without a disability. However, surprisingly once a person has any restrictive disability, the unemployment risk does not vary significantly by severity, being roughly double that of men without disabilities.

Table 6.4 Men with disabilities fare worse in labour markets

2003, men in households aged 15–64 years old^a

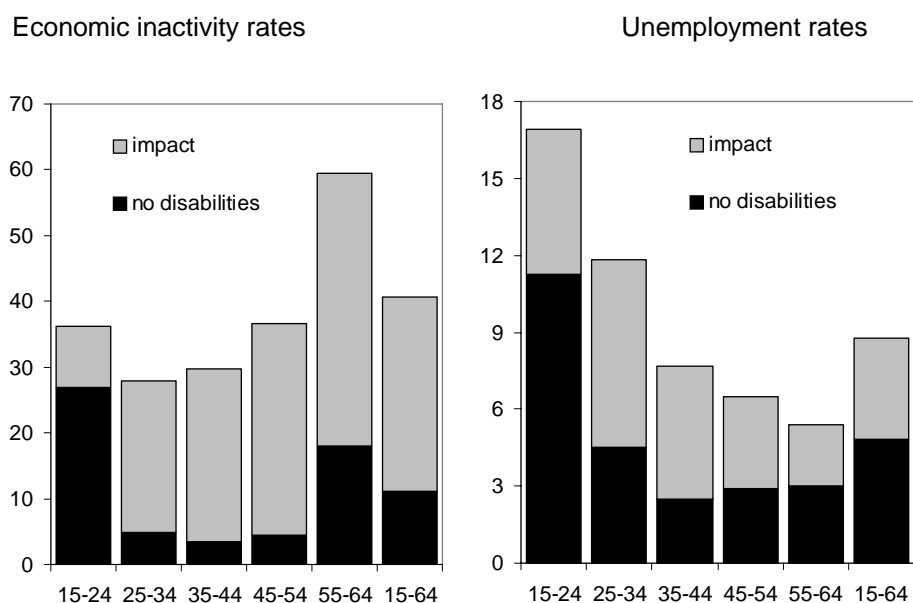
<i>By disability status</i>	<i>Rates</i>			<i>Shares of total</i>				
	NLFR	UR	ER	U	LF	NLF	EMP	POP
	%	%	%	%	%	%	%	%
<i>With a disability</i>	40.7	8.8	54.1	19.8	11.9	42.6	11.5	16.9
<i>With specific restrictions</i>	46.6	10.2	47.9	17.0	8.8	39.8	8.3	13.8
<i>Profound</i>	77.9	8.5	20.3	0.4	0.3	4.6	0.2	1.0
<i>Severe</i>	61.7	10.0	34.4	2.1	1.1	9.4	1.1	2.5
<i>Moderate</i>	43.8	7.2	52.1	2.7	2.0	8.2	2.0	3.0
<i>Mild</i>	46.8	9.0	48.4	4.7	2.8	12.7	2.7	4.4
<i>Less than mild</i>	26.8	14.2	62.9	7.0	2.6	4.9	2.4	3.0
<i>Disabled but without a restriction</i>	14.3	4.8	81.6	2.8	3.2	2.7	3.2	3.1
<i>No disability</i>	11.1	4.8	84.6	80.2	88.1	57.4	88.5	83.1
<i>All men</i>	16.1	5.8	79.4	100.0	100.0	100.0	100.0	100.0

^a Excludes those in institutions. NLFR is the economic inactivity rate (100 less the participation rate) or the ratio of the number not in the labour force (NLF) to the population (POP), UR is the unemployment rate or the unemployed (U) to labour force (LF) ratio, while ER is the employment rate or employment (EMP) to POP.

Source: ABS (2004a).

The impacts ascribable to disability were approximated by comparing inactivity and unemployment rates of men without disabilities, inferring that the difference is largely due to disability and particularly to disabilities involving some limitation (figure 6.4 and table 6.5). A distinctive result of this comparison is that the impacts of disability using the comparative method far exceed that suggested by men's self-assessment of the role of disability alone. However, the comparative method almost exactly replicates the results for self-assessment that combine disability with illness and injury (figure 6.5). This implies that the distinctions between injury/illness and disability are blurred for men giving a reason for their economic inactivity. But most importantly, the results corroborate that disability, in the broadest sense, accounts for around half of the men not in the labour force between ages 35 to 54 years.

Figure 6.4 The impacts of disability on inactivity grow with age
Men, 2003^a



^a The total height of each of the bar graphs shows the unemployment and inactivity rates associated with disability. It is inferred that the difference between these and the rates for men without disabilities is the effect of disability.

Source: ABS (2004a) and PC calculations.

Table 6.5 The 'effects' of disability on labour market prospects
2003, males, percentage points difference to labour market performance^a

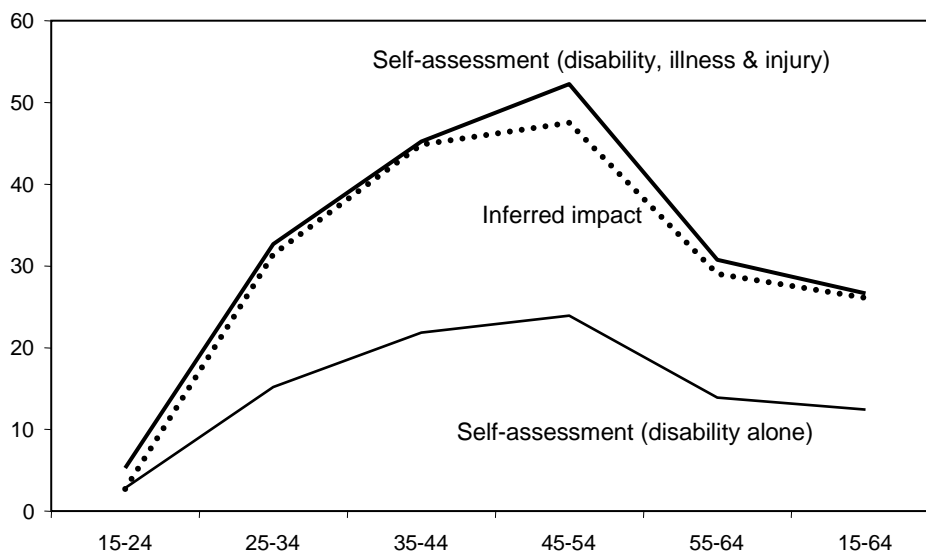
Age	Excess due to disability with limitations ^b		
	Not in the labour force rate	Unemployment rate	Employment to population rate
	points	points	points
15-24	12.1	7.0	-15.1
25-34	28.8	9.5	-33.8
35-44	34.5	6.9	-37.8
45-54	37.7	5.3	-39.7
55-64	45.6	3.2	-45.4
15-64	35.5	5.4	-36.7

^a The effects are only approximate because they fail to consider other factors, beside disability, that may be associated with poor labour market outcomes of men with limiting disabilities, and which themselves are correlated with disability. For example, drug addiction can be disabling, but usually stems from other aspects of disadvantage that would still affect labour market outcomes even were the disability to be avoided. ^b The effects are estimated by comparing the labour market performance of people with limiting disabilities, with that of people with no disabilities. It differs from the figure above in that only disabilities with limitations are considered.

Source: ABS (2004a) and PC calculations.

Figure 6.5 **Comparative information corroborates self-assessment on the importance of disability**

Men, 15–64, share of men not in the labour force in each age group^a



^a The 'inferred impact' is estimated as the currently observed NLF shares of the disabled *less* the share that would occur if they faced no disadvantage:

$$\text{Counterfactual} \left\{ \begin{array}{l} NLF_{disabled}^c = NLF_{abled}^a \times NLF_{disabled}^a \\ NLF_{all}^c = NLF_{abled}^a \times NLF_{disabled}^c \\ NLF_{SH}^c = NLF_{disabled}^c / (NLF_{disabled}^c + NLF_{abled}^a) \end{array} \right.$$

$$\text{Effect} = NLF_{SH}^a - NLF_{SH}^c$$

where a superscript 'a' denotes the actual NLF rates and NLF populations, while a superscript 'c' denotes the counterfactual case in which people with disabilities face no labour market disadvantages. The self-assessment data are based on the combined share of economically inactive men reporting disability, illness or injury as the 'main activity' when outside the labour force (from the ABS' *Persons Not in the Labour Force Survey*).

Data source: ABS (2004a); ABS 2005, *Persons Not in the Labour Force, Australia*, September 2004, Cat. No. 6220.0 and PC calculations.

That said, the causal links between labour market outcomes and disability/health are likely to be multi-directional and complex. In particular, not only do these traits cause exit from the labour force, but may occur because of the impacts of being economically inactive. This issue is taken up further in chapter 7 on the impacts of economic inactivity.

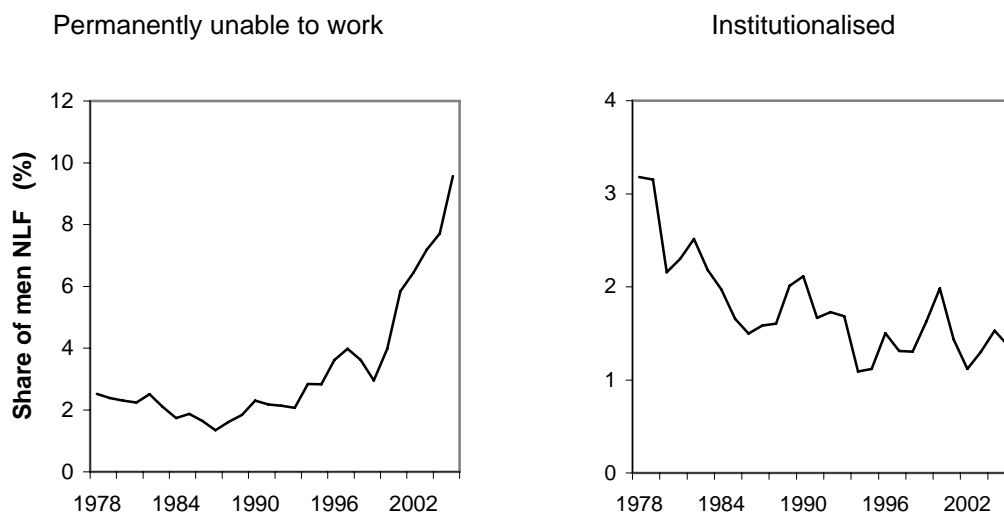
6.2 How has the role of illness, injury and disability changed over time?

Unfortunately, there is no precise answer to this question, reflecting changing criteria for determining whether someone can be labelled as ill, injured or disabled, accompanied by a growing social awareness of the importance of the issue and increased sophistication and scope of the measures used to assess the links (appendix B). Nevertheless, some pictures emerge.

Trends in ‘illness, injury and disability’ as a combined category

The narrowest measure of the changing role of disability, illness and injury among men outside the labour force is revealed by institutionalisation³ and complete work incapacity rates (figure 6.6). The share of men outside the labour force saying that they are permanently unable to work was relatively stable from 1978 to the early 1990s, but increased five-fold over the next 15 years.

Figure 6.6 Men not in the labour force who are institutionalised and permanently unable to work
Share of total men not in the labour force, 15–64 years old, calendar years 1978 to 2005^a



^a A break in the series occurred in 2001 as a result of re-design of the Labour Force Survey and different implementation strategies, but this should not affect the above measures. The shares are based on averages of monthly data over the calendar year.

Data source: ABS 2006, *Labour Force Survey*, Electronic delivery, Cat. No. 6291.0.55.001.

³ This will often cover people with disabilities, illness and injuries, such as hospitals, sanatoriums and nursing homes, but also jails.

On the other hand, the policy of de-institutionalisation, particularly among 25–44 year old men, has resulted in a significant long run reduction in the overall share of men in institutions. There is likely to be some substitution between the two categories — some of the men who were formerly in institutions will probably now say they are permanently unable to work. However, patterns of de-institutionalisation cannot explain the burgeoning rates of men who are permanently unable to work, particularly from the 1990s. Institutionalisation, while volatile, has not shown a continued downward trend over this period and the reductions in the institutionalisation rates are small relative to the increases in those permanently unable to work.

Broader measures that encompass all health conditions, regardless of their persistence and severity, give a better measure of the real role played by disability, illness and injury in economic inactivity. While the data for these conditions are less satisfactory, they nevertheless paint a picture similar to that of figure 6.6. Males who, over the past year, experience some spell outside the labour force are increasingly likely to cite illness, injury or disability as the reason (figure 6.7). That fact, combined with the increasing proportion of men who find themselves outside the labour force for some time during any given year, implies that the risk of being economically inactive associated with illness, injury or disability has doubled from the 1970s to 2005.

The above findings are also supported by surveys⁴ that give a measure, at a *specific point in time*, of the share of economically inactive men who are inactive due to illness, injury or disability (appendix B). And over the longer run, even bigger changes are apparent. For example, the ABS (2005) found that illness, injury or disability was associated with 19 per cent of economically inactive men aged 15–64 years in 1983, rising to 28 per cent in 2003. Most of this rise reflects a steep increase in the importance of health and disability conditions for men aged 55–64 years, with small apparent falls in the significance of these conditions for younger age groups.

The likelihood of new cases (the incidence) of illness, injury or disability that lead to economic inactivity has always been low (figure 6.8). The low incidence rates nevertheless translate into a significant proportion of economically inactive men with these health conditions at any time because they often persist and pose obstacles to work. Apart from some outliers in the early 1980s, there appear to be two phases in incidence rates. Rates were roughly stable over the decade from 1968 and then increased after the early 1980s.

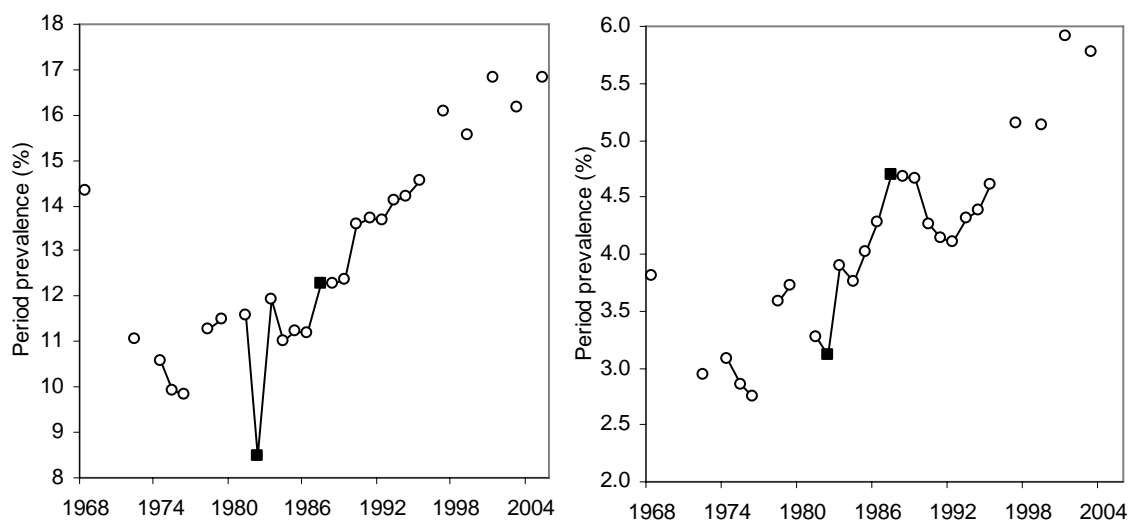
⁴ ABS (various issues), *Persons Not in the Labour Force*, Cat. No. 6220.0.

Figure 6.7 Illness, injury and disability is an important and rising source of economic inactivity

1968 to 2005^{a,b}

What share of inactive men give a health/disability condition as the reason for being not in the labour force?

What is the risk of a male in the population being out of the labour force due to a health/disability condition?

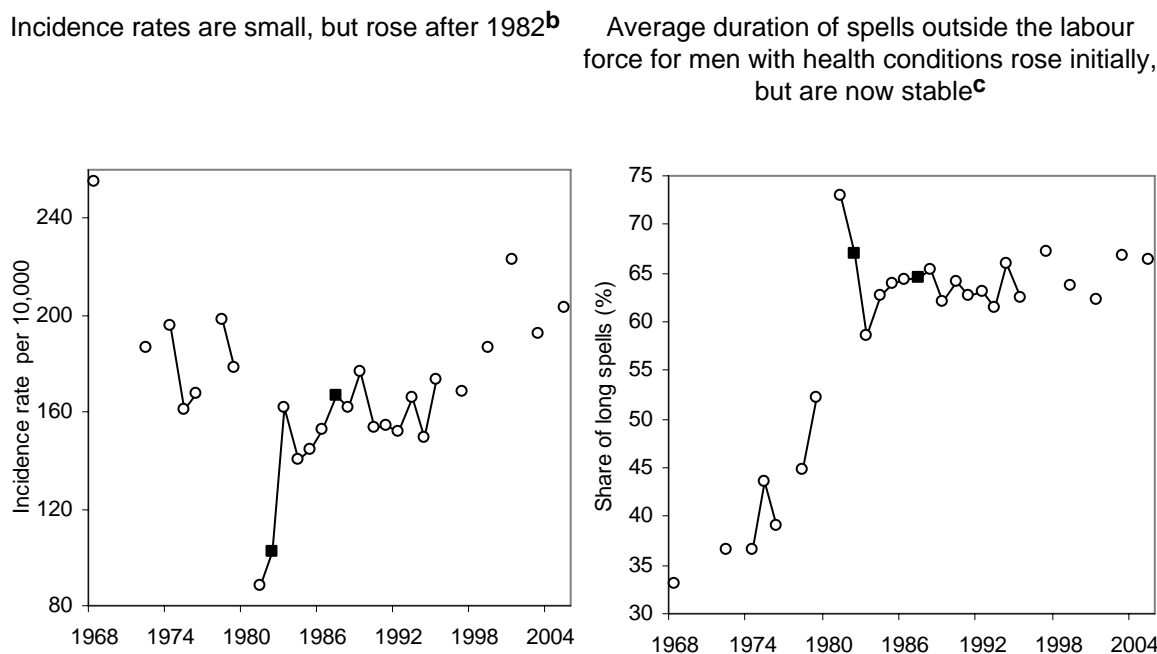


^a The two panels show the period prevalence of illness, injury and disability as the main activity of males aged 15–69 years old outside the labour force (the idea of a main activity is usually equated with the reason for being not in the labour force). The period prevalence measures a risk over a period of time, in this case, a 12 month period. The difference between the two panels is that the left one shows the prevalence among the population of males who experience any duration of economic inactivity over the past year, while the right shows the risk that a male in the total male population aged 15–69 years old will experience economic inactivity *and* report a health condition as the source of it. ^b There are several breaks in the series. The two most important are shown, with the year where the change occurred highlighted by a black box. The first was the result of excluding from the definition of ‘not in the labour force’ a group of males who had said they had been in their current job for a year or more, but had nevertheless reported that they had been out of the labour force for some of the year. The second was when the nomenclature ‘permanently unable to work’ as a main activity of those outside the labour force was replaced with ‘own disability/handicap’.

Data source: ABS various issues, *Australian labour Force Experience*, supplement to the labour force survey, Cat. No. 6206.0.

There have also been significant changes in the duration of spells of men outside the labour force while ill, injured or disabled. In 1968, only around one third of spells of economic inactivity involving these conditions lasted for a year or more, but this had increased to more than 70 per cent in 1981. It has since fallen to around two thirds (figure 6.8).

Figure 6.8 Incidence and duration of illness, injury or disability for men outside the labour force
1968 to 2005^a



^a Black boxes denote breaks in the data, as described in figure 6.7. ^b The incidence rate measures the number of new cases of a condition relative to an at-risk population. In this instance the incidence is of new cases of men outside the labour force for some time in a 12 month period who also cite a health condition (ill, injured or disabled) as the reason for inactivity, relative to the male population aged 15–69 year old. The number of new cases of males who are out of the labour force *and* with a health condition is calculated as x/y where x = the number of males experiencing economic inactivity during the past year whose main activity is a health condition and y = the number of males experiencing economic inactivity *for a year or more* whose main activity is a health condition. ^c A low incidence rate can lead to a high prevalence rate if spells of a condition are long-lasting. The right hand panel shows the share of cases where an economically inactive male cites a health condition as their main activity in which the inactivity lasts for more than 12 months.

Data source: ABS various issues, *Australian Labour Force Experience*, supplement to the labour force survey, Cat. No. 6206.0.

Trends in illness, injury and disability as separate categories

While there are similarities in their impacts on labour market success, illnesses and injuries tend to have shorter-term impacts on economic inactivity, and yet around ten times the incidence rates of disability (table B.5 in appendix B). Given these differences it is important to highlight any long term patterns that are different between the two types of condition.

The average duration of spells outside the labour force due to illness or injury, while shorter than those due to disability, appears to have changed by much more. Spells outside the labour force associated with disability have always been protracted (table B.5 in appendix B). In 1968, only 6 per cent of spells involving illness or

injury lasted more than a year. But by 2005, this was about fifty per cent. This is important because as the average duration rises, for a given inflow of newly ill or injured inactive men, the outflow will fall and the stock of inactive men will rise relative to the population.

While both disability and illness/injury have made an increasing contribution to male economic inactivity from 1972 to 1997 (appendix B), more recently the two factors have shown divergent patterns. Since 1997, the importance of illness and injury as a reason for economic inactivity among males has declined significantly for all age groups, but particularly for males aged over 55 years. Correspondingly, the importance of disability has risen, so that the overall combined illness/injury/disability rates have not changed much. There could be several factors behind the contrary shifts in the prevalence rates for the two categories.

- A long-term illness or injury can be the underlying source of a disability, so the distinction between the two categories is unclear for persistent conditions. When people are given the opportunity to describe a health/disability condition as a disability, illness or injury, they will tend to distribute their answers among them in an inconsistent fashion. A more systematic assessment of disability tends to capture all of these conditions. Moreover, people may now be more willing to label a condition as a disability (though the pace of the change seems to be too rapid to just represent a change in norms about disability);
- The Productivity Commission's inquiry into workers' compensation (PC 2004a, chapter 6) observed that the economy-wide shift to contracting out and casual workers reduced the coverage of workers' compensation schemes. These structural changes in the nature of employment and other factors affecting the coverage of State schemes suggest that people who once might have made claims on workers' compensation are now seeking compensation through public insurance arrangements, like unemployment allowances and DSP. The Department of Employment and Workplace Relations argued that 'the Australian Government's social security schemes have become a 'de-facto' workers' compensation scheme.' (DEWR 2003). However, the extent of 'cost shifting' between private and public insurance arrangements is unknown.

A ten year view using comparative analysis

A final perspective on the changing impacts of disability is an extension of the comparative analysis underpinning table 6.5 from a snapshot to two periods of time. The gap between the economic inactivity rate of males aged 25–64 years with a disability and those without has risen from 1993 to 2003, suggesting increased relative vulnerability of men with disabilities, despite buoyant economic conditions (table 6.6 and figure 6.9). For example, the inactivity rates of men aged 35–44 years

with disabilities increased by about 8 percentage points between 1993 and 2003, whereas the inactivity rates of their non-disabled counterparts increased by only one percentage point. A part of this story may be that men with disabilities who were unemployed have shifted from unemployment to economic inactivity (rather than to a job) — explaining some of the reduction in relative unemployment risk in panel 2 of figure 6.9.

Table 6.6 The participation ‘gap’ has been widening between men with and without a disability

Labour participation rates, men by age group, 1993 to 2003

Age	With disabilities		Without disabilities		Gap	
	1993	2003	1993	2003	1993	2003
	%	%	%	%	%	%
15–24	60.9	63.9	70.0	73.1	9.1	9.3
25–34	79.3	72.2	97.4	95.2	18.0	23.0
35–44	78.1	70.2	97.5	96.6	19.5	26.3
45–54	67.1	63.5	96.1	95.5	29.0	32.1
55–64	40.4	40.6	76.7	82.1	36.3	41.5
15–64	62.6	59.3	88.1	88.9	25.5	29.6

Source: ABS various issues, *Disability, Ageing and Carers Australia*, Cat. 4430.0.

It is possible to decompose the overall shift in inactivity rates of males aged 15–64 into four separate effects:⁵

- the impacts of ageing, which shifts people into age groups with lower participation rates (though the full effects of ageing would require extension of the analysis to all ages over 15 years). This accounted for 98 per cent (not points) of the change in 15–64 year old inactivity rates between 1993 and 2003;
- the change in the prevalence of disability among men. This accounted for -35 per cent of the change. It may seem perplexing that changing prevalence rates would have a negative effect when aggregate disability prevalence rates increased (slightly) over the period. This reflects the fact that disability prevalence actually *decreased* significantly for the 55–64 year old age group, and that this group faces the largest relative inactivity rates between disabled and non-disabled men;
- the change in the age-specific inactivity rates of men with disabilities, which rose significantly for most age groups. This accounted for 189 per cent of the change; and

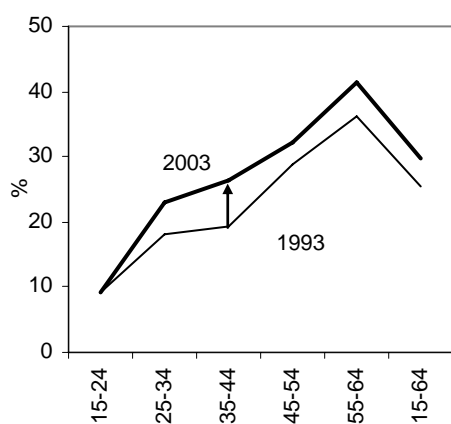
⁵ A computer intensive method that is able to allocate all the effects was used, so that effects sum to one hundred per cent. The methodology for doing this is described in Technical Paper No. 6 associated with the Commission’s analysis of the economic implications of an ageing Australia (<http://www.pc.gov.au/study/ageing/finalreport/technicalpapers/index.html>).

- the change in the age-specific inactivity rates of men without disabilities, which fell significantly for several age groups (while rising only slightly for some others). This accounted for -152 per cent of the change.

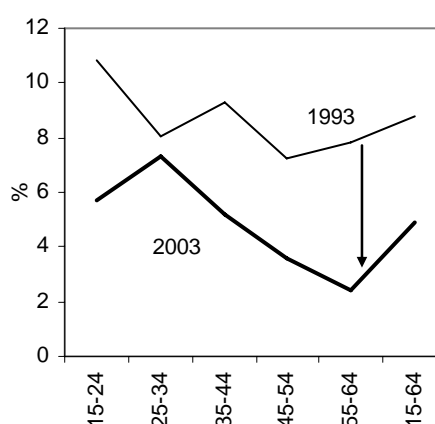
The biggest driver, therefore of increased inactivity rates of men over this period was ageing and the greater labour market vulnerability of the disabled.

Figure 6.9 Men with disabilities have become more vulnerable to inactivity, but less to unemployment
1993 to 2003^a

Gaps between inactivity rates for the disabled versus non-disabled have grown



Gaps between unemployment rates for the disabled versus non-disabled have fallen



^a Table 6.5 describes the method for the calculation of the gaps. The figure shows how the gaps have shifted over time.

Data source: ABS various issues, *Disability, Ageing and Carers Australia*, Cat. 4430.0 and PC calculations.

6.3 Summary

Rising long-run incidence rates for male economic inactivity due to illness, injury and disability and longer average duration of spells outside the labour force has contributed to a growing stock of inactive men. Many of these will be recipients of the Disability Support Pension (DSP), for which the average duration of current beneficiaries was over seven years in the early 2000s (FaCS 2003, p. 20).

The DSP has played a central role as the repository for men with disabilities, and arguably, for some, as a contributor to prolonged labour market disadvantage. Given its importance and complexity, it is examined in chapter 8, as are some of the fundamental underlying factors that have affected the poor labour market outcomes of men with disabilities.

7 Impacts of being out of the labour force

7.1 Introduction

This chapter assesses some of the effects of being out of the labour force from an economic and social perspective. Much of the interest in labour force status concentrates on the economic effects of retirement of older people, given ageing of a large cohort of baby boomers (PC 2005). Clearly, such retirement behaviour affects economic growth, the size of future welfare payments and the future consumption of retirees. This chapter, however, is mainly focussed on people whose withdrawal from the labour market occurs prior to normal retirement age, or which is based on motives other than retirement.¹ This is because the effects of these have been less intensively studied before, there are less clear cut policy interventions that can remedy such withdrawal, and the impacts on personal wellbeing appear to be larger. Nevertheless, this chapter still considers impacts on sub-groups of people under 65 years who have retired early.

Evidence on the impacts of being out of the labour force is scarce. Most studies analysing any such aspects focus on the unemployed or jobless (a grouping of both unemployed and people out of the labour force). Some of the effects of being unemployed or jobless may be applicable to the specific group that is outside the labour force. The legitimacy of drawing comparisons between unemployment and labour market inactivity is supported by several studies based on the United States labour market. From a psychological perspective, Goldsmith et al. (1995) and Tano (1991) find the two labour market states are indistinguishable for prime aged workers. Furthermore, using transitions analysis based on Australian data, Gray et al. (2002) find that marginally attached workers² have a similar labour force attachment as the unemployed.

¹ In some instances, data are only available for all ages, or for both genders. This is noted where it is the case.

² A marginally attached worker is someone who is out of the labour force but either actively looking for work but not available to start in the reference week, or not actively looking for work but available to start.

However, it is important not to overstate the similarities between the unemployed and those outside the labour force.

- The unemployed have a greater job search orientation, stemming from their greater job readiness, their desire for a job and the activity requirements of unemployment benefits. In contrast, while some inactive males would like a job, many would not and they are not subject to activity requirements.
- A significant share of economically inactive people have strong motivations for economic inactivity like child rearing or disability care, though this primarily affects females, who are not the subject of this study.
- Males outside the labour force are often disabled or unwell.
- Based on longitudinal Australian evidence, Elliott and Dockery (2006) find strong evidence (contrary to Gray et al.) that suggests that for a range of indicators — wellbeing; reservation wages; and transition probabilities to other labour force states — marginally attached workers are more like others outside the labour force than the unemployed.
- Many people outside the labour force experience that status for long periods, and in the case of those on the DSP, these periods often last from the time of entry to the time of death or eligibility for the pension (chapter 8).

Accordingly, outcomes associated with joblessness or unemployment provide, at best, only suggestive evidence about the impacts of being outside the labour force. They are used where evidence specific to economic inactivity is sparse.

7.2 Aggregate economic impacts

The major economic impact of labour market inactivity is the loss of output. Argy (2005) has characterised this as a large ‘waste of national economic potential’. Governments around the world have become increasingly interested in activating the large group of people outside the labour force, as population ageing reduces labour force and economic growth rates (PC 2005).

The key to understanding the net economic costs of labour market inactivity is a comparison of outcomes under current inactivity rates with a *realistic* counterfactual that reflects the best achievable rate of re-engagement. There is little point in estimating costs based on the assumption that all men currently out of the labour force can be employed, since that is an unachievable and undesirable outcome. For example, some of the inactive are in education — a profitable investment by society. The appropriate counterfactual should take account of the costs and benefits of engaging people currently out of the labour force.

Appendix D sets out a framework for determining the appropriate counterfactual and provides some back-of-the envelope indicators of the economic losses associated with male inactivity. Policy changes to realise the economic potential of inactive males would take many years, reflecting the gradual effects of policies aimed at current and future cohorts of boys and young men to reduce their lifetime inactivity rates. The simulations based on such policy changes suggest possible forgone economic output of male inactivity over the next 45 years of cumulatively around \$2000 billion (in non-discounted form).³ In 2050-51 alone, the gains would be around \$90 billion or about \$3000 per capita. In addition, there would be budget savings associated with reduced welfare payments, as DSP rates fell. For example, in one reasonable simulation the budget saving (relative to the base case) would be around \$4.5 billion in 2003-04 prices in 2050-51 alone and an economic saving due to reducing the inefficiency burden of taxes of around \$ 0.9 to \$1.4 billion in that year (appendix D).

Developing the appropriate conceptual framework has the added advantage that it suggests some areas where policy might fruitfully be applied to increase participation rates, as well as some of the limits that can reasonably be expected to ambitions for economic growth.

First, since policy cannot realistically aspire to re-engage all outsiders with the labour force, it need not be a sign of policy failure were significant numbers of people to remain outside the labour force *after* reforms were instituted. Fortunately, the cross-country evidence suggests that large inroads into inactivity from present levels may be possible with policy reform.

Second, the net economic benefits of reforms will depend on the incremental costs and incremental productive benefits of engagement. Any policy that lowers the former and increases the latter provides scope for bigger inroads into non-participation and bigger national benefits. For example, these could include any improvements in the effectiveness and efficiency of rehabilitation or Job Network services for people who have been outside the labour force (or who are at a high risk of a transition to it).

Third, many of the largest benefits from policy initiatives in achieving higher participation and economic growth emerge over time. It is easier to stem the inflow into inactivity than to increase the outflow. There are several reasons for this.

- For future potential entrants to inactivity it is possible to apply early interventions, such as more effective education when young, that are not feasible

³ The Commission's more elaborate exercise assessing the benefits of a new national reform agenda will provide a more comprehensive assessment of the potential gains, but for both genders.

when they are older (hence the relevance of education policy as described in chapters 9 and 10).

- Inactivity has effects on skills, confidence and habits that worsen with the duration of inactivity, decreasing the prospects of achieving a transition to a job. For example, it is likely to be easier to apply intensive rehabilitation and supportive work arrangements to prevent entry to the DSP (or at least, to apply such interventions early in the life of someone on DSP). Similarly, changing norms of early full-time retirement may be very effective. So while inflow-oriented policies will not have immediate effects, they are cheaper than outflow-oriented policies and have bigger effects on economic welfare in the long run. Some of the emerging findings about improved outcomes for unemployed and disabled users of the Job Network (DEWR 2005c) suggest that this might lower entry rates to the DSP.

7.3 Personal impacts

The standard economic costs of male inactivity may be high, but it is conceivable that the costs associated with the adverse personal and social impacts of economic inactivity may be higher. As noted by the Productivity Commission (PC 2005), these costs may constitute one of the main policy rationales for seeking to lower inactivity rates.

While these costs are present for both males and females, there is less social stigma associated with females outside the conventional labour force. This is because they often work informally as carers, a role that is usually socially affirmed. The focus of this section is on some of the possible personal impacts of male labour market inactivity for the economically inactive and their immediate family. While many of these may be adverse, some are potentially positive, such as the scope for volunteering.

Low income

Many males not in the labour force report low incomes. Government pensions, which were the main source of income for approximately 50 per cent of males not in the labour force in 2001 (ABS 2005), are well below average wages. As at August 2006, the maximum DSP payment was approximately \$13 455 annually⁴ and Newstart allowance approximately \$10 675 annually (Centrelink).⁵ Average

⁴ Based on single over 21, or under 21 with children, includes pension supplement.

⁵ Based on single person with no children.

earnings for employed males were about \$51 000 annually in May 2006⁶ (ABS 2006), while even earnings at the 10th percentile were more than two times that of the DSP.⁷

However, as an aggregate group the economically inactive report relatively low levels of financial stress compared with the unemployed (table 7.1). A major reason for this is that the aggregate group includes retirees and people with their own means of support. Inactive people report significantly higher levels of poverty than the employed, but much lower rates than the unemployed (table 7.2).

Table 7.1 Financial distress by labour force status
Both sexes, all ages^a

<i>Nature of distress</i>	<i>Employed</i>	<i>Unemployed</i>	<i>Discouraged Jobseekers</i>	<i>Others not in Labour Force</i>
	%	%	%	%
Could not pay bills on time	15.9	33.6	18.6	15.9
Could not pay mortgage/rent on time	7.7	16.7	8.6	6.9
Pawned or sold something	4.5	17.0	6.6	6.1
Went without meals	3.2	14.9	5.0	4.5
Was unable to heat home	2.2	9.2	6.1	4.2
Asked for financial help from friends or family	14.4	34.4	12.3	13.4
Asked for help from welfare/community organisations	2.5	17.0	6.5	6.0

^a Results are based on the pooled data from the first 4 waves of the HILDA survey.

Source: Elliott and Dockery 2006.

These tables mask differences by age and reason for economic inactivity. Those living on the DSP or other benefits — a large share of those who are out of the labour force below the age of 65 years — experience levels of poverty and financial distress that are close to that of people living on long-term unemployment benefits and other welfare benefits (table 7.3). This is likely to have several adverse effects apart from financial hardship. For example, being ‘poor/very poor’ is associated with much worse mental health, although the causal links between the two may be

⁶ Trend estimate based on all male employees’ total earnings.

⁷ This was estimated by noting that the ratio of average to 10th percentile male weekly earnings for non-managerial full-time employees was about 60 per cent (ABS, *Employee Earnings and Hours, Australia*, May 2004, Cat. No. 6306.0). 0.6 times \$51 000 is more than two times higher than the DSP.

quite complex (Dockery 2006).⁸ The issue of wellbeing and mental health is explored in detail in the next section.

Table 7.2 Self-assessed poverty by labour force status

Both sexes, all ages^a

<i>Self-assessed poverty level</i>	<i>Employed</i>	<i>Unemployed</i>	<i>Discouraged Jobseekers</i>	<i>Others not in Labour Force</i>
	%	%	%	%
Prosperous	1.6	1.7	1.0	1.1
Very comfortable	14.9	9.5	8.2	11.5
Reasonably comfortable	54.1	32.8	36.5	48.7
Just getting along	26.9	43.6	46.8	33.1
Poor	2.1	10.0	4.9	4.4
Very poor	0.4	2.5	2.6	1.2

^a Results are based on the pooled data from the first 4 waves of the HILDA survey.

Source: Elliott and Dockery 2006.

Table 7.3 Indicators of financial difficulties by income support group and labour market status

Males aged 65 years or less and females aged 60 years or less, Australia, 2002^a

<i>Type of difficulties</i>	<i>No income support</i>	<i>Unempl- oyed</i>	<i>Parenting payment partnered</i>	<i>Parenting payment single</i>	<i>Disability or sickness</i>	<i>Mature aged payments</i>
Not pay electricity/gas	16.7	37.0	43	58.6	36.1	21.1
Not pay mortgage/rent	8.3	19.2	18.5	30.8	13.5	10.4
Pawned/sold something	5.0	20.3	16.4	24.2	18.9	7.6
Without meals	3.4	18.6	7.2	15.5	17.8	3.8
Without heating	2.3	10.7	6.6	15.7	13.0	3.7
Help from family/friends	15.6	38.0	34.2	57.9	31.4	19.4
Help from welfare or community	3.0	24.0	14.7	30.7	19.6	5.8

^a Based on the first wave of the HILDA survey.

Source: Butterworth et al. 2004.

Other data show that financial status tends to decline with the duration of time without a job. The average duration of joblessness among a significant group of prime aged men — especially those on DSP — is very long (table 7.4 and

⁸ In this instance, Dockery's results are based on people who have jobs or are unemployed. But the relationship between poverty and mental health could be expected to occur among those outside the labour force as well.

chapter 8). People facing enduring joblessness are more likely to be renters, particularly in public housing (Kumar et al. 2004, p. 14). Moreover, even if snapshots of their poverty at any one time — like those in table 7.3 — show levels of poverty that are comparable to other welfare beneficiaries, these effects are chronic among DSP beneficiaries, rather than temporary as for most other beneficiaries.⁹

Table 7.4 Many economically inactive men have not worked for years
HILDA survey, wave 1, men aged 15+ years

Age	Years since last worked					
	Less than 1	1 to 2	2 to 4	4 to 6	6 to 10	10 plus
	%	%	%	%	%	%
15–24	59.6	23.9	12.4	4.1	0.0	0.0
25–44	29.9	17.9	22.0	9.5	13.0	7.8
45–54	19.7	9.8	18.3	14.4	16.9	20.8
55–59	14.4	7.3	24.6	12.8	20.8	20.1
60–64	9.2	10.9	19.4	19.8	24.3	16.4
65+	2.6	2.5	5.9	6.9	26.7	55.4

Source: HILDA survey and PC calculations.

An important question for the potential alleviation of low income is the extent to which inactive men want to work (table 7.5). It is apparent that a significant share does, including those with disabilities or illness. However, much lower rates of work orientation are found in older males or those who have retired early.

Table 7.5 How many economically inactive men want to work?
HILDA survey results, men aged 15–64, Wave 3

Age	Wants to work?			Activity	Wants to work?		
	Does	Maybe	Does not		Does	Maybe	Does not
	%	%	%		%	%	%
15–19	58.2	8.1	26.5	Retired	14.5	6.8	78.5
20–24	43.4	10.2	31.6	Home duties	47.5	8.2	44.3
25–34	68.3	1.4	21.5	Study	62.7	7.4	29.9
35–44	53.8	3.2	38.3	Illness/ disability	38.4	5.8	55.3
45–54	29.4	3.1	65.0	Carer	22.7	2.0	70.3
55–59	17.7	3.0	78.1	Leisure	30.3	0.0	69.7
60–64	15.3	10.9	72.5	Volunteering	54.4	10.2	35.3

Source: HILDA survey and PC calculations.

⁹ Australia is not alone in this. In Germany, for example, it has been found that economic inactivity, rather than unemployment, is more closely linked with chronic poverty (Biewen 2003).

Broad impacts on health and disability

There is a myriad of survey data highlighting the prevalence of health problems among those out of the labour force. Chapter 6 reports on broad measures of the health and disability status of men outside the labour force, as part of a broader characterisation of the traits of men outside the labour force. Chapter 8 shows the particular disabilities of the sizeable group who receive the DSP.

A major explanation for the higher prevalence of poorer health among men outside the labour force is that this is the *reason* for inactivity (chapter 5). This invites the question about the causal links that may go in the other direction. The issue is important on several counts. If economic inactivity reduces people's health, then policies might try to counter these effects while people are inactive. It also provides an even stronger policy motivation to shift people from outsiders to insiders.

Most of the evidence to date about the effects *from* labour force status *to* health relates to joblessness or, more often, unemployment. In this case, the evidence is mixed, but in summarising the literature, Mathers and Schofield (1998) find that general measures of health deteriorate as a result of unemployment.

Apart from the issue of mental wellbeing (explored later), the story for the economically inactive is less clear. Some health factors seem to be more likely to be pre-existing:

- Many of the specific conditions causing disability reflect risk factors that are not plausibly associated with unemployment or economic inactivity (many musculo-skeletal problems, developmental disorders, cancer, epilepsy and other neurological conditions). Transitions out of the Australian labour market associated with disability are often directly from a job, not from unemployment (Cai and Gregory 2005).
- Early studies that found strong links between mortality — a marker for the wider presence of disability within a sub-population — and joblessness are likely to have exaggerated the effect because they failed to control for confounding factors (Martikainen 1999). Some studies, using new methods, now even find that mortality, and by imputation, some aspects of disability, fall during economic downturns (Granados 2005).

Of course, it may be that joblessness is the source of especially large adverse health effects for *some* men, but the average impact, while negative, appears small relative to the stock of pre-existing disability.

A common factor may affect men's labour market status and disability onset

Second, some common pre-existing factors dispose some men to both poor labour market outcomes *and* the future onset of disability. For example, poor literacy and educational skills is associated with lower quality jobs and higher unemployment risk (Burchardt 2003; Jenkins and Rigg 2003), and potentially because of the nature of these jobs, to bigger occupational injury hazards. As an illustration, Burchardt found that a professional man aged 55–64 years, with a degree, income in the top quintile and living in a high risk region of the United Kingdom had a 1.7 per cent chance of becoming disabled. A similarly aged man living in the same region, but not working, with no educational qualifications and income in the bottom quintile had seven times the risk.

High risk behaviour (such as in motor vehicle or drug use), poor childhood nutrition and lack of access to health services is also associated with poorer labour market outcomes and higher probability of the onset of disability (Bradbury et al. 2001). These pathways for causality are policy relevant because they suggest that the labour participation gains from reducing disability (for example, more effective treatments for musculo-skeletal problems and affective disorders), while obviously worthwhile, will not be as large as those suggested by comparisons given in chapter 6. But it still remains the case that while men with disabilities are more likely to have been disadvantaged in labour markets prior to the onset of disability, their disadvantage is exacerbated following onset (for example, as shown by Jenkins and Rigg 2003).

The importance of acknowledging this multi-causality is that from a policy perspective, not all policy eggs should be placed in one basket. As argued by the UK Treasury (1999), a focus on disability alone may accentuate a symptom of a problem, rather than the underlying factors that lead to that and other disadvantages. As discussed in chapter 8, successful reforms to the Disability Support Pension are likely to involve measures other than those focused on the scheme or disability *per se*, such as better education for boys that insulates them from later disability risks.

What does longitudinal evidence show?

Evidence from the HILDA dataset shows the complexity of assessing the effects of labour market status on health risks (table 7.6). These data only relate to those people who changed their labour market status over a one year period. The overwhelming proportion of males maintained good health in any labour market transition, regardless of whether it was to outside the labour force, or back into it. Moreover, people in bad health one year, and who change their labour market status, are most likely to shift to good health regardless of whether the transition is

to outside or inside the labour force. This suggests that over a one year period, transitions outside the labour force do not have significant adverse effects on health. Of course over the longer term, prolonged labour force inactivity is *associated* with poorer health, as indicated by:

- table 6.3 in chapter 6; and
- the higher share of people whose starting state is bad health when moving from outside to inside the labour force than those whose move is from inside to outside the labour force (the penultimate column of table 7.6).

Table 7.6 Health changes and labour force transitions into and out of the labour market

Per cent of males, 2002–03^a

Age	Starting with good health and moving to:		Starting with bad health and moving to:		Share starting with:	
	bad health ^b	good health ^b	bad health	good health	bad health	good health
	%	%	%	%	%	%
Moving out of the labour force						
15–19	14.8	85.2	39.2	60.8	8.1	91.9
20–24	19.2	80.8	16.1	83.9	7.4	92.6
25–34	22.4	77.6	10.2	89.8	8.7	91.3
35–44	17.8	82.2	9.5	90.5	8.9	91.1
45–54	11.7	88.3	24.5	75.5	8.8	91.2
55–59	20.3	79.7	22.5	77.5	5.7	94.3
60–64	18.0	82.0	25.0	75.0	14.9	85.1
Moving into the labour force						
15–19	15.9	84.1	28.0	72.0	17.5	82.5
20–24	17.8	82.2	16.0	84.0	11.6	88.4
25–34	22.8	77.2	10.5	89.5	17.1	82.9
35–44	18.4	81.6	19.8	80.2	16.4	83.6
45–54	11.9	88.1	23.5	76.5	16.0	84.0
55–59	21.5	78.5	19.3	80.7	14.7	85.3
60–64	15.3	84.7	28.3	71.7	20.3	79.7

^a The table reports the nature of any health changes experienced by males who left the labour force from wave 2 (2002) to wave three (2003) of the HILDA survey. For example, 13.6 per cent of 15–19 year old males who moved out of the labour force (from employment or unemployment to NLF) went from good health to bad health. It should be noted that the transition risks refer to different groups whose size is also different (smaller groups exit from NLF to the LF, than the other way).^b Good health denotes those males who self identified their health as being excellent, very good or good; bad health denotes those identifying their health as fair or poor.

Source: PC calculations based on HILDA survey.

But that could be entirely expected, given selection biases. The likelihood of a transition out of the labour force is higher in people who are in bad health, while the likelihood of moving back to the labour force is lower in those who are in bad

health.¹⁰ Consequently, a greater proportion of the *stock* of people outside the labour force will be in bad health than insiders, even if no big changes in health are noticeable for *transitions*. And over time, the proportion of people who are in bad health will inevitably rise in the stock of people outside the labour force, without that implying labour force inactivity is *causing* this change.

However, this broad picture may conceal the impacts of economic inactivity on specific sub-groups. That issue is beyond the scope of this study, but may be worth considering in future analysis. The broad picture may also mask the harmful effects of economic inactivity on narrower aspects of health status and, in particular, mental wellbeing and health. Such adverse effects could be anticipated where economic inactivity is socially stigmatising or is perceived as an undesirable state by those experiencing it (for example, because of poverty or social isolation). This is the subject of the next section.

Wellbeing and mental health status

This section initially reports on the levels of wellbeing and mental health for those not in the labour force, but also tries, where evidence is available, to indicate the extent to which it is a result or precipitator of that status.

Reported wellbeing

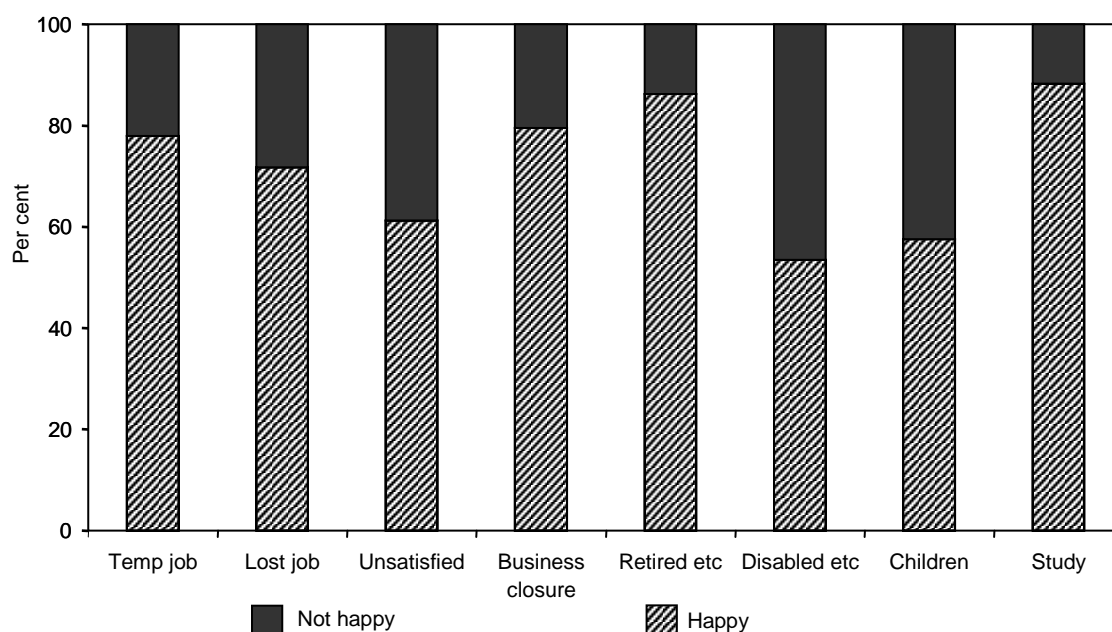
Many people say that they are happy even while not participating in the labour force (figure 7.1).¹¹ Men aged 15–64 whose reason for stopping work was study or retirement are overwhelmingly happy. But those who left the labour force because they were unsatisfied or with a health/disability problem are the most unhappy when economically inactive. Their experiences tend to be concealed by aggregate analyses.

¹⁰ These likelihoods are *not* shown in table 7.6.

¹¹ Indeed, excepting discouraged workers, who are a relatively small group, self-reported life satisfaction rates for the economically inactive as a whole (including both genders and all ages), are higher than for people in any other labour market state, including employment (Elliott and Dockery 2006).

Figure 7.1 Happiness by reason stopped work/lost last job

Males not in the labour force, 15–64 year olds, 2001^a



^a Graph is read as per cent of each reason category that is happy (where happy is those that answered feel happy all, most or a good bit of the time) or not happy (where not happy is those that answered feel happy some, little or none of the time). For comparison of absolute population sizes, the totals in each category are (sample size in brackets) 58 254 (54), 154 211 (133), 31 929 (25), 13 418 (16), 109 792 (100), 272 140 (254), 20 167 (20), 56 085 (43) respectively. Several categories were omitted due to excessively small survey samples.

Data source: PC calculations based on the HILDA survey.

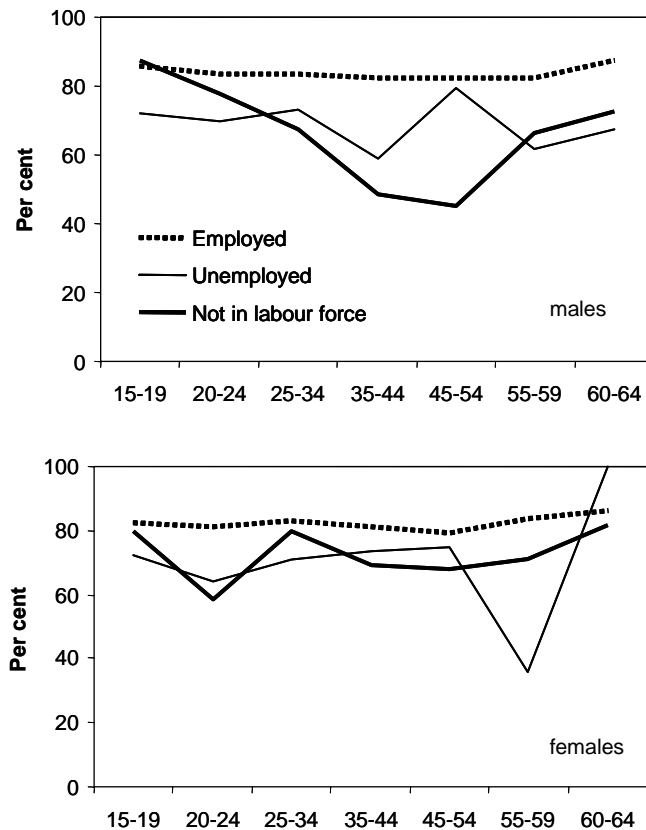
The stage of the life cycle appears to make a significant difference to reported wellbeing of inactive males (figure 7.2). During both education (15–24 years) and retirement (55 years and over), reported wellbeing levels are closer to those in employment. But for most prime working ages (years 25–34, 35–44 and 45–54), the disparity between reported wellbeing of males not in the labour force and those in employment is greater (although for most age groups it is similar to the experiences of unemployed).¹²

Female wellbeing by labour force status appears to vary by less over the life cycle. A possible explanation for this is social norms. Wellbeing is worst when people’s labour force state deviates from what is considered normal for people of their age and gender. Both males and females have socially acceptable roles when being educated or making the transition to retirement. But unlike females, males do not

¹² The case of male 45–54 year olds appears to be inconsistent with the rest of the data, but probably reflects sampling errors.

(yet) significantly exercise widely socially-affirmed caring responsibilities during the prime aged years.

Figure 7.2 Happy males and females, 2003^a



^a Proportion of each age group self identified as being happy 'all', 'most' or 'good bit' of the time based on question; 'Been a happy person?'

Data source: PC calculations based on the HILDA survey.

One policy relevant issue is the extent to which wellbeing of people not in the labour force might improve were they to enter the labour force. The outcomes are likely to depend on several factors.

- Unemployment is generally a much less desirable state than employment, so the benefits from a shift from outside the labour force is likely to depend on which of these two labour force states is realised. Fortunately, evidence on mental health, which captures some of the most important aspect of wellbeing, suggests that even a transition to unemployment improves mental health of people outside the labour force, albeit by much less than a shift to employment (figure 7.3 later in this chapter). Moreover, unemployment may often be a stepping stone to a job.
- If poor health persists after a labour market transition, then one of the most significant sources of low life satisfaction would still be present. Controlling for

all other influences, Dockery (2003, p. 12) shows that poor health is the second most influential determinant of low satisfaction for men.

- The type of job gained in any policy-induced transition from outside to inside the labour force *may* also be important. Dockery (2003) shows that for males, low job satisfaction is the single most important determinant of poor life satisfaction. However, as Dockery notes, this association may reflect the fact that generally unsatisfied people are more willing to rate their job as having low satisfaction, rather than ‘bad’ jobs causing low job satisfaction. Either way, the view that changing their labour market status will improve outsiders’ wellbeing may not occur for some groups.

Information on the changes in wellbeing associated with labour market transitions (table 7.7) sheds light on the net effects of these various factors, as well as indicating the extent to which wellbeing might be independent of labour force status. About one in five people who exit the labour force when happy, report being not happy when outside the labour force. But it appears that this mainly reflects the cycling state of happiness in people. There are just as greater share of people who, when happy while outside the labour force, report that they are not happy when they re-enter the labour force. Most men who are not happy at one time, report being happy two years later, regardless of the direction of the labour market transition.

On average, those men who re-enter the labour force are more commonly not happy in their initial labour market state than men who leave the labour force (the penultimate column of table 7.7). But (as in health status explored above), this is likely to reflect the fact that men who are less happy are less likely to get a job, so that their representation in the stock of men outside the labour force accumulates over time. For example, it is known that people with disabilities or illnesses tend to have more enduring spells outside the labour force *and* are simultaneously less happy. However, it is also possible that some of the potentially adverse effects of economic inactivity on wellbeing take longer than the period of time considered in table 7.7.¹³

The evidence from table 7.7 suggests that wellbeing is remarkably resilient across labour market states. Other personal factors appear to be the biggest determinants of wellbeing. This high degree of resilience does not, however, appear to hold for an important aspect of wellbeing, mental health, as shown below.

¹³ Changes in wellbeing for men whose state continues to be NLF were not considered in table 7.7.

Table 7.7 Changes in wellbeing from transitions in labour force status
Wave 1 to wave 3 of the HILDA survey, males^a

Age	Starting happy and moving to:		Starting not happy and moving to:		Share in starting state who are:	
	Not happy	Happy	Not happy	Happy	Not happy	Happy
	%	%	%	%	%	%
Moving out of the labour force						
15–19	22.2	77.8	21.9	78.1	17.2	82.8
20–24	23.7	76.3	17.6	82.4	16.7	83.3
25–34	20.6	79.4	12.7	87.3	15.6	84.4
35–44	21.1	78.9	20.3	79.7	22.7	77.3
45–54	19.7	80.3	21.9	78.1	15.3	84.7
55–59	20.0	80.0	21.5	78.5	15.8	84.2
60–64	15.0	85.0	19.6	80.4	15.3	84.7
Moving into the labour force						
15–19	19.6	80.4	24.3	75.7	17.6	82.4
20–24	23.5	76.5	23.2	76.8	18.2	81.8
25–34	21.2	78.8	14.7	85.3	16.8	83.2
35–44	21.1	78.9	23.2	76.8	24.9	75.1
45–54	19.0	81.0	19.1	80.9	17.7	82.3
55–59	18.1	81.9	23.3	76.7	21.8	78.2
60–64	15.5	84.5	13.3	86.7	19.4	80.6

^a 'Happy' is those that answered feel happy all, most or a good bit of the time; while 'not happy' are those that answered feel happy some, little or none of the time). Individual cells have reasonably large standard errors, so that the overall pattern across age between those men who move out of or into the labour force should be considered.

Source: HILDA database, waves 1 to 3, and PC calculations.

Other evidence for young people largely confirms this picture, but do find *small* causal links between life satisfaction and the degree of engagement for one group (Hillman and McMillan 2005). Hillman and McMillan identified four levels of engagement for young people:

- *dual role* — full-time students who were employed for 20 or more hours per week;
- *fully allocated* — full-time students who were employed for 0–20 hours per week; apprentices and trainees; full-time workers; and part-time students who were employed for 20 or more hours per week;
- *partially allocated* — part-time students who were employed for 0–20 hours per week; and part-time workers who were not enrolled in education or training; and
- *unallocated* — young people who were not in education, training or paid employment. This is the group most relevant for this report.

The study examined whether changes in engagement from 1999 to 2002 had any impact on general satisfaction. There was some support for the hypothesis that reductions in activities from ‘fully allocated’ to ‘unallocated’ engagement decreased satisfaction. But in all other pathways, changes in activity were not associated to a significant extent to any change in general satisfaction.

Mental health

A low state of wellbeing need not be associated with particular problems of mental health. Mental health is a narrower concept that measures the extent to which the state of a person’s emotions, thoughts and behaviours enable them to function effectively in society (ABS 1998).

There is a significant literature on the relationship between labour market status and mental health, albeit one that accentuates the difference between those in employment and those who are jobless generally.

- It has been found that joblessness¹⁴ increases perceptions among those affected of alienation and rejection from society, failure, low self-esteem, lack of purpose and pessimism, which intensify with duration (Goldsmith et al. 1995, Ganley 2003).
- The impacts of more severe psychological conditions, such as depression, have also been linked to labour force status.¹⁵ Dooley et al. (1994) finds that those who lose their job have over twice the risk of depressive symptoms and clinical depression.
- Based on a reading of the literature, Ganley (2003) concluded that psychological wellbeing is not just a determinant of labour force status, but changes with transitions from one state to another.
- When income support recipients alone are considered the mental health picture is stark. Just over one third of income support recipients — of which those outside the labour force are a large group — reported anxiety, depression or a substance abuse disorder, compared with 19 per cent of non-recipients (Butterworth et al. 2004). Of the different income support recipient groups, those who were outside the labour force exhibited the greatest psychological distress. (The psychological impacts of a jobless family member also indirectly affects other household members —Weston 1996).

¹⁴ Jobless is defined as the sum of unemployed and not in the labour force.

¹⁵ Summarised in Canadian Public Health Association (1996); and Mathers and Schofield (1998).

-
- Graetz (1993) found that unemployment appeared to have caused a higher rate of mental disorders, rather than being a symptom of pre-existing mental health disorders.
 - A major European study found unemployment had a ‘small’ negative effect on health (Ahn et al. 2004).

HILDA survey data (table 7.8 and Dockery 2006) suggest that focusing on the jobless as a group does not, in cross-sections, mask very different overall mental health states for the unemployed compared with the economically inactive. However, the results vary by the type of measure. The ‘mental health’ measure (just one of Dockery’s four factor model of *overall* mental health) is consistently poorest for the unemployed, while ‘role emotional’, ‘vitality’ and ‘social functioning’ are worst for those outside the labour force, so that the overall measure of mental health is also lowest for the economically inactive.

As discussed above for health status more generally, the appearance of a cross-sectional difference in characteristics between people in different states of the labour force does not mean that the differences are a consequence of those states. In particular, it is likely that people with poorer mental health have higher likelihoods of being jobless and remaining so (the *selection hypothesis*). This will show up as a higher than average prevalence of poor mental health among the jobless. Dockery exploits the longitudinal aspects of the HILDA survey to probe this issue.

- In transitions data, there is no deterioration in mental health for those people who become or remain unemployed (figure 7.3), which is consistent with the selection hypothesis. However, multivariate analysis of panel data (restricted to those in the labour force) suggests that there is a very modest deterioration during prolonged unemployment.¹⁶ Dockery suggests that the differences between the two results may reflect the fact that mental health does not decline smoothly with greater duration of unemployment, but may not change or even improve during some periods. So different methods can capture different parts of this complex cycle. The longitudinal study of Prause and Dooley (2001) also found effects of unemployment on depression.
- In contrast to the weaker evidence for unemployment, people who exit, or remain outside, the labour force face deteriorating mental health. Their mental health improves if they re-enter the labour force. This suggests that there *is* a causal link between mental health and economic inactivity.¹⁷ However, the size of the effect is relatively small. For example, the reduction in mental health from

¹⁶ As noted by Dockery it is possible that there is an unobserved factor jointly affecting mental health and the probability of being employed.

¹⁷ No multivariate analysis was conducted on this group.

continuing to be outside the labour force is about the same as being single compared with being married.

Table 7.8 Aspects of mental health by labour force status

Males and females, HILDA survey, 4 waves of survey^a

<i>SF-36 Item and Labour force status</i>	<i>Wave 1</i>	<i>Wave 2</i>	<i>Wave 3</i>	<i>Wave 4</i>
	%	%	%	%
<i>1. Mental health</i>				
Employed	75.0	75.6	75.8	75.4
Unemployed	68.4	68.2	67.4	66.3
Not in the labour force	72.0	72.1	72.0	72.4
All	73.7	74.1	74.2	74.1
<i>2. Role emotional</i>				
Employed	86.5	87.7	87.9	87.6
Unemployed	76.1	79.4	77.4	74.9
Not in the labour force	74.2	75.0	73.4	73.3
All	81.9	83.2	82.8	82.5
<i>3. Vitality</i>				
Employed	62.4	62.7	62.4	62.1
Unemployed	62.2	61.4	60.6	59.3
Not in the labour force	57.3	56.6	56.2	56.7
All	60.6	60.6	60.2	60.2
<i>4. Social functioning</i>				
Employed	85.3	86.1	85.9	86.4
Unemployed	77.7	78.8	76.0	76.0
Not in the labour force	75.0	75.1	74.4	74.8
All	81.4	82.1	81.7	82.2
Mental health summary score				
Employed	51.2	51.6	51.6	51.5
Unemployed	48.0	48.4	47.6	46.9
Not in the labour force	47.5	47.6	47.2	47.3
All	49.9	50.2	50.0	50.0

^a The factor scores are calculated by Dockery from the SF-36 health questions, but ensuring that the scoring method avoids the undesirable property present in many approaches that result in an individual's mental health summary score increasing simply as a result of a deterioration in their physical health.

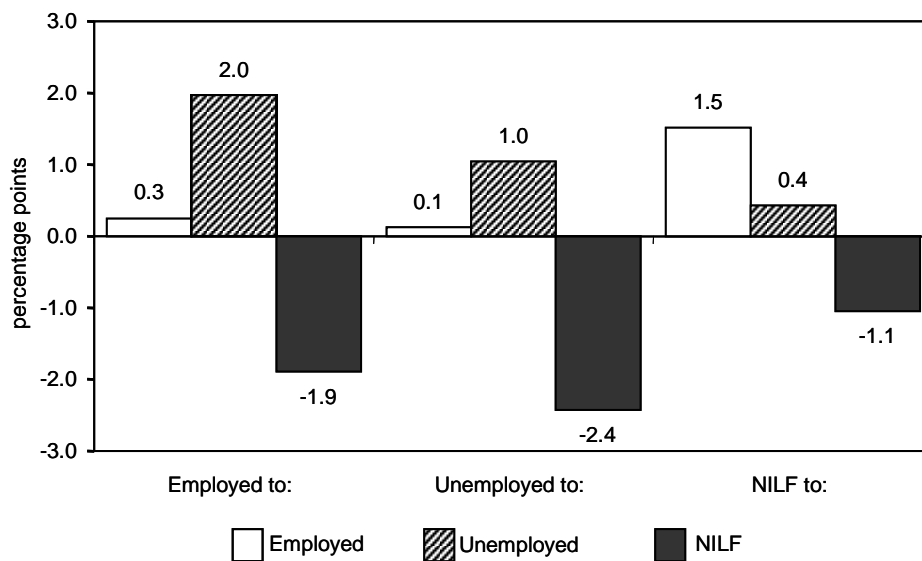
Source: Dockery 2006.

In summary, unlike the picture emerging from the analysis of broad health measures, not only do economically inactive people have significantly poorer initial mental health, but to a modest degree their mental health deteriorates with inactivity. This causal link increases the prospective benefits of labour market engagement of people outside the labour force. It is also quite likely that the average causal effects, while modest, conceal much bigger impacts for particular individuals.

And regardless of the strength of causal links, the greater prevalence of poor mental health among people outside the labour force is relevant to the nature of support mechanisms that may be needed for this group and to the prospects that they can realistically be re-engaged in the labour market.

Figure 7.3 Change in mental health status with changes in labour force status

Transition from wave 1 to wave 4 of the HILDA survey, both genders^a



^a This is the average change in the overall mental health score over three years. For example, those who shifted from employment in wave 1 to not in the labour force (NILF) in wave 4 experienced a reduction in the overall mental health score of 1.9 points. It is notable that transitions to unemployment or persistence of unemployment are not associated with any deterioration (indeed a slight increase).

Data source: Dockery 2006.

Loss of skill

It is well documented in the economic literature on unemployment that loss of employability — ‘scarring’ — increases with the duration of joblessness (Arulampalam 2001 and Cahuc and Zylberberg 2004). There is strong empirical evidence of lower probabilities of employment associated with greater unemployment duration. There are parallel, but not identical, effects associated with joblessness arising from complete withdrawal from the labour market. The second evaluation of the Job Network Disability Support Pension Pilot found that the single most important determinant of employment probability was recent labour market experience (DEWR 2005c, p. 8).¹⁸

¹⁸ Defined as those reporting earnings to Centrelink in the six months prior to the pilot. The findings of the effects of longer duration of inactivity on employability need not necessarily

Some of duration effects are due to selection biases.¹⁹ People with higher inherent skills and employability find jobs first, so that the people with longer duration spells tend to have lower skills and other traits that reduce their employability. It is for this reason that employers use time out of work as a cheap, but imperfect, signal of lower employability. The likelihood of a transition from economic inactivity to employment is significantly lower for people with lower educational attainment rates, a long-term health condition and difficulties speaking English (Elliott and Dockery 2006). However, even after controlling for attributes such as these, transition rates to employment tend to decline with the duration of time outside the labour force (Elliott and Dockery 2006, p. 19). Some of the factors that might explain this are:

- atrophied skills. This in turn, is likely to arise because lack of use erodes skills, just as experience builds them up, and because economic inactivity, like unemployment, is associated with lower levels of investment in relevant training and its on-the-job application;
- loss or decay of networks that are used to access jobs or find out about their existence (for example, the capacity to get a referee's report);
- de-motivation associated with being outside the labour force. This may particularly affect people who have developed depression because of long unsuccessful efforts searching for a job and who have then left the labour force; and
- employers may use prolonged joblessness as a signal for low inherent employability, even when that is not warranted for particular individuals. Whether this is significant is likely to depend on people's stated reason for being outside the labour force. Time spent out of the labour force while caring for a person with a disability is not likely to be seen as signalling low quality for employers, while time spent out for unknown reasons or due to chronic illness may well send adversely interpreted signals.

Consistent with these duration effects, it is commonly found that people finding a job after prolonged joblessness are paid significantly lower wages than prior to the jobless episode. Most of these studies do not, however ascribe the wage loss to any particular aspect of prior joblessness.

apply to the effects of longer duration on *benefits*. The probability of an interim employment outcome for people who initially participated in the 2004 Job Network DSP pilot was not significantly different by the duration of income support. For example, people on income support for 5 years or more had better prospects than those on benefits for 1 to 2 years. It can be inferred from this that people on DSP will occasionally get part-time jobs that do not disqualify them from the DSP — and that doing so provides them with the capacity to get jobs in the future.

¹⁹ Which have principally been investigated for the unemployed.

However, some studies have focussed on the most likely candidate, skill loss. Edin and Gustavsson (2004) estimate that 12 months of non-employment reduces an individual's skill rating by 5 percentage points down the population skill distribution. This was true for those originally at the middle and the 25th percentile of the distribution. Whether skills would continue to deteriorate with prolonged non-employment was not quantified. Nevertheless, a large proportion of those out of the labour force are consistently without employment for 12 months or more and likely to be in the lower half of the skill distribution, making it highly likely they will experience similar skill loss to that found by Edin and Gustavsson.

Impacts on families

The majority of people do not live alone, but rather are part of, and contribute to, a household group. As such, their actions, including their labour force status, affect others. For this reason, labour market inactivity — and also likely unemployment — has ramifications for partners and children. These include intergenerational impacts, welfare dependence and financial and emotional strain.

Intergenerational effects

There is accumulating evidence that joblessness and welfare reliance among adults are associated with poorer subsequent labour market prospects for their children (McClelland et al. 1998; McCoull and Pech 1998). Parental traits that increase the likelihood of joblessness (low education, job attitudes and norms about welfare) or that stem from it (poverty, family stress, knowledge of the welfare system) also affect the skills, attitudes and behaviours of their children (Antel 1992 and Maloney et al. 2003). These in turn affect children's life chances. For example, children of jobless, welfare-reliant parents are less likely to complete secondary schooling and more likely to be welfare reliant themselves. At age 21 years, a youth raised in welfare-reliant households is more than twice as likely to be welfare-reliant themselves, compared with children from households receiving no welfare.²⁰

These intergenerational effects should not be overstated. Using the HILDA survey, it is clear that most men who are unemployed or outside the labour force had, when younger, parents who were employed (table 7.9). Nevertheless, the likelihood that a father was jobless is much higher among men who are now unemployed and the likelihood that a mother was jobless is much higher among men who are now out of the labour force.

²⁰ Seth-Purdie (2000) as cited in Maloney et al. (2003).

The difference in unemployment and inactivity rates of male children, when older, do not vary significantly with their parents' past labour force status, though it is clear that both rise if both parents were jobless (table 7.10).

Table 7.9 Labour force status of offspring by parents' employment status^a
Per cent, 2003^a

<i>Labour status of son when aged 25–64 years</i>	<i>Labour status of parents when son was 14 years old</i>			
	Father was employed	Father was jobless	Mother was employed	Mother was jobless
	%	%	%	%
Employed	97.2	2.8	54.3	45.7
Unemployed	93.1	6.9	53.1	47.0
Not in the labour force	96.0	4.0	44.8	55.2

^a Jobless includes unemployment or outside the labour force. The table shows the percentage of males in each labour force state who, when they were 14 years old, had an employed/jobless mother/father. For example, 97.2 per cent of males aged 25–64 years old and currently employed, had (when aged 14 years old) an employed father.

Source: PC calculations based on the HILDA survey.

Table 7.10 Unemployment and inactivity rates of male offspring aged 25–64 years by parents' past employment status^a
2003

<i>Labour force state of parents</i>	<i>Labour force indicator for male child</i>	
	Unemployment rate	Economic inactivity rate
	%	%
Mum and dad employed	3.4	24.0
Only dad had job not mum	3.5	26.0
Only mum had job not dad	3.8	22.9
Neither had job	4.2	28.4

^a Parents' employment status when child was aged 14 years.

Source: PC calculations based on the HILDA survey.

The intergenerational effects are more apparent when the focus is on the association between the jobless rates of young people and the labour force status of their parents (table 7.11).

- The unemployment rate is almost 13 percentage points higher for young people with two parents out of the labour force compared with two parents employed.²¹

²¹ The labour force statistics presented in table 7.11 are of youth — who generally have a lower incidence of employment, regardless of their family situation — and, as such, should not be read as their final labour market outcome.

Youth participation rates, however, show a somewhat erratic pattern by parents' labour force status. Young people with both parents out of the labour force exhibit the highest participation rate. The lowest participation rates are apparent when both parents are unemployed, or where one is unemployed and one is outside the labour force. Young people with parents falling into these labour market categories also experience high unemployment rates.

- In cases where a young person was reared in a one parent family, there is a more simple link between the labour market engagement of the parent and the corresponding labour market engagement of the child, when a young adult.

The results may conceal, if anything, the strength of the relationship between parental labour market status and children's subsequent labour market experiences. This is because for the age group considered in table 7.11, it is likely that many non-participating young people from families with working parents are in education.

Table 7.11 Participation and unemployment rate of 15–24 years olds living with parent(s) by parental labour force status

Per cent, 1992, both genders

<i>Family type and parental labour force status</i>	<i>Employment rate</i>	<i>Participation rate</i>	<i>Unemployment rate</i>
	%	%	%
Couple families			
Both parents employed	59.0	71.7	17.7
One employed, one unemployed	56.4	70.8	20.3
One employed, one not in labour force	56.9	71.3	20.2
One unemployed, one not in labour force	31.2	53.0	41.2
Both unemployed	38.2	56.5	32.4
Both not in labour force	50.6	72.9	30.6
<i>Average in couple families</i>	56.5	70.7	20.1
One parent families			
Parent employed	49.5	69.0	28.2
Parent unemployed	37.0	55.7	33.5
Parent not in labour force	33.7	59.0	42.9
<i>Average in one parent families</i>	43.4	64.5	32.7

Source: *Focus on Families: Education and Employment*, ABS Cat No. 4421.0 reproduced in McCoull and Pech (1998).

The growing importance of jobless households over the last 20 years (Argy 2005)²² may exacerbate these intergenerational impacts in the future. The growth in jobless households is not a result of poor job growth, but rather that jobs are more often taken up by people in households where one member is already employed. Drawing from the *ABS Survey of Income and Housing Costs*, Dawkins et al. (2002) find jobless households grew by over 28 per cent between 1982 and 1998. Further, between 1979 and 1999, the percentage of couple families without an employed male doubled from 6 to 12 per cent.

Of course, measures of jobless households are taken at points in time and ignore the largely episodic nature of unemployment spells. What may matter most for intergenerational effects is persistent parental disengagement from the labour market, whose effects have been less well examined.

It is important to emphasise that from a policy perspective it is useful to establish the relative strengths of the various mechanisms by which intergenerational disadvantage may occur. In particular, sometimes the effects will reflect parental traits that are associated with joblessness (which are hard for policy to target) and in other cases, the consequences of parents' joblessness (which may be easier to target). This issue has not been investigated in this study.

Family strains

The impacts of joblessness often places stresses on relationships and household budgets. Other sources of tension can also arise from caring for disabled family members who are not in the labour force. These factors, individually or combined, have the potential to break up families.

One of the best indicators of family strain is separations and divorce. Data from the HILDA survey suggests that 15–64 year old males outside the labour force have separation and divorce rates that are similar to the unemployed, and much higher than the employed (table 7.12). The gap between the jobless and the employed is even more notable for those men aged 45–54 years, with those men outside the labour force having roughly double the divorce rate of those who are employed. A much greater proportion of such men have also never married compared with employed males.

Some of these patterns are likely to reflect the impacts of joblessness, but it is also likely that they are a reflection of selection effects. Men who have traits that make them less attractive partners to women are less likely to get married (or to suffer

²² A household in which no person residing there is employed.

marriage breakdown, if married) and these same traits increase the risk of labour market disengagement. Accordingly, differences in family status should not — as in so many of the traits considered in this chapter — be necessarily seen as a consequence of economic inactivity. Either way, the data suggests the relative isolation of many men who are outside the labour market regardless of the extent to which this is a partial cause or consequence of their labour market status.

Table 7.12 Relationship of males by labour force status

Per cent by labour force state, 2003^a

<i>Labour force status of men</i>	<i>Married</i>	<i>Separated</i>	<i>Divorced</i>	<i>Widowed</i>	<i>Never married - living with someone</i>	<i>Never married - living alone</i>	<i>Total</i>
	%	%	%	%	%	%	%
15–64 years							
Employed	53.5	2.4	6.1	0.2	8.8	29.1	100.0
Unemployed	19.2	2.2	5.4	0.2	12.3	60.8	100.0
Not in labour force	39.5	3.5	7.9	0.8	4.7	43.7	100.0
45–54 years							
Employed	75.7	4.4	10.9	0.5	3.4	5.1	100.0
Unemployed	45.7	..	16.7	0.0	10.5	27.1	100.0
Not in labour force	49.6	8.3	20.8	0.0	0.9	20.4	100.0

^a Data can have high standard errors, so only large differences between groups should be regarded as significant.

Source: PC calculations based on the HILDA survey.

7.4 Wider effects

There are several avenues through which low male labour force participation can affect the wider community. On the negative side this could include higher crime rates; on the positive, the scope for greater volunteering that people outside the labour force may be able to contribute.

Involvement in illegal activities

Crime participation is often linked to labour force status. Many studies find evidence that higher unemployment raise crime rates. But there is little evidence that there are similar links to labour force inactivity. As noted in chapter 5, it is also commonly argued that inactivity rates disguise hidden employment in the ‘shadow economy’, often implicitly involving tax and welfare fraud. However, as noted in

that chapter, the methods used as evidence of this as a widespread phenomenon have been discredited.

Community contributions

While for many, time out of the labour force is spent caring for others and managing disabilities or chronic illness, a significant share contribute by volunteering for the community and/or non-profit organisations. However, their contributions compared with either unemployed or employed men remain unclear.

- In 2003, there were few differences in the likelihood of volunteering by labour force status for prime aged males. Around 16 per cent of males not in the labour force between the ages of 25 and 54 years volunteered, compared with about 14 and 15 per cent of employed and unemployed males, respectively (HILDA 2005). In terms of average minutes of volunteering, the ranking for males in this age group was unemployed (highest), then not in the labour force and finally the employed. The majority (about 70 per cent) of economically inactive males aged 25–54 years contributed between 1 and 5 hours per week of their time. Over all ages from 15–64 years, there was a general upward trend in volunteering with the age of economically inactive men.
- The ABS *Time Use Survey* paints a somewhat different picture, suggesting that economically inactive males between the ages of 25 and 54 years contribute about half the time per week to unpaid voluntary work compared with employed males (ABS 1997).

7.5 Conclusions

The loss of economic activity associated with the non-participation by men is substantial.

However, an equally important dimension of impact is social. On average, the stock of economically inactive men face a more severe range of socio-economic disadvantages compared with their employed counterparts: poverty, family breakdown, poorer physical and mental health, lower self-assessed wellbeing, and skill loss. They are more likely to have come from disadvantaged families. This is readily shown by statistics on their traits.

What is less clear is the extent to which these traits are an effect of their economic inactivity. Instead, they may cause (or be associated with other factors that precipitate) economic inactivity. In some circumstances, such as mental health, skill loss and poverty, there is reasonably clear evidence to suggest that involuntary

economic inactivity is inimical to men. But it is also clear that the causal pathways go both ways. For example, many economically inactive men have pre-existing traits that made them vulnerable to both labour market withdrawal and to lower levels of wellbeing. The HILDA survey has proved to be a very useful instrument for analysing these issues, and with progressive waves will start to build up a picture of prime age males experiences that can better resolve these causal dilemmas.

8 The Disability Support Pension

The growing tide of illness, injury and disability has exacted an increasing toll on the capacity for active labour market participation by men. But except for a very few with sufficient savings or the capacity for support by family and partners, this group requires a source of government-funded income support, among other supportive measures. The prime income support mechanisms are the Disability Support Pension (earlier the Invalidity Pension) and, to a much lesser extent, the Department of Veterans Affairs Disability Pension.¹

The Disability Support Pension (DSP) would be of unremarkable interest were it be a benign, typically temporary, payment mechanism in a coherent system that effectively reduced the job and social restrictions of health conditions. But this, it is not. The Disability Support Pension (DSP) has always served a problematic role for governments, and indeed, for people with disabilities and welfare interest groups.

On the one hand, in the absence of comprehensive alternative private insurance arrangements, it has long been recognised that some arrangement must exist to provide at least a basic level of income support for people with severe disabilities. On the other hand, choosing where the thresholds for eligibility should be set, establishing its degree of integration (or isolation from) the rest of the welfare system, deciding the relative generosity of any payments, and determining the prospects and support mechanisms for work and rehabilitation of people with disabilities have presented major dilemmas. Often these dilemmas have been shaped by concerns about the budgetary and incentive effects of the scheme and, in particular, the growth in the numbers claiming the pension. As early as 1935, the Government cited excessive growth of the scheme, when the Auditor-General of the time drew attention to the doubling of invalidity pensioners since 1921 (Jordan 1984). Growth in later periods has sometimes been even more spectacular, but the scheme has generally failed to respond to various government measures to control burgeoning reciprocity rates.

Recent policy initiatives (implemented in 2006) aim to respond to some of these perennial concerns, by providing stronger links to the rest of the welfare system, attempting to reduce incentives to move onto the DSP from unemployment benefits,

¹ In June 2004, the DSP accounted for around 413 000 males and the DVA disability pension for a further 53 000 males aged under 65 years.

and to increase the scope for rehabilitation and work by boosting support resources in these areas.

This chapter critically assesses the role played by the DSP among men outside the labour force, examines why the numbers have risen over the past 30 years and discusses some of the implications of these patterns.

8.1 The role of Disability Support Pension

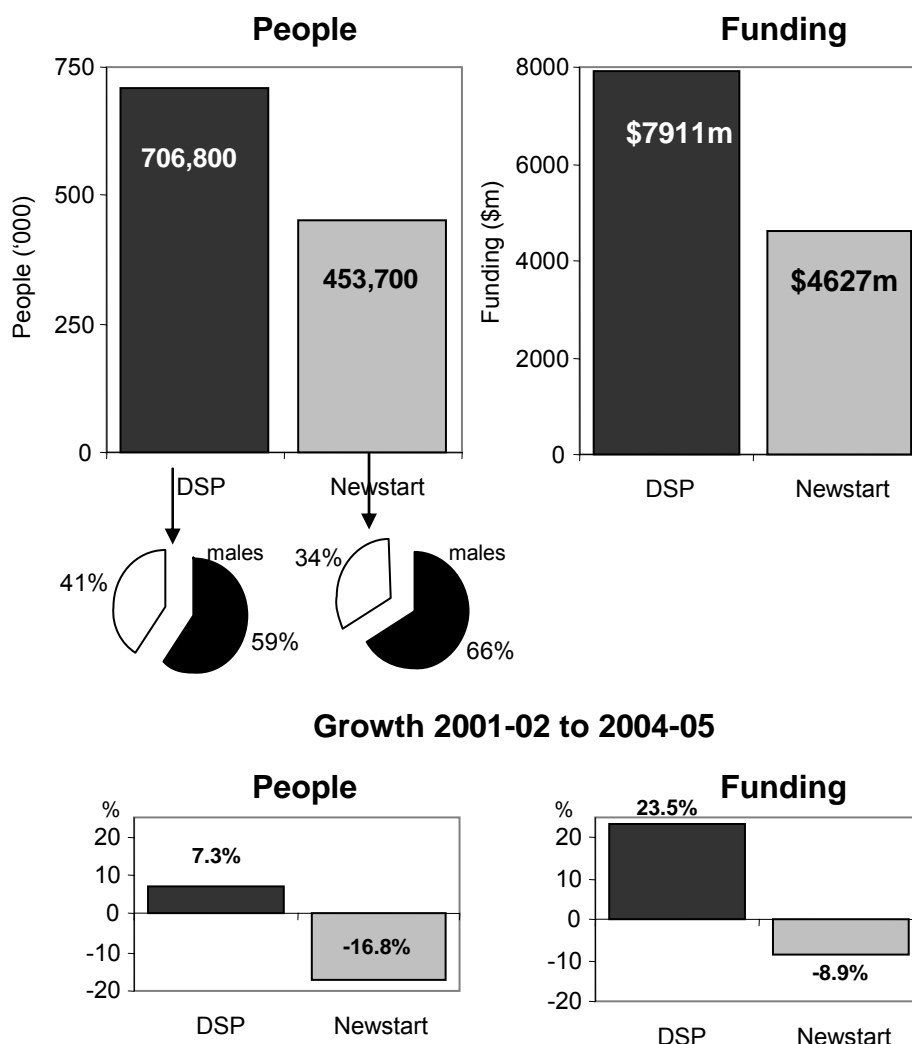
The Disability Support Pension has proved an increasingly major and, from a taxpayer perspective, costly destination for economically inactive men with disabilities, though changes in eligibility and assessment from mid-2006 may arrest that trend. The budgetary cost of providing the DSP to both sexes was nearing \$8 billion in 2004-05 (figure 8.1).² This was significantly higher than the principal unemployment allowance, Newstart payments, of \$4.6 billion. There were around 420 000 men aged 16 and over on DSP at the end of 2005, significantly higher than female numbers (less than 290 000). These were significantly higher than their counterpart numbers on Newstart. While Newstart Allowance payments and numbers have fallen since 2001-02, DSP has risen strongly.

To be eligible for the DSP (under pre-July 2006 rules), a person must:

- be aged 16 years and over and under the Age Pension age; and
- be permanently blind; or
- have a permanent impairment of at least 20 points under the Impairment Tables; and
- be unable to work at least 30 hours a week at full award wages for the next two years, or to be re-skilled for work (with this provision changing to 15 hours from 1 July 2006); and
- have generally become unable to work while in Australia, or have 10 years qualifying Australian residence.

² The DVA Disability Support Pension for all ages and both sexes cost a further \$1.3 billion in 2004-05. There were about 150 000 pensioners, which, unlike the DSP, were mostly over 65 years old (ABS 2006, *Year Book Australia 2006*, Cat. No. 1301.0).

Figure 8.1 **DSP compared with Newstart Allowance**
2004-05



Data source: ABS 2006, Year Book Australia 2006, Cat. No. 1301.0.

While people on DSP are entitled to work some hours before they lose entitlement to their benefits, 90.6 per cent of male beneficiaries do not declare any earnings from work (DEWR 2006a, p. 22). Though some will be searching for a job and available for employment, it appears likely many of the remaining beneficiaries will be defined as outside the labour force. With this in mind, table 8.1 presents several experimental estimates of the share of males not in the labour force by age that could be on DSP. These show that a large share of economically inactive males from 25 to 64 years are on DSP.

Table 8.1 Experimental estimates of the significance of Disability Support Pension beneficiaries to male economic inactivity 2004^a

Age	Male DSP beneficiaries	Total males not in the labour force	Estimate 1: DSP share of NLF population	Estimate 2: DSP share of NLF population
	'000	'000	%	%
15–24	26.4	375.7	5	5
25–34	42.9	91.6	38	34
35–44	71.0	120.5	50	36
45–54	100.4	147.2	60	60
55–59	74.6	141.9	47	48
60–64	98.1	211.3	43	43
65–69	5.5	270.1	2	1
Total 25–64	386.9	712.5	48	45

^a Male beneficiaries and total males not in the labour force are from the FaCS administrative database and the ABS supplementary labour force survey, respectively. Calculations of the DSP share of inactive males has to correct for those DSP beneficiaries who are working or looking actively for a job. In the case of estimate 1, the correction to DSP numbers uses FaCS administrative data on males earning from labour income, survey data from DEWR (2004) on those DSP clients actively looking for a job, and assumptions about the age distribution of these rates. For estimate 2, the correction uses data from wave 3 of the HILDA database. A third estimate (not shown in the table) was derived directly from the HILDA database but was regarded as less reliable due to evident under-reporting of DSP beneficiaries relative to total males NLF. (From 15–24 to Total 25–64, it suggested 3, 31, 27, 43, 38, 34, missing and 35 per cent.)

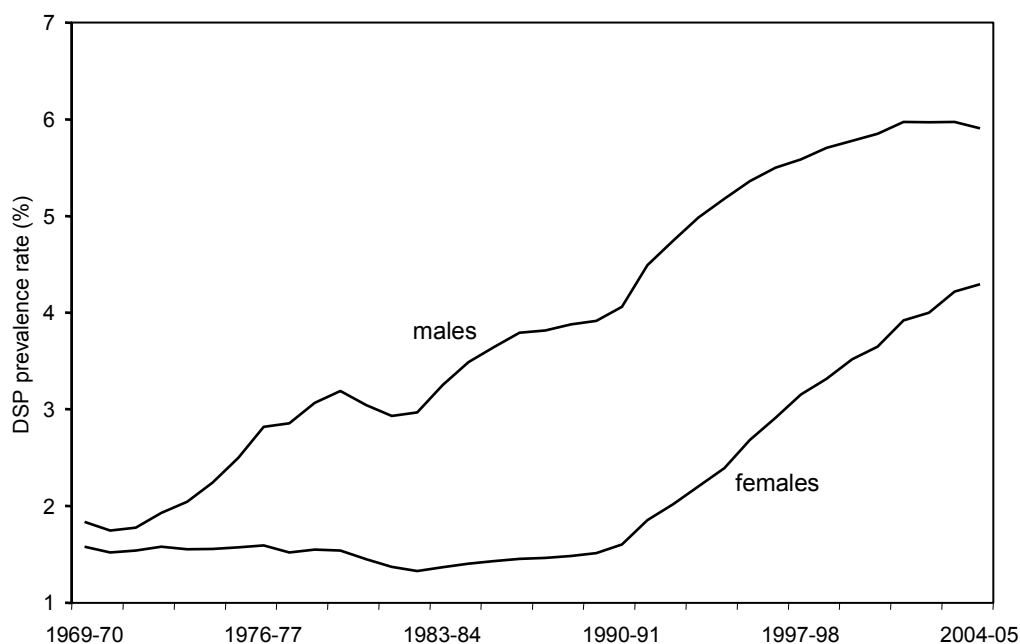
Source: PC estimates derived from FaCS and HILDA database.

8.2 Trends over time and duration of ‘spells’ on the DSP

Male DSP rates have risen dramatically over time (figure 8.2), and up to the early 1990s at a more rapid pace than females.³ The growth primarily reflects long durations on benefit and a rising annual rate of access by new claimants of the DSP (the annual incidence). The long duration of spells on DSP mean that the prevalence rates are much more than the incidence rates. For example, the current annual incidence of DSP for males is around half a per cent of the relevant adult population. This compares with a prevalence rate at end June 2005 for males aged 16–64 years of about five per cent.

³ As Cai and Gregory (2004) note, even with fixed inflow to population and outflow to DSP rates, the aggregate DSP to population rate can climb or fall because of the initial imbalance between inflow and outflow rates. However, historical simulations show that had the inflow and outflow rates stayed fixed at their 1971 values, the DSP to population ratio (of both sexes) would have been around 16 DSP beneficiaries per 1000 of the adult population under 65 years, much less than the current value of around 50. So the initial imbalance explains little of the subsequent rise.

Figure 8.2 **Disability Support Pension prevalence has risen dramatically**
Males and females, June 1970 to June 2004^a



^a The denominator is population aged 16–69 for males and 16–64 for females.

Data source: Data from FaCS and DEWR and population data from ABS 2004, *Australian Historical Population Statistics* (Cat. No. 3105.0.65.001 table 19) for end June each year and ABS 2006, *Population by Age and Sex, Australian States and Territories*, Cat. 3201.0, Table 9.

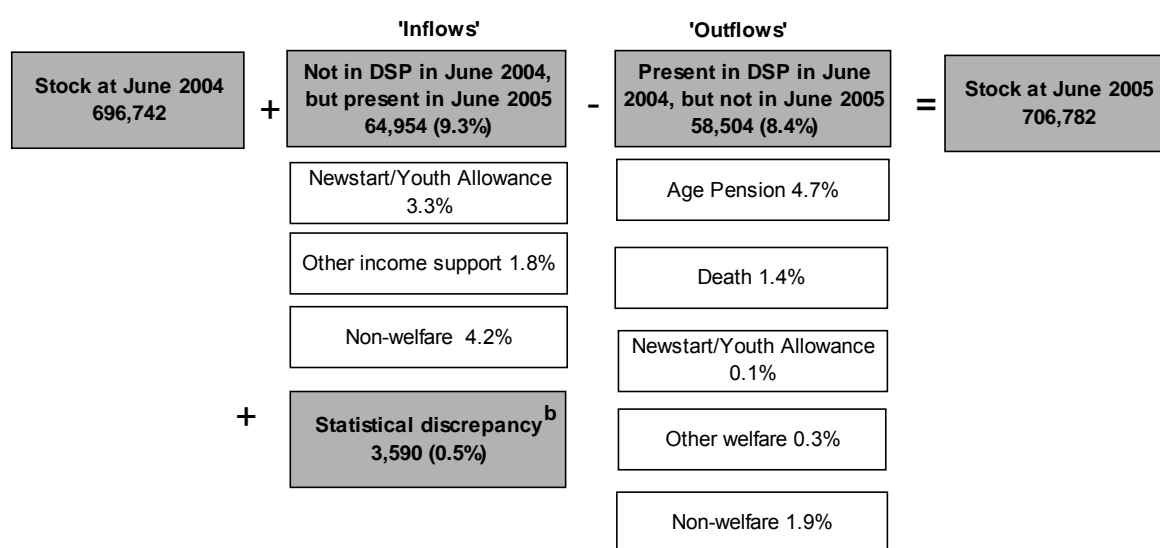
The contrast between prevalence and incidence rates of DSP may not be surprising, since many of its claimants are suffering from chronic debilitating conditions that show precisely the same pattern. For example, there are (relatively) few new cases of conditions such as rheumatoid arthritis, coronary heart disease, diabetes, cancer and serious mental diseases in the population, but large relative stocks of people with these conditions, reflecting their long durations.⁴

In this context, duration on benefit is a critical policy question because it, more than the number of new applicants, determines the number of people in receipt of the DSP over the short to medium term. There are several ways of assessing duration on DSP.

The first, indirect approach, is to consider the outflow rate. In 2004 to 2005, outflows of all kinds accounted for about 8 per cent of the stock of DSP beneficiaries, of which most was to the Age Pension (figure 8.3).

⁴ For example, rheumatoid arthritis affects around 24 out of 1000 Australians, yet its incidence ranges from 0.3 per 1000 for females and 0.1 per 1000 for males (Rahman et al. 2005 for this condition and <http://www.wrongdiagnosis.com/lists/incid.htm> for other conditions).

Figure 8.3 Recipient transfers to and from the Disability Support Pension
Both sexes, 2004 to 2005^a



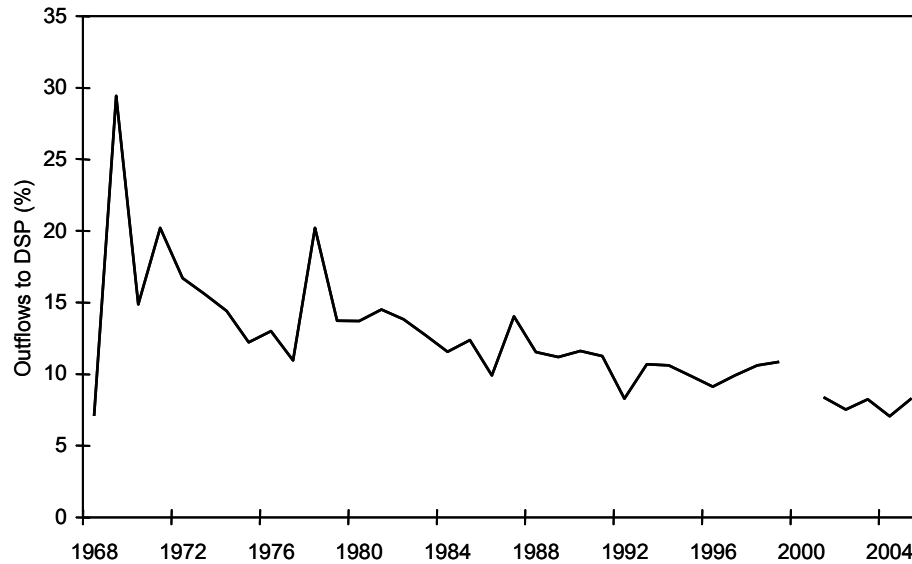
^a Inflows and outflows are expressed as ratios to the June 2004 stock. The figures are based on the status of people in June of each year, and ignore transitions that may occur between those two time periods. Movements of people who have cycled through the DSP several times during the year will be represented only once in either inflows or outflows (and this also affects the interpretation of the 'where from' and 'where to' data, which are based on client status at the June snapshots, and ignore any intermediate changes in the nature of their movements). For example, while there were 64,954 people who were on DSP in June 2005, but who were not on DSP in June 2004, some of these may have entered and left multiple times (with the same problem affecting measured outflows). However, since there were only 69 844 new grants during the year, which includes people who enter multiple times, the difference between true and measured flows is small. This is not surprising since the entry conditions for the DSP require evidence of long-term disability. Consequently, the measured flows also provide a very good picture of actual flows. ^bThe statistical discrepancy reflects differences in data management for different records.

Data source: DEWR, 2006, *Characteristics of Disability Support Pension Customers June 2005*, Disability Payments Section, Income Support Programme Branch.

Outflows from DSP were both small relative to the stock of beneficiaries (figure 8.4), but were also smaller than the inflow. The *net* inflow to adult male population has been positive in almost all years from the 1970s (figure 8.5). This is why the stock of beneficiaries has risen over time. It is notable, however, that there has been a sustained decline in the net inflow rate, probably associated with the strong economic conditions that have prevailed since the recession in the early 1990s.

Second, a direct indication of lengthy durations is revealed by a snapshot of current beneficiaries. This shows that around half have already been receiving the DSP for five or more years and that more than one quarter have been on the program for ten or more years (table 8.2).

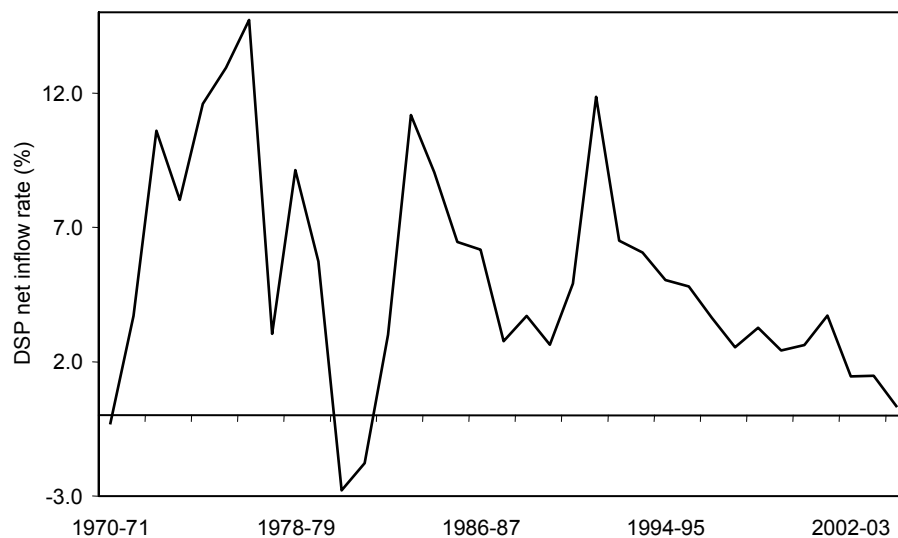
Figure 8.4 Outflow rates have been falling
Both sexes, 1968–2005^a



^a The outflow rate is calculated as the outflows over a fiscal year, divided by the average DSP population for that year.

Data source: Data provided by Dr Lixin Cai and FaCS/DEWR statistical reports on the characteristics of DSP beneficiaries.

Figure 8.5 Net male DSP inflows as a share of the DSP population
June 1971 to June 2005^a



^a Calculated as $\Delta \text{DSP}(\text{males}) / \text{DSP}_{t-1}$.

Data source: As above.

At the end of June 2003, beneficiaries' average duration on DSP was over seven years (and many of these will go onto the Age Pension). The 2003 data have

been used instead of more recent data because data released after that year are concerned with duration on DSP *and* other income support payments. If the most recent data are used, they reveal that, at June 2005, DSP beneficiaries had spent an average 9.5 years on income support of any kind. The difference between the 2003 and 2005 data suggest that many DSP beneficiaries had about two years on income support prior to entry to the DSP.

Table 8.2 Elapsed duration on the DSP: male DSP beneficiaries
June 2003^a

<i>Elapsed time on benefit to date</i>	<i>Estimated elapsed person years</i>	<i>Male beneficiaries</i>	<i>Share of men on DSP</i>
	'000 years	'000 persons	%
<1 year	22	43.8	10.6
1 to <2 years	72	48.1	11.6
2 to <3 years	97	38.7	9.4
3 to <4 years	110	31.4	7.6
4 to <5 years	138	30.7	7.4
5 to <6 years	141	25.6	6.2
6 to <7 years	157	24.1	5.8
7 to <8 years	183	24.3	5.9
8 to <9 years	173	20.4	4.9
9 to <10 years	142	14.9	3.6
10 to <15 years	657	52.5	12.7
15 to <20 years	454	25.9	6.3
≥20 years	710	32.3	7.8
Total	3,055	412.8	100.0

^a Elapsed duration measures duration to date of the current stock of beneficiaries. The June 2003 data are used rather than the more recent 2005 (or 2004) data because the latter include time spent on other income support programs preceding entry to DSP. Estimated elapsed person years are measured as the midpoint of the duration interval width times the number of DSP beneficiaries that fall into that category. The aggregate number of person years elapsed, divided by the total number of beneficiaries, (3 054 517/412 777) provides an estimate of the average non-completed spell (at around 7.4 years) of the current stock of beneficiaries.

Source: PC estimates and FaCS, 2003, *Characteristics of Disability Support Pension Customers*, June 2003.

The third approach is to consider the average expected completed duration of the group of people who *commence* DSP from a certain time, rather than the average past duration elapsed for a group of DSP beneficiaries observed at a given time. The former will include more people whose spells are relatively short and are less likely to be found in the snapshot sample.⁵ Even so, the average duration on benefits of people who ever commence the DSP is relatively long.

⁵ There is a positive correlation between the current outflow to population ratio and the inflow to population ratio one and three years previously. This suggests that many of those who do exit are those who have been on DSP for a short time only. (The significance of the 3rd year lag may reflect the fact that a criterion for entry is that the disability should prevent work for up to two years.)

-
- Even before accounting for completion of unfinished spells on DSP, the average duration of commencers was around 2.4 years (Cai 2004, p. 12). Taking account of expected completion, around 880 out of every 1000 commencing DSP beneficiaries (of both sexes) would still be on the benefit after one year, 830 on the benefit after two years and 710 by five years (Cai 2004, pp. 13ff).⁶ Males appeared to be more likely to leave benefits than females. Not surprisingly, people who did some work were much more likely to leave DSP benefits over the longer run, than those who did not. Up until two years duration on the DSP, the more time spent on benefit, the less likely a person was to leave (suggesting that job skills or motivation deteriorate with time).⁷
 - For every 1000 *mature age* DSP beneficiaries present on 23 June 1995, 860 were still present in DSP by 10 March 2000, only two moved to Newstart allowance, 29 to other welfare payments and around 110 moved off welfare benefits altogether (Kumar et al. 2004).⁸ In contrast, mature age beneficiaries on unemployment benefits were far more mobile. For every 1000 Newstart allowance beneficiaries present at the start, 280 were still present by the end of the period, 240 moved to DSP, 190 moved to other welfare programs, while the remaining 280 had moved off benefits. The asymmetry between Newstart and DSP is particularly striking. DSP ‘recruits’ readily from Newstart, but rarely ever the other way.
 - Males on DSP are ‘stuck’ in that role much more than men are stuck in ‘not in the labour force’ status generally. More men move from economic inactivity in one year, than move from DSP in five. For example, in the mid 1990s, there was a roughly fifty per cent chance that a male who was not in the labour force at the start of a year would still be outside the labour force one year later. Roughly one third of this group would be in employment and the rest would shift to unemployment (noting deaths are excluded from this analysis).⁹

It is not surprising that this labour market inertia exists for DSP beneficiaries. Disability, combined with a labour market not geared to their needs, makes working impossible for some and reduces the type of jobs available for others. It is also often

⁶ Based on a sub-sample of DSP beneficiaries.

⁷ The fact that Cai finds that the exit rate then rose is almost certainly due to the fact that many DSP beneficiaries are old and thereby ‘exit’ the program by dying or retiring to the Age Pension after a period, rather than because they got a job.

⁸ Note that these results relate to people present on 23 June, most of which would not have commenced in DSP at that date.

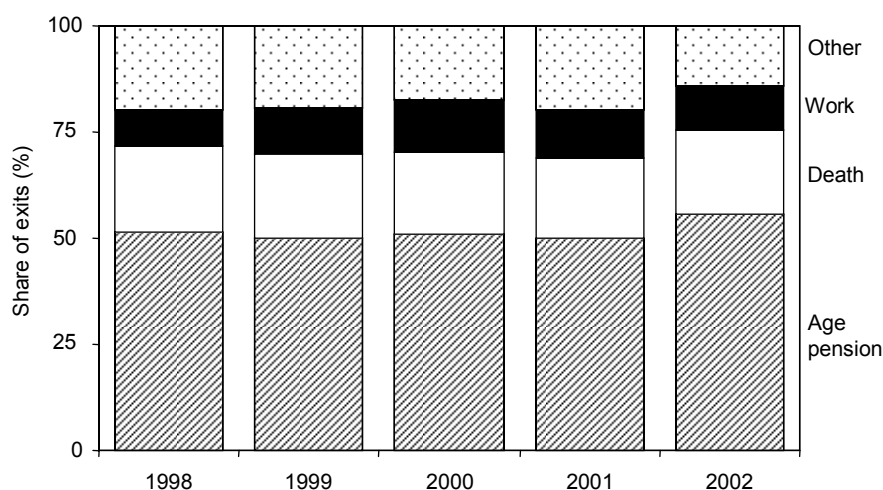
⁹ These results are based on analysis by Gray et al. (2002) of the Survey of Employment and Unemployment Patterns (SEUP). This covered people aged between 15 and 59 years from September 1994 to September 1997. Weighted results for marginally attached and ‘other not in the labour force’ from table 6 were combined to give the estimates in the main text.

associated with lower educational qualifications and skills, and invites discrimination by some employers (PC 2004b). These all decrease employment probability while a person with disabilities is looking for a job, and once search effort has diminished when a person is on DSP, makes self-sufficient employment a remote likelihood.

Where are exits to?

Very few DSP beneficiaries (0.1 per cent) go back to unemployment benefits. The evidence suggests that the likelihood of exits to jobs is higher, but still very small. About two per cent of the stock of DSP beneficiaries of both sexes exited to a non-welfare outcome, and some of these exits are to jobs¹⁰ with sufficient income to make clients ineligible for welfare.¹¹ Cai et al. (2006) have used a large sample of administrative data from FaCS for the 1990s to 2002, which suggest that exits from the DSP to jobs by males account for around 10 per cent of total male exits (figure 8.6) and therefore account for less than one per cent of the stock of males in DSP.

Figure 8.6 **Few exits from the DSP are to employment**
Males, 1998–2002



Data source: Cai et al. (2006).

¹⁰ A job exit need not involve sustained employment. For example, someone who exits DSP in May 2005 to a job and re-enters DSP in July 2005 would be counted as a job exit in the data.

¹¹ Some of the 1.9 per cent would reflect other changes in the circumstances of a beneficiary than a job, such as acquired assets; ineligibility due to the financial circumstances of their partner; and changes in disability status.

Low outflow rates to jobs from disability support are not unique to Australia. An OECD analysis of disability support programs found that:

The most striking - and devastating - commonality was that the outflow from disability programmes to a job is virtually nil in all countries. Starting to receive disability benefit generally means that you will never work again. (Berglind Ásgeirsdóttir, 2003)

In fact, it has been remarked that leaving the DSP by coffin is more likely than leaving it with a job (or to search for one). This is because death is more important a reason for exiting the DSP than acquiring employment (figures 8.3 and 8.6). To place this in context, the mortality risk of DSP beneficiaries are about four times that of the general population with the same age-sex structure.¹² This highlights that DSP beneficiaries are a genuinely severely disadvantaged group compared with the general population.

A key question for reducing the DSP population is whether changes in inflow rates and average DSP duration are equally amenable to policy measures.

8.3 High DSP coverage is not just about underlying health conditions

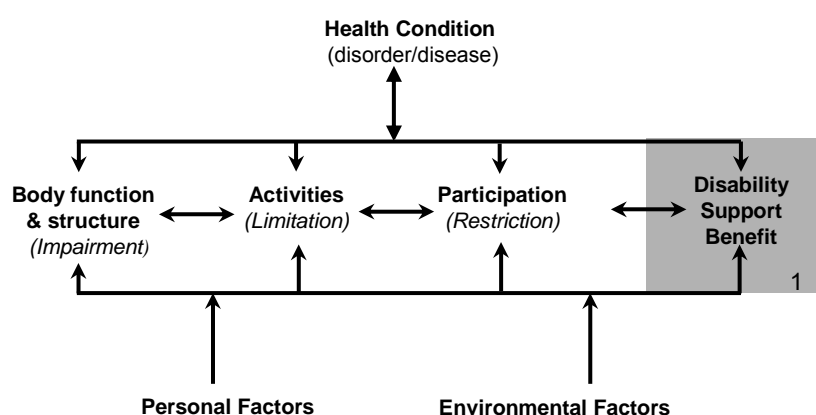
DSP beneficiaries generally experience conditions that severely restrict their work capacity. But the large numbers in DSP will reflect more than the prevalence of health disorders. The extent to which a disorder adversely affects people's physical or mental wellbeing, their ability to undertake daily activities or to successfully work is not just a function of the disorder, but also dependent on personal and environmental factors (figure 8.7).

Other than for the more severe kinds of conditions, it is these factors, more than the clinical condition underlying disability *per se*, that determines whether men with disabilities are likely to be in the labour market or not, and accordingly, whether they are likely to be on the DSP. This environment includes technology, social norms, labour market structures and opportunities, motivation and social welfare incentives. The role played by these factors has been observed in successive assessments of disability benefits in Australia and overseas:

¹² This was estimated by using data on the age-sex distribution of DSP recipients and on age-sex specific mortality rates (Q_x) of the general Australian population. This suggested that for its age and sex structure, there would have been 2544 deaths in DSP recipients from July 1 2003 to end June 2004 had recipients had the same mortality risk as Australians in general. In fact, there were 9625 deaths, implying a mortality rate 3.8 times that of the general population.

The record of invalid pension is more a history of disability as it has been socially defined, and even socially generated, than a natural history of chronic impairment. (Jordan 1984, p. 8)

Figure 8.7 **Disability has several dimensions that affect entry or exit from the Disability Support Pension^a**



^a The usual representation of the ICF definition of disability excludes the shaded area (1). This has been included in this diagram because all of the aspects of disability defined under the ICF framework, combined with external personal and environmental factors, determine whether a person enters or exits DSP. The arrows from DSP go both ways because the DSP is itself an environmental factor that shapes aspects of disability.

Data source: AIHW (2004, p. 3) based on the International Classification of Functioning, Disability and Health, with adaptation to include links to the Disability Support Pension.

The condition ‘myopia’ or short-sightedness provides a case study of the role played by environmental factors in defining disability. Before the widespread availability of technological aids (spectacles, contact lenses and laser treatment), myopia was a highly disabling condition. But now, while even more common, it is only considered a disability in rare individual cases.¹³ This is a case where technology has largely eliminated the adverse social and economic consequences of a health condition. But in other cases, environmental factors may exacerbate the impacts of health conditions (such as the advent of more demanding workplaces), and therefore, increase the need for income support provided by disability benefit programs like the DSP.

There is compelling evidence that these environmental aspects are fundamental in determining whether men with disabilities enter the DSP.

¹³ Though there are exceptions. Nicaragua, for example, included myopia as a disability in its disability survey, which explained its very high disability rate compared with other Latin American countries. It also led to perverse results regarding employment and educational attainment for those with disabilities, highlighting the importance of appropriate scope when considering what constitutes disability.

-
- While disability restricts participation, many people with disabilities can participate effectively, especially if employers take account of their needs. So it should not be assumed that medically-defined impairments prevent work in many cases.
 - Rates of use of DSP have increased dramatically from three decades ago, while underlying population age-specific disability rates have not. As noted later, this is likely to mainly reflect the changing demands and nature of jobs.
 - Differences between countries and regions in the importance of disability as a reason for inactivity varies much more than the underlying population disability rates, indicating the centrality of environmental factors.

These three strands of evidence about the importance of environmental factors are explored in the next three subsections.

Many people with disability participate

The disadvantaged nature and the poor job outcomes of DSP beneficiaries should not be taken to imply that disabled people generally have such bleak labour market outcomes. In fact, the majority of men aged 15–64 years with a disability (as defined by the ABS) are in a job or searching for one. Of the 1.1 million men aged 15–64 years with a disability, around 60 per cent participated in the labour market in 2003.¹⁴ Generally, however, participation rates fall strongly as the severity of disability rises (figure 8.8). Those with profound (65 000 males) or severe core activity limitations (165 000 males) fare worse. Their labour market engagement was much lower at around 22 and 38 per cent respectively.¹⁵ Nevertheless, the actual labour force participation evidence challenges the view that people with disabilities are passive or unable to work, especially where employers and other institutions adapt to their needs (through, for example, appropriate job design, building access and transport services).

That so many men with disabilities do participate in labour markets, whereas those on DSP hardly do so at all, suggests:

- that men on DSP are at the more severe end of the continuum of disability or have conditions for which the likelihood of work is low compared with those with disabilities generally; and/or

¹⁴ Living in households, not cared accommodation. The data are from ABS 2004, *Disability, Ageing and Carers, Australia: Summary of Findings, 2003*, Cat. No. 4430.0.

¹⁵ ABS 2004, *Disability, Ageing and Carers, Australia*, Cat. No. 4430.0 (p. 26).

- there are factors, apart from employment restrictions *per se*, that affect participation rates (such as incentive effects, norms and unemployment risk).

There is evidence for both hypotheses and each may hold in part.

Figure 8.8 Participation declines with more severe disability
2003



Data source: ABS 2004a, *Disability, Ageing and Carers, Australia: Summary of Findings, 2003*, Cat. No. 4430.0.

It is clear that DSP beneficiaries do, on average, have more severe disabilities than men with disabilities generally. Men with profound and severe core disability limitations, as defined by the International Classification of Functioning, Disability and Health, accounted for just over 20 per cent of all men with any disability. Yet they accounted for an estimated one third of DSP beneficiaries (box 8.1). This is not surprising as the criteria used for entry to the DSP are based on a significant level of impairment, which will cut off most minor forms of disability.

On the other hand, these data also suggest that around two-thirds of DSP beneficiaries have moderate or lesser core limitations, using the international classification system.¹⁶ This is consistent with the view that factors not relating to disability *per se* are important in determining employment outcomes for people with some degree of disability. This view is substantiated by the weak correlation

¹⁶ Using survey data, the OECD (2003, 43, p. 181) finds that around one in seven Australians on disability-related benefits have disabilities that have no core activity limitations or employment/educational restrictions. In other countries, the figure is much larger, with for example one half of Swedes on disability benefit having no limiting disability. An alternative, less plausible, explanation is that the selection process into DSP picks up some aspect of impairment not measured by the international system of disability assessment and that this aspect is highly adverse to employment prospects.

between the average severity of conditions and their representation in the DSP population relative to the disabled population generally (appendix G).

Box 8.1 How many male DSP beneficiaries have profound or severe core limitations?

Government allowances and pensions are the principal sources of income for 73.6 per cent for people (of both sexes) with profound core-activity limitations and for 58.1 per cent of those with severe core-activity limitations (ABS 2004a, p. 23).

Assuming these ratios also hold for males alone, and given there are around 230 000 males with profound or severe disabilities aged between 15 and 64 years, this implies that there were 143 500 males in these disability categories on such benefits.

The data above excludes the small number of men with profound and severe core-activity limitations under 65 years living in cared accommodation. Using estimates from ABS disability surveys from 1998 and 2003, it is estimated that there are around 11 000 men in these age and disability categories in cared accommodation, many of which can be expected to be on government benefits. Accordingly, there were around 154 000 men altogether in these age and disability categories.

To get an estimate of men aged 15–64 with profound and severe core-activity limitations on pensions alone, it is necessary to subtract those on unemployment allowances (Newstart, mature Age etc). However, there were only a very small number (7 500) of unemployed males with profound or severe disabilities (ABS 2004a, p. 23). Some of these will be on unemployment allowances and others may be on pensions, but actively looking. It has been assumed that two-thirds of the unemployed are on allowances.

Consequently, it is estimated that there are around 150 000 males with profound and severe core-activity limitations aged 15–64 years on some kind of pension (which will include both the DSP and the DVA disability pension). On the basis of estimates of the number of male beneficiaries aged 15–64 years of these pensions, this implies that around:

- *33 per cent of DSP beneficiaries have disabilities with profound or severe core limitations.*

Just over one in ten men on the DSP are in the labour force. Taking account of these and the small subset of men with profound and severe core-activity limitations on the DSP who are in the labour force, it is estimated that around:

- *37 per cent of DSP beneficiaries who are not in the labour force have disabilities with profound or severe core limitations.*

Even were some of these assumptions to be wrong, it is very likely that the true estimates will be within several percentage points.

DSP rates have risen over time

Rising male DSP rates present a paradox if a medical definition of physical or mental ‘impairment’ from disability is seen as the principal criterion for entry to the program. As Keating (2005, p. 9) argues:

... it is hard to believe that this increase only reflects a commensurate decline in health status.

Changes in age-specific rates of disability in the general population do not appear to explain the rise in DSP rates. It is difficult to assess this issue since measurement of population disability rates has been sporadic, survey methods for measuring disability have changed, attitudes to disclosing disability have shifted, and new disabling conditions have been identified (such as attention deficit disorder). Taking these conceptual and measurement problems into account, and controlling for population ageing, the AIHW (2005a, p. 219) judged that for Australia:

... there was no [significant] change in rates for profound or severe core activity limitations between 1981 and 2003. The rise in reported rates in 1998 is attributable to survey methodology changes rather than population changes.¹⁷

The international data also support the contention that it is unlikely that there has been a significant rise in age-specific disability rates in the general population. Many countries, such as the US, Italy, Austria and Belgium, have exhibited *declines* in age-adjusted disability rates for males (Robine et al. 2005). Those that have not, such as Greece, Denmark and France, have exhibited rates of increase that, even if replicated in Australia, could explain only a portion of the dramatic rise in the DSP prevalence rates. It is notable that generally, regardless of varying trends in the population disability rates among countries, overwhelmingly disability support prevalence has increased internationally.

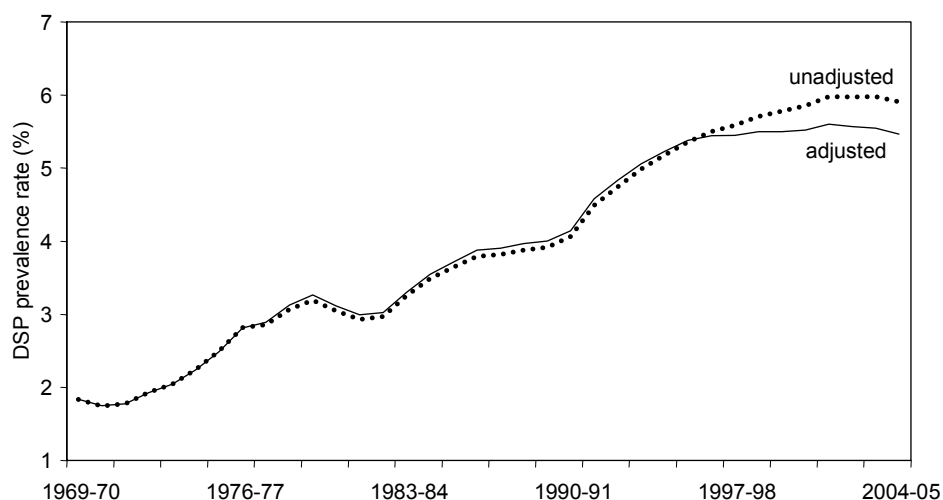
Some suggest that rising DSP rates is testimony to population ageing. It is true that older men have higher DSP rates than younger ones, and that as more people shift into older age brackets, higher expected DSP rates could be expected. However, this ageing effect has only been encountered to any degree recently and still remains a small factor relative to the historical growth. This is demonstrated by the difference between the observed and age-adjusted DSP rate in figure 8.9. The relative importance of non-age-related factors is equally well indicated by rapidly rising age-specific DSP rates (table 8.3). For example, in June 1970, less than one in ten males aged 60–64 years were on DSP, but this was more than one in five by June 2005 (and close to one quarter in the early 1990s).

Accordingly, many more Australian men with a *given* set of impairments and core activity limitations must have been participating in the labour market four decades ago. And given the low unemployment rate of the time, most with such disabilities must have been employed. This suggests that many men with disabilities currently on DSP must have once been inherently employable, and something in the economic or social environment, rather than their disabilities per se, must have affected their job success.

¹⁷ An ACOSS (2002) analysis that indicated that much of the increase in DSP numbers could be traced to an increased rate of age-specific disability rates used the 1998 results. The subsequently released 2003 estimates suggest a more stable pattern of disability over time.

Figure 8.9 The effects of ageing have been small in the past

Male DSP rates, with and without ageing^a



^a Age-adjusted DSP rates were estimated by using the population shares of June 1970 and the age-specific rates of each of the age groups for each year.

Data source: As in figure 8.8.

Table 8.3 Age-specific male DSP rates have risen too

Age	Share of men affected		Growth rate in rate ^a 1970–2004	Share of male DSP June 2004
	June 1970	June 2004		
	%	%	%	%
16–19	0.76	1.84	2.9	2.5
20–29	0.76	2.47	3.9	8.4
30–39	0.84	3.75	4.8	13.2
40–49	1.42	5.85	4.0	20.8
50–59	3.30	9.95	3.5	30.5
60–64	8.62	20.52	3.1	23.3
65–69	2.64	1.46	-3.0	1.3
16–69	1.83	5.91	3.7	100.0

^a The trend growth rate was calculated by logging the values of the annual DSP rates and running against a time trend.

Source: Calculations based on data supplied by FaCS and DEWR.

Institutional changes provide a partial explanation for some of the changing patterns affecting male inflows to DSP.

- The Disability Reform Package of November 1991 replaced the old Invalidity Pension with the DSP. It brought in new impairment criteria and different tests for work capacity (Yeend 2002), with overall uncertain impacts on numbers.
- The new Disability Support Pension broadened the eligibility basis to include people who could perform part-time (up to 30 hours per week), but not full-time

work, as well as enabling greater access to the disability support pension by people with psychiatric, and drug and alcohol conditions (ABS 2002).

- The Reform Package abolished the Sheltered Employment Allowance¹⁸ and the Rehabilitation Allowance and restricted access to Sickness Allowance to people with short-term illnesses. Many people on these programs would have shifted to the DSP.
- On the other hand, the introduction of the Mature Age Allowance in 1994 for older age long run unemployed would have reduced inflows to DSP (Argyrous and Neale 2003).

However, these changes can only explain a part of the significant growth that occurred after 1991 (ACOSS 2002) and cannot explain the large expansion in previous periods. Indeed, most administrative changes prior to 1991, such as those in 1979, 1981 and 1987 attempted to reign in eligibility to the program, not to expand its scope (Yeend 2002). For example, in May 1979, new guidelines for the Government Medical Officers removed reference to educational, environmental and labour market factors in assessing incapacity for work.

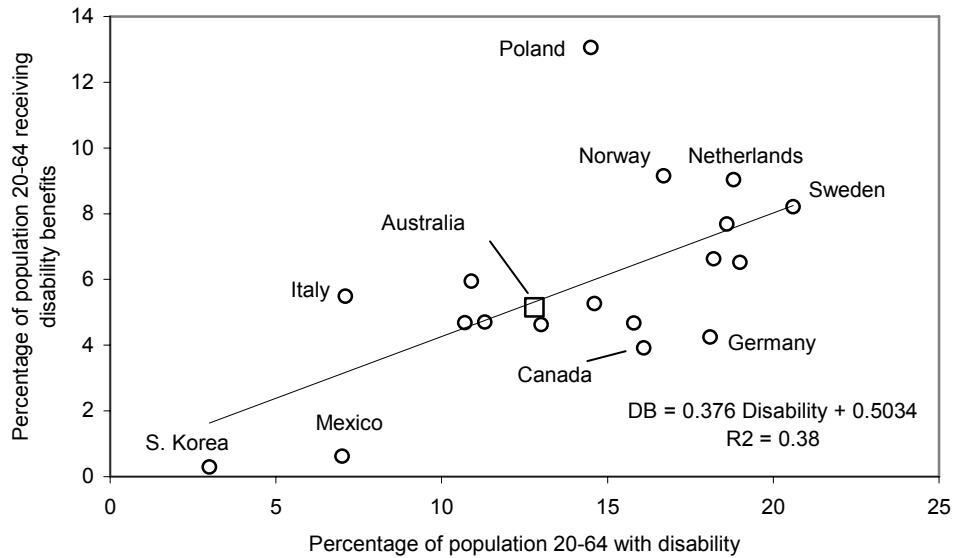
The prime suspects for the greater vulnerability of the disabled are identified in sections 8.4 and 8.5.

Rates of disability support vary spatially

The prevalence rate of disability in the general population varies significantly, even by countries that have much the same degree of economic development (figure 8.10). For example, Sweden has about three times the disability prevalence as Italy (and more than four times the severe disability prevalence). It would be expected that these variations in prevalence would substantially explain the differing rates of reciprocity of disability benefits. However, the link between apparent prevalence and reciprocity rates is weak, and even weaker if low disability countries like South Korea and Mexico are removed from the sample. As an illustration, Poland has a somewhat *lower* population prevalence rate of disability than Canada, but three times the reciprocity rate. As a consequence of the weak relationship between prevalence and reciprocity rates, the share of people with disabilities who are on disability support is far from uniform, but varies greatly by country (figure 8.11).

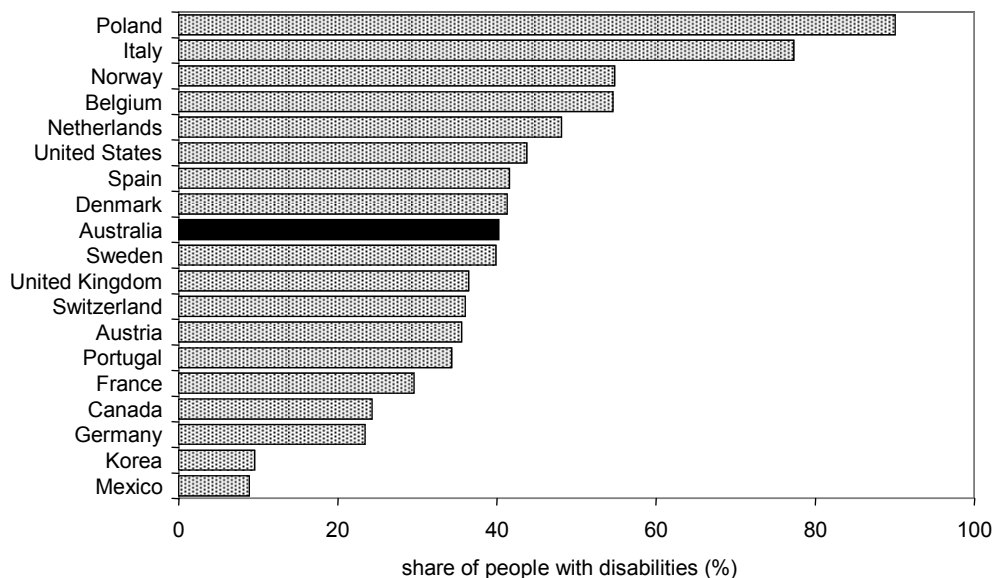
¹⁸ This added around 10 000 people of both sexes to DSP (ABS 2002, 'Income Support – Trends in Disability Support', *Australian Social Trends 2002*, Cat. No. 4102.0).

Figure 8.10 There is a weak relationship between disability prevalence and the share of the population on disability support
OECD countries



Data source: OECD database on programs for disabled persons from OECD (2003), Transforming Disability into Ability, OECD, Paris.

Figure 8.11 Share of people with disabilities who are on disability support
Late 1990s



Data source: OECD database on programs for disabled persons from OECD (2003), Transforming Disability into Ability, OECD, Paris.

These variations reflect the different eligibility and design features of countries' disability support systems and their differing methods for counting disability.

[There is an] even stranger and more arbitrary variation in assessing particular levels of invalidity. Here too, assessed incapacity varies strongly between countries, within the same countries over time and between different, mostly occupational groups of insured persons for the very same losses or impairments....In the UK in the 1960s, for instance, the loss of fingers and a leg amputated below the knee constituted a 50% disability, while the loss of three fingers and the amputation of a foot or the loss of an eye was translated into a 30% incapacity rating; today, the very same lost foot rates for 100% disability in the same country, whereas the amputation of one foot counts for only 30% in Germany, 50% in Belgium ... but both feet only 70% in Italy. (Marin 2003).

Even within the same country, where criteria for entry are the same, there appear to be large regional differences in disability benefit recipiency rates that cannot be fully explained by the prevalence of health conditions. For example, in 2001, Newcastle had a rate of DSP recipiency for men aged 55–64 years around three times more than that of Canberra. In some towns exposed to large structural changes, such as Moe in Victoria, nearly 60 per cent of men aged 55–64 years were on DSP (Healy 2002).¹⁹ Similarly wide regional variations have been found for the UK and US (McVicar 2005 and Faggio and Nickell 2005).

8.4 What are the factors underlying uptake of the DSP?

The above section suggests that participation in the DSP is strongly influenced by environmental factors. The roles played by environmental factors in defining disability are important because these may be responsive to policy. Many of the factors positively related to the capacity for work by those with medical conditions are well understood, such as the role of the built environment, technological aids, the attitudes of employers and other employees and the need for flexible hours at work. But other, more contentious, environmental factors that may work the other way are particularly important for analysis and understanding of the use of the DSP. These include:

- the business cycle — there is a link between downturns in the economy and the incidence of DSP;
- the role of incentives — the welfare system provides incentives to switch to DSP from other welfare benefits and not to switch back;

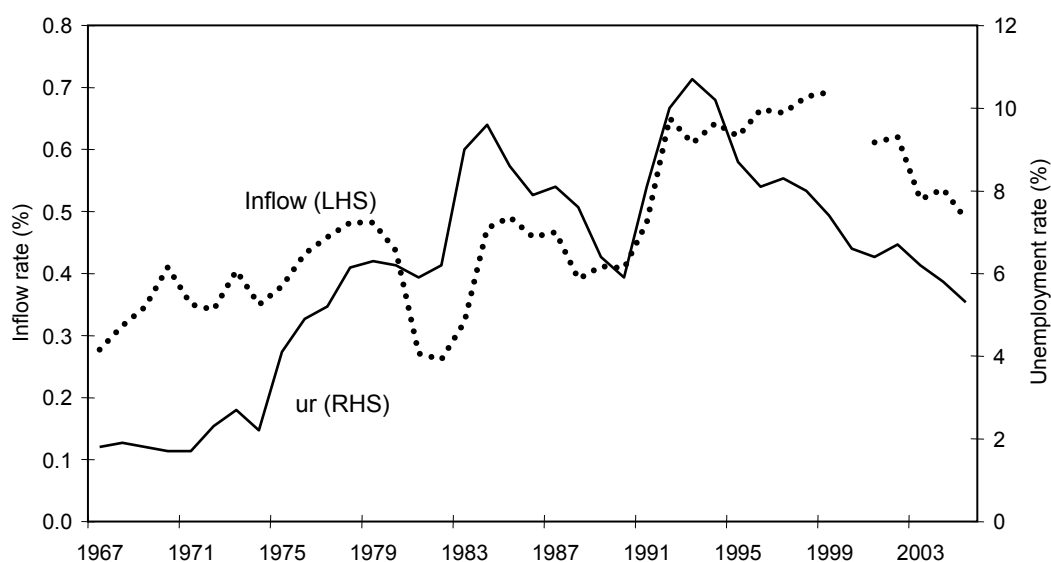
¹⁹ However, regional variations in DSP concentrations need not reflect varying disability incidence rates, but rather 'pooling of the poor' as a result of inter-area movements of people as described in chapter 4 — people with disabilities may be left behind as others move to labour markets where their prospects are better.

- the administration of disability support; and
- the changing long-run structure of the economy.

DSP is partly hinged to the business cycle

The importance of the economic environment is also apparent over short-term. There is a link between unemployment rates (as an indicator of the business cycle) and the (combined male and female) DSP inflow rate from the 1970s to around 1995 (Cai and Gregory 2004 and figure 8.12).

Figure 8.12 As unemployment rises, so too do inflows to the DSP^a



^a The inflow rate is defined as the number of new DSP claimants over each year from July 30 to June 30, divided by the average adult population over the year. The unemployment rate is the average over the fiscal year. A reasonable econometric representation of the link between unemployment rates (ur) and the inflow rate (ir) is: $\log(ir) = 0.24 + 0.066 ur - 0.049 ur_{t-1} + 0.814 \log(ir_{t-1})$.

Data source: Cai and Gregory (2004), ABS labour force data, FaCS/DEWR statistical reports on the characteristics of DSP beneficiaries.

The relationship seems to break down temporarily during the 1990s, with the inflow rate continuing to climb until the end of 1990s, despite significant reductions in unemployment rates. However, it is likely that the underlying relationship between the economic cycle and DSP rates was masked during this period, rather than disappearing altogether. As shown in figure 8.9, ageing began to stimulate aggregate DSP rates in the 1990s and will have partly offset the effects of positive economic circumstances. In addition, some institutional changes affecting female

access to various welfare payments will have also had a masking effect.²⁰ These include changes to female access to the Age Pension and the phasing out of partner/widow payments such as Wife Pension in the mid 1990s (ACOSS 2002).

What is the source of the association between the business cycle and DSP growth? Probably the major source is associated with the theme elaborated in the past section and further in section 8.5. There is a pool of men with disabilities that could clearly meet the impairment test for eligibility to the DSP. At any one time, some of these are still active in the labour market. These men are more vulnerable during recessions. They are more likely to become unemployed in such downturns, and if already looking for a job, less likely to find one. With poor job prospects, the DSP is more attractive. It has no job search expectations, potentially less stigma and, for most years between 1970 and 2006, paid higher benefits compared with unemployment allowances. Accordingly, applications for the DSP rise in downturns because men with disabilities are more likely to be, or stay, unemployed. And acceptances of applications also rise during downturns because the work test component of the eligibility requirements will be harder to meet.

An associated element of this story is that:

- until recent amendments, people with disabilities aged 55 years or older have been subject to a special, less restrictive, work test for eligibility to DSP. An older worker with disabilities facing poor prospects in their *local* labour market would be eligible for the DSP, whereas the test for younger workers is the capacity to find a job in labour markets generally. During economic downturns it is more likely that an older worker will have met the eligibility conditions; and
- the severity of disability is, as amplified in the section below, not objectively verifiable. There is a group of men with a continuum of impairment. During downturns, those just below the threshold level of impairment that provides entry to the DSP face similar risks of unemployment as those above it. If those below the threshold become unemployed, many will prefer to be on the DSP given its higher payoff. They have strong incentives to cross the threshold line. Welfare case workers and doctors are also more likely to be sympathetic to the claims made by disabled people in this group when job prospects are low. (It is worth noting that there have been few substantiated cases of outright fraud.)

²⁰ This has to be an inference because data on inflow rates by gender are not available. However, *net* male inflow rates fell in the 1990s, which, given what is known about the relative stability of the outflow rate (Cai and Gregory 2004), suggests that male gross inflow rates also fell. In contrast net female inflow rates were stable in the 1990s.

The other possible source of the link between downturns and take-up of the DSP reverses the causation. Men who become long run unemployed may develop disabilities as a result of their unemployment (for example, depression). However, this cannot be the sole explanation for the association between DSP and unemployment rates. The implied size of the effect is too large compared with general findings about the impacts of unemployment on mental health (chapter 7).²¹

A policy-relevant feature of the link between DSP take-up and unemployment is that many new DSP beneficiaries have been in receipt of reasonably enduring unemployment benefits prior to receipt of the DSP (Cai and Gregory 2004).²² Since it would have been in their interest to apply for DSP immediately after onset of unemployment, it is hard to explain the basis for deferred entry. Several explanations (mostly from Cai and Gregory) suggest why this may occur, but the one they emphasise is that many people with disabilities try to get a job first and only seek to enter DSP after repeated failure.²³

This is policy relevant for two reasons. First, any policy change that increases the employment probability or the unemployment duration before unemployed people with disabilities apply for DSP would decrease inflows into the system. Figure 8.13 suggests the impacts could be significant. Second, the fact that many people apply for DSP only after a protracted period of unemployment is consistent with the view that rarely do men with disabilities perceive their condition as automatically disqualifying them from a job.

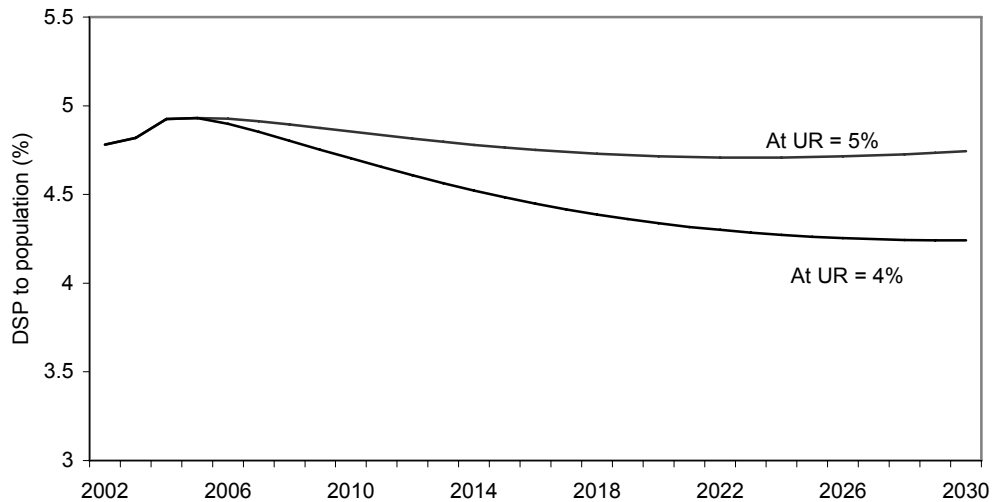
In contrast to inflow rates, outflow rates are not responsive to the business cycle (once lags of the outflow rate have been taken into account). This explains some of the inertia in the DSP rates. The stock of pensioners on the DSP is like a deep pool with a relatively small, but responsive, inflow and a small sluggish outflow. Were both the inflow to ease and the outflow to increase during buoyant economic terms, the pool would empty much more quickly.

²¹ The strongest effect on the inflow rate is contemporaneous with unemployment, not with lagged unemployment (which would be more consistent with strong impacts of unemployment on health conditions).

²² For instance, Cai and Gregory find around 40 per cent entering in the period after 1995 did so after experiencing a prior period of unemployment. This is also suggested by comparing duration data from FaCS for characteristics of DSP beneficiaries for 2005 and 2003. The former include duration on all welfare payments of DSP beneficiaries, while the latter only considers duration on DSP itself.

²³ Though job search is not ruled out when a person is on DSP, and indeed, the financial incentives for gaining a job are greater than for people on allowances.

Figure 8.13 The effect of lowering unemployment risk on DSP rates
Both sexes, 2004 to 2030^a



^a The simulation shows the DSP rate associated with an instantaneous shift in 2005-06 to a long run unemployment rate of either 4 or 5 per cent. Because ageing has only just started to affect the DSP rate (figure 8.9), the impact of ageing is not adequately taken into account in the econometric estimates underpinning the simulation (and nor will it adequately deal with the relatively recent policy changes that have affected female rates of DSP use). The key purpose of the simulation is not the actual simulated level of the DSP rate, but the *difference* in the DSP rate projections resulting from a 1 percentage point difference in the unemployment rate.

Data source: PC calculations.

The role of incentives

Welfare payments often distort the decision to work or to enter or stay in one benefit category over another. It would be surprising if the DSP were immune from these incentive effects, particularly as it has several attributes that make it more attractive than alternative welfare benefits. The OECD have found that the incentive effects of disability benefits systems are pivotal in determining inflows:

The results of our study suggest that disability benefits systems and their rules strongly influence the number of people on disability benefits. In other words, policy matters – there is no ‘natural’ rate of disability. It matters how countries define and assess disability, how they define entitlement to benefits, how they award benefits and, especially, how generous disability benefits are (Berglind Ásgeirsdóttir, 2003)

In Australia, DSP beneficiaries receive significant additional benefits compared with unemployment allowances (table 8.4).

Table 8.4 DSP has more attractive benefits than Newstart

Rates applying 1 July 2006 to 19 September 2006^a

<i>Benefit</i>	<i>Newstart</i>	<i>DSP</i>
Standard fortnightly benefit payment	\$410.60	\$499.70
Pharmaceutical Allowance	Only available in limited circumstances	\$5.80
Pensioner concession card	No	Yes
Income tests and tax		
Partial payment for fortnightly income between	\$62 & \$777.67	\$128 & \$1391.75
How many cents per dollar is payment reduced by as earned fortnightly income rises?	50 cents between income of \$62 & \$250; 60 cents for income above \$250.	40 cents per dollar above \$128
Tax treatment	No tax paid if allowance is only income or other income below the partial payment level.	Tax exempt
Asset Test (Both payments have same limits)	No payment if assets greater than limits	\$3 reduction for every \$1000 above limits
Activity requirements	Mutual obligation (effective job search, training or work-for-the dole)	None

^a Only single person arrangements are shown. Payments are less per person in couple arrangements, but this applies to both payment types. All income amounts shown are fortnightly. The Pensioner Concession card allows a range of cheaper medical services, transport discounts, rates reductions, utility price reductions and other benefits that are not normally provided to Newstart allowance recipients. The average value of the concession card depends on consumption patterns and so no meaningful value can be given.

Source: Centrelink 2006, *A Guide to Australian Government Payments*, accessed from ([http://www.centrelink.gov.au/internet/internet.nsf/filestores/co029_0607/\\$file/co029_0607en.pdf](http://www.centrelink.gov.au/internet/internet.nsf/filestores/co029_0607/$file/co029_0607en.pdf)).

They receive a higher payment²⁴; do not face any tax on their pension; are free of any obligations for job search or other mutual obligations; receive the pharmaceutical allowance automatically; obtain access to the pensioner concession card, and have significantly greater capacity to earn income before the withdrawal of benefits.²⁵ For a person with no earned income, the monetary benefits of DSP are more than 20 per cent higher than Newstart. The relative benefits can be much greater if there is earned income.

Over the longer run, the relative attractiveness — in benefit payment terms — of the DSP has ebbed and waned. It has never been less attractive than unemployment

²⁴ This gap will continue to rise while unemployment allowances increase with the CPI changes and pensions by growth in average weekly earnings.

²⁵ Though this is likely to be most attractive for DSP beneficiaries who intend to be *inside* the labour force.

benefits, and since the mid 1980s has slowly increased in attractiveness. Moreover, the relative benefit rates do not reflect the other benefits of the pension. For example, activity requirements during unemployment have increased over time, so that this intangible factor will also have increased the relative attractiveness of the DSP.²⁶

The poorer overall benefits on Newstart Allowance compared with DSP provide several incentives that can affect behaviour.

- It provides a motive for less severely disabled men with low employment prospects (or their sympathetic case-workers/doctors on their behalf) to try to shift between unemployment allowances and the DSP.
- It discourages any move back from DSP to Newstart, even if disability or job prospects improve.
- It may also discourage a man on DSP from getting a job with income high enough to make him ineligible for the DSP, since subsequent loss of that job may put him at risk of being placed back on Newstart (ACOSS 2005b).

The fact that the benefit characteristics of DSP provide a motive for entry and a discouragement for exit is a necessary condition for the relevance of incentive effects, but not sufficient evidence that these are acted upon. The administration of the pension or the attitudes of men with disabilities may counter these benefit characteristics. It is hard to objectively determine the attitudes of potential recipients, but it is possible to assess whether:

- the criteria for eligibility are (i) objective and (ii) acted on in a consistent way, since were this to be the case, the prospects for moral hazard would be limited; and
- the demand for entry to (or exit from) the DSP are consistent with the importance of incentive effects or not.

Disability can be an elastic and difficult-to-define concept

Disability lies on a continuum with few limitations or restrictions at one end, and severe ones at the other. This continuum makes categorisation difficult and has

²⁶ In addition, as the economic vulnerability of the disabled has risen, over time the expected duration on benefits has grown. In this case, so long as DSP payments are higher than for unemployment, then the absolute gap between the expected value of the future stream of DSP income to the alternative stream of unemployment income for any individual with disabilities will also grow. This occurs even if the relative benefits of the DSP to unemployment were to be fixed over time.

dogged attempts to derive consistent population estimates of disability rates between countries or over time.

These uncertainties are aggravated for the identification of those individuals whose medical conditions cause sufficient impairment or employment restrictions to make them eligible for the DSP. This is especially problematic for people close to the threshold for eligibility, or for whom the existence of, or impairment posed by, their condition is hard to objectively verify.

In many such cases, clinical assessments will be strongly dependent on information provided by the patient (such as with affective disorders and the level of pain in musculo-skeletal disorders). This information can be hard to interpret or may be misunderstood by the treating doctor. In some cases, patients themselves contribute to the uncertainty of diagnoses by understating the severity of their conditions²⁷ or by exaggerating symptoms.²⁸ As one group of doctors observed about such conditions generally: ‘There is no blood test’ (Thomas-MacLean et al. 2005). This diagnostic complexity is accentuated by the fact that the severity of conditions may fluctuate over time. For example, patients with bipolar disorder may be very productive during a manic or hypomanic phase, but very unproductive during a depressed phase (Mischoulon 1999), a situation that complicates not only DSP eligibility, but the appropriate provision of services by Job Network Providers to people with mental conditions (DEWR 2004).

As a consequence of these uncertainties, some people miss treatment (exclusion errors) and some people are misclassified as having a disabling condition (inclusion errors) — box 8.2.

²⁷ For example, many patients present with physical symptoms for depression, and may hide psychological impacts to avoid the stigma of depression. Accordingly, under-diagnosis is seen as common for depressive disorders, particularly among older people (Commonwealth Department of Health and Aged Care and Australian Institute of Health and Welfare 1999, p. 14).

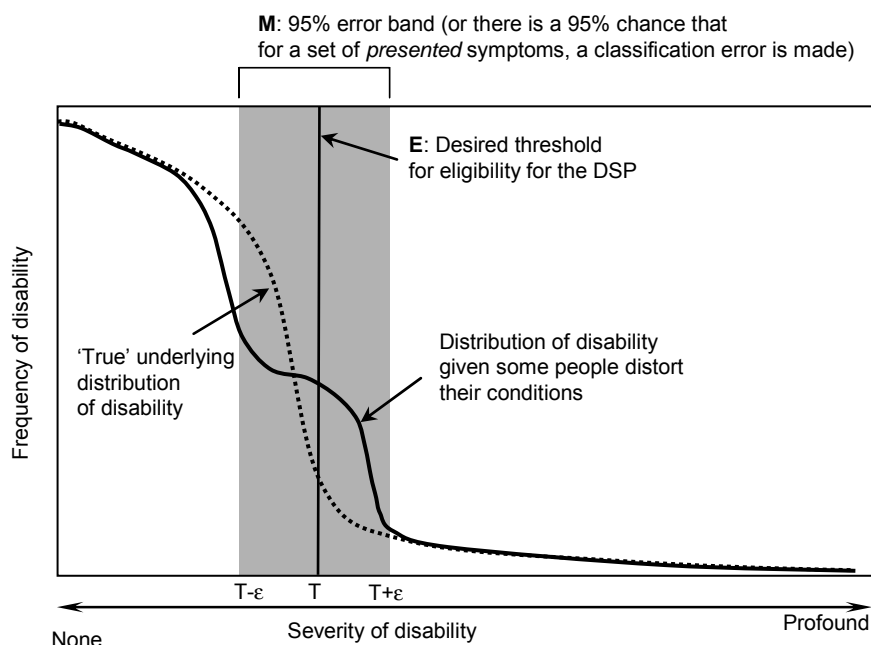
²⁸ Studies have shown that people can effectively simulate some conditions such as post-traumatic stress disorder and depression, and that some of the usual tests for their identification are unable to differentiate simulated from genuine cases. For example, subjects were asked to fake post-traumatic stress disorder and their performance on a standard diagnostic was compared with a group of verified sufferers. Scores of persons told to respond ‘as if’ they had PTSD did not differ from scores of veterans with PTSD. (Lyons et al. 1994). Walters and Clopton (2000) found similar weaknesses in the usual instruments for testing depressive disorders. The fact that it is *possible* should not be taken to imply that it is common. The World Bank (Andrews 1998) pinpoint moral hazard as a distinctive concern common to all types of disability insurance schemes.

Box 8.2 Diagnosis error has several strands

As in all health-related diagnoses, there are **false positives** (inclusion errors, or people categorised as meeting some criterion for ‘treatment’ when they do not need treatment), **false negatives** (or exclusion errors — people categorised as not meeting some criterion for treatment when they, in fact, do need treatment); **true positives** (people correctly identified as needing treatment); and **true negatives** (people correctly identified as not needing treatment).

In many health conditions, these errors principally arise from the frailty of the diagnostic test or the judgment of the clinician (test error). For example, the enzyme-linked immunosorbant assay test for Hepatitis C virus had a false positive rate of 5 to 25 per cent (Sherker 1996). However, unlike most health-related diagnoses, the determination of eligibility for the DSP not only arises from the diagnostic errors, *given a set of presented clinical symptoms*, but from the fact that those symptoms may be manipulated by the doctor or the patient because of the incentives posed by the DSP (moral hazard).

The figure below shows the consequences of these contributing errors. Test error is shown as a band of uncertainty (M) about the eligibility threshold (T) for the DSP. Even in the absence of presentation errors, the fact that the severity of disability is an asymmetric distribution (with more severe conditions much less frequent than less severe ones) suggests that inclusion errors will be more important than exclusion errors. This tendency could be significantly exacerbated by the existence of presentation errors.



In the case of the DSP it is likely that inclusion errors are more frequent than exclusion errors.

-
- The distribution of severity of disability is asymmetric, with most people having minor impairments and limitations associated with their underlying conditions, and a thinning right tail picking up profound and severe cases (box 8.2). It is known that DSP includes a substantial group of people with moderate or lesser core activity limitations, so that at the threshold for eligibility (T), the true underlying distribution of disability must be curving down relatively steeply. This implies that symmetric classification errors by clinicians around the threshold for eligibility (T) involve more inclusion than exclusion errors.
 - As in the general population, it is still likely that some people do not reveal the existence of certain disabilities, and are excluded from the DSP because they fail to apply. However, in general the incentive system (table 8.4) encourages people to fully disclose and sometimes overstate, rather than hide, the extent of impairments associated with disabilities once they near T. Minor overstatement is likely to particularly affect people facing poor labour market prospects and who have disabilities just below the threshold impairment level for benefits.
 - Doctors may err on the side of a patient in cases of uncertainty, where they sympathise with their poor economic prospects.²⁹ In the UK, which has a similar system to Australia, doctors were influenced in their prognosis of invalidity by the probability of their patients finding a job (Sawney and Challenor, 2003; Ritchie et al. 1993).

It is notable that many people apply for DSP who fail to meet the eligibility tests (around 42 000 males and females over the year prior to June 2005 or 38 per cent of all new claims processed). The most common reasons for rejections of applications for the DSP are insufficient impairment (38 per cent of rejections) and that disability is short-term (18 per cent of rejections) (DEWR 2006a, p. 29). For those who are sceptical of the existence of inclusion errors, it seems improbable that none get through the filters when severity is so hard to assess.

The uncertainty associated with assessing the degree of impairment for the DSP has been accentuated by the need, until recently, for the treating doctor to not just make a clinical judgment, but also to indicate that impact of impairment on a patient's labour market prospects.

Some GPs also discussed the issue of uncertainty of their patient's prognosis ... This was seen to be particularly difficult for the GP to predict, particularly because it is highly dependent on the patient's attitude and motivation to get back to work. (Millward Brown, 2002)

²⁹ While eligibility for the DSP is ultimately determined by public servants, the advice of Commonwealth Medical Officers and doctors on conditions and their impacts on work were 'as a matter of practice, [rarely] questioned or challenged' (Yeend 2002, p. 6).

The OECD (2003) has highlighted the *increasing* clinical difficulties of assessing who is disabled enough to get disability benefits:

There are indications that the assessment of disability and work capacity is becoming more difficult. From a medical perspective, the situation has gradually worsened with the widespread increase in the share of more difficult to diagnose diseases, such as new mental illnesses as well as many physical stress-related conditions like lower back pain. It is difficult not only to diagnose these disabilities and to assess their implications for work capacity but also to predict how these conditions may evolve in the future.

Saunders (2004) has claimed that the low verifiability of such disabilities (particularly psychological and musculo-skeletal conditions) has led, in part, to the entry of people whose disabilities would not preclude labour market participation. He considers that the DSP provides a de facto early retirement option for men with low employment prospects. The World Bank (Andrews 1998) has also claimed that disability insurance schemes create incentives that affect people's behaviour (moral hazard):

Like the market for health insurance, disability insurance claims are strongly subject to moral hazard. In particular, there are many opportunities to exaggerate a disability claim to meet the criteria set by the [insurer]. For example, mental disabilities may be particularly difficult to ascertain. Low back pain is frequently mentioned as a condition which is hard to prove or disprove based on objective medical criteria. Similarly the severity of cardiovascular disease may be difficult to assess.

The inference of Saunders and the World Bank is that the moral hazard arises from behaviour by the claimant, but it is important to note that it may also take the form of *referred* moral hazard, where doctors act in the perceived best interests of patients, regardless of whether the patients themselves are acting strategically at all.

While there are sound theoretical arguments for the relevance of moral hazard, the evidence for it is equivocal (Appendix G). One broad range of conditions whose severity is less readily verifiable — psychological/psychiatric conditions — are, given their severity, over-represented among the DSP population. But the same conclusion does not hold for musculo-skeletal conditions.

The evidence for an 'early-retirement' effect goes the opposite way, suggesting some potential role for musculo-skeletal conditions, but not for psychological/psychiatric conditions. In both strands of evidence, there are rival explanations, other than moral hazard, that could explain the patterns present in the data.

The strongest evidence for moral hazard is the very low exit rates to unemployment. Only about one in one thousand DSP beneficiaries annually exit to unemployment, despite evidence that significant numbers of beneficiaries would face improvements in their disabling conditions that allow them to look for work (appendix G).

Moral hazard is not the only factor

It would be surprising if, given the nature of disability and program rules, incentive effects were not important. Such a position does not imply people are dishonestly or deliberately rorting the program (as noted above, outright fraud cases are rare). Nor does it trivialise the impact of highly disabling conditions. *It should be emphasised that despite the uncertainties and moral hazards associated with entry and ongoing eligibility for the DSP, most beneficiaries clearly face major disabling restrictions that pose large obstacles to work.* As observed by ACOSS (2005a), it is notable that:

- despite the tax exempt status of the DSP and low benefit withdrawal rates on part-time work while *on* the pension, very few DSP beneficiaries actually work — an issue that is explored in more detail below; and
- a pilot program to help DSP recipients find work had relatively low success rates, even through the group participating had volunteered for participation, and might therefore, be expected to be better motivated than those who did not (Appendix A, DEWR 2004, 2005c and PC 2005).³⁰ A common reason for the high attrition rate from the pilot was deterioration in health status. Other programs that included DSP recipients as their targets also had relatively limited impacts (ACOSS 2005a, p. 13).

To sum up, there are two simple views about the DSP, both of which involve inadequate conceptions of disability. The first suggests that disability is an easy-to-define clinical issue alone, and that non-clinical factors do not affect admission and on-going eligibility to the DSP. The second goes too far the other way in suggesting that many on the DSP have trivial or no disabilities. A more realistic picture is that uncertainties in the appraisal of the severity of disability imply that there is substantial scope for non-clinical factors to determine eligibility for the DSP for the group whose severity lies around the threshold for entry. It is this group particularly who are more intrinsically likely to respond to employment opportunities and disability policy settings.

³⁰ As an indication of this potential selection bias, DEWR (2004, p. 6, 12) found that 28 per cent of the DSP volunteers for the pilot had been linked to a job network member prior to the pilot compared with 2 per cent of the DSP population generally.

8.5 Why are men with disabilities now less employable?

That DSP rates appear to vary over time and between countries in ways unconnected with underlying prevalence rates of disability needs an explanation. Population ageing only accounts for a small part of the story.

It appears that men with a given set of impairments were much more easily employed in the 1960s and 1970s than the 2000s. This was despite the fact that in that era:

- there was less public empathy for those with disabilities;
- aids were less sophisticated;
- public transport was poorly adapted to disability needs;
- work environments were generally more physically demanding;
- there were fewer working women, so less scope for a male to fail household income means-testing for access to the pension; and
- there were fewer opportunities for flexible employment contracts and limited casual or part-time work for men.

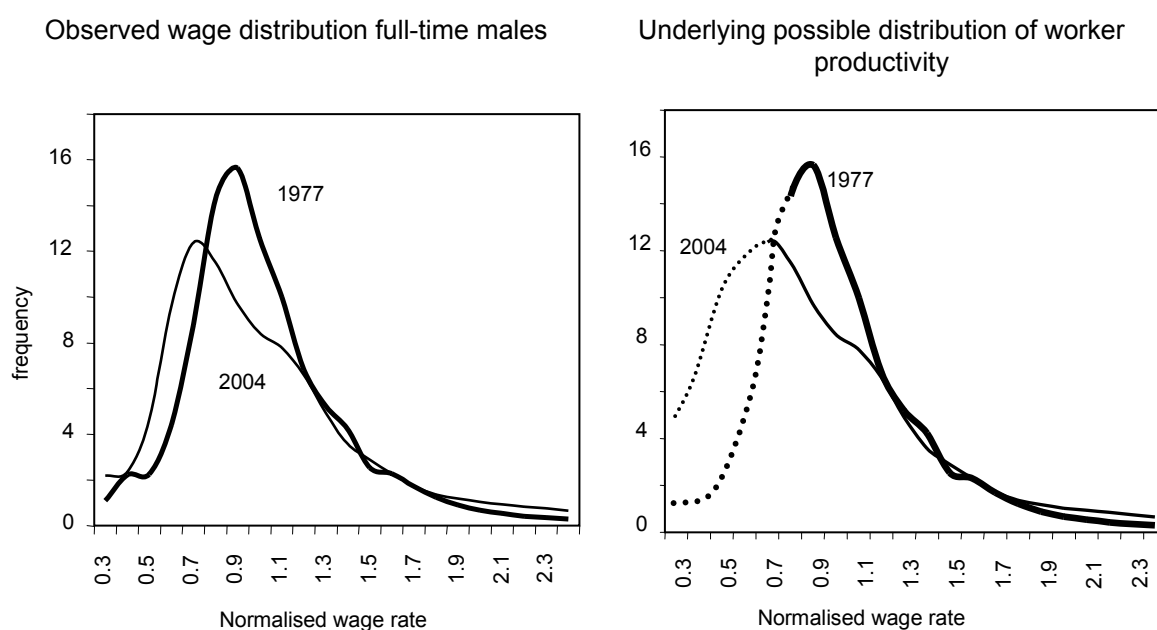
Why in such an ostensibly hostile environment were they employed then and now often relegated to DSP until retirement or death? The explanation comes in two stages. First, the structure of the economy has changed and with it the demand for unskilled versus skilled labour. Second, men with disabilities have been particularly affected by this change.

The demand for unskilled labour has fallen

There has been a steep fall in the relative demand for unskilled and manual-skilled males over the past four decades (documented by Borland 1998 and Keating 2005 among others). For example, ‘blue collar’ occupations accounted for 63 per cent of male jobs in 1971 and only 46 per cent in 2000 (Keating, p. 4). There are several competing hypotheses about the cause of this fall. But the most likely is that technological change (‘skill-biased technological change’) has favoured male jobs embodying higher skills, better English proficiency skills and educational requirements, leading to higher wage and employment growth in these areas. This has good empirical support for Australia (for example, de Laine et al. 2000; Laplagne et al. 2001 and Webster 1999) and overseas.

The fall in relative demand for less skilled workers, whatever its cause, is partly revealed by the slow growth in (before-tax) full-time wages at the lower end of the wage distribution. This has meant that significantly more workers in 2004 received (before-tax) wages that were 80 per cent or less of the mean wage than in 1977 (figure 8.14).

Figure 8.14 Productivity distributions among men
1977 and 2004^a



^a The actual wage distributions are based on fitting a cubic spline to the cumulative distribution of full-time male gross earnings, and then inferring the distribution by subtracting contiguous entries. The normalised wage rate was calculated by dividing the wages by the mean wage for both years. The left hand graph then shows the proportion of males earning a wage from 0 to 0.3 of the mean wage, from 0.3 to 0.5 of the mean and so on.

Data source: ABS (various issues), *Employee Earnings, Benefits and Trade Union Membership, Australia*, Cat. No. 6310.0.

As noted by Frijters and Gregory (2006), over the long run, wage rates are likely to approximate the marginal productivity of workers. In that case, the gross wage picture suggests that the underlying distribution of worker productivities has shifted, so that more people have lower relative productivities than the mean. In fact, the real distribution of productivities in 2004 and 1977 is likely to have a bigger left-hand tail (figure 8.14) because of ‘censoring’. This censoring occurs because there is a floor wage below which less productive workers do not have incentives to work or cannot be profitably employed. This floor wage is determined by welfare provisions for those who cannot find work, minimum wages and other labour regulations, various business transactions costs, and entry barriers to self-employment, such as licensing and planning requirements.

Frijters and Gregory conjecture that economic inactivity was low in the 1970s because businesses still found most low skill workers to be usefully productive and/or they had incentives to work. Accordingly the number of workers whose productivity fell below the floor wage was small. But by 2005, skill-biased technological change had thickened the left-hand tail of the productivity distribution of men (the right hand panel of figure 8.14) and many more could not get jobs. What had happened in workplaces as a result of these technological and regulatory changes? Highly disaggregated occupational analysis over time have shown that full-time jobs have become increasingly demanding, with a greater requirement for broad, ‘softer’ skills, rather than just high skill jobs per se.³¹ In contrast to the 1970s, there are greater requirements in current workplaces for people to:

- acquire new skills continuously;
- use analytical and cognitive aptitude rather than manual skills;
- use ICT equipment capably;
- have certification to demonstrate competency for skills that were formerly demonstrated and acquired through informal ‘learning by doing’; or
- in the booming service sector, to have service-oriented and communication skills, such as the social and language skills to act in teams and to interact with the public. For example, reasonable English proficiency is required for most jobs in this sector.

The implications of these job demands are that, for example, there are now greater barriers to employment for a man with poor literacy and communications skills than in the 1970s.

Men with disabilities are particularly affected by these changes

Men with disabilities are likely to be particularly affected by these technological and regulatory changes, due to their disabilities. Moreover, their problems are often exacerbated by accompanying traits of older age, poorer educational attainment and lower skills and, in some migrant groups, lower English proficiency (Bradbury et al. 2001). They will be overwhelmingly represented in the vulnerable left hand tail of the productivity distribution. For example:

- in 2003, 10.9 per cent of people aged 15–64 years with a specific schooling or employment restriction due to disability had a degree compared with 19.7 per cent of people with no reported disability (ABS 2004a). And nearly one in five of the group with disabilities only attended school to year 8 or less,

³¹ Pappas (2001), Sheehan and Eposto (2001) and the review article by Whitton (2002).

compared with less than one in twenty for people with no reported disability. Though not a representative sample, a FaCS survey of DSP beneficiaries found they had even lower educational attainment rates than people with disabilities generally (Nucleus Group 2004);

- people with disabilities who did work are more likely to be found in manual skill occupations exposed to risks of skill-biased technological change. Around one quarter of people aged 15–64 with a specific schooling or employment restriction due to disability were labourers and related workers or intermediate production and transport workers compared with 15.6 per cent of people without disabilities (ABS 2004a) and around 30 per cent among DSP customers (Nucleus Group 2004);
- some migrant groups likely to encounter English proficiency difficulties are strongly over-represented among DSP beneficiaries (FaCS 2004). For example, people from the former Yugoslavia are about six times more likely to be in DSP than Australians. Similarly high over-representation is apparent for some other non-English speaking European migrant groups, such as people from Greece (3 times), Lebanon (3), Malta (4) and Turkey (4). The differences may partly reflect the older average age of these groups, as well as other factors apart from language proficiency, such as their past occupations and skills. (However, some groups that might be expected to encounter such language problems are not over-represented like this, such as people from South East Asia.) A non-English speaking background is also associated with a higher likelihood of shifting from unemployment to outside the labour force and for staying outside the labour force if already there (Gray et al. 2002). The impacts of migrant status on male inactivity rates generally is explored further in chapter 3; and
- 54 per cent of all men on DSP (aged 16–69 years) are aged 50–64 years old. The corresponding shares for the same age groups are 31 per cent of men not in the labour force generally and 24 per cent of the male population generally.

Another dimension of this story may be the growing significance over time of part-time work for males of all ages. On the face of it, this change in the economy might appear to accommodate men with disabilities. However, part-time jobs are highly heterogeneous. Many have good pay and conditions, and meet the lifestyle aspirations of their workers (Rodgers 2004, Morgan 2005).

But, on average, it still remains the case that hourly earning rates are lower in part-time jobs and workers in part-time jobs tend more often to have lower educational attainment and to come from a non-English speaking background (Booth and Wood

2004).³² Even this average result does not tell the full story for the least skilled workers. These are more likely to be located in the secondary labour market segment of the part-time job market. So while not generally true of the part-time market, in the secondary market pay and conditions are relatively poor, and available hours may be determined by varying peak load demands. In cases where hours are rationed and uncertain, and hourly earning rates are commensurate with lower skill jobs, total earnings will not typically be high. In those instances, welfare benefits may be more attractive.

Whether this is the case depends on the preferences of those on DSP. If they are willing to take low paying jobs instead of the DSP then disincentive effects are low.³³ However, a recent survey suggested that many DSP beneficiaries set a reasonably high pay hurdle before considering leaving welfare. Of those new DSP customers who wanted work now or soon, 84 per cent said that they would only accept a job that paid more than \$20 000 per annum (mostly on an after-tax basis) and around 40 per cent said they would only take a job paying \$30 000 or more (Nucleus 2004, p. 88). Mostly, job-interested DSP beneficiaries wanted part-time work (Nucleus, p. 87 and Saunders et al. 2003, p. 52), so these pay aspirations imply hourly rates of pay that would be hard to achieve. Accordingly, there appears to be a gulf between the jobs that might be available and the jobs that DSP beneficiaries desire.

Others analysts have considered welfare incentive effects to be less relevant to understanding the expansion of the DSP. Cai and Gregory (2004) investigate welfare incentive effects by looking at the ratio of DSP benefits to average weekly earnings and find the ratio did not rise enough to credibly explain burgeoning DSP numbers. However, this is probably not the correct ratio for considering incentive effects. There are two plausible alternative candidates:

- the ratio of the DSP benefit to the annual earnings of the most *likely* job. The most likely job in the 1970s was a full time job, but by the 2000s was a part-time job. So once the changing job possibilities are taken into account, incentive effects might be more powerful than once thought; and
- the ratio of the DSP benefit to unemployment allowances, where there is at least a current substantial margin.

³² Booth and Wood also find that *given* the characteristics of workers employed, there is actually an hourly premium to part-time work in Australia. That does not alter the fact that *before* controlling for worker characteristics, the jobs tend to have lower pay and to recruit people with fewer desirable labour market characteristics.

³³ There is also the potential to work in a part-time job and to continue the DSP. This option is discussed later.

The DSP has been designed to partly counter these adverse incentives by making work and benefit receipt a reconcilable outcome. A man on DSP can work and retain benefits. But, quite apart from the significant disadvantages faced by DSP recipients in the labour market, there are several obstacles that may reduce the effectiveness of the built-in incentives for workforce participation by DSP recipients.

- *Transactions costs*: The threshold of earnings before a part pension applies is just over \$60 weekly (table 8.4). This implies only a few weekly hours of work at even low wage rates. There are likely to be constraints in wanting or obtaining such jobs. There are fixed costs for both employers (insurance, paperwork, training) and employees (clothes, travel) associated with work that make such a small quantum of hours often uneconomic. It is notable that the two most important constraints identified by DSP beneficiaries who were not working, but would like a job, were 'location or distance from home' and 'costs associated with working' (Nucleus 2004, p. 87).
- *Unawareness of complex welfare rules*: As noted above, the DSP has much more generous benefit withdrawal rates associated with receipt of a part pension and more favourable tax treatment than Newstart. While this should encourage workforce participation, the rules are relatively complex (table 8.4). It is uncertain how many DSP recipients are aware of and understand the implications of these rules.
- *Concern about losing welfare benefits*: It is possible that beneficiaries working longer, but variable, hours may be concerned that working longer hours may inadvertently take them over the income threshold for eligibility for any pension benefits, including concession cards. Or for those that are still able to get benefits, longer hours may cast doubt about their level of incapacity, leading to a review of their eligibility. The evidence on this is equivocal. In one set of survey evidence, DSP recipients reported this was a minor concern. Only 6 of 422 respondents cited concerns about any of Centrelink's reactions to their working or to the loss of concession cards or benefits (Nucleus 2004, p. 89). However, DEWR (2004, p. 3) report that concerns about the loss of benefits figured prominently in the work motivations of DSP beneficiaries.

Whether it reflects their obvious labour market disadvantage, incentive effects, transactions costs or unawareness of the provisions for working while on benefit, the fact remains that less than one in ten DSP recipients work.

So in summary, growth of the DSP cannot credibly be attributed to either ageing or an increase in general disability rates. The most plausible explanation for the growth of DSP is that it reflects changes in the receptiveness of the economy to

employment of people with lower skills and disabilities, accentuated by the incentives posed by the welfare system.

- Full-time jobs have got more demanding, requiring attributes that are less prevalent among men who are potential DSP users.
- Part-time jobs may be more available now than in the past, but for the least productive men, the jobs provide relatively low overall earnings compared with welfare payments.
- DSP is a relatively attractive benefit compared with alternatives, encouraging entry and discouraging entry. It has not, historically, been combined with significant early rehabilitation efforts or systematic attempts to quickly re-engage people with the labour market. So once entry occurs, exits to jobs are rare. Policy is now shifting on a number of fronts, which may reverse some of the past trends.

8.6 What remedies have been suggested?

As noted above, the growing prevalence of people on disability benefits is not an Australian peculiarity, but is common among many OECD countries. The growth has led to a concern by many commentators that often permanent welfare can be adverse to the income and general wellbeing of benefit recipients. It has also meant large budget outlays and the loss of the economic contributions of people with disabilities. The fact that the rate of labour participation (and employment) among people with disabilities varies so significantly across the OECD suggests scope for improvement of labour engagement for many countries, including Australia (figure 8.15).³⁴

The focus of policy attention by OECD countries in recent years (OECD 2003, pp. 140ff) has been:

- changing business responsibilities and breaking down employer and public prejudices (including provisions for anti-discrimination law). In Denmark, for example, there was a renewed emphasis in the 1990s on enterprise rehabilitation;
- increasing employability (rehabilitation, training, job-readiness efforts). For example, the Austrian Government has emphasised the notion that ‘rehab goes

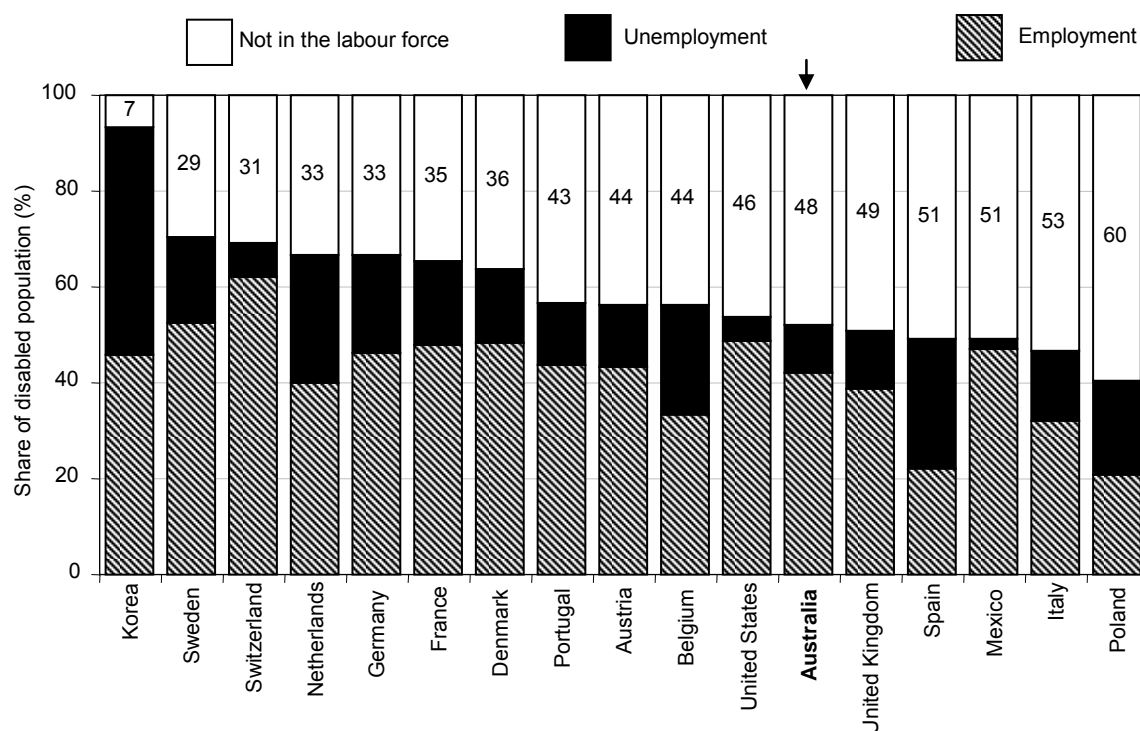
³⁴ Notably, however, the employment variations are less than the variations in participation. This reflects the fact that a part of the variation in participation rates between countries is due to variations in unemployment rates. For example, South Korea’s high participation rate is not due to high relative employment rates, but high unemployment rates. This suggests that policy settings in different countries may have a large bearing on whether labour disengagement of the disabled is experienced as unemployment or as non-labour participation.

before the pension’. In the United Kingdom, the ‘Pathways to Work’ program aims to provide work motivation, specialist employment advice and access to tailored support (Blythe 2006);

- using tighter thresholds for eligibility for disability benefits so that those with more transitory or less severe disabilities are expected to look for jobs;
- trying to reduce the sometimes whimsical aspects of judgments about whether people are over or under the line (reducing the width of the band M in box 8.2), such as the ‘verification of capacity’ system introduced in Portugal; and
- reducing incentives for people to claim disability benefits by altering the relative rewards. For instance, the UK ‘Pathways to Work’ program includes a (temporary) £40 per week return to work credit.

Figure 8.15 Labour force engagement of people with disabilities

OECD countries, late 1990s, aged 20–64 years



Data source: OECD 2003, *Transforming Disability into Ability*, OECD, Paris.

However, in the most comprehensive recent assessment of cross-country practice, the OECD (2003) found that no country exemplifies best practice. It recommended several approaches that collectively may engage additional disabled people in social and economic activities:

- remove (or in the OECD’s terminology, ‘unbundle’) the stark distinction in current systems of people with disabilities on a disability benefit and those

below, who are often get little or no specific disability assistance. This was also recommended by the McClure Report (2000) in the Australian context. Such unbundling removes many of the adverse incentives and inequities that arise from a system in which a single sharp line of entitlement for bigger benefits is defined;

- as part of unbundling, generally expect that many disabled people on benefits can participate in training, job search or volunteering ('activation'), as currently unemployed people do. Packages of integration should be designed that take individual circumstances into account, and that can vary the cash components of any support;
- promote early interventions that increase integration (such as rehabilitation and appropriate training);
- involve employers in re-integration through carrot and stick measures (including appropriate anti-discrimination provisions); and
- increase the quality of administration of benefits and programs and provide 'one-stop' shops.

Some of these approaches are already present in Australia or are foreshadowed. For example, Australia already has disability discrimination legislation, which has been recently reviewed (PC 2004b) and revamped (Australian Government 2005). Centrelink already provides a 'one-stop' service, and its model is being increasingly emulated by other countries. New assessment and administrative approaches will be applied as part of the 2005-06 Welfare to Work reforms.³⁵ The Australian Government has also adopted a new mental health strategy with a significant (\$1.9 billion over five years) boost to funding announced in the 2006-07 budget. This is relevant to the DSP because psychological/psychiatric conditions accounted for over one quarter of beneficiaries in June 2005.

Recent changes by the Australian Government are in line with the OECD's goal of greater labour market integration for people with disabilities by tightening the threshold for entry into the DSP, and providing more specialist job-oriented services to assist those who are then unable to qualify for DSP. Responsibility for the DSP has shifted from FaCS to DEWR as part of the signal that people with disabilities can often be part of, not distinct from, the labour market.

Other aspects of the OECD's recommended approach, especially the unbundling aspect, are not a feature of current Australian Government policy. The difference in

³⁵ Policy changes that have become operational in 2006 intend to alter the inflow rate by using new work tests that are based on a 15 hour rather than a 30 hour a week work capacity. These measures do not affect people who successfully applied for DSP prior to May 2005.

benefits and advantages of DSP relative to alternative welfare payments will remain significant. People with disabilities on the wrong side of the eligibility line will continue to face incentives to creep over, and those on the right side to stay there. Moreover, the existing stock of DSP beneficiaries will not be subject to significant work expectations and assistance. These features would not be present in an unbundled arrangement.

While the OECD unbundling approach is inherently attractive, it presents some dilemmas itself. Its practical feasibility has not been analysed in detail in an Australian context and its precise impacts on those with disabilities and its administrative and other budget costs are not modelled. Given all the uncertainties and the need for wide consultation and detailed policy analysis, a full assessment of adopting an OECD unbundling approach in Australia is outside the scope of this research study, though some have been recommended at the broad level by the McLure Report (2000).

Nevertheless, there are several relevant issues associated with unbundling that should be considered:

- Care would be needed to apply any mutual obligations cost effectively and humanely to a group with such diverse degrees of disability. Clearly, some people with particularly severe disabilities would have to be exempt from any obligation, which would raise questions about where that threshold should be set and the incentives it would create.
- It may require some transitional arrangements, since large numbers of people have been receiving benefits for many years. Since job skills erode with time, it may not be cost-effective or compassionate to apply the same or any activation arrangements to this group. The Disability Support Pension Pilot showed that it can be difficult to secure jobs for even the self-selected group of DSP beneficiaries who volunteered for the pilot (DEWR 2004, 2005c and appendix G). One possible transitional implementation strategy could be to only apply the arrangements to the newly identified disabled and those who have been on DSP for under a certain period. Similar transitional arrangements have been applied in the recent Australian Government changes to the work test for eligibility for the DSP.
- There are considerable information requirements for determining gradations of tailored assistance, and a tradeoff between administrative complexity and appropriate assistance. One dimension of this challenge is that an unbundled approach provides funding for the costs associated with disability for all welfare recipients with a disability, not just those who exceed a high threshold. A possible method of realising this would be to have phased levels of disability supplements associated with the severity and type of disability. However,

deciding the number of payment levels and their generosity would be difficult. One, self-selecting mechanism, could be to provide a 'disability card' covering, for example, rehabilitation expenses, purchasing aids and modifying dwellings or vehicles; and gaps in relevant medical bills not covered by public insurance, and that would bring together, in a coordinated package, services that are currently spread across Commonwealth and State programs. People with more severe disabilities would generally use the card more than those with less severe ones, and there could be levels of card that provided some disciplines on spending by those with less severe disabilities. The budget impacts and administrative complexities of having another suite of cards in the system are unknown.

- Coordination between welfare arrangements, and even across jurisdictions may be needed in a more integrated package for people with disabilities. For example, in the UK, the Disabled Working Tax Credit designed to encourage participation by making in-work income greater than out-of-work incomes was counteracted by the withdrawal of unreformed housing benefits (Burchardt 2003, p. 5). Similar risks may occur in Australia. While rent assistance is funded by the Australian Government, public housing is supplied by State Governments, mostly on a strictly means tested basis.
- It would be sensible to learn from recent arrangements overseas that have been applied to the existing stock of disability benefit recipients, such as the UK pilot 'Pathways to Work', to see how, why and to what extent they work. So far, the UK pilots appear to have had significant positive impacts on outflow rates (Blyth 2006).
- Were any unbundling initiatives to be taken, pilot programs that allowed a rigorous evaluation of net impacts should be considered, given that the changes could cost or save billions of dollars and have far-reaching consequences for people with disabilities. To rigorously test a program, a pilot should have the full features of any finally proposed general program, including compulsion for those in scope if that is a feature of the ultimately envisaged program. There are also grounds to incorporate an appropriate experimental design. This could include random assignation to the pilot, since this enables better measurement of net impacts and, as shown by Dockery and Webster (2001), does not involve the usually asserted ethical predicaments. The absence of an experimental design, as in the 2004 DEWR Disability Support Pension Pilot, leads to selection biases that are hard to measure and that muddy the identification of true impacts.

It may be that policy reforms could take a different direction to the unbundling recommendations made by the OECD. One approach is to assess the outcome of recent changes before making large further steps. The impacts of the recently implemented 2005-06 Australian Government 'Welfare to work' amendments to

DSP admission criteria should provide some guidance on the capacity for activation. It will be possible to assess the labour market outcomes of those who would have passed the work test under the old arrangements, but failed under the new arrangements. If activation policies work well for this group, then it suggests that there may be scope for further cost-effective reforms. It would also be similarly useful to evaluate how the 2003 amendments that changed the relevant labour market for the work test for people aged over 55 years have affected their labour market outcomes.

A further incremental step might be to consider ways of increasing the number of DSP recipients who work while on benefit. It is apparent from survey evidence that many DSP beneficiaries are not fully aware of the relatively work-favourable rules that already exist and the thresholds for ineligibility to the full pension (DEWR 2004, pp. 10–11), or find them too complex, as discussed previously. As well, while many DSP beneficiaries want to work, only 2.3 per cent were registered with a Job Network provider at the end of 2004 (*ibid*, p. 6). This significantly reduces the scope for effective job search assistance. Provision of more information, appropriately delivered and interpreted for individuals, about access to the Job Network and the work rules, might play a role in greater participation by people with disabilities.

Whatever suite of approaches is adopted, reforms to DSP and associated disability policies have the potential to help promote social inclusion and general welfare for people with disabilities, reduce disability duration, increase employment (and lower inactivity rates) and cut budget expenditure.

However, it is likely that the degree of success will depend on other general policies that aim to prevent disability in the first place, provide quicker treatment and rehabilitation services, and that avoid marginalisation of those with disabilities in labour markets and elsewhere. The attributes of those with disabilities, such as their educational attainment rates and literacy, are also likely to play a pivotal role in outcomes. These attributes are principally determined at a young age. If as Jordan (1984, p. 149) has observed the DSP is a ‘kind of museum of two generations of morbidity’ it also is a museum of people with educational and occupational traits cast, in many cases, in the 1960s, when attitudes and opportunities were quite different. This suggests that appropriate educational policy will be a complementary part of a policy package to reduce DSP dependence, but will take a generation to fully surface.

While micro policies dealing with disability are important, the role played by good macroeconomic management should not be underplayed. Creating an environment for better labour market prospects generally appear to be a riskless way of cutting inflows and then (gradually) the long run stock of people on DSP below that which

would otherwise occur. DSP rates may still rise even in such a good macro environment, but that reflects the temporary, masking, impacts of the winding back of the age of eligibility of women to the Age Pension and population ageing.

A caveat...

Finally, the nature of the gains from reform should be placed in perspective. The social and to a lesser extent, budgetary gains from disability welfare reform are likely to be important. Recipients of DSP often say they would like a job, and the desire for improved self-confidence, self esteem and social contact are nearly as important reasons for this as the additional money (Nucleus 2004, p. 89). The impacts on overall Australian economic performance, however, are likely to be more modest, at least in the medium run. As noted in PC (2005) and in Appendix E, this is because marginally attached workers of any kind tend to be less productive, to have higher unemployment risks, and when employed, to work fewer hours than people already in the labour market. This should not preclude serious efforts to improve the lives of people with disabilities, but as the Commission has previously noted (2005) their welfare, rather than economic growth *per se*, should probably be the prime target of policy.

9 Education and participation

This chapter brings together existing Australian and (some of the voluminous) overseas evidence on the impacts of greater educational attainment on labour market outcomes. Training has also been identified as a potentially important mechanism for re-integrating displaced older males into the labour market. However, the worldwide literature on the effectiveness of training for the economically inactive has been relatively pessimistic about its ability to achieve this aspiration. Accordingly, this and the next chapter concentrate particularly on the role of earlier interventions through education for males vulnerable to future labour market withdrawal.

While this chapter focuses on the effects of more years of education, the next chapter (chapter 10) explores the extent to which the *nature* of educational experiences affects the labour market outcomes of males.

9.1 In snapshot data, the less educated are more vulnerable to labour market withdrawal

As shown in chapter 3, less educated males are much more likely to experience lifetime economic inactivity. For example, males with tertiary training have a quarter of the risk of being outside the labour force when aged 25–64 years old than those whose educational attainment is year 10 or below.

It is also notable from chapter 3 and table 9.1 that the apparent impacts of educational attainment on labour force participation are proportionately higher in older ages. For example, at age 60 years, participation rates of males with degrees or higher is about 50 per cent higher than those with year 9 or below. At 25 years the proportionate gap is about half of this. This is important on several grounds.

- Population ageing will push a greater proportion of Australians into older age groups.
- Past educational policies will mean that the educational attainment rates of prime aged males in the future will rise as the currently better educated younger

cohorts of men begin to age. For example, the Productivity Commission (2005, p. 73) projected that by 2045 around 25 per cent of males aged 65 years would have a degree, up from about 10 per cent in 2006. And by then, only a small share of older males will have attended school for only 10 years or less.

- It is possible to increase the level of year 12 school completions through compulsory extension of school leaving ages and to use other policy instruments to increase TAFE and university attainment rates.

Table 9.1 Labour participation rates by educational attainment rate by age
Males 2001^a

<i>Age</i>	<i>Year 9 & below</i>	<i>Years 10 & 11</i>	<i>Year 12</i>	<i>Post-school</i>	<i>Degree or higher</i>
<i>years</i>	<i>%</i>	<i>%</i>	<i>%</i>	<i>%</i>	<i>%</i>
25	71.2	87.3	87.1	93.1	90.4
30	74.5	88.8	90.5	94.5	94.9
40	74.5	88.0	89.4	93.6	96.0
50	73.3	85.3	85.5	90.6	94.6
60	48.7	59.2	61.4	64.0	72.1
70	9.8	13.7	15.5	12.1	28.7

^a Provided by the Australian Government Treasury Department.

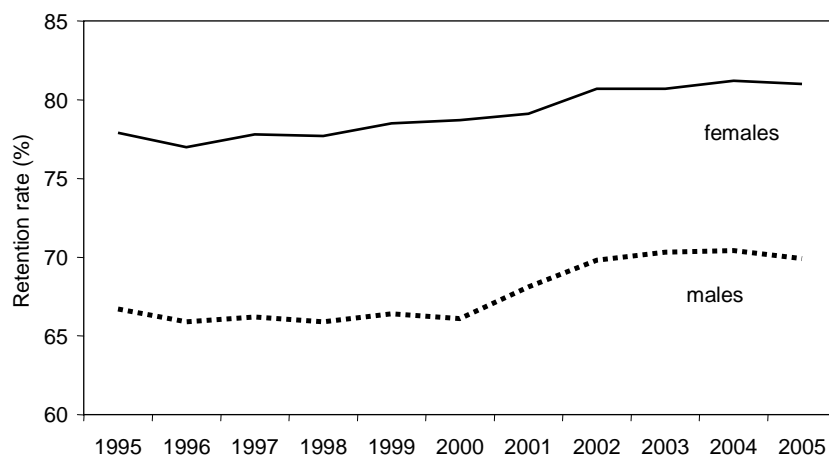
Source: ABS, *Population Census 2001*.

A key question in assessing the future effects of greater educational attainment — whether induced by policies or the continuation of past trends — is the marginal effects on labour participation of further education. A common assumption (for example, Gruen and Garbutt 2003 and Dawkins et al. 2004) is that the lifetime impacts on labour participation rates associated with increases in educational attainment for the young can be inferred from the current cross-sectional relationship between age-specific rates of labour force participation and education attainment levels. As explained later, this assumption is unlikely to be accurate, leaving open the question of the stability and causal extent of the link between further educational attainment and labour force involvement.

The resolution of these issues is central to the effectiveness of current policies that aim to increase male school retention rates above their counterfactual levels. While males of today's generation have, on average, achieved educational attainment rates far exceeding their parents, there is still widespread policy concern that male retention rates from the commencement of secondary school to completion of year 12 are insufficient. They remain low compared with females (figure 9.1) and, while male retention rates have risen since 2000, they stabilised by 2004 and even fell slightly in 2005.

Figure 9.1 **Males have lower retention rates than females**

Year 7/8 to Year 12 retention rates, 1995–2005^a



^a Retention rates refer to the number of full-time students in Year 12 divided by the number of full-time students in the first year of secondary school (Year 7 in NSW, the ACT, Vic. and Tas.; Year 8 in Qld, SA, the NT and WA) when the Year 12 cohort began secondary school. Care should be taken in interpreting apparent retention rates as they do not account for students repeating a year or migrating into or out of the relevant school student population. Ryan and Watson (2004) explain some of the other interpretational pitfalls in retention statistics.

Data source: ABS 2006, *Australian Social Trends*, Data Cube, table 1, Education and training: National Summary – 2006, Cat. No. 4102.0.

9.2 Policy is oriented to increasing education duration

On the basis of the concerns about levels of educational attainment among males and the strength of their apparent links to labour force engagement, policy commentators have often suggested that increased attainment and duration for lower-achieving students may alleviate adverse labour force outcomes for these students, while improving Australia's future growth prospects:

If policies can be adopted to further enhance the education system and raise year 12 completion rates, overall participation could be given a boost. (Dawkins et al. 2004)

Other policy commentators have highlighted the fact that Australia has a relatively low proportion of people who have completed upper secondary education compared with other developed economies (Curtain 1999). Others have suggested that low relative retention rates pose significant economic costs. The Dusseldorp Skills Forum (1999) claimed that the cost of early school leaving for a single year cohort was around \$2.6 billion.

The concerns over the incidence and impacts of early school leaving have prompted many governments to increase the years of compulsory schooling education.

Policies to change schooling duration

Queensland

In Queensland from 2006, students will have to stay at school until they finish Year 10 or turn 16, whichever comes first. Moreover, after completing Year 10 (or turning 16), all students will face a ‘learning or earning’ requirement. They will have to participate in some form of education and training for another two years unless they turn 17 years old; they gain a Senior Certificate or Certificate III vocational qualification; or they gain full-time employment.¹ A child could leave the school system after year 10 at 15 years and receive no further education if he/she got a full-time job.

The extension of schooling is associated with the development of a new senior certificate, which will include recognition of a more diverse range of learning environments, including community learning and allowances for periods of part-time or full-time work. Each student will have a senior education plan in year 10 about what they will learn in years 11 and 12.

Tasmania

In Tasmania, the minimum school year leaving age has long been 16 years. Under the *Youth Participation in Education and Training (Guaranteeing Futures) Act 2005*, young people who have completed Year 10 or turned 16 will be required from 2008 to participate in further education or training for a further two years or until they have gained a certificate III vocational qualification or have turned 17 years old. They may gain an exemption from these requirements if they get a job of 25 hours or more per week.

Western Australia

The Western Australian Government passed legislation in 2005 to raise the minimum school leaving age to 16 in 2006 and 17 years in 2008, but as with the new Queensland and Tasmanian legislation, also allows training, home-school and employment as alternative options. The legislation also provides for more individual arrangements through ‘Pathways’ and ‘Individual pathway plans’ that permit some students to choose a combination of part-time participation options.

¹ Which requires a minimum of 25 hours of work per week.

South Australia

The South Australian Government increased the minimum school leaving age to 16 years in 2003. (There are options for an approved course of instruction other than schooling from 15 to 16, such as certain private training and TAFE.) It was argued that students who complete 12 years of education improve their long term prospects of employment and that students who leave school too early to take up employment are often unemployed in their 20s and then find it difficult to find work (Department of Education and Children's Services 2003).

In part, the change in leaving age was a response to an earlier policy change. The *Early Years of School* policy, implemented in 1985 altered the age of commencement in schooling in South Australia, with the consequence that the average age of children in any given grade in the South Australian school system increased. In the early 1990s, the share of 12 year old (as opposed to 13 year old) children was about 55 per cent (considerably higher than States like Queensland and Western Australia²). By 2002 the corresponding share was about 10 per cent (considerably lower than States like Queensland and Western Australia). As the effects of the *Early Years of School* policy worked through successive cohorts, it meant that there was a substantial increase over the later 1990s of the proportion of children turning 15 years old in year 9 rather than in year 10 (Ryan and Watson 2003). Consequently, the effects of the previous minimum leaving age of 15 years meant that fewer children stayed on to year 10. The new minimum age policy of 16 years deals with this.

However, it is less clear what its effects will be on year 12 completions since 16 years is not the usual age of completion of year 12. Even so, the extension will ensure completion of year 10 for most students and potentially start some erstwhile early-leavers in post year 10 schooling, with the effect that some will complete year 12.

There is little evidence of the effectiveness of the measures adopted because so little time has elapsed, though the South Australian Government has reported a gain in retention rates since the 2003 reforms.

Victoria

The Victorian Government passed an Act in May 2006 to increase the minimum age of leaving school to 16 years. The model appears to be less flexible than in other jurisdictions, allowing few exceptions to schooling from 15 to 16 years. It will be an

² Which, like South Australia, had no preparatory or transition year prior to grade 1.

offence for an employer to employ a person under 16 years old if that prevents them from attending school.

Other States and Territories

At present, the leaving age in New South Wales, the Australian Capital Territory and the Northern Territory remains at 15 years. However, in November 2006, the New South Wales Government proposed to increase the school leaving age in that state to 16 years.

A global perspective

Many other countries have long had in place school-leaving ages in excess of 15 years and others are proposing increases. For example, in late 2006, the UK Government proposed an increase to 18 years. However, some European countries are considering *reducing* (or have already reduced) the school leaving age to increase average working lives given impending pension crises (Skirbekk 2005).

The international experiences of schooling also suggests that there are policy choices other than raising the minimum schooling age as a way of increasing human capital in young people. At least three other options can be explored.

First, school could be commenced at earlier ages.

Second, more hours of teaching may be provided in any given year or/and teaching material compressed over a given duration. In some countries, teaching hours per year are very short, so that cumulative hours from 7–14 are relatively low. For example, children in Australia receive about 40 to 45 per cent more hours of instruction per year than children in Finland and Norway (OECD 2005b). In fact, Australia has one of the highest intensities of instruction among OECD countries, which should be borne in mind when international comparisons of apparent ‘years’ of schooling are made.

Third, quite apart from the issue of schooling duration or intensity and its effects on labour market outcomes, what schools *do* with students in all grades is likely to be critical to the labour market and other benefits they receive (the subject of the next chapter). The quality of school experiences may be improved by altering syllabuses, improving teacher professionalism or average teacher quality; changing school processes and pedagogies, and providing greater differentiation between students. This may be a substitute (and at least a complement) to longer schooling duration as a strategy to achieve better outcomes. Some of the most significant of these factors relevant to non-academically oriented male students are discussed in chapter 10.

There may well be disadvantages in overly intense teaching or excessively early commencement of education, but presumably there are some tradeoffs between these aspects of the educational environment and the alternative choice of keeping children at school into later ages. International comparisons that reveal Australia as having low retention rates after year 10 would at least need to re-assess the implications of that fact against the greater intensity of instruction while they are there.

Policy evaluation issues

In Australia, the policy debate has primarily centred around two of the above strategies for raising human capital in less academically-inclined students — increasing school leaving ages (or otherwise stipulating school to work transition paths) and changing what happens in schools (for example, VET in school).

The prime focus of this chapter is the labour market outcomes that can be anticipated from increasing school leaving ages. While the link between educational attainment and participation is strong, from a policy perspective it is important to control for other factors, like the family background or inherent ability of students, that also shape educational choices. These may confound the link, resulting in spurious measures of the effects of education. In particular, average and marginal effects should be distinguished. The cross-sectional data shown in table 9.1 reflects the varying labour market experiences of groups with different educational attainment levels, averaged across the group members. But policies that provide education to more males may not reflect the experiences of the average. Moreover, even when considering sub-groups, such as students from disadvantaged backgrounds, it can be important to distinguish the impacts of greater attainment for the averages of these sub-groups from the marginal effects for these sub-groups.

This chapter uses many different approaches — aggregate time series, longitudinal analysis and international comparisons — to shed light on the possible effects of educational duration on employability and labour participation rates.

This study does not evaluate the outcomes of the various models of mandated extension to education adopted by Australian States because the evidence is not yet readily available. When evaluation of the different approaches is possible, it would be useful to consider:

- for those compelled to stay on, the attitudes to their schooling or other education option during the mandated extension;
- the relative costs of different extension proposals;

-
- the appropriate form of compliance regimes brought to bear against students who do not comply with new attendance requirements. This will largely be determined by the effectiveness and costs and for all parties (students, schools, parents and employers) associated with different compliance approaches;
 - the achievements in the system of those compelled to stay on;
 - any adverse (or positive) consequences for teachers and other students associated with the presence of young people compelled to stay on;
 - the extent to which young people who commence year 11 because they are not yet 16 years old, then go onto complete year 12, or merely leave during year 11 instead of year 10; and
 - the labour market outcomes of those compelled to stay on compared with outcomes that occurred for past cohorts that were early leavers or non-completers.

The Longitudinal Surveys of Australian Youth (LSAY) will, ultimately, be a useful resource for these assessments, but it may be necessary to develop longitudinal studies for specific States to ensure sufficient sample sizes suited to the different circumstances of each jurisdiction.

9.3 Males with poorer education have become more vulnerable, but women have not

The policy imperative to raise educational attainment rates has not only been motivated by the fact that participation rates are higher for the more educated, but by a view that people with low educational attainment have become increasingly vulnerable. In fact, this is *not* evident in the aggregate data for both sexes (figure 9.2). These show that the participation premium associated with post-school qualifications seems to have hardly changed between 1982 and 2005. And reflecting changes in service sector needs, participation rates of those who have not even completed school have roughly doubled.

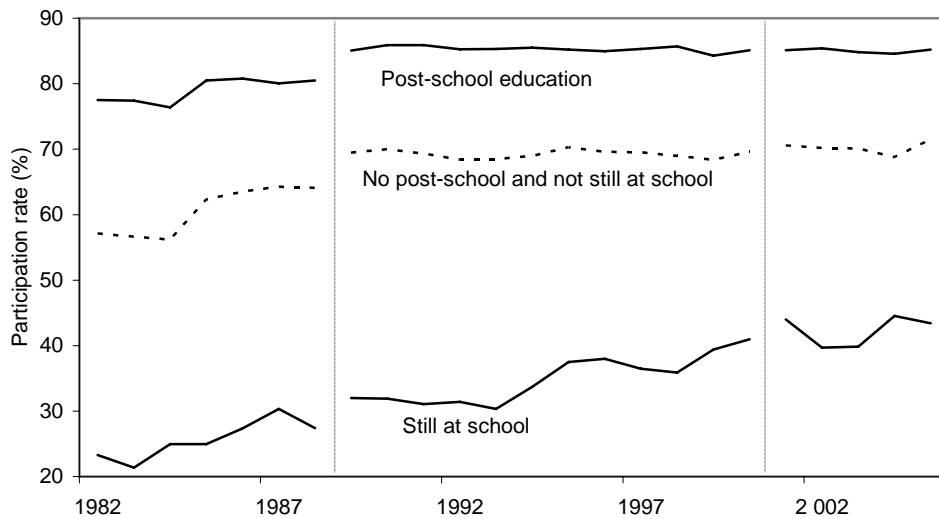
Using census data that are not subject to the breaks affecting figure 9.2, the participation premium for degrees appears to have actually fallen for those aged over 45 years (table 9.2 for persons). For example, the participation rate of people aged 55–64 years with degrees fell from 77.6 per cent in 1981 to 69.9 per cent in 2001 (whereas participation rates for people aged 55–64 years with other attainment levels hardly changed over this period).

This aggregate story, however, is the result of the starkly different patterns affecting males compared with females, underlining a theme in this study that gender (and

age) differences are critical to understanding labour market developments over the past few decades.

Figure 9.2 Are educated people doing better?

Participation rates for both sexes by highest educational attainment rates, 1982 to 2005^a



^a In 1989 the definition of ages changed to 64 yrs old down from 69 creating a structural break in the series, while in 2001, changes in educational classifications resulted in some people with basic vocational qualifications in 2000 being classified as having no post-school qualifications.

Data source: ABS, *Labour Force status and educational attainment*, Cat. No. 6235.0 from 1982 to 1994; and ABS, *Transition from education to work*, Cat. No. 6227.0 for data to 2005.

For all but those males aged over 54 years, having a degree has protected against large falls in participation rates for males (table 9.2). In contrast, female participation rates have generally risen, particularly for women who do not hold degrees.

These seemingly contradictory findings for males compared with females are likely to reflect several factors. Female participation has been encouraged by general reductions in barriers to work for lower-skill females, such as later, and lower rates of, childbearing; changes in social attitudes; and greater childcare availability. These reduced barriers have had large impacts because many females did not participate in labour markets in the past, and so many capable women, regardless of their educational attainment levels, were available. It may also be that the rapid growth of part-time, lower skill jobs in the service sector has more suited females with low educational attainment than males, because females have better acquired other skills, such as social and communication skills needed to undertake these jobs.

Table 9.2 Poorly educated males have become more vulnerable, but not poorly educated females

Census data 1981, 2001^a

Age groups	Age (years)					
	15–24	25–44	45–54	55–64	65–74	75+
	%	%	%	%	%	%
Males 1981						
Degree or higher	87.2	96.1	96.7	83.7	35.8	18.4
Post-school	96.2	97.0	94.2	73.2	15.8	7.0
No post-school	70.7	93.2	88.9	66.3	13.1	6.2
Males 2001						
Degree or higher	87.6	94.9	94.6	76.4	31.9	12.9
Post-school	90.2	94.0	90.4	66.6	15.9	5.3
No post-school	58.3	79.5	75.6	53.5	12.6	4.2
Change						
Degree or higher	0.4	-1.2	-2.1	-7.3	-3.9	-5.4
Post-school	-6.1	-3.0	-3.9	-6.6	0.1	-1.8
No post-school	-12.4	-13.7	-13.3	-12.8	-0.5	-2.0
Females 1981						
Degree or higher	85.5	77.0	80.0	59.1	18.8	6.6
Post-school	85.5	65.8	67.4	39.5	10.2	4.1
No post-school	58.6	50.8	46.4	21.4	4.9	2.3
Females 2001						
Degree or higher	89.1	84.6	87.7	62.2	17.5	6.9
Post-school	84.7	77.1	80.8	51.6	11.3	4.2
No post-school	56.1	60.5	62.6	31.6	5.4	1.5
Change						
Degree or higher	3.6	7.6	7.7	3.1	-1.3	0.3
Post-school	-0.8	11.3	13.3	12.1	1.1	0.1
No post-school	-2.5	9.7	16.2	10.2	0.6	-0.8
Persons 1981						
Degree or higher	86.4	89.4	92.0	77.6	31.1	14.4
Post-school	91.5	85.6	86.4	63.8	14.0	5.8
No post-school	64.7	69.4	65.4	40.9	8.3	3.6
Persons 2001						
Degree or higher	88.5	89.3	91.2	69.9	25.6	10.3
Post-school	87.6	87.5	87.0	62.3	14.7	5.0
No post-school	57.2	68.9	68.1	40.9	8.4	2.4
Change						
Degree or higher	2.1	-0.1	-0.8	-7.6	-5.5	-4.1
Post-school	-4.0	1.9	0.7	-1.5	0.7	-0.9
No post-school	-7.4	-0.5	2.7	0.1	0.1	-1.2

^a Post-school is any post-school qualification excluding a degree or higher. No post-school refers to year 12 or lower.

Data source: ABS, Population Census 2001 (provided by Treasury).

These factors have cumulatively led to ‘catch-up’ to their male unskilled counterparts by lower skill females (box 9.1).

Box 9.1 ‘Catch-up’ may explain why education seems to play opposite roles for men and women

In 1981, the participation gap between males and females for any given age (a) and educational attainment rate (e) is $GAP_{a,e,1981} = PR_{males_{a,e,1981}} - PR_{females_{a,e,1981}}$. Over time, this gap is closing so that typically $GAP_{a,e,2001} = \phi_{a,e}GAP_{a,e,1981}$ where $\phi_{a,e} < 1$. For example, the gender gap for people aged 25–44 years with a degree or higher was 19.1 percentage points in 1981 and 10.4 percentage points in 2001. In that case, $\phi = 10.4/19.1 = 0.54$. It is apparent from the table below that for each age group from 25–74, the value of ϕ does not vary significantly between educational attainment levels. So, for example, for people aged 25–44, ϕ is 0.54, 0.54 and 0.45 for each of the educational attainment levels.

Where ϕ does not vary much between educational levels, bigger absolute percentage point changes in participation rates will inevitably occur in those instances where the original gap was biggest. This is apparent from the fact that the above equation can be re-cast as: $\Delta Gap_{a,e} = Gap_{a,e,2001} - Gap_{a,e,1981} = (\phi_{a,e} - 1)Gap_{a,e,1981}$. If ϕ is fixed between educational classes for a given age, then ΔGap will be larger for a bigger value of $Gap_{a,e,1981}$. For example, the gap between males and females aged 25–44 decreases from 1981 to 2001 by 14.3 points for those with a non-degree post-school qualification and only 8.7 points for those with a degree or more. Hence catch-up plays a big role in the changing gender patterns of participation rates by educational category.

Table Educational levels hardly affect the extent to which participation gaps have narrowed between males and females, by age

Age group	15-24	25-44	45-54	55-64	65-74	75+
	points	points	points	points	points	points
Male-female gap 1981						
Degree or higher	1.7	19.1	16.7	24.7	17	11.8
Post-school	10.8	31.1	26.8	33.7	5.6	3
No post-school	12.1	42.3	42.5	44.8	8.2	3.9
Male-female gap 2001						
Degree or higher	-1.6	10.4	6.9	14.3	14.4	6.1
Post-school	5.5	16.8	9.6	15.1	4.6	1.1
No post-school	2.2	19	13	21.9	7.2	2.7
The narrowing gap^a						
Degree or higher	-0.92	0.54	0.41	0.58	0.85	0.51
Post-school	0.51	0.54	0.36	0.45	0.82	0.37
No post-school	0.18	0.45	0.31	0.49	0.88	0.69

^a The gap is measured for each census year as the difference between the male and female participation rates for each of the educational attainment levels. The narrowing of the gap is measured as gap 2001/ gap 1981 for each age group.

The gap between male and female participation rates in 1981 was highest for people with low educational attainment. Even were the participation gap to fall by the same *proportion* for people with high versus low educational attainment rates, this will inevitably translate to a bigger absolute increase in participation rates from 1981 to 2001 for the females with the lowest educational attainment rates. The difference in participation rates between males and females in 1981 was greatest for those with no post-school qualifications.

It should be emphasised that these observations relate to *changes* in participation rates by educational attainment rates, not to the *levels* apparent in any given year. Having a degree confers a significant advantage in participation at any given time for both genders.

In summary, males with lower skills have found it harder to participate effectively in labour markets, but females aged over 24 years have increased their engagement for all levels of educational attainment.

9.4 Simple longitudinal studies show some gains for males who complete school

Based on the Longitudinal Surveys of Australian Youth (LSAY), only around 5 per cent of males who did not complete year 12 schooling ('non-completers') were not in the labour force seven years after the time at which they would have finished Year 12, had they remained at school (table 9.3).³ This was actually a little lower than the share of males who completed year 12 schooling, but who did not go on to complete VET or university study ('completers').⁴ If full-time study is excluded, then a greater share of non-completers than completers is outside the labour force, but the margin remains small. The differential risk of unemployment by year seven was, however, much larger at 6 percentage points for non-completers.

A similar picture emerges if the post-school pathways of individuals are considered (table 9.4). Other than for study, very few males experience prolonged periods out of the labour force in the seven post-school years, regardless of their educational attainment rates. By contrast, for females, the differential effects are large, underlining again the importance of looking at each gender separately.

³ The LSAY was established to follow young Australians from year nine through to year 12 and to track their labour market outcomes after school. The main data set used in this study was from the 1986, 1987 and 1988 LSAY year 9 cohorts. The labour market experiences of this sample are measured over the first seven post-school years with the first year taken from the time at which they finished Year 12 or would have finished Year 12 had they remained at school.

⁴ However, those who started but dropped out were included.

Table 9.3 Labour force activities by educational attainment

Males, Australia, 1986, 1987 and 1988 year 9 cohorts^a

By year	Labour force					Not in the labour force		
	FT work	Apprentice or Trainee	PT work	PT work & study	Unempl-oyed	FT study	Other NILF	Total NILF
	%	%	%	%	%	%	%	%
Early school leaver								
1	48.3	29.1	3.1	0.0	10.6	5.8	3.1	8.9
2	44.8	29.9	3.5	0.7	14.9	4.2	2.1	6.3
3	50.9	21.8	4.2	0.0	15.2	4.5	3.5	8.0
4	66.3	6.0	3.9	0.0	16.5	3.2	4.2	7.4
5	74.9	3.5	3.8	0.7	12.2	1.1	3.8	4.9
6	73.9	1.8	7.8	0.7	9.5	2.5	3.9	6.4
7	75.2	1.4	5.4	0.4	12.6	1.1	4.0	5.1
Year 12 leaver								
1	35.3	13.6	8.9	1.3	11.5	27.5	1.8	29.3
2	41.9	13.1	6.6	0.5	9.3	25.5	3.0	28.5
3	43.0	17.3	5.8	1.8	11.8	19.3	1.3	20.6
4	53.2	15.6	4.5	2.3	10.1	12.9	1.5	14.4
5	68.5	7.3	3.8	1.3	8.3	8.6	2.3	10.9
6	74.3	4.5	6.8	1.3	5.5	5.0	2.5	7.5
7	79.3	1.8	6.4	0.8	6.7	2.6	2.6	5.2

^a It should be noted that the seven years followed for early school leavers are those from the time at which they would have finished Year 12 had they remained at school. Consequently, by year seven, early school leavers may have had nine years in the labour market, whereas the maximum for year 12 leavers is seven years. Some of the greater success of early school leavers in full-time job markets in years 1 to 4 may reflect their longer actual duration in the labour market.

Source: Lamb and McKenzie 2001.

However, males with low attainment rates face more prolonged periods of unemployment. For example, about one in five males with no schooling beyond year 9 experience unemployment for 4 or more years of their seven post-school years, about three times the rate of those who have completed year 12. The early experiences of these men after leaving school appear pivotal in shaping these results. Early unemployment appears to be a ‘millstone’ around their necks, with impacts that endure into subsequent years (Lamb and McKenzie, pp. 48ff).

These findings about the early labour market transitions of young people with different schooling experiences are replicated in other studies:

- Using a different cohort from the LSAY, McMillan and Marks (2003) also found male non-completers had higher unemployment, but in several other respects fared better than completers. They were more likely to be in full-time employment, received higher hourly earnings, displayed greater job stability, and reported being in the type of job they liked.

- Based on ABS data, six months after school leaving, school non-completers who were not in any form of post-school education had about a five times greater risk of being economically inactive and more than a three times greater risk of being unemployed than school completers who were not in any post-school education (Applied Economics 2002 and figure 9.3). However, it should be noted that, first, the period of follow-up is very short in this instance, and that early school leavers are younger on average, and that accordingly, age and education effects may be conflated.

Table 9.4 **Does the quality of post-school pathways improve with educational attainment?**

Australia, 1986, 1987 and 1988 year 9 cohorts^a

<i>Pathways (over seven year period)^a</i>	<i>Highest school attainment</i>			
	Year 9	Year 10	Year 11	Year 12
	%	%	%	%
<i>Males</i>				
Full time work throughout	21	19	14	18
Training & then FT work	14	31	34	16
FT study & then FT work	0	2	4	17
Interruption of <2 years before FT work	25	20	26	24
Interruption of 3-4 years before FT work	14	11	6	14
Part-time work of 4 years or more	4	4	3	3
Unemployed for 4 years or more	21	12	12	7
Non-study NLF for four years or more	0	2	2	1
<i>Females</i>				
Non-study NLF for four years or more	58	25	14	7

^a It should be noted that the seven years followed for early school leavers are those from the time at which they would have finished Year 12 had they remained at school.

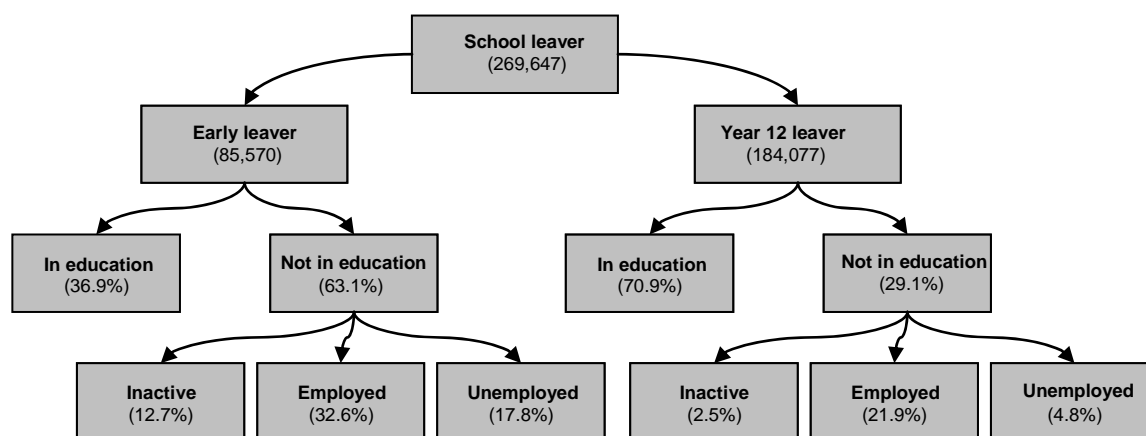
Source: Lamb and McKenzie 2001.

While the LSAY provides useful insights into the labour market prospects of people with different educational experiences, reflecting the vintage of the survey, it can only report on the labour market outcomes for young people. As noted earlier in this study, the reasons for economic inactivity by young people are different from those of other groups. They, particularly males, are more likely to be pursuing leisure or holidays while outside the labour force. This reaches a peak when males are aged around 21 years. At this age about 40 per cent of those ‘not in the labour force or in full-time education’ (being ‘outsiders’) are travelling or on holiday (Hillman 2005, p. 14).⁵

⁵ Only 12 per cent of females who were not in the labour force or in full-time education were in this category; most were undertaking home duties or childcare.

Figure 9.3 **What happened to people who left school in 2000?**

A six month follow-up (May 2001)^a



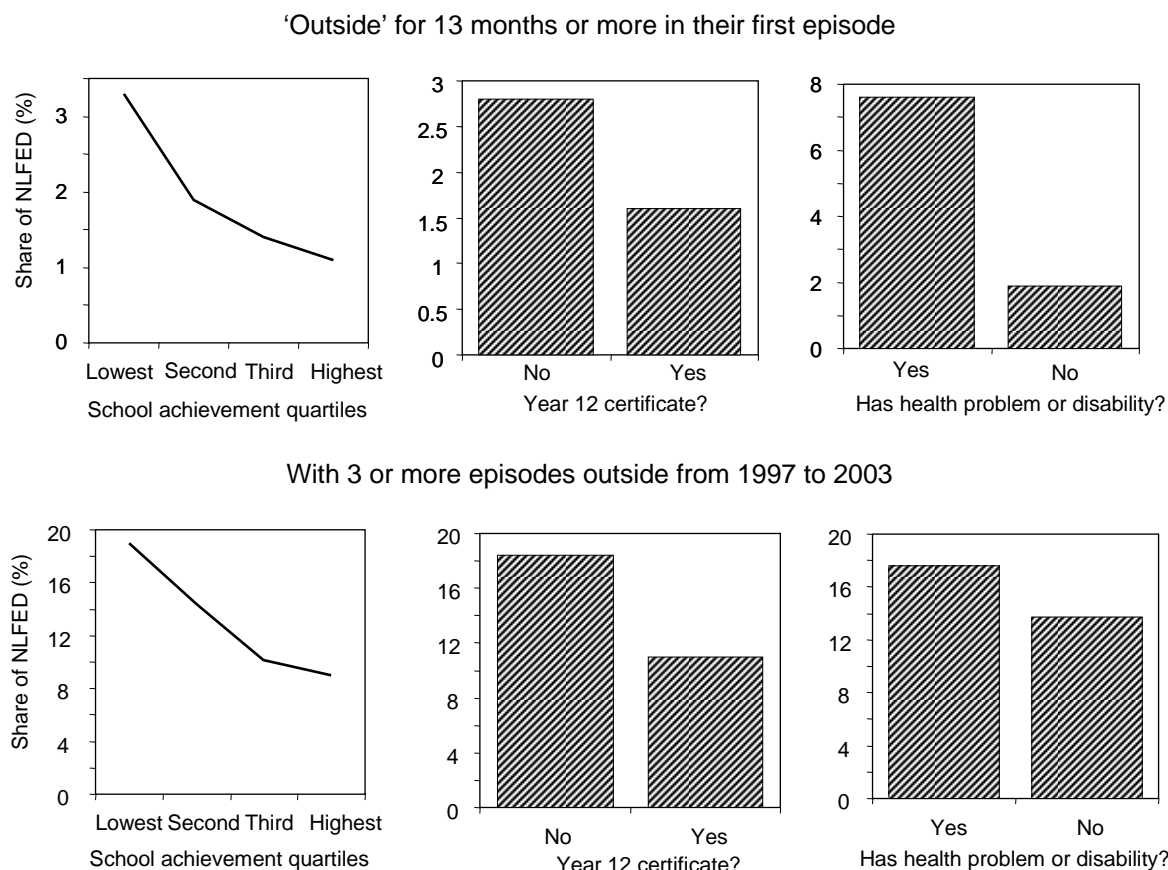
^a Results are for both males and females. Other data published by Applied Economics suggest that over this time horizon, the differences were small.

Data source: ABS, *Education to Work*, Cat no. 6227.0, unpublished data reported in table 25 in Applied Economics (2002).

Given this, it is important to find which outsiders are likely to experience later labour market problems, rather than just identify single episodes of inactivity, which are frequent for many young people. The length and number of episodes of being ‘out’ are a major discriminating factor. People with labour market disadvantages — such as lower educational achievement, lack of a year 12 certificate or with an illness/disability — are more likely to experience greater periods of absence and more periods outside (figure 9.4). Moreover, outsiders were ‘scarred’ by their experiences — with re-entry rates to the labour market or full-time education falling over time for those with a history of being outsiders (Hillman 2005, pp. 20ff). This accentuates the importance of positive post-school pathways, regardless of actual school attainment rates.

Figure 9.4 Experiences of young people who are out of the labour force and not in full-time education ('NLFED')

Following the year 9 class of 1995 to 2003, Australia^a



^a These data are based on following the year 9 LSAY cohort from 1995 until 2003 (when the participants were usually around 22 years).

Data source: Hillman (2005).

Collectively, this longitudinal evidence points to more complex pathways and more equivocal outcomes for non-year 12 completers than some have supposed. But while adverse effects on labour market inactivity rates for young male non-completers are not apparent⁶, it is nevertheless clear that this group is subject to quite poor unemployment outcomes.

Of particular interest to the focus of this study, it seems likely that higher unemployment rates of the lowly educated, when young, may presage higher labour force inactivity rates at mature and older ages. This is because it is well established that a major route to inactivity by the mature aged is via long-run unemployment.

⁶ At least until they are aged in their mid-twenties, when the window provided by the LSAY closes.

9.5 But the link between education and participation can be confounded by other influences

The underlying foundations of many evaluations of further schooling, the projections of Gruen and Garbutt discussed above, and educational policies that follow from these approaches is that higher attainment rates *cause* higher levels of participation in the labour force. The theoretical basis for a link is strong. Further education increases directly-work-related skills, such as numeracy and literacy, and may also improve socialisation skills, such as communication skills, versatility, persistence, and the ability for team work. These skills increase the capacity for labour force engagement. Moreover, as discussed later, many studies have found high rates of return from further education (primarily through higher wage rates). These imply incentives for greater labour participation rates for those with more education, since forgone earnings from non-participation would be greater for this group.

There are, however, some confounding influences that make it harder to determine the role of education in stimulating labour force participation, especially for the more vulnerable groups that are often the targets of policy. A variety of individual traits, associated with educational attainment, also affect labour market participation. These include factors like ability, motivation, social skills, the educational and occupational characteristics of parents, proximity to educational and labour market opportunities, and health status. These either affect educational choices or form the basis for preferential educational admission, which cause ‘selection’ bias when assessing the genuine effects of educational attainment. Overall, the problem arises because people are not randomly assigned education. People who undertake more education are different from people who do not.

- People with higher abilities, social skills and motivation are more likely to *choose* more education (‘self-selection’) both because it identifies their greater capabilities and because they are more able to gain additional skills than less capable people. This is (currently) relevant for the decision by children in most States and Territories whether to continue in school in years 11 and 12, and in all jurisdictions for their decision to participate in tertiary study. Such higher capabilities are also likely to affect lifetime labour force participation rates.
- People in depressed areas may have weaker labour market prospects and lower quality educational opportunities, which simultaneously reduces attainment rates and labour force participation rates.
- People with dysfunctional family backgrounds are less likely to stay at school and simultaneously are less likely to develop the social skills favourable to workforce participation.

-
- People are *selected* to undertake further education on the basis of prior test scores (as in admission to university), which in turn are related to inherent ability and labour participation prospects.

In all these instances, just looking at the apparently higher labour force participation rates of people with greater educational attainment will ignore the unmeasured effects of the individual traits that also determine labour force activity. This may be problematic for policymakers because they are typically interested in the benefits of extending education to groups different from the current group who obtain higher educational attainment rates. An analogy that highlights (and exaggerates) the bias would be suggesting that admission of an average person into Olympics training programs would yield performances similar to that of the elite athletes *selected* to participate. Ultimately, the impacts of further or different types of education is an empirical rather than a theoretical question, but persuasive results will generally have to control for individual traits that also affect labour force activity and take account of the heterogeneity of aptitudes and preferences of young people themselves. As noted by Dockery (2005b) in examining the question of the benefits of further schooling for the non-academically inclined in Australia:

It seems dangerous to paint all young people with the same brush and surely there are some young people who are simply not well suited to the schooling environment, either in terms of their individual preferences or of the benefits they can expect to gain. To express this in more concrete terms, the concern is with the implicit assumption that because those who complete school achieve superior outcomes, therefore those who did not complete school would also have achieved better outcomes if they had stayed on at school.

The best way to determine whether increased compulsory years of schooling (or other education changes) increase labour force participation would be to undertake a randomised experiment. For example, in the case of testing the impacts of additional compulsory years of schooling for the non-academically inclined, participants who would otherwise have stopped schooling would be randomly assigned to mandated further education, or to a control group that received no further mandated education. The differences between outcomes would reflect the impact of the intervention. Similar experiments could be undertaken for testing the impacts of higher education on those that normally would stop studying earlier.

While experiments of this kind are common in the United States in the educational and training area, such trials have not been applied in Australia, primarily on their cost and ethical implications.⁷ Because of the absence of true experimental data, the

⁷ As noted by Leigh (2003), these arguments have weak validity. To impose a new mandatory educational regime on a *whole* sub-population, without thorough pre-testing, raises cost and ethical issues that must exceed those implied by a proper experiment.

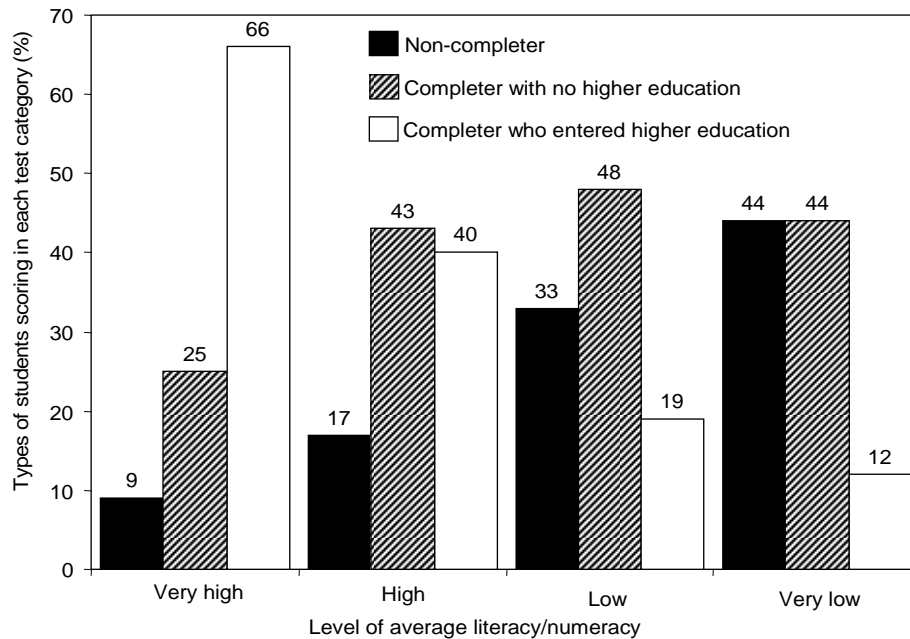
attempts to gauge the unbiased effects of education usually use natural experiments or econometric methods to counter the biases. These assessment difficulties need to be highlighted when assessing evidence about the impacts of more education.

A starting point for analysis of possible selection biases is to determine the differences between students who complete school (or further education) with those who do not.

Poorer literacy and numeracy

The lowest achievers in terms of literacy and numeracy tests at age 14 years were much less likely to continue study.⁸ For example, 44 per cent of males with the lowest year 9 literacy/numeracy performances were non-completers of year 12 schooling, while only 9 per cent of male students with the highest literacy/numeracy test results were non-completers (figure 9.5).

Figure 9.5 **Males who score low on literacy or numeracy leave school early^a**



A The figure shows, for each literacy/numeracy achievement level, the shares of males falling into various educational attainment categories. For example, 66 per cent of males achieving a very high literacy/numeracy score have completed year 12 and gone on to higher education.

Data source: McMillan and Marks (2003).

⁸ Students who self-assessed their English and maths ability as significantly lower than others were also much less likely to complete schooling, even after taking account of other factors that affected completion rates (Dockery 2005b, p. 19).

The lowest literacy/numeracy achievers had average unemployment rates around 10 percentage points greater than the highest achievers (Lamb and McKenzie 2001). McMillan and Marks (2003, p. 62) found that low literacy/numeracy at year 9 was the single most influential factor shaping post-school unemployment risk. The labour force inactivity of this group was also greater.

Extensions of education to males with *initial* poor literacy and numeracy are unlikely to achieve labour market outcomes that are the same as those whose initial literacy and numeracy are good. In this instance, resolution of poor literacy and numeracy *prior* to year 10 is likely to be the central determinant of their future labour market prospects and an important pre-condition for realising significant gains from further education.

Non-completers have different attitudes to school and work

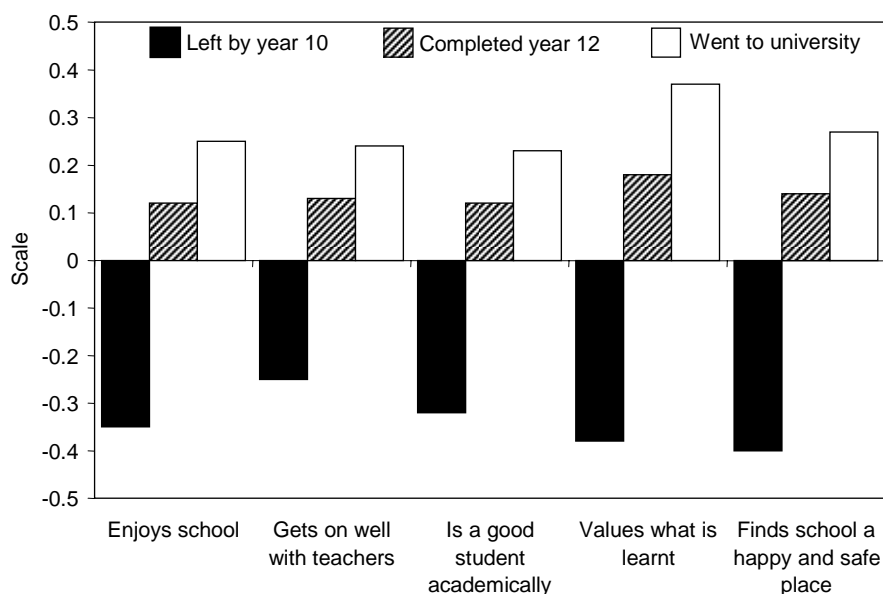
Non-completers have attitudes to work opportunities and schooling that are different from completers.

The bulk of qualitative research suggests that school non-completion is prompted by poor school experiences (Brown et al. 2001; Holden & Dwyer 1992; MacDonald 1999; Smyth et al. 2000, Dwyer et al. 1998). But as observed by McMillan and Marks (2003), evidence drawn from larger nationally representative studies (such as those of Lamb, Dwyer and Wyn 2000; Marks and Fleming 1999; ABS 2001) seems to contradict this story, suggesting that school non-completion is more prompted by positive job opportunities than school-related factors.

The resolution of this paradox is that school leavers have multiple reasons for leaving school. Using survey results that allowed differentiation of main reasons from important ones, McMillan and Marks (2003, p. 36) found that male non-completers gave the desire to get a job/apprenticeship as the *main* reason for non-completion, with relatively few citing adverse aspects of their school experience as the main motivation. Indeed, those males who left earliest (before commencement of year 11) were more likely to cite this positive aspect as the main reason for leaving, than those males who persisted in their studies and dropped out before completion of year 12.

Nevertheless, about one in two male non-completers still cited adverse school experiences (that they did not like school or poor performance) as *important* reasons for leaving school early. And regardless of whether adverse attitudes to school are the motivation for leaving, people who leave school by year 10 have far more equivocal feelings about school than completers (figure 9.6).

Figure 9.6 **Early leavers have negative attitudes to school**
1995^a



^a The factor scores calculated are standardised to have a mean of zero for the total sample population and a standard deviation of one.

Data source: Dockery et al. (2005).

This poses several questions for social policies that aim to extend the compulsory years of schooling. Why have the school experiences up to year 10 of such young people been bad and what might be done to address these problems? What are the consequences of non-consensual extensions of schooling for young people when they have a strong positive preference for a job? And would more compulsory education result in experiences of schooling for this group different from those realised in the past? It would be surprising if the gains of schooling for reluctant students were not less than those of the willing.

Non-completers come from lower socio-economic backgrounds

30 per cent of male students whose parents were in semi/unskilled manual occupations were non-completers compared with 18 per cent of students whose parents were in professional/managerial occupations (McMillan and Marks 2003, p. 16). A similar margin exists between male students whose parents have low versus high educational levels. Males from an Indigenous background faced disproportionately higher non-completion rates (45 per cent) compared with males from a non-Indigenous background (26 per cent).

There is a similar contrast between the socio-economic background of those who participate in higher education and those who do not. Australians from lower socio-

economic backgrounds have around half the likelihood of participating in higher education as those with higher socio-economic backgrounds (James 2002).

Non-completers are more likely to have conduct disorders

Students with conduct disorders — such as truancy, stealing and bullying — are less likely to complete school and, independently, less likely to be employed in later life (Le et al. 2005). The effects of such disorders on employment were about the same as exerted by educational attainment.

The implication is that, as in the case of literacy and numeracy, dealing with these disorders early is likely to be an important step in increasing future educational and labour market engagement for these children, rather than schooling compulsion alone.

9.6 Taking account of the differences generally reduces the labour market benefits of schooling for non-completers

Several broad approaches have been used to control for the differences in traits between school completers and non-completers to isolate the possible influence of further schooling.

Controlling for confounding factors using quantitative methods

A common approach is to measure the relationship between additional schooling and labour market outcomes after controlling for the various individual traits that may confound the relationship. As shown above, the Longitudinal Study of Australian Youth (LSAY) provides uniquely rich information about such individual traits. The LSAY has been, accordingly, a major tool for trying to isolate the effects of schooling in Australia, without infecting the results with the impacts of hidden individual traits, such as motivation and ability.⁹

⁹ Many econometric options for controlling confounding factors have been applied to the LSAY dataset, including simple, ordinary least squares, regressions that include personal traits as well as schooling duration; instrumental variables estimation; and propensity matching. These methods can find contrasting results, suggesting that, where possible several methods should be applied to confirm robustness.

When the confounding impacts of these traits are taken into account, the evidence generally suggest that non-completers are not as disadvantaged from failure to continue study as the raw comparisons of labour market experiences of completers and non-completers might suggest.¹⁰

For instance, using simple regression methods to control for various socio-demographic characteristics and initial literacy and numeracy competencies, it was found that males who left before even commencing year 11 ('early-leavers') had future unemployment rates that were not significantly different from those of year 12 completers who did not continue with tertiary education (McMillan and Marks 2003).¹¹ This overturned the conclusion reached when no controls were used, highlighting how the impacts of schooling can be conflated with individual traits in conventional longitudinal comparisons, like those above.

Using this approach, it was also found that those males who started year 11, but did not complete year 12 ('late leavers'¹²), had higher unemployment rates than both early leavers and completers, suggesting that more schooling *per se* need not bestow labour market advantages (or else is offset by other factors).

Similar weakening of the effects of more education is replicated in other simple regression studies. For example, using the same cohort from the LSAY, but followed for a longer period,¹³ Dockery (2005b) found that:

- wage rates and weekly full-time earnings (p. 22) were positively affected by more years of education, where this encompasses both schooling *and* tertiary experiences. The effects weakened by about 30 per cent when controls for differences in ability between students were introduced. The effects were only weakly statistically significant; and

¹⁰ An exception is estimates of the wage effects of additional schooling using instrumental variables (IV) estimation. In IV estimation the goal is to discover variables that are correlated with years of schooling that are not correlated with underlying ability. One variable sometimes used is distance to school, which may affect whether a person attends for additional years, but is not obviously connected with personal factors and ability that affect schooling investment decisions. Curiously, IV methods often find higher rates of return from additional schooling than standard approaches, but this may reflect measurement errors and other problems (Dockery 2005b, p. 11).

¹¹ One possible reason that additional schooling produced no apparent labour market benefits for completers may be that they were not followed for long enough after leaving school. Year 12 completers were followed for only three years after leaving school.

¹² Early and late leavers make up the group of non-completers.

¹³ The data were drawn from the 1995 LSAY year 9 cohort, who were followed for seven years until 2002.

-
- if time spent at school, rather than in any form of education, was considered, more years of schooling had a weak, but statistically insignificant, positive effect on the hourly wage, a slight negative impact on the full-time earnings (p. 23) and, curiously, a significant negative effect on employment rates (p. 35).¹⁴ After controlling for differences in ability between students, the impacts of further schooling became negative for hourly wages, and significantly more negative for earning and employment rates.

These results represent the *average* effects of education on labour market outcomes for a population of students that is dominated by those students who wish to and do continue to year 12 or beyond. The pertinent issue for current policy (and this study) is the impact of further schooling on those students who are not academically oriented. Other methods provide insights into the impacts of further schooling for these groups.

One approach is to assess the impact of further schooling for student sub-groups with different *ex ante* propensities to complete schooling. These methods suggest that the best labour market results for students generally occur when they match their underlying potential for completion with the corresponding choice of further schooling. Poor matching yields the worst outcomes. Accordingly, Dockery (2005b, pp. 24–27; p. 37) finds that those students with traits that imply a low *ex ante* probability of completing school who nevertheless go onto complete the maximum 12 years have lower real weekly full-time earnings and hourly earnings and higher employment rates than similar students who left earlier. For the group of children with the lowest 50 per cent predicted likelihood of completing school, two additional years of schooling past year 10 actually increases unemployment by around 3 percentage points. For this group of children, each additional year of schooling reduces real hourly earnings by about 1.1 per cent and real weekly full-time earnings by 2.4 per cent. The best (on average) that students with such traits can do is to leave school earlier. However, if a student has traits that suggest a high likelihood of completing year 12, then the best returns are generally achieved by doing just that.¹⁵ These results suggest that it is important to pose the question of the benefits of additional schooling taking into account the nature and heterogeneity of the children concerned.

Another approach that addresses student heterogeneity is based on statistically creating virtual twins among completers and non-completers and regarding the differences in outcomes as a test of further schooling. The results suggest again that

¹⁴ It may be that the negative impact of schooling on employment rates reflects the fact that any job search period for those who left school earlier will have been greater than those who left later. This effect could be expected to disappear over time.

¹⁵ While this is true for wage and earning rates, perplexingly, this is not true for unemployment.

schooling may not have big or even positive labour market benefits for non-academically oriented children (box 9.2), but some aspects of the results are not plausible.

Box 9.2 Looking at results for ‘virtual’ twins can also identify the effects of schooling

Another approach used frequently in assessments of various medical therapies — *propensity score matching* — tries to isolate virtual twins among treated and untreated groups. This potentially provides insights about the benefits of further schooling for children with different characteristics. Using this approach:

- Each student who completed year 12 (the ‘treated’ group) is matched with the most similar student who did not continue (the ‘untreated’). The mean differences in outcomes for each group measures the ‘average effect of the treatment on the treated’. This provides an estimate of the return to schooling for people who currently complete school. This is useful for evaluating whether resources used on post-year 10 schooling is worthwhile.
- Each non-completer (the untreated) is matched to the most similar completer (the treated). The mean difference in outcomes is the ‘average effect of the treatment on the untreated’. This provides an estimate of the return to schooling for people who currently do *not* complete school. This is the most policy relevant for the concerns of this study because it tests whether the extension of further schooling would produce worthwhile benefits for students who currently do not complete.

If the sample size is big enough, the effects on sub-populations, such as only those people who do not go on to post-school education (the non-academically inclined) can be gauged.

Dockery (2005b, p. 32) finds that for the non-academically inclined the average expected treatment effects (in terms of wage and earning rates) on the treated and untreated are *both* significantly negative. For employment, the treatment effects are effectively zero in both cases (p. 38). As in the more simple approaches, this casts doubt on the beneficial impacts of further schooling for the non-academically inclined.

However, implausibly, further schooling appears to be least effective for those students who currently complete year 12, rather than for students who currently do not complete school. This may reflect difficulties in the matching process to which propensity matching is quite sensitive. Dockery also does not undertake the analysis for separate genders, and this too may have affected the precision of the results.

Source: Draws on Dockery (2005b).

Natural experiments

Natural experiments are events that accidentally create situations that mimic properly controlled scientific experiments. In the context of research into the

impacts of education, they involve changes in institutions or rules that mean that groups of people, who are otherwise the same, have different educational experiences. This allows the effects of these different dimensions of education to be distinguished.

Additional schooling in the early years provides benefits, but are offset by older ages on leaving

One such experiment arose because of the adoption in the South Australian primary school system of the *Early Years of School* policy in the mid-1980s (Ryan 2003). Prior to the policy, one group of children born in particular months of the year combined kindergarten (termed ‘Reception’ in that State) and year 1 primary school in a single year, while another group experienced at least some period of kindergarten in the year prior to commencing year 1. After the policy, children in the first group were required to have a full year of kindergarten followed by year 1 of primary school. As a consequence, this group extended their primary schooling by one year (but also left school one year later than otherwise). The policy had no impact on other students, who constituted a natural group for comparison.

Ryan (2003) was able to exploit this policy change to assess the differential impact on labour market outcomes of three, usually inseparable, aspects of educational experience: an additional year of school; the age of leaving school and the grade completed. The labour market experiences of those school leavers who did not go onto further study were examined. The additional year of primary schooling increased the probability of full time employment by around 11 percentage points in the first year out of school (table 9.5). This was largely offset by the impacts of greater age. This may have reflected reduced labour demand by employers who had to pay a wage premium because of students’ older age. The net effects of schooling and age were effectively zero in the second year out of school. Unfortunately, the study does not provide separate estimates for males.

Table 9.5 Does an additional year of schooling matter?

Both genders, South Australia

<i>Relevant aspect of education</i>	<i>Impact on probability of working full time</i>	
	1 st year out from school	2 nd year out from school
	Percentage points effect	Percentage points effect
Additional year of primary school (years)	10.9	4.8
Age left school (years)	-7.8	-6.0
Grade completed (years)	5.7	2.5

Source: Ryan 2003.

This study has several lessons for policymakers:

- It reveals that the process of schooling in the early years can have lasting impacts on labour market outcomes. This is likely to reflect the additional learning in the reception year and the greater maturity of the affected children in the subsequent formal years of schooling. The results do not imply that adding years at the *end* of usual schooling would have similar benefits.
- As noted by Ryan (2003, p. 29), the policy change illustrates that while education reform can raise the capabilities of children, it can unwittingly reduce their labour market prospects in other, more subtle, ways. In this instance, the students who completed an additional year of schooling were also one year older when they confronted labour markets, reducing the value of the additional year of schooling on labour market engagement.

Credentials also matter

A dilemma in many studies of the impact of schooling is to distinguish between the impacts on labour market prospects of a credential gained at the end of an educational process and the benefits of learning associated with longer education duration. Normally, these effects are hard to separate, but some natural experiments have been used to test their different impacts.

As in the South Australian case described above, in the UK, mandatory attendance at school is dependent on the month of birth, not just age. This has the effect that some students must stay on at school for longer than their equally aged peers. The impact on schooling duration is very small, but in the UK system it compels the younger students to reach a stage in which they can take exams and leave school with a credential. This credential effect is powerful, reducing unemployment significantly in later life (Del Bono and Galindo-Rueda 2004).

The policy implication is that duration of education matters less for some students than getting some form of certification of their abilities. This, among other factors, could explain why those students who attend part of year 11 or 12 in Australia, but who fail to acquire a year 12 credential (late leavers) do not seem to benefit from their additional schooling compared with those who left at year 10 (McMillan and Marks 2003). Flexible systems that recognise this may reduce the vulnerability of students who do not fully complete 12 years of schooling. The recent (and still increasing) capacity in the Australian system for students to acquire varying levels of vocational qualifications as they progress through years 11 and 12 may improve labour market outcomes for late leavers.

9.7 What does the large literature on returns to education imply?

The extent to which labour earnings responds to further years of education remains one of the most intensively studied areas in labour economics. It has two properties that have given it this prominence — firstly, its importance to educational policy; and secondly, a goldmine of profound measurement and estimation problems.

The studies usually estimate the percentage increase in annual (labour) earnings associated with one more year of schooling (the rate of return of education). The virtue of these studies is that they usually relate to people of all ages, not just those who have left school recently. They, accordingly, pick up some of the risks from low education that takes many years to materialise.

International studies find that the returns to one more year of schooling are around 10 per cent plus or minus 4 points. The variation is attributable to problems in measuring income and to the various methods used to correct for the impacts of unobserved ability. Australian studies reveal similar uncertainty about the rate of return to further education. For example, Leigh and Ryan (2005, p. 17) use the Australian HILDA database and find three statistically significant estimates of the rate of return using (log) annual pre-tax income of 13.0 per cent (unadjusted for ability), 7.9 per cent (adjusted method 1) and 11.8 per cent (adjusted method 2). These are somewhat higher than other recent Australian estimates based on earnings of twins with different schooling experiences (of between 5.4 and 7.5 per cent).¹⁶

On the other hand, these estimates represent an amalgam of wage effects, average hour effects, and the annual risks of unemployment and inactivity. While few studies decompose the rate of return into its constituent parts, Leigh and Ryan provide complementary information that can be used to provide conjectural estimates of the effects of schooling on labour market activity. The results suggest that every year of additional schooling increases average weeks worked by around 7 per cent (box 9.3). Some of this effect will be due to lowered unemployment risk and some to higher participation rates, but the overall effect is reasonably large, albeit less than the raw figures suggested by the estimated rates of return.

¹⁶ It should not be assumed that twin studies are the ‘gold standard’ for isolating the effects of extending education. Each member of a twin is still subject to, largely unobservable, micro-environmental differences (for example, potentially different friends and family dynamics) that are revealed by their different life choices, including education. If twin 1 *prefers* to undertake x years of education with an outcome y , while twin 2 *prefers not* to undertake x years of education, then the act of compelling twin 2 to undertake more education (which is what is being ostensibly tested in these models) may not realise gains of y , simply because their first preferences have not been met.

Box 9.3 What can be inferred about education effects on activity rates from the returns to schooling literature?

The returns to schooling literature does not primarily concern itself with labour participation rates, which are just one of the factors — along with hourly wages, average hours worked, and unemployment rates — that can affect annual income. However, some idea of the effects of education on labour market engagement — albeit one that does not distinguish unemployment from non-participation — can be gauged by comparing the average returns to schooling based on different measures of earnings. There is an identity linking these, when they all relate to labour income:

Pre-tax annual labour earnings (A) \equiv Average weekly earnings (AWE) \times

Average number of weeks working (K)

Since AWE = Hourly wage (W) * Average weekly hours (H)

A \equiv W \times H \times K so that

$\log A \equiv \log AWE + \log K \equiv \log W + \log H + \log K$

For example, Leigh and Ryan's study provides some indication of the responsiveness of these various income measures to years of schooling (though only estimates not adjusted for ability are disclosed for all three).

First, using panel A of that study, $\log(AWE) = \alpha_1 + 0.099 \log(\text{Yrs_School})$ and $\log(W) = \alpha_2 + 0.08 \log(\text{Yrs_School})$ so that it can be inferred that $\log(H) = \alpha_1 - \alpha_2 + 0.019 \log(\text{Yrs_School})$, which suggests that a 10 per cent increase of schooling increases average weekly hours (H) by 1.9 per cent.

Unfortunately, the definition of pre-tax annual income (A*) used by Leigh and Ryan includes welfare income and some capital income, as well as labour income, so that the identity above cannot be exploited directly to measure the effect of schooling on average annual weeks or hours worked. However, simulations based on assumptions about progressivity in benefit payments and the relationship between capital and labour income suggest that a reasonable approximation to $\log A$ may be around $-\alpha_4 + 1.3 \log(A^*)$. In that case, given that Leigh and Ryan find that $\log(A^*) = \alpha_3 + 0.13 \log(\text{Yrs_School})$, then $\log(H.K)$ or annual average hours = $1.3\alpha_3 - \alpha_4 - \alpha_2 + 0.089 \log(\text{Yrs_School})$ and $\log(K) = 1.3\alpha_3 - \alpha_4 - \alpha_1 + 0.07 \log(\text{Yrs_School})$. The latter, though conjectural, suggests that every year of additional schooling increases annual average weeks worked by around 7 per cent. Some of this effect will be due to lowered unemployment risk and some to higher participation rates, but the overall effect is reasonably large as a share of the overall rate of return to schooling.

Source: Calculations based on Leigh and Ryan (2005).

It is important to note that these (relatively) high rates of return from more education do not imply that the benefits stay fixed in *absolute* terms as more marginal students acquire education. This is the inference of those analyses that assume that the benefits apparent for labour participation rates for existing cross-sections of educated people will be replicated for new groups acquiring education. In fact:

-
- the rates of return are average ones and do not take account of different effects for different groups of new students; and
 - even were marginal returns to be fixed, absolute returns will not be fixed. For example, if group 1 (a high ability group) had a participation rate of 85 per cent under the counterfactual of early school leaving and 95 per cent with further education, then their rate of return in participation terms is $(95/85-1) * 100 = 11.8$ per cent. Say a low ‘ability’ group had the same rate of return, but their counterfactual participation rate associated with early school leaving was only 50 per cent. In that instance, the expected participation rate with further education is 55.9 per cent. The difference in the benefits measured in terms of participation rates is 10 points for group 1 and fewer than 6 points for group 2, though the rates of return from further education are the same for both groups.

9.8 Education and labour market outcomes for special groups

Some groups of men are more vulnerable than others. Since these are often the focus of policy, it is especially important to identify the particular effects of further years of schooling on these groups. In an Australian context, the group with the worst labour market outcomes are Indigenous males.

Unfortunately, as with the literature on the effects of education generally, the assessed impacts depend on the methods and data used.

Snapshot data generally show large effects of education for Indigenous males

Using snapshot data for 1994, Hunter and Gray (1999) examined the marginal effects upon the chances of being out of the labour force for a sample of Indigenous males, after controlling for a range of other variables that might confound the analysis.¹⁷ The results suggest generally positive benefits for participation rates from increases in educational attainment (table 9.6). Much bigger and robust effects are apparent for non-CDEP employment rates.

¹⁷ The data were based on the 1994 National Aboriginal and Torres Strait Islander Survey. A rich group of control variables were used, including age, region of residence, years of schooling, family status (married, children etc.) cultural variables (Indigenous language etc.), household social environment (other family members unemployed, other family members completed year 10 etc.) and socio-economic indicators (voted, health problem or arrested).

Table 9.6 Marginal effect on the probability of being in various labour force states for Indigenous males who are not currently studying^a

<i>Educational status</i>	<i>In the labour force</i>			<i>Not in the labour force</i>	
	<i>Non-CDEP scheme employed</i>	<i>CDEP scheme employed</i>	<i>Unemployed</i>	<i>Discouraged workers</i>	<i>Other NILF</i>
	%	%	%	%	%
Less than 6 years schooling	-6.4	-1.6	-2.4	0.1	10.3
Year 10 to 11	5.5	0.9	-3.7	-1.2	-1.5
Year 12	10.1	-2.1	-5.1	-2.0	-0.9
Degree/Diploma	14.8	-1.5	-4.4	-1.2	-7.6
Vocational qualification	20.3	-4.6	-7.8	-1.5	-6.4
Other qualification	17.0	-3.9	-5.9	-0.8	-6.5
Base probability	48.0	9.9	29.1	3.0	10.0

^a The base probabilities in the last row indicate the probability that a reference person is in the various labour force states. The educational status of the reference person is someone who left school between years 6 and 9 and has no post-school qualification. The marginal effects in the other rows indicate the change in this probability from a change in the respective explanatory variables. For example, if a reference male left school after year 12, then they are 10.1 percentage points more likely to be employed in a non-CDEP scheme employment than the reference person. Since the reference person is still in one of the labour force states, the marginal effects must sum to zero in each row.

Source: Hunter and Gray (1999).

- Indigenous males who completed less than six years of schooling had labour force inactivity rates 10 percentage points higher than those who completed years 6–9 schooling and slightly *lower* unemployment rates (by around 2 percentage points). The latter probably reflects low job search incentives.
- Indigenous males who completed years 10 or 11 schooling, without further qualifications, had slightly lower labour force inactivity rates than those who had completed years 6–9 (by about one percentage point) and significantly lower unemployment rates (by around 4 percentage points).
- Indigenous males who completed year 12 schooling, without further qualifications, had slightly *higher* (non-discouraged) labour force inactivity rates than those who had completed years 10 or 11 (but experienced better non-CDEP employment rates).
- On the other hand, those who had completed a degree/diploma had significantly higher labour force participation rates. Even so, those with vocational and other qualifications, which are associated with quite different school-to-work pathways and involve potentially varying years of investment in education, had about the same participation rates as those with degrees/diplomas.

Hunter and Gray's results suggest that the overall impacts of education for Indigenous men are high, but sometimes discontinuous. In terms of labour market

participation, the two biggest effects are in going beyond year 9 and engaging in post-year 12 education. There appeared to be little difference in the labour market benefits of vocational versus degree/diploma qualifications.

Other analysis show weaker effects of educational attainment on labour market participation

However, notwithstanding the use of a rich set of control variables in their snapshot analysis, it is possible that Hunter and Gray's (1999) results above are affected by selection biases. In a companion paper, Gray and Hunter (1999) investigated this by using longitudinal data based on census data between 1986 and 1996. They posed the question whether, after controlling for other factors, higher education attainment rates for Indigenous males had increased aggregate participation rates. In contrast to expectations based on their cross-sectional analysis, the answer was surprisingly no, even for degrees.

Echoing these results, Halchuk (2006)¹⁸ finds that education has no statistically significant impact on employability for Indigenous men in major urban locations (unlike Indigenous females, where positive effects are apparent). But she does find education effects for remote, inner regional and outer regional locations.

Yet in other, later work, based also on the Census, Hunter (2002) suggests that — as for Australian males generally — those Indigenous males with the lowest educational qualifications are being increasingly penalised in labour markets (figure 9.7). But he found apparently reasonable returns to post-secondary qualifications.

In summary, the impacts of higher education attainment on participation rates for Indigenous males present yet another example of ambiguous results. From a policy perspective, this provides a frustrating source of uncertainty.¹⁹ Nevertheless, some common themes emerge, with most models suggesting that increases in educational attainment for Indigenous males can have significant positive effects, but that the size of the effect is non-uniform.

The discontinuous nature of the impacts of education on labour market participation by Indigenous males does not reduce the importance of education for Indigenous

¹⁸ Using the 2002 National Aboriginal and Torres Strait Islander Social Survey (NATSISS).

¹⁹ This uncertainty could, in part, be addressed if the statistical models finding insignificant education effects could use formal encompassing methods (Hendry 1995) to statistically explain why the alternative models find otherwise. This would be a useful elaboration of the better methods, such as those that attempt to control for selection biases.

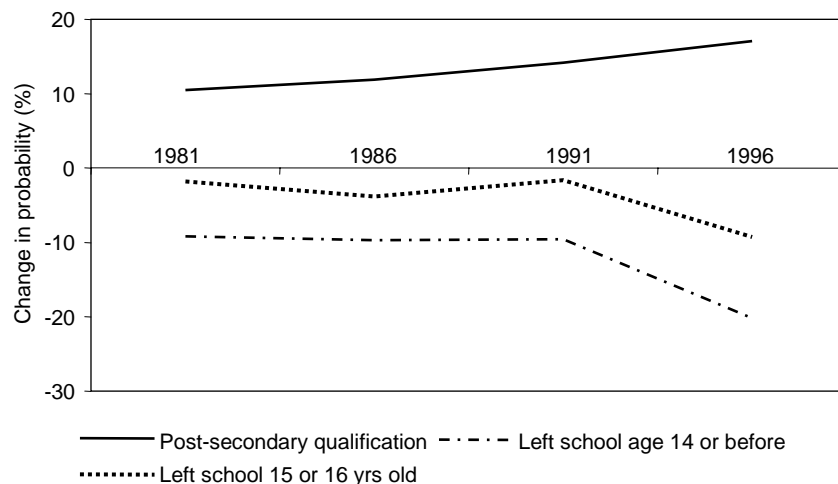
Australians. But it suggests that educational policy may not be enough by itself. As Gray and Hunter (1999, p. 13) observes:

... formal education needs to be combined with a series of other policies aimed at combating Indigenous labour market disadvantage ... A holistic approach to increasing Indigenous attachment to the labour market and employment outcomes is likely to be required. Such an approach might include addressing low self-esteem, high arrest rates, inadequate health and poor housing conditions among Indigenous people.

The results for Indigenous men provide a warning about what can be expected from education policy alone for significantly disadvantaged non-Indigenous men. It would be surprising indeed that holistic approaches were deemed necessary for one group, but not for the other.

Figure 9.7 **Impact of varying education levels on labour force participation rates**

Indigenous males, major urban centres, relative to left school at 17 years, various census years



Data source: Hunter (2002, p. 16).

9.9 What do international comparisons reveal?

Another approach for assessing the impact of education is whether countries with higher educational attainment rates show higher aggregate labour force participation rates. Such an approach is free from the biases associated with selection into education because the comparisons are at an aggregate level.

No evidence of a relationship in a cross-sections

Surprisingly, there is little evidence of a robust cross-sectional relationship between tertiary degree attainment rates and male participation rates for the three age groups 25–34, 35–44 and 45–54 across 14 OECD countries, including Australia, in 2003 (figure 9.8). Some countries with relatively low degree attainment rates have relatively high participation rates and vice versa.

But panel data reveal some important effects

However, there may be other country-specific factors, apart from educational attainment that hide the effect of education in such cross-sectional country data. Panel data — which uses cross-sectional and time series data — can control for these fixed country effects and may be better able to discover any impacts of education. Given the difficulties in obtaining comparable data over time, the analysis that follows uses only two panels, one for 1988 and one for 2003.²⁰ One straightforward method of gauging education impacts is to consider the relationship between *changes* in participation and attainment rates. This reveals a positive link between changes in degree attainment rates and changes in labour participation rates between these two years (figure 9.9 for 35–44 and table 9.7 for all ages), although it is only statistically significant at conventional levels for men aged 35–44 years.

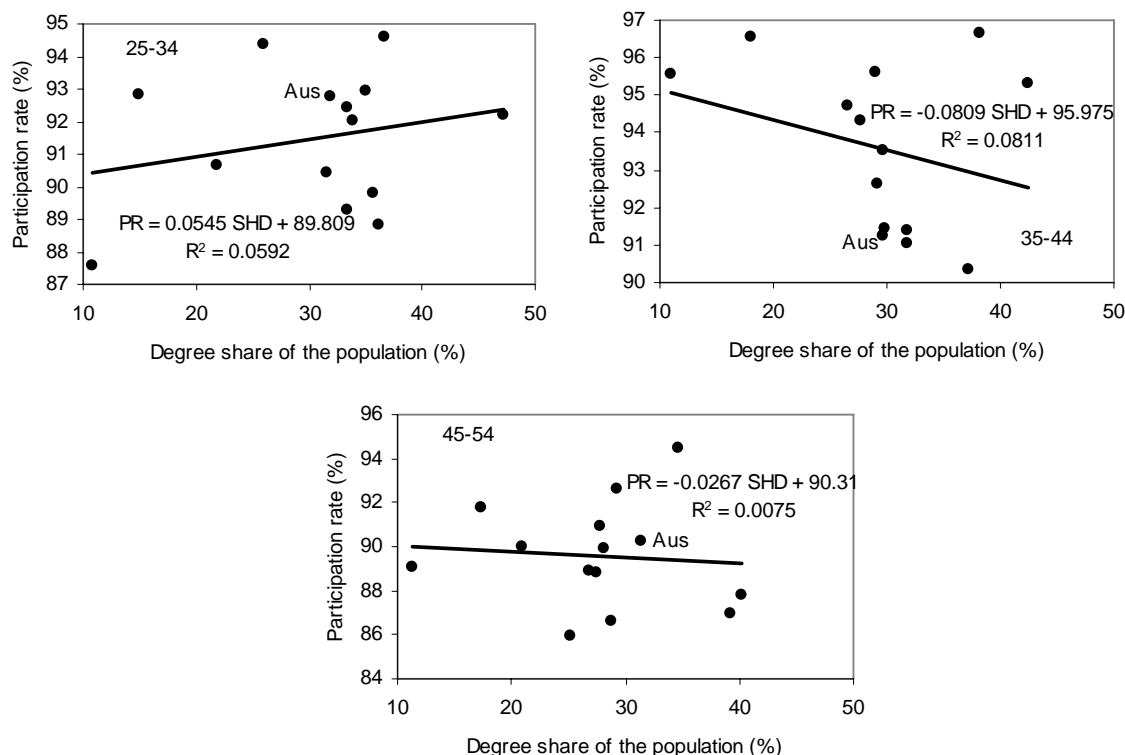
The magnitude of the education effect from this approach is small, but policy relevant. For example, the model suggests that a 10 percentage point increase in the degree attainment rate (a substantial change) would, all other things being equal, increase participation rates of males aged 45–54 years by 1.4 percentage points. Over the period from 1988 to 2003, this implies that the increase in degree attainment rates for Australian males aged 45–54 years (by about 22 points) would have increased participation rates by about 3 percentage points.²¹ However, this ignores other factors, unrelated to educational attainment, that depressed participation rates for this group of men by a significant margin. The model therefore predicts a net decline in participation rates from 1988 to 2003 for males of this age group, despite rising educational participation.²²

²⁰ The results for 55–64 year olds were not estimated due to the absence of a consistent measure of educational attainment for this group in 1988. Educational attainment rates were based on age groups 55+, 55–64, 50–60, 50–64 and 55–74, depending on the country.

²¹ The OECD data suggest a shift in the share of men with a degree of 21.6 points from 1988 to 2003 for Australia for this age group. Hence, the gain in the participation rates can be estimated as $0.14 * 21.6 = 3.02$ percentage points.

²² These results can be compared with those given by Gruen and Garbutt over the same time period. Using the 2003 participation rates for level A, B and E education levels (which were 83.2,

Figure 9.8 Links between degree attainment rates and labour participation rates, 2003^a



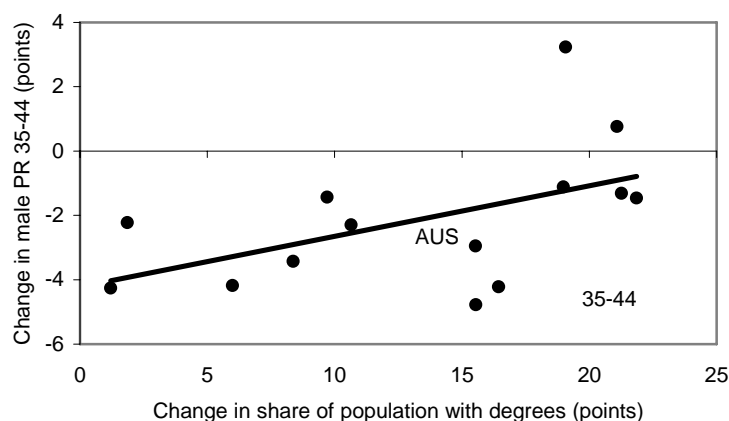
^a The graphs show the relationship between the labour participation rate for all male members of each age group (regardless of their educational qualifications) and the share of each age group who have a degree. This is a better way of assessing the labour supply impacts of a degree than looking at participation rates for degree holders compared with non-degree holders. This is because it resolves the selection bias problem and enables a judgment about whether the overall participation rate is stimulated by rising degree attainment rates (ie it takes account of the fact that non-degree holders' participation rates may fall as degree attainment rises). The degree rate for 2003 is levels 5 and 6 of the ISCED educational categories. The lines are the ordinary least squares trend lines. A fixed group of countries were used for the analysis (these being Australia, Austria, Belgium, Canada, Finland, Germany, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, US and UK). It should be noted that the OECD participation rate shown for Australia in 2003 deviates from that given by ABS Labour Force statistics for that year, particularly for men aged 45–54 years, probably reflecting the differences in scope of the underlying survey data.

Data source: The labour participation rates and the degree rates are from the OECD Labour Force Statistics database (<http://www1.oecd.org/scripts/cde/members/lfsdataauthenticate.asp>).

92.4 and 95.3 per cent respectively using the OECD data) and changes in the population shares with these attainment rates of -8.2, -13.4 and 21.6 points for A, B and E education levels respectively, implies an *increase* in participation rates by men aged 45–54 of about 1.4 percentage points, about 2 percentage points higher than the results predicted by the fixed effects model. The difference reflects the absence of controls for factors, unrelated to education, that can shift participation rates up or down.

Figure 9.9 Is there a link between *growth* in cross-country participation rates and more degrees?

Age 35–44, Selected OECD countries, 1988 to 2003^a



^a See note a in the previous figure.

Data source: The labour participation rates and the degree rates for 2003 are from the OECD Labour Force Statistics database (<http://www1.oecd.org/scripts/cde/members/lfsdataauthenticate.asp>), while the data for 1988 is from the OECD www.oecd.org/dataoecd/63/52/3888221.pdf.

Table 9.7 Fixed effects model: impacts of degrees on participation rates
14 OECD countries, 1988 to 2003^a

<i>Age groups</i>	<i>Shift in participation rates from other shocks between 1988 and 2003</i>	<i>Impact of a one percentage point increase in the degree attainment rate</i>	<i>R²</i>
	Percentage points	Percentage points	%
25–34 (t statistics)	-3.4 (2.3)	0.05 (0.8)	2.9
35–44 (t statistics)	-4.2 (6.4)	0.16 (2.7)	26.1
45–54 (t statistics)	-3.7 (3.3)	0.14 (1.5)	14.1

^a In the fixed effect model, $PR_{it} = \beta_1 + \beta_2 ED_{it} + \lambda_t + \alpha_i + \varepsilon_{it}$ for the *i*th country at time *t*. λ takes account of the fact that there are broad shifts not related to educational attainment rates (ED) that can push participation rates up or down over time. α is a fixed effect for each country that can make it hard to interpret the cross-sectional pattern. ε is a random error. Differencing eliminates both the fixed effect and β_1 and allows the measurement of the educational impact (β_2) and the extent to which other shocks are pushing participation rates up or down over time (λ). The value of β_2 is shown in column 3 and that of λ in column 2. The degree to which changes in degree educational attainment rates explain the variation in participation rates is shown by the R². Heteroscedasticity-adjusted t statistics are in parentheses.

Source: As in the previous figure.

Education impacts are diluted with more education

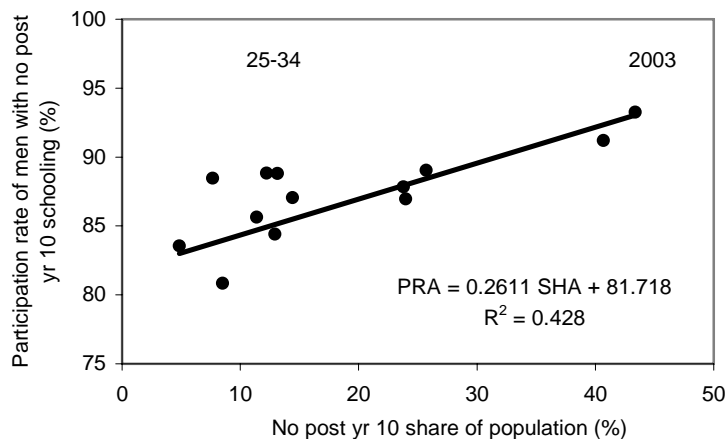
In the context of this study, one important question is whether education effects become diluted as more people in the population acquire a given higher level of educational qualification. Such dilution effects could, for example, reflect the changing mix of traits of people with different educational qualifications. For example:

- In the past many men did not go past year 10 schooling, regardless of their inherent ability and social skills. Consequently, this large pool of men included many highly able people and they faced an economy whose industry structures were receptive to their employment. However, over time, more able males continued in education past year 10. The residual group of men had worse average prospects because they had lower average ability and the structure of the economy had shifted away from activities that provided them with secure employment. This implies that the participation rates of males with no post-year-10 schooling will be a positive function of the share of the male population with no post-year-10 schooling (i.e. the pool size). Figure 9.10 shows, for example, a strong positive link for 25–34 year old males along these lines.
- The opposite pattern could be expected for men with degrees. In the past, few men acquired degrees, and generally, the people who did so were highly able — a small relative pool size at the top of the educational ladder distils talent. As more, generally less able, men acquired degrees, the average ability of the pool of men with degrees could be expected to fall, and with it, the prospects for labour participation. Accordingly, this implies that participation rates of males with degrees will be a negative function of the share of the male population with degrees.

The extent to which these patterns hold was tested using the 1988/2003 panel data (box 9.4 and table 9.8). The results suggested both of the above effects held for males aged 25–34, 35–44 and 45–54 years. Indeed, there was evidence that the effects of relative pool size were accentuated over time. Of particular interest to this study, the effects are bigger for males with no post year 10 schooling, suggesting that as fewer men fall into this group, the relative disadvantage posed by their limited qualifications grows significantly.²³

²³ It should be noted that dilution effects are tested by examining the relationship between participation rates of men *with a given educational qualification* and the share of men with this qualification in the relevant (age-specific) population. This is in contrast to the broader tests of the impact of education in which participation rates for *all* men of a given age group (regardless of their qualifications) are related to the shares of men with certain qualification levels. The question arises how might dilution affect these broader tests? The appropriate way of including dilution effects in these broader models is the addition of squares and cross-products of

Figure 9.10 A large pool of lowly educated men has many geniuses
2003, males aged 25–34 years, OECD countries



Data source: Figure 9.9.

Box 9.4 Modelling dilution effects

The presence of dilution effects was tested by considering the relationships:

$$PRA_{a,i,t} = \alpha + \phi DUM 2003 + \beta_1 EDA_{a,i,t} + \beta_2 DUM 2003 \times EDA_{a,i,t} + \sum_{i=1}^{13} \theta_i DUM_i$$

$$PRE_{a,i,t} = \alpha + \phi DUM 2003 + \beta_1 EDE_{a,i,t} + \beta_2 DUM 2003 \times EDE_{a,i,t} + \sum_{i=1}^{13} \theta_i DUM_i$$

PRA and PRE are participation rates by males of age a at time t in country I with educational qualifications that are up to year 10 (A) and degree and over (E) respectively. DUM2003 is a dummy variable equal to 1 in year 2003. DUM(i) are fixed effect dummies for each country. EDA and EDE are the share of the relevant age-specific population by males with A and E qualifications respectively. Data were for 1988 and 2003 for 14 countries, giving 28 observations altogether.

These general models were estimated and more specific models were derived through exclusion tests. Results (excepting fixed effects) are shown in table 9.8.

educational shares. However, the results were only partially credible. In all age groups, increases in the share of men with degrees stimulated participation rates, and for men aged 45–54 years, a clear dilution effect was apparent for increased shares of men with degrees. However, for men aged 25–34 and 35–44 years, counterintuitive results were obtained from increases in the share of men with no post-year 10 schooling.

Table 9.8 How much does extra education dilute impacts on participation rates?

Males, 1988 and 2003^a

<i>Age group</i>	<i>Shift in participation rate of men with this attainment level between 1988 and 2003 (Australia)</i>	<i>Impact of a one percentage point increase in the attainment rate in 1988</i>	<i>Additional impact in 2003 of a one percentage point increase in the attainment rate</i>
	Percentage points	Percentage points	Percentage points
Degrees			
25–34	17.4	-0.0494	0.0
35–44	15.5	0.0	-0.046
45–54	21.6	-0.145	0.0
Below year 10 schooling ^b			
25–34	-6.7	0.164	0.166
35–44	-4.5	0.204	0.067
45–54	-8.2	0.155	0.103

^a Based on relationship estimated for OECD countries. All parameters are significant at usual levels. Fixed effects are not shown. ^b An example of how to read the table may be useful. For the 25–34 year age group, the first data column entry suggests that the share of men with below year 10 schooling fell by 7.64 points between 1988 and 2003. The second data column suggests that for every additional point in the population share with this attainment rate, participation rates of men with below year 10 schooling was higher by 0.164 points (so that those countries with lower population shares with below year 10 schooling had lower expected participation rates for this attainment level). The magnitude of this effect had grown by 2003 by an additional 0.166 points.

Source: PC estimates using data described in figure 9.9.

Summary

The key results emerging from this international data analysis are:

- larger shares of men with degrees, all other things being equal, stimulate labour participation rates, particularly for males over 35 years;
- the participation rates of men with no post year 10 schooling falls as the relative pool size of men holding this qualification becomes smaller — and this effect has grown over time, making such men even more vulnerable to withdrawal from the labour market;
- the participation rates of men with one degree or more also falls, but in this case as the relative pool size of men holding this qualification becomes larger, reducing the average ability of this group; and
- the positive impacts of increased take-up of education by men have been more than offset by downward shifts in participation of men stemming from other influences. Governments wanting to stimulate participation rates will need to address these other influences, as well as using education policy.

Models using more panels and more control variables are likely to give more precise results and provide improved insights. However, the models above do not give reliable estimates of the effects of increased retention rates or post-year 12, non-tertiary education, which are particularly relevant for the men who are the main preoccupation of this report.

9.10 Conclusion

A commonly expressed view is that more education is always better for labour market performance and that the future effects of increased educational attainment and duration for erstwhile early-leavers may be inferred from the impacts observed for previous cohorts of more educated students. The evidence from this chapter suggests that these inferences are not well-founded because they fail to take account of the differences in the traits of new cohorts of students compared with previous cohorts. In particular, it appears that non-academically oriented male students tend to receive smaller (absolute) benefits from additional schooling than their academically oriented peers.²⁴

Magnitudes aside, will more education of non-academically inclined students at least improve outcomes? The answer is probably dependent on which groups are targeted, the nature of education and the times when it is delivered. For example, in the absence of changes in school practices, mandatory extensions of schooling might be seen as asking a sub-group of non-academically oriented students to do more of what has so far served them badly. This might not have the anticipated positive results for these groups.

There is an important proviso to these general conclusions. The equivocal findings above reflect schools as they are, not schools as they could be. Two factors degrade the effectiveness of additional schooling for those with a high propensity for early leaving. First, while the reason that these students are different from others is partly related to their inherent abilities, it also reflects the past effectiveness of their schooling. If they have failed to develop adequate numeracy or literacy or have been alienated by school cultures prior to year 11, then the value of further investments are likely to be reduced. So what occurs prior to year 11 can be important in determining the returns in the labour participation rates from extension of schooling past year 10.

Second, what occurs in the mandated extension period is also likely to be important, and may need to be adapted to the needs of hitherto reluctant stayers. This is

²⁴ That does not mean that the educational *rates* of return are necessarily less.

acknowledged in most Australian States' efforts aimed at mandatory retention. For example, in Western Australia it was acknowledged that for young people not in an appropriate job, mandatory increases in participation in education implied that the:

... most critical questions are to do with the nature of the places and programs we provide for 16-17 year olds from 2006 onward.

There are also escape clauses in most extension provisions with school not the only option mandated. Shifts to increased mandatory schooling, described in the previous section, are mostly more elaborate policy changes that allow young people to pursue a variety of pathways, including training or education outside schools, such as at TAFE or in full-time jobs. Both are critical opportunities for some sub-groups of young people because they take them into a world outside school, with richer interactions with adults and support broader learning environments. It is particularly important to see jobs as learning environments for many people. Choices of jobs first for some young people need not prevent them later choosing formal education, as Australia has highly flexible arrangements for accessing education for mature-age students (including year 12 certificates at TAFE).

Though most requirements for extended education recognise the value of multiple pathways, it will be important to ensure that the pathways are sufficiently flexible to cater for individual needs. For example, some young people may be able to get a part-time job, but not a full-time one. Under some systems they will be obliged, except in exceptional circumstances,²⁵ to enter a training/education pathway, even if the job pathway is more appropriate.

The fact that most extension proposals are more nuanced than just extensions in schooling per se recognises the obvious point that duration is just one, and perhaps a subsidiary, dimension of the education system. That system is far more complex, with its outcomes determined by the interaction of the aptitudes, decisions and behaviour of students (ability, attendance, class behaviour, subject choice, attitudes); teachers (pedagogic skills, empathy); and processes (duration, organisations, syllabuses, rules, incentives). Changing some of these other dimensions of education may constitute a necessary pre-condition to productive extensions of schooling duration. The nature of recent attempts to improve the quality of students' school experiences and the evidence about their effectiveness is assessed in the next chapter.

²⁵ All States allow exemptions in exceptional circumstances.

10 The effects of what schools do

Two thrusts have been usually advocated for improving the lifetime job and other prospects of the non-academically-inclined. A commonly affirmed approach — the subject of the last chapter — is to encourage or compel them to stay on at school if they have not found some other appropriate post-school pathway, without necessarily systematically altering the nature of their educational experiences during that period.

A second approach, subject to considerable innovation and experimentation in Australia and around the world, recognises the heterogeneity of students and aims to tailor education more closely to their specific needs. Tailored educational approaches have increasingly been adopted at the same time as measures to increase schooling duration.

The potential value of adapting schools to student needs has been demonstrated by specific case studies. These have shown that particular schools drawing students from highly disadvantaged backgrounds and with poor past achievement levels have improved dramatically with different educational approaches and student expectations. For example, Oatlands in Tasmania increased, without compulsion, retention rates from 45 per cent in 1994 to 90 per cent in 1999 and reduced truancy and suspension rates (Strategic Partners 2001a). At the primary school level — where successful learning is critical to subsequent transitions — Belfield Primary School in Victoria improved literacy standards from some of the lowest relative to State benchmarks to one of the highest in just six years (Fleming 2005). Such case studies demonstrate that the student traits that produce subsequent poor school performance and risky lifetime pathways are dependent on school processes. However, the key question for policy is whether the remarkable successes in individual schools, often led by excellent principals and expert outsiders, can be replicated across a wider group of schools.

There have been many recent approaches to schooling adopted by the Australian Government Australia-wide, or State and Territory Governments within their own jurisdictions. These approaches have built on a long heritage of novel attempts to engage students at risk of non-completion of school, mostly involving pilot programs or isolated to particular schools or areas (for example, Anglicare 2004, pp. 17–18). There is also a wide range of complementary measures that have been

developed to improve post-school transition outcomes.¹ These are potentially important for improving male labour market participation rates.

It is not feasible to cover the full nature and impacts of this wide group of interventions in this chapter.² Instead, in this study, several national approaches that may be suited to males with weak labour market prospects are accentuated. They revolve around:

- programs targeted at specific groups. These include recovery programs for highly disadvantaged young people who have left the school system prematurely (such as the *Partnership Outreach Education Model*); particular programs for young people with a higher likelihood of dropping out and who need more personalised service (such as in the now lapsed *Full Service School Program*); and experimental approaches to better education targeted at males through the *Success For Boys* initiative and its predecessor, *the Boys' Education Lighthouse Program*;
- broader, curriculum-based initiatives, that attempt to change what schools do and how they impart learning. The most important of this is the availability of more vocational options within schools (VET in schools) and specialist vocational schools; including the recent *Australian Technical Colleges* initiative by the Australian Government; and
- implementation of approaches that yield better numeracy and literacy among students, skills that are strong prerequisites for subsequent learning and employability (which is also a feature of the *Success For Boys* initiative).

An important part of many of these approaches is the recognition that non-academically-inclined children may need not just critical generic and specific vocational skills, but 'soft' skills, such as better motivation and life skills.

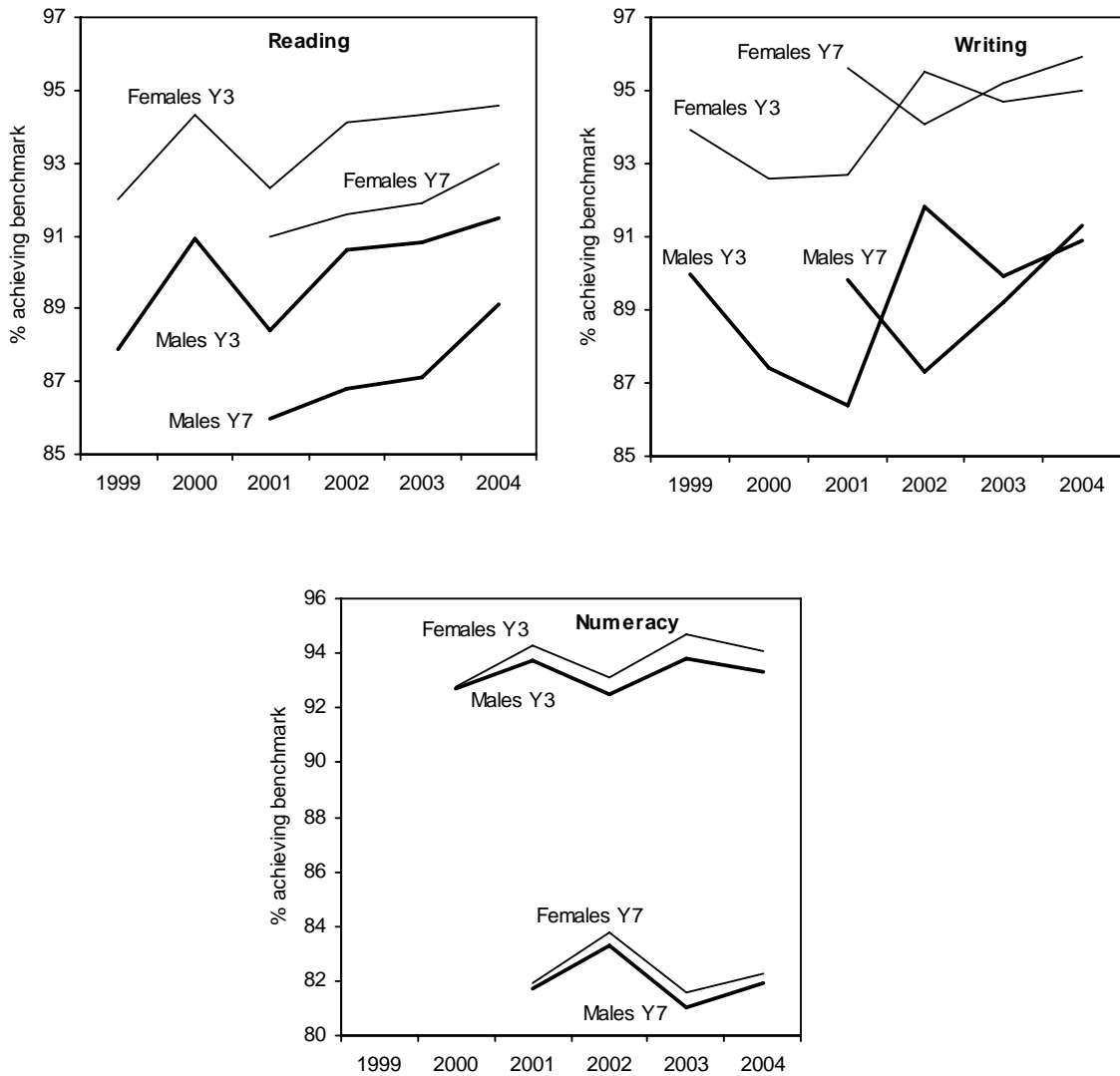
Most of these approaches are gender-neutral because it is recognised that sub-groups of both males and females face significant educational challenges. However, as noted above, some approaches focus on boys. The emergence of some male-focused strategies has partly stemmed from data revealing the relatively poor performance of males in literacy tests, though not numeracy (figure 10.1). The literacy performance of 14 year old boys declined between 1975 and 1995, whereas that of girls slightly improved (Cortis and Newmarch 2000). The PISA study of student performance finds that the share of Australian male students scoring in the

¹ These include the Language, Literacy and Numeracy Program, Job Network services, Youth Pathways, the Career and Transition Support Program, government-sponsored web-based services and the Regional Industry Career Advisers Network.

² Lamb et al. (2004) provide a comprehensive examination of many of the interventions aimed at this objective around Australia and the United States.

bottom performing group is more than double that of females, a situation common in many other countries (OECD 2004b, p. 286). As noted in the previous chapter, literacy is an important determinant of successful education-to-work transitions and longer term labour market engagement.

Figure 10.1 Boys have lower competency in literacy
1999 to 2004^a



^a The results show the share of students by sex that achieve a national minimum standard of competency in numeracy and literacy appropriate to their age. The results relate to year 3 (Y3) and year 7 (Y7), though the exact age of testing varies from state to state.

Data source: Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) 2004, *National Report on Schooling in Australia Preliminary Paper 2004 National Benchmark Results Reading, Writing and Numeracy Years 3, 5 and 7*.

10.1 Strategies for particular groups or problems

A major recovery program: the Partnership Outreach Education Model (POEM)

The Australian Government's POEM Pilot initiative provide opportunities for young people who are disconnected from mainstream schooling (or with a tenuous attachment to it) to re-participate in education.³ The initiative targets young people facing severe problems, such as chronic truancy; drug/alcohol misuse; homelessness; legal and financial issues; mental health and medical conditions; and poor self-perceptions. About one in three of the strand one participants were Indigenous, around one in five had substance misuse problems and about the same fraction were involved in juvenile justice (DEST 2004, p. v). Around 60 per cent of the targeted group were males, indicating their particular vulnerability. The goal was to test new ways of increasing engagement in this particularly disadvantaged group. The strategy, though varying in its details across projects and individuals, emphasised flexible and accredited education and training options, and increased social integration, delivered in a supported community setting. Local support networks maintain support for POEM participants on exit from the program.

The initiative was trialed in 21 projects across Australia, running initially from 2002 to 2003, with full-time involvement by students for an average period of about 20 weeks (through there was no maximum limit for participation). The pilot assisted about 2500 young people. The pilot evaluation (DEST 2004) suggested that the program had generated positive results, though no long term longitudinal study has been undertaken. Of the young people who exited in 2003, 40 per cent of young people exited to further education and training, 18.9 per cent exited to employment, 9.8 per cent exited to another program, 3.3 per cent exited to detention, 15.8 per cent did not engage in an activity after POEM, and it was uncertain as to what 12.2 per cent of young people were doing after participation in POEM. These results are poor compared with mainstream students. However, given the students' severe disadvantages, they nevertheless suggest significant re-engagement in education or training relative to any plausible counterfactual. The model indicated the importance of flexibility, partnerships with local communities, and relationships between project staff and students.

The program has been subsequently expanded to an ongoing program, receiving funding of \$34.9 million over four years from 2006–07 to 2009–10 for 60 projects across Australia, and aimed at assisting 3000 young people annually.

³ Around 80 per cent of the target group were not in school and more than 15 per cent were chronic truants (with the remainder attending school, but at risk).

POEM has a distinctive role as dealing with young people who have fallen through the cracks of the education system in a conspicuous fashion, but as important as its role is, its specificity also means that it cannot (nor should aspire to) deal with the bulk of the more ‘quietly’ disengaged.

Another potential issue raised by POEM is that of early intervention. The program is perceived as a form of early intervention in that it aims to prevent young people from falling into aberrant lifetime patterns:

This is due to the fact that POEM provides a ‘preventive’ service, and therefore reduces the likelihood that young people who participate will end up needing extensive remedial services later in life. Through an intervention like POEM, it should be possible to substantially reduce such costs to the community, through ‘joined-up’ services that met young people’s needs in a timely and holistic way, and at critical points in their development, thereby reducing the occurrence of distressing and costly inter-generational and longitudinal problems. (DEST 2004, p. 43)

Early intervention possibilities

The issue of early intervention raises the question of whether it might be possible to have even earlier interventions that target the students who are most likely to need recovery programs like POEM and to identify and assist others whose post-school transitions are poor *before* they leave the school system.

It is notable that an antagonistic relationship with teachers was the main reason given by students in POEM for their initial disengagement from schools. This should, in principle, act as a indicator for intervention at that earlier point. More generally among early school leavers, high and increasing truancy rates are also a good predictor of a high likelihood of leaving school early (Lamb et al. 2004, p. 30, Hull 2005, p. 16). As noted in the previous chapter, early leavers are much less likely than stayers to get on well with teachers, do not value what is being learnt, and do not find school a happy or safe place. While students often also leave for positive, employment-based reasons (chapter 9), among those with lower socio-economic status, school-based reasons appear to be most important (Lamb et al. 2004, pp. 15–16).

Many of these aspects of male experiences of school are observable by teachers or could reasonably be elicited from students. So a key question is whether these are acted on systematically in schools, or more widely, through family support and other community-based approaches, to deal with them early. There have been many strategies developed to achieve this among schools. Some strategies aim to change whole school cultures, curricula and processes to reduce the risks of low retention

and under-achievement. VETIS, discussed below, represents a major example of the transformation of curriculum.

Other strategies are oriented to specific at-risk students (tutoring/peer support, case management, mentoring, counselling). Some are not school-based — such as the Mentor Marketplace program. This Australian Government program, which commenced in 2002-03, funded a variety of projects that were built around mentoring for young people (Urbis Key Young 2005). The principal goals were increased participation in work, education, training and community life; increased self esteem, resilience and physical and mental health; improved relationships with family and peers; and improved skills in areas such as leadership and communication. The evaluation was unable to reach a conclusion about the program's effectiveness, since many projects had been in place for a short period.⁴ However, it considered that the projects were:

... valued by all stakeholders and have had positive impacts in a range of areas on the individual young people who have participated in them. (p.i)

Other strategies are within schools, of which, the now lapsed, Full Services Program represented a major set of experimental approaches.

Full-service schools

The Full Service Schools (FSS) program was designed for students at high risk of non-completion of year 12 schooling. At least 86 per cent of all participants were at a high risk of leaving school group prior to entry into an FSS program (Strategic Partners 2001b, p. 83). The program also targeted students with absenteeism and behaviour problems. It aimed to provide better learning experiences and a higher likelihood of positive post-school transitions. The program was not based on a prescriptive formula for delivering these outcomes. Rather, it was primarily a funding mechanism for diverse ways of achieving better outcomes for at risk students that were specific to particular schools and communities. In each particular State or Territory, its manifestations will often be referred to by another name or as distinct sub-program.⁵ Funded activities included:

⁴ Lamb et al. (2004) noted that while mentoring programs are now widespread, their impacts had generally not been rigorously evaluated. A rare exception was the experimental design used to evaluate the US Project RAISE, a Baltimore-based mentoring project. The evaluation found that the program had positive effects on school attendance and grades in English, but not on promotion rates or standardised test scores. Other studies, however, reviewed by Lamb et al. appeared to suggest bigger, more enduring effects.

⁵ For example, the Support Team for At Risk Students (STAIRS) program in the ACT; the Youth Enterprise Centre in the Far North Coast cluster of NSW; and the Construction Industry Skillcentre in Mount Gambier.

-
- the establishment of case management and counselling services;
 - literacy and numeracy courses;
 - the provision of vocational and pre-vocational subjects and courses;
 - organising part-time external vocation courses with registered VET providers;
 - the development of contextualised curriculum (in conjunction with pre-vocational learning);
 - separate classrooms; and
 - community and work based learning.

The emphasis was on greater personal support of students by teachers and the teaching of FSS students as a separate group.

The FSS program funded 65 clusters of schools throughout Australia, catering for around 12 500 students in 1999 and about 19 500 in 2000 (with some common members). Strategies adopted by each school could be quite different — from a vocational orientation in some, to development of generic skills, maturity and social skills in others (such as life, anger-management and relaxation skills) (Strategic Partners 2001b). Mentoring was an important component of some arrangements, as in the Elizabeth/Gawler/Munno Para cluster. Most clusters initiated in-school programs, but some, such as Cairns and Rockhampton, adopted off-campus centres to which schools would refer.

Course development varied between the participating schools. In some cases, access to appropriate quality vocational learning was lacking. On the other hand, some of the students were quite disadvantaged and may not have been ready for participation in fully-fledged vocational learning.

Overall, during its operation, evaluation evidence suggested that FSS sub-programs appeared to improve attitudes to school and increase retention rates of students with a high risk of leaving school prior to year 12. Teachers also reported improvement in attitudes to school and an improvement in self esteem and belonging.

77 per cent of all participants remained at school until their scheduled graduation (p. 92). While it is not known what share of ex ante at risk students would have actually completed school in the absence of program involvement, sensitivity analysis suggests that, for any reasonable parameters, participation in the program is likely to have significantly improved retention rates.

Of those that did not complete, about 30 per cent left to further education and training; just over 20 per cent to full-time employment; 7 per cent to part-time jobs; 14 per cent to unemployment and 29 per cent to unknown destinations (which

would include not labour force inactivity). The Strategic Partners' evaluation regarded full-time employment and further education as positive 'outcomes' for FSS non-completers. However, the study did not establish a clear counterfactual against which to test whether these outcomes could be causally linked to the FSS — a common difficulty in evaluations. Some evidence suggests the links may not be causal. It is apparent that the outcomes for early school leavers who were never enrolled in the FSS seem at least as good as the results for those students enrolled in FSSs who left early.⁶

However, it is hard to compare like with like. To see why this may be a problem, suppose that the group of FSS enrollees can be broken into two groups. Both groups have a high risk of leaving early, but, on average, group A is comprised of those who are more motivated, capable and 'school willing', while group B is comprised of those who are more disengaged, less motivated and not as capable. If this characterisation is accurate, then it seems likely that the FSS is more likely to retain group A in the program, while those who do leave early (group B) have traits that pre-dispose them to poor labour market outcomes. Comparing group B with a group of students who left early, but who were never enrolled in the FSS, is probably more akin to comparing A with (A+B). Such a counterfactual is likely to underplay the achievement of FSSs for those who commence the program, but do not complete it. Nevertheless, it remains hard to interpret whether outcomes for the one quarter of students who fail to complete their schooling in FSSs are better or worse than might be expected in the absence of the program. As a consequence, the clearest impact of FSSs appears to be higher retention rates for at-risk students.

While lapsing after initial funding, the program appears to have initiated arrangements and learning in schools that persisted, although the extent to which these extended beyond the original clusters is uncertain.

The Boys' Education Lighthouse and Success for Boys Programs

The Boys' Education Lighthouse Schools (BELS) program was a school-based approach to developing, testing and disseminating strategies for improving learning outcomes for boys (Zbar et al. 2003). It had two stages. In the first, commencing in 2003, 230 schools were involved in 110 projects (with individual schools receiving grants of up to \$5000 each to support their projects and school clusters receiving grants of \$10 000 to \$20 000).

⁶ This is based on the data from Lamb and McKenzie (2001) for the general population of early leavers.

The second stage of BELS commenced in April 2004, and was completed in December 2005. A total of 51 Lighthouse school clusters, involving around 350 schools collectively, received up to \$100 000 over the 2004 and 2005 school years to trial, showcase and evaluate interventions aimed at improving boys' educational outcomes. The approaches varied, but concentrated on five major areas:

- teaching methods, subjects and assessment for different learning styles;
- literacy and communications skills;
- behaviour management programs;
- student engagement with schooling and motivation to learn; and
- positive role models, drawing school and community resources together.

The Success for Boys Program followed (and drew from the knowledge created by) the lapsing Lighthouse Program. It had similar objectives to improve educational outcomes for boys and used a similar funding framework. Successful schools received grants of around \$10 000 to apply professional learning modules aimed at better meeting boys' learning needs. Around \$27 million was committed by the Australian Government for 2003–2008, with around 800 schools participating in the first round. It is too early to substantiate whether these programs have made an effective difference to boys' educational outcomes, and particularly for those groups of boys most at risk of poor performance in the past.

A plethora of other approaches

Full Service schools, the Lighthouse program and Success for Boys are Australia-wide examples of approaches within schools to improve school and post-school outcomes. There is a plethora of other approaches across all Australian jurisdictions. The South Australian Government, for example, lists 12 separate approaches aimed at improving school retention rates.⁷ A system-wide example that does not specifically target at-risk children is Victoria's Managed Individual Pathways (MIPs) program. The initiative aimed to develop plans for education,

⁷ The SA Government provided about \$30 million over four years overseen by eight lead agencies for 12 retention initiatives comprising (1) Innovative Community Action Networks (ICANS); (2) Youth participation and Youth Development; (3) Recognition of community-based learning; (4) Inclusive schooling structures and practices; (5) Schools and community capacity building; (6) Career choices and transitions to employment and training; (7) Multi Disciplinary/Multi Agency Responses and Services; (8) Strengthen Interagency Links; (9) Education Pathways to Re-engagement; (10) Supporting Aboriginal communities education initiatives; (11) Good practice and cross agency linkages; and (12) Support for families in the early years (www.socialinclusion.sa.gov.au/site/page.cfm?u=60 accessed on 3 August 2006).

training or work pathways for *all* Victorian government school students in their post-compulsory years (in years 10, 11 and 12). The program also identified young people at risk of early leaving, and aimed to help them either to stay at school or to achieve a positive post-school destination (training or a job) by giving them intensive personal support, counselling and mentoring. The evaluation of the program found (among things) that:

- the initiative had been very successful, but only in those schools that had implemented it seriously;
- there was excessive variety in school practices;
- the identification of at-risk students needed to be clearly defined. Some schools had defined the whole secondary school population as ‘at-risk’ because they had widened the definition of what might constitute an adverse outcome (say to include poor tertiary subject choices). This had weakened their capacity to really target resources to the more severely at-risk student population; and
- case management should only be used for students at risk of leaving school early.

The Victorian Government has made changes to reflect the bulk of these evaluation results — a good example of the value of early program review. The MIPS program also provides a good case study of the complex interconnections between programs that arise in the crowded policy space of schooling and school-to-work transitions. The Australian Government’s Jobs Pathways Program (JPP), which was re-oriented to only at-risk young people in 2006 and re-named the Youth Pathways Program (YPP), significantly overlaps with some of the core elements of MIPS. Both include the provision of personal support services for young people at risk of a poor transition from year 10. The MIPS and YPP both overlap with the Victorian Government’s On Track program, which aims to follow up young people after their schooling and offer, where necessary, referral services. As noted by the Asquith Group (2005), school leavers could potentially be contacted by all three initiatives. These overlaps can often be resolved through coordination between programs or sensible decisions at the school level about what programs will be drawn on.

Are the benefits of support programs sustained?

Most programs that have provided support are evaluated after program completion by a student. However, it can be important to consider whether the benefits persist. Lamb et al. (2004, p. 62) find little empirical evidence on sustainability for Australia that can help shine light on this.

However, they note some US evidence that raises concerns in this area. For example, the US Achievement for Latinos through Academic Success (ALAS) program supported disadvantaged students from years 7 to 9. A proper experimental design was used to assess its effectiveness. During the intervention, outcomes were highly positive. By the end of Grade 9, students in the ‘treatment’ group had half the number of failed classes, had one quarter of the incidence of excessive absences, and were half as likely to be behind in their course credits for graduation as were those who participated in the control group. But a main goal of the program — retention — was not achieved, with effectively identical year 12 graduation rates for the treatment and control groups. Lamb et al. (2004) conclude that ongoing interventions throughout all school years are needed for disadvantaged groups. Though this may be true, the social context of Latinos in the US may not be sufficiently similar to disadvantaged youth in Australia to generalise in this way.

The question of sustainability posed by Lamb et al. can be extended beyond school years to post-school outcomes. In most cases, school interventions are not undertaken for improving school outcomes, but to improve life outcomes, including higher labour force participation. Their effectiveness in achieving that purpose has, unfortunately, not generally been tested due to the absence of long-term follow-up. Such follow-up is expensive and difficult to achieve without bias due to increasing survey non-response in longitudinal surveys. In theory, it is possible to data match Medicaid IDs to subsequently issued tax file numbers to identify earnings and social welfare payments. This could form the basis for unbiased monitoring of all early intervention programs, and without a compliance burden for their subjects. However, there is a tradeoff between trying to design programs that are genuinely effective in helping young people and perceptions that such data matching, even if subsequently de-identified, presents a problem for privacy.

10.2 Changes in vocational education

The question of what schools and other agencies for learning (including businesses) should do and how they should interact with each other has been a recurrent theme in educational policy. A cyclic tension has been between academic and vocational goals of the system. At times, the system has institutionally separated these two goals, with schools being seen as principally academically oriented, while other approaches, through apprenticeships or TAFE colleges, fulfilled vocational purposes. At other times, such as the 1890s, 1930s and from the 1990s, concerns about the impacts of economic disruption led to a broader vocational role for schools (Ryan 2002).

There were several reasons for the introduction of VET in schools' (VETIS) in the 1990s.⁸ First, there was a concern about rising unskilled youth unemployment (and the lifelong risks that this entails) and the need for more vocational education and support for post-school training.

Second, it was argued that existing institutional approaches were not adequate for this purpose. On the one hand, schools, as currently constituted, had year 11 and 12 syllabuses that were oriented to students with university aspirations; while on the other, industry and business bodies indicated the need for a workforce with problem solving and social skills, not just pure vocational skills.

Report after report tells us that what employers value most in young people are the individual-focused, not industry-skills focused qualities. Interpersonal skills, communications skills, problem solving abilities, independence, initiative, punctuality, work ethic, teamwork skills, personal pride, courtesy — these are the traits that employers consistently indicate that they hope to have developed in schools. (Smith 2000 cited in Ryan 2002)

This suggested a hybrid approach between traditionally separated modes of learning. This hybrid mode integrated vocational training and basic skills with a wider range of subjects aimed at broadening the capabilities of students, such as improved literacy, numeracy and analytical skills. It was hoped that the capacity to perform well in vocational subjects might re-motivate less academically able students and improve their capacity for some of the academically oriented subjects. The model was, in theory, highly flexible:

- courses could be full or part-time;
- courses could include different shares of vocational and conventional school subjects;
- vocational study could be undertaken completely within the school, or students may attend both school and a TAFE college or registered training body;
- work experience could be a component;
- VETIS could encompass New Apprenticeships (featuring both school-based vocational study and work experience); and
- schools could also provide 'pre-vocational' subjects that developed some of the skills needed to succeed in their vocationally-oriented courses.

The first allocation of funding for VETIS was made in 1996. Student numbers in VETIS have increased from an estimated 60 000 in 1996 to 211 900 in 2004. The proportion of secondary students engaging in VET in 2004 was 50 per cent. Around

⁸ A similar transition in policy occurred in the US, which also introduced vocational education into US high schools.

95 per cent of all schools offer VET courses (2001 figures). In 2006, 34 per cent of the male population had VET qualifications.⁹ VET in school has been seen as an option for low achieving students (36 per cent of participants), although there are a significant proportion of high achievers (13 per cent of participants) (DEST 2002).

However, these and similar data can be hard to interpret. Some VET subjects would once have been labelled as academic, such as information technology units, like computer programming. Students may, therefore, incidentally acquire a VET qualification. Accordingly, participation in such subjects tends to exaggerate the real penetration of VETIS. These problems of interpretation — compounded by differing definitions about what constitutes a VETIS course (Barnett and Ryan 2005) — confuse the picture about how well the system is operating for those vocationally-oriented students who were the main targets of the policy. Nevertheless, there is little question that VETIS has constituted a large shift in the role of the Australian school system.

There have been many assessments of the impacts of VETIS, but each has different perspectives about the nature and extent of its benefits. In part, this may reflect the fact that there is no single VETIS model, but many, varying both by jurisdiction and by school (Lamb and Vickers 2006). For example, some schools provide VET in a way that resembles TAFEs (stand alone subjects that do not count towards year 12 certificate and resemble provision currently delivered in TAFEs or Registered Training Organisations). Others provide a VET package more integrated with the existing year 12 structure. Lamb and Vickers find these different models have varying effects, so it is hard to characterise the impact of VETIS as if it were a single experiment.

In a strategic evaluation of the system, the Chair of the NSW Board of Vocational Education and Training and of the NSW Vocational Education and Training Accreditation Board found that the NSW variant of VETIS had been highly successful:

... students have resoundingly endorsed the value of the NSW vocational education and training in schools program... The hard evidence is now there for all to see. VET in schools is clearly making a difference for NSW students, adding value to their school participation, their HSC achievement and their preparation for the transition to post school education, training and work ... ‘Never underestimate the value of VET in schools’, a quote from a leader in the hospitality industry, may accurately reflect the majority view of employers involved with the program. ... From a school principal’s perspective the most representative statement may be ‘thank goodness for VET in

⁹ These are defined as an Advanced diploma/diploma; Certificates I–IV, and Certificates n.f.d with data from ABS 2006, *Education and Work, May 2006*, December, Cat. No. 6227.0.

schools' ... When asked about whether VET in schools is of value to students one representative group of teachers retorted 'absolutely' (Evans 2005).

This assessment was largely based on stakeholder consultations and a survey of questions posed to students (Polesel et al. 2005). This evaluation approach, while useful, requires careful interpretation. For example, it was observed that among those students whose destination is a job, traineeship or apprenticeship, VET students are more likely than non-VET students to say their HSC helped them 'a lot' to get their current job, and acquire skills and knowledge for their current job. This does not control for selection biases, which are likely to be strong for students who sort themselves into groups that want specific vocational training for a future specific job and those who do not. Causality can also be hard to determine. For instance, Evans (2005) noted that the top graduates of any particular VET course received high university admission indexes (UAI). This is likely to indicate that some students with high inherent aptitudes undertake VET courses, but does not provide convincing evidence about the causal impact of VET on UAIs.

Nevertheless, the survey by Polesel et al. (2005) and other reports revealed evidence suggestive of important positive effects for the groups that are the main preoccupation of this study.¹⁰

- 74 per cent of boys with the lowest level of prior achievement said VETIS influenced them to continue in school after year 10. This was significantly higher than for boys with the highest level of prior achievement (Polesel et al. 2005).
- Of the lowest quartile of achievers (both sexes), VETIS students were less likely to enter part-time casual jobs than non-VETIS students and more likely to enter a further education or training destination, which may presage longer term improved labour market prospects. However, they had identical unemployment risk (Polesel et al. 2005).
- Though based on qualitative evidence only, VETIS may bring about increases in motivation, self-esteem and attitudes to learning of students who have not experienced this before (Currie and McCollow 2002, p. 50).

¹⁰ The evidence is only suggestive because of the lack of satisfactory controls. For example, it is not clear what their counterfactual destination would have been had low achieving students not stayed on at school. There are other VET options other than through school. Similarly, it is possible that selection biases explain why VET students were less likely than non-VET students to enter casual part-time jobs. Polesel et al. reveal some evidence along these lines when they match VET with notionally similar non-VET students (albeit with matching based on a small set of traits). In this instance, there is no difference between the groups in terms of casual part time work prevalence rates.

-
- Self-paced learning, the capacity for learning generic skills (such as work habits, and life skills) and integrated workplace experience, which would not be a feature of conventional school syllabuses (Porter 2006).
 - Fullarton (2001, p. 55) reports that for students in the lowest achievement quartiles ('those most at risk of ending up in economically precarious positions') participation in VETIS does appear to be providing improved pathways to employment and, to a lesser extent, further training.
 - It is well established that apprenticeship courses are associated with good labour market prospects. But there is some evidence that non-apprenticeship VET participation for 15 to 17 year olds also provides benefits in terms of being engaged on a full-time basis in education, training and labour market activities at age 20 (McMillan et al. 2005).

Other assessments have also affirmed beneficial aspects of VETIS, but have been cautious about some of the effects.¹¹

- The demands on school resources and teachers needed to offer a quality program have been underestimated (Porter 2006, Barnett and Ryan 2005, Currie and McCollow 2002).
- In an inquiry by the Victorian Automobile Chamber of Commerce (VACC 2002, p. 5), it was suggested that a commonplace industry view was that 'few schools have adequate staff, experience and facilities to deliver vocational programs to the level required in the standards'. Currie and McCollow (2002, pp. 55ff) found similar quality problems.
- There was a concern that VETIS might not be achieving the appropriate balance between vocational and generic skills, with the latter suffering (Ghost 2002, pp. 62–63).
- Employers argued that processes used as part of workplace competency assessment were 'complex, bureaucratic and time consuming' (Malley et al. 2001).
- Workplace experience gained as a part of VETIS was seen as a key strength of the system, and was generally valued by students (Polasel et al. 2005, Porter 2006). However, it has not been a mandatory feature of the system in many States and the real extent of workplace experience has, overall, been scanty.
- While a major rationale for VETIS was to promote the engagement and skill development of more disadvantaged students, it may come too late in schooling

¹¹ The divergence of these assessments from those of Evans and Polasel et al. may partly reflect the differences between VETIS in NSW from that in other States and Territories (Currie and McCollow 2002).

and be too demanding for that group to achieve this objective successfully (Collins, Kenway and McLeod 2000, p. 134; Angwin et al. 1998 and Currie and McCollow, pp. 108ff). The scope for pre-vocational courses and the development of non-vocationally-oriented employability skills (like attitudes to learning, motivation, punctuality and dealing with workplace conflicts) depends on the manifestation of VETIS in each jurisdiction or school. Provision of VETIS for students with disabilities faces significant obstacles, though there a number of trial programs aimed at dealing with these (Currie and McCollow, pp. 114ff; Harrison & Barnett 2001).

- Relations between VETIS and VET-providers outside the school are dependent on financial and other arrangements that can affect the extent of real cooperation (Currie and McCollow 2002, pp. 39ff and pp. 121ff).
- Notwithstanding the claims by students that VET availability in schools had changed their view about staying on, this does not appear to have materialised in the aggregate retention rates in years 10–12 (Malley et al. 2002, p. 25 and Anlezark et al. 2006). Using aggregate data, Anlezark et al. (2006) provide evidence that the effect may have been positive but, *at best*, the effect is that for every 10 percentage points increase in VETIS participation, retention rates might have risen by 1 percentage point — a negligible impact. Using longitudinal data, they conclude that VETIS increased year 10 to year 11 retention, but adversely affected year 11 to 12 retention, so that the overall effect of VETIS on retention from year 10 to year 12 has been slightly negative for boys. These results indicate that take-up of VETIS reflects substitution between traditional and VET courses in schools.
- VET *outside* schools reflect labour market demands, which is not always true of VETIS subjects (Anlezark et al. 2006).

The VETIS system is evolving. A critical issue will be whether independent evaluations that discover flaws in the system are acted upon. This will sometimes involve experimentation, additional resources, and complementary interventions that occur prior to year 10. Building basic competencies in literacy and numeracy among children prior to year 10 is now recognised as a key aspect of these complementary strategies (and was re-affirmed in the 2006 COAG meeting), as are approaches that deal with the motivation and poor education experiences of some students. These complementary approaches are considered below. There have also been several major national experiments that represent major accretions to the original VETIS concept: the now lapsed Full Service Schools program and the ongoing Australian Technical Colleges initiative.

Experiments overseas in vocationally-oriented schools also provide useful lessons for Australia, especially where they represent widely adopted programs and have

been evaluated rigorously. For instance, in the United States, Career Academies appear to have been very successful at improving labour market outcomes for males with medium or high risk of leaving school prematurely, and, unlike any similar Australian program, its effectiveness has been substantiated through a randomised evaluation (box 10.1).

The Australian Technical Colleges Initiative

The Australian Government's Australian Technical Colleges (ATCs) are specialist senior secondary schools (years 11 and 12) designed as centres of excellence in vocational training. Altogether there will be 25 ATCs throughout Australia, mainly in regional areas. They are not aimed at disadvantaged students, although they are mainly sited in industrial areas that often experience both skills shortages and higher youth unemployment. Australian School-based Apprenticeships at an ATC allow students in Years 11 and 12 to:

- undertake an apprenticeship while still at school;
- participate in a combination of school, paid work and on and off site training ;
- progress towards gaining a nationally recognised qualification;
- work towards completing their Year 12 Certificate; and
- keep open the option of further education and training.

The colleges have several features that, when combined, make them unique compared with other VETIS models. First, each college is linked with, and endorsed by, industry. Each college has a governing council chaired by a local business or industry representative and with members drawn from industry groups, business, schools, TAFEs or universities.

Second, their establishment within any designated area is based on tenders submitted by consortia of local businesses, industry representatives, government or non-government schools, TAFEs and other registered training organisations, and universities. Rather than adopting a pre-determined model, the organisation of these consortia is largely the responsibility of interested individuals and organisations.

Third, they are run autonomously by principals, who are able to engage teaching staff on a performance pay basis. The principal is appointed by the College Governing Council.

Fourth, the arrangements are flexible and a number of different governance arrangements can emerge, depending on local circumstances.

Box 10.1 Career academies in the United States

Career academies are vocational learning programs undertaken with US high schools. They usually cater for around 150 to 200 students from grades 9 or 10 through grade 12. They have been operating since the late 1960s, and their numbers have been increasing since then. There were more than 2500 career academies across the United States in the early 2000s. Academies were initially introduced as a solution for students at high risk of dropping out, but now cater for a broad range of students.

Career academies have several defining characteristics:

- They combine vocational subjects, academic-type subjects and work experience organised around career themes. Career themes are used as a way of motivating learning. More academic subjects are made more relevant (for example, in terms of examples used) to career themes. Students can then more readily identify the relevance of the more academic subjects to their career theme and may be more engaged as a result.
- Compared with other high school programs, career academies provide a higher level of individualised support for students.
- They are run as a school-within-a-school with separate buildings and teaching staff.
- They rely on a partnership with local industry to provide work experience and career awareness.

Since 1993, the Manpower Development and Research Corporation has been evaluating career academies, with key recent outcomes examined by Kemple (2004) in a randomised study¹² undertaken in nine high schools across the US. It followed academy and a non-academy students for their last four years of high school and for their first four years after high school.

Relative to controls, the career academies were found to increase the earnings of young men at high risk of dropping out by an average of 16 per cent over the 48 months follow-up-period (disproportionately due to more hours, rather than higher wage rates) and to increase average numbers of months employed from 36.0 to 38.8 months. Only high and medium risk men benefited, with no benefit for low risk groups. Academies had no impact on educational attainment, suggesting the gains emerged from the content and style of education, not from duration per se. Career Academies had no impact on labour market outcomes for women.

The study concluded that Career Academies was 'one of the few youth-focused interventions that have been found to improve the labour market prospects of young men'.

The use of a random-assignment methodology used the evaluation was very important in achieving unbiased estimates of the effects of the academies. There was strong evidence of powerful selection effects in choices to attend academies. The evaluation results would have been misleading in the absence of controls for these effects (p. ES-9).

Source: Kemple (2004).

¹² All of these students had applied for a place in a career academy. Of the applicants, 54 per cent were randomly selected to enrol in one of the academies. The remaining students were not enrolled, but could choose other options available in their high school or school district.

The design of ATCs will test the effectiveness of some novel approaches to the delivery of educational services — such as the involvement of formal consortia and new incentive arrangements for teachers. Since ATCs are a new feature of the VETIS system with few currently established campuses, it is not yet possible to evaluate their success.

10.3 Literacy and numeracy

As noted in chapter 9, competency in literacy and numeracy is a key determinant of retention to year 12 and to successful school to work transitions. In 1997, all State, Territory and Commonwealth education ministers agreed to the common objective that every child leaving primary school should be numerate and able to adequately read, write and spell. They established a timeframe for reaching a minimum standard for all new commencing children. A National Literacy and Numeracy Plan was formed, which aimed for:

- early assessment and intervention for students at risk of not achieving minimum required standards;
- development of national benchmarks for each of years 3, 5 and 7;
- assessment of student progress against these benchmarks;
- national reporting of benchmark data; and
- professional development for teachers.

Over the period since the commitment has been in place, all jurisdictions have put in place programs that aim to achieve these outcomes. There is evidence that policy changes have had positive impacts. Test performance against benchmarks for boys for years 3 and 7 increased over the relevant periods since benchmark tests have been undertaken (MCEETYA 2004).¹³ However, this is not certain since the performance is imprecisely measured and fluctuates from year to year for most benchmark results. Only the increase for year 7 reading was statistically significant. Nevertheless, large increases over short periods cannot be realistically expected.

10.4 Early childhood development

Educational extension has two dimensions — increased school leaving ages (chapter 9) and earlier ages at which skills/social/physical capabilities are

¹³ 1999 to 2004 for year 3 reading and writing; 2000 to 2004 for year 3 numeracy; and 2001 to 2004 for year 7 reading, writing and numeracy.

systematically imparted to children (and sometimes parents). There has been an increasing interest in early childhood development (ECD) — at ages prior to formal commencement of school. ECD programs have the potential benefit of increasing children’s capacity for later learning, social skills and better school-to-work transitions. The provision of ECD may also provide time off for parents to obtain a job or to acquire training/education for future labour market prospects. The Nobel laureate, James Heckman (2004) among others, has suggested that the national application of ECD programs could have sizeable benefits, particularly for disadvantaged children. Many countries currently provide some forms of government-funded ECD, mostly of a small-scale nature, including Australia. New programs (and evaluations of them) are constantly appearing.¹⁴

There is some high quality evaluation evidence (for the United States) using rigorous random assignment methodologies that reveal substantial benefits for some ECD programs aimed at at-risk children.

The most successful and widely-cited program has been the US Perry Preschool Program, which involved 123 disadvantaged Afro-American children in Ypsilanti, Michigan (Burr and Grunewald 2006). Parents had high unemployment rates, poor education levels and were often single parents. Half of the children were randomly assigned to attend a high-quality pre-school for 2 ½ hours a day an early childhood, with the other half acting as a control group. The program also involved a once weekly 1 ½ hour visit by the pre-school teacher to the home to engage with the parent/s. So far the outcomes for the participating children have been followed from age at participation (ages 3 and 4 years) to age 40 years. The program had clear positive benefits for measured IQ, attitudes to schooling, high school graduation, criminal activity and employment outcomes. At age 40 years, significantly more program-males were employed than the control group males — 70 per cent versus 50 per cent (Schweinhart 2004). However, in general, effects on females were stronger than on males.

Another ‘model’ program was the Carolina Abecedarian Project, which involved just over 100, largely African-American children living in poverty in North Carolina (Burr and Grunewald 2006). Half the children were enrolled in a high quality pre-school and the other half acted as the control group. The children were followed until they were 21 years old. Literacy and numeracy were improved for those attending pre-school, as did their subsequent college attendance and employment rates.

¹⁴ For example, a recent rigorous study has been undertaken for a large scale Argentinian ECD program (Berlinski et al. 2006).

However, while other ECDs have also demonstrated significant positive effects (as shown in evidence collated by the Commission's analysis of the impacts of the National Reform Agenda and by various meta analyses discussed below), this has not always occurred, especially in programs that involve large numbers of children. For example, as a whole, the US-wide federally-funded Head Start program, which involved around 800 000 children per year at the start of the millennium, has had low impacts on high school completion rates (Blau and Currie, 2003 and the US Department of Health and Human Services 2003).¹⁵ The gains that were apparent were larger and more sustained for white and Hispanic children than Afro-American children, suggesting that cultural factors associated with disadvantage are also important co-determinants of outcomes. Large-scale State-funded ECD programs do not appear to have achieved outcomes different from Head Start (Gilliam and Zigler 2001).

There are several differences between successful programs and the Head Start program as a whole. For example, average teacher qualifications were much higher in the Perry Preschool program (as were teacher wages), the curricula varied and periods spent on the program were different (Schweinhart 2004). Grunewald and Rolnick (2006) claim that Head Start was under-funded and that this, with aspects of its design, contributed to its weaker outcomes. They emphasise that effective schemes have to be properly funded, targeted to high return groups and reward successful outcomes. Others note that ECD programs need to be complemented by appropriate school-based interventions. It should also be noted that Head Start is not a tightly defined program, but a nationwide funding mechanism for loosely organised early education arrangements. Some local manifestations of the program have been more effective than others. The Head Start and State-funded preschool experiences warns that it can be sometimes hard to replicate the results of small programs on a larger scale. However, some larger scale programs, such as Chicago Child-Parent Centers, have performed relatively well (Burr and Grunewald 2006).

Several meta analyses of the plethora of early childhood development programs in the United States have been conducted (Aos et al. 2004; Gilliam and Zigler 2001; Burr and Grunewald 2006). The strength of the first of these meta analyses is its concentration on evaluations in which cost-benefit analyses were undertaken. It was found that three of six pre-kindergarten education programs had costs that exceeded their benefits, while five of eight child welfare/home visitation programs had cost that exceeded their benefits. This suggests that the strongly positive conclusions

¹⁵ It is difficult to compare outcomes of Head Start with some of the model programs, such as the Perry program, because only recently has a random assignment experiment begun for Head Start. As a result, rigorously-based information on long-run outcomes is not yet available (Burr and Grunewald 2006). Existing long-term outcome results for Head Start are based on other evaluation methods — all of which have a number of deficiencies.

about the general efficacy of ECD programs reached by some assessments (such as Burr and Grunewald 2006) may be overly optimistic. Of meta analyses that consider ECDs from an international perspective, the most comprehensive is an Australian study (Wise et al. 2005). This analysis used particularly thorough investigation methods and a large initial sample (108) of programs for its meta analysis. There were sufficient research findings to consider a subset of 32 programs for more detailed analysis. The program evaluations examined were still predominantly based in the United States (22 exclusively with one shared with the UK), with one program from Canada, several programs from the United Kingdom, three from Australia and several from other countries.¹⁶ The Australian programs were the Positive Parenting Program (Triple P), Support at Home for Early Language and Literacy (SHELLS) and the Baby Happiness, Understanding, Giving and Sharing program (Baby HUGS).

Wise et al. found very few programs were adequate in all aspects of design and implementation. As noted previously by Currie (2000) and Gilliam and Zigler (2004), programs had highly variable evaluation adequacy. (The three Australian programs occupied the full spectrum of quality with SHELLS — poor; Baby HUGS — moderate; and Triple P — good.) In most evaluations, there was no information at all about long-term labour market effects because the programs had not been going long enough and/or did not consider this question. The studies did not provide consistent reporting on many other dimensions of effects, such as social skills or school test results. There was evidence that short-run effects were greater than longer-run effects. The conclusion from Wise et al. suggests that the present evidence available for assessing the effects of the widespread availability of ECD programs is, as yet, unclear:

The dearth of evaluation data on interventions generally, and missing data on the restricted and unrepresentative number of interventions in this review, makes it impossible to comment on the usefulness of early childhood interventions as a general strategy to sustain improvements for children in the long-term.

However, the meta analysis suggested that there was some evidence of benefits, particularly for centre-based ECD interventions (such as the Perry Preschool Program), as opposed to ‘home-visiting’ or ‘case management’ interventions. Like other evaluations of ECD programs, Wise et al. considered that high quality care was an important aspect of achieving outcomes.

Overall, the evidence about the long-run labour market effects of targeted early childhood development programs is mixed and fragmentary. Where there is evidence, it is largely derived from the United States evaluations. These have more

¹⁶ There were also several other studies from countries quite dissimilar to Australia (Bolivia and Turkey) and one evaluation of a program with international scope.

often adopted rigorous methods of assessment, including random assignment evaluations of the effectiveness of these programs. However, the groups targeted in the United States have different traits to those groups that might be targeted by similar programs in Australia — and so this adds further uncertainty about the effects of such programs in an Australian context. Results of ECD programs in other countries that might be more similar to Australia — such as those arising from the large-scale UK Sure Start Program — may be more relevant. However, the Sure Start Program has not been in existence for long, and full investigations of its impacts even over the short-run have not been completed yet. The existing Australian ECD evaluations do not provide long run evidence, or in some cases, much rigorous short-run evidence about impacts.

It is clear, however, that well-conducted programs, such as the Perry Preschool Program, can have very substantial impacts on cognitive and social skills of young children and on the future labour market outcomes of disadvantaged children. The ‘model’ programs suggest that properly designed, resourced and targeted programs may have considerable benefits for boys’ and girls’ lifetime labour market (and other) outcomes. But the poor and modest outcomes associated with many large-scale programs suggest that the process for expanding successful pilots should be gradual, rather than moving from pilot to national implementation in one step.

10.5 Conclusions

This and chapter 9 have investigated two aspects of education policy aimed at achieving better labour market and life outcomes for less academically oriented students. Chapter 9 focused on the impacts of higher retention rates, which by themselves may not achieve significant benefits in labour market outcomes.

However, the shift to longer durations has also been accompanied by many other policy changes that aim to improve what schools do and how they do it — the subject of this chapter. These may generate better long term results than compulsory extensions of schooling by themselves. While the multitude of programs aimed at achieving this have been evaluated using largely qualitative measures over short follow-up periods, the results nevertheless appear promising. Their long term effects on labour market participation rates may take decades to emerge, but nevertheless be important for raising average participation rates when demographic pressures on the labour market are most severe (PC 2005).

The vast literature on the school to work transition and the impacts of education suggests no single policy to increase labour market outcomes for the least skilled.

The current learning and portfolio approach appears to be appropriate given the heterogenous nature of students' needs.

However, the plethora of (sometimes short-lived) programs across jurisdictions raises questions of coordination, the potential for excessive variety in programs and resource burdens on teachers and schools. Several evaluation issues also arise. Existing evaluation approaches of the effectiveness of schools or early childhood development programs make it difficult to assess impacts on retention and labour market outcomes rigorously. For the more costly and long-lasting programs, the feasibility of complementing qualitative approaches with more rigorous experimental and 'treatment-control' methods (routinely applied to US educational programs) could be examined. Some of the program impacts may also be better assessed through cooperative evaluations that exploit the variety in programs across jurisdictions. These issues have been largely left unexplored in this study.

A Work expectancy

A.1 Introduction

Cohort worklife *expectancy* measures the number of years a particular cohort can expect to be active in the labour force.¹ It provides a summary measure of different generations' lifetime involvement in the labour market. This can be more accurate than inferring lifetime activity from cross-sectional data for different ages. Changes in the measure give an indication of developments in lifetime economic inactivity for successive generations. The measure controls for the effects of population ageing.

There are no official estimates of cohort worklife expectancy in Australia, nor in most other countries,² although some limited estimates were derived for Australia by Ruzicka (1986) and by Bingham (2003). This appendix sets out the methodology for deriving estimates and provides some experimental estimates for Australia for various male birth cohorts from federation to the middle of the 21st century.

A.2 Methods

The concept of worklife expectancy is similar to cohort life expectancy (PC 2005) and is derived using parallel techniques. Cohort worklife expectancy is based on following a cohort of people (a group of people born in a given year) through their lives and counting the accumulated number of years in which they participate in the labour market (which includes both working and looking for a job). Worklife expectancy is affected by the pattern of future labour participation and life expectancy, and so requires projections of both of these variables. Even worklife expectancy for a considerably aged cohort with some current survivors requires projections, since they may be at least partly active in the labour market in the

¹ Although some measures of it relate to years in employment.

² The US Bureau of Labor Statistics published some sporadic estimates in the 1980s. Most interest and derivation of worklife expectancy is in the area of forensic economics — torts involving personal injury resulting in work incapacity.

future (census data suggests that a proportion of even the very old participate in the labour market).³

Estimating survivors in any given cohort

Key aspects of work expectancy are future survival rates and associated life expectancies. ABS medium scenario survival rates (from series B projections from 2005 to 2050) were used as the basis for the estimates, but some adaptations were made (box A.1):

- to allow for more smooth transitions over time;
- to cover periods beyond 2050, since for work expectancy, survival rates are required for a longer horizon, and
- to allow the impact of better or worse survival prospects on work expectancy to be examined.

The estimates of Q were used to estimate the number of people alive (L) for given ages at last birthday (x) from a birth population of 100 000 — this measures the probability that someone from a given birth cohort with a last birthday of x years is still alive. For example, $L(45,1960) = 92\,503$, which means that there is a 92.5 per cent chance that someone born in 1960 whose last birthday was 45 years is still alive. These were estimated in the standard way used to construct life tables (PC 2005, Technical Paper 1), with one important proviso. As interest is centred on the work expectancy of different birth cohorts, the Q_x used for constructing L_x take account of *future* mortality rates of each cohort at each age from birth to 100+ years, rather than the current mortality rates for each age as in standard reported life tables. This is important because people are expected to live longer and this will influence the number of years available for working. The relevant formulae are:

$$L_{0,t} = (1 - Q_{b,t}) \times 100\,000$$

$$L_{x,t} = (1 - Q_{x-1,t+x}) \times L_{x-1,t} \text{ for } x = 1 \text{ to } 99, \text{ where } x \text{ denotes age at last birthday}$$

$$L_{100+,t} = L_{99,t} \times (1 - Q_{99,t+100}) / Q_{100+,t+100}$$

³ The approaches also require backcasts, since the goal is to consider long run trends in male labour activity (and to residually derive long run trends in lifetime inactivity). Data on survivorship ratios, participation rates, unemployment rates, part-time work rates, average part-time hours worked and full-time hours worked were obtained back to 1900-01 for ages 0 to 100 using a variety of econometric and spline techniques applied to existing data. Because of widespread extrapolation and interpolation, the data results should be seen as indicative.

Box A.1 Different scenarios for life expectancy

Using the standard nomenclature for life tables, the change in log Q_x for age x for the years 2005 and 2050 is:

$$v_x = \phi \times \ln \frac{Q_x(2050)_{ABS}}{Q_x(2005)_{ABS}}$$

Q_x is 1 minus the survival rate for age x (with the ABS subscript indicating that these estimates are derived from ABS estimates of mortality for these years) and ϕ being a scale variable that raises (or lowers) the change in ABS mortality rates to give different estimates of longevity than produced by the ABS in its base case. This implies that the actual measure of Q_x is:

$$Q_x(2050) = Q_x(2005) e^{(v_x/\phi)} = Q_x(2050)_{ABS} \text{ iff } \phi = 1$$

The ABS values of Q_x shift down in discontinuous steps to 2050 and remain fixed after 2050, associated with the cessation of longevity gains from that time. It is useful to have a more general form for longevity that allows for continuous changes in Q_x between 2005 and 2050 and that permits life expectancy gains that slowly dissipate after 2050. An initial step in doing this is to allow a single variable (γ) to shape gains occurring after 2050. (Empirical analysis suggests this is a reasonable simplification.) Suppose that in the long run:

$$\ln \frac{Q_x(\infty)}{Q_x(2005)} = \gamma v_x \Rightarrow Q_x(\infty) = Q_x(2005)^{1-\gamma} Q_x(2050)^\gamma \quad \forall x$$

Suppose that the mortality trends follow a logistic curve, so that they do not change in the long run. This may be preferred to Lee-Carter methods, which suggest a permanent random walk with drift for log Q_x . A logistic can be written as:

$$Q_x(T) = Q_x(\infty) + \frac{1}{(k + \alpha \beta^T)}$$

Assuming values for ϕ and β and observed ABS estimates of Q_x for 2005 and 2050, it is possible to derive α and k :

$$\alpha = \left(\frac{1}{Q_x(2050) - Q_x(\infty)} - \frac{1}{Q_x(2005) - Q_x(\infty)} \right) / (\beta^{45} - 1) \text{ and}$$

$$k = \frac{1}{Q_x(2005) - Q_x(\infty)} - \alpha$$

Reasonable values of β are 1.01 and for γ of 1.5. These then closely reproduce the transition observed in ABS data for Q_x for most ages between 2005 and 2050 (but in a smoother manner), while allowing scope for ϕ to be varied from 1 to give different longevity estimates than the ABS base case. This provides Q_x estimates for end June of each fiscal year. Work expectancy is based on participation rates, which are averages over the fiscal year and therefore centred on December. Moving averages of Q_x were taken to place them on the same basis.

Then ‘little’ l_x — survivors at exact ages from a birth cohort of 100 000 — consistent with L_x were deduced, with appropriate separation factors for the first years:⁴

$$l_{0,t} = 100\,000$$

$$l_{1,t} = (L_{1,t} - 0.14l_{0,t})/0.86$$

$$l_{x,t} = (L_{x,t} - 0.5l_{x-1,t})/0.5 \text{ for } x = 2 \text{ to } 100$$

For example, $l(45,1960) = 92\,590$ means that there is a 92.6 per cent chance that someone born in 1960 is still alive exactly on their 45th birthday.

Cohort participation rates

Future participation rates for any birth cohort were based on estimated entry and exit rates to and from the labour force as cohorts age. The same method was used as in PC (2005, Technical paper 3), except that the estimation techniques took account of newly released labour force data for 2004-05. The derived measure, $PR_{x,t}$, is the participation rate — or probability of labour force involvement — of a surviving male born in year t aged x years. For example, $PR(45,1960) = 0.903$ means that there is a 90.3 per cent chance that someone born in 1960 *and* surviving until 2005 participates in the labour force.

The survival rates of males, combined with their participation rates, determine the likelihood that a male born in a given year and of a given age is in the labour market.

Cohort work expectancy

The starting point for work expectancy estimates is the number of people that are still in the labour force at age x for every 100 000 people born in year t . This was calculated as:

$$LLF_{x,t} = L_{x,t} \times PR_{x,t}$$

For example, $LLF(45,1960) = 83\,493$ means that of every 100 000 males born in 1960, around 83 000 were in the labour force when they were aged 45 years old.

⁴ For years from 1900 to 2003, actual separation factors used by the various actuaries in preparing lifetables were used as these changed over times. The 0.14 factor was only used for projections.

Cohort work expectancy at any given age is then estimated as the number of accumulated work years left, divided by the number of surviving males of the relevant age:

$e_{x,t} = \text{TLLF}_{x,t} / l_{x,t}$ where

$\text{TLLF}_{100+,t} = \text{LLF}_{100+,t}$ and where

$\text{TLLF}_{x,t} = \text{LLF}_{x,t} + \text{TLLF}_{x+1,t}$ for $x = 99$ to 0

For example, $e(45,1960) = 18.6$ years, so that someone born in 1960 and surviving to age 45 years can expect (on average) to participate in the labour force for a further 18.6 years.

Cohort full time equivalent work expectancy

Cohort work expectancy only takes account of whether a male is in the labour force in different phases of his life, not the degree of their involvement. A better measure of lifetime labour market activity may be one that takes account of the extent of work, not just participation (or non-participation) per se. Such a measure needs to take account of the proportion of males employed and their hours of work. This was estimated by initially calculating the number of full-time equivalent people that are still in the labour force at age x for every 100 000 people born in year t (LEQV):

$$\text{LEQV}_{x,t} = L_{x,t} \times \text{PR}_{x,t} \times (1 - \text{UR}_{x,t}) \times \left\{ \frac{\text{PTSH}_{x,t} \times \text{PTHRS}_{x,t}}{40} + \frac{(1 - \text{PTSH}_{x,t}) \times \text{FTHRS}_{x,t}}{40} \right\}$$

Apart from terms defined earlier, UR, PTSH, PTHRS and FTHRS denote the unemployment rate, share of male employment that is part-time, average part-time hours per part-time worker, and average full-time hours per full-time worker. As in all other variables, these are cohort measures not cross-sectional measures (ie they relate to a male aged x years born in year t). Then, as with work expectancy, a recursive approach was used to estimate the expected value of lifetime work activity:

$e\text{EQV}_{x,t} = \text{TLEQV}_{x,t} / l_{x,t}$ where

$\text{TLEQV}_{100+,t} = \text{LEQV}_{100+,t}$ and where

$\text{TLEQV}_{x,t} = \text{LEQV}_{x,t} + \text{TLEQV}_{x+1,t}$ for $x = 99$ to 0

B Illness, injury and disability data

While there are official data on the disability and health status of economically inactive men over time, it is hard to piece together coherent series that provide a long run perspective.

There are significant gaps in the available data.

- The first national survey of disabilities (the 1981 *ABS Survey of Handicapped Persons, Australia*) published no information on the labour force status of people with disabilities. The 1988 survey did include labour market status, but its coverage of disability was narrower than later surveys. Fortunately, there have now been three surveys of disability in the general community (1993, 1998 and 2003) that provide a (reasonably) consistent framework for assessing how men with differing levels of severity in disability fare in the labour market.
- Some editions of surveys of the ABS, *Persons not in the Labour* (Cat. 6220.0), published no results cross tabulated by illness, injury or disability (such as the March 1979 edition).
- Remote areas are excluded from the scope of labour force supplementary surveys that examine health status of the economically inactive. Although the exclusion does not affect overall Australian labour force estimates, it may have larger effects on counts of illness/injury and disability as the main activity while out of the labour force. This is because some susceptible people are over-represented among the excluded groups (for example, 20 per cent of all people in the Northern Territory are excluded).
- The *Labour Force Survey* (Cat. No. 6291.0.55.001) provides monthly estimates of males not in the labour force who are institutionalised or ‘permanently unable to work’. This provides a narrow perspective on men whose economic inactivity is a consequence of disability or illness/injury. There is a break in April 2001 reflecting changes to the questionnaire, but this is unlikely to have affected these two data items.

The information that is available over the longer run is often vitiated by changing definitions and scope.

- The ABS *Labour Force Experience* survey (Cat. 6206.0, published from 1969) examines the general experiences of people in the labour force over the last year.

In early editions, there was information on illness/injury as the main activity of people who were outside the labour force, but disability was only partly captured by the concept of ‘permanently unable to work’. It was only by 1987, that this was changed to ‘own disability/handicap’, which included some people who previously answered ‘illness/injury’. The data after 1987 only sporadically separate illness/injury from disability. There were some changes in the definition of varying labour market status in 1982 that also affected prevalence measures for illness, injury and disability.

- Early ABS surveys of *Persons not in the Labour Force* (Cat. 6220.0 published from May 1975) aggregated disability with illness and injury and only published reasons for not working from people who would like a job and were not actively looking (and, in some later survey editions, those who were available for work within four weeks). Early measures were based on ‘reasons for not looking for work’ of those aged 15–64 years, rather than ‘main activity’ while not in the labour force of those aged 15 years and above, as in later editions. The early editions also published separate estimates of men outside the labour force who did not want a job and who were ‘permanently unable to work’. But while the nomenclature is identical to that in Cat. 6206.0, the numbers for this category were elicited with a different question that did not relate to the main activity while not in the labour force and covered a smaller group outside the labour force (advice provided by ABS). Overall, a reasonably consistent data set on the point prevalence of *combined* illness/injury/disability as a main activity for men aged 15–69 years outside the labour force is available in published form from 1990. Estimates for earlier years from formerly unpublished data are sometimes available, such as for 1983 (derived by ABS 2005). It has only been since 1997 that estimates of the role played by disability separate from that of illness or injury have been published.
- Data on men who are institutionalised has been collected over a long period. Many, but not all, of these men will have disabilities. However, the reason for institutionalisation is not established and nor are these data included as part of survey estimates of men whose reason for, or main activity while, not in the labour force is illness, injury or disability. De-institutionalisation (apparent in table B.7) has added to the *measured* component of disability among economically inactive men, biasing any trends that can be identified.

Nevertheless, while incomplete, the data that does exist can be used to develop a likely picture of what has happened over the past 30 years.

The principal data sets that can be pieced together are shown here and some are shown in charts in chapter 6.

Table B.1 Point prevalence measures of illness, injury and disability as the 'main activity' of males not in the labour force

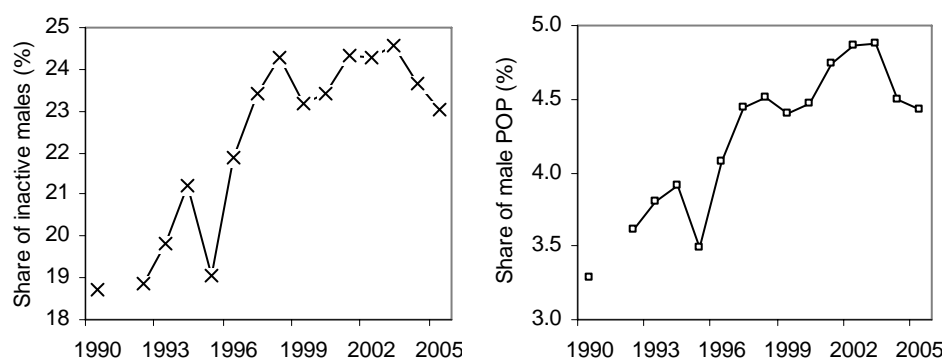
1990 to 2005

Year	<i>Inactive males whose main activity is illness, injury or disability</i>		<i>Inactive males whose main activity is disability</i>		<i>Inactive males whose main activity is illness/injury</i>	
	Share of males not in the labour force	Share of all males	Share of males not in the labour force	Share of all males	Share of males not in the labour force	Share of all males
	%	%	%	%	%	%
1990	18.7	3.3	..	..	..	..
1991	..	..	..	..	..	..
1992	18.8	3.6	..	..	..	..
1993	19.8	3.8	..	..	..	..
1994	21.2	3.9	..	..	..	..
1995	19.1	3.5	..	..	..	..
1996	21.9	4.1	..	..	..	..
1997	23.4	4.4	6.6	1.3	16.8	3.2
1998	24.3	4.5	7.4	1.4	16.9	3.1
1999	23.2	4.4	6.9	1.3	16.3	3.1
2000	23.4	4.5	9.0	1.7	14.5	2.8
2001	24.3	4.7	8.9	1.7	15.4	3.0
2002	24.3	4.9	9.2	1.8	15.1	3.0
2003	24.6	4.9	10.7	2.1	13.9	2.8
2004	23.7	4.5	11.0	2.1	12.7	2.4
2005	23.1	4.4	12.0	2.3	11.1	2.1

Source: ABS various issues, *Persons Not in the Labour Force*, Cat. No. 6220.0.

Figure B.1 Point prevalence of combined illness, injury and disability among men outside the labour force

1990–2005, men aged 15–69 years



Data source: ABS various issues, *Persons Not in the Labour Force*, Cat. No. 6220.0 (adjusted where necessary for change of scope).

Table B.2 Men not in the labour force, whose main activity is disability
1997–2005, by age group

Year	Share of men not in the labour force in each age group				
	35–44 years	45–54 years	55–59 years	60–64 years	15–64 years
	%	%	%	%	%
1997	15.8	12.8	11.8	5.5	7.7
1998	14.9	18.1	11.9	6.5	8.6
1999	17.1	14.4	11.4	6.0	8.2
2000	19.9	19.8	15.4	10.8	10.6
2001	19.3	20.4	14.0	10.0	10.5
2002	18.4	21.8	15.9	7.5	10.9
2003	20.6	24.8	16.8	12.2	12.3
2004	21.8	23.9	17.8	11.3	12.4
2005	22.4	23.9	19.4	14.8	13.6

Source: ABS various issues, *Persons Not in the Labour Force*, Cat. No. 6220.0.

Table B.3 Men not in the labour force, whose main activity is illness or injury
1997–2005, by age group

Year	Share of men not in the labour force in each age group				
	35–44 years	45–54 years	55–59 years	60–64 years	15–64 years
	%	%	%	%	%
1997	31.6	39.6	30.7	19.6	19.2
1998	33.6	39.4	34.4	18.6	19.5
1999	35.4	35.6	26.5	19.0	18.9
2000	29.5	33.4	21.6	18.1	16.7
2001	26.2	34.2	26.1	18.7	17.3
2002	29.2	32.4	30.3	20.2	17.6
2003	26.5	28.0	22.5	16.5	15.7
2004	23.4	28.3	20.9	14.2	14.2
2005	17.7	24.2	20.0	11.9	12.0

Source: ABS various issues, *Persons Not in the Labour Force*, Cat. No. 6220.0.

Table B.4 **Measures of period prevalence of inactivity involving illness, injury or disability**

Males aged 15–69 years, 1968–2005^{a,b}

Year	<i>Males outside the labour force whose main activity is disability</i>		<i>Males outside the labour force whose main activity is illness or injury</i>		<i>Males outside the labour force whose main activity is illness, injury, or disability</i>	
	Share of males experiencing economic inactivity over past year	Share of all males	Share of males experiencing economic inactivity over past year	Share of all males	Share of males experiencing economic inactivity over past year	Share of all males
	%	%	%	%	%	%
1968	4.32	1.15	10.01	2.67	14.33	3.82
1969	..	..	..	..	..	..
1970	..	..	..	..	..	..
1971	..	..	..	..	..	..
1972	3.26	0.87	7.79	2.07	11.05	2.94
1973	..	..	..	..	..	..
1974	3.57	1.04	7.00	2.04	10.57	3.08
1975	3.44	0.99	6.47	1.86	9.92	2.85
1976	2.63	0.73	7.19	2.01	9.82	2.75
1977	..	..	..	..	..	..
1978	2.73	0.87	8.56	2.72	11.29	3.58
1979	2.54	0.82	8.96	2.91	11.49	3.73
1980	..	..	..	..	..	..
1981	3.19	0.90	8.41	2.37	11.59	3.27
1982	2.43	0.89	6.03	2.21	8.46	3.11
1983	2.89	0.94	9.06	2.96	11.95	3.90
1984	2.64	0.90	8.37	2.86	11.02	3.76
1985	2.20	0.79	9.01	3.22	11.22	4.01
1986	1.64	0.62	9.57	3.65	11.21	4.27
1987	2.60	0.99	9.67	3.70	12.27	4.70
1988	..	..	..	..	12.28	4.68
1989	..	..	..	..	12.35	4.66
1990	..	..	..	..	13.58	4.27
1991	..	..	..	..	13.74	4.14
1992	..	..	..	..	13.66	4.11
1993	..	..	..	..	14.13	4.31
1994	..	..	..	..	14.19	4.39

Continued next page

Table B.4 (Continued) ^{a,b}

Year	<i>Males outside the labour force whose main activity is disability</i>		<i>Males outside the labour force whose main activity is illness or injury</i>		<i>Males outside the labour force whose main activity is illness, injury, or disability</i>	
	Share of males experiencing economic inactivity over past year	Share of all males	Share of males experiencing economic inactivity over past year	Share of all males	Share of males experiencing economic inactivity over past year	Share of all males
1995	..	..	..	..	14.57	4.61
1996	..	..	..	..	..	..
1997	5.26	1.68	10.82	3.46	16.08	5.14
1998	..	..	..	..	..	..
1999	4.70	1.55	10.87	3.59	15.57	5.14
2000	..	..	..	..	..	..
2001	5.69	2.00	11.13	3.91	16.82	5.91
2002	..	..	..	..	..	..
2003	5.78	2.07	10.39	3.71	16.17	5.78
2004	..	..	..	..	..	..
2005	6.67	2.39	10.15	3.64	16.82	6.04

^a The period prevalence measures a risk over a period of time, in this case, a 12 month period. The difference between the first two columns for each health condition is that the first one shows the prevalence among the population of males who experience any duration of economic inactivity over the past year, while the second shows the risk that a male in the total male population aged 15–69 years old will experience economic inactivity *and* report a health condition as their main activity. ^b There are several breaks in the series. The two most important are in 1982 and 1987. The first was the result of excluding from the definition of 'not in the labour force' a group of males who had said they had been in their current job for a year or more, but had nevertheless reported that they had been out of the labour force for some of the year. The second was when the nomenclature 'permanently unable to work' as a main activity of those outside the labour force was replaced with 'own disability/handicap'.

Data source: ABS various issues, *Australian labour Force Experience*, supplement to the labour force survey, Cat. No. 6206.0.

Table B.5 Measures of the incidence and duration of inactivity involving illness, injury or disability
1968–2005^{a,b}

<i>Year</i>	<i>Incidence rate of disability and economic inactivity</i>	<i>Incidence rate of illness or injury and economic inactivity</i>	<i>Incidence rate for illness/injury or disability and economic inactivity</i>	<i>Share of long spells due to disability</i>	<i>Share of long spells due illness & injury</i>	<i>Share of long spells due illness, injury & disability</i>
	Per 10 000 men in the general population	Per 10 000 men in the general population	Per 10 000 men in the general population	%	%	%
1968	4.0	251.0	255.1	96.5	5.8	33.2
1969	..	..	..	..	..	..
1970	..	..	..	..	..	..
1971	..	..	..	..	..	..
1972	4.1	182.3	186.4	95.3	12.1	36.7
1973	..	..	..	..	..	..
1974	7.9	187.5	195.4	92.4	8.0	36.5
1975	3.5	157.3	160.8	96.5	15.4	43.6
1976	2.6	165.1	167.7	96.5	17.9	38.9
1977	..	..	..	..	..	..
1978	3.7	194.2	197.9	95.7	28.5	44.8
1979	0.8	177.7	178.5	99.0	38.9	52.1
1980	..	..	..	..	..	..
1981	0.4	87.8	88.2	99.6	62.9	73.0
1982	2.3	100.0	102.3	97.4	54.8	67.0
1983	3.4	158.7	162.1	96.4	46.4	58.5
1984	2.3	138.4	140.7	97.5	51.6	62.6
1985	1.5	143.2	144.7	98.1	55.6	63.9
1986	2.4	150.5	152.9	96.2	58.8	64.2
1987	7.8	159.2	167.0	92.1	57.0	64.4
1988	..	..	161.8	..	..	65.4
1989	..	..	176.6	..	..	62.1
1990	..	..	153.4	..	..	64.1
1991	..	..	154.3	..	..	62.7
1992	..	..	151.8	..	..	63.1
1993	..	..	165.7	..	..	61.5
1994	..	..	149.4	..	..	65.9

Continued next page

Table B.5 (Continued) ^{a,b}

Year	Incidence rate of disability <i>and</i> economic inactivity	Incidence rate of illness or injury <i>and</i> economic inactivity	Incidence rate for illness/injury or disability <i>and</i> economic inactivity	Share of long spells due to disability	Share of long spells due illness & injury	Share of long spells due illness, injury & disability
	Per 10 000 men in the general population	Per 10 000 men in the general population	Per 10 000 men in the general population	%	%	%
1995	..	..	172.9	..	..	62.5
1996	..	..	..	..	..	..
1997	..	158.3	168.5	93.9	54.3	67.2
1998	..	..	..	..	..	..
1999	13.9	172.7	186.6	91.0	51.9	63.7
2000	..	..	..	..	..	..
2001	22.9	200.2	223.1	88.6	48.8	62.3
2002	..	..	..	..	..	..
2003	17.5	175.0	192.5	91.5	52.8	66.7
2004	..	..	..	..	..	..
2005	16.7	186.3	203.0	93.0	48.9	66.4

^a The incidence rate measures the number of new cases of a condition relative to an at-risk population. In this instance, the incidence is of new cases of men outside the labour force for some time in a 12 month period who *also* cite a health condition (ill, injured or disabled) as the reason for inactivity, relative to the male population aged 15–69 year old. The number of new cases of males who are out of the labour force *and* with a health condition is calculated as x-y where x is the number of males experiencing economic inactivity during the past year whose main activity is a health condition and y is the number of males experiencing economic inactivity *for a year or more* whose main activity is a health condition. ^b The duration measures show the share of cases where an economically inactive male cites a health condition as their main activity in which the inactivity lasts for more than 12 months.

Data source: ABS various issues, *Australian labour Force Experience*, supplement to the labour force survey, Cat. No. 6206.0.

Table B.6 Men not in the labour force who are permanently unable to work

Share of total men not in the labour force, calendar years 1978 to 2005, by age group

Year	Age group (years)							
	15–19	20–24	25–34	35–44	45–54	55–59	60–64	15–64
	%	%	%	%	%	%	%	%
1978	0.29	1.36	2.94	4.79	5.96	6.01	3.39	2.52
1979	0.43	1.23	3.55	4.73	5.17	4.97	2.71	2.38
1980	0.25	1.21	3.83	4.49	4.08	5.26	2.77	2.31
1981	0.19	1.15	3.41	4.34	4.87	4.42	2.46	2.25
1982	0.48	1.39	3.17	3.42	5.64	5.24	2.63	2.51
1983	0.31	1.37	2.35	3.21	5.26	4.12	2.24	2.10
1984	0.16	0.98	2.12	3.30	4.77	3.41	1.59	1.73
1985	0.17	0.86	2.59	3.39	4.51	3.71	1.83	1.87
1986	0.09	1.32	1.98	3.19	3.28	3.15	1.87	1.64
1987	0.13	1.13	1.74	2.49	2.43	2.64	1.48	1.34
1988	0.18	1.31	1.69	3.10	3.25	2.89	1.80	1.61
1989	0.15	0.89	2.38	3.14	3.63	3.20	2.29	1.84
1990	0.19	1.11	3.65	4.07	3.69	4.01	3.14	2.31
1991	0.26	1.40	3.32	3.24	4.96	4.49	1.99	2.18
1992	0.13	0.86	2.91	3.92	4.65	3.92	2.32	2.14
1993	0.12	1.08	3.00	3.57	4.75	2.94	2.35	2.07
1994	0.27	1.75	3.45	4.77	5.46	4.31	3.33	2.85
1995	0.27	1.70	4.96	3.29	6.01	4.42	2.74	2.84
1996	0.27	1.82	4.72	6.12	6.73	6.82	3.08	3.62
1997	0.30	1.59	6.36	5.36	7.96	7.26	3.18	3.98
1998	0.45	1.48	4.17	5.31	8.10	5.47	3.18	3.62
1999	0.19	0.71	2.46	4.61	6.36	5.03	3.01	2.96
2000	0.28	1.71	3.57	6.72	7.50	5.55	4.65	3.98
2001^a	0.28	2.38	5.44	8.22	10.60	9.56	6.99	5.84
2002	0.48	2.02	5.79	8.42	11.75	11.46	8.10	6.45
2003	0.35	1.51	6.37	9.35	12.75	12.06	10.43	7.19
2004	0.50	3.41	6.82	10.49	14.00	13.48	9.29	7.71
2005	0.44	2.94	8.88	13.23	16.77	15.21	13.87	9.57

^a A break in the series occurred in 2001 as a result of re-design of the Labour Force Survey, but this should not have appreciably affected the measure above.

Source: ABS 2006, *Labour Force Survey*, Electronic delivery, Cat. No. 6291.0.55.001.

Table B.7 Men not in the labour force who are institutionalised

Share of total men not in the labour force, calendar years 1978 to 2005, by age group

Year	Age group (years)							
	15–19	20–24	25–34	35–44	45–54	55–59	60–64	15–64
	%	%	%	%	%	%	%	%
1978	1.71	8.19	13.84	11.52	8.56	5.86	3.18	3.18
1979	2.16	9.86	15.59	11.55	8.45	5.84	3.15	3.15
1980	1.13	7.54	12.82	8.69	6.49	4.70	2.16	2.16
1981	1.12	8.47	12.11	8.50	6.11	4.20	2.30	2.30
1982	1.08	6.77	13.58	12.05	7.45	4.88	2.52	2.52
1983	1.55	8.15	13.67	7.23	6.10	4.15	2.18	2.18
1984	1.83	10.34	15.27	10.89	5.20	3.49	1.97	1.97
1985	0.82	10.98	17.20	10.77	5.08	3.34	1.66	1.66
1986	1.16	10.58	13.65	6.27	3.55	2.33	1.50	1.50
1987	1.26	8.63	11.76	7.03	3.12	2.29	1.59	1.59
1988	0.77	5.10	8.96	6.58	3.39	2.85	1.60	1.60
1989	1.05	7.63	12.44	10.19	4.84	2.94	2.01	2.01
1990	0.96	7.12	9.17	5.67	4.15	2.87	2.11	2.11
1991	0.99	5.02	11.39	6.90	3.77	2.48	1.67	1.67
1992	0.63	3.47	8.46	6.63	3.66	2.38	1.73	1.73
1993	1.30	3.17	5.62	3.83	3.18	1.15	1.68	1.68
1994	0.97	5.97	12.78	6.68	4.57	1.34	1.09	1.09
1995	0.75	3.76	9.72	6.33	3.46	1.60	1.12	1.12
1996	0.46	2.86	6.39	5.10	2.35	1.14	1.50	1.50
1997	0.55	4.25	6.77	5.02	2.41	2.14	1.31	1.31
1998	0.21	5.04	8.17	4.54	3.10	1.69	1.30	1.30
1999	0.61	7.86	9.67	5.31	3.09	1.57	1.63	1.63
2000	0.27	2.25	3.93	4.03	2.80	2.36	1.98	1.98
2001^a	0.25	2.44	4.81	3.94	3.46	1.72	1.44	1.44
2002	0.16	3.45	5.93	3.94	2.57	1.24	1.12	1.12
2003	0.24	5.17	8.32	5.32	2.80	1.61	1.30	1.30
2004	0.45	7.25	15.01	7.86	4.15	2.10	1.53	1.53
2005	0.26	4.72	10.67	7.65	4.37	2.38	1.37	1.37

^a A break in the series occurred in 2001 as a result of re-design of the Labour Force Survey, but this should not have appreciably affected the measure above.

Source: ABS 2006, *Labour Force Survey*, Electronic delivery, Cat. No. 6291.0.55.001.

C Engagement of people on DSP

There are two principal ways of reducing DSP caseloads. The first is to cut the inflow rate by:

- reducing the prevalence of disability through better OH&S approaches; new health interventions; and more effective rehabilitation;
- decreasing the incentives to shift to DSP from unemployment through welfare system design and better support of unemployed people with disabilities; and
- decreasing the risk of unemployment in the first place (the main prior labour market state to DSP) through improved education and training, and greater receptiveness of employers to people with disabilities.

This strategy is likely to produce significant long-run cuts in DSP numbers (chapter 8). The second strategy is to reduce the current caseload by increasing the outflow from DSP. In theory, this can produce quicker changes in the caseload, but it involves many challenges. It is the main topic of this appendix.

Some of the difficulties in achieving this second aspiration are suggested by the pilot program undertaken by the Department of Employment and Workplace Relations (DEWR) to re-engage DSP participants with the labour market using the Job Network.

DEWR undertook the pilot between December 2003 and June 2004. Entry into the pilot was voluntary, so that there is a risk of selection biases. The most substantive observable differences between the pilot participant population and the wider DSP population were the:

- greater relative involvement in the pilot of people with psychological/psychiatric conditions and those with sense organ disabilities, and the lesser involvement of people with musculoskeletal and connective tissue disabilities;
- greater involvement by younger people; and
- less involvement by people with long durations on the DSP. For example, 12.4 per cent of pilot participants had been on income support for 10 years or more compared with 26.1 per cent of the DSP population (DEWR 2004, p. 8).

The pilot participants were similar in socio-demographic terms to DSP recipients already enrolled with generalist Job Network members — excepting that pilot participants were somewhat better educated. It is likely that there are unobservable differences between the pilot group and the wider DSP population, such as different levels of motivation. The characteristics of pilot participants suggest that the results of the pilot will tend to exaggerate the labour market prospects of the broader pool of DSP clients.

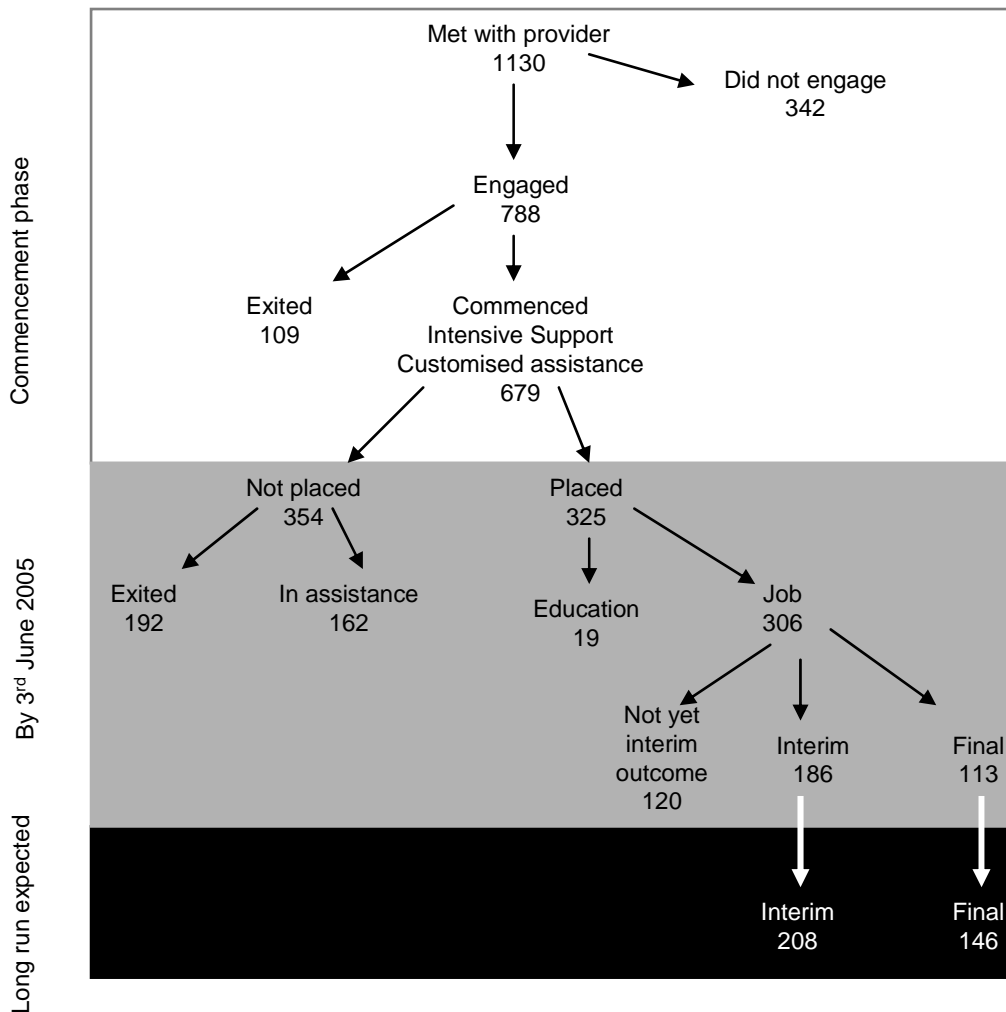
Despite their advantages, relatively few of the pilot participants have got a job through the pilot (figure C.1), though the results have improved over time and will continue to improve. The evaluations show that of the 1130 people initially expressing interest in the pilot, only 679 people ultimately entered customised assistance. This suggests that even among volunteers, only about 60 per cent are suitable to commence in the Job Network. In the long-run, around 15 per cent of the 1130 initial pilot participants can be expected to secure a job lasting around six months or more (a ‘final’ outcome) and about twenty per cent a job lasting three months or more (an ‘interim’ outcome).

However, not all of these jobs are likely to be ascribable to the pilot since self-motivated DSP beneficiaries would tend to get jobs in the absence of any intervention. It is notable that one third of pilot participants had recent labour market experience when they engaged in the pilot (and these were the most likely to get a job during the pilot).

One measure of the effectiveness of the pilot is to calculate the average cost per job outcome. Up to early June 2005 the cost per final job outcome was around \$27 000 (table C.1), but this is for job outcomes, not job outcomes causally related to the program. The evaluations to date do not estimate net impacts (and in any case, this would be difficult without a clear comparison group). However, as a *hypothetical*, suppose that half the outcomes can be ascribed to the pilot. This would imply a net program impact rate of four times that found for people with disabilities in the Job Network generally (DEWR 2006, p. 16). Given the similarity in the socio-economic profiles of the two groups, this is probably an overestimate. In this hypothetical case, costs per net long-term job would still be around \$54 000. Against this, the pilot suggested that benefit payments fell, so that in addition to the economic and non-pecuniary benefits received by job finders, taxpayers benefited from reduced needs to finance income support payments (a saving of around \$85 a fortnight for each job lasting over 13 weeks).

The long-run impacts of interventions like the pilot are very hard to estimate because periods of employment can have lasting benefits that are not captured in the time periods considered by the evaluation. These benefits are realised as reduced episodes of unemployment and inactivity in the future.

Figure C.1 **The Job Network Disability Support Pension Pilot**
Progress to 3 June 2005^a



^a The graph will be approximate in some places as the evaluations of the pilot do not always provide exact numbers for all possible labour market states and flows. There are also difficulties in presenting data where a participant achieves both job and education outcomes. For example, education outcomes record those who only got an education outcome and ignore those who got a job and an education outcome (these are counted in the job totals). The long run expected outcomes were calculated by DEWR in DEWR (2005c) and may be exceeded. Some participants achieved more than one outcome over time (for example, two jobs in succession). Only one outcome is shown.

Data source: DEWR (2004, 2005c).

Overall, the results highlight the considerable costs of re-engaging the existing caseload of DSP beneficiaries. The fact that the pilot participants who came forward were probably the more advantaged group within the DSP population generally suggests that the costs of engaging people in the labour market after entering DSP are very high. This does not necessarily mean it is not worthwhile, but it has to be balanced against potentially cheaper alternatives for improving engagement.

Table C.1 Indicative costs per additional long-term job
To 3rd June 2005^a

<i>Category</i>	<i>Value</i>
Jobs	
Interim jobs (number)	186
Final jobs (number)	113
Costs (\$)	
Pilot and service fees \$	1 300 000 ^b
Job placement fees \$	70 000 ^c
Outcome fees \$	940 000 ^d
Job Seeker Account \$	710 000 ^e
Total pilot costs \$	3 020 000
Costs per job	
Cost per interim job \$	16 200
Cost per final job \$	26 700
Cost per additional final job \$	53 500

^a The calculations are estimates only, but the Commission considers that the true estimates are likely to be within ten per cent of the estimated figure. However, it is important to emphasise that the results relate only to the period up to early June 2005 and that average costs per job outcome will probably fall slightly over time. However, with increased time it is also likely that additional job outcomes may reflect factors other than the program intervention itself, so that the net job impacts probably do not change appreciably. ^b This includes the costs of raising awareness of the pilot in order to recruit DSP beneficiaries and payments to Job Network providers for work capacity assessments, including liaison with treating doctors (from Senate Estimates, *Hansard, Employment, Workplace Relations and Education Committee*, 17 February 2005). ^c Job placement fees were estimated on the basis of the scheduled placement fee under employment service contract number 3, the number of job placements (including repeat job placements) discounted by jobs gained by job seekers without the aid of the Job Network provider (assumed to be around 2/3 of placements), and with the assumption that 40 per cent of placements achieved the bonus placement rate. ^d Outcome fees depend on the duration of the job acquired and the prior duration of the job seeker on income support. The DEWR evaluation (2005c) provides sufficient evidence on both counts that the frequency of the four different types of outcome fees can be estimated to give total outcome fees. ^e Expenditure on the job seeker accounts is based on average job seeker account values and numbers of recipients of the accounts.

Source: Commission calculations based on DEWR (2004, 2005c).

D Output effects of inactivity

D.1 Economic impacts

As noted in chapter 7, estimates of the net economic costs of labour market inactivity need an appropriate counterfactual. Such a counterfactual should take account of the costs and benefits of engaging people currently out of the labour force. At some point, the additional costs associated with engaging just one more person realises benefits that are not worth those costs. That point provides a useful counterfactual for calculating the current output forgone through male inactivity.

The following sections therefore assess what costs and benefits would be involved in re-engaging men not in the labour force. The final *net benefits* from that conceptual exercise represent the *net costs* associated with present male inactivity.

D.2 The gross costs of labour market engagement

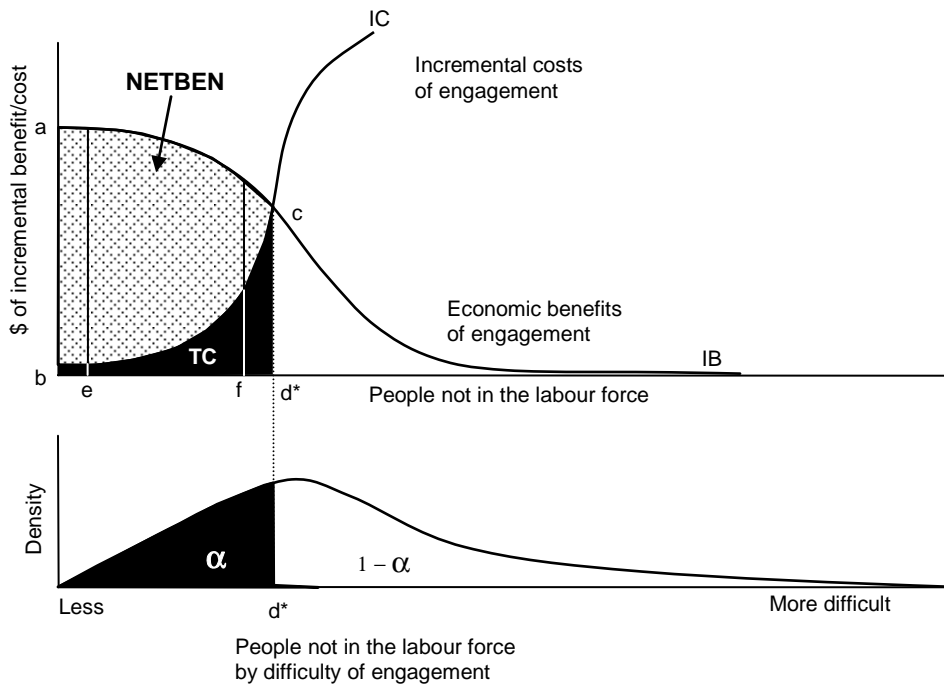
Some policies to re-integrate males into the labour force could use changes in benefit eligibility rules, which require few resources. However, many policy measures that encourage people into the labour force impose resource costs — rehabilitation costs, education and training costs, Job Network payments, work support, public servants and social workers. The costs per person of achieving job outcomes rise with their degree of disengagement from the labour force and can be amplified by other traits (such as age). For people who are only just detached from the labour force, these costs are low. But for people with severe barriers to participation — such as those with mental, intellectual and physical disabilities or with low education and poor skills — these costs will be higher per person. For those with severe barriers, the costs are very high, hence the steepening incremental costs shown in figure D.1. Evidence from the Job Network DSP pilot (DEWR 2005c) showed that those participants with low ex ante measured employability¹ did, in fact, have poor ex post job prospects.

There is little empirical evidence on the magnitude of costs borne by taxpayers associated with engagement policies. Some estimates are described for the 2004 Job Network DSP pilot. These suggest high costs per truly additional job (appendix C).

¹ As measured by the Job Seeker Classification Index (p. 11).

In any case, the costs depend on the type of policy, with the likelihood that policies that attempt to keep people in jobs or searching for jobs have lower costs per effective outcome than those aimed at getting people back into the labour force.

Figure D.1 A policy-useful counterfactual for considering the costs of people not in the labour force^a



^a The area TC denotes the total costs of encouraging engagement and the area denoted by $bacd^*$ is the gross benefits. NETBEN, the total net economic benefits from engagement is, therefore, the difference between $bacd^*$ and TC. d^* is the number of people at which the marginal benefits are equal to the marginal costs. α is the proportion of people not in the labour force with difficulty of engagement below d^* . The actual shapes of the curves are illustrative and could be quite different from this.

D.3 The feasible change in the participation rate

There are many possible benchmarks for conjectures about the participation rates associated with the optimum engagement of people outside the labour force (d^* in figure D.1). One is the achievement of participation rates typical of other OECD countries. Gruen and Garbutt (2003), for example, used the 80th percentile across OECD countries for age-specific participation rates. These are countries at much the same level of economic development and therefore provide some guide to what may be achievable in Australia. However, the countries that constitute the 80th percentile vary by age group. Accordingly, it is not so clear that it is feasible to achieve simultaneously each of the 80th OECD age-specific percentiles in just one country. For example, there can be tradeoffs across the lifecycle in participation rates because education can reduce participation when young and stimulate it when old.

Cultural and economic traits specific to countries may also affect what is feasible in Australia.² Finally, for some age groups Australia is already above the 80th percentile. Nevertheless, this international benchmark has the virtue of simplicity and provides a useful potential policy target.

An alternative is to look at participation rates achieved in the past. Participation rates were much higher for males in the 1960s and 1970s. For example, for each of the 5 year age groups from 25–49 years male participation rates fell by about seven percentage points from 1969–70 to 2004–05. However, a return to the past rates is probably not a realistic policy counterfactual. For instance, the structure of the economy has shifted away from industries in which manual skills are commonly in demand (chapter 8). Educational involvement has also increased substantially for the young, reducing the scope for their full-time participation in the labour market.

In this paper, we have adopted another approach based on conjectures about entry and exit rates by successive cohorts over time into and out of the labour market. The assumptions are shown in figure D.2. The values underpinning this are *hypothetical*, but were chosen so that they were not outside the bounds of historical values, were consistent with the expected impacts of policy changes, and reflect changes in the nature of the economy (such as the increasing importance of tertiary education following school).

The most important assumptions are the entry rates of the young since these influence participation rates for all subsequent ages. It is assumed that:

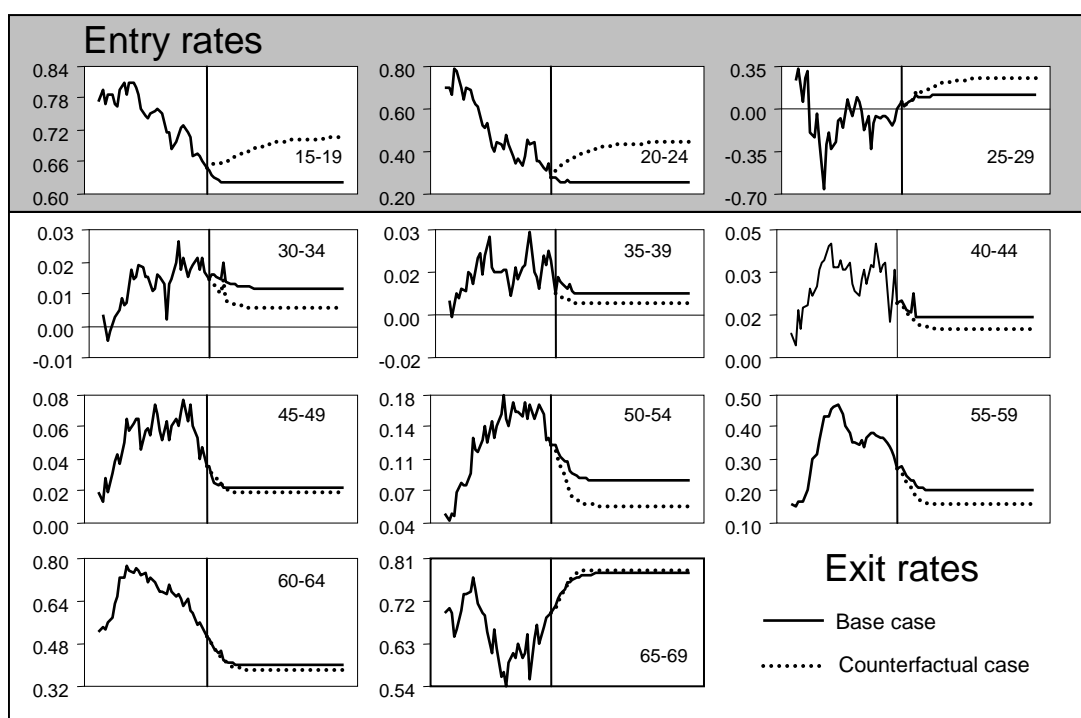
- rising levels and quality of education of 15 to 19 year olds improves their employability. This increases the net entry rates of males from 15–19 years to 20–24 years. It also improves net entry rates for older age groups. This reflects the fact that some people can use a higher school attainment rate as a stepping stone to further education and this has another round of entry benefits. Greater employability also reduces the gross exit rates that contribute to net entry rates;
- the introduction of reforms for those with disabilities, changes in superannuation policy settings and males' greater educational attainment rates reduces net exit rates from the labour force at older ages to levels that are more in line with historical levels. However, in most instances, these trends are already apparent in existing exit rates, and so the future gains through reduced exit rates are, relative to the base case (PC 2005), not as important as the changes in net entry rates; and

² As can statistical differences in how they measure participation rates (for example, accounting for defence forces, institutional populations and missing data).

- the net exit rates of 65–69 year old males actually rises (slightly), simply because the size of this group is so much larger as a result of policy reforms. At some time, people must retire. If they do not do it earlier in their lives, a greater proportion must retire at later ages. It is apparent that past exit rates for 65–69 year olds are inversely related to exit rates for 60–64 years, providing an additional basis for this assumption.

The important insight gained by considering exit and entry rates, rather than participation rates, is that the achievement of higher participation rates for prime-aged males is considerably supported by higher entry rates by young males. This is why this report has given so much attention to assessing and understanding dynamic reform options, like education, that may alter the pattern of net entry to the labour market at earlier ages. In the absence of such increases in younger entry rates, the reductions in exit rates at older ages make much smaller differences to prime age male participation rates, though they do affect participation rates of the old.

Figure D.2 **Hypothetical entry and exit rates associated with optimal policy**
1969-70 to 2050-51, by age groups 15–19 years to 70+ years^a



^a Exit and entry rates shown for period t and age group a , are the rate at which a transition to participation in the labour force occurs for the age group $a+5$ at time $t+5$. So, for example, an exit rate for men aged 30–34 years for time t indicates the likelihood of exit from the labour force in the transition from ages 30–34 to 35–39 years over the period from t to $t+5$. The vertical line shown is the year after which projections are made (2004-05).

Data source: Commission calculations.

The resulting participation rates from these assumptions reveal very significant gains relative to the base case, especially for prime aged males (table D.1 and figure D.3). However, gains for this group are not so high as to be unrealistic. The gains are similar to those in the Productivity Commission's National Reform Agenda, especially for the older age groups. Where there are differences, they reflect the longer period and different methodologies.

Table D.1 Male participation rates

Age	2004–05		2050–51		Gain points
	Actual %	Base %	Counterfactual %	Gain points	
15–19	59.6	61.0	54.7	-6.3	
20–24	84.7	84.6	85.9	1.3	
25–29	90.4	88.2	91.6	3.4	
30–34	91.7	89.3	93.5	4.2	
35–39	91.1	88.4	93.0	4.6	
40–44	90.5	87.6	92.5	4.9	
45–49	89.8	86.3	91.5	5.2	
50–54	86.0	84.4	89.7	5.3	
55–59	74.6	77.6	84.7	7.2	
60–64	53.0	61.9	71.2	9.4	
65–69	22.8	37.4	43.3	5.9	
70+	5.6	8.3	9.1	0.8	

Source: Commission estimates.

The labour participation outcomes for the young require some comment.

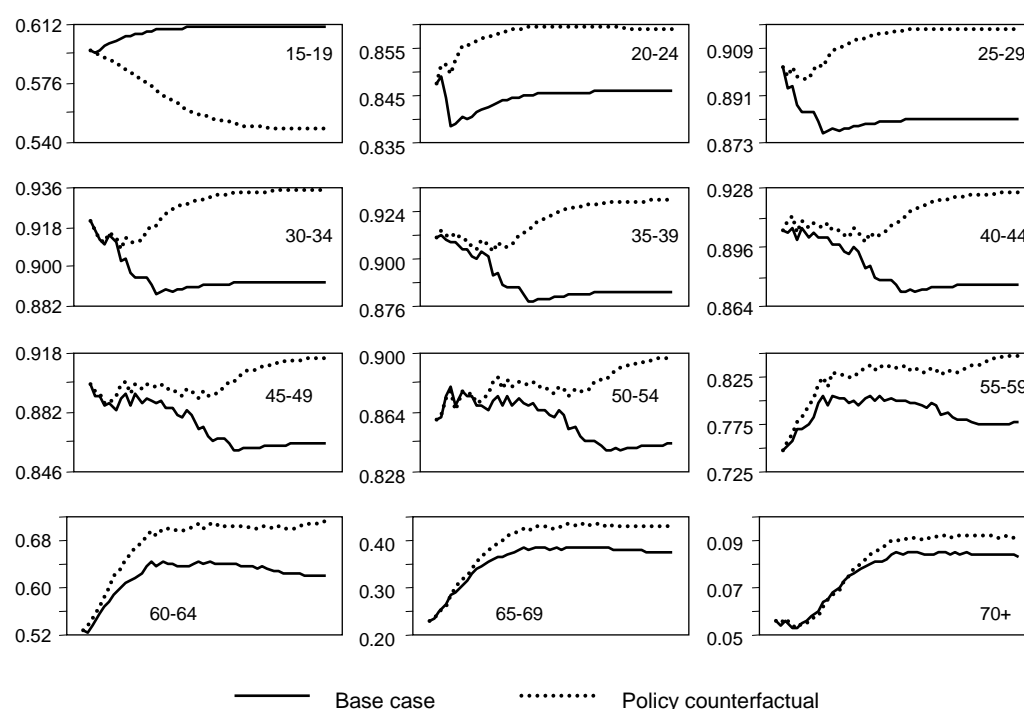
- Participation rates *fall* by about 6 percentage points relative to the base for 15–19 year olds as more attend post-year 10 schooling and as the average ‘quality’ of those who leave early falls relative to stayers.³
- In contrast, participation rates *rise* (slightly) for 20–24 year olds, despite increased levels of education among this group. This occurs because the labour participation rates of those not involved in education rise with their greater employability following past investments in human capital. The participation rates of those who are studying also rise (the financial needs of new entrants to study are likely to be greater, prompting more demand for participation and their

³ This report's scenarios for the costs of male inactivity do not, therefore, assume that young males attending educational institutions represent a foregone economic opportunity. These males are investing in future education, a decision that is generally supported by policy in recognition that the future economic gains outweigh the immediate losses. Such groups should be subtracted completely from the relevant population of the inactive for calculations of the economic costs of inactivity.

employability is also enhanced from past investment in schooling). In theory, the overall participation rate of 20–24 year olds could still have declined because the average labour participation rate of those in tertiary education is significantly below that of those not involved in education, while the shares of young men involved in education are expected to rise. However, modelling suggests that the net effect is a small increase in the participation rate.

Figure D.3 Male participation rates by age group

Base case and policy counterfactual, 2004-05 to 2050-51, for age groups 15–19 years to 70+ years^a



^a The base case is estimated using the methods described in PC (2005), but updated with 2004-05 fiscal year data. The counterfactual is estimated using the exit and entry rates shown in the previous figure. The difference between the base and the counterfactual results is the long-run feasible gain in participation rates. The difference in the size of the economy between these two cases forms the basis for the estimates in this report of the costs of inactivity. The focus is the result in 2050-51, not the exact path to that outcome.

Data source: PC (2005) and PC estimates.

D.4 The gross benefits of engagement

The changes in the labour participation rates that are feasible is only one element of the benefits of re-engaging the inactive. There are several other aspects of labour market performance of the inactive, were they to enter the labour market, relevant to the gains in economic output. To get an insight into this, first consider a breakdown

of the value-added contribution of males per capita *before* the engagement of outsiders:⁴

$$\frac{VA_i}{POP} \equiv \frac{VA_i}{HRS_i} \times \frac{HRS_i}{EMP_i} \times \left(1 - \frac{UNEMP_i}{LF_i}\right) \times \frac{LF_i}{CPOP} \times \frac{CPOP}{POP} \times \frac{POP}{POP}$$

where *i* denotes ‘male insiders’, VA is value-added, HRS is hours worked, EMP is employment, UNEMP is unemployment, LF is the labour force, CPOP is the male civilian population aged 15 years and over, POPM is the male population and POP is the total population. The sum of value added of males and females is equal to GDP. Were outsiders to enter, then total GDP per capita would be a combination of the ex ante value-added contribution of insiders, *plus* the contribution of outsiders (denoted by a subscript *o*), *plus* any change in the value-added contribution of insiders that occurs as a result of the recruitment of outsiders:

$$\frac{GDP}{POP} \equiv \frac{VA_f}{POP} + \frac{VA_i}{POP} + \left\{ \frac{VA_o}{HRS_o} \times \frac{HRS_o}{EMP_o} \times \left(1 - \frac{UNEMP_o}{LF_o}\right) \times \frac{LF_o}{CPOP} \right\} \times \frac{CPOP}{POP} \times \frac{POP}{POP} + \frac{\Delta VA_i}{POP}$$

(1) = (2) + (3) + (4) × (5) × (6) × (7) × (8) × (9) + (10)

It is easy to show that if (10) is zero and aggregate (4), (5),(6) ,(8) and (9) for new labour force entrants is the same as past male labour force members, then the percentage increase in *value added per male* would be:

$$100 \times \Delta PR / PR$$

Suppose that policy achieves an increase in male participation rates from a base case of 62.3 per cent to the counterfactual of 65.7 per cent by 2050-51. Value added per male is higher by 5.4 per cent under the counterfactual. Using the methods described in box D.1, overall GDP per capita would be around 3.3 per cent higher by 2050-51 (assuming that the policies encouraging engagement apply only to males).

⁴ It is assumed that population numbers are invariant to policy changes that promote participation, though there could be some effects on fertility and mortality rates. For example, improvements in health may increase the participation rates of males on DSP, but these initiatives can also be expected to decrease age-specific mortality rates, increasing the number of older males. This changes the age structure of the economy and will also affect output per capita. The incidental links between policies aimed at increasing labour participation and population are complex, as are their effects on per capita output. They are beyond the scope of this paper.

Box D.1 Estimating GDP per capita benefits from decreasing male economic inactivity rates

To calculate the corresponding increase in GDP per capita, an assumption must be made about what has happened to the output of females. One simple way of isolating the effects of policy on GDP per capita stemming from initiatives oriented at males is to calculate the female value added in 2050-51 that holds under the base case and use that to derive an estimate of the missing component of GDP.

Define the base case GDP as VAM+VAF in 2051, where VAM is value added of males and VAM is value added of females. Under the counterfactual, VAF is left at its base case value and VAM changes so that:

$$VAM^* = (1 + \Delta PR / PR) \times VAM$$

and

$$GDP^* = VAF + (1 + \Delta PR / PR) \times VAM$$

Now VAF is estimated to be a fraction of VAM so that:

$$VAF = \alpha \cdot VAM$$

In that case, the change in GDP per capita as a result of policy change is:

$$\frac{GDP^*}{GDP} - 1 = \frac{(VAF + VAM^*)}{(VAF + VAM)} - 1 = \frac{(VAM^* - VAM)}{(VAF + VAM)} = \frac{((1 + \Delta PR / PR) - 1)}{(\alpha + 1)} = \frac{\Delta PR / PR}{(1 + \alpha)}$$

It is estimated that by 2050-51, α would be around 0.6.⁵ In that case, GDP per capita would be higher than its base value by about 3.3 per cent in 2050-51, a substantial permanent dividend to the economy.

However, this is likely to be an inaccurate measure of the gross economic benefits. First, changes in participation rates differ by age group, so that even if labour market ratios are the same at the age-specific level for insiders and outsiders, there is a discrepancy in the age structure of insiders versus outsiders. As a result, labour market ratios are not the same for insiders and outsiders at the aggregate level. If the age structure of participation changes is taken into account then value-added per male increases by 6.0 per cent and GDP per capita by 3.7 per cent.

Second, a potentially more important factor is that people out of the labour force are not identical to those currently inside the labour force (hence the falling marginal benefits of reform shown in figure D.1).

⁵ This ratio was calculated based on the present ratio of hourly earnings of females to males (assumed to stay fixed over time), and projections of total annual hours worked by gender for 2050-51 from PC (2005).

Productivity, employment rates and hours worked by new labour entrants will be lower

It can be expected that inactive males will, on re-entering the labour market, have lower hourly productivity than the average. This is because, compared with those already in the labour force, their general employability, health and disability status, motivation, inherent ability, and available family resources (for example, assistance with moving jobs interstate or buying a car) are likely to worsen. They also have lower educational attainment rates, and these are correlated with other general problems, such as literacy skills (chapter 9). Many of these traits are dependent on the original reason for not being in the labour force. For example, a large number of males are out of the labour force due to a disability or injury. In 2004, this accounted for over 37 per cent of prime aged (25 to 64 year olds) males not in the labour force (ABS 2005). Even were some of these traits to be dealt with through policy (such as more education), the evidence suggests that there are other, less easily observed traits, like motivation, inherent ability and social skills, that may reduce productivity compared with current insiders (as raised in chapters 9 and 10).

There are several indicators of the productivity of prime-aged males who re-enter the labour force. These are discussed in a separate appendix (appendix E).

The same traits that affect the productivity of formerly inactive males suggest that unemployment risks of prime-aged inactive males will, on re-entering the labour market be higher than men generally in the labour force. These traits increase the probability of future job exits and reduce the probability of subsequent job entry. Moreover, the gap between likely earned income and unemployment benefits are likely to be smaller than other labour market members, reducing incentives for job search and retention.

Average weekly hours are also likely to be lower because (a) some groups who are responsive to policies that encourage transitions from inactivity to activity prefer part-time jobs (erstwhile retirees and those with disabilities); and (b) the segment of the labour market that generates most new jobs involve part-time work.

Overall, it is assumed that for outsiders who become insiders, their:

- productivity is around 70 per cent of insiders for each age-specific group;⁶

⁶ The Commission's NRA analysis uses a higher ratio that includes females. Since a higher proportion of the female population is outside the labour force, it is likely that their average 'quality' is higher and their productivity on entry is higher than the average 'marginal' male. Hence, the two different assumptions are consistent.

-
- their average unemployment rates are 1.5 times that of insiders (so if the unemployment rate was 4 per cent for insiders in a particular age group it would be 6 per cent for former outsiders);
 - their average part-time work share is 1.3 times that of insiders; and
 - their average hours are 80 per cent of insiders' hours.

Wage rate variations by age group were used to determine relativities in productivity per hour and these were incorporated into the analysis (for both insiders and outsiders). Real wage rates for each age group were assumed to grow by 1.75 per cent per annum, in line with long-run productivity growth. This is equivalent to the treatment in the models used for the Commission's National Reform Agenda study.

With these assumptions and the initial assumed feasible gain in male participation rates, the increase relative to the base case by 2050-51 in:

- value added per male is 3.1 per cent; and
- GDP per capita is 2.0 per cent.

These are still very substantial gains, though they do not take into account any resources used to achieve these increases. Re-engagement cannot realistically take place instantly — policies take some time to implement and sometimes many years to have any impacts (as in the case of policies that reduce inflows to the DSP). Assuming policies are put in place that achieve the exit and entry rates of the extent described in figure D.2, then over the period from 2005-06 to 2050-51, the gain to GDP (in non-discounted form) would be around \$1000 billion in 2003-04 dollars. In 2050-51 the gains would be about \$50 billion. These estimates ignore any gains from increasing female participation, which are also likely to be large. These figures are conjectural only — but they provide a reasonable indicator of the long-term opportunity cost of males outside the labour force.

What about effects on insiders?

The long-run story is likely to be more complex than this given feedbacks of policy changes on people who were formerly active in the labour market — the effects shown as (10).

- If re-entry (or lower entry rates to inactivity) is based on improved employability of the previously inactive, then this could increase productivity and lower wage pressures more generally in the economy, with wider benefits for unemployment.

-
- Developing human capital may expand options for full-time work or increase productivity during the working lives of people prior to the period, when under the present policy settings, they left the labour force (ie outsiders at age 60 may be insiders at age 40 years).
 - Improvements in human capital or health that assist people who would otherwise be outsiders may also make insiders more productive. For example, better school literacy and numeracy programs would not be targeted just on the future inactive, but on students more generally. As such, these initiatives may generally improve the subsequent productivity of insiders, as well as outsiders.

To assess the effects of policies that generally augment skills and reduce frictions in labour markets, an alternative set of simulation options allowed for greater labour supply and for stronger productivity growth among insiders. It was assumed:

- as in the Commission's National Reform Agenda modelling, that productivity of insiders by 2031 was 1.9 per cent (not points) higher than it would have been in the absence of policy changes. This implies an average labour productivity growth rate of around 1.82 per cent per annum instead of 1.75 per cent per annum until 2031 (that is, an increased growth rate of 0.07 per cent per year).⁷ After 2031, it was assumed that the annual productivity growth rate returns to 1.75 per cent per year.
- that there was a 5 per cent reduction in insider males' part-time employment rates; and
- that there was a 10 per cent reduction in insider males' unemployment rates.

In this case, the increase relative to the base case by 2050-51 in:

- value added per male is 6.2 per cent; and
- GDP per capita is 3.9 per cent.

Over the period from 2005-06 to 2050-51, the gain to GDP (in non-discounted form) would then be around \$2150 billion in 2003-04 dollars. In 2050-51 alone, the gains would be around \$95 billion or about \$3300 per capita. The results are not sensitive to the assumption of the extent of the productivity of outsiders relative to insiders (table D.2).

⁷ As in other experiments described in this appendix, this experiment assumes that the gains are for males only.

Table D.2 Sensitivity of the results to the ‘outsiders’ productivity discount factor

<i>Measure of gain from policy</i>	<i>Productivity of outsiders relative to insiders (%)</i>		
	60	70 (default)	80
Change in value added per male (%)	5.8	6.2	6.6
Change in GDP per capita (%)	3.6	3.9	4.2
Absolute gain in GDP to 2050-51 (\$billion 2003-04 prices)	2003	2145	2287
Gain in GDP in 2050-51 (\$billion 2003-04 prices)	88	95	102

Source: PC calculations.

In summary, while it is very difficult to estimate the forgone economic opportunities represented by economically inactive males, the gains from policies that encourage their engagement are substantial. The most sophisticated approach suggests gains could be about \$2000 billion over the next 45 years.

The Commission’s more elaborate exercise assessing the benefits of a new national reform agenda provides a more comprehensive assessment of the potential gains from a wider set of reforms for both genders, but is broadly consistent with the results presented here.

Taxation and welfare benefits effects can also be important

There are other feedback effects, which are also reflected in (10). Policies that successfully shift people from outside the labour force are likely to lower welfare benefits. A significant proportion of inactive males are supported by government income payments, primarily the DSP,⁸ and by various other transfer payments⁹ that reflect the relative poverty of prime aged males outside the labour force.

The economic costs are not these transfer payments per se, but the adverse effects on incentives from taxes to raise the revenue to fund the transfers. This economic burden reflects reduced incentives to work and distortions in capital markets. A rate of around 20 to 30 cents in each dollar of taxation revenue has been assumed.

The first step in considering the possible magnitude of the benefits from reducing DSP numbers is establishing a future base case. This was done by calculating and

⁸ In 2001, over 42 per cent of prime aged males, who were not in the labour force, claimed the DSP or carer payment as their main source of income (ABS unpublished data, Labour force supplementary surveys 2001).

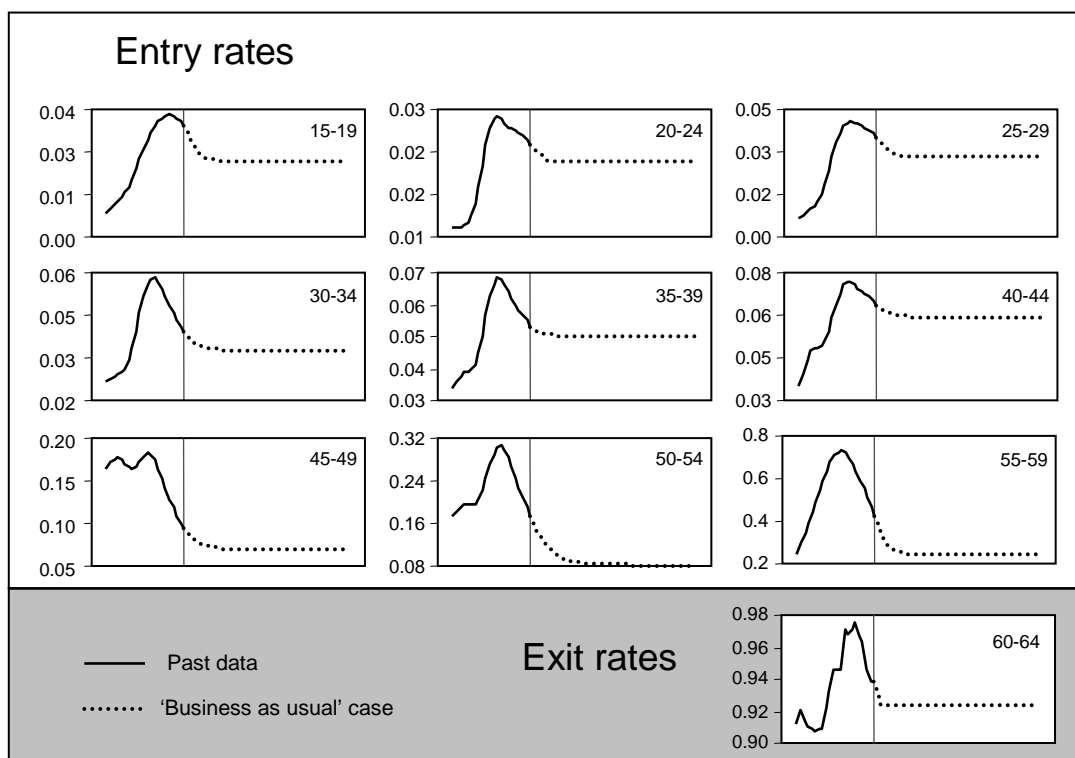
⁹ Such as health card concessions and public housing/rent assistance.

then projecting exit and entry rates for DSP — using a similar methodology to that above (figure D.4).¹⁰ It is notable that DSP entry rates have tended to fall for some time now and that the effect of this is that male DSP propensities also fall for some age groups (figure D.5). The aggregate DSP rate is also expected to fall slowly over the next 45 years from a continuation of the existing trajectory of policies (‘business as usual’). The absolute numbers of DSP beneficiaries, however, would still be expected to rise under the base case, simply because population ageing places men into the groups at a higher risk of being in the program (figure D.6).

The second step is to consider possible reductions in DSP numbers. No formal modelling exercise has been undertaken here, but there are prospects that reductions against the base case could occur. For example, some countries have successfully reduced disability benefit rolls through changes in the administration of their programs and through re-engagement policies. Increases in the average skill levels of Australians may provide a future antidote to entry to the program, as may preventing health conditions that lead to disability and more effective management of health conditions. The benefit of long-run strategies aimed at reducing disability (or the labour market intolerance of it) is that such policies are more likely to generate positive employment outcomes, rather than move people from one welfare payment to another. Policies directed at net inflows (inflows less outflows) that are not based on employability can still increase employment, but are likely to do so to a lesser extent (figure 2.6 in chapter 2).

¹⁰ The method of calculating is the same, with the exception that the maximum DSP propensity for an age group is set at 0.27 instead of 0.99 as for participation rates. This affects the calculation of entry rates. The details of the methods for calculating entry and exit rates are in PC (2005).

Figure D.4 Male DSP entry rates have been falling recently
1984-85 to 2050-51^a



^a The vertical line is at 2004-05.

Data source: Commission calculations.

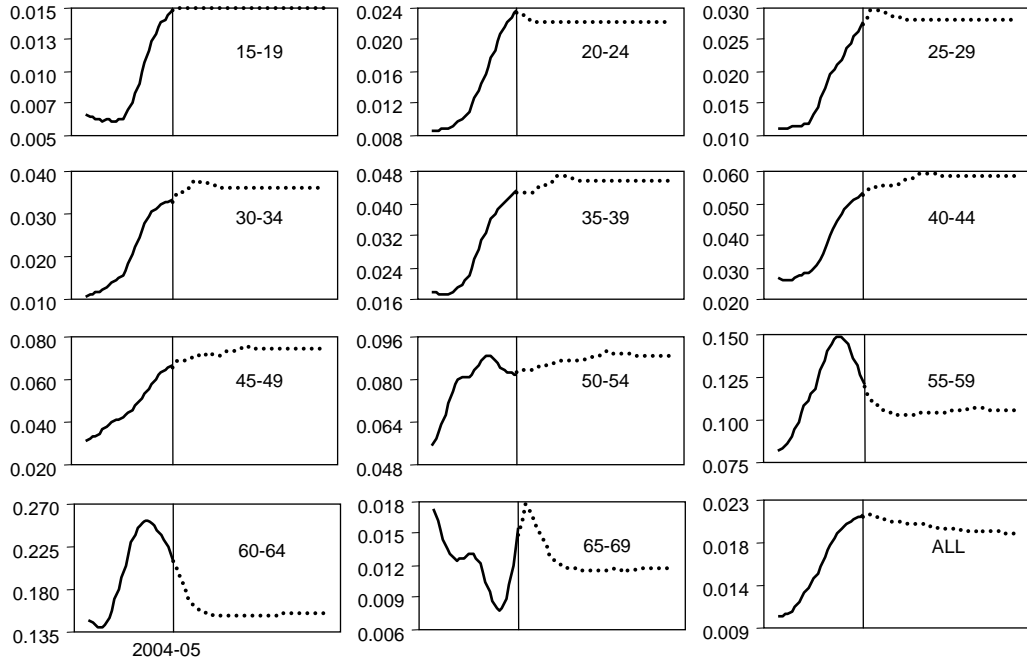
As a hypothetical case, suppose this reduces the DSP rolls significantly, with one third of the DSP recipients in the base case being employed under the counterfactual. This would imply a budget saving of around \$4.5 billion in 2003-04 prices in 2050-51 alone and an economic saving of around \$ 0.9 to \$1.4 billion in that year (based on the marginal excess burden of taxation).¹¹ There would also be significant savings for the years up to this point.

Apart from the reduced distortions associated with tax-funded welfare benefits, shifts of males from inactivity to the labour force can generate other dynamic and general equilibrium effects as the macro economy responds to labour force shocks. These could only be successfully modelled by a dynamic general equilibrium model.

¹¹ It is assumed that DSP pensions rise with average weekly earnings, which in turn grow by the productivity growth rate of 1.75 per cent per annum.

Figure D.5 Male DSP propensities are stable for young males and falling for older males

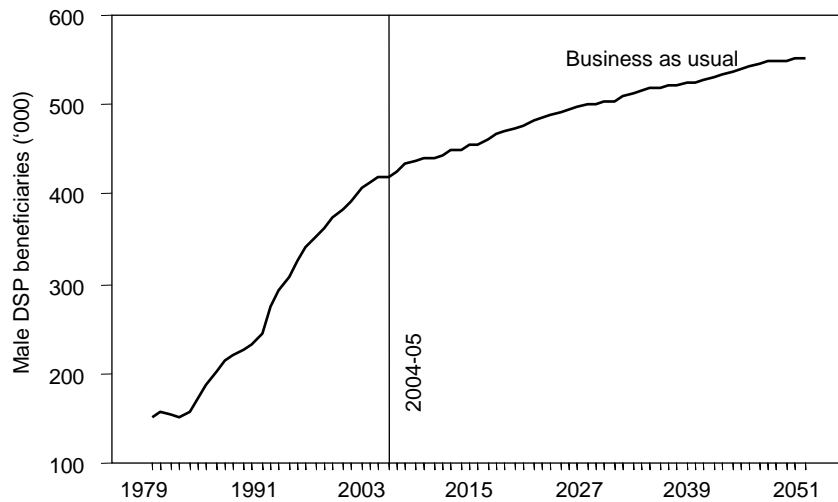
1979-80 to 2050-51, 'business as usual' case



Data source: Commission calculations.

Figure D.6 Male DSP numbers still rise under 'business as usual'

1979-80 to 2050-51



Data source: Commission calculations.

D.5 Some wrinkles in this story

There are several important wrinkles that are not represented in figure D.1 for the sake of simplicity, but which, nevertheless, affect the aggregate economic impacts of inactivity.

On the one hand, the intangible economic benefits of inactivity should be subtracted from the inactive group's forgone contribution to GDP.

- Some people not in the labour force perform valuable unpaid work (such as caring for a person with a disability and childcare). Movement of these groups into formal employment might make a difference to *recorded* economic output, but little to *actual* economic performance.
- Leisure is valuable, else retirement and holidays would be regarded as forgoing economic opportunities. So the effects on GDP (a measure of economic output) and on real consumption (including leisure) of increasing participation rates can be quite different. Of course, many people are inactive involuntarily, so the consumption value of leisure should not be *equated* with that of people on holiday or who have chosen retirement. Yet most inactive people would need to earn more through their labour income than they receive in benefits to make work attractive. This is consistent with some value placed on the involuntary hours of leisure they experience (and which is why income support can sometimes create so-called 'inactivity' traps).

On the other hand, there is also one particularly important additional cost associated with inactivity. Many people not in the labour force suffer adverse personal consequences, as do family members (chapter 7). These non-economic costs, while hard to value, could be appreciable. As noted by the Productivity Commission (PC 2005), these costs may constitute one of the main policy rationales for seeking to lower inactivity rates.

E The productivity of outsiders

As noted in appendix D, the value of GDP forgone through male economic inactivity is best measured as equivalent to the *gain* in output from achieving a realistic rate of re-engagement. A key part of measuring this gain is the productivity in workplaces of men who would have otherwise been outside the labour force (outsiders). Given the traits of men out of the workplace, it can be expected that these productivities are lower than existing male workers.

The theoretical framework developed by Frijters and Gregory (2006) provides a useful *initial* conceptual framework for considering the productivities of the responsive group — men currently not at work, but who would be employed under the counterfactual. In this model, the productivity of workers is equal to their potential market wages. Frijters and Gregory suggest that inactive males are outside the labour force because they have average productivities (p) that are either:

- (a) at or below the minimum wage (w_{\min}), so that the average productivity of this group is $w_{\min}(1-\varepsilon)$ where ε is the extent to which their effective productivity falls below that at the minimum wage; or
- (b) somewhat above the minimum wage, $w_{\min}(1+\nu)$, but where welfare benefits or other incentive mechanisms are sufficiently high to dissuade participation. ν is the extent to which their effective productivity is above that at the minimum wage.¹ For example, policies that have encouraged early retirement by educated men involve high productivity workers.

The ratio (r) of the labour productivity of new labour market entrants (p) to that of the average labour productivity of existing workers (p_{av}) accordingly depends on the weighted average of these groups:

$$r = \frac{p}{p_{av}} = \frac{s \times w_{\min}(1-\varepsilon) + (1-s) \times w_{\min}(1+\nu)}{p_{av}}$$

where s is the share of the responsive group that are in (a) and ε or ν are the extent to which average potential wages deviate from the minimum wage for the (a) and

¹ This case may be apt for males, but it is notably less so for women, who are often outside the labour market for reasons separate from those in (a) or (b).

(b) groups respectively. If $s = 0.5$ and $\varepsilon = \nu$, then $r = w_{\min}/p_{\text{av}}$, which was the assumption applied by the Victorian Department of Treasury and Finance (2005) in a future modelling exercise.²

There are several possibilities for measures of minimum wages.

- Federal minimum wages are given statutory recognition for many workers. In 2006, the ratio of Federal minimum adult full-time wages (\$484.60) to average full-time male ordinary-time wages (\$1101.2)³ was about 44 per cent.⁴
- The ABS provides data on the earning distribution of various groups. The 10th percentile provides a reasonable measure of the bottom group of wage earners. In 2004 — the latest year for which data are available — the 10th percentile was \$576 for full-time male non-managerial employees relative to average earnings for this group of \$974.9 or a ratio of just below 60 per cent.

But given uncertainty, it is important to consider scenarios in which s , ε and ν have values different from those assumed above.⁵ For example, were s , ε or ν equal to 0.3, 0.1 and 0.25 respectively, then $r = 1.15 w_{\min}/p_{\text{av}} = 50$ per cent using Federal minimum wages as the value of w_{\min} .

A more complex approach is based on estimating expected wages as a function of the characteristics of people (education, experience, age, occupation). Such wage equations need to be adjusted⁶ for the fact that wages are only observed for the employed, which can bias the estimates. When adjusted, it is then possible to use these equations to infer the wages of people, were they to commence working, who are currently outside the labour force. As part of analysis undertaken for assessing the benefits of the National Reform Agenda, the Commission used wage equations estimated by Breusch and Gray (2004) to estimate the wage effects of re-integrating people outside the labour force. Relative wages then provide an indicator of relative productivities. Across several age-sex cohorts, the average hourly productivity of new entrants was around three-quarters of existing workers.

Bryant et al. (2004) use a similar approach to estimate the productivity differential for new entrants in New Zealand using a wage equation estimated by Kalb and Scutella 2003. For males aged over 20 years, this suggests relative productivities, between around 65 and 70 per cent (figure E.1).

² With the ratio being around 0.5.

³ Based on ABS, *Average Weekly Earnings, Australia*, Cat. No. 6302.0.

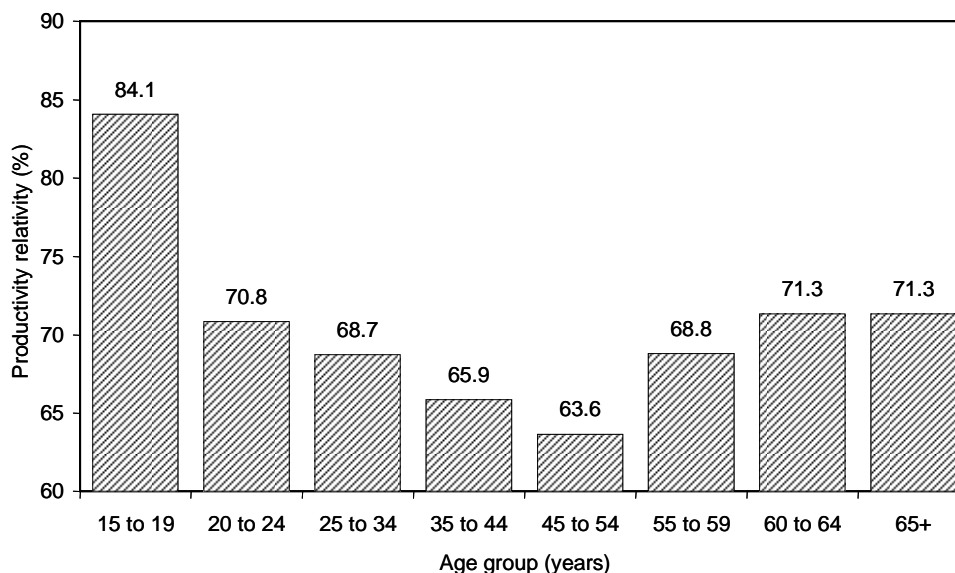
⁴ The Victorian Department of Treasury and Finance study (2005) also used the assumption of $r = w_{\min}/p_{\text{av}}$, but found a ratio of 50 per cent.

⁵ Reflecting this uncertainty, Frijters and Gregory find little evidence about the value of s , ε or ν .

⁶ Using Heckman selection bias adjustments.

Figure E.1 **Implied productivity relativities by age between newcomers and existing workers**

Males, New Zealand



Data source: Bryant et al. (2004).

There are three potential problems in using Breusch and Gray (2004), Kalb and Scutella (2003) or similar wage equations to infer productivities of ‘outsiders’ were they to get jobs, with opposing biases.

Unobserved characteristics

First, the wage equations of Breusch and Gray (2004) and Kalb and Scutella (2003) exclude some characteristics that may be particularly relevant for assessing the productivities of some key groups of males who are outside the labour force. They exclude:

- health/disability status, which, all other things being equal, is associated with lower productivity. Some idea of the magnitude of those effects is given by Cai (2006), who examined wages of people by their health status using the HILDA survey. This is relevant to the issue of re-integrating men with disabilities into employment. The results, corrected for the effects of wages on health, suggest that Australian men in poor or fair health earn wages around 20 per cent less than men with good or better health.⁷ This effect would further

⁷ Cai reports that people in good or better health earn a premium of 24 per cent higher than those with poor or fair health. That ratio is inverted to give the 20 per cent figure.

decrease the average productivity of new entrants compared with existing workers; and

- other variables that are likely to be associated with working, but that are hard to observe, such as motivation, adaptability, social skills, and inherent ability. These are also likely to affect wages and productivity.

People don't stay the same

Second, the results shown in figure E.1 above (and implied by the conceptual framework used by Frijters and Gregory (2006)) are based on the supposition that existing inactive males have the same traits when re-integrated into the labour market. This assumption is imperfect. As emphasised in appendix D, the counterfactual used to estimate forgone output associated with the currently economically inactive is based on optimal policy (one that equates the marginal benefits of re-engagement with the marginal costs). That counterfactual will undoubtedly involve a range of policy initiatives, some of which rely on changing the characteristics of those presently outside the labour force (such as improved education when young, preventative health strategies and so on). This has several effects.

- Productivities of outsiders when integrated into the labour force are higher than they would be otherwise.
- Policies aimed at reducing inactivity rates of some groups in the future do so by increasing wages and productivity of these groups *throughout* their working life. So, for example, if under current policy, someone were to be in the workforce for 20 years, and then leave for the remaining 30 years, then a reform that increases workforce life to 25 years not only generates output gains during the additional five years of work, but the productivity of the first 20 years. This positive effect will show up in factor (10) in the model shown in appendix D.

Only some outsiders can realistically become insiders

Outsiders are a highly heterogeneous group. For example, one dimension of this is the expected duration of economic inactivity. Men outside the labour force comprise those with:

- (a) long expected durations outside the labour force (those with long-term health conditions, disabilities and retirees); and
- (b) those with short and medium durations (leisure activities when young, education, childcare).

It could be expected that group (b) are intrinsically more productive than (a), but that proposed policy changes are (for males) not aiming to increase their labour participation. Indeed, policy will, to some extent, convert some insiders to outsiders in this category by increasing educational attainment rates. Accordingly, it would be desirable to exclude this group from the calculation of relative productivities.

Policy is principally aimed at those with long expected durations of inactivity, who face more enduring obstacles to work. But it is unrealistic to assume that all of group (a) outsiders could become insiders. For example, those with extremely serious barriers, such as with a profound disability, are much less likely to enter the labour force. Consequently, the group of policy-relevant outsiders are likely to be the more employable subset of outsiders within (a). These will have higher average productivity rates than group (a) as a whole, but lower than group (b).

This heterogeneity suggests that even when good estimates of wage equations are available, it is difficult to work out the appropriate productivity relativities unless the groups of outsiders targeted by policy can be clearly identified.

The assumption used in this paper

All of the various conceptual and modelling approaches described above have weaknesses, which increases the uncertainty about the appropriate parameter to use for the relative productivity of outsiders versus insiders. This paper uses a ratio of 70 per cent as a reasonable guide to this relativity, but applies sensitivity analysis when calculating implications for forgone output. Were the study to include women — as is the case in the Commission's analysis of the National Reform Agenda — a higher ratio would be employed because the available evidence suggests that female outsiders have characteristics that make them more closely akin to insiders.⁸

⁸ This is confirmed using the data from Bryant et al. (2004), which show much lower productivity disadvantages for female outsiders compared with insiders for most ages.

F Will population ageing reduce male inactivity rates?

Cross-sectional evidence on participation rates show that they follow an inverted-u for most countries, with particularly low rates of labour participation by people aged 65 years or more. Accordingly, demographic ageing can be expected to increase *aggregate* male inactivity rates because it pushes a greater share of people into ages where their labour engagement is small.

However, a common view is that this (incipient) reduction in labour supply per capita will create long run labour shortages, which will allow people not in the labour force to get jobs. Were this true, it would have the welcome policy implication that there was an autonomous market mechanism that would reduce Australia's relatively high prime age male economic inactivity rates (as well as for other age groups). Government policy in this area could then be relatively passive.

F.1 Conceptual framework

The Productivity Commission (PC 2005) contested this sanguine view on theoretical grounds. The nutshell of the argument is that the capacity to engage people of standard working age outside the labour force is predominantly determined by their employability (and any regional mismatches) (Layard 1994), not by the raw numbers of people of standard working age relative to the population. With one exception (taken up below), population ageing does not alter the employability of the currently economically inactive and so it should not change age-specific participation rates from their counterfactual level.¹ This argument is consistent with:

¹ There are some other possible endogenous responses to ageing that could affect participation rates, but these usually involve accommodating policy changes. For example, Bean (2004) suggests that the wage pressures created by incipient labour shortages could increase net migration inflows, acting as a safety valve to overheating. Because the inflows are predominantly workers, they would raise national participation rates above counterfactual levels. However, this mechanism requires the government to relax any quotas on immigration and it does not improve the employability of 'natives'.

-
- past experiences that negative labour supply shocks — such as early retirement policies aimed at already employable older people in past decades — simply reduced the available labour supply and did not create vacancies into which people of lower employability could leap (Layard et al. 1991, pp. 502ff; Saint-Paul 2004). The problem with assuming that negative (positive) labour supply shocks improve (reduce) participation prospects of those not in employment is the so-called ‘lump of output’ fallacy. This fallacy assumes that output stays fixed after the labour supply shock, whereas macroeconomic feedbacks imply that output also falls;
 - the stylised fact that positive labour supply shocks (such as intakes of skilled migrants or the massive post-war increase in female labour supply) result in an equivalent increase in the labour supply without reducing age-specific labour participation rates (or increasing unemployment rates). This is the realisation of Say’s law that supply creates its own demand; and
 - contemporary labour market policy practices, which aim to increase the employability of people by changing their skills, incentives to work (for example, by eliminating early retirement incentives) and motivation, rather than using macroeconomic demand stimulation. The importance of improving employability is that those not in the labour force and to a lesser extent, the long run unemployed, are weak substitutes for the employed, and so provide little restraint on wage bargaining between employers and the employed.

Consequently, in the absence of policies that raise employability, incipient labour shortages that arise as a society ages are likely to create wage pressures. These trigger interest rate responses by central banks that short-circuit the beneficial impacts of the shortages on labour participation rates. This suggests that ageing *per se* is unlikely to increase the labour market involvement of the significant reserves of people of standard working age outside the labour force.

It may well be the case that governments will try to counteract the adverse labour supply effects of ageing through policies that change the employability and incentives for work of those outside the labour force. This is the approach suggested by Australian assessments of the economic impacts of ageing (Intergenerational Report 2002, PC 2005), by the OECD (2005a) and in forthcoming work by the Commission on the national reform agenda. But it is important to separate what will happen if *nothing* is done about employability (in our view, relatively little) from what will happen if governments take a proactive approach.

The exception may arise because of the impacts of ageing on employment structure. Ageing will change consumption patterns, which will result in significant shifts in the occupational and industrial structure of employment. For example, in a German context, Borsch-Supan (2002, p. 26) suggests that more than one sixth of workers

may need to change their jobs, as sectors like health expand, while transport declines. Australian data on consumption shares by age confirm the importance of health spending particularly (PC 2005, p. 265).

The issue for future male inactivity rates is whether changes in the nature of labour demand are likely to affect their employability. For example, expansions in the health and formal aged care sector will involve the need for highly skilled labour (nurses, medical practitioners and para-professionals), which are not likely to be drawn from economically inactive groups. On the other hand, some age-related services have lower skill requirements (such as shopping and personal care services for the old). People of lower employability in highly skilled labour markets may well be employable in these less skilled labour market segments. However, currently women are more likely to be involved in the provision of services of this kind, while males predominate in those service areas most likely to decline in relative importance (such as transport). Absent a change in this norm, structural changes associated with ageing are not likely to improve significantly the employability of economically inactive males.

Accordingly, it is not clear that, without policy changes, ageing will markedly improve the employment prospects of inactive males. It could even worsen them if occupational shifts favour employment characteristics in which women have advantages.

F.2 Cross-country evidence

If population ageing prompts automatic offsetting increases in labour force activity rates, then it implies that countries with a greater share of people at those ages associated with low economic activity rates (those aged 55+ years) would, all other things being equal, have higher age-specific participation rates than countries with younger populations.

However, a problem with testing this is that the presence of a relationship between ageing and participation rates is compatible with (at least) two competing hypotheses:

- (a) ageing may prompt market responses that raise age-specific participation rates; or
- (b) ageing may prompt government policy reactions that raise age-specific participation rates.

One way of distinguishing, which, if either of the hypotheses holds is that hypothesis (a) is likely to involve increases in age-specific participation rates for all ages, whereas (b) is much more likely to involve increases in mature age participation rates, since much of the policy focus of countries that are experiencing slower labour supply associated with ageing populations has been on increasing labour retention rates of mature age workers aged 45 to 65 years. For example, this is a repeated theme in OECD policy diagnoses of ageing countries (OECD 2005a).

The evidence (figure F.1) reveals a weak positive relationship between age-specific male participation rates and ageing for those aged 35–44, 45–54 and 55–59 years, but, if anything, a negative and (generally) weak relationship for other ages. This is not at all consistent with hypothesis (a). It is also, at best, only weakly consistent with hypothesis (b), since a relationship is found for those males aged 35–44, who are not the usual target of policy in this area, while not showing a relationship for those aged 60–64, who are a target. In any case, the effects are not statistically significant.² This suggests that government policy reactions to ageing around the world may not yet have made a substantial difference to participation rates of older male workers.

A drawback in using the results from figure F.1 is that it fails to control for other factors that may also influence participation rates. For example, participation rates are affected by GDP per capita, by the state of economic development and whether an economy is in a state of transition (as for many Eastern European countries). Accordingly, a variety of multiple regressions for each age-specific participation rate were estimated that controlled for these factors. The conclusion that ageing was not associated with higher age-specific participation rates was robust.

In order to examine the links to ageing for aggregate participation rates, an ageing-adjusted aggregate participation rate was constructed for all OECD countries using Australian population weights. This then provides a measure of aggregate participation rates that is not affected by varying population weights. (If the aggregate participation rate is not age-adjusted, it is likely to be negatively correlated with ageing because of the inverted u shape of participation by age.) This summary measure was regressed against a measure of ageing and a set of other variables to control for other economic differences between countries. An illustrative result is shown in table F.1, again showing that population ageing does not appear to play a positive role in activating males not in the labour force.

Finally, it is possible that the true link between age-specific participation rates and ageing is confounded by the demographic effects of lower youth population shares. The effect of ageing on the size of the labour force per capita is partly (or in some

² Based on t statistics corrected for heteroscedasticity.

countries, completely) offset by the impacts of reduced population share of people aged under 15 years — an age in which participation rates are effectively zero in developed countries. Thus, an alternative approach is to control for all age groups that have high economic inactivity rates — both the young and the old. This still fails to show a statistically or economically significant link between ageing and age-specific participation rates.

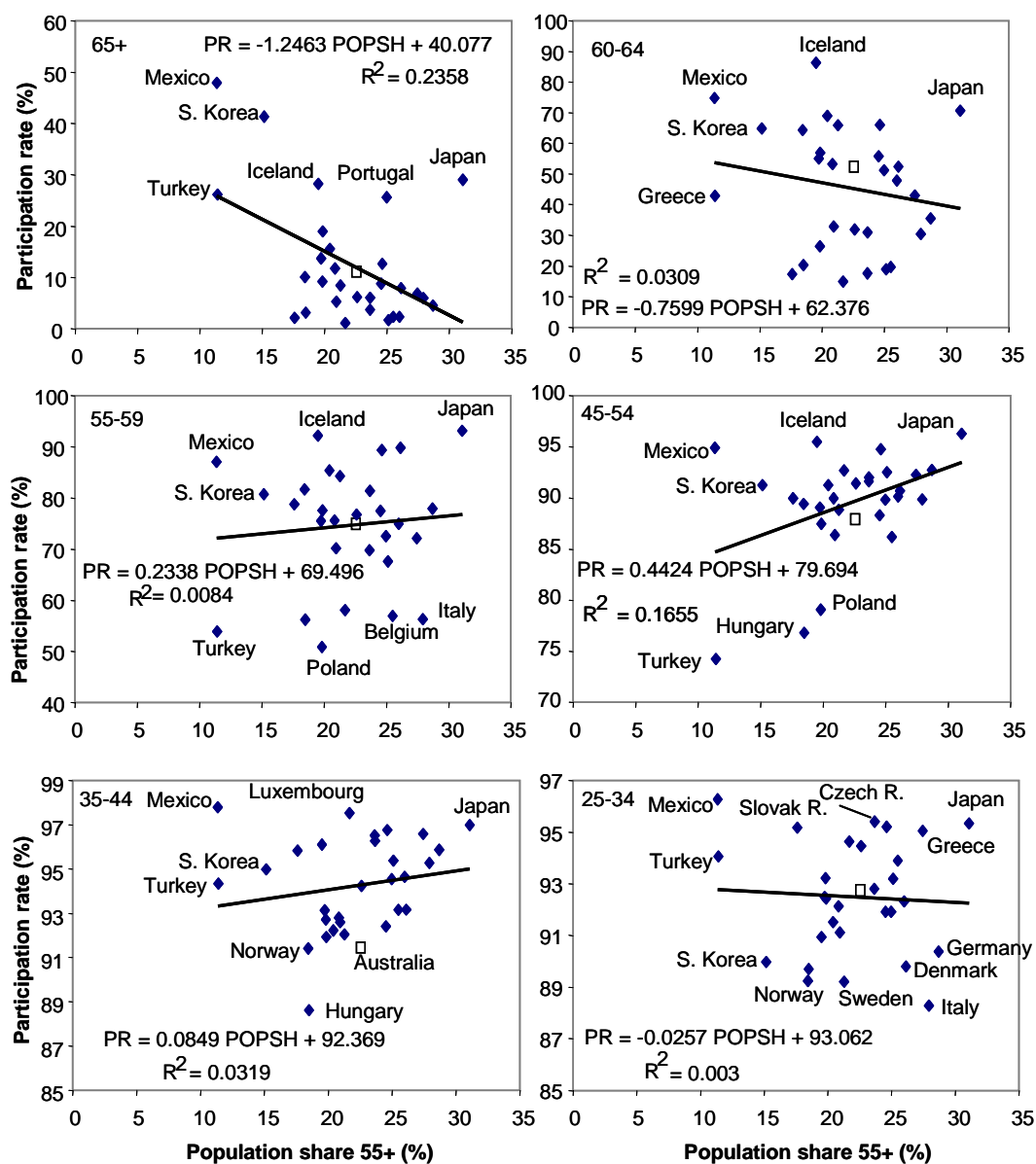
Table F.1 Does ageing increase standardised participation rates for OECD countries?^a

<i>Variable</i>	<i>Coefficient</i>	<i>t-stat</i>	<i>Significance</i>
Constant	-19.96	-4.5	0.000
Log of population share 50+	-0.13	-1.6	0.109
Dummy for transition economies	-0.36	-4.5	0.000
Dummy for poorer countries	0.34	3.5	0.001
Log of GDP per capita	4.76	5.6	0.000
Squared Log of GDP per capita	-0.23	-5.7	0.000

^a The t statistics are adjusted for heteroscedasticity. The dependent variable was the log of the age-standardised participation rate for those aged 15+ years. The log of the population aged 50+ years was used instead of 55 years, since it gave a better fit, though the parameter estimates were close. Poorer countries were defined as those with PPP GDP per capita of \$20,000 or less. Log GDP and (Log GDP)² were also included to cover the complex links between income and participation. Transition economies are former Eastern bloc countries. The R² was 0.49 for 30 observations.

Source: Commission estimates.

Figure F.1 **Ageing and age-specific male participation rates**
 OECD countries, 2004^a



^a The participation rates use adjustments outlined by Abhayaratna and Lattimore (2006). Results are similar if unadjusted data are used.

Data source: OECD labour market database.

G Moral hazard and the DSP

As noted in chapter 8, the higher levels of benefits, the absence of work tests, and the presence of greater in-work benefits if work is obtained makes the DSP a more attractive benefit for people with disabilities of any kind compared with other welfare programs. As Saunders (2004) and the World Bank (Andrews 1998) have observed, this can produce moral hazards as the behaviour of people with disabilities (or their agents — such as their treating doctor) changes given the incentives presented to them.

There are several epidemiological approaches to assess the extent to which moral hazard matters for admission to the DSP. There would be more people with less verifiable conditions in DSP, especially around the ages of retirement than would be expected given the severity of their conditions. These groups would have a low relative inclination for job search compared with others facing conditions with comparable severity and they would have low job exit probabilities, all other things being equal. Recovery rates would be low relative to that expected from the conditions they face. Exits back to less attractive forms of benefit — such as unemployment benefit — would be rare.

This appendix scrutinises the available evidence on all these counts to assess the extent of moral hazard. The overall evidence is equivocal in many cases, partly because there are rival explanations that may sometimes explain the patterns that are found. Nevertheless, it seems highly likely that moral hazard plays a role in the long duration on benefits, as well as some entries to the DSP.

G.1 Are less verifiable conditions more prevalent among DSP beneficiaries?

Saunders makes the observation that the low verifiability of some types of disability (particularly psychological and musculo-skeletal conditions) has led to the entry of some people whose disabilities would not preclude labour market participation. One test of this hypothesis is to see whether DSP claimants are over-represented in these least verifiable medical conditions. The pattern for psychological and psychiatric conditions (these are principally anxiety, depression and stress disorders, rather than psychotic disorders) appears consistent with Saunders's hypothesis (table G.1 and

figure G.1). The likelihood of being in the DSP for disabled people with psychological and psychiatric conditions is over 80 per cent higher than would be predicted by the severity of these conditions in the general disabled population relative to other disabling conditions. On the other hand, musculo-skeletal conditions, which can also be hard to verify, are *not* significantly over-represented. And some other, typically verifiable conditions, like acquired brain impairment and visceral conditions, are also over-represented. This suggests that factors other than verifiability and severity are also important in determining entry to the DSP and employment outcomes.

Table G.1 Do DSP beneficiaries have different conditions than those with disabilities in the population as a whole?
Both sexes, 2003

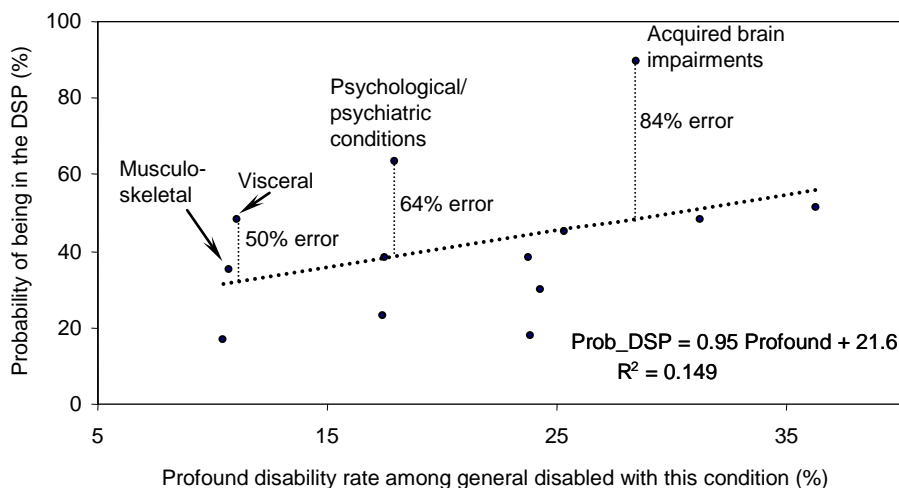
<i>Condition</i>	(1):	(2):	(3):	<i>Discrepancy</i>
	<i>Propensity to be in DSP^a</i>	<i>Severity of condition^b</i>	<i>Predicted value of (1)^c</i>	
	%	%	%	%
Acquired brain impairment	89.4	28.4	48.6	84.0
Cancer	45.2	25.3	45.6	-1.0
Circulatory system	38.0	23.8	44.1	-13.8
Congenital abnormality	51.4	36.3	56.0	-8.2
Musculo-skeletal	35.1	10.7	31.8	10.4
Nervous system	17.8	23.8	44.2	-59.6
Respiratory	22.9	17.4	38.1	-39.8
Sense organs	17.0	10.5	31.5	-46.0
Visceral	48.1	11.0	32.0	50.2
Intellectual/learning	48.3	31.3	51.2	-5.8
Psychological/psychiatric	63.4	18.0	38.6	64.2
Other	29.8	24.2	44.6	-33.2
Total	38.2	17.5	48.6	..

^a This is a proxy for the likelihood that people with various disabling conditions are a DSP beneficiary. The numerator of the ratio is the number of DSP beneficiaries by condition. The denominator is the number, by condition, of disabled people in the general community with a schooling or employment restriction (aged below age 65 years, though it also includes children aged 0–14 years). This is the closest that it is possible, with published ABS results, to get to a group of disabled people in the general community from which DSP beneficiaries are likely to be drawn. ^b The numerator of this ratio is the number, by condition, of people with a profound core activity limitation. The denominator is the number, by condition, of people with some specific disabling limitation. In this case, the data relates to all ages (0–100+) since ABS published data by severity by condition is only available on this basis. Nevertheless, the ratio should provide a reasonable guide to the severity of particular types of conditions at ages 16–64 years in terms of their impact on disability. ^c This is the predicted propensity to be in the DSP given the severity of conditions.

Source ABS 2004, *Disability, Ageing and Carers, Australia: Summary of Findings, 2003*, Cat. No. 4430.0; FaCS, 2003, *Characteristics of Disability Support Pension Customers*, June 2003.

Figure G.1 Relationship between severity of disabilities and take up of the DSP

Both sexes, 2003^a



^a See notes in table G.1.

Data source: See table G.1.

It is hard to know, in this context, how to interpret the finding in relation to psychological/psychiatric conditions. It could be, for example, that psychological/psychiatric conditions are more stigmatised by society and that, while objectively not more limiting than many other disorders, are perceived as so. Or it could be that these conditions are less stable in their severity than other conditions. This would tend to reduce their average measured severity in disability surveys, which consider limitations at a point in time and can tend to underplay conditions that generate episodic disability. Either way, the underlying reasons and implications for the over-representation of psychological disorders among DSP claimants is a relevant and largely unexplored issue. It should not be assumed that the over-representation reflects moral hazard.

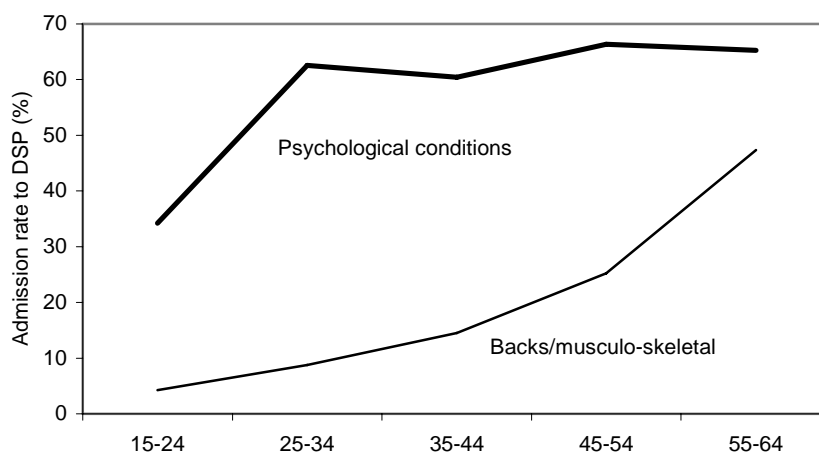
G.2 Early retirement?

Another potentially testable aspect of Saunders's view is the extent to which less verifiable conditions can be used as a Trojan horse for early retirement through the DSP. All other things being equal, if this were an important factor there would be a significantly higher propensity for disabled people with less verifiable conditions to be in DSP around the ages of early retirement (45+ years), relative to the previous age group (35–44), but otherwise weak age variation. Note that the test is not about the prevalence rate of disability by age — which will inevitably have a strong age

profile — but the propensity of someone who has a disability already to successfully enter the DSP.

The results of this test are equivocal. There is a strong increase in the propensity of people with musculoskeletal disabilities to be in DSP at older ages, and this propensity seems to accelerate after age 35–44 years, which is consistent with Saunders’s hypothesis (figure G.2).

Figure G.2 What’s the chance of getting on DSP for different conditions as people age?
Both sexes^a



^a The prevalence rates by age in the general population for disabling psychological and back conditions were estimated for 1998 from ABS survey data. This was then compared with the prevalence rates by age in the general population for disabling psychological and musculo-skeletal conditions that were also subject to DSP for 2003. The *ratio* of the prevalence rates gives the likelihood that someone with these conditions is on DSP (the ‘admission’ rate). A deficiency of this approach is that the prevalence of back and associated musculo-skeletal problems from the 1998 data is being compared with the prevalence of more general classes of musculo-skeletal conditions for DSP beneficiaries. However, the comparison should still provide some guidance.

Source ABS 2004, *Disability, Ageing and Carers, Australia: Summary of Findings, 2003*, Cat. No. 4430.0; ABS 1998, *Disability, Ageing and Carers, Disability and Long-term Health Conditions*, Cat. 4433.0, and FaCS, 2003, *Characteristics of Disability Support Pension Customers*, June 2003.

However, in the case of psychological disorders — the other major less verifiable condition, there is little rise in the propensity of such disabled people to be on the DSP with age.¹ (An alternative explanation for the upward age profile is that

¹ For example, the prevalence rate in the general population aged 25–34 years of a disabling psychological condition is about 1.5 per cent. In contrast, the prevalence rate in the general population aged 25–34 years of a disabling psychological condition where the person is also on DSP is around 0.95 per cent. Accordingly, the ‘admission’ rate to DSP of people with this disabling condition at this age is around 60 per cent. At older ages, the prevalence rates climb steeply in both populations, but the admission rate climbs only slightly.

disabilities in older people may be worse than disabilities in younger people, so increasing the likelihood of admission to DSP. But this does not appear to be true, at least for disabling conditions as a whole.)

G.3 Employment propensities of those on DSP

The employment attitudes and orientation of people within the DSP can also be revealing. During the 2004 Job Network DSP Pilot, beneficiaries with mental and psychological disabilities had a higher likelihood of applying to participate in the pilot compared with other conditions, but had a significantly lower probability of successful interim job outcomes compared with other clients (DEWR 2005c, p. 13). This suggests that such beneficiaries have a higher than average desire to work, not less, but that their conditions (combined with the work environments they face) predispose them to poorer labour market outcomes. This evidence therefore challenges the moral hazard hypothesis. However, these results may reflect selection biases involved in application processes for the pilot. The pilot was based on voluntary recruitment, and therefore may pick up the ‘work-willing’, but currently disengaged.

Among the entire population of DSP, beneficiaries with mental and behavioural disabilities (excluding intellectual and developmental disorders) have a slightly *higher* employment rate than those with musculo-skeletal disorders, notwithstanding the fact that self-assessment survey evidence suggests that their health status was slightly worse than those with musculo-skeletal problems.²

G.4 Low outflow rates?

Another feature of the DSP consistent with the presence of moral hazard or/and administrative norms is that the very low outflow rates to non-benefit outcomes imply that recovery rates appear low. This is paradoxical given that some of the most common conditions represented among DSP populations tend to have relatively high recovery rates. For example, treatment of depression is often highly effective. The duration of episodes of major depression is 20 weeks (Angst 1995, Solomon 1997, cited from Department of Human Services 1999). Many musculo-skeletal injuries also resolve themselves quickly.³

² 7.7 per cent for psychological/psychiatric conditions compared with 7.1 per cent for musculo-skeletal conditions (FaCS 2003). Nucleus Group (2004, p. 48) show the results for self-assessed health status.

³ However, the recovery rate for back pain can be very protracted if it has not resolved itself quickly, and many sufferers experience later episodes (Bogduk 1999). In its survey of disabilities

This paradox would be resolved if DSP only involved severe cases that are less amenable to effective treatment. But as noted in chapter 8, two thirds of DSP beneficiaries have moderate or less restricting conditions. Survey evidence suggests that a significant minority of DSP recipients with psychological or musculo-skeletal conditions are not receiving any kind of professional health care (table G.2).

Table G.2 Health care for new DSP customers
2004

<i>Health care</i>	<i>Psychological/psychiatric</i>	<i>Musculo-skeletal and connective tissue</i>
	%	%
Medical treatment	61	56
Counselling or therapy	59	15
Rehabilitation	12	22
Palliative care	0	0
One or more of the above	78.6	63.2
None of the above	21.4	36.7

Source: Nucleus Group (2004, p. 51).

The survey evidence could be explained by several factors. First, some people may have lower genuine rates of clinical recovery partly due to limited use of services. This would be of significant concern because early treatment can effectively reduce chronic problems (Peters et al. 2004). For instance, depression is more likely to be chronic or recurrent if early treatment protocols are not observed (Guidelines and Protocols Advisory Committee, 2004). This warrants further examination.

Second, some people may be staying on DSP after their conditions have improved because of moral hazard or administrative practices (box G.1 describes the present Australian practices). Just as incentives may play a role in entry to the DSP, they may play a role in the duration on the pension. It is well established that compensation and disability arrangements have such incentive effects. For example, Meyer et al. (1995) considered a natural experiment where compensation benefits were increased for high earning individuals in Kentucky and Michigan by 50 per cent, while no change occurred in benefits for low earning individuals. The study found an increase in duration for those whose benefits rose and no change for those whose benefits did not. Many other studies have found the same pattern (PC 2004a, pp. 196, 236–237; Greenough and Fraser 1989), although the magnitude of the effect varies. The School of Occupational Therapy (2001) found that processes for compensation arrangements should not be overlooked in understanding how injury recovery rates may be slowed.

and health conditions, the ABS (1998, p. 19) found that back pain was also more likely to involve disability than other long term health conditions.

Box G.1 **Administrative practices for people on the DSP**

DEWR (the present agency responsible for DSP policy) and, in the past, FaCS, have used various procedures to detect recipients who have become well enough to work.

Excluding severe and terminal cases, medical reviews were routinely conducted at two or five year intervals depending on the characteristics of the disability. However, in late 2003, this was replaced by a Service Update Review. Selection for review is done using a profiling method intended to determine those who have a higher chance of improvement in their conditions. The new review checked all of a customer's details, not just their medical details or their income and assets. The new reviews provided recipients with an opportunity to access information about their correct entitlement and may result in a change in DSP entitlement and an extra payment such as rent assistance. It also gave DSP customers the chance to discuss possible job options with a Centrelink officer. (FaCS 2006).

Under this process, it is understood that many thousands of DSP clients undergo a medical review each year. Of these only around two per cent have their benefits changed or removed. Were the process of medical review to be precise, this would suggest that improvement in conditions is very rare. However:

- a survey of DSP customers found that around 35 per cent of those in poor health expected their condition to improve, 45 per cent expected it to get worse and 20 per cent were unsure (Nucleus 2004, p. 49); and
- treating doctors have indicated several difficulties with the process of appraisal, such as uncertainty in diagnosis, difficulty with the Treating Doctor's Report form, and appropriate feedback from Centrelink (Millward Brown, 2002).

The UK's Pathways to Work initiative involves considerably more frequent meetings and is more job-focussed than compliance-based. It has a much higher outflow rate than achieved under the Service Update Review, but is also likely to cost more.

However, the bulk of these studies relate to people who are injured at work. These people can access worker's compensation benefits before returning to a job. In the case of DSP recipients the context and the relative incentives are different, and so too might be the overall impacts of incentives. For DSP beneficiaries, there are likely to be three main choices — staying on the DSP benefit, getting a job with sufficient earnings to get off DSP and moving to unemployment allowances (there are other *transitions*, such as death or the Aged Pension, but these are not voluntary *choices*). For many DSP beneficiaries, the likelihood of getting a job is relatively low, because the people concerned usually face barriers to employment other than disability, and their disability may continue in a less severe form.

In that instance, a more common realistic choice is between the DSP and unemployment allowances. As noted previously, unemployment allowances are significantly less attractive for pecuniary and non-pecuniary reasons (such as

activity testing). In that context, it would be expected that there would be very few transitions from DSP to unemployment allowances and that when there are voluntary outflows from DSP, they are more likely to be to jobs than to unemployment.

And, that is precisely what the data shows. When people do exit DSP it is hardly ever back to unemployment allowances (figure 8.3 in chapter 8). Of the 58 504 people who exited DSP from June 2004 to June 2005, just 676 exited to Newstart or Youth Allowance. Many went onto the Aged Pension, nearly ten thousand died, and a few went onto other government payments. Altogether 13 483 exited to jobs (or to a positive outcome of some other kind) or lost eligibility for some reason. So excluding death and the Aged Pension, a person on DSP is around 20 times⁴ more likely to exit to a job or off-benefit for some other reason, than to exit to unemployment allowances. The overall prospects of exiting from DSP to unemployment is nearly zero at 676 in 706 782 or one in every 1000 DSP recipients per year. In the absence of incentive effects, the low transitions to unemployment is perplexing because it seems likely that many people with a disability might experience an improvement in their disability that moved them below the threshold for DSP eligibility, but still not find a job.

These data suggest that the behaviour of the outflow may be as much an outcome of the incentives and administration of the DSP, as disability itself. As corroborating evidence, it is clear from the historical data that big changes in outflow rates can occur as a result of policy shifts. For example, changes in means testing led to a spike in outflow rates in the late 1960s (Jordan 1984).

The extent to which low outflow rates are shaped by administrative practice and incentives has obvious implications for the growth in the stock of DSP beneficiaries and for their low labour market engagement. But it may also have clinical implications. Some clinicians argue that incentives to stay on disability benefits are actually counter-productive for patient recovery involving certain conditions. For example,

David Mischoulon, M.D., Ph.D., a psychiatrist at Massachusetts General Hospital in Boston, told *Psychiatric Times*. 'It made me realize how bad it is when people get paid to be sick. It really becomes part of them, it consolidates the "I am a mental patient and nothing else" identity.' (Ellen 2002)

So the fact that there are low recovery rates on DSP may also reflect impacts of the benefit system on the actual clinical wellbeing of its recipients.

⁴ That is, $13483/676 = 19.95$.

References

- Abhayaratna, J. and Lattimore, R. 2006, *Workforce Participation Rates — How Does Australia Compare?*, Productivity Commission Staff Working Paper, Canberra.
- ABS (Australian Bureau of Statistics) 1997, *How Australians Use Their Time*, ABS Cat. no. 4153.0.
- 1998, *Mental Health and Wellbeing, Profile of Adults, Australia 1997*, Cat. no. 4326.0, March.
- 2001, 'Participation in Education: Trends in Completing School', *Australian Social Trends*, Cat. no. 4221.0. Canberra.
- 2002, 'Income Support: Trends in Disability Support', *Australian Social Trends*, 2002, Cat. no. 4102.0.
- 2003a, *Population Characteristics Aboriginal and Torres Strait Islander Australians 2001*, Cat. no. 4713.0.
- 2003b, 'The Underground Economy and Australia's GDP', Feature article, *National Accounts*, Canberra.
- 2004a, *Disability, Ageing and Carers, Summary of Findings*, Cat. no. 4430.0.
- 2004b, *Labour Statistics: Concepts, Sources and Methods Concepts and Sources*, Cat. no. 6102.0.55.001, 8 December 2004.
- 2005, *Australian Labour Market Statistics*, Cat. no. 6105.0, January.
- 2006, *Average Weekly Earnings, Australia, May 2006*, ABS Cat. no. 6302.0, August.
- ACOSS (Australian Council of Social Services) 2002, *Key Causes in the Rise of Disability Pensioners*, September.
- 2005a, *Ten Myths and Facts About the Disability Support Pension DSP*, January.
- 2005b, *Effects of Possible Changes to the Disability Support Pension*, ACOSS Info 371, April.
- Ahn, N., Garcia, J. and Jimeno, J. 2004, 'The Impact of Unemployment on Individual Well-Being in the EU', European Network of Economic Policy Research Institutes, Working Paper no. 29.

-
- AIHW (Australian Institute of Health and Welfare) 2004, 'Disability and Its Relationship to Health Conditions and Other Factors', AIHW Cat. no. DIS 37, December.
- 2005a, *Australia's Welfare 2005*, Canberra.
- 2005b, *Residential Aged Care in Australia, 2003–04: A Statistical Overview*, AIHW Cat. no. AGE 43, Canberra, Aged Care Statistics Series No. 20.
- Andrews, E. 1998, *Disability Insurance, Programs and Practice*, World Bank.
- Anglicare 2004, 'Non-completion of Year 12 Schooling, Incidence, Reasons, Impacts and Programs', Briefing Paper, February.
- Angwin, J., Henry, C., Laskey, L., McTaggart, R. and Picken, D. 1998, *Paths to Pathways: Vocational Education and Training for Educationally Disadvantaged Groups of Young People*, Deakin University, Geelong
- Anlezark, A., Karmel, T. and Ong, K. 2006, Have School Vocational Education and Training Programs Been Successful?, National Centre for Vocational Education Research, Adelaide.
- Anno, R. and Schneider, F. 2005, Estimating the Underground Economy by Using MIMIC Models: A Response to T. Breusch's Critique, unpublished paper <http://www.economics.uni-linz.ac.at/Schneider/ResponsetoBreusch'spaper.pdf>, (accessed 6 April 2006).
- Antel, J. J. 1992, 'The Intergenerational Transfer of Welfare Dependency: Some Statistical Evidence', *The Review of Economics and Statistics*, pp. 467–73.
- Aos, S., Lieb, R., Mayfield, J., Miller, M., and Pennucci, A. 2004, 'Benefits and Costs of Prevention and Early Intervention Programs for Youth', Washington State Institute For Public Policy.
- Applied Economics 2002, *Young Persons' Education, Training and Employment Outcomes with Special Reference to Early School Leavers*, A Report prepared for the Business Council of Australia and Dusseldorp Skills Forum by Applied Economics, October.
- Arulampalam W. 2001, 'Is Unemployment Really Scarring? Effects of Unemployment Experiences on Wages', *The Economic Journal*, vol. 111, no. 475, November, pp. 585–606.
- Argy, F. 2005, 'An Analysis of Joblessness in Australia', *Economic Papers*, Economic Society of Australia, vol. 2, pp. 75–104.
- Argyrous, G. and Neale, M. 2003, 'The Disabled Labour Market: The Disability Support program and Unemployment', *Journal of Australian Political Economy*, no. 51, pp. 5–28.

-
- Ásgeirsdóttir, B. 2003, 'Transforming Disability into Ability – Results and Conclusions from the OECD's Study of Disability Policies for the Working-age Population in 20 Member Countries', Conference on Transforming Disability into Ability Policies to Promote Work and Income Security for Disabled People, Vienna, 6-7 March.
- Asquith Group 2005, *Review of Managed Individual Pathways in Government Schools*, Final Report, July.
- ATO (Australian Tax Office) 2003, *The Cash Economy Under the New Tax System*, Commonwealth of Australia, Canberra.
- Australian Government 2005, 'Government Response: The Productivity Commission's Review of the Disability Discrimination Act 1992', Canberra, <http://www.ag.gov.au/PCDDA>.
- Australian Government Treasury 2002, *Intergenerational Report 2002-03*, Budget Paper no. 5, May, Commonwealth of Australia.
- Australian Housing and Urban Research Institute (AHURI) 2005, Collaborative Research Venture 1, Research Assistance and Economic participation, April 2005, <http://www.ahuri.edu.au/global/docs/doc764.pdf>, (accessed 18 January 2006).
- Bajada, C. 1999, 'Estimates of the Underground Economy in Australia', *Economic Record*, vol. 75, no. 231, pp. 369–84.
- 2001, 'The Cash Economy and Tax Reform', Research Studies Series No. 36, Australian Tax Research Foundation, Sydney.
- 2002, *Australia's Cash Economy: A Troubling Issue for Policymakers*, Ashgate, Aldershot.
- 2003, 'Business Cycle Properties of the Legitimate and Underground Economy in Australia', *Economic Record*, 79, 397–411.
- Barnett, K. and Ryan, R. 2005, 'Vocational Education and Training in Australian Schools: Issues for Practitioners', *International Education Journal*, Special Issue, vol. 5, no. 5, pp. 89–104.
- Bean, C. 2004, 'Global Demographic Change: Some Implications for Central Banks, Overview Panel', Speech by the Chief Economist, Bank of England to the FRB Kansas City Annual Symposium, Jackson Hole, Wyoming, 28 August.
- Berlinski, S., Galiani, S. and Gertler, P. 2006, 'The Effect of Pre-Primary Education on Primary School Performance', Institute for Fiscal Studies, WP06/04, February.

-
- Biewen, M. 2003, 'Who Are the Chronic Poor? Evidence on the Extent and the Composition of Chronic Poverty in Germany', IZA DP no. 779, Forschungsinstitut zur Zukunft der Arbeit (Institute for the Study of Labor).
- Bingham, C. 2003, 'Impact of Private Saving and Longer Careers on Retirement Incomes', Retirement and Income Modelling Unit, Department of Treasury, Australia, Paper presented to the Eleventh Colloquium of Superannuation Researchers, University of New South Wales, 7 and 8 July 2003.
- Birch, E. 2005, 'Studies of the Labour Supply of Australian Women: What Have We Learned?', *Economic Record*, 81(252), pp. 65–84.
- Birrell, B., O'Connor, K. and Rapson, V. 1999, 'Explaining Spatial Concentrations of the Poor in Metropolitan Melbourne', *People and Place*, vol. 7, no. 1, pp. 53–65.
- Blau, D. and Currie, J. 2004, 'Preschool, Day Care, and Afterschool Care: Who's Minding the Kids?' NBER Working Paper no. 10670, August.
- Blyth, B. 2006, 'Incapacity Benefit Reforms – Pathways to Work Pilots Performance and Analysis', Department for Work and Pensions, Working Paper no 26, Corporate Document Services, United Kingdom.
- Bogduk, N. 1999, *Evidence-based Clinical Guidelines for the Management of Acute Low Back Pain*, Prepared on behalf of the Australasian Faculty of Musculoskeletal Medicine for the National Musculoskeletal Medicine Initiative, November.
- Booth, A. and Wood, M. 2004, 'Back-to-Front Down-under? Part-time/Full-time Wage Differentials in Australia', Discussion Paper no.482, December, Australian National University, Centre for Economic Policy Research
- Borland, J. 1998, 'Earnings Inequality in Australia: Changes, Causes and Consequences, Centre for Economic Policy Research', Discussion Paper no. 390, The Australian National University, Canberra, Australia.
- Borsch-Supan, A. 2001, 'Labour Market Effects of Population Ageing', Mannheim Research Institute for the Economics of Ageing (Germany) and National Bureau of Economic Research (US).
- Bradbury, B., Norris, K. and Abello, D. 2001, 'Socio-economic Disadvantage and the Prevalence of Disability', Social Policy Research Centre, University of NSW, January.
- Braithwaite, V., Reinhart, M. and Job, J. 2004, 'Getting On or Getting By? Australians in the Cash Economy', Centre for Tax System Integrity and Regulatory Institutions Network, August, in Bajada, C. and Schneider, F. (eds.),

Size, Causes and Consequences of the Underground Economy, Ashgate Publishing.

- Bray, J. 2000, 'Social Indicators for Regional Australia', Department of Family and Community Services, Policy Research Paper 8, Canberra.
- Breusch, T. 2005a, 'Australia's Cash Economy: Are the Estimates Credible?', *Economic Record*, 81(255), 394–403.
- 2005b, 'The Canadian Underground Economy: An Examination of Giles and Tedds', *Canadian Tax Journal*, vol. 53, no. 2, 367–91.
- 2005c, 'Estimating the Underground Economy using MIMIC Models', Economics Working Paper, The Australian National University, November.
- and Gray, E. 2004, 'Does Marriage Improve The Wages Of Men and Women in Australia?', Australian Population Association 12th Biennial Conference, Canberra, 15–17 September.
- Bridge, R. 2001, 'Migrants in the Australian Labour Market — Some Trends and Developments', *People and Place*, 9(1), pp. 1–11.
- Brown, J., Holdsworth, R. and Stokes, H. 2001, *Building Relationships: Making Education Work*, Commonwealth Department of Education, Training and Youth Affairs, Canberra.
- Bryant, J., Jacobsen, V., Bell, M. and Garrett, D. 2004, 'Labour Force Participation and GDP in New Zealand', New Zealand Treasury Working Paper 04/07, June.
- Burchardt, T. 2003, 'Being and Becoming: Social Exclusion and the Onset of Disability', ESRC Centre for Analysis of Social Exclusion London School of Economics, CASE Report 21, November.
- Burr, J. and Grunewald, R. 2006, *Lessons Learned: A Review of Early Childhood Development Studies*, Federal Reserve Bank of Minneapolis, April.
- Butterworth, P., Crosier, T. and Rodgers, B. 2004. 'Mental Health Problems, Disability and Income Support Receipt: A Replication and Extension Using the HILDA Survey', *Australian Journal of Labour Economics*, vol. 7, no. 2, pp. 154–74.
- Cahuc, P. and Zylberberg, A. 2004, *Labor Economics*, MIT Press, March.
- Cai, L. 2004, 'Length of Completed Spells on the Disability Support Pension (DSP) Program', *Australian Social Policy*, 2002-03, pp. 101–20, Australian Government Department of Family and Community Services (FaCS).
- 2006, 'Effects of Health on Wages of Australian Men', Melbourne Institute of Applied Economic and Social Research, University of Melbourne, 31 May.

-
- and Gregory, R. 2004, 'Inflows, Outflows and the Growth of the Disability Support Pension (DSP) Program', *Australian Social Policy*, 2002-03, pp. 121–43, Australian Government Department of Family and Community Services (FaCS).
- and —— 2005, 'Unemployment Duration and Inflows onto the Disability Support Pension Program: Evidence from FaCS LDS Data', *Australian Economic Review*, vol. 38, issue 3, pp. 233–52.
- , Vu, H. and Wilkins, R. 2006 'Disability Support Pension Recipients: Who Gets Off (and Stays Off) Payments?', Melbourne Institute Working Paper Series Working Paper No. 18/06.
- Canadian Public Health Association 1996, 'The Health Impact of Unemployment', Discussion Paper.
- Collins, C., Kenway, J. and McLeod, J. 2000, 'Factors Influencing the Educational Performance of Males and Females in School and their Initial Destinations after Leaving School', Deakin University, University of South Australia, A project funded by the Commonwealth Department of Education, Training and Youth Affairs, July.
- Commonwealth Department of Health and Aged Care and Australian Institute of Health and Welfare 1999, National Health Priority Areas Report: Mental health 1998. AIHW Cat. no. PHE 13. AIHW, Canberra.
- Cortis, N. and Newmarch, E. 2000, 'Boys in Schools What's Happening?', A paper prepared for Manning the Next Millennium, an International Interdisciplinary Masculinities Conference hosted by the School of Humanities and Social Science, Queensland University of Technology, 1-2 December (the authors are from the Equity Section, Analysis and Equity Branch Department of Education, Training and Youth Affairs).
- CSA (Child Support Agency) 2003, *Child Support Scheme, Facts and Figures 2002-03*, Department of Family and Community Services.
- Currie, J. 2000, 'Early Childhood Intervention Programs: What Do We Know?' UCLA and NBER April.
- 2001, 'A Fresh Start for Head Start?', Children's Roundtable, The Brookings Institution, No. 5, March.
- Currie, W. and McCollow, J. 2002, 'Vocational Education and Training in Public Schools: Enhancing Student Career Options', Sydney: Australian Education Union.
- Curtain, R. 1999, 'Young People's Transition from Education to Work: Performance Indicators', Melbourne: Curtain Consulting.

-
- 2002, 'Australia Needs a New National Threshold Educational Qualification', Online Opinion, 22 April.
- Davis, B. 2003, Inference for Discrete Time Stochastic Processes Using Aggregate Survey Data, Thesis submitted for the Doctorate of Philosophy, The Australian National University, February.
- Dawkins, P., Gregg, P. and Scutella, R. 2002. 'The Growth of Jobless Households in Australia', *Australian Economic Review*, June.
- , Lim, G. and Summers, P. 2004, *The Impacts of Population Ageing on Labour Force Participation*, Final Report to the Department of Treasury and Finance.
- de Koning, J., Layard, R., Nickell, S. and Westergaard-Nielsen, N. 2004, 'Policies for Full Employment', HMSO, UK.
- de Laine, C., Laplagne, P. and Stone, S. 2000, *The Increasing Demand for Skilled Workers in Australia: The Role Of Technical Change*, Productivity Commission Staff Research Paper, AGPS, Canberra, September.
- Del Bono, E. and Galindo-Rueda, F. 2004, 'Do a Few Months of Compulsory Schooling Matter: The Education and Labour Market Impact of School Leaving Rules', Institute for the Study of Labor, IZA DP no. 1233, August.
- Department of Human Services (Victoria) 1999, *Victorian Burden of Disease Study*, Morbidity Public Health Division.
- Department of Education and Children's Services 2003, Increase in School Leaving Age, <http://www.decs.sa.gov.au/speced2/pages/default/leavingage/>, (accessed 12 April 2006).
- DEWR (Department of Employment and Workplace Relations) 2003, Submission to the Productivity Commission Inquiry into National Workers' Compensation and Occupational Health and Safety Frameworks, sub. 166.
- 2004, *Job Network Disability Support Pension Pilot: Interim Evaluation Report*, Evaluation and Programme Performance Branch Research and Evaluation Group Department of Employment and Workplace Relations October 2004.
- 2005a, *Building on Success*, CDEP Discussion Paper 2005, Canberra.
- 2005b, *Building on Success CDEP — Future Directions*, Canberra.
- 2005c, *Job Network Disability Support Pension Pilot: Progress Report*, Research, Evaluation and Legislation Group, October 2005.
- 2006a, *Characteristics of Disability Support Pension Recipients June 2005*, Canberra.

—— 2006b, *Customised Assistance, Job Search Training, Work for the Dole and Mutual Obligation — A Net Impact Study*, Evaluation and Programme Performance Branch Research and Evaluation Group Department of Employment and Workplace Relations April 2006 EPPB Report 1/2006.

DITR (Department of Industry, Tourism and Resources) 2004, *The Impacts of Ageing on Industry*, Submission to the Productivity Commission Research Study, Economic Implications of an Ageing Australia, October, <http://www.pc.gov.au/study/ageing/subs/sub033.pdf> (accessed 28 September 2005).

Department of Treasury and Finance of Victoria 2005, 'The Potential Economic Impact of a New National Reform Initiative', DTF Working Paper, Preliminary Draft, October.

DEST (Department of Education, Science and Training) 2002, Submission to the House of Representatives Standing Committee Inquiry into Vocational Education in Schools, DEST, Canberra.

—— 2004, *The Evaluation of the Partnership Outreach Education Model (POEM) Pilot, Supporting Young People Through Their Life, Learning and Work Transitions*, June (2 vols.).

Dixon, R., Lim, G. and Thomson, J. 2002 'Australian Gross Flows Data: The Labour Force Survey and the Size of the Population Represented by the Matched Sample', *Australian Journal of Labour Economics*, 5, pp. 1–21.

Djankov, S. Lieberman, I., Mukherjee, J. and Nenova, T. 2003, 'Going Informal: Benefits and Costs', in Belev, B. (ed.), *The Informal Economy in the EU Accession Countries*, Centre for the Study of Democracy.

Dockery, A. 2003, *Happiness, Life Satisfaction and the Role of Work: Evidence from Two Australian Surveys*, Curtin Business School.

—— 2005a, *Mental Health and Labour Market Status*, Curtin Business School.

—— 2005b, *Assessing the Value of Additional Years of Schooling for the Non-academically Inclined*, Longitudinal Surveys of Australian Youth, Research Report 38, Australian Council for Educational Research, June.

—— 2006, 'Mental Health and Labour Force Status: Panel Estimates With Four Waves of HILDA', Curtin Business School, CLMR Discussion Paper Series 06/01.

—— and Webster, E. 2001, 'Long Term Unemployment and Work-Deprived Individuals: Issues and Policies', Australian National University, CEPR Discussion Paper no. 445, December, Canberra.

-
- , Koshy, P., and Stromback, T. 2005, 'From School to Work, The Role of Traineeships', Curtin University of Technology, A National Vocational Education and Training Research and Evaluation Program Report.
- Dooley, D., Catalano, R. and Wilson, G. 1994, 'Depression and Unemployment: Panel Findings from the Epidemiologic Catchment Area Study' *American Journal of Community Psychology*, 22, pp. 745–65.
- Dusseldorp Skills Forum 1999, 'Why Australia Needs a National Youth Commitment: A Discussion Paper', Melbourne: Dusseldorp Skills Forum.
- Dwyer, P., Stokes, H., Tyler, D. and Holdsworth, R. 1998, *Negotiating Staying and Returning: Young People's Perspectives on Schooling and the Youth Allowance*, Melbourne: Youth Research Centre.
- Edin, P. and Gustavsson, M. 2004, 'Time Out of Work and Skill Depreciation', Working Paper 2004:14, Department of Economics Working Paper 2004:14, Uppsala University, October.
- Ellen, E. 2002, 'Psychiatric Disability on the Rise', *Psychiatric Times*, XIX, Issue 12, December.
- Elliot, C. and Ellingworth, D. 1996. 'The Relationship Between Unemployment and Crime', *International Journal of Manpower*, vol 17, no. 6/7, pp. 81–8.
- Elliott, L. and Dockery, A. 2006, 'Are the 'Hidden Unemployed' Unemployed?', Centre for Labour Market Research, Curtin Business School, Curtin University of Technology, CLMR Discussion Paper 06/02.
- Evans, B. 2005, 'Establishing the Value For Students, Employers and The Community of Vocational Education and Training in Schools Qualifications', Strategic Evaluation of Vocational Education and Training in Schools in New South Wales, Report to the Minister for Education and Training, October.
- FaCS (Department of Family and Community Services) 2003, *Characteristics of Disability Support Pension Customers*, June.
- 2004, *Characteristics of Disability Support Pension Customers*, June 2004.
- 2006, Guide to Social Security Law, www.facs.gov.au/guide/ssguide/36110.htm, (accessed 20th February 2006).
- Faggio, G. and Nickell, S. 2005, 'Inactivity Among Prime Age Men in the UK', CEP Discussion Paper 0673, Centre for Economic Performance
- Fleming, J. 2005, Submission to the National Inquiry into the Teaching of Literacy, Australian Government, Department of Education, Science and Technology, submission no. 356.

-
- Frijters, P. and Gregory, B. 2006, 'From Golden Age to Golden Age: Australia's 'Great Leap Forward'?', School of Economics, Queensland University of Technology and Australian National University, Research School of Social Sciences (RSSS).
- Fullarton, S. 2001, VET in Schools: Participation and Pathways, Research Report no. 21, Australian Council for Educational Research, Melbourne, November.
- Fullarton, S., Walker, M., Ainley, J. and Hillman, K. 2003, *Patterns of Participation in Year 12*, Research Report 33, Longitudinal Surveys of Australian Youth, ACER, July.
- Ganley, R. 2003. 'The Psychological Impact of Joblessness', *Australian Social Policy 2002-03*, Labour market and Parenting Branch, Department of Family and Community Services.
- Ghost, S. 2002, 'VET in Schools: The Needs of Industry', *Unicorn*, 28 (3).
- Gilliam, W. and Zigler, E. 2001, 'A Critical Meta-Analysis of All Evaluations of State-Funded Pre-school from 1977 to 1998: Implications for Policy, Service Delivery and Program Evaluation', Yale University Child Study Center.
- Goldsmith, A. H., Veum, J. R. and Darity, W. 1995. 'Are Being Unemployed and Being out of the Labour Force Distinct States?: A Psychological Approach', *Journal of Economic Psychology*, vol. 16, pp. 275–95.
- Graetz, B. 1993, 'Health Consequences of Employment and Unemployment: Longitudinal Evidence for Young Men and Women', *Social Science and Medicine*, vol. 36, no. 6, pp. 715–24.
- Granados, J. 2005, 'Increasing Mortality During the Expansions of the US Economy, 1900–1996', *International Journal of Epidemiology*, 34(6), pp. 1194–1202.
- and Thacker, E. 2001, 'CDEP as a Stepping Stone to Employment: The Port Augusta Case', *Australian Journal of Labour Economics*, vol. 4, no. 2.
- and Hunter, B. 1999, *Determinants of Employment and Labour Force Participation: A Cohort Analysis of Indigenous and Non-Indigenous Australians*, 1986–96, No. 186/1999, Centre for Aboriginal Economic Policy Research (CAEPR), Australian National University.
- , Heath, A. and Hunter, B. 2002, 'An Exploration Of Marginal Attachment To The Australian Labour Market', Research Discussion Paper 2002/07, Reserve Bank of Australia.
- Greenough, C. and Fraser, R. 1989, 'The Effects Of Compensation on Recovery From Low-Back Industry', *Spine*, 14(9), pp. 947–55.

-
- Gruen, D and Garbutt, M 2003, 'The Output Implications of Higher Labour Force Participation', Treasury Working Paper 2003-02.
- Grunewald, R. and Rolnick. A. 2006, *A Proposal for Achieving High Returns on Early Childhood Development*, Federal Reserve Bank of Minneapolis, March.
- Halchuk, P. 2006, 'Measuring Employment Outcomes for Indigenous Australians', *Australian Journal of Labour Economics*, forthcoming.
- Harrison, C. and Barnett, K. 2001, 'Collaborative Approaches to Increasing the Participation and Outcomes of People with a Disability in Vocational Education and Training', Paper presented to the UNESCO TVET Asia-Pacific Conference, Adelaide, 25–29 March.
- Healy, E. 2002, 'Disability or Disadvantage: Spatial Variation in the Disability Support Pension Recipient Rate 1996-2001', *People and Place*, vol. 10, no. 3.
- Heckman, J. 2004, 'The Productivity Argument for Investing in Young Children', University of Chicago Working Paper 5, Invest in Kids Working Group, Committee for Economic Development, October.
- Heckman, J. and Vytlačil, E. 2001, 'Policy-Relevant Treatment Effects', *American Economic Review*, vol. 91, no. 2, Papers and Proceedings of the Hundred Thirteenth Annual Meeting of the American Economic Association, May, pp. 107–111.
- Hendry, D. 1995, *Dynamic Econometrics*, Oxford: Oxford University Press.
- Hernández-Licona, G. undated, 'Disability and the Labor Market: Data Gaps and Needs in Latin America and the Caribbean,' Inter-American Development Bank.
- Hillman, K. 2005, 'Young People Outside the Labour Force and Full-time Education: Activities and Profiles', Longitudinal Surveys of Australian Youth, Research Report 45, Australian Council for Educational Research, November.
- and McMillan, J. 2005, *Life Satisfaction of Young Australians: Relationships between Further Education, Training and Employment and General and Career Satisfaction*, Longitudinal Surveys of Australian Youth, Research Report 43, September 2005.
- Holden, E. and Dwyer, P. 1992, 'Making the Break: Early School Leaving'. Working Paper No. 8, Youth Research Centre, Melbourne.
- Hull, D. 2005, *Identifying Students At Risk Of Disengaging From Education and Training*, Final Report, Department of Education and Training, June.
- Hunter, B. 2002, 'Institutional Factors Underpinning Indigenous Labour Force Participation: The Role of the CDEP Scheme and Education', CAEPR Working Paper No. 14/2002.

-
- and Gray, M. 1999, 'Further Investigations Into Indigenous Labour Supply: What Discourages Discouraged Workers?', Australian National University, CAEPR Working Paper no. 2/1999, Canberra.
- and —— 2001, 'Indigenous Labour Force Status Re-Visited: Factors Associated with the Discouraged Worker Phenomenon', *Australian Journal of Labour Economics*, vol. 4, no. 2, pp. 115–37.
- James, R. 2002, 'Socioeconomic Background and Higher Education Participation, An Analysis of School Students Aspirations and Expectations', Department of Education, Science and Training, Evaluations and Investigations Programme, Canberra.
- Jenkins, S. and Rigg, J. 2003, 'Disability and Disadvantage: Selection, Onset and Duration Effects', Institute for Social and Economic Research (UK) Working Paper 2003–18.
- Jordan, A. 1984, 'Permanent Incapacity: Invalid Pension in Australia', Research Paper no. 23, Research and Statistics Branch, Department of Social Security, April.
- Kalb, G. and Scutella, R. 2003, 'Wage and Employment Rates in New Zealand from 1991 to 2001', New Zealand Treasury Working Paper 03/13 June.
- Keating, M. 2005, 'Increasing Employment Participation in Australia and How to Finance It', Paper given at the conference on Transitions and Risk: New Directions in Social Policy, February.
- Kemple, J. 2004, *Career Academies: Impacts on Labour Market Outcomes and Educational Attainment*, Manpower Development and Research Corporation, March.
- Kryger, T. 2003, 'Migrant Participation in the Labour Force', Research Note no. 35, 2002-03, Statistics Group, Parliamentary Library, 13 May.
- Kumar, A. De Maio, J. and Abello, R. 2004, 'Mature Age Customers on Income Support: Duration, Transition and Flow Analyses Using the FaCS Longitudinal Data Set', Australian Bureau of Statistics, Working Papers in Econometrics and Applied Statistics, Working Paper No. 2004/2 Cat. no. 1351.0, August.
- Lamb, S. and McKenzie, P. 2001, *Patterns of Success and Failure in the Transition from School to Work in Australia*, Longitudinal Surveys of Australian Youth, Research Report 18, Australian Council for Educational Research, June.
- and Vickers, M. 2006, *Variations in VET Provision Across Australian Schools and Their Effects on Student Outcomes*, Longitudinal Surveys of Australian Youth, Research Report no. 48, Australian Council for Educational Research, March

-
- , Dwyer, P. and Wyn, J. 2000, *Non-completion of School in Australia: The Changing Patterns of Participation and Outcomes*, Longitudinal Surveys of Australian Youth, Research Report No. 16, Australian Council for Educational Research.
- , Walstab, A., Teese, R., Vickers, M. and Rumberger, R. 2004, *Staying on at School: Improving Student Retention in Australia*, Report for the Queensland Department of Education and the Arts, Centre for Post-compulsory Education and Lifelong Learning, The University of Melbourne, August.
- Laplagne, P., Marshall, P. and Stone, S. 2001, *The Role of Technology in Determining Skilled Employment: An Economywide Approach*, Productivity Commission Staff Research Paper, AusInfo, Canberra, August.
- Layard, R. 1994, 'Unemployment: The Way Forward for Europe', Centre for Economic Performance, Occasional Paper 7, August.
- Layard, R., Nickell, S. and Jackman, R. 1991, *Unemployment: Macroeconomic Performance and the Labour Market*, OUP, Oxford.
- Le, A., Miller, P., Heath, A. and Martin, N. 2005, 'Early Childhood Behaviours, Schooling and Labour Market Outcomes: Estimates from a Sample of Twins', *Economics of Education Review*, 24, pp. 1–17.
- Leigh, A. 2003, 'Randomised Policy Trials', *Agenda*, 10(4), pp. 341–354.
- 2005, 'Early School Leavers Still Have a Lot to Learn', *Sydney Morning Herald*, 22 August.
- and Ryan, C. 2005, 'Estimating Returns to Education: Three Natural Experiment Techniques Compared', Centre for Economic Policy Research, the Australian National University, Discussion Paper No. 493, August
- Lyons J., Caddell, J., Pittman, R., Rawls, R. and Perrin, S. 1994, 'The Potential for Faking on the Mississippi Scale for Combat-Related PTSD', *Journal of Trauma Stress*, July; 7 (3), pp. 441–5.
- MacDonald, H. 1999, *Bridging the Gap. Assisting Early School Leavers to Make the Transition to Work*, Brotherhood of St Laurence, Fitzroy, Victoria.
- Malley, J., Keating, J., Robinson, L. and Hawke, G. 2002, *The Quest for a Working Blueprint: VET in Australian Schools*, vol 1, Adelaide: National Centre for Vocational Education Research.
- Maloney, T. Maani, S. and Pacheco, G. 2003, 'Intergenerational Welfare Participation in New Zealand', *Australian Economic Papers*, September.
- Marin, B. 2003, 'Transforming Welfare Disability Policy: Completing a Paradigm Shift', in Prinz, C. (ed.), *European Pension Disability Policies*, European Centre for Social Welfare Policy and Research, Vienna.

-
- Marks, G.N. and Fleming, N. 1999, *Early School Leaving in Australia: Findings from the 1995 Year 9 LSAY Cohort*, Longitudinal Surveys of Australian Youth, Research Report no. 11, Australian Council for Educational Research.
- Martikainen, P. 1999, 'Does Unemployment cause Mortality?', Population Research Unit, Department of Sociology, University of Helsinki.
- Mathers, C. and Schofield, D. 1998, 'The Health Consequences of Unemployment: The Evidence', *Medical Journal of Australia*, 168 (4), pp. 178–82.
- McClelland, A., Macdonald, F. and MacDonald, H. 1998, 'Young People and Labour Market Disadvantage: The Situation of Young People Not in Education or Fulltime Work', in *Australia's Youth: Reality and Risk*, Dusseldorp Skills Forum, Sydney.
- McClure Report (Reference Group on Welfare Reform) 2000, *Participation Support for a More Equitable Society*, July.
- McCoull, F. and Pech, J. 1998. 'Intergenerational Poverty and Welfare Dependence: Is there an Australian problem?', Changing Families, Challenging Futures, 6th Australian Institute of Family Studies Conference, Melbourne, November.
- MCEETYA 2004, *National Report on Schooling in Australia Preliminary Paper 2004 National Benchmark Results Reading, Writing and Numeracy Years 3, 5 and 7*.
- McMillan, J. and Marks, G. 2003, *School Leavers in Australia: Profiles and Pathways*, Longitudinal Surveys of Australian Youth, Research Report 31, Australian Council for Educational Research, June.
- , Rothman, S. and Wernert, N. 2005, *Non-apprenticeship VET Courses: Participation, Persistence and Subsequent Pathways*, Longitudinal Surveys of Australian Youth, Research Report No. 47, Australian Council for Educational Research, December.
- McVicar, D. 2005, 'Why Do Disability Benefit Rolls Vary Between Regions? A Review of Evidence from the US and UK', School of Management and Economics, Queens University, United Kingdom, June.
- Meyer, B., Viscusi, W. and Durbin, D. 1995, 'Workers' Compensation and Injury Duration: Evidence from a Natural Experiment,' *American Economic Review*, vol. 85, no. 3, June, pp. 322–40.
- Millward Brown Australia 2002, *General Practice Compliance Costs Feedback and Context for the Assessment of Commonwealth Forms*, Research Conducted by Max Yann, Mark Zuker, Kim Kreuzer and Kamela Bearlin for the Productivity Commission, December.

-
- Mischoulon D. 1999, 'An Approach to the Patient Seeking Psychiatric Disability Benefits', *Academic Psychiatry*, 23(3):128–36.
- Morgan, L. 2005, 'Quality Part-time Work – It Shouldn't be so Hard!', Background Paper: Families Matter, 9th Australian Institute of Family Studies Conference, Melbourne, 9–11 February 2005.
- Nucleus Group, 2004, 'Survey of New Disability Support Pension Customers', July, Preliminary Analysis Report.
- O'Brien, M. J. 2000, 'Older Male Labour Force Participation: The Role Of Social Security and Hidden Unemployment', *Australian Journal of Labour Economics*, vol. 4, no. 3, pp. 206–23.
- OECD 2003, *Transforming Disability into Ability Policies to Promote Work and Income Security for Disabled People*, Paris.
- 2004a, The OECD Labour Market Statistics Database, documentation from <http://www1.oecd.org/scripts/cde/members/lfsdataauthenticate.asp> (accessed 14 July 2004).
- 2004b, *Learning for Tomorrow's World First Results from PISA 2003*, Programme for International Student Assessment, Paris.
- 2005a, *Ageing and Employment Policies, Australia*, Paris
- 2005b, *Education at a Glance: OECD Indicators 2005*, Paris.
- Pappas, N. 2001, 'Earnings Inequality and Skill' in Borland, J., Gregory, B. and Sheehan, P. (eds.), *Work Rich, Work Poor*, Centre for Strategic Economics Studies, Victoria University, Melbourne.
- PC (Productivity Commission) 2003, *Trends in Australian Manufacturing*, Commission Research Paper, AusInfo, Canberra.
- 2004a, *National Workers' Compensation and Occupational Health and Safety Frameworks*, Inquiry Report No. 27, March.
- 2004b, *Review of the Disability Discrimination Act 1992*, Inquiry Report No. 30, April 2004.
- 2005, *Economic Implications of an Ageing Australia*, Research Report, Canberra.
- 2006, *Economic Impacts of Migration and Population Growth*, Final Report, April.
- Peters, J., Wilford, J., MacDonald, E., Jackson, A., Pickvance, S., Blank, L. and Craig, D. 2004, 'Literature Review of Risk Factors for Job Loss Following Sickness Absence', University of Sheffield, University of Glasgow, Sheffield

Occupational Health Advisory Service and the Sheffield Southwest Primary Care Trust, Undertaken for the UK Department for Work and Pensions.

- PIR Independent Research Group 2004, 'A Review of the Unemployment and Welfare Costs of the Child Support Agency', A Community Awareness Project.
- Polesel, J., Teese, R., Lamb, S., Helme, S., Nicholas, T., Clarke, K. 2005, *Destination and Satisfaction Survey of 2004 HSC VET Students in NSW*, Final Report, Undertaken at University of Melbourne, Centre for Postcompulsory Education and Lifelong Learning, (CPELL) for NSW Department of Education and Training, October.
- Porter, J. 2006, *What Makes Vocational Training Programs in Schools Work? A Study of New South Wales and Queensland Schools*, NCVET, Adelaide.
- Prause, J. and Dooley, D. 2001, 'Effect of Favorable Employment Change on Psychological Depression: Two Year Follow-up Analysis of the National Longitudinal Survey of Youth', *Applied Psychology: An International Review*, 50, pp. 282–304.
- Rahman, N., Bhatia, K. and Penn, E. 2005, *Arthritis and Musculoskeletal Conditions in Australia*, AIHW.
- Raphael, S. and Winter-Ebmer, R. 2001, 'Identifying the Effect of Unemployment On Crime', *Journal of Law and Economics*, vol. 44.
- Ritchie J., Ward, K. and Duldig, W. 1993, 'GPs and IVB: A Qualitative Study of the Role of GPs in the Award of Invalidity Benefit', Department of Social Security Research Report no. 18, London, HMSO.
- Robine, J. Jagger, C. and van Oyen, H. 2005, Interpreting International Evidence on the Evolution of Morbidity and Disability Prevalence Over Time and Perspectives for Extended Healthy Life Expectancy, Brussels, Joint EU – OECD workshop, February 21–22.
- Rodgers, J. 2004, 'Hourly Wages of Full-Time and Part-Time Employees in Australia', *Australian Journal of Labour Economics*, 7(2), pp. 231–54.
- Ruzicka, L. 1986, 'The Length of Working Life of Australian Males, 1933–1981', Bureau of Labour Market Research Monograph Series No. 15, AGPS, Canberra.
- Ryan, C. 2003, A 'Causal' Estimate of the Effect of Schooling on Full-time Employment among Young Australians, Longitudinal Surveys of Australian Youth, Research Report 35, Australian Council for Educational Research, August.
- Ryan, R. 2002, 'Making VET in Schools Work: A Review of Policy and Practice in the Implementation of Vocational Education and Training in Australian Schools', *Journal of Educational Enquiry*, vol. 3, no. 1, pp. 1–16.

-
- Ryan, C. and Watson, L. 2003, 'Factors Affecting Year 12 Retention Across Australian States and Territories in the 1990s', Centre for Economic Policy Research Discussion Papers, No. 467, Australian National University, Canberra, September.
- and Watson, L. 2004, 'Year 12 Completion and Retention in Australia in the 1990s', *Australian Journal of Labour Economics*, 7(4), December 2004, pp. 481–500.
- Saint-Paul, G. 2004, 'Why Are European Countries Diverging in their Unemployment Experience?', February 28, <http://idei.fr/doc/wp/2004/unemployment.pdf> (accessed 28 September 2005).
- Samuels, R. and Judd, B. 2002, 'Public Housing Estate Renewal-Interventions and the Epidemiology of Victimization', Paper presented at the Housing, Crime and Stronger Communities Conference convened by the Australian Institute of Criminology and the Australian Housing and Urban Research Institute, Melbourne, 6-7 May.
- Saunders, P. 2004 'Why We Must Reform the Disability Support Pension', *Issue Analysis*, The Centre for Independent Studies, no. 47, April.
- 2005, 'Reviewing Recent Trends in Wage Income Inequality in Australia', Revised version (February 2005) of paper presented to the Workshop on Deregulation of the Labour Market: A Workshop in Honour of Keith Hancock, University of Sydney, 25–26 November 2004.
- , Brown, J. and Eardley, T. 2003, 'Patterns of Economic and Social Participation Among FaCS Customers', Policy Research Paper no. 19.
- Sawney, P. and Challenor, J. 2003, 'Editorial: Poor Communication Between Health Professionals is a Barrier to Rehabilitation', *Occupational Medicine*, no. 53, pp. 246–48.
- School of Occupational Therapy 2001, *Does Workers' Compensation Influence Recovery Rates? A Critical Review of the Literature*, A Report Prepared for the Workers' Compensation and Rehabilitation Commission by the Curtin University of Technology Western Australia, July.
- Schneider, F. 2000, 'The Value Added of Underground Activities: Size and Measurement of the Shadow Economies of 110 Countries all over the World', Paper presented to the Workshop of Australian National Tax Centre, ANU, Canberra, Australia, July 17, 2002.
- 2003, 'The Size and Development of the Shadow Economies and Shadow Economy Labour Force of 22 Transition and 21 OECD Countries: What Do We Really Know?' in Belev, B. (ed.), *The Informal Economy in the EU Accession Countries*, Centre for the Study of Democracy.

-
- 2004, 'The Size of the Shadow Economies of 145 Countries all over the World: First Results over the Period 1999 to 2003', Institute for the Study of Labour, Discussion Paper No. 1431, December, Bonn.
- , Braithwaite, V. and Reinhart, M. 2001, 'Individual Behavior in the Cash/Shadow Economy in Australia: Facts, Empirical Findings and Some Mysteries', Working Paper No. 0107, Department of Economics, Johannes Kepler University of Linz, March.
- Schweinhart, L. 2004, *The High/Scope Perry Preschool Study Through Age 40: Summary, Conclusions and Frequently Asked Questions*, The High/Scope Educational Research Foundation, 3, November.
- SCRGSP (Steering Committee for the Review of Government Service Provision) 2005, *Overcoming Indigenous Disadvantage: Key Indicators 2005*, Productivity Commission, Canberra.
- Seth-Purdie, R. 2000, 'Multiple Risk Exposure and Likelihood of Welfare Receipt', *Family Matters*, vol. 57, pp. 22–9.
- Sheehan, P. and Eposto, A. 2001, 'Technology, Skills and Earnings Inequality: A New Approach to Understanding the Characteristics of Jobs', in Borland, J., Gregory, B. and Sheehan, P. (eds.), *Work Rich, Work Poor*, Centre for Strategic Economics Studies, Victoria University, Melbourne.
- Sherker, A. 1996, 'Unravelling the Mystery of Hepatitis C Serology', HepNet, <http://www.hepnet.com/update3.html>, (accessed 21 March 2006).
- Silvey J. and Birrell B. 2004, 'Financial Outcomes for Parents after Separation', *People and Place*, 12(1).
- Skirbekk, V. 2005, 'The Impact of a Lower School Leaving Age and Later Retirement on the Financing of the Norwegian Public Pension System', Statistics Norway, February.
- Smyth, J., Hattam, R., Cannon, J., Edwards, J., Wilson, N. and Wurst, S. 2000, 'Listen to Me I'm Leaving: Early School Leaving in South Australian Secondary Schools', Flinders Institute for the Study of Teaching, Department of Education, Training and Employment and the Senior Secondary Assessment Board of South Australia, Adelaide.
- Strategic Partners in association with the Centre for Youth Affairs and Development 2001a, *Innovation and Best Practice in Schools: Review of Literature and Practice*, Report prepared for the Commonwealth Department of Education, Training and Youth Affairs, February.
- 2001b, *National Evaluation Report, Full Services Schools Program 1999 and 2000*, February.

-
- Tano, D. K. 1991, 'Are Unemployment and Out of the Labour Force Behaviourally Distinct Labor Force States?', *Economic Letters*, vol. 36, pp. 113–17.
- Thomas-MacLean, R., Stoppard, J., Miedema, B. and Tatemichi, S. 2005, 'Diagnosing Depression', *Canadian Family Physician*, vol. 51, August.
- UK Treasury 1999, 'Tackling Poverty and Extending Opportunity, The Modernisation of Britain's Tax and Benefit System', Paper No. 4, HM Treasury, London.
- Urbis Keys Young, 2005, *Evaluation of the Mentor Marketplace Program*, Final Report, Australian Government Department of Family and Community Services, January 2005.
- US Department of Health and Human Services 2003, *Strengthening Head Start*, What the Evidence Shows, June.
- VACC (Victorian Automobile Chamber of Commerce) 2002, Submission to the House of Representatives Standing Committee Inquiry into Vocational Education in Schools Canberra, Parliament of Australia.
- Walters, G. and Clopton, J. 2000, 'Effect of Symptom Information and Validity Scale Information on the Malingering of Depression on the MMPI-2', *Journal of Personality Assessment*, vol. 75, no. 2, pp. 183–99.
- Weatherburn, D. 1995, 'The Economic and Social Context of Property Crime in Australia', First National Outlook Symposium, Australian Institute of Criminology, Canberra, 5 and 6th June.
- Webster, E. 1999, 'Occupational Profiles of Men Since 1947', Melbourne Institute Paper No. 23/99, October.
- Weston, R 1996, 'Unemployment and the Family', *Newsletter of the Northern Women's Health Service*, no. 13, pp. 14–15.
- Whitton, G. 2002, 'Skills for Employability, Labour Market Research Unit', Department of Employment and Training, Working Paper No. 11.
- Wise, S., da Silva, L., Webster, E. and Sanson, A. 2005, *The Efficacy of Early Childhood Interventions*, Australian Institute of Family Studies, Research Report 14, A report prepared for the Australian Government Department of Family and Community Services.
- Wood, G. and Ong, R. 2005, *Housing Assistance and Economic Participation, Collaborative Research Venture 1: Housing Assistance and Non-shelter Outcomes, Stage 1*, Report for the Australian Housing and Urban Research Institute, RMIT-NATSEM Research Centre and Western Australia Research Centre.

Yeend, P. 2002, Family and Community Services Legislation Amendment (Disability Reform) Bill 2002, Department of the Parliamentary Library, May.

Zbar, V., Bereznicki, B. and Trist, S. 2003, *Meeting the Challenge: Guiding Principles for Success from the Boys' Education Lighthouse Schools Programme Stage One*, Commissioned by DEST.